

Central America and the Caribbean Region

**Data Collection Survey on
Development Cooperation With/Post
COVID-19 Society in Central
America and the Caribbean Region**

Final Report

February 2022

**Japan International Cooperation Agency
(JICA)**

**Nippon Koei Co., Ltd.
Koei Research & Consulting Inc.
Nippon Koei LAC Co., Ltd.**

5R
JR
22-013

Central America and the Caribbean Region

**Data Collection Survey on
Development Cooperation With/Post
COVID-19 Society in Central
America and the Caribbean Region**

Final Report

February 2022

**Japan International Cooperation Agency
(JICA)**

**Nippon Koei Co., Ltd.
Koei Research & Consulting Inc.
Nippon Koei LAC Co., Ltd.**

Table of Contents

1.	OUTLINE OF THE SURVEY	1-1
1.1	INTRODUCTION.....	1-1
1.2	SURVEY NAME.....	1-1
1.3	BACKGROUND OF THE SURVEY	1-1
1.4	PURPOSE OF THE SURVEY	1-2
1.5	COUNTRIES COVERED BY OF THE SURVEY	1-2
1.6	AWARENESS OF CURRENT ISSUES RELATED TO THE SURVEY.....	1-2
1.7	CONSULTING SERVICE CONTRACT.....	1-3
1.8	SCOPE OF THE SURVEY	1-3
3.	SUMMARY OF THE SURVEY	3-1
3.1	OVERVIEW OF CENTRAL AMERICA AND CARIBBEAN REGION	3-1
3.2	SUMMARY OF SECTOR SURVEY	3-2
3.3	SURVEY OF IMPACT OF COVID-19 ON JICA PROJECT SITES.....	3-24
3.4	PILOT PROJECTS.....	3-26
3.5	SUMMARY OF THE SURVEY AND RECOMMENDATIONS FOR DEVELOPMENT COOPERATION.....	3-28
4.	IMPACT OF COVID-19 IN CENTRAL AMERICA AND THE CARIBBEAN AND MEASURES IMPLEMENTED.....	4-1
4.1	COVID-19 INFECTION STATUS IN THE REGION AND COMPARISON WITH OTHER REGIONS	4-1
4.2	KEY MEASURES IMPLEMENTED AND COMPARISON WITH OTHER REGIONS.....	4-5
5.	SOCIO-ECONOMIC POLICY SECTOR.....	5-1
5.1	GENERAL	5-1
5.2	SUMMARY OF SECTOR SURVEY	5-1
5.3	SECTORAL SCOPE OF WORK	5-3
5.4	SURVEY METHOD BY SECTOR	5-4
5.5	COLLECTING BASIC INFORMATION ON 23 TARGET COUNTRIES	5-5
5.6	SELECTION OF PRIORITY SECTORS BY COUNTRY	5-15
5.7	SELECTION OF PRIORITY COUNTRIES BY SECTOR	5-27
5.8	DETAILED SURVEY BY SECTOR	5-34
5.9	DEVELOPMENT OF HYPOTHESES ON THE STATE OF SECTORAL DEVELOPMENT COOPERATION IN WITH/POST COVID-19 SOCIETY	5-59
6.	HEALTH AND NUTRITION SECTOR.....	6-1
6.1	GENERAL	6-1
6.2	SUMMARY OF SECTOR SURVEY	6-1
6.3	SECTORAL SCOPE OF WORK	6-2
6.4	COLLECTING BASIC INFORMATION ON 23 TARGET COUNTRIES	6-4
6.5	SELECTION OF PRIORITY COUNTRIES BY SECTOR	6-29
6.6	DETAILED SURVEY BY SECTOR	6-30
6.7	DEVELOPMENT OF HYPOTHESIS ON THE STATE OF SECTORAL DEVELOPMENT COOPERATION IN	

	WITH/POST COVID-19 SOCIETY	6-51
6.8	ANALYSIS AND RECOMMENDATIONS CONTRIBUTING TO SECTORAL COOPERATION POLICY	6-56
7.	EDUCATION SECTOR PROGRESS REPORT	7-1
7.1	GENERAL	7-1
7.2	SUMMARY OF SECTOR SURVEY	7-1
7.3	SECTORAL SCOPE OF WORK	7-2
7.4	SURVEY METHOD BY SECTOR	7-3
7.5	COLLECTING BASIC INFORMATION ON 23 TARGET COUNTRIES	7-4
7.6	SELECTION OF PRIORITY COUNTRIES BY SECTOR	7-26
7.7	DETAILED SURVEY BY SECTOR	7-33
7.8	DEVELOPMENT OF HYPOTHESIS ON THE STATE OF SECTORAL DEVELOPMENT COOPERATION IN WITH/POST COVID-19 SOCIETY	7-41
7.9	ANALYSIS AND RECOMMENDATIONS CONTRIBUTING TO SECTORAL COOPERATION POLICY	7-48
8.	AGRICULTURE AND RURAL DEVELOPMENT SECTOR	8-1
8.1	GENERAL	8-1
8.2	SUMMARY OF SECTOR SURVEY	8-1
8.3	SCOPE OF WORK BY SECTOR	8-3
8.4	SURVEY METHOD BY SECTOR	8-5
8.5	COLLECTING BASIC INFORMATION ON THE 23 TARGET COUNTRIES	8-5
8.6	SELECTION OF PRIORITY COUNTRIES BY SECTOR	8-26
8.7	DETAILED STUDY BY SECTOR	8-27
8.8	DEVELOPMENT OF HYPOTHESIS ON THE STATE OF SECTORAL DEVELOPMENT COOPERATION IN WITH/POST COVID-19 SOCIETY	8-51
8.9	ANALYSIS AND RECOMMENDATIONS CONTRIBUTING TO SECTORAL COOPERATION POLICY	8-56
9.	PRIVATE SECTOR.....	9-1
9.1	GENERAL	9-1
9.2	SUMMARY OF SECTOR SURVEY	9-1
9.3	SECTORAL SCOPE OF WORK	9-2
9.4	COLLECTING BASIC INFORMATION ON 23 TARGET COUNTRIES	9-3
9.5	SELECTION OF PRIORITY COUNTRIES BY SECTOR	9-20
9.6	DETAILED SURVEY BY SECTOR	9-22
9.7	DEVELOPMENT OF HYPOTHESIS ON THE STATE OF SECTORAL DEVELOPMENT COOPERATION IN WITH/POST COVID-19 SOCIETY	9-50
9.8	ANALYSIS AND RECOMMENDATIONS TO CONTRIBUTING TO SECTORAL COOPERATION POLICY	9-58
10.	ENVIRONMENT AND DISASTER MANAGEMENT SECTOR	10-1
10.1	GENERAL	10-1
10.2	SUMMARY OF SECTOR SURVEY	10-1
10.3	SECTORAL SCOPE OF WORK.....	10-3
10.4	COLLECTING BASIC INFORMATION ON 23 TARGET COUNTRIES	10-4
10.5	SELECTION OF PRIORITY COUNTRIES BY SECTOR	10-15
10.6	DETAILED SURVEY BY SECTOR	10-15
10.7	DEVELOPMENT OF HYPOTHESIS ON THE STATE OF SECTORAL DEVELOPMENT COOPERATION IN WITH/POST COVID-19 SOCIETY	10-20
10.8	ANALYSIS AND RECOMMENDATIONS CONTRIBUTING TO SECTORAL COOPERATION POLICIES.....	10-25

11.	GOVERNANCE AND CITIZEN SECURITY SECTOR.....	11-1
11.1	GENERAL	11-1
11.2	SUMMARY OF SECTOR SURVEY	11-1
11.3	SECTORAL SCOPE OF WORK	11-3
11.4	COLLECTING BASIC INFORMATION ON 23 TARGET COUNTRIES	11-5
11.5	SELECTION OF PRIORITY COUNTRIES BY SECTOR	11-31
11.6	DETAILED SURVEY BY SECTOR	11-34
11.7	DEVELOPMENT OF HYPOTHESIS ON THE STATE OF SECTORAL DEVELOPMENT COOPERATION IN WITH/POST COVID-19 SOCIETY	11-58
11.8	ANALYSIS AND RECOMMENDATIONS CONTRIBUTING TO SECTORAL COOPERATION POLICY	11-64
12.	DIGITAL INNOVATION SECTOR.....	12-1
12.1	GENERAL.....	12-1
12.2	SUMMARY OF SECTOR SURVEY.....	12-1
12.3	SECTORAL SCOPE OF WORK.....	12-3
12.4	COLLECTING BASIC INFORMATION ON 23 TARGET COUNTRIES	12-4
12.5	DETAILED SURVEY BY SECTOR	12-4
12.6	INTERVIEW SURVEY	12-8
12.7	DIGIAL UTILIZATION AND NEEDS	12-11
12.8	UTILIZING DIGITAL TECHNOLOGIES.....	12-16
12.9	DEVELOPMENT OF HYPOTHESES ON THE STATE OF SECTORAL DEVELOPMENT COOPERATION IN WITH/POST COVID-19 SOCIETY	12-18
13.	INFRASTRUCTURE AND ENERGY SECTOR.....	13-1
13.1	GENERAL.....	13-1
13.2	SUMMARY OF SECTOR SURVEY.....	13-1
13.3	SECTORAL SCOPE OF WORK	13-3
13.4	COLLECTING BASIC INFORMATION ON 23 TARGET COUNTRIES	13-4
13.5	SELECTION OF PRIORITY COUNTRIES BY SECTOR	13-26
13.6	DETAILED SURVEY BY SECTOR	13-27
13.7	DEVELOPMENT OF HYPOTHESIS ON THE STATE OF SECTORAL DEVELOPMENT COOPERATION IN WITH/POST COVID-19 SOCIETY	13-39
13.8	ANALYSIS AND RECOMMENDATIONS CONTRIBUTING TO SECTORAL COOPERATION POLICY	13-43
14.	TOURISM SECTOR.....	14-1
14.1	GENERAL.....	14-1
14.2	SUMMARY OF SECTOR SURVEY.....	14-1
14.3	SECTORAL SCOPE OF WORK	14-2
14.4	COLLECTING BASIC INFORMATION ON 23 TARGET COUNTRIES	14-3
14.5	SELECTION OF PRIORITY COUNTRIES BY SECTOR	14-14
14.6	DETAILED SURVEY BY SECTOR	14-16
14.7	DEVELOPMENT OF HYPOTHESIS ON THE STATE OF SECTORAL DEVELOPMENT COOPERATION IN WITH/POST COVID-19 SOCIETY	14-18
14.8	ANALYSIS AND RECOMMENDATIONS CONTRIBUTING TO SECTORAL COOPERATION POLICY	14-33
15.	PUBLIC-PRIVATE PARTNERSHIP SECTOR.....	15-1
15.1	GENERAL.....	15-1
15.2	SUMMARY OF SECTOR SURVEY.....	15-1

15.3	SECTORAL SCOPE OF WORK	15-2
15.4	SURVEY METHOD BY SECTOR	15-3
15.5	COLLECTING OF BASIC INFORMATION ON 23 TARGET COUNTRIES	15-3
15.6	SELECTION OF PRIORITY COUNTRIES BY SECTOR	15-37
15.7	DETAILED SURVEY BY SECTOR	15-38
15.8	DEVELOPMENT OF HYPOTHESIS ON THE STATE OF SECTORAL DEVELOPMENT COOPERATION IN WITH/POST COVID-19 SOCIETY	15-47
15.9	ANALYSIS AND RECOMMENDATIONS CONTRIBUTING TO SECTORAL COOPERATION POLICY	15-48
16.	IMPACT STUDY OF COVID-19 ON THE JICA PROJECT SITE	16-1
16.1	INTRODUCTION	16-1
16.2	METHOD OF THIS SURVEY	16-1
16.3	SELECTION OF TARGET PROJECT OF IMPACT STUDY	16-1
16.4	STRENGTHENING THE MECHANISM PROJECT FOR TOURISM DEVELOPMENT BASED ON SUSTAINABLE COMMUNITY IN THE NORTHERN REGION (DOMINICAN REPUBLIC).....	16-1
16.5	PROJECT PHASE 2 (GENSAI-2) IN SUPPORT OF THE OFFICE OF CLIMATE CHANGE AND RISK MANAGEMENT STRATEGIES FOR STRENGTHENING PUBLIC INFRASTRUCTURE (EL SALVADOR).....	16-6
16.6	PROJECT ON STRENGTHENING CONSERVATION AND MANAGEMENT OF COASTAL FISHERIES RESOURCES THROUGH COLLABORATION BETWEEN FISHERMEN AND GOVERNMENT (SAINT LUCIA)	16-13
16.7	COMMUNITY POLICING PROJECT (GUATEMALA).....	16-20
16.8	SUMMARY OF THIS STUDY AND DIRECTIONS FOR DEVELOPMENT COOPERATION.....	16-27
17.	PILOT PROJECT	17-1
17.1	GENERAL	17-1
17.2	SELECTION OF PILOT PROJECTS	17-1
17.3	IMPLEMENTATION OF PILOT PROJECTS.....	17-6
17.4	EVALUATION OF PILOT PROJECT	17-8
17.5	CREATION OF HYPOTHESES ON THE IDEAL FORM OF DEVELOPMENT COOPERATION.....	17-13
17.6	ANALYSIS AND RECOMMENDATIONS CONTRIBUTING TO COOPERATION POLICY.....	17-16

List of Tables

Table 1-1	Supplemental Contracts	1-1
Table 1-2	Name of the Survey	1-1
Table 1-3	Counties covered by the Survey	1-2
Table 1-4	Recognition of Current Status and Issues related to the Survey	1-3
Table 1-5	Consulting Service Contract	1-3
Table 1-6	Work Tasks in the Contract	1-3
Table 1-7	Three objectives of this survey	1-4
Table 2-1	Basic Policy of This Survey	2-1
Table 2-2	Scope of Works by Sector	2-1
Table 2-3	Travel Restrictions Applied during the Field Survey	2-3
Table 2-4	Survey Method Applied to [Task 2]	2-3
Table 2-5	Record of Interviews Conducted during the Field Survey Related to [Task 2]	2-4
Table 2-6	Survey Method Applied to [Task 3]	2-5
Table 2-7	Record of Interviews Conducted during the Field Survey Related to [Task 3]	2-5
Table 2-8	Deliverables Related to [Task 3]	2-5
Table 2-9	Survey Method Applied to [Task 4]	2-6
Table 2-10	Record of Interviews Conducted during the Field Survey Related to [Task 4]	2-6
Table 2-11	Deliverables Related to [Task 4]	2-7
Table 2-12	Work Steps for Building Hypothesis for ODA	2-8
Table 2-13	Timing of Field Surveys and Activity Items	2-8
Table 2-14	Three Business Schemes for Pilot Projects	2-9
Table 2-15	Standard Form of Pilot Business Overview	2-9
Table 2-16	Selection Criteria for Pilot Projects	2-10
Table 2-17	Standard Table of Contents Structure of Pilot Project Implementation Plan	2-10
Table 2-18	Standard Table of Contents Structure of Monthly Progress Report of Pilot Project	2-11
Table 2-19	Experts in This Survey	2-11
Table 2-20	Experts Meeting held in the Survey	2-12
Table 2-21	List of Academic Papers and External Transmissions	2-13
Table 3-1	Economic Index of 23 Countries	3-1
Table 3-2	Grouping of Target 23 Countries	3-2
Table 3-3	Regional Organizations	3-2
Table 3-4	Priority Countries in Each Sector	3-3
Table 3-5	Status of Detailed Survey by Sector	3-4
Table 3-6	Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Socio-economic Policy)	3-5
Table 3-7	Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Healthcare and Nutrition)	3-7
Table 3-8	Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Education)	3-8
Table 3-9	Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Agriculture and Rural Development)	3-9
Table 3-10	Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Private Sector)	3-12
Table 3-11	Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation	

	(Environment and Disaster Management)	3-13
Table 3-12	Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Governance and Citizen Security).....	3-15
Table 3-13	Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Digital and Innovation).....	3-17
Table 3-14	Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Infrastructure and Energy).....	3-19
Table 3-15	Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Tourism)	3-21
Table 3-16	Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (PPP)	3-22
Table 3-17	Selection of Target Projects of Impact Survey.....	3-24
Table 3-18	Outline of COVID-19 Impact Survey on JICA Projects.....	3-24
Table 3-19	COVID-19 Summary Results of Impact Survey.....	3-25
Table 3-20	Selected Pilot Project	3-26
Table 3-21	Summary of Results of Pilot Projects	3-27
Table 3-22	COVID-19 Pandemic Social Transformation (World).....	3-29
Table 3-23	COVID-19 Pandemic Social Transformation (CA and Caribbean)	3-29
Table 3-24	Basic Policy in Setting Recommendations for Development Cooperation.....	3-30
Table 3-25	Analysis of Sector-Recommendations by Framework.....	3-32
Table 3-26	Records of JICA's Support in the Region	3-40
Table 3-27	International and Regional Organizations in Survey Area.....	3-41
Table 4-2	COVID-19 Infection Status in Central American and Caribbean Countries (vs. 100,000 Population, as of 2022 February).....	4-2
Table 4-3	Number of New COVID-19 Infections and Deaths in the Last Week, and Cumulative Infections and Deaths, by WHO region, as of 2022 January	4-3
Table 4-4	Total Number of Cases, Deaths, and Fatality Rates (%) in PAHO Member Countries and Territories with more than 3010,000 Cumulative Cases	4-3
Table 4-5	Summary of the Number of Measures Taken by Governments as Summarized in COVID-19 Observatory in LAC.....	4-5
Table 4-6	Stringency Index (OxCGRT) in C.A and Caribbean.....	4-6
Table 5-1	Sectoral Hypotheses and Policy Recommendations on the State of Development Cooperation (draft) (Socio-economic Policy).....	5-1
Table 5-2	Scope of Works (Socio-economic Policy)	5-3
Table 5-3	Survey Methodology Applied on the Socio-economic Policy Sector.....	5-4
Table 5-4	List of Economic Data for COVID-19 of International Organizations.....	5-5
Table 5-5	GDP at Constant Price Except Mexico	5-7
Table 5-6	External Debt (% of GDP).....	5-9
Table 5-7	Foreign Direct Investment (Net FDI).....	5-10
Table 5-8	Analytical Work for Selection of Priority Sectors in Each Country	5-11
Table 5-9	Policy Classification as Presented in ECLAC COVID-19 Observatory	5-12
Table 5-10	Summary of the Number of Measures Taken by Governments as Summarized in the COVID-19 Observatory in LAC.....	5-13
Table 5-11	List of Collected Materials.....	5-14
Table 5-12	Example of the Evaluation Based on Survey on Reports of Development Partners and Country-specific Development Cooperation Policies.....	5-15

Table 5-13	Weighting Between Each Evaluation Criteria.....	5-18
Table 5-14	Weighting Between Each Evaluation Criteria (Updated)	5-18
Table 5-15	Pair-wise Comparison Table for "GDP Growth Rate by Sector" and "Ratio of Sectoral GDP to Total GDP"	5-18
Table 5-16	Weighting Results by AHP Evaluation Criteria	5-19
Table 5-17	Key Economic Indicators Used (Example of El Salvador).....	5-19
Table 5-18	Results of the Analysis; Rank as Impact by COVID-19	5-22
Table 5-19	Ranked as Impact by COVID-19 (ECLAC Category).....	5-23
Table 5-20	Classification of Sectors in this Study	5-23
Table 5-21	Allocation of ECLAC-classified Sectors to Vertical Sector Classification.....	5-24
Table 5-22	Results of Evaluation of Various Government Policies for COVID-19.....	5-24
Table 5-23	Results of Survey of Development Partners and Development Cooperation Policies by Country	5-25
Table 5-24	Results of Country-specific Priority Sector Selection	5-25
Table 5-25	Setting Up a Case for Sensitivity Analysis	5-26
Table 5-26	Sensitivity Analysis Results.....	5-26
Table 5-27	Aggregate Results for Priority Sectors	5-26
Table 5-28	Aggregate Results of Sensitivity Analysis	5-27
Table 5-29	Aggregation of Priority Sectors Reflecting the Results of Sensitivity Analysis	5-27
Table 5-30	GDP Growth Rates at Constant Prices.....	5-27
Table 5-31	Issues in the Socio-economic Sector and Points Raised at the Expert Meetings	5-28
Table 5-32	Comparison of Overseas Remittances and Major Economic Indicators in Target Countries (1) (2).....	5-30
Table 5-33	Sorting Based on Each Item of Overseas Remittance Amount.....	5-31
Table 5-34	Grouping of Countries Surveyed	5-33
Table 5-35	Selection of Countries for the Survey	5-34
Table 5-36	Selection of Countries for the Survey	5-34
Table 5-37	Results of the Selection of Countries for the Detailed Survey.....	5-35
Table 5-38	El Salvador Imports, Exports, and Maquila Industry Trends (2016-2020)	5-37
Table 5-39	Family Remittances from Abroad and as Percentage of GDP in Central America and the Caribbean	5-39
Table 5-40	Key Economic and Statistical Characteristics of the Three Priority Countries.....	5-40
Table 5-41	Top Five States for Number of Latinos Residing from Mexico, Central America, and the Dominican Republic	5-43
Table 5-42	Comparison of Remittance Receiving and Non-receiving Families	5-45
Table 5-43	Family Remittance Receipt by Remittance Institution, 2018-2020	5-46
Table 5-45	Status of CBDC Development in the Target Countries.....	5-56
Table 5-46	Analysis Based on Detailed Survey Results	5-58
Table 5-47	Vulnerabilities in the Socio-economic Policy Sector Revealed by COVID-19	5-58
Table 5-48	Vulnerabilities Revealed in COVID-19	5-59
Table 5-49	Agricultural Sector Contribution to GDP as Share of GDP	5-60
Table 5-50	Contribution of the Tourism Sector to GDP/Employment (2019)	5-60
Table 5-51	Community Innovation Projects, Blue Economy Projects, and Initiatives	5-61
Table 5-52	Transnational Economic Activities by Migrant Workers	5-63
Table 5-53	Products Imported from El Salvador in Nostalgia Markets (2014)	5-64
Table 5-54	Vulnerabilities Revealed in COVID-19 and Measures to Overcome Them (draft)	5-64

Table 5-55	JICA Projects Related to Social and Economic Policy Sectors Currently Being Implemented in Central America and the Caribbean	5-67
Table 5-56	Direction of Cooperation in the Socio-economic Policy Sector (draft)	5-67
Table 6-1	Sectoral Hypothesis on Development Cooperation (draft) (Health and Nutrition).....	6-1
Table 6-2	Sectoral Scope of Work (Health and Nutrition)	6-2
Table 6-3	Collected Data and Materials: Health and Nutrition Sector.....	6-4
Table 6-4	GDP per Capita, Demography, and Non-communicable Diseases	6-5
Table 6-5	Maternal, Newborn and Child Health, and Nutrition.....	6-6
Table 6-6	Health Finance and Service Provision	6-8
Table 6-7	Cumulative Numbers of Confirmed Cases, Deaths, and Vaccine Completed Schedule per 100 Population	6-9
Table 6-8	Impact of COVID-19 on Health and Nutrition Service Coverages	6-13
Table 6-9	Overview of COVID-19 Responses in Health Sector.....	6-16
Table 6-10	List of National Influenza Centers in the Central American and Caribbean Countries, as of May 2021	6-18
Table 6-11	Testing, Hospitalization and Vaccination in the Target Countries (as of 6 November 2021)	6-19
Table 6-12	Strategic Objectives of Health Agenda for Central America and the Dominican Republic (ASCARD) 2019- 2030	6-23
Table 6-13	Outline of Health Plan for Central America and the Dominican Republic (PSCARD) 2021-2025	6-24
Table 6-14	Outline of the Health Sector Framework Document, Social Sector	6-24
Table 6-15	The World Bank Support for COVID-19 Responses for the Survey Target Countries	6-25
Table 6-16	Health Sector in the Japanese Country Cooperation Policy for the Target Countries..	6-26
Table 6-17	Major JICA's Cooperation in Health Sector of the Target Countries	6-27
Table 6-18	Grouping of the Target Countries in Health and Nutrition Sector	6-28
Table 6-19	Pre-COVID-19 Indicators in the Central American and Caribbean Countries	6-29
Table 6-20	Indicators Relevant to COVID-19 in the Central American and Caribbean Countries (as of 06 November 2021)	6-29
Table 6-21	Criteria for Priority Countries.....	6-30
Table 6-22	Priority Countries.....	6-30
Table 6-23	Outline of the Detailed Survey	6-31
Table 6-24	Activities of Major Development Partners in Health and Nutrition Sector in Guatemala... ..	6-31
Table 6-25	Activities of Major Development Partners in Health and Nutrition Sector in Honduras.....	6-34
Table 6-26	Number of Maternal Care Services Provided in 2019 and 2020.....	6-36
Table 6-27	Number of Home Deliveries by Type of Birth Attendants 2019-2020	6-36
Table 6-28	Maternal Deaths from COVID-19 According to Sanitary Region Epidemiology Week No. 1 to 27 (First Semester 2021)	6-37
Table 6-29	Total Number of Newborns with Low Birth Weight 2019-2021	6-38
Table 6-30	Number of Cases of NCDs Treated in 2019-2021	6-39
Table 6-31	Number of Hospital Deaths from Major NCDs in Honduras 2019-2021	6-39
Table 6-32	Outline of the Strategic Plan for Containment and Response to COVID-19.....	6-40
Table 6-33	Recent ICT in Health Section in Honduras.....	6-42
Table 6-34	Activities of Major Development Partners in Health and Nutrition Sector in Nicaragua... ..	6-46

Table 6-35	Issues in Pre-COVID-19 and Vulnerabilities under COVID-19	6-52
Table 6-36	Hypothesis on Development Cooperation for Health and Nutrition Sectors in the Latin American and Caribbean Regions With/Post COVID-19	6-53
Table 6-37	Possible Matching between Existing Cooperation and Region-wide Cooperation Topics	6-55
Table 6-38	Proposed Strategy on Regional Coordination	6-57
Table 6-39	Proposed Strategy on Inter-sectoral Collaboration	6-58
Table 7-1	Sectoral Hypothesis and Policy Recommendations on the State of Development Cooperation (draft) (Education).....	7-1
Table 7-2	Updated Scope of Works (Education) (October 10, 2021)	7-2
Table 7-3	Learning Achievement of Children by Country (ERCE 2019)	7-5
Table 7-4	Number of Weeks of Full and Partial School Closure in the Central American and Caribbean Countries	7-6
Table 7-5	Implementation of Face-to-Face Classes in Schools	7-7
Table 7-6	School Openings (as of the end of October 2021)	7-8
Table 7-7	Adverse Consequences of School Closures (UNESCO)	7-9
Table 7-8	Education Budget Situation in Five Countries.....	7-14
Table 7-9	Initiatives of JICA Chairs in Central America and the Caribbean	7-17
Table 7-10	Policies Related to COVID-19 in Each Country	7-18
Table 7-11	Distance Education Implementation Methods by Countries.....	7-19
Table 7-12	UNICEF RLRI's Five-level Criteria	7-20
Table 7-13	Results of the Distance Learning Readiness (RLRI) Index for Central America and the Caribbean	7-21
Table 7-14	Support Trends of Major Development Partners	7-22
Table 7-15	Countries Where Education is a Priority Area by Japanese Government	7-23
Table 7-16	Selection Criteria for Priority Countries	7-26
Table 7-17	Net Enrollment Rate (Primary Education), in Descending Order.....	7-27
Table 7-18	Net Enrollment Rate (Lower Secondary Education), in Descending Order	7-27
Table 7-19	Net Enrollment Rate (Upper Secondary Education), in Descending Order.....	7-28
Table 7-20	Completion Rate of Primary Education, in Descending Order.....	7-29
Table 7-21	Out-of-School Children Rate (Primary Education), in Ascending Order	7-29
Table 7-22	Out-of-School Children Rate (Secondary Education) in Ascending Order (2015-2020).....	7-30
Table 7-23	Priority Countries and Reasons for Selection	7-32
Table 7-24	Schedule of Detailed Survey and Places for Hearing or Visit.....	7-34
Table 7-25	Enrollment Rates in Distance Education by Type.....	7-35
Table 7-26	International Cooperation Support Related to COVID-19 in Guatemala	7-40
Table 7-27	Challenges and Vulnerabilities Revealed by COVID-19	7-42
Table 7-28	Hypothesis on the State of Development Cooperation in the Education Sector	7-43
Table 7-29	Support Measures by JICA to Overcome Vulnerabilities	7-44
Table 7-30	Pilot Project wide-Area Webinar Implementation Details	7-46
Table 7-31	Establishment of Bases and Intra-Regional Cooperation.....	7-49
Table 8-1	Hypothesis and Policy Recommendations for the Agriculture and Rural Development Sector in the Development Cooperation (Draft)	8-1
Table 8-2	Scope of Work by Sector (Agriculture and Rural Development).....	8-3
Table 8-3	Methodology of Study by Sector (Agriculture and Rural Development)	8-5
Table 8-4	Changes in Undernourished Populations Worldwide and by Region	8-10

Table 8-5	Share of Greenhouse Gas Emissions of the Agricultural Sector in the World and in Central America, Caribbean, and South America (2019 %)	8-12
Table 8-6	Examples of COVID-19 Measures Taken by Governments related to the Agriculture and Rural Development Sector	8-19
Table 8-7	OECS Recommendations on Agricultural Sector Issues after COVID-19	8-20
Table 8-8	Examples of Support by Development Partners	8-20
Table 8-9	Major Cooperation by Government of Japan in the Past 10 years and Planned (Agriculture and Rural Development Sector)	8-24
Table 8-10	Evaluation Criteria for Priority Countries Selection (Agriculture and Rural Development Sector).....	8-26
Table 8-11	Result of Evaluation and Grouping of 23 Countries (Agriculture and Rural Development Sector).....	8-27
Table 8-12	Priority Countries (Agriculture and Rural Development Sector).....	8-27
Table 8-13	Target Countries and Products for Value Chain Analysis	8-28
Table 8-14	Visited and Interviewed Organization.....	8-28
Table 8-15	Vulnerabilities (Key Issues) in the Agriculture and Rural Development Sector and their Exposure by COVID-19	8-52
Table 8-16	Countermeasures and Supporting Measures for Addressing the Vulnerabilities (Key Issues)	8-54
Table 8-17	Bases for Addressing each Key Issues.....	8-56
Table 9-1	Hypothesis and Policy Recommendations for the Private Sector in the Development Cooperation (Draft).....	9-1
Table 9-2	Scope of Works by Sector.....	9-2
Table 9-3	Results of Collection of Private Sector Macroeconomic Indicators	9-3
Table 9-4	Import Volume Around COVID-19	9-4
Table 9-5	Import Volume Around COVID-19	9-5
Table 9-6	Trading measures due to COVID-19 in Central America and the Caribbean	9-6
Table 9-7	2011-2020 Unemployment Rate	9-8
Table 9-8	2011-2020 Women's Unemployment Rate.....	9-9
Table 9-9	2011-2020 Youth Unemployment Rate.....	9-10
Table 9-10	2011-2020 Underemployment Rate	9-12
Table 9-11	2011-2020 Informal Worker Rate	9-13
Table 9-12	Private Sector Policies Taken by Each Country.....	9-15
Table 9-13	COVID-19 Examples of Capacity Building and Employment Support.....	9-15
Table 9-14	Major Publications of Development Partners in Central America and the Caribbean	9-16
Table 9-15	Country Development Policy in Private Sector	9-17
Table 9-16	Major Assistance of JICA in past 10 Years	9-17
Table 9-17	Private Sector Support by JICA in Mexico	9-19
Table 9-18	Impact of COVID-19 on Unemployment Rate.....	9-21
Table 9-19	Hearings in the Private Sector.....	9-22
Table 9-20	Panama's Strengths and Weaknesses in Attracting Manufacturers	9-29
Table 9-21	Departments and Number of Workers in Fundación Ciudad del Saber	9-29
Table 9-22	Challenges for Innovation Startups in Panama	9-31
Table 9-23	Collaboration for Industrial Development in Mexico Realized by JICA.....	9-37
Table 9-24	Innovation-related Policies in Mexico	9-38
Table 9-25	Changes in Employment Situation (Costa Rica).....	9-43
Table 9-26	Changes in Women's Employment Status (Costa Rica).....	9-44

Table 9-27	Breakdown of Employment Situation in Costa Rica (2017-2018)	9-45
Table 9-28	Number of Women Workers by Sector (Costa Rica)	9-46
Table 9-29	Reasons for Difficulty in Finding Employment (Costa Rica).....	9-47
Table 9-30	Estimating the Actual Unemployment Rate for 15 to 35 Years Old (Costa Rica)	9-48
Table 9-31	Organizations Involved in Supporting SMEs, Women and Youth Employment in Costa Rica	9-49
Table 9-32	Challenges for the Private Sector and Vulnerabilities Revealed by COVID-19	9-52
Table 9-33	Hypothesis on Measures and Directions of Cooperation for the Private Sector	9-53
Table 9-34	Hypotheses on Measures to Overcome and Directions of Cooperation for the Private Sector	9-54
Table 9-35	Issues, Direction and Recommendations for Development Cooperation.....	9-59
Table 10-1	Hypotheses and Policy Recommendations of the Environment and Disaster Management Sector on Development Cooperation	10-1
Table 10-2	Scope of Work in the Environment and Disaster Management Sector	10-3
Table 10-3	Environmental Budget Data and GDP per Capita for each Country.....	10-6
Table 10-4	Environmental Budget as a Percentage of the National Budget in Each Country	10-7
Table 10-5	Business Development Plan for the Environment and Disaster Management Sector.....	10-11
Table 10-6	JICA's Ongoing Cooperation in the Environment and Disaster Prevention Sector.....	10-12
Table 10-7	Number of Projects being Implemented by Other Donors.....	10-13
Table 10-8	Selection Criteria and Evaluation of Priority Countries in the Environmental Sector.....	10-14
Table 10-9	Selection Criteria and Evaluation of Priority Countries in the Disaster Management Sector	10-15
Table 10-10	Selection of Important Countries by Sector	10-15
Table 10-11	Countries Covered by Detailed Sectoral Surveys	10-16
Table 10-12	Detailed Survey Schedule and Sites Visited	10-16
Table 10-13	Change in Water Consumption in Panama City and Year-on-year Change	10-19
Table 10-14	Examples of Disaster Response under COVID-19 Pandemic Conditions	10-20
Table 10-15	Grouping of Countries Surveyed by Sector	10-20
Table 10-16	Vulnerability Analysis of the Environment and Disaster Management Sector	10-21
Table 10-17	Hypotheses on the Nature of Development Cooperation in the Environment and Disaster Management Sectors.....	10-22
Table 10-18	Regionalization and Wide-Area Cooperation (draft).....	10-29
Table 10-19	Draft Direction of Development Cooperation and Policy Recommendations for Environment Sector	10-31
Table 10-20	Draft Direction of Development Cooperation and Policy Recommendations for Disaster Management Sector	10-32
Table 11-1	Hypothesis Concerning the Modality of Development Cooperation and Recommendation of Policy (Proposal) (Governance and Citizen Security).....	11-1
Table 11-2	Work Scope (Governance and Citizen Security).....	11-4
Table 11-3	Major Indicators for Governance and Citizen Security Analysis.....	11-5
Table 11-4	"Worldwide Governance Indicators" (2020) of the 23 Target Countries.....	11-9
Table 11-5	Freedom House "Global Freedom Score" in 2020.....	11-10
Table 11-6	Corruption Perception Index (CPI) in 2020.....	11-11
Table 11-7	Actors Believed to be Involved in Corruption (2020)	11-11
Table 11-8	Corruption Control in National Development Plans	11-12
Table 11-9	National Strategies for E-Government Development	11-13
Table 11-10	E-Government Development Index in 2020	11-14
Table 11-11	Central American and Caribbean Countries with IDs in 2018.....	11-16
Table 11-12	Population and Percentage of Population Without a National ID (2017)	11-16
Table 11-13	Rule of Law Index in 2020	11-19
Table 11-14	Rule of Law Index in 2020	11-19
Table 11-15	Initiative of Citizen Security in National Development Plans	11-21

Table 11-16	Status of GBV in the Countries of the Northern Triangle of Central America	11-23
Table 11-17	Government Measures for COVID-19 (Governance and Citizen Security)	11-24
Table 11-18	The World Bank Ongoing Governance Projects in Central America and the Caribbean (As of October 13, 2021)	11-25
Table 11-19	Trends in the World Bank Group's Assistance for Governance and Citizen Security in Central America and the Caribbean	11-26
Table 11-20	Number of Ongoing IDB Governance Projects in Central America and the Caribbean (As of October 13, 2021)	11-27
Table 11-21	Trends in Governance and Citizen Security Assistance by the IDB in Central America and the Caribbean	11-27
Table 11-22	Major assistance programs over the past 10 years (Governance and Citizen Security).....	11-31
Table 11-23	Criteria for Selecting Priority Countries (Governance and Citizen Security).....	11-32
Table 11-24	Results and Summaries of Assessments and Grouping of 23 Countries (Governance and Citizen Security)	11-32
Table 11-25	Results of Evaluation and Grouping of 23 Countries (Governance and Citizen Security)..	11-33
Table 11-26	Grouping Result (Governance and Citizen Security).....	11-34
Table 11-27	Goal of Improving Governance of the Guatemalan Government	11-36
Table 11-28	Projects with Governments and Aid Agencies under Implementation by the CPCC.	11-38
Table 11-29	Consultation with International Cooperation Agency on Possible Cooperation Schemes (April 2021)	11-53
Table 11-30	Results of Grouping in Governance and Citizen Security	11-58
Table 11-31	Hypothesis on the Nature of Development Cooperation in the Governance and Citizen Security Sector of With/Post COVID-19 Societies in the Region	11-62
Table 11-32	Matching of Cooperation Themes with Existing Project Countries that could Serve as Bases (Proposal)	11-63
Table 12-1	Hypotheses and Policy Recommendations of the Digital Innovation Sector on the Nature of Development Cooperation.....	12-1
Table 12-2	Scope of Work for the Digital Innovation Sector.....	12-3
Table 12-3	Examples of Action Areas and Goals.....	12-6
Table 12-4	Countries with Individual Plans for Digitization	12-6
Table 12-5	Hearing Summary (El Salvador).....	12-8
Table 12-6	Hearing Results.....	12-8
Table 12-7	Hearing Summary (Dominican Republic)	12-10
Table 12-8	Hearing Results.....	12-10
Table 12-9	Menu of Cooperation by Sector and Analysis and Recommendations	12-27
Table 13-1	Scope of the Infrastructure and Energy Sector	13-1
Table 13-2	Sectoral Scope of Work (Infrastructure and Energy).....	13-3
Table 13-3	Data on Pre- and Post-COVID-19 Indicators Related to the Transportation Sub-sector	13-5
Table 13-4	Changes in the Number of Air Passengers.....	13-6
Table 13-5	Data by Google and Apple on Changes in Movement by Mobile User Location Data	13-7
Table 13-6	Data on Pre- and Post-COVID-19 Indicators Related to the Energy Sector.....	13-11
Table 13-7	Indicator Data on Power Generation Capacity from Renewable Energy Sources	13-12
Table 13-8	Daily Number of Departing Flights (Only Selected Countries).....	13-15
Table 13-9	Expected Behavioral Change (Infrastructure Sector)	13-17
Table 13-10	Projects by the World Bank in Transport and Energy Sectors	13-22
Table 13-11	Numbers of Projects by Inter-American Development Bank in Transport and Energy Sectors.....	13-23
Table 13-12	Projects by Caribbean Development Bank in Transport and Energy Sectors	13-24

Table 13-13	Projects by JICA in Transport and Energy Sectors	13-25
Table 13-14	Countries Surveyed in the Detailed Survey	13-27
Table 14-1	Draft Sectoral Hypotheses and Policy Recommendations on the State of Development Cooperation (Draft) (Tourism).....	14-1
Table 14-2	Tourism Sector Work Scope.....	14-2
Table 14-3	Rank of 11 Countries on Prioritization of Travel and Tourism (out of 140 countries, 2019).....	14-7
Table 14-4	TDI for the Latin American and Caribbean Countries.....	14-8
Table 14-5	Change in Dependency on Tourism from 2019 to 2020	14-9
Table 14-6	Number of Policy Responses to Support Tourism by Category.....	14-9
Table 14-7	Percentage of Domestic Overnight Stays in Hotels and Similar Establishments in SIDS... ..	14-12
Table 14-8	Selection Criteria of Priority Countries	14-15
Table 14-9	Priority Countries and Rationale for the Selection	14-15
Table 14-10	Contents of Questionnaires for the Detailed Survey.....	14-16
Table 14-11	List of Recipients of the Questionnaires	14-17
Table 14-12	Interviewees.....	14-17
Table 14-13	Vulnerabilities of the Tourism Sector in Central America	14-18
Table 14-14	Vulnerabilities of the Tourism Sector in the Caribbean	14-22
Table 14-15	Status of the Digital Readiness of Tourism MSMEs in Eastern Caribbean	14-24
Table 14-16	Similarities and Differences in the Fragility of the Tourism Sector in Central America and the Caribbean	14-26
Table 14-17	Hypothesis on the Nature of Tourism Development Cooperation	14-27
Table 14-18	Draft Measures to Overcome the Vulnerabilities of the Tourism Sector in the Central American Region	14-28
Table 14-19	Examples of Capacity Building in the Use of Digital Tools by Level.....	14-30
Table 14-20	Draft Measures to Overcome the Vulnerabilities of the Tourism Sector in the Caribbean Region.....	14-31
Table 14-21	JICA Cooperation Related to the Tourism Sector Currently Implemented in Central America and the Caribbean.....	14-33
Table 14-22	Examples of Similar Projects.....	14-34
Table 14-23	Draft Support Measures in the Tourism Sector.....	14-36
Table 15-1	Survey Objectives of the Public-Private Partnership Sector.....	15-1
Table 15-2	Hypotheses and Policy Recommendations on the State of Development Cooperation (draft) (PPP).....	15-1
Table 15-3	Public-Private Partnership Sector Tasks and Work Scope	15-2
Table 15-4	Major Japanese Government Policies on Development Cooperation through Public-Private Partnerships	15-4
Table 15-5	Summary of Public-Private Partnership Programs by JICA	15-5
Table 15-6	Cooperation Agreements between JICA and the Japanese Private Sector	15-8
Table 15-7	Selected Private Sector Partnership Projects in Central America and the Caribbean (2012-2020, 1st Round)	15-10
Table 15-8	Selected Private Sector Collaborative Projects in Central America and the Caribbean (since the Second Call for Proposals in FY2020)	15-10
Table 15-9	Public-Private Partnership Projects (Mexico: 23 projects)	15-12
Table 15-10	Public-Private Partnership Projects (Honduras: 2 Projects).....	15-13
Table 15-11	Public-Private Partnership Projects (El Salvador: 1 Project).....	15-13

Table 15-12	Public-Private Partnership Projects (Costa Rica: 1 Project)	15-14
Table 15-13	Public Private Partnership Projects (Nicaragua: 1 Project).....	15-14
Table 15-14	Public-Private Partnership Projects (Guatemala: 1 Project)	15-14
Table 15-15	Private Sector Investment Finance Projects (Latin America: 3)	15-15
Table 15-16	Number of Japanese Companies Operating Overseas (Survey Results as of October 1, 2019)	15-15
Table 15-17	Number of Japanese Companies Operating Overseas by Sector	15-16
Table 15-18	The Trend of Japanese Companies Operating Overseas	15-17
Table 15-19	Number of Japanese Residents in Central America and the Caribbean, 2020 (as of October 1, 2019)	15-18
Table 15-20	Regional and International Agreements in Central America and the Caribbean.....	15-19
Table 15-21	Investment Climate Scores for Latin American Region	15-27
Table 15-22	List of SEZ Policies in the Region.....	15-29
Table 15-23	PPP Projects with Japanese Companies.....	15-32
Table 15-24	Grouping of Countries Surveyed in the Public-Private Partnership sector	15-36
Table 15-25	Selection Criteria for Priority Countries	15-37
Table 15-26	Selection Process of Priority Countries	15-37
Table 15-27	Investment Climate Scores for Priority Countries, 2020	15-38
Table 15-28	Number of Japanese Companies Operating Overseas in Priority Countries (2019 Survey Results (as of October 1, 2019))	15-39
Table 15-29	Japanese Companies in Costa Rica and Jamaica	15-41
Table 15-30	Trends in Issues by Public-Private Partnership Sector Group	15-46
Table 15-31	Problem Trends and Perspectives on Support Approaches by Public-Private Partnership Sector Group.....	15-47
Table 15-32	Priority Issues and Countermeasures	15-48
Table 15-33	Options of Support Measures for Target Groups	15-49
Table 16-1	Dominican Republic Questionnaire Survey Summary	16-2
Table 16-2	Trend Indicators and Factors of Change in Ongoing Tourism Projects	16-5
Table 16-3	El Salvador Questionnaire Survey Summary.....	16-6
Table 16-4	Composition of Survey Respondents and Number of Responses.....	16-7
Table 16-5	Saint Lucia Survey Summary	16-13
Table 16-6	Indicators of Change and Causes of Change in Fisheries Projects under Implementation ..	16-15
Table 16-7	Indicators of Change and Causes of Change in Fisheries Projects under Implementation ..	16-19
Table 16-8	Guatemala Questionnaire Survey Summary	16-20
Table 16-9	Indicators and Drivers of Change in Community Policing Cases during Implementation ..	16-26
Table 17-1	Criteria for Selecting Pilot Projects	17-1
Table 17-2	Pilot Project List and Evaluation Points	17-2
Table 17-3	Pilot Project Overview	17-2
Table 17-4	Pilot Project Progress.....	17-6
Table 17-5	Selection Evaluation of Each Pilot Project	17-8
Table 17-6	Evaluation of Each Pilot Project	17-10
Table 17-7	Future Development of Each Pilot Project	17-14
Table 17-8	Target Sectors of the Pilot Projects and JICA Office Countries which Have Challenges in Each Sector	17-15

List of Figures

Figure 1-1	Survey Areas and Countries.....	1-2
Figure 1-2	Overall Structure of this Survey	1-4
Figure 1-3	Workflow of Survey Tasks.....	1-5
Figure 2-1	Chronicle Model of Building Hypothesis for ODA.....	2-8
Figure 2-2	Workflow of Preparation of Recommendations.....	2-12
Figure 3-1	IMF’s Financial Monitoring.....	3-28
Figure 4-1	Number of People Infected with COVID-19 Worldwide.....	4-4
Figure 4-2	Number of Deaths due to COVID-19 Worldwide.....	4-4
Figure 4-3	Number of Vaccinations against COVID-19 Worldwide	4-5
Figure 4-4	Status of the Global Government Stringency Index (as of February 2, 2022).....	4-6
Figure 4-5	Status of the Global Income Support Index (as of February 2, 2022)	4-7
Figure 4-6	Status of the Global Vaccination Policy Index (as of February 2, 2022)	4-8
Figure 5-1	Quarterly GDP in 2019 and 2020	5-9
Figure 5-2	Methods of Organizing Policies Taken by Governments.....	5-12
Figure 5-3	Development Cooperation Framework.....	5-14
Figure 5-4	Characteristics of Japan’s Development Cooperation.....	5-15
Figure 5-5	Selection of Priority Countries and Sectors	5-16
Figure 5-6	AHP Hierarchy Diagram of Goals, Evaluation Criteria, and Alternatives.....	5-17
Figure 5-7	Comparison Between Evaluation Criteria.....	5-18
Figure 5-8 (1)(2)	GDP Growth by Sector (Change Before and After COVID-19, Trend Before COVID-19) 5-21	5-22
Figure 5-9	Share of Total GDP in Each Sector.....	5-22
Figure 5-10	Income Inequality and Poverty Rates in Latin American and Caribbean Countries....	5-36
Figure 5-11	Remittances to LAC as a Share of GDP, 2019 and 2020	5-39
Figure 5-12	Percentage of Informal Employment in Selected Latin American Countries (2018 or Latest Available Year).....	5-40
Figure 5-13	Relationship between GDP/Capita and Overseas Remittances as a Percentage of GDP.....	5-41
Figure 5-14	Relationship between GDP Contribution of Tourism and Overseas Remittances as a Percentage of GDP.....	5-41
Figure 5-15	Relationship between GDP Growth Rate (2020) and Overseas Remittances as a Percentage of GDP.....	5-42
Figure 5-16	Family Remittances by Month in El Salvador	5-43
Figure 5-17	Family Remittances by Month in the Dominican Republic	5-44
Figure 5-18	U.S. Hispanic Unemployment Rate and Monthly Family Remittances (2002-2021)..	5-44
Figure 5-19	Average Cost per Remittance to Each Country, 2011-2020 (% of Remittance Amount).....	5-47
Figure 5-20	Percentage of Households Receiving Family Remittances by Province, 2019.....	5-47
Figure 5-21	Number and Amount of Funding Raised by Emerging Banks in Latin America.....	5-53
Figure 5-22	Country Status of Central Bank Digital Currencies.....	5-55
Figure 5-23	Today’s Central Bank Digital Currencies Status	5-55
Figure 5-24	Project Maturity of Retail CBDC Development	5-56
Figure 6-1	Sectoral Work Schedule (Health and Nutrition)	6-4
Figure 6-2	Groups of the Target Countries According to Health Issues	6-7

Figure 6-3	Groups of the Target Countries According to Health System Issues	6-8
Figure 6-4	Cumulative Number of Confirmed COVID-19 Cases (Upper: as of 18 March 2021, Lower: as of 05 November 2021) and GDP per Capita	6-10
Figure 6-5	Cumulative Number of COVID-19 Deaths (Upper: as of 18 March 2021, Lower: as of 05 November 2021) and Number of Hospital Beds.....	6-11
Figure 6-6	Movements of Migrants in Central America in 2020.....	6-12
Figure 6-7	Excess Maternal Mortality (Upper) and Under-five Mortality (Lower) due to Decrease of Service Coverage	6-14
Figure 6-8	Excess Mortality Due to COVID-19 (Compare With the Same Months in 2015-2019)..	6-15
Figure 6-9	COVID-19 Stringency Index (from February 2020 to August 2021)	6-20
Figure 6-10	Strategic Priorities and Outcomes of Caribbean Cooperation in Health-IV (2016-2025)	6-22
Figure 6-11	Prevalence of Anemia among Women of Reproductive Age in Nicaragua, 2001-2019	6-43
Figure 6-12	Prevalence of Infants with Low Birth Weight in Nicaragua, 2001-2012	6-43
Figure 6-13	Prevalence of Infant and Young Child Feeding Indicators in Nicaragua, 2001-2012..	6-44
Figure 6-14	Prevalence of Stunting, Wasting and Overweight among Children under Five Years of Age in Nicaragua, 2001-2012	6-44
Figure 6-15	Prevalence of Obesity in Adults Aged 18 Years and Over in Nicaragua, 2001-2012 ..	6-45
Figure 6-16	Under-5 Mortality Rate Per 1,000 Live Births in Nicaragua, 2001-2019	6-45
Figure 6-17	Number of Cases COVID-19. Nicaragua, 2020-2021	6-48
Figure 6-18	Number Deaths Related to COVID-19. Nicaragua, 2020-2021.....	6-48
Figure 6-19	Fatality Rate (Percent) to COVID-19. Nicaragua, 2020-2021	6-49
Figure 6-20	Positivity Rate Per 10,000 Persons. Nicaragua, 2020-2021.....	6-49
Figure 6-21	Mortality Rate per 10,000 Persons. Nicaragua, 2020-2021	6-50
Figure 6-22	Departments with High Positivity and Mortality Rates per 10,000 People (Managua, Matagalpa, Rivas y León).....	6-50
Figure 6-23	Proposed Cooperation Framework Against Vulnerability	6-55
Figure 6-24	Possible Implementation Mechanism of Region-wide Cooperation.....	6-56
Figure 7-1	GDP per Capita and Net Enrollment Rate in Primary Education	7-24
Figure 7-2	GDP per Capita and Percentage of Out-of-school Children in Primary Education	7-24
Figure 7-3	Internet Access Rate in Households of School-aged Children (Urban and Rural).....	7-25
Figure 7-4	Internet Access Rates in Households of School-aged Children (Rich and Poor).....	7-25
Figure 7-5	Percentage of Schools with Basic Water Supply Facilities.....	7-26
Figure 7-6	Enrollment Rates (Primary Education, 2017-19).....	7-27
Figure 7-7	Net Enrollment Rates (Lower Secondary Education, 2017-19).....	7-28
Figure 7-8	Net Enrollment Rates (Upper Secondary Education, 2017-19).....	7-28
Figure 7-9	Primary Education Completion Rates (2017-19).....	7-29
Figure 7-10	Percentage of Out-of-School Children (Primary Education, 2017-19).....	7-30
Figure 7-11	Percentage of Out-of-School Children (Secondary Education, 2015-20).....	7-31
Figure 7-12	Number of School Closed Days due to COVID-19	7-32
Figure 7-13	Challenges Before and After COVID-19	7-42
Figure 7-14	Conceptual Diagram of JICA's Educational Cooperation Strategy in With/Post COVID- 19 Societies.....	7-43
Figure 7-15	Conceptual Diagram of the Proposed Support Measures Derived from the Results of the Pilot Project	7-47

Figure 8-1	Updated Work Schedule by Sector (Agriculture and Rural Development Sector)	8-5
Figure 8-2	Change in Exports by Region and Sector (2020 Jan-Aug, % against the same period 2019).....	8-6
Figure 8-3	Change in GDP of Agriculture, Livestock, and Fisheries Sectors in Latin America and the Caribbean in the First Quarter of 2020 (%).....	8-7
Figure 8-4	Changes in Agriculture, Forestry, Livestock, Fisheries Sector GDP, and Total GDP in Latin America and the Caribbean in 2020	8-8
Figure 8-5	Change in GDP of Different Sectors from the First Quarter of 2019 to the Second Quarter 2021 for Latin Countries (%).....	8-8
Figure 8-6	Changes in Awareness of Food Security Concerns	8-9
Figure 8-7	Monthly Overseas Remittance Receipts in 2020 (El Salvador, Guatemala, Honduras, The Dominican Republic, % against Previous Year)	8-9
Figure 8-8	Threats Affecting Agriculture and Food Systems in Latin America and the Caribbean by 2030	8-11
Figure 8-9	Greenhouse Gas Emission Sources Worldwide and in Latin America and the Caribbean.....	8-11
Figure 8-10	Greenhouse Gases Emitted from Food Loss.....	8-13
Figure 8-11	Freshwater Use in 24 Countries in Latin America and the Caribbean	8-13
Figure 8-12	Projected Changes in Temperature and Other Climatic Conditions in Latin America and the Caribbean	8-14
Figure 8-13	Projected Changes in Suitable Coffee Cultivation Areas due to Climate Change (2050).....	8-14
Figure 8-14	Projected Changes in Suitable Land for Bean Cultivation due to Climate Change (2050) .	8-15
Figure 8-15	Changes in the Number of Extreme Weather Events in Central America and the Caribbean	8-15
Figure 8-16	Changes in the Number of Extreme Weather Events and Natural Disasters in Central America and the Caribbean.....	8-16
Figure 8-17	Characteristics of Migrants in El Salvador, Guatemala, and Honduras	8-17
Figure 8-18	Percentage of Agricultural and Non-Agricultural Sector Workers in Rural Areas.....	8-17
Figure 8-19	GDP Contribution of the Agricultural Sector in Latin America and the Caribbean (2017) .	8-18
Figure 8-20	Agricultural Preference Index in Latin America and the Caribbean	8-18
Figure 8-21	Growth of Total GDP and Agriculture, Livestock and Fisheries and Food Industry Sectors GDP in the Second Quarter of 2020.....	8-30
Figure 8-22	Main Tilapia Producing States in Mexico (2003)	8-30
Figure 8-23	Percentage of Agriculture Sector Employment against Total Employment.....	8-32
Figure 8-24	Grain Crop Yield (Ton/ha)	8-32
Figure 8-25	Percentage of Agricultural and Livestock Households with Surplus Agricultural Products for Sale.....	8-33
Figure 8-26	Value Added per Agricultural Worker in Belize and Other Countries	8-35
Figure 8-27	Climate Change Forecast for Belize in 2050	8-36
Figure 8-28	Growth of Total Agriculture and Food Sector GDP in the Second Quarter of 2020....	8-44
Figure 8-29	Number of Weather Disasters Impacting the Dominican Republic	8-45
Figure 8-30	Price Variation in the Rice Food Value Chain in the Dominican Republic (2016)	8-47
Figure 9-1	Import and Export Value of Central America and Caribbean Region.....	9-6
Figure 9-2	Restrictions on Economic Activity in each Country	9-7

Figure 9-3	Growth of GDP and GDP per Person Employed in Central America and the Caribbean ..	9-8
Figure 9-4	2011-2020 Unemployment Rate	9-9
Figure 9-5	2011-2020 Women Unemployment Rate	9-10
Figure 9-6	2011-2020 Youth Unemployment Rate	9-11
Figure 9-7	2011-2020 Underemployment Rate	9-12
Figure 9-8	2011-2020 Informal Worker Rate	9-14
Figure 9-9	Relationship between Unemployment Rate and Informal Worker Rate	9-14
Figure 9-10	Change in Employment Situation (Panama)	9-23
Figure 9-11	Added Value Amount by Sector (Panama)	9-24
Figure 9-12	Added Value Amount by Sector in Central American and Caribbean Countries	9-24
Figure 9-13	Relationship between GDP per Capita and GII (Panama)	9-25
Figure 9-14	Breakdown of Panama's GII Score	9-26
Figure 9-15	The number of startups in Central America and the Caribbean	9-26
Figure 9-16	Distribution of startups by Funding at Present (Panama)	9-27
Figure 9-17	Changes in Employment Situation (Mexico)	9-32
Figure 9-18	GDP per Capita and Minimum Wage in Each Country	9-33
Figure 9-19	Number of Startups per Capita in Mexico	9-34
Figure 9-20	Distribution of Startups by Funding at Present (Mexico)	9-34
Figure 9-21	Relationship between GDP per Capita and GII (Mexico)	9-35
Figure 9-22	Innovation Sophistication of the Economic Sector in Mexican states	9-36
Figure 9-23	Procurement Sources of Parts and Raw Materials for Japanese Companies (Manufacturing of Transportation Equipment and Parts) by Region	9-41
Figure 9-24	Origin of Nationality of Capital of Local Procurement Sources of Parts and Raw Materials for Japanese Companies (Manufacturing of Transportation Equipment and Parts)	9-41
Figure 9-25	Advantages of Latin American and ASEAN Emerging Countries in Terms of Investment Environment	9-42
Figure 9-26	Risks Perceived by Japanese Companies in Latin American and ASEAN Emerging Countries in Terms of Investment Environment	9-43
Figure 9-27	Number of Women Workers by Sector (Costa Rica)	9-47
Figure 9-28	Changes in Youth Unemployment Rate (Costa Rica)	9-48
Figure 9-29	The Number of University-Launched Venture Companies by Year of Establishment.	9-57
Figure 10-1	Challenges and Background of the Environment and Disaster Management Sector before COVID-19	10-5
Figure 10-2	Efforts to Address Issues in the Environment and Disaster Management Sectors before COVID-19	10-6
Figure 10-3	Environmental Budget Trends (2019-2021)	10-8
Figure 10-4	Comparison of Environmental Budget and GDP per Capita (2019)	10-9
Figure 10-5	Number of Natural Disasters in Each Country (2010-2020)	10-10
Figure 10-6	Number of Affected People per 100,000 Population by Natural Disasters in Each Country (2010-2020)	10-10
Figure 10-7	COVID-19 Impact on the Environment and Disaster Management Sector	10-17
Figure 10-8	Water Consumption in Panama City (2019-2021)	10-19
Figure 10-9	Panama City Sewerage Water Consumption (2018-2021)	10-19
Figure 10-10	Consideration of Support Measures that could Contribute to Overcoming Vulnerabilities (Conceptual Diagram)	10-23
Figure 10-11	Conceptual Diagram of the Shared Information Platform for Disaster	10-27
Figure 11-1	Work Schedule (Governance and Citizen Security)	11-5
Figure 11-2	Confidence in Public Institutions (2018)	11-7

Figure 11-3	“Worldwide Governance Indicators” of Latin America and the Caribbean (2010 to 2020).....	11-8
Figure 11-4	Reaction to Corruption (Keeping Silent, Not Keeping Silent).....	11-12
Figure 11-5	E-Government Development Index of the Central American and Caribbean Countries	11-15
Figure 11-6	Share of Budget Execution by Local Administrations in the National Budget (2015)	11-18
Figure 11-7	Homicide Rates per 100,000 Population in Belize, Costa Rica, Dominican Republic, El Salvador, Guatemala, and Honduras.....	11-20
Figure 11-8	Jamaica Homicide Rate (left), Mexico Homicide Rate (right) 1990 – 2018	11-21
Figure 11-9	Femicide Rates in the Latin American Countries (2020).....	11-23
Figure 11-10	Guatemala Worldwide Governance Indicators 2010–2020.....	11-35
Figure 11-11	Perceptions of Worldwide Governance Indicator "Control of Corruption"	11-37
Figure 11-12	Guatemalan Corruption Perception Index (2010-2020).....	11-37
Figure 11-13	Perceptions of "Government Effectiveness" (2000-2019)	11-38
Figure 11-14	Guatemala "E-Government Development Indicators" 2020.....	11-39
Figure 11-15	Guatemala "Communication Network Development Indicators”	11-39
Figure 11-16	Rule of Law Indicators (2020 – 2019) in Guatemala.....	11-40
Figure 11-17	Homicide Rate and Number of Homicides: 2008 to 2019	11-41
Figure 11-18	Comparison of the Number of Crimes Committed (2019, 2020, 2021).....	11-42
Figure 11-19	Honduras: Worldwide Governance Indicators 2010-2020	11-44
Figure 11-20	Killings of Journalists during 2005-2020.....	11-45
Figure 11-21	Indicators of "Political Stability" in Honduras.....	11-46
Figure 11-22	Indicators Related to "Administrative Functions" in Honduras: 2000-2019	11-47
Figure 11-23	E-Government Development Index of Honduras in 2020	11-47
Figure 11-24	Rule of Law 2000-2019 in Honduras.....	11-48
Figure 11-25	Homicide Rate in Honduras.....	11-48
Figure 11-26	Jamaica “Worldwide Governance Indicators” 2020	11-49
Figure 11-27	Political Stability in Jamaica 2000-2019	11-50
Figure 11-28	"Administrative Functions" in Jamaica, 2000 to 2019.....	11-51
Figure 11-29	Jamaica's E-Government Development Index 2020	11-51
Figure 11-30	Rule of Law in Jamaica 2000-2019	11-52
Figure 11-31	Nicaragua "Worldwide Governance Indicators" 2010-2020.....	11-54
Figure 11-32	Indicators Related to Nicaragua's "Level of Democracy".....	11-55
Figure 11-33	Nicaraguan Civil Liberties 1990-2020.....	11-55
Figure 11-34	Nicaragua Control of Corruption Indicators 2000-2019	11-56
Figure 11-35	Nicaraguan E-Government Development Index 2020.....	11-56
Figure 11-36	Nicaragua Rule of Law Indicators 2000-2019	11-57
Figure 11-37	Nicaraguan Homicide Rate 1990-2016.....	11-57
Figure 11-38	Number of Homicides in Belize, El Salvador, Costa Rica, Guatemala, Honduras, and the Dominican Republic (Comparison of 2019 and 2020).....	11-61
Figure 11-39	Number of Reported Cases of Intra-family/In-home Violence (2018-2020)	11-61
Figure 11-40	Number of Reported Sex Crimes (2019-2020).....	11-62
Figure 12-1	Internet Usage Rate.....	12-4
Figure 12-2	E-Government Ranking Index	12-4
Figure 12-3	Example of a Country Report	12-7
Figure 12-4	Office of the Ciudad del Saber (Panama)	12-14

Figure 12-5	Join (Communication Application).....	12-16
Figure 12-6	Service Image of the Ground Deformation Monitoring System.....	12-17
Figure 12-7	Distribution and Grouping of Online Service Indicators and Information and Communication Development Indicators by Country	12-22
Figure 12-8	Direction of Actions for Co-creation	12-26
Figure 13-1	Recovery Trend of Air Passenger Transport in 2021 (RPK by Market)	13-6
Figure 13-2	Movement Data Based on the Mobile Users (UNDP/Grandata)	13-7
Figure 13-3	Movement Data (Jamaica) (COVID-19 Community Mobility Reports by Google)....	13-8
Figure 13-4	Movement Data (El Salvador) (COVID-19 Community Mobility Reports by Google).....	13-9
Figure 13-5	Movement Data (Nicaragua) (COVID-19 Community Mobility Reports by Google)	13-9
Figure 13-6	Movement Data (Entire Mexico and Mexico City) (Mobility Trends Reports by Apple)	13-10
Figure 13-7	Growth of Economy and With Increasing Demand of Primary Energy.....	13-13
Figure 13-8	Daily Number of Departing Flights and Weekly COVID-19 Cases	13-14
Figure 13-9	International Revenue Passenger-Kilometers (RPK) (2021 vs 2019).....	13-16
Figure 13-10	International Cargo Tonne Kilometer (vs January 2020).....	13-16
Figure 13-11	Energy Self-sufficiency Ratio (2019)	13-18
Figure 13-12	Renewable Energy as a Percentage of Total Power Generation (2019).....	13-19
Figure 13-13	Ratio of Fossil Fuels to Electricity Generated (2019).....	13-19
Figure 13-14	Comparison of Electricity Demand between March 30 and April 5, 2020 with the Same Week Last Year	13-20
Figure 13-15	Comparison of Electricity Demand by Time Zone with the Same Week of the Previous Year and the First Week of March 2020.....	13-20
Figure 13-16	Movement Data (Costa Rica) (COVID-19 Community Mobility Reports by Google).....	13-29
Figure 13-17	Comparison of Hourly Electricity Demand for Ten Months after March 2, 2020 (Same Day in 2020 and 2019).....	13-30
Figure 13-18	Movement Data (Barbados) (COVID-19 Community Mobility Reports by Google)	13-35
Figure 14-1	Change in Total Contribution of Travel and Tourism to GDP	14-4
Figure 14-2	Change in a Total Contribution of Travel and Tourism to Employment.....	14-5
Figure 14-3	Change in Portion of International Spending in Total Tourism Spending	14-5
Figure 14-4	Portion of the Budget for the Tourism-related Ministries in the National Budget.....	14-6
Figure 14-5	COVID-19 Death Rates and Economic Growth in 2020 by Country	14-11
Figure 14-6	Inbound Tourism Expenditure as a Proportion of GDP	14-12
Figure 14-7	Proportions of International Arrivals in SIDS by Main Source Markets	14-12
Figure 14-8	Access to Financing as the Main Obstacle According to the Size of the Enterprise..	14-19
Figure 14-9	Informality of Employment	14-21
Figure 14-10	The Beach Where a Large Quantity of Sargassum Washed Ashore.....	14-25
Figure 14-11	Distribution of Sargassum (2019).....	14-26
Figure 14-12	Pottery Producer’s House	14-41
Figure 14-13	OVOP Fair	14-41
Figure 14-14	Example of Segmentation of OVOP.....	14-41
Figure 15-1	List of Supporting Menu for Public-Private Partnership by the Japanese Government.....	15-7
Figure 15-2	Share of SDGs Business Supporting Surveys by Region	15-11
Figure 15-3	Share of SDGs Business Supporting Surveys in Central America and the Caribbean by	

	Sector	15-11
Figure 15-4	Annual Trends in Exports and Imports from Japan by Region (2016-2019) (Above: Export from Japan, below: Import to Japan).....	15-21
Figure 15-5	Annual Trends in Exports from Japan (23 Countries in Central America and the Caribbean, 2015-2021)	15-22
Figure 15-6	Annual Export Value from Japan (20 countries except Mexico, Panama, and Bahamas, 2015-2021).....	15-22
Figure 15-7	Monthly Export Value from Japan (all 23 countries including Group 1, Jan. 2019-Mar. 2021)	15-23
Figure 15-8	Monthly Value of Exports from Japan (Group 2, 10 countries, Jan. 2019-Mar. 2021).....	15-23
Figure 15-9	Monthly Export Value from Japan (Group 3, 10 countries, January 2019-March 2021).....	15-24
Figure 15-10	Annual Trends in Imports from Japan (23 Countries in Central America and the Caribbean, 2015-2021)	15-24
Figure 15-11	Annual Trends in Imports from Japan (22 Countries Other Than Mexico, 2015-2021).....	15-25
Figure 15-12	Monthly Value of Exports to Japan (all 23 countries, Jan. 2019-Mar. 2021).....	15-25
Figure 15-13	Monthly Trends in Exports to Japan (Seven Central American Countries Excluding Mexico, January 2019-March 2021).....	15-26
Figure 15-14	Monthly Value of Exports to Japan (Caribbean, Guyana, Suriname, January 2019-March 2021).....	15-26
Figure 15-15	Investment Climate Scores by Sector (Latin America Regional Average).....	15-28
Figure 15-16	Private Investment in Infrastructure by Region (2011-2020)	15-31
Figure 15-17	Cities with Advanced Smart City Initiatives in Latin America	15-33
Figure 15-18	Impact of COVID-19 on PPP Project Operations	15-34
Figure 15-19	Evaluation of PPP Project Management and Response to COVID-19 Disaster	15-35
Figure 15-20	Breakdown of Capital and Nationality of Local Suppliers of Parts and Raw Materials for Japanese Companies Overseas.....	15-40
Figure 15-21	Plans to Change Suppliers and Production Sites due to the USMCA.....	15-40
Figure 16-1	Implementation Structure of this Project	16-3
Figure 16-2	Outdoor Activities (UMPC Guanatico, Photo by the Study Team).....	16-4
Figure 16-3	Negative Impact on Government Activities Related to Road Infrastructure Management	16-8
Figure 16-4	Positive Impact on Government Activities Related to Road Infrastructure Management	16-9
Figure 16-5	Necessary Measures for Disaster Prevention and Mitigation of Road Infrastructure	16-10
Figure 16-6	Prioritization of Road Infrastructure Development for Congestion Mitigation	16-11
Figure 16-7	Changes in the Volume of Trade in Fish Processing and the Selling Price of Fish in Saint Lucia	16-14
Figure 16-8	Volume of Fisheries-related Transactions and Changes in Fisheries-related Businesses in Saint Lucia	16-14
Figure 16-9	Positive Changes due to COVID-19 and Needed Fisheries-related Measures	16-15
Figure 16-10	Changes in Selling Prices (left) and Fishing Costs (right) Since the First Survey.....	16-16
Figure 16-11	Changes in Security in the Fishing Area (left) and Negative Changes Other than Reduced Fish Catch and Income Since the COVID-19 Outbreak (right).....	16-17
Figure 16-12	Changes in the Volume and Number of Traders Since the First Survey (left) and Changes	

	in Fishermen's Conservation Practices Since COVID-19 (right).....	16-18
Figure 16-13	Positive Changes to Fisheries Since COVID-19 (left) and What is Needed to Promote Fish Consumption (right).....	16-19
Figure 16-14	Results of the First Questionnaire Survey: Regions Where the Survey was Conducted, Sample Size, and Implementation.....	16-20
Figure 16-15	How Police and Residents Perceive the Public Safety Situation (Results of the First Questionnaire Survey)	16-21
Figure 16-16	How Police and Residents Perceive the Public Safety Situation (Results of the Second Questionnaire Survey)	16-21
Figure 16-17	Police and Residents' Perceptions of Police Work (First Questionnaire Survey)	16-22
Figure 16-18	Police and Residents' Perceptions of Police Work (Second Questionnaire Survey) ..	16-22
Figure 16-19	Police Perceptions of Issues in their Assigned Districts (Left: 1st Survey, right: 2nd Survey).....	16-23
Figure 16-20	Police Perceptions of Changes in Security Challenges (Left: 1st Survey, Right: 2nd Survey).....	16-23
Figure 16-21	Residents' Perceptions of Public Safety Issues (Left: 1st Survey, Right: 2nd Survey)	16-24
Figure 16-22	People Experiencing Anxiety and Stress due to COVID-19 (2nd Survey).....	16-24
Figure 16-23	Police and Residents' Predictions for Public Safety in the Next Three Months (First Survey).....	16-25
Figure 16-24	Police and Residents' Predictions for Public Safety in the Next Three Months (Second Survey).....	16-25
Figure 17-1	TRESSA Progress Management Screen	17-7
Figure 17-2	Project Location Display Screen.....	17-7

List of Abbreviation

Abbreviation	Meaning
AECID	Agencia Española de cooperación internacional para el desarrollo
AHP	Analytic Hierarchy Process
AIDS	Acquired Immunodeficiency Syndrome
AMLO	Andrés Manuel López Obrador
AMPYME	Autoridad de la Micro, Pequeñas y Medianas Empresas
AOI	An Agriculture Orientation Index
ASOTUR	Asociación Salvadoreña de Operadores de Turismo
BBB	Build Back Better
BCIE	Banco Centroamericano de Integración Económica
BCP	Business Continuity Plan
BIS	Bank for International Settlements
BL&P	Barbados Light & Power Company
BofA	Bank of America
BRT	Bus Rapid Transit
CARDI	Caribbean Agricultural Research and Development Institute
CARICOM	Caribbean Community
CARIFORUM	Caribbean Forum of the ACP States
CARPHA	Caribbean Public Health Agency
CASATUR	Cámara Salvadoreña de Turismo
CATA	Central America Tourism Agency
CATIE	Centro Agronómico Tropical de Investigación y Enseñanza
CBDC	Central Bank Digital Currency
CARICOM	Caribbean Community
CBT	Community Based Tourism
CCC	CARICOM Competition Commission
CCREEE	Caribbean Center for Renewable Energy and Energy Efficiency
CCS	Carbon dioxide Capture and Storage
CCSA	Committee for the Coordination of Statistical Activities
CCT	Consejo Centroamericano de Turismo
CCTs	Conditional Cash Transfer
CCTV	Closed-circuit Television
CCUS	Carbon dioxide Capture, Utilization and Storage

Abbreviation	Meaning
CDB	Caribbean Development Bank
CDEMA	Caribbean Disaster Emergency Management Agency
CDF	CARICOM Development Fund
CECAPRO	Centro de Calidad y Productividad
CECC	Coordinacion Educativa y Cultural Centroamericana
CEFOF	Centro de Formación de Formadores y de Personal Técnico para el Desarrollo Industrial de Centroamérica
CELAC	Comunidad de Estados Latinoamericanos y Caribeños
CELAC	Community of Latin American and Caribbean States
CENIDH	El Centro Nicaragüense de Derechos Humanos
CECAPRO	Centro de Calidad y Productividad
CENPROMYPE	Centro Regional de Promoción de la MYPYME
CEPAL	Economic Commission for Latin America and the Caribbean
CEPREDNAC	Centro de Coordinación para la Prevención de los Desastres en América Central y República Dominicana
CIAT	Centro Internacional de Agricultura Tropical
CID Gallup	Consultoría Interdisciplinaria en Desarrollo
CENPROMYPE	Promotion of the Micro and Small Company in Central America
CIMMYT	Centro Internacional de Mejoramiento de Maíz y Trigo
CNA	Consejo Nacional Anticorrupción
CNE	Consejo Nacional de Energía
COMISCA	Council of Ministers of Health of Central America and the Dominican Republic
CONACYT	Consejo Nacional de Ciencia y Tecnología
COVAX	COVID-19 Vaccines Global Access
COVID-19	Coronavirus Disease 2019
CPCC	Comisión Presidencial Contra la Corrupción
CPI	Corruption Perceptions Index
CPSO	CARICOM Private Sector Organisation
CT	Computed Tomography
CTO	Caribbean Tourism Organization
DACGER	Dirección de Adaptación al Cambio Climático y Gestión Estratégica del Riesgo
DB	Database
DCC	Dirección de Cambio Climático
DFID	Department for International Development

Abbreviation	Meaning
DIGESTYC	Dirección General de Estadística y Censos
DMO	Destination Management Organization
DTP	Diphtheria-Tetanus-Pertussis
DX	Digital transformation
ECCB	Eastern Caribbean Central Bank
ECCU	Eastern Caribbean Currency Union
ECFA	Engineering and Consulting Firms Association, Japan
ECLAC	Economic Commission for Latin America and the Caribbean
ECLAC	Economic Commission for Latin America and the Caribbean
EGDI	E-Government Development Index
EM-DAT	The International Disaster Database *The Center for Research on the Epidemiology of Disasters
EMMA	Empresa Multinacional para la Prestación de Servicios Relacionados con la Manufactura
EOJ	Embassy of Japan
ERCE	Estudio Regional Comparativo y Explicativo
EU	European Union
EV	Electric Vehicle
EWBS	Emergency Warning Broadcasting System
FAO	Food and Agriculture Organization of the United Nations
FTA	Free Trade Agreement
FUSADES	Fundación Salvadoreña para el Desarrollo Económico y Social
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GII	Global Innovation Index
GIRD	Gestión Integral del Riesgo de Desastres
GIS	Geographic Information System
GIZ	German International Cooperation Agency
GNI	Gross National Income
GPE	Global Partnership for Education
GISRS	Global Influenza Surveillance and Response System
GTRCMC	Global Tourism Resilience and Crisis Management Center
HACCP	Hazard Analysis and Critical Control Point
HCI	Human Capital Index
HIV	Human Immunodeficiency Virus

Abbreviation	Meaning
IACHR	Inter-American Commission on Human Rights
IATA	The International Air Transport Association
ICAO	International Civil Aviation Organization
ICE	Instituto Costarricense de Electricidad
ICT	Information and Communication Technology
ICU	Intensive care unit
IDB	Inter-American Development Bank
IDB	Inter-American Development Bank
IEA	International Energy Agency
IFAD	International Fund for Agricultural Development
IHME	Institute of Health Metrics and Evaluation
IHR	International Health Regulations
IICA	Inter-American Institute for Cooperation on Agriculture
ILO	International Labour Organization
IMF	International Monetary Fund
IMST	Incident Management System Teams
IMT	Incident Management Team
INADEM	Instituto Nacional de Emprendedor
INAMU	Instituto Nacional de las Mujeres
INEGI	Instituto Nacional de Estadística y Geografía
IPA	Information-technology Promotion Agency, Japan
IPCC	Intergovernmental Panel on Climate Change
IRENA	International Renewable Energy Agency
ISSS	Instituto Salvadoreño del Seguro Social
IT	Information Technology
ITU	International Telecommunication Union
JAD	Junta Agroempresarial Dominicana
JETRO	Japan External Trade Organization
JHTA	Jamaica Hotel & Tourist Association
JICA	Japan International Cooperation Agency
JETRO	Japan Export Trade Organization
JOCV	Japan Overseas Cooperation Volunteers
JPS	Jamaica Public Service
LAC	Latin American and Caribbean
LCC	Low-Cost Carrier

Abbreviation	Meaning
LINUX	Linux is a family of open-source Unix-like operating systems
LUCELEC	St. Lucia Electricity Services Limited
MaaS	Mobility as a Service
MACCIH	Misión de Apoyo contra la Corrupción y la Impunidad en Honduras
MAG	Ministerio de Agricultura y Ganadería
MARN	Ministerio de Medio Ambiente y Recursos Naturales
MEAL	Monitoring, Evaluation, Accountability and Learning
MERS	Middle East Respiratory Syndrome
MINAE	Ministro de Ambiente y Energía
MINSA	Ministerio de Salud de la República de Nicaragua
MNS	Ministry of National Security of Jamaica
MOCA	
MOFA	Ministry of Foreign Affairs of Japan
MOPT	Ministerio de Obras Públicas y Transportes
MOSAFC	Modelo de Salud Familiar y Comunitario
MRI	Magnetic Resonance Imaging
MRT	Mass Rapid Transit
MYSQL	open-source relational database management system
NAFTA	North American Free Trade Agreement
NCD	Non-Communicable Diseases
NDC	Nationally Decided Contribution
NGO	Non Governmental Organization
NLiS	Nutrition Landscape Information System
NREL	National Renewable Energy Laboratory
OACNUDH	Oficina del Alto Comisionado de las Naciones Unidas para los Derechos Humanos
OAS	Organization of American States
OAS	Organization of American States
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OECS	Organisation of Eastern Caribbean States
OPETUR	Asociación de Tour Operadores Receptivos de la República Dominicana
OS	Operating System
OSI	Online Service Index
OVOP	One Village One Product movement

Abbreviation	Meaning
PACS	Picture Archiving and Communication Systems
PAHO	Pan American Health Organization
PCR	Polymerase Chain Reaction
PDM	Product Design Matrix
PEPFAR	The U.S. President's Emergency Plan for AIDS Relief
PHC	Primary Health Care
PHEIC	Public Health Emergency of International Concern
PISA	Programme for International Student Assessment
PMOP	Policía Militar del Orden Público
PP	Pilot Project
PPE	Personal Protective Equipment
PRI	Partido Revolucionario Institucional
PROMITUR	Programa Regional de Competitividad y Sostenibilidad para las Mipymes Turísticas
PSCARD	Plan de Salud de Centroamérica y República Dominicana
RECOPE	Refinadora Costarricense de Petroleo
RHCN	Regional Health Communication Network
RLRI	Remote Learning Readiness Index
SaaS	Software as a Service
SAGARPA	Secretaría de Agricultura y Desarrollo Rural *Mexican Government
SARS	Severe Acute Respiratory Syndrome
SATREPS	Science and Technology Research Partnership for Sustainable Development
SDGs	Sustainable Development Goals
SEGITUR	Sociedad Mercantil Estatal para la Gestión de la Innovación y las Tecnologías Turísticas
SDGs	Sustainable Development Goals
SEM	Sedes de Empresas Multinacionales
SEPSA	Secretaría Ejecutiva de Planificación Sectorial Agropecuaria
SEPSE	Secretaría de Planificación del Subsector Energía
SHEP	Smallholder Horticulture Empowerment Project
SICA	Central American Integration System
SICA	Sistema de la Integración Centroamericana
SIDS	Small Island Developing States
SIECA	Secretaría de Integración Económica Centroamericana
SIEPAC	Sistema de Interconexión Eléctrica para América Central

Abbreviation	Meaning
SINAGER	Sistema Nacional de Gestión de Riesgo
SITCA	Secretaría de Integración Turística Centroamericana
SME	Small and Medium-sized Enterprises
SNS	Social Networking Service
SOE	State of Emergency
SUN MOVEMENT	Scaling Up Nutrition Movement
TDI	Tourism Independency Index
TERCE	Tercer Estudio Regional Comparativo y Explicativo
TES	Total (Primary) Energy Supply
TII	Telecommunication Infrastructure Index
TIU	International Telecommunication Union
TSA	Tourism Satellite Account
TTCI	Travel & Tourism Competitiveness Index
UDP	Unidad de Desarrollo Productivo
UFECIC	Unidad Especial Contra la Impunidad de la Corrupción
UHC	Universal Health Coverage
UIS	Institute for Statistics
UG	University of Guyana
UN	United Nations
UNAH	Universidad Nacional Autónoma de Honduras
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
UNODC	United Nations Office on Drugs and Crime
UNWTO	World Tourism Organization
USAID	United States Agency for International Development
USMCA	United States–Mexico–Canada Agreement
UWI	University of West Indies
UNWTO	United Nations World Tourism Organization
VAT	Value-Added Tax

Abbreviation	Meaning
VMT	Viceministerio de Transporte, Ministry of Public Works
VPD	Vaccine Preventable Diseases
VRE	Variable Renewable Energy
WB	World Bank
WDI	World Development Indicators
WEO	World Energy Outlook
WFP	World Food Programme
WGC	World Geothermal Congress
WGI	Worldwide Governance Indicators
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WJP	World Justice Project
WTO	World Trade Organization
WTTC	World Travel and Tourism Council
WWF	World Wildlife Fund
WB	World Bank

1. Outline of the Survey

1.1 Introduction

This survey started in March 2021, and have carried out the following four (4) times of the field survey:

First Field Survey: 7 June 2021 ~ 2 July 2021 (26 days)

Second Field Survey: 6 September 2021 ~ 5 October 2021 (30 days)

Third Field Survey: 30 October 2021 ~ 20 December 2021 (52 days)

Fourth Field Survey: 7 January 2022 ~ 7 February 2022 (32 days)

In addition, during the implementation of this survey, five (5) supplemental contracts, shown in Table 1-1, have been concluded and supplemental works have been carried out. The reports of those works are included in Chapter Six (6): Supplemental Contracts and not included in this report.

Table 1-1 Supplemental Contracts

No.	Contract No.	Contract Name
1	Supplemental 15	Preliminary Study on Jamaica Inverness Smart City Special Economic Zone Development in Jamaica
2	Supplemental 16	Preliminary Study on Improvement of Urban Traffic in Saint Domingo City in Dominican Republic
3	Supplemental 17	Preliminary Analysis on Food Value Chain
4	Supplemental 18	Jamaica Inverness Smart City Special Economic Zone Development Preliminary Study
5	Supplemental 19	Preliminary Study on Possible Countermeasure on Noncommunicable Diseases in Dominican Republic

Source: Study Team

1.2 Survey Name

The names of the survey are shown in Table 1-2 by language.

Table 1-2 Name of the Survey

No.	Language	Name of This Survey
1	Japanese	中米・カリブ地域 With/Post COVID-19 社会における開発協力の在り方に係る情報収集・確認調査
2	English	Data Collection Survey on Development Cooperation With/Post COVID-19 Society in Central America and the Caribbean Region
3	Spanish	Estudio para la recopilación de datos sobre cooperación para el desarrollo de la sociedad Con/Post COVID-19 en la región centroamericana y caribe

Source: Study Team

1.3 Background of the Survey

Due to the worldwide spread of the new coronavirus (COVID-19), there are several countries in Central America and the Caribbean where the infection has spread explosively, which will have a serious impact on the social and economic activities of each country. JICA has been implementing emergency support measures for Central America and the Caribbean since the emergency period after the spread of COVID-19 infection, but under the stigma of With / Post COVID-19, the importance of social and economic resilience is strongly recognized.

In this situation, the most vulnerable sectors are health care, education, and from the viewpoint of socioeconomic recovery, disaster prevention, private sector (including tourism), agriculture and rural development, and environment, energy. With / Post COVID-19 Investigate the need for cooperation in society in such fields, and make effective plans for future JICA projects, especially in the event of a pandemic or disaster, **Build Back Better** (better reconstruction). It was decided to carry out this survey in order to consider the cooperation that contributes and to consider the ideal way of cooperation in the Central America and the Caribbean region based on the survey results.

1.4 Purpose of the Survey

This survey collects and analyzes information and data on the impact of COVID-19 pandemic on the socioeconomic conditions and cooperation needs in Central America and the Caribbean region, also implements several pilot projects. In addition to organizing and making proposals, Subsequently, summary of the analysis and recommendations for the setting of the future development cooperation in the region, with making proposals to ongoing JICA projects, will be prepared.

1.5 Countries Covered by of the Survey

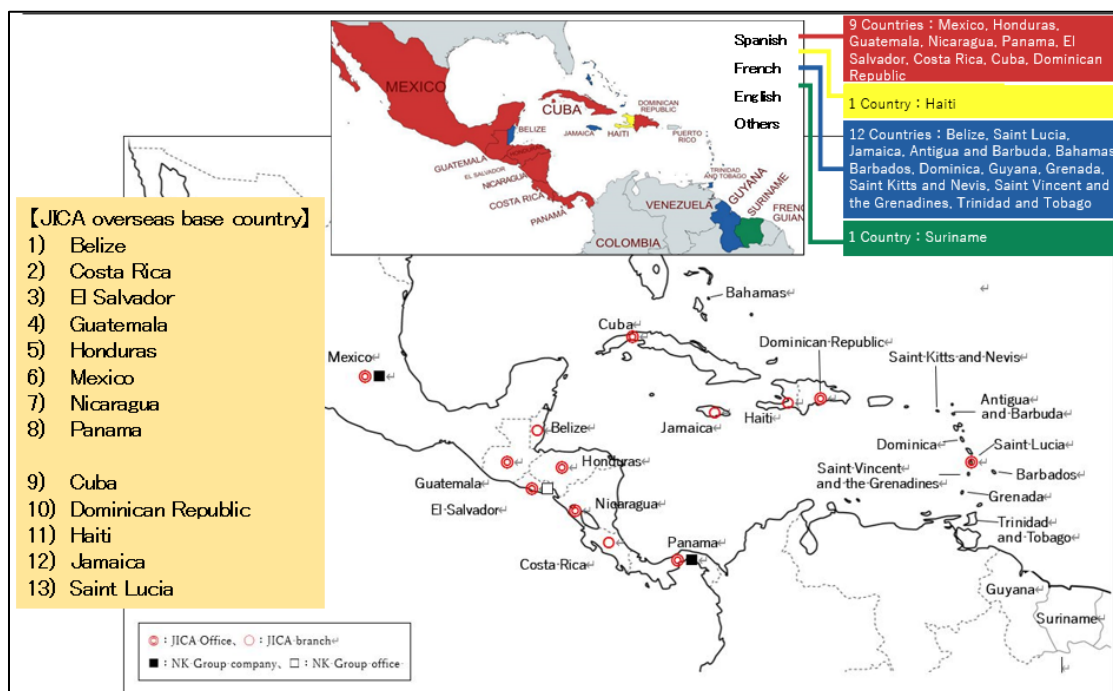
This survey covers the following 23 Central American and Caribbean countries shown in Table 1-3 and Figure 1-1.

Table 1-3 Counties covered by the Survey

No.	Region	Countries
1	Central America (8 Countries)	Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama
2	Caribbean (15 Countries)	Bahamas, Barbados, Cuba, Dominican Republic, Haiti, Jamaica, Trinidad Tobago, Guyana, Surinam
	OECS (6 Countries)	Antigua and Barbuda, Dominica, Grenada, St. Christopher Nevis, St Lucia, St Vincent Grenadines

OECS : Organization of Eastern Caribbean States

Source: Study Team



Source: Study Team

Figure 1-1 Survey Areas and Countries

1.6 Awareness of Current Issues related to the Survey

The survey covers 23 countries, which are located in Central America and the Caribbean region. There are significant differences in population size, area, economic scale, and industrial composition among these countries. The target country's economy had a relatively strong growth rate of 2.6% from 2010 prior to the outbreak of COVID-19 (see Table 1-4). However, the expected growth rate for 2020 was negative due to the spread of COVID-19 infection, and the expected recovery for 2021 was uncertain due to the prolonged spread of infection. Under these circumstances, governments are required to formulate and implement measures to strengthen resilience in society and the economy that balance health and safety in the With / Post COVID-19 society.

Table 1-4 Recognition of Current Status and Issues related to the Survey

No.	Issues	Description
1	The impact of COVID-19 on countries/sectors is unknown.	Before COVID-19 pandemic, JICA has provided active support such as the provision of medical equipment. Furthermore, as the impact of the spread of infection extends to society, economy, and the entire region, it is necessary to evaluate the impact from a bird's-eye view across countries and sectors.
2	A cooperative policy is needed in With/Post COVID-19's transformed social context	Based on Issue 1, it is assumed that local co-operation needs are being changing by COVID-19, but those needs, and specific cooperative policies have not been clarified.
3	It is necessary to deal with the risks of this survey conducted during the COVID-19 disaster period.	This survey will be conducted during the period from March 2021 to February 2022. While the vaccine for COVID-19 is being put to practical use, it is still in the phase of spread of infection, such as the spread of variants, a high risk of aggravation and lockdown, and the occurrence of movement restrictions including travel in this survey as well. The infection is still spreading, and the research environment is changing rapidly.
4	It is necessary to support the geographical spread of the countries, and multilingual.	The survey covers 23 countries in Central America and the Caribbean, which are far from Japan, and are geographically widely located as shown in the survey location map. As shown in Figure 1-1, the official languages of each country differ.

Source: Study Team

1.7 Consulting Service Contract

Table 1-5 gives an overview of the consulting service contract.

Table 1-5 Consulting Service Contract

No.	Item	Description
1	Project Name	Data Collection Survey on Development Cooperation With/Post COVID-19 Society in Central America and the Caribbean Region
2	Client	Japan International Cooperation Agency (JICA)
3	Consultant	Joint Venture of Nippon Koei Co., Ltd., Koei Research & Consulting Inc. and Nippon Koei LAC Co., Ltd.
4	Contract Period	March 12, 2021 - February 28, 2022

Source: Study Team

1.8 Scope of the Survey

1.8.1 Work Tasks

Work tasks in the contract is shown in Table 1-6.

Table 1-6 Work Tasks in the Contract

Task No.	Task Name
1	Preparation of the Inception Report
2a	Information & data collection and analysis of policies related to COVID-19 measures in each country's target sector and existing impact surveys [Domestic work (remote survey)]
2b	Information & data collection and analysis of policies related to COVID-19 measures in each country's target sector and existing impact surveys [Domestic work / field survey (continuous survey)]
3	Survey of the impact of COVID-19 on JICA project sites [domestic operations (remote surveys)]
4a	Preparation of the hypothesis of the future development cooperation in With / Post COVID-19 pandemic society and the selection of target countries for the field survey [Domestic work]
4b	Preparation of the hypothesis of the future development cooperation in With / Post COVID-19 pandemic society and the selection of target countries for the field survey [Domestic work / field survey (continuous survey)]
5	Implementation of field surveys
6	Selection of pilot projects
7	Preparation of pilot project plan
8	Implementation of pilot projects
9	Experts Meetings

Task No.	Task Name
10	Preparation of policy recommendations
11	Publishing, including academic presentations
12	Preparation of the Progress Report
13	Preparation of the Draft Final Report
14	Preparation of the Final Report
Suppl. 15	Preliminary Study on Jamaica Inverness Smart City Special Economic Zone Development in Jamaica
Suppl. 16	Preliminary Study on Improvement of Urban Traffic in Saint Domingo City in Dominican Republic
Suppl. 17	Preliminary Analysis on Food Value Chain
Suppl. 18	Jamaica Inverness Smart City Special Economic Zone Development
Suppl. 19	Preliminary Study on Possible Countermeasure on Noncommunicable Diseases in Dominican Republic

Source: Study Team

1.8.2 Workflow of Operations

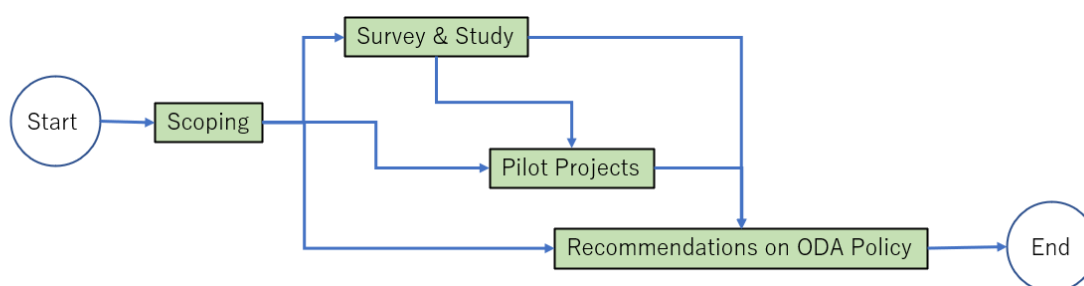
(1) Overall Structure of Operations

Table 1-7 shows the three objectives presented for the purpose of this survey, and Figure 1-2 shows the overall structure of this survey.

Table 1-7 Three objectives of this survey

No.	Purpose of this survey
1	Gathering and analyzing information on the impact of COVID-19 disaster on social systems and cooperative needs in Central America and the Caribbean region
2	Implement, pilot project(s), and organize & propose specific points to note for ongoing projects.
3	Analyses and recommendations that contribute to JICA's future policy of cooperating with Central America and the Caribbean region

Source: Study Team



Source: Study Team

Figure 1-2 Overall Structure of this Survey

(2) Workflow of Survey Tasks

Figure 1-3 shows the workflow of the survey tasks.

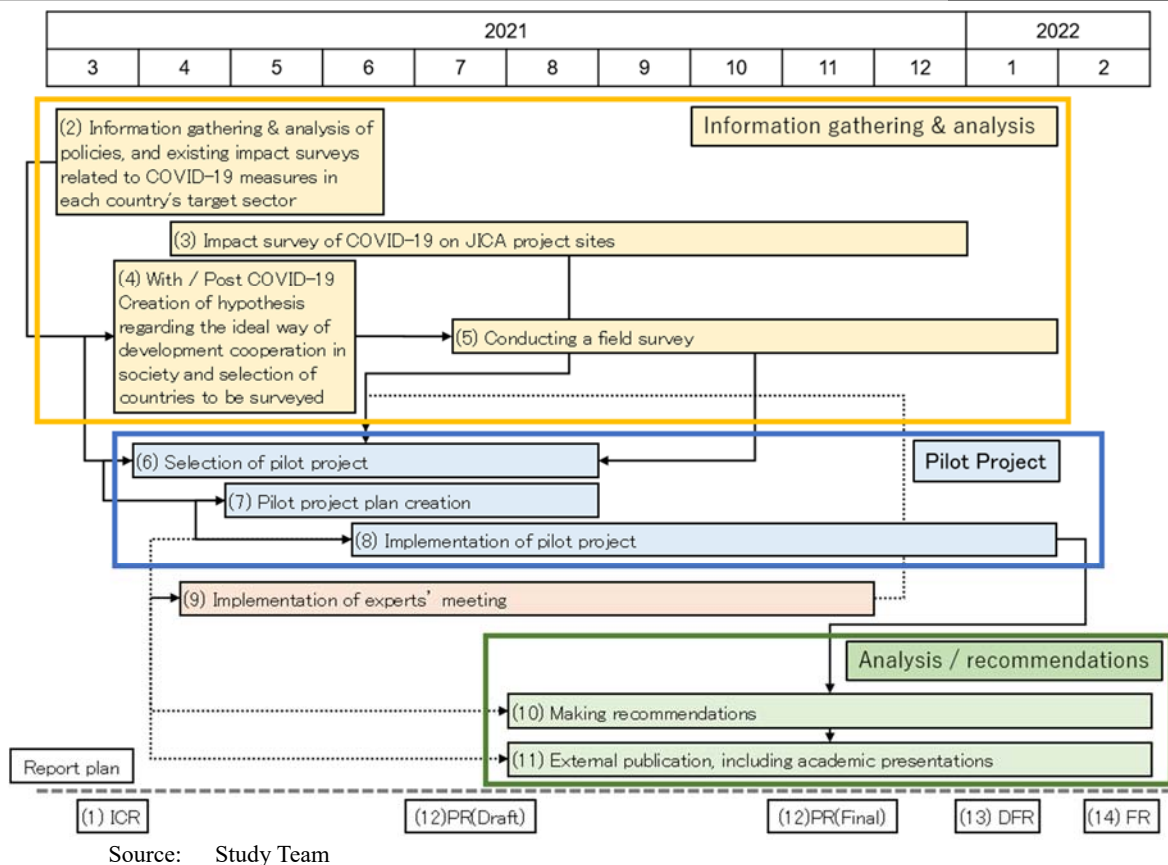


Figure 1-3 Workflow of Survey Tasks

2. Survey Method

2.1 Introduction

The basic policy and implementation method of this survey are summarized below. The results of the survey are described in Chapter 3 and subsequent chapters.

2.2 Overall Survey Method

2.2.1 Basic Policy of the Survey

Table 2-1 shows the basic policy applied to this survey.

Table 2-1 Basic Policy of This Survey

No.	Theme	Critical Point	Basic Policy of This Survey	
1	The impact of COVID-19 on each country / sector is unknown.	Macroeconomic analysis and policy impact analysis and identification of key sectors	(1)	COVID-19 application of viewpoints and viewpoints of impact analysis on the socio-economic system
2	With / Post COVID-19 is seeking cooperation policies in the changing social situation.	It is necessary to collect and share lessons learned from JICA ongoing projects.	(2)	Implementation of regular surveys to accurately evaluate the impact of COVID-19 on JICA projects
		Confirmation of cooperation needs regarding key sector hypotheses	(3)	With / Post COVID-19 analysis and proposal of cooperation needs based on the hypothesis about the ideal way of development cooperation in society
		Demonstration of hypothesis that contributes to development cooperation through pilot projects	(4)	COVID-19 implementation of a pilot project that contributes to the examination of social development cooperation
		It is necessary to create a cooperation policy in collaboration with development partners	(5)	Identify realistic scenarios with high resilience and consider cooperation policies based on policy recommendations including academic perspectives on the impact of COVID-19 and its solutions
3	It is necessary to deal with the risks of this survey conducted during the COVID-19 disaster period.	Efficient remote surveys under travel restrictions	(6)	Construction and implementation of a resilient remote survey implementation system under COVID-19
		Response to the risk of infection / transmission of COVID-19 by persons involved in the study team	(7)	Implementation of safety measures including infectious diseases
4	Geographical expansion of the countries surveyed and multilingual support are needed	Effective utilization of local resources and study team network	(8)	Utilization of effective project management tools utilizing digital technology
		It is necessary to apply efficient management methods	(9)	Creation and implementation of efficient communication plans by applying project management standards

Source: Study Team

2.2.2 Scope of Works by Sector

At the beginning of this study, the Study Team created the sectoral work scope and agreed with the Client. Since then, the Study Team regularly confirmed whether or not the work scope of each sector has been updated during the internal meetings, and has implemented change control. Table 2-2 shows the latest sectoral goals and sectoral work scopes.

Table 2-2 Scope of Works by Sector

No.	Sector	Sectoral Goals
1	Socio-economic Policy Sector	Through the collection and compilation of information on social and economic policies, analyze how the various measures taken in response to COVID-19 have affected each sector. In the analysis of vulnerability in priority sectors, field surveys and interviews will be conducted on the status of access to financial services for the socially vulnerable in the sectors, and support measures to overcome vulnerability will be discussed.
2	Health and Nutrition	To develop a resilient health system and strengthen regional coordination to maintain essential health services and equality in access under health emergency. To strengthen the health literacy of individuals throughout their life course.

No.	Sector	Sectoral Goals
3	Education	Aiming to realize a society in which each individual can fully develop his or her talents and abilities and live with dignity, the Study Team will analyze and identify issues in the education sector that have emerged due to the impact of COVID-19 through information and data collection that fully takes into account historical assets, and propose effective support measures.
4	Agriculture and Rural Development	Identify issues and challenges in the agriculture and rural development sector (agriculture, livestock, fisheries) (agricultural value chain), with particular emphasis on strengthening resilience to COVID-19 (pandemic) and climate change, with a focus on the use of smart technologies and makes recommendations on Japanese cooperation to strengthen this sector. Rural development" is not included in the scope of work to avoid duplication with other sectors.
5	Private sector	To support industrial development through the development and growth of private entrepreneurs and companies in developing countries, the promotion of trade and investment in developing countries, and the development of industrial policies and business environments, and to promote solutions to social issues through private business. Through these efforts, this study will contribute to the realization of high-quality growth and the creation of stable employment opportunities in developing countries.
6	Environment and Disaster Management	Collect and analyze information in the fields of natural environment/ecosystem, environmental management (waste, air, etc.), and water resources, with the aim of realizing carbon neutrality in the future as well as building a society that is resilient to climate change risks, especially in developing countries, through sustainable development and development. Through the collection and analysis of information on disasters and disaster risks under COVID-19, we will make an efficient and effective contribution to reducing the number of people killed and affected by disasters, as well as economic losses, and chart a course for moving these losses to a substantial downward trend.
7	Governance and Citizen Security	Identify key countries and challenges related to governance and citizen security, taking into account the impact of COVID-19. Rank Central American and Caribbean countries based on international comparative data on democracy, legal systems, reliability, security, and corruption, then identify priority countries and issues. Propose capacity strengthening of administrative systems to address priority countries and issues and propose cooperation strategies through an institutional development-oriented approach. Note: Screening for focus country selection is performed using quantitative data available on the web.
8	Digital and Innovation	With the aim of strengthening the economic and social resilience of developing countries through the use of digital technology, we will collect information on the effective implementation of pilot projects in each sector, and conduct technological demonstrations through pilot projects to identify appropriate digital technology innovations for each sector with potential (agriculture and rural development, health, disaster prevention, education). Digital technology innovation will be organized by potential sectors (agriculture and rural development, health, disaster prevention, education).
9	Infrastructure and Energy	To collect, analyze, and make recommendations on how to tackle the challenges in the fields of urban development, transport and energy that have emerged under COVID-19 or that will need to change as a result of COVID-19. <ul style="list-style-type: none"> ▪ To show what kind of initiatives can be taken to achieve "autonomous urban and regional management". ▪ To show how the development of transport facilities and the sustainable provision of services can be realized and developed in accordance with the objective "to promote economic and social development by ensuring the smooth and safe movement of people and goods, thereby improving people's living standards". From the perspective of both primary energy and electricity supply, based on the goal "to build a society in which all people in developing countries have sustainable and affordable access to low-carbon, adequate and secure electricity", the Study Team proposes challenges that existed before COVID-19, challenges that have emerged as a result of COVID-19, and solutions for the future.
10	Tourism	To collect and analyze information on the conditions of tourism sectors in countries affected by COVID-19, and to support the promotion of tourism in Central America and the Caribbean by providing assistance that meets the needs of public and private sectors responsible for the sector.
11	PPP	With / Post COVID-19 society, the business environment has been transformed. In order to promote the entry and development of private companies, mainly Japanese companies, conduct various verifications for demonstration and entry, derive the direction of various public-private-partnership (PPP) support for revitalizing private entry in Central America and the Caribbean region.

Source: Study Team

2.2.3 Countermeasures against the Impact of the New Corona (COVID-19)

When preparing the schedule for each field survey, the schedule of each one were prepared in consideration of the JICA travel resumption date and the risk level of the Ministry of Foreign Affairs, and the schedule was finally confirmed by the JICA overseas office. At the time of the field survey, PCR tests were conducted according to the preventive measures of each country. Table 2-3 shows the travel restrictions applied during the field survey.

Table 2-3 Travel Restrictions Applied during the Field Survey

Field Survey	Implementation Period	Applied Travel Restrictions
1st	7 June – 2 July 2021 (26 days)	Immigration restrictions: Guatemala, Nicaragua, Guyana, Trinidad and Tobago 14 days quarantine upon entry: Guatemala, Mexico Travel to up to 2 countries
2nd	6 September - 5 October 2021 (30 days)	Immigration restrictions: Guatemala, Nicaragua, Guyana, Trinidad and Tobago 14 days quarantine upon entry: Mexico Maximum 2 travelers: Jamaica Restrictions on the number of countries of travel are lifted
3rd	30 October 30 - 20 December 2021 (52 days)	Immigration restrictions: Nicaragua, Guyana, Trinidad and Tobago 14 days quarantine upon entry: Mexico Maximum 3 travelers: Jamaica Restrictions on the number of countries of travel are lifted
4th	7 January - 7 February 2022 (32 days)	The explosive epidemic of the Omicron variant caused some member of the study team infected COVID-19, however those member returned to work after recovery and completed their duty.

Source: Study Team

2.3 [Task 2] Methods for Collecting and Analyzing Information on Policies related to COVID-19 Measures in each Country's Target Sector and Existing Impact Surveys

2.3.1 Survey Method

[Task 2] Information gathering and analysis of policies related to COVID-19 countermeasures in each sector and existing impact surveys were carried out by the method shown in Table 2-4 according to the work situation of each sector.

Table 2-4 Survey Method Applied to [Task 2]

No.	Survey Method	Contents	Work Charge	
			Member	Local Employee
1	Extraction and selection of survey target organizations	The related organizations in each sector were extracted and selected by extracting the survey targets by the Study Team network and consulting with the local office.	○	○
2	Information retrieval on the web	Creating an information retrieval work plan on the web	○	-
3	Information retrieval on the web	Implementation and organization of information retrieval on the web	○	○
4	Distribution and collection of questionnaires	The Study Team sent a questionnaire under the name of the Study Team to the surveyed organizations in each sector and asked them to conduct an online interview. In the questionnaire, the name of the local employee was shown as the person in charge of the investigation.	○	○
5	Explanation / hearing by telephone	If necessary, explain the contents of the survey to the person in charge of the surveyed organization by telephone and conduct a hearing survey.	-	○
6	Online interview	When the surveyed organizations responded to the online interview, the survey contents were explained, and information was collected through the online interview.	○	○
7	Interview at the time of the field survey	At the time of the field survey, the members in charge of each sector visited the surveyed organizations and collected information.	○	○

No.	Survey Method	Contents	Work Charge	
			Member	Local Employee
Note: "o" - In charge of; "-" - Not in charge.				

Source: Study Team

2.3.2 Interview Results at the Time of Field Survey

Table 2-5 summarizes the results of the interviews during the 1st to 4th field surveys related to [Task 2].

Table 2-5 Record of Interviews Conducted during the Field Survey Related to [Task 2]

Sector	1st Field Survey (2021.6.7-7.2)	2nd Field Survey (2021.9.6-10.5)	3rd Field Survey (2021.10.30-12.20)	4th Field Survey (2022.1.7-2.7)
Social and economic policy	Panama Dominican Republic	Barbados Saint Lucia USA	Barbados Guatemala Dominican Republic El Salvador	Jamaica Honduras Dominican Republic
Healthcare / nutrition	---	---	---	---
Education	---	Panama El Salvador	---	Belize Dominican Republic St. Lucia
Agriculture / rural development	Panama El Salvador	Belize	Guatemala	---
Private sector	Panama Dominican Republic	Costa Rica	Panama	Mexico Panama
Environment / disaster prevention	Panama Dominican Republic	---	El Salvador Jamaica Guatemala Saint Lucia	Jamaica Honduras
Governance and security	---	---	Guatemala Jamaica	---
DX innovation	Panama El Salvador	Dominican Republic Panama	---	---
Infrastructure and nergy	---	Costa Rica El Salvador	---	Barbados St. Lucia
Tourism	---	---	Jamaica Dominican Republic El Salvador Saint Lucia	---
Public-private partnership	---	Jamaica	---	---

Honduras: Countries where the visit were canceled by member's infection of COVID-19.

Source: Study Team

2.4 [Task 3] Method of Investigating the Impact of COVID-19 on the JICA Project Site

2.4.1 Survey Method

[Task 3] The impact of COVID-19 on the JICA project site was investigated, and each project underway and the work status of the sector in charge were carried out by the method shown in Table 2-6.

Table 2-6 Survey Method Applied to [Task 3]

No.	Survey Method	Contents	Work Charge	
			Member	Local Employee
1	Extraction and selection of survey target organizations	In consultation with the organization, the Study Team selected the projects in progress.	○	-
2	Distribution and collection of questionnaires	The Study Team sent a questionnaire under the name of the Study Team to the surveyed organizations in each sector and asked them to conduct an online interview. In the questionnaire, the name of the local employee was shown as the person in charge of the investigation.	○	○
3	Online interview	When the surveyed organizations responded to the online interview, the survey contents were explained and information was collected through the online interview.	○	○
4	Hearing by interview	Hearing survey by local employees.	-	○
5	Interview at the time of field survey	At the time of the field survey, the members in charge of each sector visited the surveyed organizations and collected information.	○	-

Note: "○" - In charge of. "-" - Not in charge.

Source: Study Team

2.4.2 Interview Results at the Time of Field Survey

Table 2-7 summarizes the results of the interviews during the 1st to 4th field surveys related to [Task 3].

Table 2-7 Record of Interviews Conducted during the Field Survey Related to [Task 3]

Sector	1st Field Survey (2021.6.7-7.2)	2nd Field Survey (2021.9.6-10.5)	3rd Field Survey (2021.10.30-12.20)	4th Field Survey (2022.1.9-2.5)
Guatemala Regional police project	-	-	○	
El Salvador GENSAI-2	-	-	○	
Dominican Republic Community tourism	-	-	○	
Saint Lucia Fishery conservation management	-	○	-	

Note: "○" was implemented, "-" was not implemented

Source: Study Team

2.4.3 Results of the Survey

Table 2-8 shows the deliverables related to [Task 3].

Table 2-8 Deliverables Related to [Task 3]

Sector	Main Story Report Text	Volume 5 Impact Survey on JICA Ongoing Projects
Guatemala Regional police project	○	○
El Salvador GENSAI-2	○	○
Dominican Republic Community tourism	○	○
Saint Lucia Fishery conservation management	○	○

Source: Study Team

2.5 [Task 4] With / Post COVID-19 How to Create a Hypothesis About the Ideal Way of Development Cooperation in Society and Select a Country to be Surveyed

2.5.1 Survey Method

[Task 4] With / Post COVID-19 The hypothesis regarding the ideal way of development cooperation in society and the selection of countries to be surveyed were carried out by the method shown in Table 2-9 according to the work situation of each sector.

Table 2-9 Survey Method Applied to [Task 4]

No.	Survey Method	Contents	Work Charge	
			Member	Local Employee
1	Extraction and selection of survey target organizations	The related organizations in each sector were extracted and selected by extracting the survey targets by the Study Team network and consulting with the local office.	○	○
2	Information retrieval on the web	Creating an information retrieval work plan on the web	○	-
3	Information retrieval on the web	Implementation and organization of information retrieval on the web	○	○
4	Distribution and collection of questionnaires	The Study Team sent a questionnaire under the name of the Study Team to the surveyed organizations in each sector and asked them to conduct an online interview. In the questionnaire, the name of the local employee was shown as the person in charge of the investigation.	○	○
5	Explanation / hearing by telephone	If necessary, explain the contents of the survey to the person in charge of the surveyed organization by telephone and conduct a hearing survey.	-	○
6	Online interview	When the surveyed organizations responded to the online interview, the survey contents were explained and information was collected through the online interview.	○	○
7	Interview at the time of field survey	At the time of the field survey, the members in charge of each sector visited the surveyed organizations and collected information.	○	○

Note: "○" - In charge of. "-" - Not in charge.

Source: Study Team

2.5.2 Interview Results at the Time of Field Survey

Table 2-10 summarizes the results of the interviews during the 1st to 4th field surveys related to [Task 4].

Table 2-10 Record of Interviews Conducted during the Field Survey Related to [Task 4]

Sector	1st Field Survey (2021.6.7-7.2)	2nd Field Survey (2021.9.6-10.5)	3rd Field Survey (2021.10.30-12.20)	4th Field Survey (2022.1.7-2.7)
Social and economic policy	Panama Dominican Republic	Barbados Saint Lucia USA	Barbados Guatemala Dominican Republic El Salvador	Jamaica Honduras Dominican Republic
Healthcare / nutrition	---	---	---	---
Education	---	Panama El Salvador	---	Belize Dominican Republic St. Lucia
Agriculture / rural development	Panama El Salvador	Belize	Guatemala	---
Private sector	Panama Dominican Republic	Costa Rica	Panama	Mexico Panama

Sector	1st Field Survey (2021.6.7-7.2)	2nd Field Survey (2021.9.6-10.5)	3rd Field Survey (2021.10.30-12.20)	4th Field Survey (2022.1.7-2.7)
Environment / disaster prevention	Panama Dominican Republic	---	El Salvador Jamaica Guatemala Saint Lucia	Jamaica Honduras
Governance and security		---	Guatemala Jamaica	---
DX innovation	Panama El Salvador	Dominican Republic Panama	---	---
Infrastructure and energy	---	Costa Rica El Salvador	---	Barbados St. Lucia
Sightseeing	---	---	Jamaica Dominican Republic El Salvador Saint Lucia	---
Public-private partnership	---	Jamaica	---	---

Honduras: Countries where the visit were canceled by member's infection of COVID-19.

Source: Study Team

2.5.3 Results of the Survey

Table 2-11 shows the deliverables related to [Task 4].

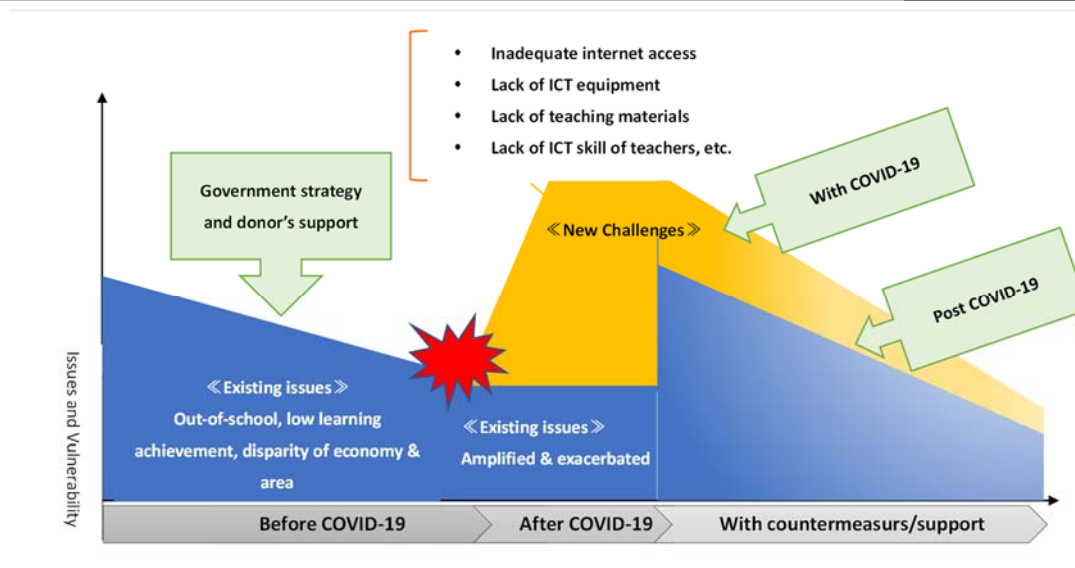
Table 2-11 Deliverables Related to [Task 4]

Sector	Main Story Report Text	Volume 3 By Sector Country Report	Volume 4 By Sector Collected Data	Volume 7 Correspondence Record of Proceedings
Social and economic policy	○		○	○
Healthcare / nutrition	○		○	○
Education	○		○	○
Agriculture / rural development	○		○	○
Private sector	○		○	○
Environment / disaster prevention	○		○	○
Governance and security	○		○	○
DX innovation	○		○	○
Infrastructure and energy	○		○	○
Sightseeing	○		○	○
Public-private partnership	○		○	○

Source: Study Team

2.5.4 Procedure of Building Hypothesis for ODA

Based on the results of detailed survey for selected countries, applying the chronicle model and work steps shown, in Figure 2-1 and Table 2-12 respectively, a hypothesis for ODA have been built for each sector.



Source: Study Team

Figure 2-1 Chronicle Model of Building Hypothesis for ODA

Table 2-12 Work Steps for Building Hypothesis for ODA

No.	Work Step	No.	Work Step
1	Existing Issues before COVID-19	5	Countermeasure (Draft)
2	Grouping by Issues	6	Direction of ODA
3	Existing Vulnerability appeared by COVID-19	7	Policy Recommendations
4	New Vulnerability caused by COVID-19		

Source: Study Team

2.6 [Task 5] How to Conduct a Field Survey

The field survey was conducted after discussing and confirming the destination and schedule with each organization after preparing a schedule that takes into account the travel restrictions shown in Table 2-13. The results of each field survey are summarized as a report and shown in Volume 2: Field Survey Report. Table 2-13 summarizes the activity items at the time of the field survey.

Table 2-13 Timing of Field Surveys and Activity Items

No.	Field Survey	Activity Items							
		Courtesy	Information Gathering [Task 2] [Task 4]	Pilot Business					
				Selection [Task 6]	Plan [Task 7]	Start	Directed by [Task 8]	Termination	Report
1	1st field survey (2021.6.7-2021.7.2)	X	X	X	X	X	---	---	---
2	2nd field survey (2021.9.6-2021.10.5)	---	X	X	X	X	X	---	---
3	3rd field survey (2021.10.30 - 2021.12.20)	---	X	---	---	---	X	X	---
4	4th field survey (2022.1.9-2022.2.5)	---	X	---	---	---	---	X	X

“X”: Included in the purpose of the field survey. “---”: Not included in the purpose of the field survey.

Source: Study Team

2.7 [Task 6/7/8] How to Implement the Pilot Project

2.7.1 Introduction

In this survey, eight pilot projects were carried out. The implementation method of the pilot project is shown below. The results of the pilot projects implemented are summarized in Volume 4: Pilot Projects.

2.7.2 [Task 6] Selection of Pilot Projects

(1) Three Implementation Schemes of Pilot Project

There are three project schemes shown in Table 2-14 for the implementation of the pilot projects. The applicable implementation scheme was confirmed at the project formation stage.

Table 2-14 Three Business Schemes for Pilot Projects

No.	Business Scheme	Explanation
1	Subcontract to a private company	<ul style="list-style-type: none"> ▪ Normal subcontracting work ▪ Subcontractor implements pilot project
2	Directly managed by JICA	<ul style="list-style-type: none"> ▪ Technology transfer-type business to the partner country ▪ The Study Team manages the business ▪ Partially subcontracted to a partner country company
3	Holding Seminars	<ul style="list-style-type: none"> ▪ Holding seminars that contribute to the preparation of development cooperation policy and/or development project(s)

Source: Study Team

(2) Standard Form of Outline Pilot Project

The project outline shown in the pilot project candidate projects is organized as the standard form shown in Table 2-15.

Table 2-15 Standard Form of Pilot Business Overview

No.	Item
1	Program Title
2	Target Country
3	Sector
4	Pilot Project Name
5	Background: Social Issues (Vulnerability)
6	Background: Impact by COVID-19
7	Project Outline
8	Project Period
9	Implementation Body
10	Related Authorities
11	Solution Provided by Pilot Project
12	Beneficiary
13	Top Policy Goal
14	Objectives
15	Outcomes
16	Scope
17	Expected Activities after Project Completion
18	Possible Contribution against COVID-19

Source: Study Team

(3) Setting of Evaluation Criteria

In the selection process the pilot project, the Study Team made preliminary evaluation for each candidate based on the evaluation criteria shown in

Table 2-16, and updated it as the final evaluation in consultation with JICA.

Table 2-16 Selection Criteria for Pilot Projects

No.	Evaluation Item	Evaluation Criteria	
		Mandatory Items (5/10 points each)	Grade Evaluation (1-10-20)
1	Consistency with the hypothesis of development cooperation		1-10
2	Presence of local needs		1-10
3	Project undertaker	Be confirmed (10)	
4	Project period	Can be started/terminated within the survey period (5)	
5	Project cost	Within 10 million yen (5)	
6	Existence of Project Plan/management plan	Prepared (10)	
7	Explanation to Stakeholders	Agreed (10)	
8	Project continuity	Future project can be assumed (5)	
9	Relationship with JICA Implementation Projects		1-10
10	Intentions and priorities of JICA		1-20
11	Others	Agreement on start / end requirements (5)	
		50	Up to 50 in total

Source: Study Team

2.7.3 [Task 7] Pilot Project Plan Creation

At the stage when the pilot project was selected, the project implementation plan shown in Table 2-17 was prepared in collaboration with the subcontractor. The project implementation plan is an official document that is (1) attached to the meeting book and (2) attached to the subcontracting contract.

Table 2-17 Standard Table of Contents Structure of Pilot Project Implementation Plan

Standard Table of Contents Structure of Project Implementation Plan	
Project overview form	4. Pilot project cost 4.1 Premises and conditions for quotation 4.2 Project cost
2. Outline of pilot project	5. Pilot Project management indicators
2.1 Project name	5.1 List of deliverables and delivery time
2.2 Background	(1) List of deliverables
2.3 Purpose	(2) Deliverable delivery destination and delivery time
2.4 Target countries / regions	5.2 Demonstration evaluation of the provided solution
2.5 Demonstration target area	5.2.1 Demonstrated solution items
2.6 Demonstration content	5.2.2 Demonstration of solution quality
2.7 Beneficiaries	5.2.3 Operational demonstration of the solution
2.8 Verification period	5.3 Progress management
2.9 Before / After (comparison table) of the demonstration project	(1) Milestone
2.10 Scheduled Project development after verification	(2) Expenditure plan
(1) Development in target countries / regions	(3) Process chart
(2) Development in Central America and the Caribbean	(4) Progress management method
3. Implementation plan of pilot project	5.4 Start and end of Project
3.1 Stakeholder confirmation	(1) Conditions and procedures for starting a Project
(1) List	(2) Conditions and procedures for Project termination
(2) Role	
3.2 Work plan	6. Safety management of pilot Project
(1) Work items	6.1 Contents of safety management
(2) Work schedule	6.2 Measures against new corona
3.3 Obtaining permits	6.3 Emergency contact information
(1) Permit items	
(2) Permit schedule	7. Risk analysis and countermeasures
3.4 Training	7.1 Risk analysis
(1) Training items	7.2 Risk response plan
(2) Schedule	

3.5 Implementation system (1) Overall organization (2) Implementing organization (3) Presence or absence of subcontracting 3.6 Personnel plan (1) Personnel plan (2) Relationship between work items and implementation responsibility 3.7 Attribution and use of intellectual property rights (1) List of intellectual property rights and owners required for the implementation of this project (2) How to use intellectual property rights not owned by the Project operator (3) Possibility of acquiring "new intellectual property rights" during the implementation period of this project (4) Use of intellectual property rights after the end of this project	Attachment-1 Project career Attachment-2 Career of personnel Attachment-3 Technical data, etc. Attachment-4 Other materials
--	--

Source: Study Team

2.7.4 [Task 8] Implementation of Pilot Project

After the pilot project started, the subcontractor submitted the monthly progress report shown in Table 2-18, and the Study Team submitted the finalized review and comment to the organization.

Table 2-18 Standard Table of Contents Structure of Monthly Progress Report of Pilot Project

Standard Table of Contents Structure of Monthly Progress Report	
1. Contractual requirements 2. Change management (1) Change of business scope (2) Change of business schedule (3) Change in business cost (4) Change of project organization (5) Other changes	3. This month's work (1) Work (2) Meeting 4. Issues and response policies 5. Work schedule for next month (1) Work (2) Meeting 6. Other reports / communications (if any)

Source: Study Team

2.8 [Task 9] Expert Meetings

2.8.1 Experts in This Survey

The experts in this survey are shown in Table 2-19.

Table 2-19 Experts in This Survey

No.	Full Name	Target Field	Affiliation
1	Akio Hosono	Latin America in general / Economic development	<ul style="list-style-type: none"> ▪ Sadako Ogata Senior Research Advisor, Peace Development Institute ▪ Former Ambassador to El Salvador ▪ Former JICA-RI Director ▪ Former Vice President, University of Tsukuba
2	Kojiro Takeshita	Public-private partnership / Private sector development	<ul style="list-style-type: none"> ▪ Faculty of International Studies, Takushoku University, Associate Professor ▪ Former JETRO South American expatriate
3	Tomoyuki Naito	DX / Innovation	<ul style="list-style-type: none"> ▪ Kobe Institute of Computing, Vice President and Specially Appointed Professor
4	Satoshi Sento	Fisheries / regional development	<ul style="list-style-type: none"> ▪ JICA International Cooperation Specialist
5	Norihiro Nishikata	Education	<ul style="list-style-type: none"> ▪ JICA International Cooperation Specialist

Source: Study Team

2.8.2 Experts Meetings Held in the Survey

Five times of the experts meeting have been held as shown in Table 2-20.

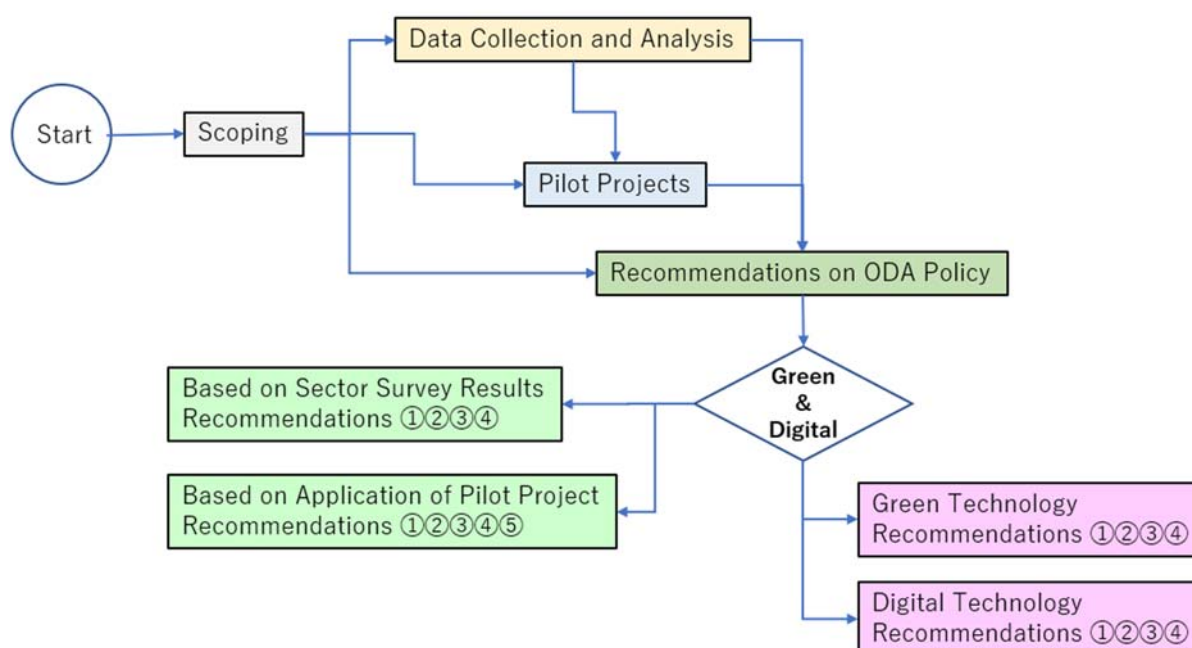
Table 2-20 Experts Meeting held in the Survey

No.	Meeting Name	Meeting Date	Contents of the Meeting
1	Meeting of Experts (1)	23 April 2021	[Inception Report] Arrangement of the results of discussions with JICA Analysis / examination of existing materials Policy and method of the entire survey Arrangement of survey items Formulation of survey plan [Pilot project selection process report]
2	Expert Meeting (2)	29 June 2021 (1st field survey period)	[Pilot project selection report (draft)] Progress report of advanced PP business [1st field survey report]
3	Expert Meeting (3)	19 August 2021	[Progress Report (Draft)] Progress report on information gathering and analysis Issues that should be prioritized Proposed hypothesis (by sector) Final selection of pilot projects (8 cases)
4	Expert Meeting (4)	25 November 2021 (3rd field survey period)	[Progress Report (Final)] Proposed hypothesis and direction of cooperation (draft) Analysis method (draft) of impact survey on JICA ongoing projects Progress report of pilot project
5	Expert Meeting (5)	27 January 2022 (4th field survey period)	[Draft Final Report] Policy proposal (draft) Local debriefing session (draft)

Source: Study Team

2.9 [Task 10] Method of Preparation of Recommendations

Based on the results of detailed survey for selected countries, applying the chronicle model and work steps shown, in Figure 2-1 and Table 2-12 respectively, hypothesizes for future development cooperation, for each sector and final recommendations for a whole, have been organized shown in Figure 2-2.



Source: Study Team

Figure 2-2 Workflow of Preparation of Recommendations

2.10 [Task 11] How to Make External Calls, Including Academic Presentations

As of early February 2022, the external transmissions shown in Table 2-21 have been implemented or are planned.

Table 2-21 List of Academic Papers and External Transmissions

No.	Announcement Destination / "Title"	Announcement Time	Remarks
1	Latin American Time Signal (Quarterly) "Efforts to digitize administrative services in Central America and the Caribbean"	Fall 2021 issue Published October 25, 2021	Japanese A4 page 4
2	International Development Journal (Monthly)	April 2022 issue Manuscript submission. End of February 2022	Reserved. Examination materials have been sent Japanese sentence
3	Infrastructure Development Institute Japan "IDI Quarterly" (quarterly)	Spring 2022 issue (April 2022)	Preparing examination materials English A4 page 3-4
4	International Agricultural and Forestry Collaboration Association (JAICAF)		1,000 character application → 8,000 character post
5	JICA-RI		

Source: Study Team

3. Summary of the Survey

3.1 Overview of Central America and Caribbean Region

(1) Economic Index of 23 Countries

Table 3-1 shows economic index of 23 Countries.

Table 3-1 Economic Index of 23 Countries

Region	No	Country	Population (Thousands) 2020 *1	Population of Capital (Thousand) 2022 *1	Rate of Population at Capital (%)	GDP (Million USD) 2019 *2	GDP per Capita (USD) 2019	
Central America (8)	1	Belize	412	13	3.2%	1,838	4,461	
	2	Costa Rica	5,200	1,000	19.2%	61,801	11,885	
	3	El Salvador	6,550	654	10.0%	27,023	4,126	
	4	Guatemala	18,584	3,036	16.3%	76,710	4,128	
	5	Honduras	9,570	1,527	16.0%	25,095	2,622	
	6	Nicaragua	6,790	1,083	15.9%	12,521	1,844	
	7	Panama	4,447	1,938	43.6%	66,801	15,022	
	Oil Producing (1)	8	Mexico	131,089	21,900	16.7%	1,268,868	9,679
Caribbean (15)	9	Bahamas	403	401	99.5%	13,579	33,695	
	10	Barbados	288	99	34.4%	5,205	18,073	
	11	Cuba	11,400	2,146	18.8%	103,539	9,082	
	12	Dominican Republic	10,630	3,458	32.5%	88,941	8,367	
	13	Haiti	11,624	2,915	25.1%	13,577	1,168	
	14	Jamaica	2,982	595	20.0%	15,907	5,334	
	Oil Producing (3)	15	Trinidad Tobago	1,407	545	38.7%	23,208	16,495
		16	Guyana	794	25	3.1%	5,174	6,516
		17	Surinam	597	250	41.9%	3,697	6,193
	OECS (6)	18	Antigua and Barbuda	100	99	99.0%	1,662	16,620
		19	Dominica	72	15	20.8%	582	8,083
		20	Grenada	113	3	2.7%	1,201	10,628
		21	St. Christopher Nevis	54	16	29.6%	1,053	19,500
		22	St. Lucia	186	66	35.5%	2,123	11,414
		23	St Vincent Grenadines	112	25	22.3%	825	7,366

*1: Internet. *2: ZCLAC
 Source: Study Team

(2) Grouping of Target 23 Countries

The countries surveyed can be grouped as shown in Table 3-2 based on their geographical location, political relations, population / economic size, and the presence of oil production. In each sector survey, we have conducted detailed surveys by grouping target countries for their vulnerabilities and/or issues. In consideration of the ideal way of development cooperation, regional connections between countries, similarities in industrial practices and information, efficiency of sharing, the grouping shown in Table 3-2 should be used as the baseline for the survey and analysis of the target countries for development cooperation.

Table 3-2 Grouping of Target 23 Countries

No.	Region	Countries
1	Central America (8 Countries)	Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama
2	Oil Producing (1 Country)	Mexico
3	Caribbean (15 Countries)	Bahamas, Barbados, Cuba, Dominican Republic, Haiti, Jamaica
4	Oil Producing (3 Countries)	Trinidad Tobago, Guyana, Surinam
5	OECS (6 Countries)	Antigua and Barbuda, Dominica, Grenada, St. Christopher Nevis, St Lucia, St Vincent Grenadines

OECS: Organisation of Eastern Caribbean States

Source: Study Team

(3) Regional Organizations

Target 23 countries belong the regional organization as shown in Table 3-3 except Mexico and Cuba. Belize belongs to both SICA and CARICOM.

Table 3-3 Regional Organizations

No.	Regional Organization	Locations	Countries
1	Central American Integration System (SICA) (8 Countries)	<ul style="list-style-type: none"> ▪ Central American Parliament (Guatemala) ▪ Central American Court of Justice (Nicaragua) ▪ General Secretariat of Central American Integration System (El Salvador) ▪ Central American Bank for Economic Integration (Honduras) 	Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Dominican Republic
2	Caribbean Community (CARICOM) (14 Countries)	Guyana	(CA) Belize (Carib) Antigua and Barbuda, Bahamas, Barbados, Dominic, Grenada, Haiti, Jamaica, St. Christopher Nevis, St Lucia, St Vincent Grenadines, Trinidad Tobago, Guyana, Surinam
3	Organisation of Eastern Caribbean States (OECS) (6 Countries)	St Lucia	Antigua and Barbuda, Dominica, Grenada, St. Christopher Nevis, St Lucia, St Vincent Grenadines

Source: Study Team

3.2 Summary of Sector Survey

3.2.1 Overview of Central America and Caribbean Region

(1) Development Status of Central America and Caribbean Region

Prior to the outbreak of COVID-19, the politics and economy of the 23 countries in the target area were generally stable, except for some countries. With the exception of Mexico, relatively small countries are adjacent to each other in Central America, and many countries have commonalities not only in history, culture, and language, but also in development issues, but domestic and regional disparities are still significant. As a result, poverty, security, and environmental problems are becoming more serious in many countries. Many Caribbean countries have small populations and areas and a short history after independence, while their per capita income levels are relatively high, but their economies are small, and many countries depend on tourism for their economies. The most important development policy issue shared by most countries in Central America and the Caribbean is poverty reduction, and in order to solve the poverty problem from a medium- to long-term perspective, the region and each country will be sustainable. Achieving economic growth, increasing employment and improving people's quality of life are essential. In Central American countries, including Costa Rica and Panama, where economic and social development is relatively advanced, it cannot be said that industrial

diversification and job creation are sufficient in many countries, mainly in the United States in search of employment opportunities. There are very many cases of immigrants seeking employment overseas, and the occurrence of chaotic immigrants has become a major social problem in the region. Even in the Caribbean countries, many countries depend on tourism and there are few employment opportunities, so remittances from overseas immigrants to their home countries are also very important financial resources.

Historically, several attempts to integrate Central America have collapsed, but from the perspective of strengthening regional competitiveness, the elimination of tariffs in the region, the unification of animal and plant quarantine, and the multi-modal of logistics, centered on SICA. The concept of conversion is being considered. In the Caribbean region as well, in addition to attempts to strengthen competitiveness and support development by regional organizations centered on CARICOM, preparations are underway to establish the CARICOM Single Market Economy (CSME), but countries that use languages other than English as official languages. There are various factors such as the fact that there are countries that are organized as OECS, and CSME has not been fully realized.

(2) Status and Impact of COVID-19 Pandemic

According to the World Health Organization (WHO), the number of deaths from COVID-19 by November 2020 is 18 of all infectious diseases that occurred in Latin America and the Caribbean between 1970 and 2019. More than double. In addition, these deaths represent 63% of all disaster deaths in the area during the same period. And for the first time since the record began, all countries in the region are shrinking at the same time, losing employment, and increasing poverty and inequality. Comparing infections around the world with Central American countries (as of February 2, 2022), the Americas (North and South America) have the most serious infections (36%) and deaths (44%) in the world. It is one of the areas. In the United States, the United States, Brazil, Argentina, and Colombia account for 84% of the total number of infected people and 71% of the fatalities. , The number of infected people is Panama (9,530), Costa Rica (7,402), Republic of Dominica (3,058), and the number of deaths is Mexico (181), Panama (152), Costa Rica (93), the ratio of infection at CA region is relatively high.

(3) Macroeconomic Analysis for Industrial Sectors Impacted by COVID-19 Pandemic

In the macroeconomic analysis of the social and economic policy sector of this survey, the degree of impact by COVID-19 was analyzed based on the economic statistics of ECLAC, and the priority of each sector was also examined. From the analysis results, it became clear that the impact was highest in the order of infrastructure and energy, manufacturing, tourism, and education (vertical sector). Economic statistics from 2020 onward have also been released, and infrastructure, energy, manufacturing, etc. are recovering quickly and the initial impact was large, but the resilience is high because they are recovering by applying infection prevention measures at an early stage. The result is. In addition, the health care / nutrition sector and the education sector are not classified into sectors in the economic statistics by ECLAC, and macroeconomic analysis cannot fully grasp the actual situation of their impact.

3.2.2 Information and Data Collection, Selection of Priority Countries in Each Sector

As a result of collecting and analyzing information on policies related to COVID-19 measures and existing impact surveys, priority countries by sector shown in Table 3-4 were selected. Details of selection criteria and procedures are shown in the sectoral reports from Chapter 5 of the main text.

Table 3-4 Priority Countries in Each Sector

Region	Country	Social and economic policy	Healthcare /Nutrition	Education	Agriculture /Rural development	Private sector	Governance and security	Environment /Disaster prevention	Digital /Innovation	Infrastructure /Energy	Tourism	PPP
CA (8)	Belize				○		○		No Priority Country			
	Costa Rica				○	⊙		⊙		⊙		⊙
	El Salvador	⊙		⊙	⊙		⊙	⊙		⊙	⊙	○
	Guatemala	⊙	⊙	⊙	⊙		⊙	⊙				
	Honduras	○	⊙	○	⊙		⊙	○				○

	Mexico	○			⊙	⊙	○					⊙
	Nicaragua	○	⊙		⊙	○	⊙	⊙				
	Panama	○		⊙	⊙	⊙		○				
Caribbean (15)	Bahamas						○					
	Barbados	○					○			⊙		
	Cuba							○				
	Dominican Republic	⊙			○		○	○			⊙	
	Haiti			○	○		⊙	⊙				
	Jamaica	○							⊙		⊙	⊙
	Trinidad Tobago											
	Guyana							○				
	Surinam											
OECS (6)	Antigua and Barbuda											
	Dominica											
	Grenada											
	St. Christopher Nevis				○							
	St Lucia	○			○					⊙		
	St Vincent Grenadines										○	

OECS : Organisation of Eastern Caribbean States
 ⊙: 1st Priority, ○: 2nd Priority

Source: Study Team

3.2.3 Detailed Survey by Sector

Table 3-5 shows the selected priority countries that have undergone detailed surveys through field surveys and online surveys. As shown in the table, there are still some countries that have been selected as priority countries but could not carry out detailed surveys due to travel restrictions and restrictions on the field survey period.

Table 3-5 Status of Detailed Survey by Sector

Region	Country	Social and economic policy	Healthcare /Nutrition	Education	Agriculture /Rural development	Private sector	Governance and security	Environment /Disaster prevention	Digital /Innovation	Infrastructure /Energy	Tourism	PPP
CA (8)	Belize			■	○■		○					
	Costa Rica				○	⊙■		⊙□		⊙■		⊙
	El Salvador	⊙■□		⊙■	⊙■		⊙	⊙■		⊙■	⊙■	○
	Guatemala	⊙■	⊙□	⊙	⊙■		⊙■	⊙■□				
	Honduras	○	⊙□	○	⊙		⊙□	○				○
	Mexico	○□			⊙	⊙■	○					⊙□
	Nicaragua	○	⊙□		⊙	○	⊙	⊙				
	Panama	○■□		⊙■	⊙■	⊙■		○■□				
Caribbean (15)	Bahamas					○			No Priority Country			
	Barbados	○■□				○				⊙■		
	Cuba						○					
	Dominican Republic	⊙■		■	○		○	○■			⊙■	
	Haiti			○	○		⊙	⊙				
	Jamaica	○■					■	⊙■			⊙■	⊙■
	Trinidad Tobago											
	Guyana						○					
	Surinam											

Region	Country	Social and economic policy	Healthcare /Nutrition	Education	Agriculture /Rural development	Private sector	Governance and security	Environment /Disaster prevention	Digital /Innovation	Infrastructure /Energy	Tourism	PPP
OECS (6)	Antigua and Barbuda											
	Dominica											
	Grenada											
	St. Christopher Nevis				○							
	St Lucia	○■		■	○			■		◎■	■	
	St Vincent Grenadines										○	
Regional Organization	SICA			SECC							CATA	
	CARICOM										CTO	

OECS : Organisation of Eastern Caribbean States
 ◎: 1st Priority, ○: 2nd Priority, ■: Interview Survey, □: Online Survey

Source: Study Team

3.2.4 Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation

Sector-based hypotheses for development cooperation is built based on the chronicle model shown in Figure 2-1 and Table 2-13.

(1) Socio-economic Policy

Table 3-6 Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Socio-economic Policy)

No.	Item	Socio-economic Policy		
1	Issues pre COVID-19	<ul style="list-style-type: none"> ▪ Diversification of industrial structure and discovery of competitive industries ▪ Development of domestic market (distribution, shipping, storage) ▪ Different employment resilience by sector ▪ Labor shortage and slow response to digitalization ▪ High reliance on external debt and foreign investment ▪ Low access to finance ▪ Formation, policy formulation, and dissemination of fundamental support to break out of poverty ▪ Financial system challenges ▪ Lack of domestic employment and dependence on foreign remittances 		
2	Grouping of the target countries	<ul style="list-style-type: none"> ▪ Industrial structure, human resources and DX, economy and finance, financial inclusion 		
3	Vulnerability under COVID-19	<ul style="list-style-type: none"> ▪ Inability to ship and store manufactured goods due to stoppage of import/export and distribution ▪ Lack of market development and sales capacity at the domestic market and community level ▪ Impact on maquila industries with low employment resilience ▪ Delays in adapting to digitalization ▪ Delay in purchase of digital equipment ▪ Increased need for various public investments, subsidies and grants against limited public budget ▪ Decreased cash flow due to reduced income, dependence on subsidy and grant policies ▪ Stagnation in lending due to challenges in the financing system (real estate collateral and credit guarantees) ▪ Delay in response to system development to reduce costs ▪ Livelihood upheaval due to decline in overseas remittances 		
4	Issues emerged under COVID-19	<ul style="list-style-type: none"> ▪ Self-restraint and regulation of business ▪ Labor shortage due to rapid increase in demand (agriculture, shipping, etc.) ▪ Lack of office space in the rural areas ▪ Demand for and treatment of essential workers ▪ Online consumption, lack of digital talent ▪ Inequality due to lack of internet access ▪ Digitalization needs for lowering financial costs 		
5	Proposed countermeasures	<table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 50%;"> <ul style="list-style-type: none"> ▪ Economy and Finance ▪ Financial Inclusion </td> <td style="vertical-align: top; width: 50%;"> <ul style="list-style-type: none"> ▪ Consideration of new schemes to improve cost efficiency and promote the use of private funds ▪ Continued support for existing poverty alleviation measures (e.g. ACTIVO in Honduras), and support for the introduction of digital technology through smart phone applications and emerging banks. </td> </tr> </table>	<ul style="list-style-type: none"> ▪ Economy and Finance ▪ Financial Inclusion 	<ul style="list-style-type: none"> ▪ Consideration of new schemes to improve cost efficiency and promote the use of private funds ▪ Continued support for existing poverty alleviation measures (e.g. ACTIVO in Honduras), and support for the introduction of digital technology through smart phone applications and emerging banks.
<ul style="list-style-type: none"> ▪ Economy and Finance ▪ Financial Inclusion 	<ul style="list-style-type: none"> ▪ Consideration of new schemes to improve cost efficiency and promote the use of private funds ▪ Continued support for existing poverty alleviation measures (e.g. ACTIVO in Honduras), and support for the introduction of digital technology through smart phone applications and emerging banks. 			

No.	Item	Socio-economic Policy	
			<ul style="list-style-type: none"> ▪ Improving access to finance by improving systems for real estate collateral and land registration, and expanding credit guarantee systems ▪ Support for future financial instability risks, such as the creation of regional standards through cooperation with regional organizations such as CARICOM, SICA, LAC countries, which has succeeded in spreading CBDCs, especially Brazil where CBDC are leading in implementation. ▪ Support for lowering remittance fees and simplifying remittances through the use of smartphone applications (digitalization promotion), and support for the development of solidarity economy and nostalgia markets ▪ Introduction of digital equipment and capacity development in community support
6	Proposed cooperation strategy and recommendations	Economy and Finance	<ul style="list-style-type: none"> ▪ Support for the development of new schemes using private funds
		Financial Inclusion	<ul style="list-style-type: none"> ▪ Support for continuous poverty alleviation and introduction of emerging technologies ▪ Support for the improvement of financial system issues
		Others	<ul style="list-style-type: none"> ▪ Sharing of technical experience in Japan ▪ Support sustainable and efficient development by expanding cooperation with international organizations
			<ul style="list-style-type: none"> ▪ Brokering cross-regional cooperation to enhance competitiveness (further in-depth study)
			<ul style="list-style-type: none"> ▪ Create a system that facilitates the entry of private funds, such as SIBs with pay for success system ▪ Continuing to provide long-term support for fundamental issues in the region (support that is closely linked to communities, financial institutions, etc., through the Honduras Poverty Alleviation Model (ACTIVO), etc.) ▪ Support for financial digitalization and smartphone application development (support for technological development to improve financial access) ▪ Introduction and technology transfer of Japanese systems such as credit guarantee associations and credit risk information databases ▪ As for CBDCs, which are expected to contribute to reducing user costs, the OECS countries, which are ahead of other countries in implementing CBDCs, and the Central Bank of Brazil, which has already achieved a high penetration rate in Brazil, as well as FINTEC companies, including Japanese companies, are expected to be involved in lobbying SICA, CARICOM, and other regional organizations to quickly establish unified regional standards and other measures to deal with future risks of financial instability. ▪ With regard to community remittance, introduction of case studies of hometown tax payment, cloud funding and development of prefectural antenna stores in Japan (nostalgia market development support) ▪ Blue economy, anti-sargassum measures, connections with business networks (e.g., IDB Connect America), coordination with international organizations for long-lasting support ▪ Support for the expansion of best practices through collaboration between CARICOM and SICA ▪ (Intermediary cooperation for research on the potential of successful cases in English-speaking CARICOM in Spanish-speaking countries)

Source: Study Team

(2) Healthcare and Nutrition

Table 3-7 Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Healthcare and Nutrition)

No.	Item	Healthcare and Nutrition	
1	Issues pre COVID-19	Individual <ul style="list-style-type: none"> ▪ Triple burden of health issues; communicable issues and maternal and child health, noncommunicable diseases, and injury caused by violence/ accident ▪ Aging ▪ Malnutrition (under/ over) 	Health system <ul style="list-style-type: none"> ▪ Fragmented health service providing system ▪ High out-of-pocket expenditure ▪ Insufficient quantity and quality of doctors and nurses ▪ Gap in service access due to ethnic groups, gender, household economy, urban/rural, and education,
2	Grouping of the target countries	Central America <ul style="list-style-type: none"> ▪ Maternal and child health, undernutrition ▪ Fragmented service providing system in public sector ▪ Gap in service access 	Caribbean <ul style="list-style-type: none"> ▪ NCDs, Aging ▪ Vulnerable to disaster and health emergency due to small size of countries
3	Vulnerability under COVID-19	<ul style="list-style-type: none"> ▪ Due to insufficient health and nutrition status, low immunity and high risk of infection/ aggravation ▪ Expanded gap in access to information and health services ▪ Inability to flexibly and appropriately reallocate and share resources, resulting in inefficiencies such as uneven distribution of human resources, equipment, hospital beds, and medicines. ▪ Pandemic beyond the borders ▪ Essential health services could not be maintained 	
4	Issues emerged under COVID-19	<ul style="list-style-type: none"> ▪ Increased medical waste could bring negative impact to concerned workers, community people, and environment for long term 	
5	Proposed Countermeasures	Individual health	<ul style="list-style-type: none"> ▪ Improve fundamental health status ▪ Nutrition improvement during the first 1000 days in pregnant and childhood ▪ Early detection and intervention of health risks (malnutrition, NCD and the risk factors, risks during pregnancy)
		Health system	<ul style="list-style-type: none"> ▪ Improve health literacy to acquire knowledge of healthy lifestyles, signs of and responses to disease, and available health services and social support ▪ Provide multilingual information ▪ Utilize affordable media such as local radio ▪ Update and strengthen of PHC ▪ Telemedicine for counselling, diagnosis, and support for health personnel. ▪ Improve service access by the poor ▪ Protection of health personnel and improve employment condition ▪ Strengthen leadership of the ministry of health ▪ Restructure/ Integration of health service providing system and referral system ▪ Continuous collaboration for human resource development beyond the border ▪ Strengthen human network based on mutual trust ▪ Prompt situation analysis and information sharing under emergency situation ▪ Development and update of a business continuity plan (BCP) ▪ Safe treatment and management of medical waste ▪ Improvement of primary treatment at health facilities
6	Proposed Cooperation Strategy	PHC for individual health	< Central America > <ul style="list-style-type: none"> ▪ Maternal and child nutrition improvement
		Health system	< Common > <ul style="list-style-type: none"> ▪ Promotion of behavior change for healthy lifestyle ▪ Early detection, follow-up and treatment of health risks < Common > <ul style="list-style-type: none"> ▪ Improvement of digital health with base of pyramid (BOP) ▪ Mental care for health personnel ▪ Ensuring human resources in collaboration with private sector ▪ Capacity development of national reference laboratories ▪ Development of BCP at public health and clinical service institutions ▪ Capacity development of medical waste management

No.	Item	Healthcare and Nutrition	
7	Recommendations	Regional collaboration	<ul style="list-style-type: none"> ▪ Health emergency response: strengthening of collaboration based on the existing frameworks ▪ Development regional reference laboratory network in cooperation with PAHO ▪ Promoting information and data sharing through regular experience sharing activities to strengthen collaboration and communication
		Inter-sectoral collaboration	<ul style="list-style-type: none"> ▪ Education, IEC materials, community development sectors for increasing health literacy ▪ Food production and processing sectors for nutrition improvement ▪ Local administration and environmental sectors to improve medical waste management capacity ▪ ICT and private sectors to promote retention of health personnel and improve service providing system
		Innovative technology	<ul style="list-style-type: none"> ▪ Minimize gap in service access by telemedicine ▪ Sharing health record of migrant people moving beyond the borders
		Health emergency response	<ul style="list-style-type: none"> ▪ Development of business continuity plan (BCP) at PHC level

Source: Study Team

(3) Education

Table 3-8 Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Education)

No.	Item	Education		
1	Issues from before COVID-19	<ul style="list-style-type: none"> ▪ Low net enrollment rates (primary, lower and upper secondary) ▪ Low education completion rate (primary education) ▪ High out-of-school children rate (primary education) ▪ Low learning achievement (reading, math, science) ▪ Learning achievement gap due to economic disparity ▪ Disparities in educational opportunities (people living in remote areas, the poor, indigenous people, refugee and immigrants, people with disabilities) ▪ Inadequate school facilities 		
2	Grouping by Issue	<ul style="list-style-type: none"> ▪ Existence of traditional schooling issues ▪ Internet access at home for school-aged children ▪ Installation of water supply facilities in schools 		
3	Vulnerabilities Revealed in COVID-19	<ul style="list-style-type: none"> ▪ Increased risk of drop-out ▪ Delays in learning for students ▪ Loss of educational opportunities for vulnerable groups who have difficulty accessing distance education ▪ Poor quality of education due to lack of preparation for distance learning ▪ Delay in reopening schools due to inadequate school sanitation facilities ▪ Lack of ICT capabilities and skills among teachers ▪ Undernourishment of poor students due to discontinuation of school feeding programs 		
4	New issues that emerged during COVID-19	<ul style="list-style-type: none"> ▪ Delayed or non-implementation of learning assessment and monitoring evaluation ▪ Inadequate Internet access environment at school or home ▪ Lack of ICT equipment (schools, teachers, families) ▪ Lack of digital teaching materials ▪ Lack of know-how in distance education planning and implementation ▪ Lack of ICT skills among teachers ▪ Lack of support for parents ▪ Loss of learning opportunities for students with disabilities ▪ Increased mental burden for students ▪ Discontinuation of school nutrition programs ▪ Reduction of public education budget 		
5	Countermeasures (draft)	<table border="0" style="width: 100%;"> <tr> <td style="width: 20%; vertical-align: top;">Learning delay</td> <td> <ul style="list-style-type: none"> ▪ Analysis of learning delay and academic decline by learning assessment surveys ▪ Development and enhancement of supplementary and digital teaching materials ▪ Capacity building of teachers (including ICT skills) </td> </tr> </table>	Learning delay	<ul style="list-style-type: none"> ▪ Analysis of learning delay and academic decline by learning assessment surveys ▪ Development and enhancement of supplementary and digital teaching materials ▪ Capacity building of teachers (including ICT skills)
Learning delay	<ul style="list-style-type: none"> ▪ Analysis of learning delay and academic decline by learning assessment surveys ▪ Development and enhancement of supplementary and digital teaching materials ▪ Capacity building of teachers (including ICT skills) 			

No.	Item	Education				
		<table border="1" style="width: 100%;"> <tr> <td style="width: 30%;">Drop-out of vulnerable groups</td> <td> <ul style="list-style-type: none"> ▪ Development of teaching materials and teacher guidebooks based on characteristics ▪ Expansion of remedial and supplementary learning ▪ Expansion and strengthening equitable educational opportunities. ▪ Continuation of school feeding and nutrition programs </td> </tr> <tr> <td>School Infrastructure</td> <td> <ul style="list-style-type: none"> ▪ Strengthening of the school sanitation environment ▪ Development and enhancement of Internet access network </td> </tr> </table>	Drop-out of vulnerable groups	<ul style="list-style-type: none"> ▪ Development of teaching materials and teacher guidebooks based on characteristics ▪ Expansion of remedial and supplementary learning ▪ Expansion and strengthening equitable educational opportunities. ▪ Continuation of school feeding and nutrition programs 	School Infrastructure	<ul style="list-style-type: none"> ▪ Strengthening of the school sanitation environment ▪ Development and enhancement of Internet access network
Drop-out of vulnerable groups	<ul style="list-style-type: none"> ▪ Development of teaching materials and teacher guidebooks based on characteristics ▪ Expansion of remedial and supplementary learning ▪ Expansion and strengthening equitable educational opportunities. ▪ Continuation of school feeding and nutrition programs 					
School Infrastructure	<ul style="list-style-type: none"> ▪ Strengthening of the school sanitation environment ▪ Development and enhancement of Internet access network 					
6	Direction of development cooperation and Policy recommendations (draft)	<p><u>Intensive, Long-term, and Continuous Measures to Improve Learning Achievement</u></p> <ul style="list-style-type: none"> ▪ Intensive and continuous measures over a long period of time of year 2030 ▪ Create learning recovery programs and promote learning assessment and analysis, curriculum organization and development of teaching materials ▪ Increase of learning time (strengthening school management plan, increase of number of class days and hours, etc.) ▪ Targeted support for vulnerable groups, tailored to their individual challenges and needs <p><u>Application of Fundamental and Innovative Technologies and Improvement of School Facilities and Environment</u></p> <ul style="list-style-type: none"> ▪ Application of fundamental and innovative technologies to reduce educational disparities. Promotion of the development and use of digital teaching materials and applications. ▪ Private sector collaboration and intra-regional cooperation in the development of digital teaching materials and learning applications. ▪ Development and dissemination of basic technologies, such as communication infrastructure in schools. ▪ Improvement of the school sanitation environment (water facilities, toilets, etc.) to prevent infection in preparation for the reopening of schools. <p><u>Intra-Regional Cooperation and Establishment of a Base in Region</u></p> <ul style="list-style-type: none"> ▪ Promote the development of digital teaching materials and applications based on experience in distance education, and collaborate with other countries in regions (SICA, CARICOM, OECS, etc.) that share common language and educational issues. ▪ Measures to contribute to the transition from special education to inclusive education, accumulation of knowledge and experience in educational support for various disabilities, and regional cooperation and establishment of a base in region for the development of teaching materials and provision of equipment. 				

Source: Study Team

(4) Agriculture and Rural Development

Table 3-9 Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Agriculture and Rural Development)

No.	Item	Agriculture and Rural Development
1	Issues from before COVID-19	<ul style="list-style-type: none"> ▪ Lack of sanitation, testing techniques, equipment, and infrastructure ▪ Lack of storage technology, equipment, and infrastructure ▪ Dependence on specific economic sectors (vulnerability in terms of economic structure) ▪ Lack of competitiveness development in the domestic agricultural and rural sector ▪ Lack of farming techniques, including cultivation by producers ▪ Lack of efficiency improvement in the production system, such as the realization of planned production, stable production, shipment through producers' organization, etc. ▪ Lack of production incentives due to market structure ▪ Lack of production infrastructure ▪ Lack of operation and maintenance of production infrastructure ▪ Lack of trust among chain actors due to lack of understanding of each actor's role, absence of clear quality standards, etc. ▪ Lack of value-adding such as processing and certification ▪ Lack of market information ▪ Lack of efforts to mitigate climate change on both the production and consumption sides ▪ Lack of efforts on the part of producers to adapt to climate change ▪ Lack of climate change-related information such as weather, pests, and diseases ▪ Lack of information on resource management and monitoring ▪ Lack of access to finance ▪ Lack of access to insurance ▪ Lack of information related to the agricultural sector, including information on producers and products ▪ Lack of technological development and diffusion

No.	Item	Agriculture and Rural Development	
2	Grouping by Issue	(1) Central American countries and large Caribbean countries where the presence of the agricultural sector is maintained, but the entire agricultural sector needs to be strengthened, both for domestic use and export; (2) Small Caribbean countries where very low food self-sufficiency rates and an economic structure dependent on tourism need to be corrected; and (3) Countries that, due to political or external factors, are in a state of socioeconomic turmoil and need to be stabilized or are in need of a significant revamping of the production system.	
3	Vulnerabilities Revealed in COVID-19	<ul style="list-style-type: none"> ▪ Lack of sanitation, testing techniques, equipment, and infrastructure ▪ Lack of distribution and storage technology, equipment, and infrastructure ▪ Dependence on specific economic sectors (vulnerability in terms of economic structure) ▪ Lack of competitiveness development in domestic agricultural and rural sector ▪ Lack of efficiency improvement in the production system, including the realization of planned production, stable production, shipment through producers' organization, etc. ▪ Lack of trust among chain actors due to lack of understanding of each actor's role, absence of clear quality standards, etc. ▪ Lack of market information ▪ Lack of access to finance ▪ Lack of access to insurance for producers (limited insurance products) ▪ Lack of information related to the agricultural sector, including information on producers and products 	
4	New issues that emerged during COVID-19	<ul style="list-style-type: none"> ▪ Lack of regional and inter-sectoral collaboration (importance reaffirmed by COVID-19) ▪ Lack of agricultural value chain digitization (importance recognized by COVID-19) 	
5	Countermeasures (draft)	Strengthen food hygiene management and storage capacity	<ul style="list-style-type: none"> ▪ Installation of post-harvest processing and distribution infrastructure, including packaging and cold chain facilities ▪ Strengthening of food safety and hygiene management technologies and systems through HACCP and other measures ▪ Strengthen food safety and hygiene management by enhancing border phytosanitary functions (regional level) ▪ Development of national and regional food stockpiling infrastructure (regional level)
		Reducing dependence on food imports	<ul style="list-style-type: none"> ▪ Realization of planned production through the formation of producer organizations and strengthening of organizational management capacity, and realization of stable production in terms of both quantity and quality. ▪ Branding of local products through the introduction of OVOP (One Village One Product) and processing etc. ▪ Improvement of trust among stakeholders in the agricultural value chain by establishing quality standards, etc. ▪ Strengthen local-level agriculture and food cycle initiatives such as local production for local consumption.
		Strengthen the agricultural value chain	
		Strengthen measures against climate change	<ul style="list-style-type: none"> ▪ Promotion of low-carbon and energy-saving cultivation technologies such as irrigation and proper fertilizer management ▪ Introduction of weather and natural disaster risk monitoring system ▪ Strengthening of crop residue and food loss recycling ▪ Environmental education on the agricultural environment, food loss, and health ▪ Introduction of the certification systems such as Eco-Food Certification. ▪ Development and introduction of new varieties against climate change
		Strengthening of agricultural support system	<ul style="list-style-type: none"> ▪ Strengthening of financing, assistance, and subsidy programs for producers and producer organizations ▪ Support for the agricultural sector start-up companies ▪ Strengthening of farmer and agriculture-related information systems ▪ Strengthening of the agricultural technology development and extension system
6	Direction and Recommendations for Development Cooperation (Draft)	Strengthening of food resilience and mitigation of migration through integrated approaches to key issues	Set up “Strengthening food hygiene and storage capacity”, “reducing dependence on food imports”, “strengthening the linkage of agricultural value chains”, and “strengthening climate change countermeasures” as key issues and, “strengthening agricultural support system” as a key cross-cutting issue to strengthen the regional food resilience and reduce the migration problem in rural areas by increasing the attractiveness of the agricultural sector, which is the primary source of income for the area, as a result of comprehensive efforts in the key issues.
		Regional collaboration	COVID-19 has spread across borders and around the world, affecting the socio-economy. The number of regional and global level challenges such as diseases, climate change, and migration to other countries is increasing. To respond to these challenges effectively and efficiently in terms of both technology and cost, it is essential to strengthen regional cooperation. The monitoring of weather, disasters, and resources, as well as developing low-carbon production

No.	Item	Agriculture and Rural Development	
			technologies, new varieties adapted to climate change, and providing extension services by using smart technologies can be considered to be examples of regional collaboration.
		Collaboration among sectors and actors	COVID-19 has had a negative impact across borders and also across different sectors such as commerce, especially tourism, health, and agriculture. At the same time, COVID-19 provided an opportunity to reaffirm the importance of inter-sectoral collaboration and to gain experience in such collaboration through food distribution done jointly by ministries related to agriculture and those related to health. Such inter-sectoral collaboration will be effective in strengthening the agricultural and rural development sectors in the future. For example, environmental monitoring through collaboration between the agricultural and environmental sectors, or education in schools on the food production system and nutrition through the collaboration of the agriculture and education sectors. Furthermore, taking into account the greenhouse gas emissions from waste food, for example, it is also important to incorporate consumers who cause losses at the consumption stage or excess supply, in other words, inter-actor collaboration
		Support of the entire agricultural value chain, including the private sector	The agriculture is a private sector consisting of many individual entrepreneurs. In this sector it takes a long time to introduce new technologies and products because of the long production cycle ranging from months to years, high affection by weather conditions, and many economically vulnerable producers who cannot engage in high-risk trial activities. Considering these two characteristics, it would be effective to provide them support by incorporating the agricultural product distributors and processors from the private sector who compose the agricultural value chain and are semi-permanently in the region. In addition, many of the actors that compose the chain were affected by instability in the distribution system caused by COVID-19. Therefore, it is essential to involve these actors in supporting the agricultural value chain, from production to consumption, as one productive unit, not only production or sales, etc. An example of the activities would be the reinforcement of the cold chain, standardization of product quality, management through the participation of producer associations, distributors, and processors, and reinforcement of the systematic production and shipment system by producer associations and middlemen (e.g., the establishment of a production system where producer associations carry out planned production in both quality and quantity, provide stable shipment to middlemen, and the middlemen make distribution with fixed transportation fees which allows both parties to reduce risks). In addition, the provision of financial support (loans and subsidies) by the government and donors is also very important yet at the same time high-risk actions that require a lot of coordination between many participants.
		Support the active use, development, and diffusion of smart technologies	The number of private companies using smart agricultural value chain technologies is increasing, and the technologies range from cheap and simple ones using smartphones to advanced ones such as production environment management devices equipped with analyzers and automatic machines. It is important to utilize and support such actions in the private sector to further advance agriculture and rural development. Specifically, this includes the accumulation of sector-related information on producers and markets (open data), and financial support for product development and dissemination by private companies, especially start-ups.
		The direction of Japan's development cooperation	In order to make a comprehensive effort in key issues ("strengthening food hygiene and storage capacity", "reducing dependence on food imports", "strengthening the linkage of agricultural value chains", and "strengthening climate change countermeasures" as key individual issues and "strengthening agricultural support") and thereby strengthen food resilience and address the migration issue, the countermeasures shown in point 5 should be developed. At the same time, "improved efficiency in the use of existing infrastructure," "PR support for the creation of a development model through intensive investment and financing of a wide range of existing efforts", "engaging the private sector and consumers," "regional and inter-sectoral collaboration," "positive utilization of JICA's existing assets.

Source: Study Team

(5) Private Sector

Table 3-10 Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Private Sector)

No.	Item	Private Sector										
1	Issues from before COVID-19	<ul style="list-style-type: none"> ▪ Large informal sector ▪ Stagnation in productivity improvement ▪ Lack of government funding ▪ High unemployment rate among women and young people 										
2	Grouping by Issue	<ul style="list-style-type: none"> ▪ Above issues are common in the region ▪ In addition, each country has its own issues 										
3	Vulnerabilities revealed in COVID-19	<table border="0"> <tr> <td style="vertical-align: top;">1. Large informal sector</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ▪ Difficulty in gathering information and providing public support to the informal sector in the event of a pandemic or other emergency </td> </tr> <tr> <td style="vertical-align: top;">2. Stagnation in productivity improvement</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ▪ The limits of economic expansion through the input of labor while productivity growth remains stagnant have become apparent. </td> </tr> <tr> <td style="vertical-align: top;">3. Lack of government funding</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ▪ Lack of support for small businesses and workers affected by the pandemic </td> </tr> <tr> <td style="vertical-align: top;">4. High unemployment rate among women and young people</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ▪ The pandemic further increased the unemployment rate among women and young people, reaffirming the challenges and revealing the vulnerability of working conditions. </td> </tr> </table>	1. Large informal sector	<ul style="list-style-type: none"> ▪ Difficulty in gathering information and providing public support to the informal sector in the event of a pandemic or other emergency 	2. Stagnation in productivity improvement	<ul style="list-style-type: none"> ▪ The limits of economic expansion through the input of labor while productivity growth remains stagnant have become apparent. 	3. Lack of government funding	<ul style="list-style-type: none"> ▪ Lack of support for small businesses and workers affected by the pandemic 	4. High unemployment rate among women and young people	<ul style="list-style-type: none"> ▪ The pandemic further increased the unemployment rate among women and young people, reaffirming the challenges and revealing the vulnerability of working conditions. 		
1. Large informal sector	<ul style="list-style-type: none"> ▪ Difficulty in gathering information and providing public support to the informal sector in the event of a pandemic or other emergency 											
2. Stagnation in productivity improvement	<ul style="list-style-type: none"> ▪ The limits of economic expansion through the input of labor while productivity growth remains stagnant have become apparent. 											
3. Lack of government funding	<ul style="list-style-type: none"> ▪ Lack of support for small businesses and workers affected by the pandemic 											
4. High unemployment rate among women and young people	<ul style="list-style-type: none"> ▪ The pandemic further increased the unemployment rate among women and young people, reaffirming the challenges and revealing the vulnerability of working conditions. 											
4	New issues that emerged during COVID-19	Same as above										
5	Countermeasures (draft)	<table border="0"> <tr> <td style="vertical-align: top;">1. Large informal sector</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ▪ Strengthen existing measures to promote industry and support SMEs </td> </tr> <tr> <td style="vertical-align: top;">2. Stagnation in productivity improvement</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ▪ Establish and strengthen productivity improvement support system ▪ Increase productivity by introducing and developing new technologies ▪ Creation of sophisticated industries through innovation </td> </tr> <tr> <td style="vertical-align: top;">3. Lack of government funding</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ▪ Secure funds for long-term and global contingencies </td> </tr> <tr> <td style="vertical-align: top;">4. High unemployment rate among women and young people</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ▪ Seed money provision and entrepreneurial capacity building ▪ Strengthening the resilience of schools and other facilities </td> </tr> <tr> <td style="vertical-align: top;">1. Large informal sector</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ▪ Strengthen existing measures to promote industry and support SMEs <ul style="list-style-type: none"> ➢ Technical Assistance: Development of policies for the promotion of SMEs and regional industrial development plans (Panama) ➢ Regional expert: Technology transfer through collaboration with Japanese companies (Panama) </td> </tr> </table>	1. Large informal sector	<ul style="list-style-type: none"> ▪ Strengthen existing measures to promote industry and support SMEs 	2. Stagnation in productivity improvement	<ul style="list-style-type: none"> ▪ Establish and strengthen productivity improvement support system ▪ Increase productivity by introducing and developing new technologies ▪ Creation of sophisticated industries through innovation 	3. Lack of government funding	<ul style="list-style-type: none"> ▪ Secure funds for long-term and global contingencies 	4. High unemployment rate among women and young people	<ul style="list-style-type: none"> ▪ Seed money provision and entrepreneurial capacity building ▪ Strengthening the resilience of schools and other facilities 	1. Large informal sector	<ul style="list-style-type: none"> ▪ Strengthen existing measures to promote industry and support SMEs <ul style="list-style-type: none"> ➢ Technical Assistance: Development of policies for the promotion of SMEs and regional industrial development plans (Panama) ➢ Regional expert: Technology transfer through collaboration with Japanese companies (Panama)
1. Large informal sector	<ul style="list-style-type: none"> ▪ Strengthen existing measures to promote industry and support SMEs 											
2. Stagnation in productivity improvement	<ul style="list-style-type: none"> ▪ Establish and strengthen productivity improvement support system ▪ Increase productivity by introducing and developing new technologies ▪ Creation of sophisticated industries through innovation 											
3. Lack of government funding	<ul style="list-style-type: none"> ▪ Secure funds for long-term and global contingencies 											
4. High unemployment rate among women and young people	<ul style="list-style-type: none"> ▪ Seed money provision and entrepreneurial capacity building ▪ Strengthening the resilience of schools and other facilities 											
1. Large informal sector	<ul style="list-style-type: none"> ▪ Strengthen existing measures to promote industry and support SMEs <ul style="list-style-type: none"> ➢ Technical Assistance: Development of policies for the promotion of SMEs and regional industrial development plans (Panama) ➢ Regional expert: Technology transfer through collaboration with Japanese companies (Panama) 											
6	Direction and recommendations for development cooperation (draft)	<table border="0"> <tr> <td style="vertical-align: top;">2. Stagnation in productivity improvement</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ▪ Capacity building to support productivity improvement through regional cooperation <ul style="list-style-type: none"> ➢ Technical Assistance: Capacity building for a supporting organization for productivity improvement through South-South cooperation or triangular cooperation (Panama) ▪ Support for developing a startup and innovation ecosystem <ul style="list-style-type: none"> ➢ Technical Assistance: Training and technical cooperation to promote innovation at universities (Panama) ➢ Technical Assistance: Assistance for promotion of social innovation (Mexico) </td> </tr> <tr> <td style="vertical-align: top;">3. Lack of government funding</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ▪ Providing stand-by loans in case of a pandemic </td> </tr> <tr> <td style="vertical-align: top;">4. High unemployment rate among women and young people</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ▪ Provision of seed money and capacity building for entrepreneurship <ul style="list-style-type: none"> ➢ Provision of seed money (bilateral government loan) and support for capacity building of loan recipient companies (technical assistance and volunteers) (Costa Rica) </td> </tr> </table>	2. Stagnation in productivity improvement	<ul style="list-style-type: none"> ▪ Capacity building to support productivity improvement through regional cooperation <ul style="list-style-type: none"> ➢ Technical Assistance: Capacity building for a supporting organization for productivity improvement through South-South cooperation or triangular cooperation (Panama) ▪ Support for developing a startup and innovation ecosystem <ul style="list-style-type: none"> ➢ Technical Assistance: Training and technical cooperation to promote innovation at universities (Panama) ➢ Technical Assistance: Assistance for promotion of social innovation (Mexico) 	3. Lack of government funding	<ul style="list-style-type: none"> ▪ Providing stand-by loans in case of a pandemic 	4. High unemployment rate among women and young people	<ul style="list-style-type: none"> ▪ Provision of seed money and capacity building for entrepreneurship <ul style="list-style-type: none"> ➢ Provision of seed money (bilateral government loan) and support for capacity building of loan recipient companies (technical assistance and volunteers) (Costa Rica) 				
2. Stagnation in productivity improvement	<ul style="list-style-type: none"> ▪ Capacity building to support productivity improvement through regional cooperation <ul style="list-style-type: none"> ➢ Technical Assistance: Capacity building for a supporting organization for productivity improvement through South-South cooperation or triangular cooperation (Panama) ▪ Support for developing a startup and innovation ecosystem <ul style="list-style-type: none"> ➢ Technical Assistance: Training and technical cooperation to promote innovation at universities (Panama) ➢ Technical Assistance: Assistance for promotion of social innovation (Mexico) 											
3. Lack of government funding	<ul style="list-style-type: none"> ▪ Providing stand-by loans in case of a pandemic 											
4. High unemployment rate among women and young people	<ul style="list-style-type: none"> ▪ Provision of seed money and capacity building for entrepreneurship <ul style="list-style-type: none"> ➢ Provision of seed money (bilateral government loan) and support for capacity building of loan recipient companies (technical assistance and volunteers) (Costa Rica) 											

Source: Study Team

(6) Environment and Disaster Management

Table 3-11 Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Environment and Disaster Management)

No.	Item	Environment and Disaster Management	
1	Issues from before COVID-19	Climate Change	<ul style="list-style-type: none"> Global Warming, Greenhouse Gas Emissions, Biodiversity, Deforestation, Air and Water Pollution
		Urbanization	<ul style="list-style-type: none"> Waste management, marine plastic waste, public health improvement, land use
		Increasing frequency and severity of natural disasters	<ul style="list-style-type: none"> Extreme weather, disaster risk assessment, land use regulation, seismic retrofitting, damage mitigation, recovery and reconstruction
		Economic disparity. Other Social Context	<ul style="list-style-type: none"> Disaster preparedness literacy, evacuation behavior, disaster education, consultation and coordination with institutions
2	Grouping by Issue	Climate Change: Types of sectors affected, Waste Management: Implementers (national and local governments), Disaster Management: Frequency and severity of natural disasters	
		Global warming countermeasures	<ul style="list-style-type: none"> Dependence on fossil fuels, cost of installing renewable energy Extensive economic impact on multiple fields (agriculture, fisheries, tourism, disaster prevention) Global warming and extreme weather increase poverty problem
		Biodiversity conservation	<ul style="list-style-type: none"> Water and air quality and ocean pollution are increasing. Chronic budget and staff shortages
		Waste management	<ul style="list-style-type: none"> Unable to keep up with growing waste disposal capacity Inadequate management of hazardous and medical wastes Low awareness of the 3Rs in society as a whole Insufficient laws, insufficient budget, insufficient technology, insufficient information management Maintain profitability of water supply and wastewater projects
		Understanding disaster risk	<ul style="list-style-type: none"> Inadequate collection, analysis, management, and utilization of relevant data Inadequate disaster risk assessment
3	Vulnerabilities Revealed in COVID-19	Strengthen disaster risk management governance for disaster risk reduction	<ul style="list-style-type: none"> Lack of understanding of disaster management in other sectors Disaster prevention has not been mainstreamed. Frequent personnel changes due to changes in administration make it difficult to maintain continuity.
		Prior investment in disaster management for resilience	<ul style="list-style-type: none"> Lack of prior investment by the public and private sectors through hardware and software measures Uncontrolled land use, no building standards in place Disaster prevention plans and standards are outdated or inadequate.
		Strengthening preparedness for effective disaster response and "better recovery"	<ul style="list-style-type: none"> Need to establish and strengthen mechanisms for international and regional cooperation Emergency in case of disaster Need to foster and strengthen awareness of crisis management, self-help and mutual-help
4	New issues that emerged during COVID-19	<ul style="list-style-type: none"> It is thought that the previous issue was exacerbated by COVID-19. With the promotion of digitization, issues such as the spread of inaccurate information and the widening of information gaps have become apparent. 	
5	Countermeasures (draft)	Global warming countermeasures	<ul style="list-style-type: none"> Technical and financial assistance to reduce greenhouse gas emissions Community-focused implementation of climate change "mitigation" and "adaptation" measures (cross-sectoral)
		Biodiversity conservation	<ul style="list-style-type: none"> Improving science and technology, research and analysis capacity for sustainable development Technical and financial assistance for projects

No.	Item	Environment and Disaster Management		
		Waste management	<ul style="list-style-type: none"> ▪ Improving management capacity by strengthening administration to realize a recycling-oriented society ▪ Regional cooperation, know-how sharing through South-South cooperation 	
		Understanding disaster risk	<ul style="list-style-type: none"> ▪ ICT utilization ▪ Centralized management and use of information through the establishment of a disaster prevention information platform 	
		Strengthen disaster risk management governance for disaster risk reduction	<ul style="list-style-type: none"> ▪ Strengthen governance through the formation of cross-sectoral/multidisciplinary projects ▪ Capacity building of government agencies 	
		Prior investment in disaster management for resilience	<ul style="list-style-type: none"> ▪ Support for the formulation of disaster management plans to strengthen resilience ▪ Technical and financial support 	
		Strengthen preparedness and "Build Back Better" for effective disaster response	<ul style="list-style-type: none"> ▪ Community disaster management to improve local disaster preparedness ▪ Promotion of regional cooperation ▪ Fostering awareness of crisis management among individuals, companies, and communities 	
6	Direction of development cooperation and Policy recommendations (draft)	Environment	Implementation of concrete measures to address climate change	<ul style="list-style-type: none"> ▪ Technical and financial cooperation necessary to achieve carbon neutrality ▪ Support for the introduction of renewable energy (geothermal, etc.) ▪ Consolidation and management of basic data to achieve zero emissions ▪ Implementation of cross-sectoral "mitigation" and "adaptation" measures. Disaster prevention and agriculture sectors particularly affected by global warming and climate change, and education and health sectors indirectly affected (Central America), tourism, fisheries and agriculture sectors (Caribbean)
			Sustainable Development through Ecosystem Conservation	<ul style="list-style-type: none"> ▪ Sustainable development and regional development through ecosystem conservation ▪ Technical assistance for community development (Central America) ▪ Research and measures for the conservation of terrestrial and marine environments, and strengthening of measures against marine plastic litter (Caribbean) ▪ Utilization of Biodiversity in Tourism ▪ Improve legal system for management of nature reserves and strengthen management capacity ▪ Surveys and resource management of ecosystems, vegetation distribution, wildfires, etc. using digital technology such as satellite imagery data ▪ Improve legal system for management of nature reserves and strengthen management capacity
			Realization of a recycling-oriented society	<ul style="list-style-type: none"> ▪ Improvement of the legal system for waste management (comprehensive waste management, hazardous waste management, medical waste management) ▪ Creating a framework for realizing a recycling-based economy ▪ Realization of 3Rs and establishment of sanitary waste flow through capacity building of local government ▪ Capital investment, technological innovation (introduction of recycling facilities, autoclaves, waste power generation, etc.) ▪ Promotion of private investment
		Disaster Management	ICT utilization	<ul style="list-style-type: none"> ▪ Hazard assessment through the use of ICT (introduction of satellite imagery technology) ▪ Construction of a non-contact monitoring, observation, information provision, and early warning system
			Mainstreaming disaster prevention	<ul style="list-style-type: none"> ▪ Promote information sharing and collaboration among central and local governments and ministries by using the Disaster management Information Platform.

No.	Item	Environment and Disaster Management	
			<ul style="list-style-type: none"> Form cross-sectoral/multidisciplinary projects (agriculture, education, health (Central America), tourism (Caribbean), etc.)
		Strengthening Resilience	<ul style="list-style-type: none"> Formulate disaster prevention plans and update urban resilience (road infrastructure development, earthquake resistance, landslide prevention, river improvement, etc.) Infrastructure development that contributes to disaster mitigation (road maintenance, landslide prevention, flood prevention such as river improvement) Conducting disaster prevention education
		Improvement of local disaster prevention capacity	<ul style="list-style-type: none"> Raising awareness among individuals, companies, and communities through the dissemination of crisis management plans and BCPs Foster self-help and mutual-help through community disaster prevention support and strengthen local disaster prevention capabilities by promoting regional cooperation in recovery and reconstruction

Source: Study Team

(7) Governance and Citizen Security

Table 3-12 Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Governance and Citizen Security)

No.	Item	Governance and Citizen Security	
1	Preexisting issues (before COVID-19)	Democracy level	<ul style="list-style-type: none"> Opaque election process/elections with no guarantee of competition Freedom of speech and media is not guarantee
		Administrative functions	<ul style="list-style-type: none"> Poor quality of government services Insufficient capacity of civil servants Opaque policy-making process Insufficient information disclosure Low level of decentralization in Central America and the Caribbean
		E-government development	<ul style="list-style-type: none"> Developing e-government agenda, but few countries are implementing it Delay in infrastructure development Lack of human resources Although electronic national IDs have been issued, a high percentage of citizens have not been given national IDs themselves
		Rule of Law	<ul style="list-style-type: none"> 'Non-punishment' for crime Insufficient capacity of legal professionals Insufficient number of legal professionals
		Corruption	<ul style="list-style-type: none"> Corruption occurs in a wide range of settings, from high-ranking government officials to civil servants in administrative offices and police officers, making it difficult to control. Although each country has established a corruption reporting office, the number of cases that are reported, prosecuted, and punished is small
2	Grouping per issue	Citizen Security	<p><u>Central America</u></p> <ul style="list-style-type: none"> The homicide rate is declining in all countries except Mexico, but the homicide rate remains very high compared to the global average Poor citizen security due to murder, organized crime, gang warfare, etc. Gender based violence (GBV), such as domestic violence, rape, and other sexual crimes, is a long-standing problem <p><u>Caribbean</u></p> <ul style="list-style-type: none"> While Jamaica has a consistently high murder rate, Cuba has the lowest murder rate in the Caribbean and the least amount of other common crimes Poor citizen security due to drug trafficking, firearms trafficking, organized crime, and gangs, as most of the Caribbean countries are a transit area for drug trafficking (except Cuba and Suriname) As in Central America, domestic violence and GBV are longstanding issues
		Quality of democracy (holding competitive elections, guaranteeing freedom of speech and press), effectiveness of government, e-government development, curbing corruption, developing	

No.	Item	Governance and Citizen Security	
		regulations and institutions that promote the private sector, establishing the rule of law, citizen security (violent crime, general crime, GBV, drug trafficking)	
3	Vulnerabilities revealed with COVID-19	Democracy level	<ul style="list-style-type: none"> ▪ Measures taken by the government to prevent the spread of COVID-19, such as the declaration of a state of emergency and border closures and border control measures, which affect human, civil and political rights ▪ Postponement of elections
		Administrative functions	<ul style="list-style-type: none"> ▪ The provision of various government services has been suspended or delayed ▪ E-government development has not been sufficiently carried out
		Rule of law	<ul style="list-style-type: none"> ▪ Suspension or delay of judicial services
		Corruption	<ul style="list-style-type: none"> ▪ Fraud in public procurement of COVID-19 related goods occurred (skipping the existing checking process due to emergency, etc.)
		Citizen security	<ul style="list-style-type: none"> ▪ Temporary improvement during periods of lockdown and other restrictions on movement, but tending to return to normal thereafter ▪ Deterioration in GBV
4	New issues revealed with COVID-19	COVID-19 has made the original vulnerabilities and challenges (inadequate e-government development, poor administrative and judicial services, GBV) even more urgent.	
5	Assistance policy (proposal)	Democracy level	<ul style="list-style-type: none"> ▪ Supporting the development of free journalism ▪ Strengthening the capacity of election management institutions
		Administrative functions	<p><u>Government effectiveness</u></p> <ul style="list-style-type: none"> ▪ Supporting the development of free journalism ▪ Strengthening the capacity of election management institutions <p><u>E-government development</u></p> <ul style="list-style-type: none"> ▪ Widespread use of digitalized national IDs ▪ Digitalization of administrative procedures ▪ Capacity building of civil servants associated with digitalization <p><u>Empowerment of local government</u></p> <ul style="list-style-type: none"> ▪ Capacity building of local government ▪ Capacity building of planification skills ▪ Wide-area cooperation in Central America and the Caribbean with Nicaragua, Dominican Republic, and Honduras as base countries (as a specific example, the FOCAL process in Honduras could be disseminated and expanded in Central America) <p><u>Control of corruption</u></p> <ul style="list-style-type: none"> ▪ Digitalization of administrative procedures ▪ Raising awareness of corruption among public officials ▪ Enhance accountability through disclosure of information on budget execution and government procurement processes to the public
		Rule of Law	<p><u>Enhancing the rule of law</u></p> <ul style="list-style-type: none"> • Improvement of dispute resolution systems, including court procedures and mediation systems; development of laws and procedures that form the basis of economic activities; and training of legal professionals • Digitalization of judicial procedures
		Citizen security	<p><u>Improvement of citizen security</u></p> <ul style="list-style-type: none"> ▪ Measures focusing on areas with poor citizen security ▪ Generation-focused crime prevention education and planning ▪ Study of crime prevention measures using ICT ▪ Accumulate and analyze information on crime, and formulate crime prevention measures and plans based on the information ▪ Establishment of police systems, including community police, and support for capacity building of police organizations and personnel ▪ Strengthening the capacity of community police based on the dissemination of "community police" in Jamaica and expand towards English-speaking countries in the Caribbean, through triangular cooperation with Sao Paulo police and, in the future, with Guatemala and Honduras, where the project is still ongoing. <p><u>Measures against GBV</u></p> <ul style="list-style-type: none"> ▪ Strengthening the justice system ▪ Formulate and implement efficient policies and plans based on data collection and analysis of criminal damage ▪ Raise awareness of GBV prevention

No.	Item	Governance and Citizen Security	
			<ul style="list-style-type: none"> ▪ Increase the number of crimes reported, investigated and prosecuted against "non-punishment" of GBV ▪ Psycho-economic and social support for victims ▪ Establish and operate platforms to provide information to those in need of assistance (good practices: CuentaNos, Ciudad Mujer Honduras) ▪ Collaboration with maternal and child health and education sectors
6	Development cooperation strategy and policy recommendation (proposal)	<p>E-government development</p> <p>Enhancing the rule of law</p>	<p><u>Grand design for digitization of the entire country</u></p> <ul style="list-style-type: none"> ▪ Design a platform where all public services can be integrated around an electronic national ID. ▪ Reliable and secure storage of data ▪ A system to enable mutual use by local governments and different competent ministries and agencies through centralized data management ▪ A system that allows online administrative procedures and public services to be provided using national IDs ▪ Effective use of data to promote public participation and public-private collaboration, improve efficiency of administrative services, and enhance transparency and trust <p><u>Cooperation implementation based on the above</u></p> <ul style="list-style-type: none"> ▪ For countries that do not have a national ID in the first place, or are using a non-electronic national ID, develop an electronic national ID and provide it to all citizens. ▪ For countries that already have electronic national IDs, develop a system for granting electronic national IDs to all citizens, improve the current system, and then increase the number of administrative services that can be provided online using national IDs <p><u>Eradicate the deep-rooted culture of impunity</u></p> <ul style="list-style-type: none"> ▪ Strengthening and improving the judicial system, capacity building of the legal profession and increasing the number of legal professionals per capita ▪ Reform the current system to increase the number of crimes reported, investigated, and prosecuted ▪ Building a system to protect the safety of reporters and witnesses (protection from reprisals) ▪ Support victims at the grassroots level

Source: Study Team

(8) Digital and Innovation

Table 3-13 Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Digital and Innovation)

No.	Item	Digital Innovation	
1	Issues from before COVID-19		<ul style="list-style-type: none"> ▪ Development of legal systems in countries that have not yet formulated plans for digitization ▪ Little accumulation of digital technology at the initiative of the country. ▪ Building a value chain for digital services ▪ Digital divide between urban and rural areas, etc. ▪ Improving off-literacy on the user side
2	Grouping by Issue		<ul style="list-style-type: none"> ▪ Grouping according to the degree of progress in digitization (classified as advanced, intermediate, or developing based on online service indicators and the status of telecommunications infrastructure development)
3	Vulnerabilities Revealed in COVID-19		<ul style="list-style-type: none"> ▪ Digital divide, literacy challenges emerge in education, healthcare and nutrition sectors ▪ Vulnerability of communication infrastructure
4	New issues that emerged during COVID-19		<ul style="list-style-type: none"> ▪ Develop a digital plan for advancing digital government ▪ Establishing an ecosystem for digitization and DX in the public and private sectors ▪ Developing IT human resources, bridging the digital divide
5	Countermeasures (draft)	Society and Economy	<ul style="list-style-type: none"> ▪ Development of services such as payment systems and electronic remittance using digital technology ▪ Technology transfer of various systems for service user protection, etc.

No.	Item	Digital Innovation	
		Health Care and Nutrition	<ul style="list-style-type: none"> ▪ Networking of medical institutions and introduction of telemedicine services ▪ Tools to connect with central specialists, networks, and literacy education for health care providers ▪ Planning and institutional design for digitization of the health care sector ▪ Build an ecosystem for security human resource development and startup support.
		Education	<ul style="list-style-type: none"> ▪ Network infrastructure development for educational institutions ▪ Creation of digital teaching materials, support for acquisition of technologies for dissemination, dissemination measures through public-private partnerships, etc.
		Agriculture and Rural Areas	<ul style="list-style-type: none"> ▪ Planning of short-, medium- and long-term measures based on Japanese examples, and trials of demonstration tests of various technologies for digitization ▪ Promotion of infrastructure development such as IoT for large irrigation facilities and weather monitoring systems through open innovation methods, and gradual introduction of tools for field management and sales.
		Private	<ul style="list-style-type: none"> ▪ Support for the introduction of management support systems tailored to the legal systems of each country and the development of digital human resources to support management ▪ Introduction to the structure of university-based innovation centers and development of specialized institutions ▪ Human resource development for the coordinator role and support for establishing the organization
		Environment and disaster prevention	<ul style="list-style-type: none"> ▪ Building a disaster prevention information platform to share various risk information in an integrated manner, and strengthening disaster prevention and mitigation governance ▪ A monitoring observation and information provision system that contributes to the early evacuation of residents will be established as soon as possible. ▪ Information sharing and introduction of technologies that contribute to the proper management of waste and rare earths, including recycling and traceability
		Governance public order	<ul style="list-style-type: none"> ▪ Human resource development for the implementation and operation of a platform (public cloud) to support the digitization of public administration ▪ Grand design for improving data security, data utilization services, and integrated handling of national IDs ▪ Application of various advanced technologies such as image analysis and AI analysis to secure replacement
		Infrastructure Energy	<ul style="list-style-type: none"> ▪ Traffic volume monitoring using AI image recognition methods from images, introduction of a dynamic traffic signal control system based on traffic volume, and countermeasures against traffic congestion and accidents through inter-vehicle communication that manages vehicles and roadsides as a whole. ▪ Maintenance of public transportation vehicles (diagnosis of deterioration, failure, and monitoring) to reduce maintenance costs ▪ Introduction of systems and human resource development to support energy storage devices that match demand to the amount of electricity, energy efficiency, mechanisms to capture fluctuations, rate fluctuations, etc.
		Sightseeing	<ul style="list-style-type: none"> ▪ Support for the formulation of crisis management responses (BCP formulation, implementation of drills, etc.) ▪ Development of digital infrastructure such as digital accounts and human resource development
6	Direction and Recommendations for Development Cooperation (Draft)	Government-private partnership	<ul style="list-style-type: none"> ▪ Introduction of a public-private partnership system for efficient management of government ▪ Implement urban operating systems and other systems that enable data acquisition and analysis (smart cities).
		Policy formulation	<ul style="list-style-type: none"> ▪ It is necessary to establish an administrative body that can formulate national strategies for digital government, and to build a digital grand design that suits the situation of each country. ▪ The grand design should be a compilation of individual measures according to the situation of each country, but it should also include priorities and monitoring mechanisms to enhance effectiveness.

No.	Item	Digital Innovation
		<ul style="list-style-type: none"> ▪ To support these efforts, we will strengthen the overall security and IT human resource development in government agencies, and for the time being, we will work with foreign companies with advanced technologies to develop private sector operators.
	Introduction of training and education programs for IT personnel	<ul style="list-style-type: none"> ▪ Digital technology will bring about major changes in the way nations and organizations utilize human resources, as well as in the way individuals learn. In light of these changes, it is necessary to formulate digital human resource policies that are appropriate for the new era. ▪ Digital human resource policies include the development of general ICT human resource training programs (servicer training, service development and operation human resources (private sector)), as well as an evaluation system to assess the competency of ICT human resources and standardize their skills, and the establishment of ICT human resource development institutions (from strategy to implementation) in the public and private sectors.
	Infrastructure improvement	<ul style="list-style-type: none"> ▪ As an issue for the entire Central American and Caribbean region, the development of a broadband infrastructure that enables high-capacity communications nationwide is required. In the Caribbean, it is also necessary to ensure the redundancy of submarine cables in consideration of disasters. A national broadband and mobile network development plan should be formulated in order to efficiently carry out such development. ▪ In particular, in the COVID-19 disaster, it is desirable that the public and private sectors work together to develop measures to encourage the development of lines to government agencies, community centers, schools, etc., since addressing needs in the education and health care sectors is an urgent issue. ▪ In cooperation with foreign companies, we will promote the establishment of data centers in the region, and in the future, we aim to operate data centers in our own countries that meet the utilization policies and security policies of each country.
	X-TEC	<ul style="list-style-type: none"> ▪ To foster a future digital value chain, we will promote the construction of digital services and the use of information services led by the government, and accumulate good examples and challenges. ▪ For example, various measures that lead to the creation of new services, such as start-up support business contests, matching events, and online platforms for the development of advanced information human resources, will be effective. ▪ A platform for intra-regional digital service sharing will be established to share and mutually utilize such examples within the region.

Source: Study Team

(9) Infrastructure and Energy

Table 3-14 Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Infrastructure and Energy)

No.	Items	Infrastructure and Energy
1	Issues from Before COVID-19	<ul style="list-style-type: none"> ▪ In general, heavy reliance on transportation modes (automobiles) with high dependence on fossil fuels ▪ In general, congestion in urban areas is significant. ▪ In general, the routes of public transportation (mainly buses) are not optimized and difficult to understand. ▪ In general, there is a tendency for people to be less willing to use public transportation after COVID-19 because of the risk of infection. ▪ In the Central American region, many countries use a lot of electricity derived from renewable energy sources, but many countries depend on imported fossil fuels for energy other than the electricity subsector, and the overall energy self-sufficiency rate is not high. ▪ In the Caribbean region, many countries have low energy self-sufficiency rates due to high dependence on primary energy imports (the same applies to electricity). ▪ Electricity cannot be exchanged between countries without international interconnection lines, making it impossible to make efficient use of surplus electricity, especially in the case of large-scale introduction of variable renewable energy (VRE). ▪ In the Caribbean, in particular, due to the cost of available resources and equipment, as well as the limited land area available, the large-scale introduction of renewable energy is not as advanced as the average level in Central America and the world.

No.	Items	Infrastructure and Energy		
		<ul style="list-style-type: none"> Vulnerability to natural disasters is a challenge. It is important to note that the impact of this vulnerability is not limited to the infrastructure and energy sectors, but also affects the speed of recovery of society as a whole from natural disasters. 		
2	Grouping by Issue	<ul style="list-style-type: none"> Infrastructure (Transportation Subsector) issues by transportation mode <ul style="list-style-type: none"> Aviation Sea transportation Track-based public transport Road-based public transport Motor transport in general Energy self-sufficiency in energy and adoption of renewable energy <ul style="list-style-type: none"> Caribbean region (excluding Trinidad and Tobago, Guyana, Suriname) Central America region (excluding Mexico) Trinidad and Tobago Mexico Guyana, Suriname 		
3	Vulnerabilities Revealed in COVID-19	<ul style="list-style-type: none"> Impacts on public common institutions (capacity restrictions, avoidance of use by being considered as infected routes, and business impacts especially on private operators) Impact on the supply chain of imported fossil fuels, which was not confirmed in Central America and the Caribbean but has become apparent globally Impacts on the supply chain of materials and equipment necessary for project implementation 		
4	New Issues Revealed in COVID-19	<ul style="list-style-type: none"> Sustainability of public transportation Maintaining the supply chain 		
5	Proposed Measures to Overcome Direction of Development Cooperation	Infrastructure	<ul style="list-style-type: none"> Making public transportation more resilient in terms of management Diversification of the supply chain 	
		Energy	<ul style="list-style-type: none"> Diversification of energy sources (use of local resources, especially renewable energy) Promotion of energy conservation 	
6	Policy Recommendations (draft) Issues from Before COVID-19 Grouping by Issue	Infrastructure	<ul style="list-style-type: none"> Dissemination of EVs, human resource development for maintenance technology, and dissemination of EV forward power facilities (standardization of which Japan is leading) Strengthen, improve, and optimize the overall urban transportation infrastructure Promotion of shift to and use of public transportation, cooperation to help alleviate concerns about the risk of COVID-19 infection 	
		Energy	<ul style="list-style-type: none"> Cooperation in all measures necessary to achieve carbon neutrality, including introduction of renewable energy, utilization of energy derived from renewable energy (utilization of stored energy through hydrogen, etc.), and promotion of energy conservation In oil- and gas-producing countries as well, carbon neutrality is a global demand, and the Study Team will cooperate in carbon neutrality initiatives and energy conservation promotion. Possibility of cooperation in the areas of international interconnection lines, energy storage (e.g., hydrogen), and carbon capture and storage (CCS) technology, which are necessary to expand the introduction of renewable energy in each country. Possibility of mid- to long-term cooperation with Japan based on common issues, such as the disadvantageous conditions for the large-scale introduction of renewable energy in the Caribbean region, specifically the restrictions on land area and available area, and the relatively high cost of introduction. 	
		General	<ul style="list-style-type: none"> Cooperation in technology and know-how based on Japan's countermeasures and responses to earthquakes and typhoons, in order to overcome vulnerability to natural disasters and ensure resilience. 	
7	Vulnerabilities Revealed in COVID-19	Infrastructure	Road and bridge infrastructure	<ul style="list-style-type: none"> Road and bridge infrastructure is the key to economic recovery and growth. It is also important in ensuring the resilience of society as a whole in terms of climate change. Therefore, there is a strong need for continued cooperation.
			Japan's experience and high quality infrastructure	<ul style="list-style-type: none"> The accumulation of experience gained from the challenges that Japan has solved or is facing ahead of the rest of the world is Japan's strength, and it is necessary to formulate projects from this perspective. (High quality

No.	Items	Infrastructure and Energy		
				infrastructure, disaster prevention, toughening, and resilience assurance)
			Carbon Neutral	<ul style="list-style-type: none"> This is a particularly urgent issue, and the perspective of decarbonization and carbon neutrality is necessary in all projects, including urban development, roads, transportation, and electrification of transportation.
		Energy	Central American Region	<ul style="list-style-type: none"> In addition to technical cooperation, financial cooperation will become even more important. (Technical cooperation mainly focusing on human resource development, and financial cooperation to accelerate the expansion of technologies that are already in widespread use.)
			Caribbean Region	<ul style="list-style-type: none"> There are opportunities for cooperation based on the geographical constraints and vulnerabilities of the country. (Continue to promote energy conservation, increase the introduction of renewable energy, and provide general technical and financial cooperation in the area of energy integration (hydrogen supply chain, etc.))

Source: Study Team

(10) Tourism

Table 3-15 Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Tourism)

No.	Item	Tourism	
1	Issues since before COVID-19	<ul style="list-style-type: none"> Difficulties in addressing financial services for MSMEs Low penetration rate of debit cards and credit cards Insufficiency of Tourism Law High cost of intra-regional travel Low safety of overland travel within the region Delays in the development of legal systems for payments outside the banking system The market size that makes it difficult for Fin Tech companies to enter Disparities in connectivity between urban and rural areas High level of informality in the tourism sector The concentration of marketing resources on specific markets Dependence on cruise tourism Dependence on "Sun, Sand & Sea" tourism by foreign-affiliated all-inclusive resorts Mono-product image of "Sun, Sand & Sea" Lack of coordination among countries in tourism policy Inadequate risk management for damage to the tourism industry caused by natural disasters, such as hurricanes (Inadequate crisis management specific to the tourism industry, crisis management only on a business-by-business basis, and inadequate continuous updating of BCPs) Damage to tourism caused by sargassum 	
2	Grouping by issue	<ul style="list-style-type: none"> Geographical conditions (borders shared over land or islands) Degree of need for collaboration Degree of dependence on cruises and foreign inclusive resorts 	
3	Vulnerabilities revealed by COVID-19	<ul style="list-style-type: none"> Cash strapped micro-, small-, and medium-sized enterprises (MSMEs) Discrepancies among countries in the region in terms of entry restrictions and quarantine measures Delayed adoption of digital payments and online booking Exclusion of MSMEs from the tourism value chain Worsening of the poverty level of those not covered by the Social Security System Inadequate statistics to serve the development of strategies to meet emerging needs 	
4	New issues that emerged by COVID-19	<ul style="list-style-type: none"> Pressure on the business of legal operators due to the increase of illegal ones Need to address new needs (intra-regional tourism, diaspora markets, experiential tourism, responsible tourism, long-stay remote workers, etc.) Need to address the health-related tourism crisis 	
5	Possible measures to overcome vulnerabilities	MSMEs promotion	<ul style="list-style-type: none"> Improvement of access to financial services, including the development of financial products tailored to the needs of MSMEs in the tourism sector Strengthening a fair market competition environment

No.	Item	Tourism	
			<ul style="list-style-type: none"> Capacity development to respond to new needs and markets of With/Post COVID-19
		Promotion of digitalization	<ul style="list-style-type: none"> Establishing a legal system for digital payments Providing incentives to Fin Tech companies Capacity development of MSMEs in digital payments and digital marketing Subsidies to promote digitization and tax incentives to encourage investment in digitization Integration of digitalization promotion into tourism promotion policies
		Tourism crisis management	<ul style="list-style-type: none"> Dissemination of the concept of tourism crisis management and capacity building before and after the crisis Removal and effective utilization of sargassum
		Promotion of regional collaboration (Central America)	<ul style="list-style-type: none"> Creation of unified rules for frontline measures in the event of an infectious disease outbreak Appropriate fares through liberalization of air transportation Improvement of the safety of cross-border land transportation Development of statistics that contribute to region-wide marketing
		Minimization of tourism leakage (the Caribbean)	<ul style="list-style-type: none"> Development of legal systems and infrastructure to support new markets Development of services for new markets Promotion of community-based tourism (CBT) Promotion of local producers' participation in the tourism value chain by adding value to local products
6	Direction of development cooperation and draft recommendation	Cross-sectoral initiatives	<ul style="list-style-type: none"> Cross-cutting initiatives with digital transformation, disaster prevention, and fisheries sector Pursue synergies with promotion of MSMEs, strengthening of local government capacity, and environmental protection
		Promotion of MSMEs	<ul style="list-style-type: none"> Short-term relief measures (e.g., benefits, loans) Long term support (e.g., strengthening resilience) Business environment improvement
		Tourism crisis management	<ul style="list-style-type: none"> Destination-wide tourism crisis management through public-private partnership
		Problem solving in the tourism sector using OVOP	<ul style="list-style-type: none"> Possibility of contributing to the reduction of tourism leakage by promoting local production for local consumption and breaking away from the monolithic image of "Sun, Sand & Sea". However, it is essential to build consensus among stakeholders on what OVOP is for and what they want to achieve through OVOP
		Long-term and comprehensive perspective for digital transformation	<ul style="list-style-type: none"> What emerged from the field interviews and in the context of the "impact of COVID-19" is mainly short-term and business unit-based initiatives. Initiatives such as smart destination development require a long-term and comprehensive perspective.

Source: Study Team

(11) PPP

Table 3-16 Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (PPP)

No.	Item	Public-Private-Partnership (PPP)
1	Issues since before COVID-19	<ul style="list-style-type: none"> Lack of the presence of the Japanese private sector in the region (except for Mexico) Lack of the utilization of the Public-Private Partnership development cooperation scheme
2	Grouping by issue	<ul style="list-style-type: none"> Private sector support, business information disclosure, business environment improvement, PPP project formulation
3	Vulnerabilities Revealed by COVID-19	The implementation of Japanese public-private partnership projects in the study area has been poor since before COVID-19, so it is not worthy of vulnerability analysis.

No.	Item	Public-Private-Partnership (PPP)	
4	New issues that emerged by COVID-19	-	
5	Possible measures to overcome vulnerabilities	(1) Information disclosure to Japanese companies	<ul style="list-style-type: none"> ▪ Build a framework for information collection and sharing using JICA offices ▪ PR of the business environment in the region ▪ Create matching opportunities for companies in Japan and target countries ▪ PR the use of public-private partnership program
		(2) Improvement of the business environment	<ul style="list-style-type: none"> ▪ Improvement of investment environment and legal system for industrial and investment promotion ▪ Technical cooperation on capacity building for industrial and investment promotion
		(3) Expansion of the value chain of the manufacturing industry	<ul style="list-style-type: none"> ▪ Technical cooperation for human resource development in industrial sector ▪ Development of gateway infrastructure for supply chain expansion ▪ Support for industrialization ▪ Technical cooperation for improving public safety
		(4) Encouraging large companies to participate in infrastructure development projects	<ul style="list-style-type: none"> ▪ Infrastructure development through yen loan and grant schemes ▪ Support for formulating PPP infrastructure projects ▪ Utilization and PR of co-financing options with multi-donors ▪ Support with private sector investment finance
		(5) Supporting the business development of small- and medium-sized companies and start-up companies	<ul style="list-style-type: none"> ▪ PR of public-private partnership program ▪ Utilization and PR of co-financing options with multi-donors ▪ Support for introducing digital technology ▪ Support for smart city formation
6	Direction of development cooperation and draft recommendation	In order to create public-private partnership projects with high development impact, the following measures and support measures are proposed. Each measure is presented as an option for support and is not a recommendation to implement all of the support measures for the target group. A specific support measure or a combination of several support measures should be implemented at an appropriate time based on the requests of Japanese companies and local governments.	
		Business Information Dissemination	<ul style="list-style-type: none"> ▪ Investment desk functions utilizing JICA overseas offices and branches
		Business Matching Support	<ul style="list-style-type: none"> ▪ Establishment of an information sharing platform for sharing information of the business environment and holding regular investment seminars
		Improvement of Business Environment and Strengthening of Administrative Capacity	<ul style="list-style-type: none"> ▪ Dispatch of experts to improve the business environment, or provision of technical cooperation projects to local investment-related ministries and agencies as counterparts.
		Human Resource Development in Industrial Sector	<ul style="list-style-type: none"> ▪ Support for the development of human resources for the revitalization of local manufacturing industries.
		Gateway Infrastructure Development	<ul style="list-style-type: none"> ▪ Infrastructure development to facilitate international logistics, such as ports and highways
		Support for Industrialization	<ul style="list-style-type: none"> ▪ Support for the formulation of national and regional strategies for the development of industrial parks and special economic zones through development surveys
		Support for PPP Infrastructure Projects	<ul style="list-style-type: none"> ▪ Utilization and PR of public-private partnership schemes
	Use of Private Sector Investment Finance	<ul style="list-style-type: none"> ▪ Conducting projects with pilot projects using Japanese technologies, and preparatory survey for private sector investment finance. 	
	Support with Co-finance Loans	<ul style="list-style-type: none"> ▪ Support through co-financing with multi-donor agencies 	

No.	Item	Public-Private-Partnership (PPP)	
	PR for the use of Public-Private Partnership Scheme	<ul style="list-style-type: none"> Implementation of development studies, including pilot projects, and support for the horizontal development of companies that are implementing private sector collaborative projects in other regions. 	
	Support for Digital Technology Utilization and Smart City Formation	<ul style="list-style-type: none"> Support for the formation of smart cities and the application of digital technologies 	

Source: Study Team

3.3 Survey of Impact of COVID-19 on JICA Project Sites

In the "Survey of Impact of COVID-19 on the JICA Project Sites", information is regularly collected from the ongoing JICA projects through questionnaire surveys, web conferences, and field surveys of project teams, project counterparts, and beneficiaries. , COVID-19 and related policies have been analyzed and considered on the ongoing projects. Details of the survey, analysis results and considerations are given in Chapter 16 of the main text.

(1) Selection of Target Projects of Impact Survey

Target projects were selected two (2) in Central America and two (2) in the Caribbean that started before the outbreak of the COVID-19 pandemic (March 2021) and will ended after December 2021 in consultation with JICA as shown in Table 3-17.

Table 3-17 Selection of Target Projects of Impact Survey

Sector	Country	Project name
Tourism	Dominican Republic	Strengthening the Mechanism Project for Tourism Development Based on Sustainable Community in the Northern Region
Disaster Prevention	El Salvador	Phase 2 of the Project to Support the Office of Climate Change and Risk Management Strategies for Strengthening Public Infrastructure
Fishery	St Lucia	Strengthening Conservation and Management of Coastal Fisheries Resources through Collaboration between Fishermen and Government
Citizen Security	Guatemala	Community Policing Project

Source: Study Team

(2) Outline of the Survey

Outline of the impact survey is summarized in Table 3-18.

Table 3-18 Outline of COVID-19 Impact Survey on JICA Projects

Project	Nos of Sampling	Interviewee Surveyee	Method	Content
Dominican Republic	1st Interview: 2	<ul style="list-style-type: none"> Project coordinator (3 people) Tourism production group (2 groups) 	Interview	Impact on community tourism and response status
	2nd Interview: 1	<ul style="list-style-type: none"> Project coordinator (3 people) 	Interview	Status of digital marketing in the tourism field
El Salvador	1st Questionnaire 37	<ul style="list-style-type: none"> DACGER: Director, Vice Director MOP: Vice Ministers MOP: Directors JCC participants 	Questionnaire	Needs for road infrastructure systems that contribute to traffic congestion relief and road disaster prevention in the event of a pandemic or disaster

Project	Nos of Sampling	Interviewee Surveyee	Method	Content
St Lucia	1st Questionnaire 11	<ul style="list-style-type: none"> ▪ Fisheries bureau staff (9 districts) ▪ 2 Districts' staff 	Questionnaire	Impact on fishermen's livelihood
	2nd Questionnaire 11	<ul style="list-style-type: none"> ▪ Fisheries bureau staff (9 districts) ▪ 2 Districts' staff 	Questionnaire	Impact on fishermen's livelihood Fish consumption/hygiene management/Internet sales
Guatemala	1st Questionnaire Police :118 Resident :129	<ul style="list-style-type: none"> ▪ Police and resident (55 districts) 	Questionnaire	Changes in Citizen Security due to COVID-19 pandemic
	2nd Questionnaire Police: 122 Resident: 131	<ul style="list-style-type: none"> ▪ Police and resident (55 districts) 	Questionnaire	Changes in Citizen Security due to COVID-19 (especially focusing on "invisible crime")

Note: JCC: Joint Coordination Committee

Source: Study Team

(3) Summary Results of Impact Survey

Table 3-19 summarizes the results of the impact survey.

Table 3-19 COVID-19 Summary Results of Impact Survey

Project	Summary of Survey Results
Dominican Republic	<Effects of COVID-19 revealed in Survey> <ul style="list-style-type: none"> ▪ As a result of implementing immigration restrictions as a measure against COVID-19 pandemic, the number of tourists from overseas has decreased. On the other hand, the number of domestic tourists increased. ▪ It was confirmed that the number of domestic tourists increased, especially in facilities that have low risk of infection and are engaged in outdoor activities. ▪ It was confirmed that some places have succeeded in increasing the number of tourists by utilizing SNS.
	<Analysis> <ul style="list-style-type: none"> ▪ In order to maintain a certain level of tourism demand even in the event of a major disaster such as COVID-19, resilience will be strengthened by promoting domestic tourism as well as overseas tourism. ▪ From the perspective of digital marketing, it is important to utilize SNS.
	<Recommended Countermeasure in With /Post COVID-19 Society > <ul style="list-style-type: none"> ▪ To promote technical education support, financial support, professional cooperation and cooperation regarding the utilization of products and SNS.
El Salvador	<Effects of COVID-19 revealed in Survey> <ul style="list-style-type: none"> ▪ It was confirmed that COVID-19 devoted personnel and resources to priority projects such as the construction of hospital facilities, and as a result, had a negative impact such as delays in infrastructure development. ▪ On the other hand, we also confirmed the positive impact of being able to unify the movement with other ministries and support each other. ▪ We confirmed the contribution of the road infrastructure developed by the cooperation projects so far to society, such as supporting the transportation of medical staff, food supply, and various vehicle traffic of each ministry and agency, and contributing to the functioning of pandemic countermeasures.
	<Analysis> <ul style="list-style-type: none"> ▪ It was shown that during the COVID-19 pandemic, road infrastructure enabled the transportation of health care workers and food supplies and contributed to the maintenance of social functions. ▪ In order for road infrastructure to contribute to disaster prevention and mitigation such as COVID-19, it is necessary to build a system that enables "information sharing with related organizations" in addition to drainage systems and congestion mitigation.
	<Recommended Countermeasure in With /Post COVID-19 Society > <ul style="list-style-type: none"> ▪ To improve the hygiene of transportation, alleviate traffic congestion in normal times, improve infrastructure that contributes to road disaster prevention, and convert to ICT-based operation for sharing information on road infrastructure / disaster prevention.
St Lucia	<Effects of COVID-19 revealed in Survey> <ul style="list-style-type: none"> ▪ As a result of immigration restrictions and restrictions on self-restraint from going out as a response to COVID-19, the volume of fish transactions with hotels and restaurants has decreased. ▪ Some fishermen are selling online. ▪ With COVID-19, the people's idea of hygiene has improved.

Project	Summary of Survey Results
	<ul style="list-style-type: none"> The improvement of hygiene has led to improvements in fish preservation methods and improved fish quality. The facilities provided by JICA were being effectively utilized. Following COVID-19, health consciousness has improved and domestic demand is gradually increasing.
	< Analysis > <ul style="list-style-type: none"> To strengthen the resilience of fisheries, it is important to promote local production for local consumption, improve storage facilities, and develop markets for the purpose of improving quality and further increasing demand.
	< Recommended Countermeasure in With /Post COVID-19 Society > <ul style="list-style-type: none"> To improve the stable supply of fish and shellfish, provide equipment, and promote fish food education.
Guatemala	< Effects of COVID-19 revealed in Survey > <ul style="list-style-type: none"> It has become clear that "invisible crimes" have increased due to restrictions on COVID-19's self-restraint from going out. The police confirmed that the trust of the residents was not sufficiently gained because the corruption cases could not be prevented, and the residents and the police were still far from each other.
	< Analysis > <ul style="list-style-type: none"> It is considered indispensable to gain trust in the police and further improve Citizen Security by deterring "invisible crimes" in order to improve security in the whirlpool and gain trust in the police.
	< Recommended Countermeasure in With /Post COVID-19 Society > <ul style="list-style-type: none"> To implement measures to prevent "invisible crimes" (strengthening consultation counters, strengthening patrols by local police).

Source: Study Team

3.4 Pilot Projects

(1) Selection of the Pilot Projects

Pilot projects shown in Table 3-20 were selected in consultation with JICA (including local offices), taking into consideration the affinity and synergistic effects with existing on-going JICA projects, the possibility of utilizing resources in Japan and local areas.

Table 3-20 Selected Pilot Project

No.	Project name	Implementation Body	Project Scope
1	Dominican Republic Telemedicine	<ul style="list-style-type: none"> Allm Inc. 	Introducing the telemedicine app Join and the triage app Join Triage provided by Allm Inc., and building and evaluating a rapid medical care provision system.
2	Nicaragua EWBS	<ul style="list-style-type: none"> Tanabiki Inc. Japan Telecommunications Engineering and Consulting Service (JTEC) 	To operate the EWBS by the local government organizations, and promote the EWBS environment to be enriched with effective contents.
3	Guatemala Satellite Image Analysis	<ul style="list-style-type: none"> Synspective Inc. 	To introduce LDM satellite technology to local government and let them understand the historical ground changes visually.
4	St Lucia OVOP	<ul style="list-style-type: none"> JAHNUS. Inc. 	Introduction of OVOP concept and methodology for utilizing local products
5	Jamaica Tourism Resilience	<ul style="list-style-type: none"> Global Tourism Resilience and Crisis Management Centre (GTRCMC) 	Improving the ability of local governments and tourism industry people to understand the tourism crisis management plan.
6	Multi Countries DAISY Seminar	<ul style="list-style-type: none"> Assistive Technology Development Organization (ATDO) 	Introducing and promoting understanding of the role and introduction effect of accessible textbooks and teaching materials DAISY / EPUB for educators
7	Panama Innovation Seminar	<ul style="list-style-type: none"> Fundación Ciudad del Saber 	Holding a online seminar for gathering information for building good relationships between Japanese companies and Panama companies and promote open innovation.
8	Guatemala Civic Security ICT	<ul style="list-style-type: none"> JICA Study Team 	Introduction of Japanese innovative Citizen Security technology for improvement of Citizen Security level in Guatemala.

Source: Study Team

(2) Implementation of Pilot Project

The pilot projects had been started, time to time, and but ended on January 10, 2022 for all of projects. During the 4th field survey of the study team, "Close-out meeting" were held to summarize the pilot project, with discussion with local governments for future extension of those pilot projects.

(3) Summary of Results of Pilot Projects

Summary of the results of pilot projects are summarized in Table 3-21 .

Table 3-21 Summary of Results of Pilot Projects

No.	Project	Before Project	Achievement	Possible Future Activities
1	Dominican Republic Telemedicine	Due to the lack of communication tools for doctors and out-of-hospitals, the burden on one doctor is getting larger.	<ul style="list-style-type: none"> ▪ The application of JOIN apps enables the transmission of medical images outside the hospital, enabling more appropriate treatment and reducing the burden on doctors. ▪ Even in the user evaluation survey, all items reached the target value of 70% or more. 	<ul style="list-style-type: none"> ▪ Allm intends to develop it as its own business. ▪ Given the high evaluation of the hospitals joined in the pilot project, desirable to continue the dialogue for the full-scale introduction with the Dominican Republic government level. ▪ Confirm the need for support for medical equipment, etc.
2	Nicaragua EWBS	The reception environment of EWBS was limited, and the spread nationwide was stagnant.	<ul style="list-style-type: none"> ▪ Expansion of coverage area by expanding equipment and improvement of operational capacity through training ▪ Government-led project started, accelerating the spread of EWBS 	<ul style="list-style-type: none"> ▪ Expecting independent use of EWBS, expansion of coverage area, and enhancement of transmitted content. ▪ Study on the possibility of making Central America a base country as one of JICA's support menus in the field of disaster prevention.
3	Guatemala Satellite Image Analysis	Satellite images and its analysis of crustal movements (ground subsidence, landslides, etc.) is available only.	<ul style="list-style-type: none"> ▪ Understand the improvement of work efficiency and analysis accuracy by utilizing satellite dynamic data and images ▪ Useful for COVID-19 pandemic countermeasures by reducing field surveys. 	<ul style="list-style-type: none"> ▪ Since it is too early for Synspective to develop its own business due to the cost burden of the other party, consider the continuity as a B2G pilot project scheme. ▪ Consider the service usage system and cost burden through training and technical cooperation to deepen the understanding of the widespread utilization of satellite technology. ▪ Consider holding seminars for countries in the region that have similar natural disaster risks with Guatemala.
4	St Lucia OVOP	The East Caribbean countries are extremely dependent on food imports, and this correction is an issue. However, on the other hand, domestic products are not sufficiently captured in the market due to the product differentiation of producers and lack of marketing ability.	<ul style="list-style-type: none"> ▪ Confirmed that the OVOP concept is likely to be useful for improving product quality of small-scale producers and raising awareness of local products. 	<ul style="list-style-type: none"> ▪ OVOP practice is to be stably spread and established in Saint Lucia ▪ Confirm the possibility of the system as a base country for introducing and introducing OVOP to the OECS region
5	Jamaica Tourism Resilience	Highly vulnerable to external factors due to lack of crisis management capabilities in the tourism industry	<ul style="list-style-type: none"> ▪ Confirmed the usefulness of the adopted crisis management plan formulation manual in the field ▪ GTRCMC shows his intention for continuing to study for dissemination and plan to open it to the public. 	<ul style="list-style-type: none"> ▪ Reconfirmation of the implementing body of Jamaica tourism resilience enhancement ▪ Confirmed needs with CARICOM regarding the possibility of expansion to Caribbean countries

No.	Project	Before Project	Achievement	Possible Future Activities
6	Multi Countries DAISY Seminar	It is not understood that non-accessible textbooks and materials are a learning barrier for children and students who have difficulty reading.	<ul style="list-style-type: none"> The seminar participants (inclusive education officers, etc.) have improved their knowledge and motivation to create “understanding of reading disabilities” and DAISY teaching materials. 	<ul style="list-style-type: none"> Since the demand for inclusive education has been confirmed, implement human resource development through JICA agenda-specific training and continue dialogue for future cooperation development. If individual country's needs related to DAISY is confirmed, study on the development method of business in such country.
7	Panama Innovation Seminar	There is no support for open innovation (from public sector) that can promote Panama's industrial promotion and employment extraction.	<ul style="list-style-type: none"> Seminars, questionnaire surveys and hearings, let confirmed that the collaboration between Japanese and Panama companies were to be promoted for both side. 	<ul style="list-style-type: none"> Through discussions with related organizations in both Japan and Panama, confirm specific development needs and consider the possibility of forming future cooperation projects.
8	Guatemala Civic Security ICT	Although there are expectations for the application of ICT technology to support Citizen Security operations, the ICT introduction is not sufficiently organized.	<ul style="list-style-type: none"> Shared the examples of Japan's ICT solutions in the Citizen Security field. Issues and expectations related to the introduction of ICT have been sorted out. 	<ul style="list-style-type: none"> While confirming the intentions of Japanese companies participating in this pilot project to expand overseas, consider support for proof of concept (PoC) when local needs are confirmed in Guatemala and Honduras.

Source: Study Team

3.5 Summary of the Survey and Recommendations for Development Cooperation

Summary of the survey and the overall recommendations (draft) are organized based on the results of information collection and analysis of each sector and the recommendations mentioned in each sector.

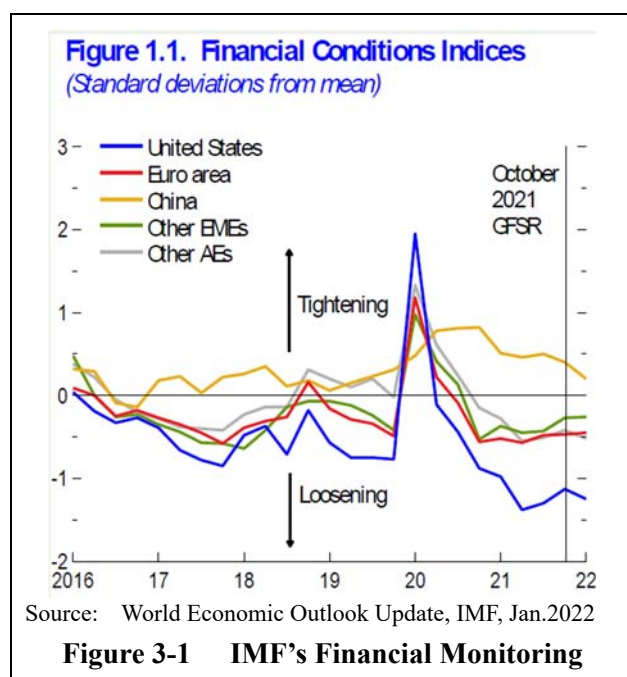


Figure 3-1 IMF's Financial Monitoring

3.5.1 COVID-19 Pandemic Social Transformation or Recovery Status (As of February 2022)

The COVID-19 pandemic has largely impacted on the socio-economic activities of the world. As of February 2022, the impact on socio-economic activities and the transformations caused and/or recovery status in each industry is summarized below.

(1) World

As of February 2022, the COVID-19 pandemic still not be converged in the world, however taking thorough infection preventive measures and increasing the vaccination rate, the degree of mitigation varies from region to country, but the world is being transformed into a "With COVID-19" society. Table 3-22 overviews the current observations of world socio-economic transformation.

Table 3-22 COVID-19 Pandemic Social Transformation (World)

No.	Industry	Major Transformation and/or Recovery Status (World)
1	Manufacturing, Food, Transportation, etc.	<ul style="list-style-type: none"> ▪ Industrial activities are gradually recovering from production sites where infection preventive measures applied. ▪ Lockdown and remote work let people purchase mobile devices and delivery-type food services have become standard under such social situation. ▪ Due to increasing of online conferences, the volume of passengers has decreased significantly, but the volume of freight has not decreased. ▪ Industrial whose supply chain damaged largely, their recovery activities delayed.
2	Finance, Consumer goods, Service, Energy	<ul style="list-style-type: none"> ▪ Recovering gradually in tandem with the recovery of the manufacturing and food industries. ▪ Non-contact and remote working are widely normalized, and product development and commercial transactions on the Web are rapidly increasing.
3	Passenger-based business (aviation, ships, railroad, long-distance bus, etc.), Tourism	<ul style="list-style-type: none"> ▪ Passenger-based business and tourism have not yet recovered due to the continued epidemic preventive measures of each country.
4	Agriculture, Fishery	<ul style="list-style-type: none"> ▪ The production of fresh foods declined due to the decline in the activity of the food industry, but the production of storable grains and vegetables was hardly affected. ▪ Fresh food industry, the demand of ensuring hygiene quality increased for COVID-19 preventive measures. ▪ Volume of products whose supply chain damaged largely was decreased and still not recovered yet.
5	Healthcare, Education	<ul style="list-style-type: none"> ▪ For the hospitals and schools, the facilities with preventive measures limited, and mainly located capital city areas for people belong to wealthy layer in the society. ▪ In the urbanized area, the telemedicine and distance education services have rapidly become good market under COVID-19 pandemic society. ▪ On the other hand, the facilities for vulnerable groups in the society had been closed and limited services had been provided as infection preventive measures. ▪ Telemedicine and distance education services for vulnerable groups should be provided as “public service”, however, it hardly been realized due to lack of government budget.

Source: Study Team

(2) Central America and the Caribbean Region (Survey Target)

In Central America and the Caribbean, as of February 2022, some distinct points that differed from the world situation were observed (Table 3-23). In particular, immigration, Citizen Security and environmental issues had existed in this area since before COVID-19, but due to the COVID-19 pandemic, they have become more apparent as larger social issues.

Table 3-23 COVID-19 Pandemic Social Transformation (CA and Caribbean)

No.	Industry and Social Issue	Major Transformation and/or Recovery Status (CA and Caribbean)
1	Manufacturing, Food, Transportation, etc.	<ul style="list-style-type: none"> ▪ In Central America (CA) and the Caribbean, the number of countries where the manufacturing is the main industry is limited. ▪ Manufacturing, in Mexico and Costa Rica, whose infection preventive measures were applied is showing good recovery trend. ▪ Due to the high ratio per capita, of COVID-19 infected in this region, the behavioral restriction (said curfew) policy has been prolonged and the negative impact on the tourism and food industry is still large.
2	Finance, Consumer goods, Service, Energy	<ul style="list-style-type: none"> ▪ CA and the Caribbean, excluding Mexico, have small populations and areas, and the economic disparity of the people is large, and “poverty reduction” is the most important policy in many countries. ▪ Many of these poor people, without possessing PCs, mobile devices and/or credit cards, cannot access remote financial services, and cannot earn income under the prolonged curfew situation.
3	Passenger-based business (aviation, ships, railroad, long-distance bus, etc.), Tourism	<ul style="list-style-type: none"> ▪ The economies of many countries, in this region, strongly depend on tourism, and the COVID-19 pandemic had caused large-scaled negative impact on the loss of employment. ▪ In this region, many countries, there are many natural disasters such as hurricanes and earthquakes, and in recent years there has been a tendency for the damage to be enormous due to the effects of “climate change”. ▪ In this region, which is highly dependent on tourism industry, it is necessary to formulate crisis management plan against increasing natural disaster with taking the infection preventive measures.

No.	Industry and Social Issue	Major Transformation and/or Recovery Status (CA and Caribbean)
4	Agriculture, Fishery	<ul style="list-style-type: none"> The economic scale of agriculture and fisheries, in this region, is generally small, and the large negative impact of the COVID-19 pandemic could hardly be confirmed.
5	Healthcare, Education	<ul style="list-style-type: none"> In this region, there are many regular and non-regular immigrants to the United States (US), especially in the CA region, and the volume of overseas remittances consists of a big portion and great impact on the economic activities in each country. Confirmed that the provision of compensation for COVID-19 in the US had a great impact on the recovery of economic activities in this region. As of February 2022, being reported that the unwelcome situation where a large number of non-regular immigrants are flooding the southern border of the US is still continuing. This is an important social characteristic of the CA region.
6	Immigration Issues	<ul style="list-style-type: none"> In the CA region, there are many regular and non-regular immigrants to the US, it was confirmed that the provision of compensation for COVID-19 in the US had a great impact on the recovery of economic activities in this region. For this social issue, international and regional organizations can take a more proactive position than existing organizations and can take the lead for preparation of the long-term portfolio solution agreements.
7	Governance and Citizen Security	<ul style="list-style-type: none"> In some countries the CA and the Caribbean, Citizen Security level is poor, the number of murders per capita is position in the top ranking in the world, and government corruption cases are becoming a normal unwelcome reputation. Reported that the number of crimes decreased, but it was also reported that domestic violence (DV) was increased.
8	Environment and Disaster Prevention	<ul style="list-style-type: none"> Confirmed that the method of treating a large amount of medical waste by COVID-19 pandemic preventive measures is inappropriate. It is necessary to formulate policies on how to dispose of medical waste safely with economic manner. Water pollution in the Panama-bay and Lake Managua has become a serious water quality management problem. Wide-area water quality improvement projects have many stakeholders and with different interests. It is desirable that wide-area water quality improvement projects be managed by international and regional organizations under the initiative, at least at the portfolio plan stage.

Source: Study Team

3.5.2 Basic Policy in setting Recommendations for Development Cooperation

Based on the above-mentioned recognition of the current state of the transformed socio-economic status With/Post COVID-19 society in the world and the Central America and the Caribbean region, considering the future development cooperation in this region, the following basic policy, shown in Table 3-24, is proposed for further preparation of overall recommendations in this survey.

Table 3-24 Basic Policy in Setting Recommendations for Development Cooperation

No.	Industry and Social Issue	Basic Policy
1	Manufacturing, Food, Transportation, etc.	<ul style="list-style-type: none"> Support for poverty reduction policies in each country Support for industrial diversification, job creation, etc.
2	Finance, Consumer goods, Service, Energy	<ul style="list-style-type: none"> Support for start-up companies and companies with useful technologies in the region As measures to allow the poor to access financial services, provide basic ICT infrastructure and opportunities to use mobile devices in remote areas, support national ID development and credit card creation
3	Passenger-based business (aviation, ships, railroad, long-distance bus, etc.), Tourism	<ul style="list-style-type: none"> Support for infrastructure development (roads, water-supply, etc.) that supports the resilience of industrial supply chains Support for providing public transportation to areas that cannot be covered by private businesses
4	Agriculture, Fishery	<ul style="list-style-type: none"> Support for strengthening tourism resilience as a response to natural disasters in countries that are highly dependent on tourism
5	Healthcare, Education	<ul style="list-style-type: none"> Support for the provision of telemedicine services and distance education services as a public project Support for the development of multilingual people who can utilize the knowledge of the world and the region Support for creating a business continuity plan (BCP) in the event of a major natural disaster or a pandemic such as COVID-19
6	Immigration Issues	<ul style="list-style-type: none"> Support for solving immigration problems in Central America
7	Governance and Citizen Security	<ul style="list-style-type: none"> Support for building a system for “community police” services Support for cooperation with South American countries that have already succeeded in “community police” services

No.	Industry and Social Issue	Basic Policy
8	Environment and Disaster Prevention	<ul style="list-style-type: none"> ▪ Support for disposal methods of medical waste ▪ Support for solving wide-area environmental problems that transcend national borders, such as mass drifting of Sargassum and marine plastics. ▪ Support for pollution control of sea and inland waters in Central America and the Caribbean.
9	Cooperation with Regional Organizations (SICA, CARICOM, OECS)	<ul style="list-style-type: none"> ▪ Support for the development of legal systems applicable to a wide area related to the implementation of development cooperation ▪ Support for multilingual human resource development that can utilize the knowledge of the world and region of development cooperation. ▪ Support for establishing a library of good practices for development cooperation and building a platform for knowledge sharing

Source: Study Team

3.5.3 Analysis of Sector-Recommendations by Framework

As a result of the sector survey of this survey, there are many cross-sectoral support measures that require regional cooperation for the development cooperation. Such combined support measures are indispensable for forming the future development cooperation. Table 3-25 summarizes sector-specific recommendations (drafts) and “Green & Digital¹”, support measures for each sector (infrastructure / equipment, knowledge, human resources, legal system), and the possibility of pilot projects.

¹ "Green and Digital" is a policy announced by the European Commission (EU) and the Government of Japan in 2020. Green economy indicates the transition to a decarbonized society, and Digitalization indicates the promotion of digitalization of society, as new industrial strategies for growth.

Table 3-25 Analysis of Sector-Recommendations by Framework

No.	Sector	Recommendations (Draft) for Development Cooperation				Green & Digital		Support to Sector			Pilot Prj. Possibility
						Green	Digital	Infra	Knowledge	HR		Legal
1	Socio-economic Policy	Financial Inclusion	<ul style="list-style-type: none"> Continuing to provide long-term support for fundamental issues in the region (support that is closely linked to communities, financial institutions, etc., through the Honduras Poverty Alleviation Model (ACTIVO), etc.) Support for financial digitalization and smartphone application development (support for technological development to improve financial access) 	—	⊙	—	⊙	○	○	△	
		Economy & Finance	<ul style="list-style-type: none"> Create a system that facilitates the entry of private funds, such as SIBs with pay for success system 	—	—	—	⊙	○	○	△	
		Support for the improvement of financial system issues	<ul style="list-style-type: none"> Support sustainable and efficient development by expanding cooperation with international organizations Brokering cross-regional cooperation to enhance competitiveness (further in-depth study) 	—	—	—	⊙	○	○	△	
		Regional collaboration	<ul style="list-style-type: none"> Health emergency response: strengthening of collaboration based on the existing frameworks Development regional reference laboratory network in cooperation with PAHO Promoting information and data sharing through regular experience sharing activities to strengthen collaboration and communication 	—	⊙	○	○	○	○	○	
2	Healthcare and Nutrition	Inter-sectoral collaboration	<ul style="list-style-type: none"> Education, IEC materials, community development sectors for increasing health literacy Food production and processing sectors for nutrition improvement Local administration and environmental sectors to improve medical waste management capacity ICT and private sectors to promote retention of health personnel and improve service providing system 	⊙	○	○	⊙	⊙	○	○	
		Innovative technology	<ul style="list-style-type: none"> Minimize gap in service access by telemedicine Sharing health record of migrant people moving beyond the borders 	—	⊙	○	○	○	○	○	
		Health emergency response	<ul style="list-style-type: none"> Development of business continuity plan (BCP) at PHC level 								
3	Education	Intensive, long-term, and continuous measures to	<ul style="list-style-type: none"> Intensive and continuous measures over a long period of time of year 2030 Create learning recovery programs and promote learning assessment and analysis, curriculum organization and development of teaching materials Increase of learning time (strengthening school management plan, increase of number of class days and hours, etc.) 	—	⊙	○	○	○	○	○	

No.	Sector	Recommendations (Draft) for Development Cooperation		Green & Digital		Support to Sector			Pilot Prj. Possibility	
				Green	Digital	Infra	Knowledge	HR		Legal
		improve learning achievement	<ul style="list-style-type: none"> Targeted support for vulnerable groups, tailored to their individual challenges and needs 							
		Application of fundamental and innovative technologies and improvement of school facilities and environment	<ul style="list-style-type: none"> Application of fundamental and innovative technologies to reduce educational disparities. Promotion of the development and use of digital teaching materials and applications. Private sector collaboration and intra-regional cooperation in the development of digital teaching materials and learning applications. Development and dissemination of basic technologies, such as communication infrastructure in schools. Improvement of the school sanitation environment (water facilities, toilets, etc.) to prevent infection in preparation for the reopening of schools. 	⊙	⊙	⊙	⊙	⊙	○	○
		Intra-regional cooperation and establishment of a base in region	<ul style="list-style-type: none"> Promote the development of digital teaching materials and applications based on experience in distance education, and collaborate with other countries in regions (SICA, CARICOM, OECS, etc.) that share common language and educational issues. Measures to contribute to the transition from special education to inclusive education, accumulation of knowledge and experience in educational support for various disabilities, and regional cooperation and establishment of a base in region for the development of teaching materials and provision of equipment. 	—	○	⊙	⊙	⊙	○	⊙
4	Agriculture and Rural Development	Strengthening of food resilience and mitigation of migration through integrated approaches to key issues	<ul style="list-style-type: none"> Set up “Strengthening food hygiene and storage capacity”, “reducing dependence on food imports”, “strengthening the linkage of agricultural value chains”, and “strengthening climate change countermeasures” as key issues “Strengthening agricultural support system” as a key cross-cutting issue for strengthening of regional food resilience Reducing the migration problem in rural area through the improvement of the attractiveness of the agricultural sector 	⊙	⊙	⊙	⊙	⊙	○	⊙
		Regional collaboration	<ul style="list-style-type: none"> In order to respond to wide-area issues, effectively and efficiently in terms of both technology and cost, it is essential to strengthen regional cooperation. Weather, disasters, and resources monitoring, developing low-carbon production technologies and new varieties for adaptation to climate change Providing extension of services using smart technologies as examples of regional collaboration. 	⊙	⊙	—	⊙	⊙	○	⊙
		Collaboration among sectors and actors	<ul style="list-style-type: none"> COVID-19 provided an opportunity to reaffirm the importance of inter-sectoral collaboration and to gain experience in such collaboration through 	⊙	⊙	○	⊙	⊙	○	△

No.	Sector	Recommendations (Draft) for Development Cooperation		Green & Digital		Support to Sector			Pilot Prj. Possibility	
				Green	Digital	Infra	Knowledge	HR		Legal
5	Private Sector	Strengthen existing measures to promote industry and support SMEs	<ul style="list-style-type: none"> food distribution done collaboratively by ministries related to agriculture and ministries related to health. Inter-sectoral collaboration will be effective in strengthening the agriculture and rural development sectors in the future. 							
			<ul style="list-style-type: none"> Technical Assistance: Development of policies for the promotion of SMEs and regional industrial development plans Regional expert: Technology transfer through collaboration with Japanese companies 	—	—	—	⊙	⊙	—	○
		Capacity building to support productivity improvement through regional cooperation	<ul style="list-style-type: none"> Technical Assistance: Capacity building for a supporting organization for productivity improvement through South-South cooperation or triangular cooperation 	—	—	—	⊙	⊙	—	○
		Support for developing a startup and innovation ecosystem	<ul style="list-style-type: none"> Technical Assistance: Training and technical cooperation to promote innovation at universities (Panama) Technical Assistance: Assistance for promotion of social innovation (Mexico) 	—	—	—	⊙	⊙	—	○
		Lack of government funding	<ul style="list-style-type: none"> Providing stand-by loans in case of a pandemic 	—	—	—	○	—	⊙	—
6	Governance and Citizen Security	Provision of seed money and capacity building for entrepreneurship	<ul style="list-style-type: none"> Provision of seed money (bilateral government loan) and support for capacity building of loan recipient companies (technical assistance and volunteers) 	—	—	—	○	○	—	○
		Grand design for digitization of the entire country	<ul style="list-style-type: none"> Design a platform where all public services can be integrated around an electronic national ID. Reliable and secure storage of data A system to enable mutual use by local governments and different competent ministries and agencies through centralized data management A system that allows online administrative procedures and public services to be provided using national IDs 	—	⊙	○	⊙	⊙	○	○

No.	Sector	Recommendations (Draft) for Development Cooperation	Green & Digital		Support to Sector			Pilot Prj. Possibility	
			Green	Digital	Infra	Knowledge	HR		Legal
7	Environment and Disaster Management	<ul style="list-style-type: none"> Effective use of data to promote public participation and public-private collaboration, improve efficiency of administrative services, and enhance transparency and trust 							
		<ul style="list-style-type: none"> Enhancing the rule of law <ul style="list-style-type: none"> Strengthening and improving the judicial system, capacity building of the legal profession and increasing the number of legal professionals per capita Reform the current system to increase the number of crimes reported, investigated, and prosecuted Building a system to protect the safety of reporters and witnesses (protection from reprisals) Support victims at the grassroots level 	—	⊙	—	⊙	⊙	⊙	○
		<ul style="list-style-type: none"> Improvement of Citizen Security <ul style="list-style-type: none"> Improvement of Citizen Security for promoting the private investment and tourism by several possible means Extend on-going “community police model” to other countries in the region. 	—	○	○	⊙	⊙	○	⊙
		<ul style="list-style-type: none"> Implementation of concrete measures to address climate change <ul style="list-style-type: none"> Technical and financial cooperation necessary to achieve carbon neutrality Support for the introduction of renewable energy (geothermal, etc.) Consolidation and management of basic data to achieve zero emissions Implementation of cross-sectoral "mitigation" and "adaptation" measures. Disaster prevention and agriculture sectors particularly affected by global warming and climate change, and education and health sectors indirectly affected (Central America), tourism, fisheries and agriculture sectors (Caribbean) 	⊙	○	—	⊙	○	○	⊙
		<ul style="list-style-type: none"> Sustainable Development through Ecosystem Conservation <ul style="list-style-type: none"> Sustainable development and regional development through ecosystem conservation Technical assistance for community development (Central America) Research and measures for the conservation of terrestrial and marine environments, and strengthening of measures against marine plastic litter (Caribbean) Utilization of Biodiversity in Tourism Improve legal system for management of nature reserves and strengthen management capacity Surveys and resource management of ecosystems, vegetation distribution, wildfires, etc. using digital technology such as satellite imagery data Improve legal system for management of nature reserves and strengthen management capacity 	⊙	⊙	△	⊙	⊙	⊙	⊙
	<ul style="list-style-type: none"> Realization of a recycling-oriented society <ul style="list-style-type: none"> Improvement of the legal system for waste management (comprehensive waste management, hazardous waste management, medical waste management) 	⊙	△	⊙	⊙	⊙	⊙	⊙	

No.	Sector	Recommendations (Draft) for Development Cooperation	Green & Digital		Support to Sector			Pilot Prj. Possibility	
			Green	Digital	Infra	Knowledge	HR		Legal
		<ul style="list-style-type: none"> Creating a framework for realizing a recycling-based economy Realization of 3Rs and establishment of sanitary waste flow through capacity building of local government Capital investment, technological innovation (introduction of recycling facilities, autoclaves, waste power generation, etc.) Promotion of private investment 							
		<p>ICT utilization</p> <ul style="list-style-type: none"> Hazard assessment through the use of ICT (introduction of satellite imagery technology) Construction of a non-contact monitoring, observation, information provision, and early warning system 	○	◎	◎	◎	○	—	◎
		<p>Mainstreaming disaster prevention</p> <ul style="list-style-type: none"> Promote information sharing and collaboration among central and local governments and ministries by using the Disaster management Information Platform. Form cross-sectoral/multidisciplinary projects (agriculture, education, health (Central America), tourism (Caribbean), etc.) 	○	○	—	◎	◎	△	◎
		<p>Strengthening Resilience</p> <ul style="list-style-type: none"> Formulate disaster prevention plans and update urban resilience (road infrastructure development, earthquake resistance, landslide prevention, river improvement, etc.) Infrastructure development that contributes to disaster mitigation (road maintenance, landslide prevention, flood prevention such as river improvement) Conducting disaster prevention education 	○	△	◎	◎	◎	—	△
		<p>Improvement of local disaster prevention capacity</p> <ul style="list-style-type: none"> Raising awareness among individuals, companies, and communities through the dissemination of crisis management plans and BCPs Foster self-help and mutual-help through community disaster prevention support and strengthen local disaster prevention capabilities by promoting regional cooperation in recovery and reconstruction 	○	○	○	◎	◎	—	◎
8	Digital and Innovation	<p>Policy formulation</p> <ul style="list-style-type: none"> Support for building a digital grand design that suits the situation of each country. Support for building the grand design by compilation of individual measures according to the situation of each country. Support to enhance the overall civil security and IT human resource development in government agencies working with foreign companies with advanced technologies to develop private sector operators. 	—	◎	—	◎	◎	△	△
		<p>Training for IT human resources</p> <ul style="list-style-type: none"> Formulate digital human resource policies that are appropriate for the new era. 	—	◎	○	◎	◎	△	○

No.	Sector	Recommendations (Draft) for Development Cooperation		Green & Digital		Support to Sector			Pilot Prj. Possibility	
				Green	Digital	Infra	Knowledge	HR		Legal
		Infrastructure improvement	<ul style="list-style-type: none"> Establish a digital human resource policies include the development of general ICT human resource training programs Establish ICT human resource development institutions (from strategy to implementation) in the public and private sectors. Support for the development of a broadband infrastructure that enables high-capacity communications nationwide. Support to establish a mechanism that enable the public and private sectors work together to develop measures to encourage the development of lines to government agencies, community centers, schools, etc. Support the establishment of data centers in the region for the utilization policies and security policies of each country. 	○	◎	◎	○	○	○	◎
		X-TEC	<ul style="list-style-type: none"> foster a future digital value chain, promote the construction of digital services and the use of information services led by the government, and accumulate good practices and challenges. Support to hold business contests, matching events, and online platforms for the development of advanced information human resources. Support a digital platform for intra-regional digital service sharing will be established to share and mutually utilize such examples within the region. 	—	◎	—	◎	◎	—	◎
9	Infrastructure and Energy	Carbon Neutral	<ul style="list-style-type: none"> Support for the decarbonization and carbon neutrality. Support to promote the electrification of transportation including urban development, roads, transportation. 	◎	◎	—	—	—	—	○
		Resilience Improvement	<ul style="list-style-type: none"> Realizing "high quality infrastructure export" by forming projects from the perspective of solving problems in the region, with world experience and resilience enhancement technology Cooperation for technologies and know-how based on countermeasures and responses to earthquakes and typhoons to overcome vulnerability to natural disasters and secure high resilience 	○	○	○	—	—	—	○
		Infrastructure	<ul style="list-style-type: none"> Strengthening, improving, optimizing the infrastructure of the entire urban transportation Cooperation that contributes to shifting and promoting the use of public transportation and relieving anxiety about the risk of COVID-19 infection Promotion of EV, human resource development of maintenance technology, spread of EV charging facility, support for building related supply chain. 	◎	○	○	○	○	○	○
		Energy	<ul style="list-style-type: none"> Cooperation for realization of carbon neutrality, such as introduction of renewable energy, utilization of energy derived from renewable energy, promotion of energy saving, etc. 	◎	○	○	○	○	○	◎

No.	Sector	Recommendations (Draft) for Development Cooperation		Green & Digital		Support to Sector			Pilot Prj. Possibility	
				Green	Digital	Infra	Knowledge	HR		Legal
			<ul style="list-style-type: none"> Even in oil-producing and gas-producing countries, efforts toward carbon neutrality are a global request, and cooperation in efforts toward carbon neutrality and promotion of energy conservation Introduction of renewable energy in the Caribbean region, specifically the restrictions due to the land area and available area, and the high introduction cost, etc., are medium- to long-term based on smart-grid technology. 							
10	Tourism	Cross-sectoral initiatives	<ul style="list-style-type: none"> Cross-cutting initiatives with digital transformation, disaster prevention, and fisheries sector Pursue synergies with promotion of MSMEs, strengthening of local government capacity, and environmental protection 	○	◎	—	◎	◎	△	○
		Promotion of MSMEs	<ul style="list-style-type: none"> Short-term relief measures (e.g., benefits, loans) Long term support (e.g., strengthening resilience) Business environment improvement 	—	◎	—	○	○	◎	△
		Tourism crisis management	<ul style="list-style-type: none"> Destination-wide tourism crisis management through public-private partnership 	—	◎	○	◎	◎	△	○
		Problem solving in the tourism sector using OVOP	<ul style="list-style-type: none"> Possibility of contributing to the reduction of tourism leakage by promoting local production for local consumption and breaking away from the monolithic image of "Sun, Sand & Sea". However, it is essential to build consensus among stakeholders on what OVOP is for and what they want to achieve through OVOP 	—	○	—	◎	◎	△	◎
		Long-term and comprehensive perspective for digital transformation	<ul style="list-style-type: none"> What emerged from the field interviews and in the context of the "impact of COVID-19" is mainly short-term and business unit-based initiatives. Initiatives such as smart destination development require a long-term and comprehensive perspective. 	◎	◎	◎	◎	◎	○	◎
11	Public-Private-Partnership (PPP)	Business Information Dissemination	Investment desk functions utilizing JICA overseas offices and branches	—	○	—	○	○	—	○
		Business Matching Support	Establishment of an information sharing platform for sharing information of the business environment and holding regular investment seminars	—	○	—	○	○	—	○
		Improvement of Business Environment and Strengthening of	Dispatch of experts to improve the business environment, or provision of technical cooperation projects to local investment-related ministries and agencies as counterparts.	—	—	—	○	○	◎	◎

No.	Sector	Recommendations (Draft) for Development Cooperation		Green & Digital		Support to Sector			Pilot Prj. Possibility	
				Green	Digital	Infra	Knowledge	HR		Legal
		Administrative Capacity								
		Human Resource Development in Industrial Sector	Support for the development of human resources for the revitalization of local manufacturing industries.	—	—	—	○	◎	—	△
		Gateway Infrastructure Development	Infrastructure development to facilitate international logistics, such as ports and highways	—	○	◎	—	—	—	—
		Support for Industrialization	Support for the formulation of national and regional strategies for the development of industrial parks and special economic zones through development surveys	—	○	—	○	○	—	○
		Support for PPP Infrastructure Projects	Utilization and PR of public-private partnership schemes	—	○	—	○	○	—	○
		Use of Private Sector Investment Finance	Conducting projects with pilot projects using Japanese technologies, and preparatory survey for private sector investment finance.	—	—	—	○	○	—	—
		Support with Co-finance Loans	Support through co-financing with multi-donor agencies	—	—	—	○	○	—	△
		PR for the use of Public-Private Partnership Scheme	Implementation of development studies, including pilot projects, and support for the horizontal development of companies that are implementing private sector collaborative projects in other regions.	—	○	—	○	○	—	◎
		Support for Digital Technology Utilization and Smart City Formation	Support for the formation of smart cities and the application of digital technologies	◎	◎	○	○	○	△	◎

Note: In case a technical cooperation scheme is recommended, it is categorized as Pilot Project

Source: Study Team

3.5.4 Records of JICA's Support in the Region

Table 3-26 shows the record of JICA's support for Central America and the Caribbean countries.

Table 3-26 Records of JICA's Support in the Region

Region	No	Country	JICA Office	Social and economic policy	Healthcare /Nutrition	Education	Agriculture /Rural development	Private sector	Governance and security	Environment /Disaster prevention	Digital /Innovation	Infrastructure /Energy	Tourism	PPP	
Central America (8)	1	Belize	[BO]	◎格差是正						◎					
	2	Costa Rica	[BO]					◎		◎○					
	3	El Salvador	[CO]	◎	◎○	◎	◎		◎○	◎○					
	4	Guatemala	[CO]		○	○	◎			◎○			○		
	5	Honduras	[CO]	◎○	◎	◎				◎○					
	6	Nicaragua	[CO]		◎	◎	◎			◎					
	7	Panama	[CO]	◎						◎○					
	Oil Producing (1)	8	Mexico	[CO]				○	◎○		◎○				
Caribbean (15)	9	Bahamas													
	10	Barbados													
	11	Cuba	[CO]		◎○		◎○			◎		◎●			
	12	Dominican Republic	[CO]										○		
	13	Haiti	[BO]		◎	◎○	◎○			◎					
	14	Jamaica	[BO]					◎		◎○		○			
	Oil Producing (3)	15	Trinidad Tobago												
		16	Guyana												
		17	Surinam												
	OECS (6)	18	Antigua and Barbuda												
		19	Dominica					◎○			◎○				
		20	Grenada												
		21	St. Christopher Nevis												
		22	St Lucia	[CO]				◎●			◎●				
		23	St Vincent Grenadines												

Note: ◎ Priority Sector ○ On-going ● Planned △ Completed

CO: Country Office, BO: Branch Office

Source: Study Team

3.5.5 International and Regional Organizations in the Region

International and regional organizations in the Central America and the Caribbean region is tabulated in Table 3-27.

Table 3-27 International and Regional Organizations in Survey Area

Region	Country	HQ	Social and economic policy	Healthcare /Nutrition	Education	Agriculture /Rural development	Private sector	Governance and security	Environment /Disaster prevention	Digital /Innovation	Infrastructure /Energy	Tourism	PPP
International Organizations			WB, IDB	PAHO	UNICEF	FAO, IFAD	IDB		UNDRR ICG/PTWS		IMO ICAO IEA IRENA		WB (IFC) IDB
Central American Integration System (SICA) (8 Countries)	Belize												
	Costa Rica		SE-CMCA ICAP		SG-CECC	SE-CAC			OCAM	CTCAP	CRRH		
	El Salvador	CCSICA SGSICA CFR-SICA	SE-COSEFIN CTPT CENTROE STAD	ST-COMISCA		OSPESCA	CENPRO MYPE	ST-COMMCA	SE-CCAD			SITCA CATA	
	Guatemala	PARLACEN		INCAP	CSUCA				CEPREDE NAC		SE-SEAC CRIE		
	Honduras		BCIE	CODICAD ER				CCP		COMTE LCA COCESN A			
	Nicaragua	CCJ							CCHAC		COCATR AM		
	Panama												
	Dominican Republic												
Caribbean Community (CARICOM) (14 Countries)	Belize					CRFM			CCCCC				
	Antigua and Barbuda												
	Bahamas												
	Barbados		CDF Carib- Export		UWI		CPSO	CLI/CLIC CLE CARICAD	CIMH CDEMA		CCREEE	CTO	
	Dominica												
	Grenada												
	Haiti												
	Jamaica		CDB	CARPHA	UWI								
	St. Christopher Nevis												
	St Lucia			CARPHA									
	St Vincent Grenadines												
	Trinidad Tobago		CROSQ?	CARPHA	UWI	CARDI		IMPACS CCJ	CMO	CTU	CTU		
	Guyana	HQ	Carib- Export COTA		UG		CCL	COTA				CASSOS	
	Surinam		CCC			CAHFSA	CCC					CRITI	
Organisation of Eastern Caribbean States (OECS) (6 Countries)	Antigua and Barbuda										ECCAA		
	Dominica												
	Grenada												
	St. Christopher Nevis		ECCB										
	St Lucia	HQ						ECSC					
St Vincent Grenadines													

Source: Study Team

3.5.6 Summary of Analysis of the Survey and Recommendations on Development Cooperation

(1) Summary of Analysis of the Survey

The 23 countries surveyed in this study belong to the Central American Integration System (SICA, 8 countries) or the Caribbean Community (CARICOM, 14 countries), except for Mexico and Cuba, and some countries located in the eastern Caribbean area belong to the Organization of Eastern

Caribbean States (OECS, 6 countries). These regional organizations possess their sectorial offices scattered in each city in the region.

This region includes four (4) oil-producing countries of Mexico, Trinidad and Tobago, Guyana, and Suriname those have an important role in the recent transformation of the "decarbonized / carbon-neutral" industrial structure.

In this survey, 11 sectors, including Socio-economic Policy, Health and Nutrition, Education, Agriculture and Rural Development, Private Sector, Governance and Citizen Security, Environment and Disaster Prevention, Digital Innovation, Infrastructure and Energy, Tourism, and Public-Private Partnership (PPP) have been surveyed. This sector survey confirmed the impact of the COVID-19 pandemic, by sector in each country, government measures and future directions. The information and data collection and analysis of this survey can be organized as follows:

① **"Disparity Problem" expanded with COVID-19**

In the countries surveyed, disparities between cities and regions, income disparities, access to public services (finance, health care, education, etc.) have been social problems since before COVID-19 pandemic, but in the sector survey, each it was confirmed that these traditional disparities have widened in the sector. These disparities are closely linked to poverty reduction, which is the most important policy common to Central America and the Caribbean, and immigration issues peculiar to Central America.

② **Shortage of basic infrastructure becomes apparent due to COVID-19 pandemic**

In the countries surveyed, there are variations in the development level of economic infrastructure such as roads, water services, and communication equipment; and social infrastructure such as hospitals, schools, and public spaces. It was confirmed that the negative impact of COVID-19 pandemic was larger where those infrastructure is poor.

③ **"New Social Issue" caused by COVID-19 pandemic**

A new working environment and lifestyle have been created by the normalization of behavioral restrictions that is a typical COVID-19 countermeasure. As a result, new demand for non-contact services, remote operations/services, delivery-type services, etc. have arisen for financial services, healthcare and hygiene services, education services, food services, etc. Regarding the response to this change in social structure, it was confirmed that procurement of materials and equipment and human resource development have become "new social issues" and are required to be addressed.

④ **Damage to the vulnerable supply chain caused by COVID-19 pandemic**

The manufacturing industry and agriculture have a long supply chain from the production stage to the purchase of users and consumers, but it was confirmed that the segment of the supply chain have damaged and lost the function in the middle of the process by COVID-19 pandemic.

⑤ **Differences in COVID-19 response policies in each country**

There is a "stringency index" as an index to evaluate the limit level of national behavior in government policy. In this survey, it has been monitored secular variation of this index during the survey period, but COVID-19 damage in countries with strict behavioral restrictions (large index value) such as Honduras and countries with weak behavioral restrictions (small index value) such as Nicaragua, there confirmed that no significant difference was found.

⑥ **Matters common to sector-specific recommendations (drafts)**

Comparing and analyzing the recommendations (drafts) of 11 sectors, (1) elimination of disparities by utilizing digital technology, (2) sharing of good practices and efficient human resource development through regional cooperation, (3) climate change and waste (medical

care, marine plastics, etc.) management needs, it was confirmed that “Green and Digital” technology and solutions are commonly recommended to be utilised.

⑦ **Issues of Citizen Security Level in the Region**

In Central America and the Caribbean region, the level of Citizen Security was far below the world level, and Citizen Security became a major social problem, which was a hindrance to investment and tourism. Since there has been an improvement trend in recent years, further improvement of this Citizen Security issue through various measures will be a good trigger for future economic growth in the region.

(2) **Recommendations for Development Cooperation**

Based on the results of the analysis, the following recommendations for future development cooperation is made:

① **Development Direction: "Strong, Inclusive and Sustainable Growth"**

Major themes that should be prioritized in Central America and the Caribbean have traditionally been industrial promotion, job creation, social sector development, disaster prevention capacity strengthening, governance strengthening, and Citizen Security improvement. Given the vulnerabilities that have become more vulnerable, there is an urgent new need to form a strong society to respond to them. In comparison to other parts of the world, the mineral resources are limited, with exception of Mexico, many countries have relatively small territories and populations, and the driving force for socio-economic development depends on human resources and tourism resources mainly the ocean-based tourism. Based on this situation, it is recommended that "Strong, Inclusive and Sustainable Growth" aiming to build a society where stable growth can be expected even if it is gradual is set as a major goal in future development in this region. It is expected that development based on this policy will lead to measures to contribute to solving the root cause of disordered immigrants, which is a social problem peculiar to the region, and under the same goal, cooperation with international organizations and regional organizations. It is necessary to deepen the situation, grasp the actual situation in cooperation with the countries concerned, agree on medium- to long-term directions, and divide the roles between the parties concerned and the countries to formulate and implement solutions.

② **Utilization of "Green Technology" in Development Cooperation**

After 2020, the transition to a “Decarboxylation Society” is a global issue. Future development cooperation projects need to consider the degree of contribution to carbon neutrality from the formation stage. The survey also identified some potential environmental issues. The existence of water pollution in the ocean and lakes, waste treatment in big cities, medical waste and marine plastics. Many of these existing environmental problems have already been overcome in developed countries. For environmental improvement and environmental protection, which are difficult to establish as a private investment project, it is considered that the efforts by the development cooperation project are effective as long as the independence of the government of the other party guarantees.

③ **Dealing with "Climate Change" in Development Cooperation**

“Colledor Seco (dry corridor)” reported in the agriculture and rural development sector, increased natural disasters from climate change reported in the environment and disaster prevention sector, and the frequency of large hurricanes reported in the tourism sector. Negative impact to the socio-economic impact caused by the global climate change, is not a national issue, so wide-area efforts are needed in collaboration with regional organizations.

④ Challenges of "Digital Technology" in Development Cooperation

Transition to a digital society is a global challenge, along with the green economy. By utilizing digital technology, premised on the development of ICT infrastructure, it is possible to eliminate the "access gap" that exists in many sectors in the region. On the other hand, digital technology has the characteristic that "operation costs are required after the service starts". For future development cooperation, the ICT infrastructure and utilization of digital technologies should be one of main component development projects. Appropriate applicable business scheme that distinguishes, private projects, PPP projects, and public projects, should be analysed at the initial stage of the projects.

⑤ Urban Problems in Development Cooperation and "Smart City Technology" as a Solution

There are nine cities with a population of more than one million (San Jose, Guatemala City, Tegucigalpa, Managua, Panama City, Mexico City, Havana, Santo Domingo, Port-au-Prince) in the region, and the population is increasing. In these cities, urban problems such as deteriorating Citizen Security, traffic congestion, waste treatment, wastewater and sewage treatment, and power shortages are becoming more serious. In developed countries and cities around the world, there are many cases where smart city technology is applied to solve these urban problems, so even in large cities in Central America and the Caribbean region, urban problem solving projects using smart city technology should be considered with reference of good practices in the similar type of cities in the region and the world.

⑥ Strengthen Wide-area Cooperation in Development Cooperation Projects

The Central American Integration System (SICA), the Caribbean Community (CARICOM), and the Organization of Eastern Caribbean States (OECS) exist in the region. As regional organizations in the development context, they are regional public for member countries, and "Creating, Disseminating and Sharing" of public goods are achieved. Since many development projects implemented as bilateral cooperation deal with issues common to the region, it have been proceeding with the construction of a business scheme with a mechanism for sharing the good practices of development cooperation projects in mind. It is effective to proceed with a similar approach. As a platform for sharing technology and knowledge, it is desirable to utilize the existing three regional organizations more than before.

⑦ Value Chain Analysis and Resilience Enhancement

Regarding the vulnerability of the supply chain in Central America and the Caribbean, which became apparent due to the COVID-19 pandemic, it is recommended to reconfirm the supply chain of each industry through existing businesses and additional surveys, and then consideration of measures to strengthen resilience is desirable.

⑧ Efficient Training of Human Resources in Development Cooperation

Many sectors have pointed out the importance of human resource development and are proposing to include it in development cooperation projects. Central America and the Caribbean can be generally divided into English-speaking countries and Spanish-speaking countries, and there are language barriers in communication. In order to overcome this, it should develop multi-language human resources on the donor side and the person in charge of the partner country involved in development cooperation.

⑨ Utilization of Pilot Project Scheme in General

Many lessons were learned from the pilot project conducted in this survey, which greatly contributed to the formulation of methods for future development project formulation in the country concerned. In particular, differences in business customs were recognized among the

parties concerned, and mutual understanding greatly progressed through the process of overcoming these differences and implementing the pilot project. The pilot project method enables speedy project implementation and allows confirmation of the reaction and evaluation of the government of the partner country in a short time. Based on this lesson, it should actively adopt that, as mutual understanding promotion tool, a pilot project scheme to be included in development cooperation projects.

(3) For Coming Stage

This survey collected and analyzed information and data on the socio-economic impact of the COVID-19 pandemic, conducted eight (8) pilot projects, and made a draft proposal on the direction of future development cooperation.

For the preparation towards the coming stages, both short and long term, based on the direction of development cooperation as described above, by utilizing the human network constructed and based on the results of this survey, it is indispensable to materialize several development cooperation projects in each sector in cooperation with governments and regional organizations in this region.

4. Impact of COVID-19 in Central America and the Caribbean and measures implemented

4.1 COVID-19 infection status in the region and comparison with other regions

Following the outbreak of a novel coronavirus (COVID-19) in Wuhan, Hubei Province, China, there has been a rapid spread of the disease in the community, region and internationally, with a rapid increase in the number of cases and deaths. On January 30th of 2020, the Director General (DG) of WHO declared the COVID-19 outbreak a Public Health Emergency of International Concern (PHEIC) under the International Health Regulations (IHR) (2005). In the Americas, the first case of COVID-19 was confirmed in the United States on January 20th of 2020, the first case in Latin America and the Caribbean was reported from Brazil on February 26th of 2020. Since then, COVID-19 has spread to all countries and territories in the 56 countries in Americas¹.

The infection situation in the target area is summarized in Chapter 7, Health Care and Nutrition, and ECLAC's analysis is as follows.

"The COVID-19 pandemic is a disaster that combines biological threats with a variety of vulnerabilities, including organizational and response capacities of the health system, overcrowding, informality, social workers and public transport. In Latin America and the Caribbean, such disasters are not uncommon in Latin America and the Caribbean, which have experienced many outbreaks of infectious diseases during the past 50 years, including dengue fever and cholera. However, unlike earthquakes, hurricanes, and floods that last for minutes, days, or weeks, infectious diseases can last for years, and the human and economic consequences of a pandemic are unprecedented. According to the World Health Organization (WHO), the number of deaths from COVID-19 through the November 2020 is eighteen times more than the number of deaths from all infectious diseases that have occurred in Latin America and the Caribbean from 1970 through 2019. Furthermore, these deaths represent a 63 percentage of the total number of deaths from all disasters in the region during the same period. For the first time since records began, all countries in the region are experiencing simultaneous economic contraction, job losses, and growing poverty and inequality. the COVID-19 epidemic has cracked existing development patterns and revealed their limits around the world, especially in Latin America and the Caribbean.²"

4.1.1 Status of COVID-19 infection in the region (infected, dead, vaccine)

The number of people infected and the number of deaths as of the date of February 2nd of 2022 are shown in Table 4-1. In terms of the number of infected people, Mexico's 4.98 million people is exceptionally high, followed by Cuba, Panama, Costa Rica, Guatemala, Dominican Republic, and Honduras. At the time of July, in terms of the number of deaths, Mexico has the highest number of deaths at 10,000. In terms of the number of deaths, Mexico leads with 0.3 million people, followed by Guatemala, Honduras, Cuba, Panama, Costa Rica, and the Dominican Republic.

Table 4-1 COVID-19 Infection Status in Central American and Caribbean Countries

(PAHO/WHO, Region of the Americas Update, 3 P.M. Feb. 2, 2022)

	Countries	Cumulative Cases as of 2 Feb 2022	Cumulative Death as of 2 Feb 2022
ATG	Antigua and Barbuda	6,731	127
BHS	Bahamas	32,645	748
BRB	Barbados	45,897	282
BLZ	Belize	52,004	629
CRI	Costa Rica	701,471	7,593
Cub.	Cuba	1,047,860	8,415
DMA	Dominica	9,032	51
DOM	Dominican Republic	557,919	4,313
SLV	El Salvador	135,109	3,914
GRD	Grenada	12,589	211
GTM	Guatemala	694,545	16,401
GUY.	Guyana	60,109	1,171

¹ COVID-19 - PAHO/WHO Response, Report 68 (14 January 2022) (<https://www.paho.org/en/documents/covid-19-pahowho-response-report-68-14-january-2022>)

² The coronavirus disease (COVID-19) pandemic: an opportunity for a systemic approach to disaster risk for the Caribbean, COVID-19 Report ECLAC-UNDRR, March 2021

	Countries	Cumulative Cases as of 2 Feb 2022	Cumulative Death as of 2 Feb 2022
HTI	Haiti	29,217	876
HND	Honduras	391,874	10,504
JAM	Jamaica	124,967	2,675
MEX	Mexico	4,985,689	306,920
NIC	Nicaragua	13,727	221
PAN	Panama	705,880	7,752
KNA	Saint Kitts and Nevis	5,446	37
LCA	Saint Lucia	21,081	333
VCT	Saint Vincent and the Grenadines	7,939	94
SUR	Suriname	73,956	1,267
TTO	Trinidad and Tobago	112,679	3,423

Source: PAHO (<https://www.paho.org/en/covid-19-global-and-regional-daily-update>)

Because of the wide variation in the populations of the 23 countries, it is difficult to compare the cumulative numbers in Table 4-2. In this case, Panama, Suriname, Dominican Republic, St. Lucia, Honduras, Guyana, and Trinidad and Tobago have the highest number of infected people, and Mexico, Panama, Suriname, Honduras, Trinidad and Tobago, Guyana, and Guatemala have the highest number of fatalities, in that order.

Table 4-2 COVID-19 Infection Status in Central American and Caribbean Countries (vs. 100,000 Population, as of 2022 February)

	Countries	Cumulative Cases	Cumulative Death
ATG	Antigua and Barbuda	1,291	42
BHS	Bahamas	3,311	64
BRB	Barbados	1,429	16
BLZ	Belize	3,381	83
CRI	Costa Rica	7,402	93
Cub.	Cuba	1,928	12
DMA	Dominica	273	0
DOM	Dominican Republic	3,058	35
SLV	El Salvador	1,239	37
GRD	Grenada	144	1
GTM	Guatemala	1,737	53
GUY.	Guyana	2,624	61
HTI	Haiti	168	4
HND	Honduras	2,733	72
JAM	Jamaica	1,705	37
MEX	Mexico	1,984	181
NIC	Nicaragua	102	2
PAN	Panama	9,530	152
KNA	Saint Kitts and Nevis	975	5
LCA	Saint Lucia	2,920	46
VCT	Saint Vincent and the Grenadines	2,019	10
SUR	Suriname	3,884	95
TTO	Trinidad and Tobago	2,423	65

Source: Survey Team (Ch6 Health Care and Nutrition, Table-66)

4.1.2 Comparison with Other Regions

A comparison of the infection situation in countries around the world and Central American countries (Table 4-3), the Americas are one of the most serious regions in the world in terms of both cumulative number of cases (36%) and cumulative number of deaths (44%).

Table 4-3 Number of New COVID-19 Infections and Deaths in the Last Week, and Cumulative Infections and Deaths, by WHO region, as of 2022 January

WHO Region	New cases in last 7 days (%)	Cumulative cases (%)	New deaths in last 7 days (%)	Cumulative deaths (%)
Americas	5,792,408 (27%)	137,352,449 (36%)	31,902 (47%)	2,518,094 (44%)
Europe	11,702,488 (54%)	149,655,337 (39%)	22,923 (33%)	1,778,905 (31%)
South-East Asia	1,720,773 (8%)	52,789,146 (14%)	7,955 (12%)	741,067 (13%)
Eastern Mediterranean	747,619 (3%)	19,305,272 (5%)	2,062 (3%)	322,449 (6%)
Africa	109,859 (1%)	8,132,548 (2%)	1,532 (2%)	164,817 (3%)
Western Pacific	1,478,457 (7%)	16,274,263 (4%)	2,278 (3%)	168,479 (3%)
Global	21,551,604 (100%)	383,509,779 (100%)	68,652 (100%)	5,693,824 (100%)

Source: WHO COVID-19 Weekly Epidemiological Update Edition 50, published 2 feb 2022

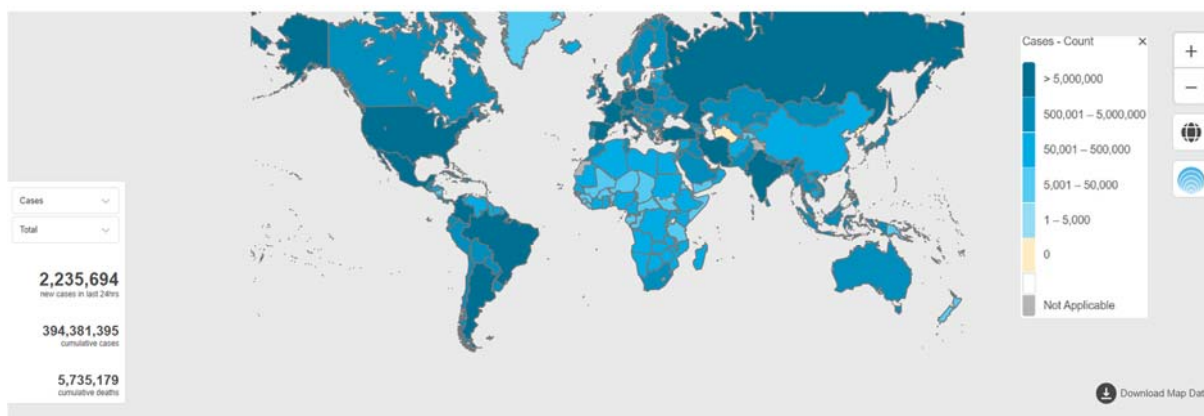
However, within the Americas, the United States, Brazil, Argentina, and Colombia account for 84% of the total number of infected people and 71% of the total number of deaths (Table 4-4). The percentage of 22 countries except Mexico is not necessarily high.

Table 4-4 Total Number of Cases, Deaths, and Fatality Rates (%) in PAHO Member Countries and Territories with more than 3010,000 Cumulative Cases

Country/Territory	Cases	Deaths	CFR (%)
United States of America	75,087,972	888,113	1.2%
Brazil	25,793,112	628,960	2.4%
Argentina	8,515,285	122,152	1.4%
Colombia	5,916,825	134,781	2.3%
Mexico	4,985,689	306,920	6.2%
Peru	3,286,151	206,220	6.3%
Canada	3,082,000	34,212	1.1%
Chile	2,258,005	39,824	1.8%
Cuba	1,049,406	8,420	0.8%
Bolivia	863,675	21,045	2.4%
Ecuador	739,297	34,572	4.7%
Panama	711,691	7,773	1.1%
Costa Rica	708,560	7,605	1.1%
Guatemala	698,385	16,421	2.4%
Uruguay	690,496	6,540	0.9%
Paraguay	594,430	17,426	2.9%
Dominican Republic	558,936	4,315	0.8%
Venezuela	489,305	5,462	1.1%
Puerto Rico	461,010	3,908	0.8%
Honduras	391,874	10,504	2.7%

Source: PAHO COVID-19 Region of the Americas Update, 2022.02.03, CFR: Case Fatality Ratio

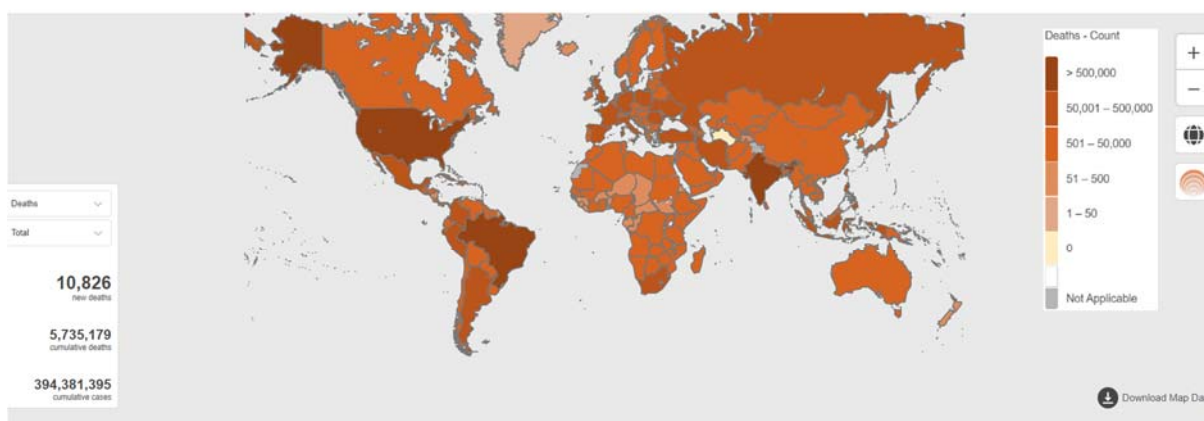
Table 4-1 through Table 4-3 shows the distribution of the number of COVID-19 cases, deaths, and vaccinated people worldwide according to WHO. In the Central American and Caribbean region in the Americas, there is a delay in vaccination in Haiti and Jamaica.



Globally, as of 6:08pm CET, 7 February 2022, there have been 394,381,395 confirmed cases of COVID-19, including 5,735,179 deaths, reported to WHO. As of 6 February 2022, a total of 10,045,314,770 vaccine doses have been administered.

Source: WHO Coronavirus (COVID-19) Dashboard (<https://covid19.who.int/>)

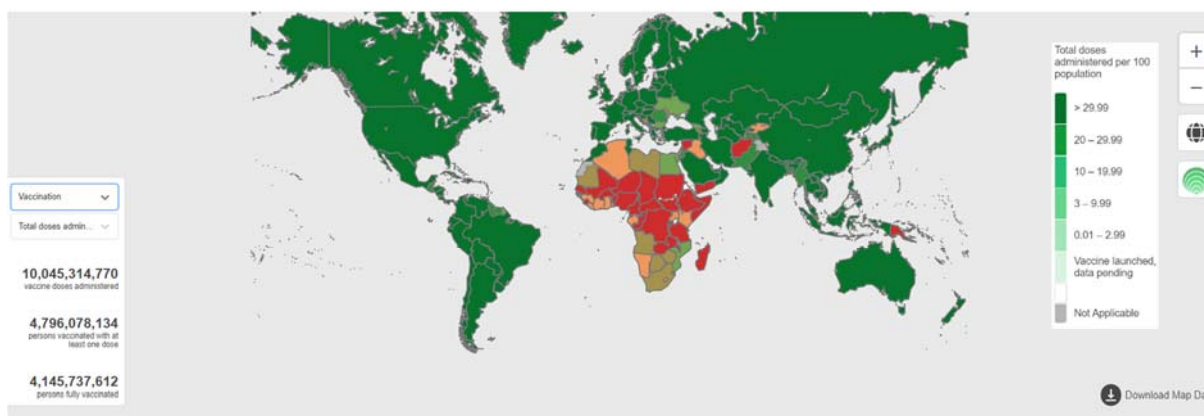
Figure 4-1 Number of People Infected with COVID-19 Worldwide



Globally, as of 6:08pm CET, 7 February 2022, there have been 394,381,395 confirmed cases of COVID-19, including 5,735,179 deaths, reported to WHO. As of 6 February 2022, a total of 10,045,314,770 vaccine doses have been administered.

Source: WHO Coronavirus (COVID-19) Dashboard (<https://covid19.who.int/>)

Figure 4-2 Number of Deaths due to COVID-19 Worldwide



Globally, as of 6:08pm CET, 7 February 2022, there have been 394,381,395 confirmed cases of COVID-19, including 5,735,179 deaths, reported to WHO. As of 6 February 2022, a total of 10,045,314,770 vaccine doses have been administered.

Source: WHO Coronavirus (COVID-19) Dashboard (<https://covid19.who.int/>)

Figure 4-3 Number of Vaccinations against COVID-19 Worldwide

4.2 Key Measures Implemented and Comparison with Other Regions

4.2.1 Policies related to COVID-19 Measures in the Region

Support to the health sector in each country is coordinated by the WHO, but for Central America and the Caribbean, the Pan American Health Organization (PAHO), the WHO's regional agency for the Americas, is working with national crisis management teams and key development partners. In the case of Central America and the Caribbean, the Pan American Health Organization (PAHO), a regional agency of the WHO in the United States, is working with national crisis management teams and key development partners. In this study, the health sector responses in each country are described in the chapter 6 on health care and nutrition (and its annexes), and The classification of measures taken by the governments of each country by sector is summarized in "6.3.3 Evaluation of various policies related to COVID-19 taken by the government". In this study, the health sector response is summarized in Chapter Health and Nutrition (and its Annexes), and the sectoral classification of measures taken by governments is summarized in Chapter Health and Nutrition (and its Annexes). Table 4-5 indicates the number of measures by country and sector for each of the policy categories listed in the ECLAC COVID-19 Observatory.

Table 4-5 Summary of the Number of Measures Taken by Governments as Summarized in COVID-19 Observatory in LAC

対策の分類項目	MEX	BLZ	GTM	SLV	HND	NIC	CRI	PAN	BHS	CUB	HTI	DOM	JAM	ATG	KNA	DMA	LCA	VCT	BRB	GRD	TTO	GUY	SUR
a																							
N	5	14	5	17	4	0	14	10	5	23	5	6	15	5	5	9	19	2	5	22	7	10	21
P	0	0	0	0	0	0	1	1	0	1	1	4	1	0	0	0	0	1	0	0	0	0	1
D	2	10	5	16	10	1	4	3	2	4	3	10	3	5	1	0	1	3	2	2	4	3	3
S	6	2	18	12	2	6	19	12	0	3	0	13	0	0	0	0	7	0	4	1	0	0	4
Travel restriction	1	14	7	14	5	4	8	8	4	7	8	6	10	10	4	4	7	3	3	8	7	4	6
Mitigation of exacerbation and	2	2	12	19	14	1	10	0	0	5	0	10	1	0	0	2	0	1	1	1	1	0	0
b																							
Socioeconomic policy	18	16	37	49	20	4	48	25	5	17	13	53	11	2	3	1	4	5	6	7	11	5	8
Health care & nutrition	9	9	31	39	15	10	14	13	4	7	8	26	9	6	2	3	5	4	2	0	5	3	1
Education	3	2	9	18	1	1	10	2	0	2	1	6	5	0	1	2	1	1	2	1	2	1	0
Agriculture & rural development	0	0	0	4	2	0	3	1	0	3	1	4	1	0	1	0	0	0	0	0	0	1	1
Private sector	11	12	24	12	8	4	38	13	3	14	2	20	5	2	0	9	2	4	7	6	9	7	1
Environment & disaster prevention	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Governance and social security	10	2	15	5	8	5	13	3	4	4	7	5	3	3	1	1	3	1	3	1	4	2	4
DX and innovation	2	1	3	6	1	2	6	3	0	1	1	2	1	0	0	0	1	0	0	0	0	2	0
Infrastructure & energy	3	2	2	1	1	1	4	2	0	0	0	2	0	0	0	0	0	1	0	0	0	1	0
Tourism	0	0	0	0	1	1	10	0	1	1	0	2	2	0	0	0	0	0	0	0	0	1	0
PPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Others (b)	3	1	9	4	1	1	1	0	1	7	4	2	0	1	1	0	0	0	4	3	7	0	0
Total	59	45	130	138	58	29	150	62	18	56	37	123	37	14	9	16	16	16	24	18	38	23	15

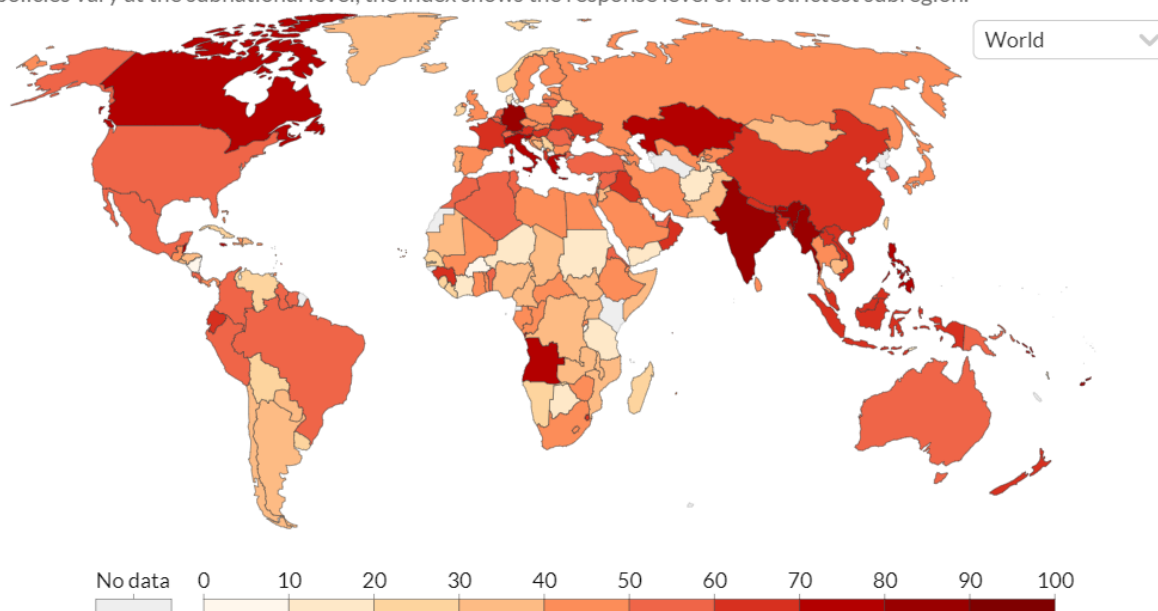
Source: Prepared by the research team based on ECLAC COVID-19 Observatory

4.2.2 Comparison with Other Regions

COVID-19 has affected most of the countries in the world, but the magnitude of the impact has varied greatly from country to country, and some countries are considered to have been successful in controlling the spread of the infection and the number of deaths. While the reasons for the differences in the magnitude of the damage are not clear, differences in government policy responses may be a partial factor, and the Oxford Coronavirus Government Response Tracker (OxCGRT) was consulted to determine what policies have been implemented. The OxCGRT project uses 9four response indicators (school closures, workplace closures, public event cancellations, assembly restrictions, and other measures). The OxCGRT project has collected data on four response indicators (school closures, workplace closures, cancellation of public events, restrictions on public gatherings, closure of public transportation, staying at home, public information campaigns, restrictions on internal travel, and restrictions on international travel) and compiled them into an index called the Government Stringency Index (Figure 4-4).

COVID-19 Stringency Index, Feb 2, 2022

The stringency index is a composite measure based on nine response indicators including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100 = strictest). If policies vary at the subnational level, the index shows the response level of the strictest subregion.



Source: Policy Responses to the Coronavirus Pandemic, Our World in Data <https://ourworldindata.org/policy-responses-covid>

Figure 4-4 Status of the Global Government Stringency Index (as of February 2, 2022)

The average score of the nine indicators is calculated as the value 0 from 100, and the higher the score, the more severe the government's response (i.e. 100, the most severe response). It is important to note that this indicator records the severity of government policies and does not suggest the adequacy or effectiveness of a country's response, and a high score does not indicate that a country's response is "better" than that of lower-ranked countries.

The summary of Figure 4-4, as an extracted data for the target 23 countries, is shown in Table 4-6.

Table 4-6 Stringency Index (OxCGRT) in C.A and Caribbean

C. A.								Caribbean														
MEX	BLZ	GTM	SLV	HND	NIC	CRI	PAN	BHS	CUB	HTI	DOM	JAM	ATG	KNA	DMA	LCA	VCT	GRD	BRB	TTO	GUY	SUR
57.8	77.7	44.0	35.1	34.2	8.3	57.4	48.1	42.5	26.8	43.5	37.9	74.0	n.a.	n.a.	37.0	n.a.	n.a.	n.a.	64.8	48.1	n.a.	54.6

Source: Compiled by the research team based on OxCGRT

Data for many countries in the Caribbean are not available, but many countries with data have more than 50 indicators, which shows that they are not necessarily loose compared to other regions. However, as mentioned above, this data is a compilation of nine indicators, and it is necessary to refer to each data for details. Although detailed analysis is not performed here, only an overview is given, but according to “Income compensation” in Figure 4-5 and “Summary of vaccination policy” in Figure 4-6, income compensation and vaccines are provided in many countries in the target area. Both inoculations show weak policies.

Income support during the COVID-19 pandemic, Feb 2, 2022



Income support captures if the government is covering the salaries or providing direct cash payments, universal basic income, or similar, of people who lose their jobs or cannot work.

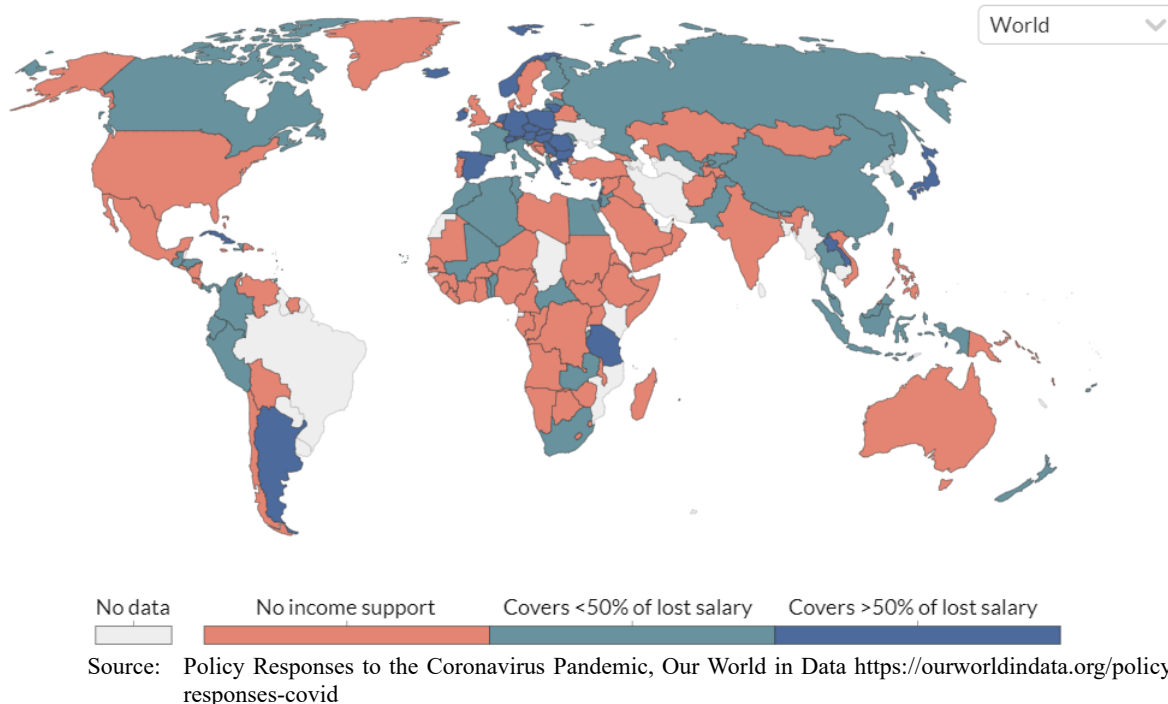


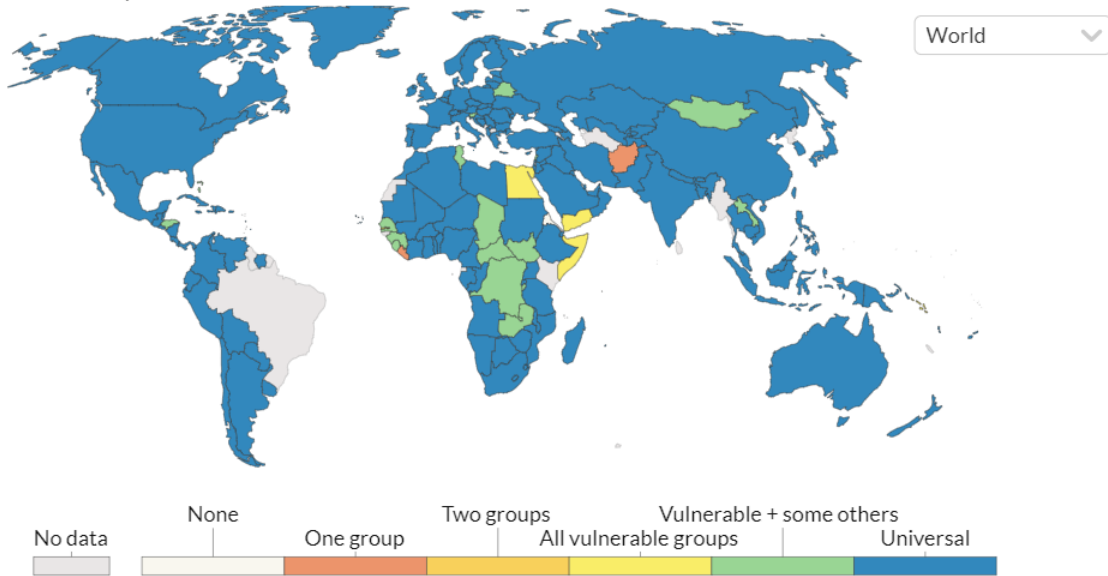
Figure 4-5 Status of the Global Income Support Index (as of February 2, 2022)

COVID-19 vaccination policy, Feb 2, 2022



This metric records policies for vaccine delivery for different groups.

- Availability for ONE of following: key workers/ clinically vulnerable groups / elderly groups
- Availability for TWO of following: key workers/ clinically vulnerable groups / elderly groups
- Availability for ALL of following: key workers/ clinically vulnerable groups / elderly groups
- Availability for all three plus partial additional availability (select broad groups/ages)
- Universal availability



Source: Policy Responses to the Coronavirus Pandemic, Our World in Data <https://ourworldindata.org/policy-responses-covid>

Figure 4-6 Status of the Global Vaccination Policy Index (as of February 2, 2022)

5. Socio-economic Policy Sector

5.1 General

Firstly, in order to understand the impact of coronavirus disease 2019 (COVID-19) on the economies of the 23 target countries, statistical economic indicators were collected and a comparative analysis between 2019 and 2020, before and after COVID-19 was conducted. Further, to understand the industrial structure of the Central American and Caribbean countries and the impact of COVID-19 from such reports as of Economic Commission for Latin America and the Caribbean (ECLAC), United Nations Development Programme (UNDP), and Inter-American Development Bank (IDB), Japan International Cooperation Agency (JICA) officials were interviewed about the issues on the socio-economic sectors of the three countries (Guatemala, El Salvador, and Dominican Republic) where in-depth surveys were conducted, and the future direction of development cooperation is headed.

Based on the above, issues and trends in the socio-economic policy sector in the 23 target countries were summarized, the criteria for selecting priority countries were set, and priority countries and issues that JICA should address in the socio-economic policy sector in the future were selected. Then, a hypothesis was formulated on how JICA should cooperate in the development of the socio-economic policy sector in Central America and the Caribbean. The progress and results of the work are summarized below.

5.2 Summary of Sector Survey

Table 5-1 Sectoral Hypotheses and Policy Recommendations on the State of Development Cooperation (draft) (Socio-economic Policy)

No.	Item	Socio-economic Policy		
1	Issues pre COVID-19	<ul style="list-style-type: none"> ▪ Diversification of industrial structure and discovery of competitive industries ▪ Development of domestic market (distribution, shipping, storage) ▪ Different employment resilience by sector ▪ Labor shortage and slow response to digitalization ▪ High reliance on external debt and foreign investment ▪ Low access to finance ▪ Formation, policy formulation, and dissemination of fundamental support to break out of poverty ▪ Financial system challenges ▪ Lack of domestic employment and dependence on foreign remittances 		
2	Grouping of the target countries	<ul style="list-style-type: none"> ▪ Industrial structure, human resources and DX, economy and finance, financial inclusion 		
3	Vulnerability under COVID-19	<ul style="list-style-type: none"> ▪ Inability to ship and store manufactured goods due to stoppage of import/export and distribution ▪ Lack of market development and sales capacity at the domestic market and community level ▪ Impact on maquila industries with low employment resilience ▪ Delays in adapting to digitalization ▪ Delay in purchase of digital equipment ▪ Increased need for various public investments, subsidies and grants against limited public budget ▪ Decreased cash flow due to reduced income, dependence on subsidy and grant policies ▪ Stagnation in lending due to challenges in the financing system (real estate collateral and credit guarantees) ▪ Delay in response to system development to reduce costs ▪ Livelihood upheaval due to decline in overseas remittances 		
4	Issues emerged under COVID-19	<ul style="list-style-type: none"> ▪ Self-restraint and regulation of business ▪ Labor shortage due to rapid increase in demand (agriculture, shipping, etc.) ▪ Lack of office space in the rural areas ▪ Demand for and treatment of essential workers ▪ Online consumption, lack of digital talent ▪ Inequality due to lack of internet access ▪ Digitalization needs for lowering financial costs 		
5	Proposed countermeasures	<table border="0"> <tr> <td style="vertical-align: top;"> Economy and Finance Financial Inclusion </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ▪ Consideration of new schemes to improve cost efficiency and promote the use of private funds ▪ Continued support for existing poverty alleviation measures (e.g. ACTIVO in Honduras), and support for the introduction of digital technology through smart phone applications and emerging banks. </td> </tr> </table>	Economy and Finance Financial Inclusion	<ul style="list-style-type: none"> ▪ Consideration of new schemes to improve cost efficiency and promote the use of private funds ▪ Continued support for existing poverty alleviation measures (e.g. ACTIVO in Honduras), and support for the introduction of digital technology through smart phone applications and emerging banks.
Economy and Finance Financial Inclusion	<ul style="list-style-type: none"> ▪ Consideration of new schemes to improve cost efficiency and promote the use of private funds ▪ Continued support for existing poverty alleviation measures (e.g. ACTIVO in Honduras), and support for the introduction of digital technology through smart phone applications and emerging banks. 			

No.	Item	Socio-economic Policy	
			<ul style="list-style-type: none"> ▪ Improving access to finance by improving systems for real estate collateral and land registration, and expanding credit guarantee systems ▪ Support for future financial instability risks, such as the creation of regional standards through cooperation with regional organizations such as CARICOM, SICA, LAC countries, which has succeeded in spreading CBDCs, especially Brazil where CBDC are leading in implementation. ▪ Support for lowering remittance fees and simplifying remittances through the use of smartphone applications (digitalization promotion), and support for the development of solidarity economy and nostalgia markets ▪ Introduction of digital equipment and capacity development in community support
6	Proposed cooperation strategy and recommendations	Economy and Finance	<p>Support for the development of new schemes using private funds</p> <ul style="list-style-type: none"> ▪ Create a system that facilitates the entry of private funds, such as SIBs with pay for success system ▪ Continuing to provide long-term support for fundamental issues in the region (support that is closely linked to communities, financial institutions, etc., through the Honduras Poverty Alleviation Model (ACTIVO), etc.)
		Financial Inclusion	<p>Support for continuous poverty alleviation and introduction of emerging technologies</p> <p>Support for the improvement of financial system issues</p> <ul style="list-style-type: none"> ▪ Support for financial digitalization and smartphone application development (support for technological development to improve financial access) ▪ Introduction and technology transfer of Japanese systems such as credit guarantee associations and credit risk information databases ▪ As for CBDCs, which are expected to contribute to reducing user costs, the OECS countries, which are ahead of other countries in implementing CBDCs, and the Central Bank of Brazil, which has already achieved a high penetration rate in Brazil, as well as FINTEC companies, including Japanese companies, are expected to be involved in lobbying SICA, CARICOM, and other regional organizations to quickly establish unified regional standards and other measures to deal with future risks of financial instability.
		Others	<p>Sharing of technical experience in Japan</p> <p>Support sustainable and efficient development by expanding cooperation with international organizations</p> <ul style="list-style-type: none"> ▪ With regard to community remittance, introduction of case studies of hometown tax payment, cloud funding and development of prefectural antenna stores in Japan (nostalgia market development support) ▪ Blue economy, anti-sargassum measures, connections with business networks (e.g., IDB Connect America), coordination with international organizations for long-lasting support
			<p>Brokering cross-regional cooperation to enhance competitiveness (further in-depth study)</p> <ul style="list-style-type: none"> ▪ Support for the expansion of best practices through collaboration between CARICOM and SICA ▪ (Intermediary cooperation for research on the potential of successful cases in English-speaking CARICOM in Spanish-speaking countries)

Source: Study Team

5.3 Sectoral Scope of Work

Table 5-2 Scope of Works (Socio-economic Policy)

No.		Sub-sector	Work Scope
1	Sector Targets		Through the collection and compilation of information on social and economic policies, analyze how the various measures taken in response to COVID-19 have affected each sector. In the analysis of vulnerability in priority sectors, field surveys and interviews will be conducted on the status of access to financial services for the socially vulnerable in the sectors, and support measures to overcome vulnerability will be discussed.
2	Work Scope Update		Based on consultations with JICA, select countries to be surveyed or confirm the priorities of the survey, and update and agree on the scope of the survey.
3	Domestic Information and Data Collection		Collection of information and sorting out of issues on Japan's existing assistance in the field of education
4	[Task 2]		Selection of interview-related institutions
5			Conduct of interview survey
6		Collect research results from international/regional organizations	<ul style="list-style-type: none"> ▪ GDP annual growth rates (at constant 2012 prices) ▪ GDP by sector annual growth rates ▪ GDP by 9 subsectors prepared by CEPAL (up to 2020) ▪ GDP by 6 types of expenditure by CEPAL (up to 2020) ▪ Balance of payments for 6 accounts prepared by CEPAL ▪ Other economic statistical data
7		Macroeconomic analysis	<ul style="list-style-type: none"> ▪ Understand the status of industrial structure of each country before COVID-19. ▪ Collect comparable indicators for pre- and post-COVID-19 and analyze the impact of COVID-19
8		Government's control policy on COVID-19 and impact of the policy of COVID-19	<ul style="list-style-type: none"> ▪ Government's control policy on COVID-19 ▪ Evaluation (impact) of the policy ▪ Organize measures to support against the spread of infection and severe disease, and to assist affected industries and people.
9		Confirmation of aid policies and plans of Japan and other donor agencies	<ul style="list-style-type: none"> ▪ Research reports by country and donor agency, academic reports, mass media information, etc. ▪ Receive input from [Task 3].
10		Analysis of impacts and identification of priority sectors	<ul style="list-style-type: none"> ▪ Receive "policy and impact" inputs from sectoral surveys ▪ Determine the sectors with the highest positive and negative impacts from COVID-19 ▪ Identify "priority sectors" in each country based on development policies and plans of target countries, aid policies and plans of the Japanese government and other donors, and industry composition
11		Preparation of country reports	[Task 2] Compile the contents of the survey as country-specific report for each country.
12		Vulnerability analysis in key sectors	<ul style="list-style-type: none"> ▪ Establish vulnerability analysis definitions and indicators for each key sector ▪ Assess and integrate vulnerability at the individual, social, regional and national levels ▪ Develop quantitative indicators of vulnerability in development cooperation in tabular form
13		Preparation of response and support measures to overcome vulnerabilities	<ul style="list-style-type: none"> ▪ Considering the business practices of each country and sector, compile feasible measures and support for development cooperation needs during the recovery phase of "With COVID-19" societies in the country. ▪ In addition, the development cooperation needs of the recovery phase of the future Post-COVID-19 society will be addressed.
14		Preparation of hypotheses on the modalities of development cooperation	<ul style="list-style-type: none"> ▪ Develop hypotheses on measures that can be taken to overcome each vulnerability in line with the Ministry of Foreign Affairs' Country Development Cooperation Policy and Project Deployment Plan and JICA's PDM. ▪ The hypotheses created confirm priorities for cooperation needs on a country-by-country basis.

No.		Sub-sector	Work Scope
15		Preparation of sector-specific reports	<ul style="list-style-type: none"> [Task 4] Prepare the Sector-Specific Hypothesis Report by compiling the results of the survey.
16		Selection of countries for field survey	<ul style="list-style-type: none"> Based on the hypothesis, the project proponent of the pilot project is assumed. Selection of candidate project implementers through JICA field office, EOJ, and JETRO/JCC. Based on the list of PPs whose willingness to implement the project has been confirmed, the candidate countries for the field survey are selected and an itinerary is prepared.
17	[Task 5]	Visit international/regional organizations and government agencies to collect additional information related to [Task 2] and [Task 4], and exchange views on how development cooperation should be conducted.	
18	[Task 6/7/8]	Advise on the selection, implementation, and conclusion of pilot projects from the perspective of the socio-economic policy sector.	
19	[Task 9]	Prepare necessary materials for an experts' meeting and make a presentation on the survey of the sector in charge.	
20	[Task 10]	Develop policy recommendations for the sector in charge	
21	[Task 11]	Prepare academic papers and other similar documents. for the sector in charge	

Source: Study Team

5.4 Survey Method by Sector

To begin with, in order to investigate the general economic situation of each country and the impact of COVID-19, the Study Team has decided to conduct a survey on 1) the industrial composition and other conditions before COVID-19 in each country, 2) sectoral trends (growth trends) until COVID-19, and 3) the impact of COVID-19 on the economy by comparing macroeconomic indicators in 2019 and 2020, before and after COVID-19. In this way, the magnitude of the impact of COVID-19 will be determined for each sector, and the sectors with the greatest impact will be selected as priority sectors for detailed studies.

Information collection and analysis of policies and existing impact studies related to COVID-19 measures in the target sectors of each country were conducted using the methods shown in Table 5-3, depending on the work status of each sector.

Table 5-3 Survey Methodology Applied on the Socio-economic Policy Sector

No.	Method of the Survey	Contents	Person-in-charge of the Work	
			Team Member	Local Expert
1	Extraction and Selection of Organizations to be Surveyed	The survey targets were identified by the Study Team network and through consultation with JICA offices, the organizations involved in each sector were selected.	○	○
2	Information Search on the Web	Create a work plan for searching information on the web	○	—
3	Information Search on the Web	Conduct and organize information searches on the web	○	○
4	Distribution and Collection of Questionnaires	Questionnaires were sent to the surveyed organizations in each sector in the name of the Study Team, requesting them to conduct interviews. The name of the local expert was indicated on the questionnaire as the person in charge of the survey.	○	○
5	Explanation and Hearing by Telephone	Whenever necessary, explanations of the survey contents and hearings by telephone to the person in charge of the surveyed organization were done.	—	○
6	Online Interviews	When the surveyed institutions agreed to online interviews, the survey contents were explained	○	○

No.	Method of the Survey	Contents	Person-in-charge of the Work	
			Team Member	Local Expert
		and through the online interviews, collected information.		
7	Interviews During the Field Survey	During the field survey, the team members in charge of each sector visited the target institutions to collect information.	○	○

Note: "○": In charge, "—": Not in charge

Source: Study Team

5.5 Collecting Basic Information on 23 Target Countries

5.5.1 Collected and Analyzed Data

The 23 countries covered are divided into the Caribbean, Central America, and South America (Guyana and Suriname) regions. Based on the data from ECLAC, which was considered to have the most information, the Study Team tried to collect the missing information by directly asking ECLAC and the Central Bank of each country. As a result, statistics up to 2020 on the above three indicators for 17 out of the 23 countries were collected. The Study Team analyzed 1) the industrial structure of each country prior to COVID-19, 2) sectoral trends (growth trends) up to COVID-19 using statistics from 2011 to 2019 (or other available years), and for 3) comparisons between 2019 and 2020, before and after COVID-19 (sectoral impact of COVID-19). For the six countries that data were not available (Belize, the Bahamas, Cuba, Haiti, Barbados, and Trinidad and Tobago), the Study Team analyzed the sectors (quantitative and qualitative) affected by COVID-19 as described in the survey results of development partners, e.g., reports of international organizations. In many countries, it was difficult to obtain the data on the working population by sector, which was originally selected as an indicator, and thus, it was decided not to use it in this analysis.

Table 5-4 shows the comparable economic indicator data before and after COVID-19 (gross domestic product (GDP), sectoral GDP, import/export figures, overseas remittances) and a list of collected data on the economic impact of COVID-19 in international organizations.

Table 5-4 List of Economic Data for COVID-19 of International Organizations

No.	Name of Institution	Name of Information
1	ECLAC	Building a New Future: Transformative Recovery with Equality and Sustainability
2	ECLAC	Economic Survey of Latin America and the Caribbean 2020, Response to COVID-19
3	ECLAC	Preliminary Overview of the Economies of LAC 2020
4	ECLAC	Social Panorama of Latin America
5	ECLAC	Economic Survey of LAC 2020
6	ECLAC	Statistical Yearbook for Latin America and the Caribbean
7	ECLAC	COVID-19 and the Socio-economic Crisis in Latin America and the Caribbean
8	IDB	Opportunities for Stronger and Sustainable Post-Pandemic Growth
9	IDB	The Future of Work in Latin America and the Caribbean 6 ~ How can technology facilitate job recovery after COVID-19
10	IDB	Opportunities for Stronger and Sustainable Post-Pandemic Growth
11	IDB	Policies to Fight the Pandemic: 2020 Latin American and Caribbean Macroeconomic Report
12	WB	Desatando el Potencial de Crecimiento de Centro América
13	WB	Renewing with Growth~Semi-annual Report of the Latin America and the Caribbean Region
14	WB	The Economy in the Time of COVID-19~Semi-annual Report of the Latin America and the Caribbean Region
15	IMF	Staff Report for the 2021 Article IV Consultation and Request for an Extended Arrangement Under the Extended Fund Facility for Costa Rica
16	IMF	World Economic Outlook (WEO) 2021.04~Managing Divergent Recoveries
17	IMF	Regional Economic Outlook: Western Hemisphere Pandemic Persistence Clouds the Recovery
18	UNDP	Regional Human Development Report 2021
19	UNICEF	LAC COVID-19 Response Progress Report No. 3
20	GCF	Scaling Up Climate Finance in the Context of Covid-19
21	ILO	COVID-19 and the World of Work~Updated Estimates and Analysis
22	OECD	COVID-19 in Latin America and the Caribbean: Regional Socio-economic Implications and Policy Priorities

No.	Name of Institution	Name of Information
23	North American Observatory on Health Systems and Policies	Comparing Policy Responses to COVID-19 among Countries in the Latin American and Caribbean (LAC) Region
24	Committee for the Coordination of Statistical Activities (CCSA)	How COVID-19 is Changing the World: a Statistical Perspective
25	BCIE	Centroamérica en Cifras (Central America Yearbook) 2020
26	BCIE	Impacto Económico del COVID-19
27	SICA, SIECA, CMCA	Estimación del Impacto Económico del COVID-19 en Centroamérica y República Dominicana
28	World Economic Forum	The Travel & Tourism Competitiveness Report 2019: Travel and Tourism at a Tipping Point
29	WTTC	2021 Travel & Tourism Economic Impact Research Methodology
30	WTTC	2020 Travel & Tourism Economic Impact Research Methodology
31	Inter-American Dialogue	A Commitment to Family: Remittances and the Covid-19 Pandemic~Experiences of US Migrants
32	Banco Central de Honduras	Resultados de la Encuesta Semestral de Remesas Familiares
33	Banco Central de Nicaragua	Informe Anual 2020
34	BCR El Salvador	Informe Económico Mensual 2020.01~2021.02
35	FUSADES	La Economía Muestra Lenta Recuperación Después de la Reapertura por el COVID-19
36	FUSADES	Impacto del COVID-19 en los Sectores Económicos en 2020 y Perspectivas de Recuperación para 2021
37	FUSADES	Informe de Coyuntura Económica, Mayo 2021
38	FUSADES	Ley Bitcoin: Una Ley que Genera Incertidumbre para Los Salvadoreños
39	HBS	Measuring the “Impact” in Impact Investing
40	Embassy of Japan in Trinidad and Tobago	Outline of the Republic of Guyana

Source: Study Team

5.5.2 Analysis of Macroeconomic Indicators

In order to understand the economic situation and the impact of COVID-19 of the 23 countries, three indicators, i.e., GDP, external debt, and foreign investment, and other related indicators were surveyed. After searching for indicators that would be useful to understand the impact of COVID-19: a comparison of indicators for 2019 and 2020, and a time series analysis with common indicators for the 23 countries, it was decided to use the economic indicators collected and published by ECLAC, which is also referred to by the IDB and other organizations.

(1) GDP Trends of Target Countries

As shown in the GDP trends (ECLAC) in Table 54, the economic overview of the 23 countries surveyed has been expanding almost steadily with the exception of a few countries, but all countries except Guyana, which started oil production in December 2019, have experienced a year-on-year decline in 2020, indicating the impact of COVID-19.

Table 5-5 GDP at Constant Price Except Mexico

(USD in Million)

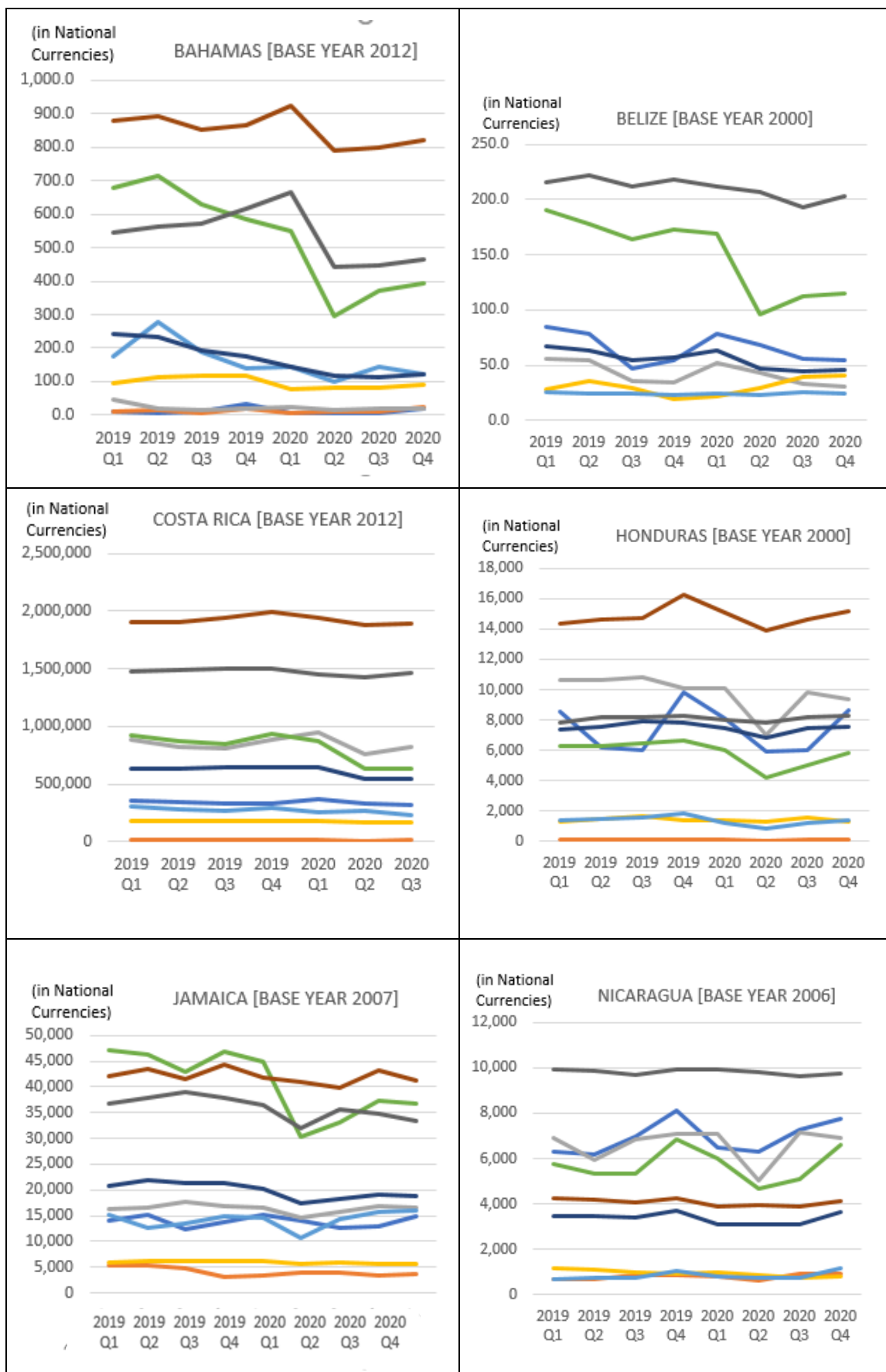
Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Antigua and Barbuda	1,126	1,164	1,157	1,201	1,247	1,316	1,357	1,451	1,500	1,260
Bahamas	10,158	10,471	10,096	10,327	10,491	10,501	10,671	10,967	11,044	9,441
Barbados	4,499	4,479	4,414	4,411	4,519	4,633	4,653	4,626	4,566	3,762
Belize	1,404	1,438	1,456	1,515	1,555	1,554	1,583	1,629	1,657	1,423
Costa Rica	39,317	41,236	42,265	43,762	45,361	47,268	49,233	50,245	51,335	49,234
Cuba	66,131	68,125	69,999	70,733	73,872	74,251	75,595	77,294	77,126	70,725
Dominica	493	488	483	504	491	503	469	480	496	413
El Salvador	19,150	19,691	20,131	20,475	20,966	21,499	21,982	22,512	23,106	21,271
Grenada	777	768	786	844	898	932	973	1,013	1,033	917
Guatemala	42,375	43,634	45,247	47,258	49,192	50,509	52,065	53,794	55,875	55,026
Guyana	3,611	3,802	3,941	4,007	4,035	4,188	4,345	4,538	4,781	6,860
Haiti	12,624	12,688	13,236	13,464	13,810	14,060	14,413	14,653	14,406	13,931
Honduras	16,447	17,126	17,604	18,142	18,839	19,572	20,520	21,309	21,875	19,914
Jamaica	13,449	13,367	13,436	13,529	13,653	13,841	13,979	14,243	14,370	12,945
Mexico	1,096,548	1,136,488	1,151,877	1,184,703	1,223,717	1,255,907	1,282,446	1,310,596	1,308,281	1,199,576
Nicaragua	9,312	9,917	10,405	10,903	11,426	11,947	12,501	12,080	11,636	11,406
Panama	32,771	35,976	38,459	40,408	42,724	44,841	47,348	49,051	50,542	41,470
Dominican Republic	55,548	57,057	59,839	64,058	68,495	73,056	76,466	81,805	85,938	80,163
Saint Kitts and Nevis	774	757	798	848	856	881	863	888	907	809
Saint Vincent and the Grenadines	678	688	700	709	718	732	739	755	759	738
Saint Lucia	1,551	1,549	1,518	1,538	1,540	1,593	1,648	1,692	1,721	1,312
Suriname	4,951	5,084	5,233	5,247	5,068	4,819	4,894	5,137	5,193	4,440
Trinidad and Tobago	22,152	22,439	22,939	22,730	23,067	21,775	21,124	21,138	20,875	19,445
Total	1,455,847	1,508,430	1,536,022	1,581,316	1,636,540	1,680,177	1,719,867	1,761,897	1,769,022	1,626,481

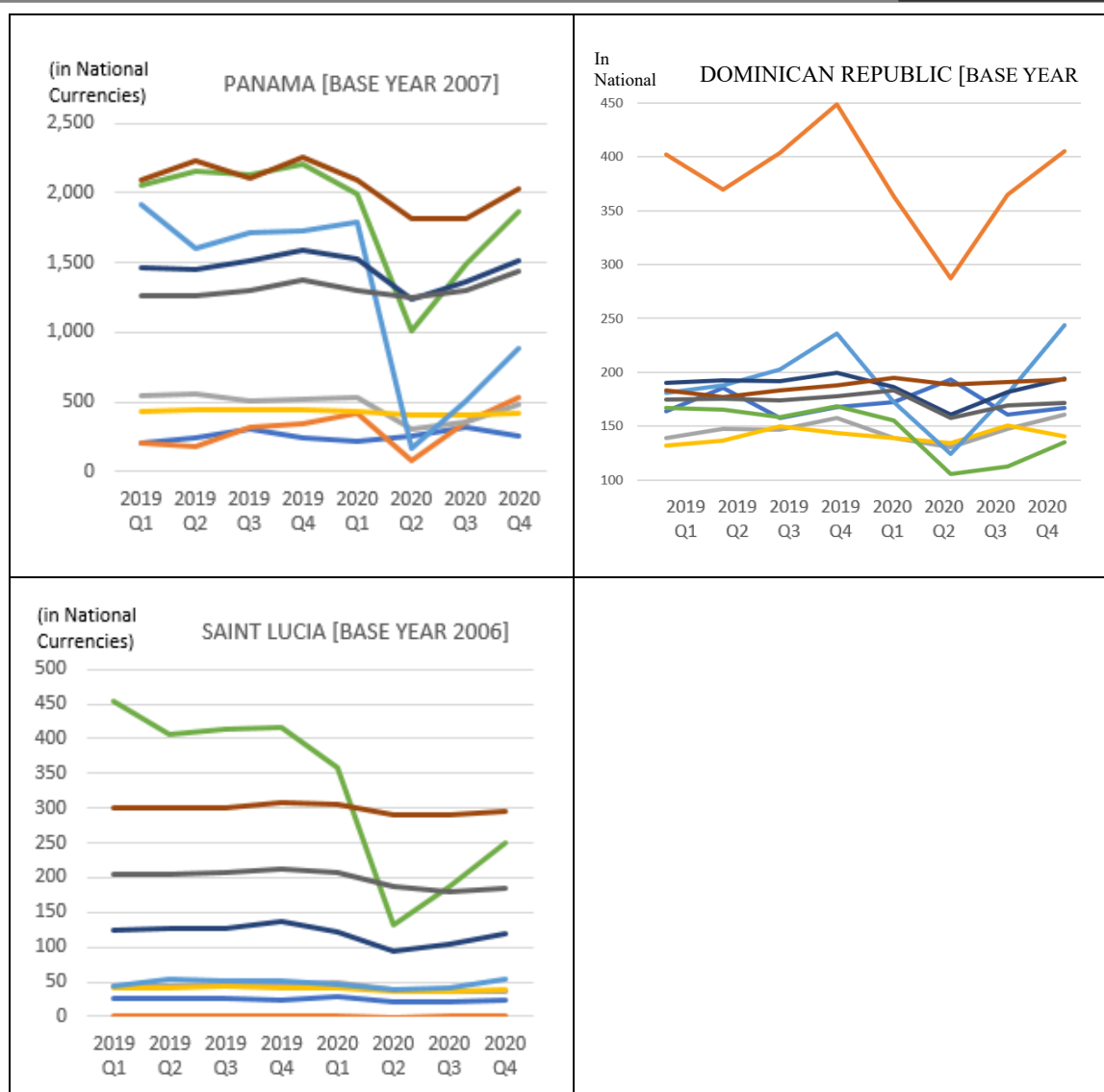
Source: CEPALSTAT

(2) Quarterly GDP Trends in 2020

As for the impact of COVID-19 on the economy, it is important to analyze the monthly or quarterly trends in 2020, but the status of these statistics varies by country. The information is available for nine countries (Bahamas, Belize, Costa Rica, Jamaica, Nicaragua, Panama, Dominican Republic, and Saint Lucia). Although it varies by country and sector, it generally shows a slight impact in the first quarter of 2020, a significant decrease in the second quarter of 2020, and a flat or slight recovery/continuous decrease from the third quarter onward.

Legend Items	
	Agriculture, hunting, forestry and fishing
	Mining and quarrying
	Manufacturing /j
	Electricity, gas and water supply
	Construction
	Wholesale and retail trade, repair of goods, and hotels and restaurants /j
	Transport, storage and communications /j
	Financial intermediation, real estate, renting and business activities /j
	Public administration, defence, compulsory social security, education, health and social work, and other community, social and personal service activities /j





Source: Study Team

Figure 5-1 Quarterly GDP in 2019 and 2020

(1) Changes in External Debt

As for their external debts in 2020, these have increased compared with the previous year (2019) in most of the countries, as shown in Table 5-6. The top countries in terms of percentage increase are Panama, Dominican Republic, Bahamas, Mexico, Barbados, Honduras, El Salvador, and Jamaica.

Table 5-6 External Debt (% of GDP)

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	VS 2019
Bahamas	10.4	13.7	15.3	18.9	18.6	19.9	25.9	24.4	23.0	30.2	131%
Barbados	29.7	28.7	30.7	32.4	31.0	29.9	28.4	31.4	31.3	37.4	119.4%
Belize	70.7	67.5	68.5	67.5	68.5	67.3	67.6	67.0	66.6	65.0	98%
Costa Rica	26.1	32.3	38.3	41.6	41.8	43.4	44.5	46.6	48.3	49.1	102%
Cuba	-	-	-	-	-	-	-	-	-	-	-
Dominica	47.4	54.1	55.2	55.2	52.7	46.9	51.4	45.9	41.5	-	-
El Salvador	58.5	62.4	63.8	65.5	64.9	67.7	66.0	63.8	64.7	74.0	114%
Guatemala	33.1	35.2	37.4	37.3	35.8	35.3	34.9	33.4	32.6	32.6	100%
Guyana	32.7	33.4	29.9	29.5	26.7	25.9	26.3	27.6	25.2	18.9	75%
Haiti	6.6	7.9	10.3	12.6	14.0	15.4	14.8	13.8	15.5	-	-
Honduras	23.8	26.2	36.3	36.4	35.5	34.5	37.1	37.5	37.9	45.2	119.1%
Jamaica	59.7	55.8	58.3	62.3	72.7	72.8	68.2	63.2	58.5	66.1	113%
Mexico	17.8	18.9	20.4	21.8	25.3	29.1	28.8	28.0	28.0	34.7	124%
Nicaragua	83.1	85.0	88.1	85.3	82.7	83.2	83.8	89.8	93.3	91.8	98%

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	VS 2019
Panama	31.3	26.7	26.8	28.7	28.9	29.2	29.6	31.7	36.3	54.7	151%
Dominican Republic	20.0	21.2	23.8	23.9	22.5	23.2	23.5	25.2	26.3	37.3	142%
Saint Kitts and Nevis	39.1	39.6	38.1	31.0	23.1	20.5	15.7	14.7	13.6	-	
San Vicente and the Grenadines	48.5	47.5	49.1	53.2	52.8	58.8	48.9	48.2	48.0	-	
Santa Lucía	26.4	27.1	29.3	30.0	28.1	28.4	29.9	29.0	29.3	-	
Suriname	12.7	13.3	15.9	16.8	22.5	56.4	57.0	51.5	54.4	56.1	103%
Trinidad and Tobago	8.7	7.7	9.3	9.2	10.2	15.7	17.4	17.4	18.2	-	

Source: CEPALSTAT

(2) Trends in Foreign Direct Investment

As shown in Table 5-7 for foreign direct investment in 2020, almost all countries have seen significant decrease from the previous year.

In Central America and the Caribbean, there are many family remittances from migrants living abroad, and some Central American countries have remittances that exceeded 20% of GDP, which should be considered as an important economic component. In 2020, it was initially expected and feared that there would be a significant decline due to COVID-19, but in fact, after a significant decline in the first quarter, remittances began to increase around the second quarter, and for the entire year, many countries saw year-on-year increases.

Table 5-7 Foreign Direct Investment (Net FDI)

USD in Million

Country	Years										
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Antigua and Barbuda	65	133	95	40	100	59	144	193	154	13	-92%
Bahamas	669	530	688	475	526	390	305	491	265	...	
Barbados	83	565	-62	...	...	...	...	...	...	...
Belize	94	193	92	138	59	42	24	121	101	...	
Costa Rica	2,328	1,803	2,401	2,818	2,541	2,127	2,652	2,434	2,695	1,644	-39%
Dominica	35	59	23	14	19	41	23	77	33	25	-23%
El Salvador	218	466	179	306	396	348	889	826	636	201	-68%
Grenada	43	31	113	100	137	93	152	166	123	146	19%
Guatemala	1,140	1,226	1,449	1,388	1,048	965	934	778	799	704	-12%
Guyana	247	294	214	255	122	6	212	1,232	1,695	...	
Haiti	119	156	162	99	106	105	375	105	75	...	
Honduras	1,012	851	992	1,315	952	900	1,035	895	500	366	27%
Jamaica	144	323	470	523	891	658	855	762	219	...	
Mexico	12,263	-571	32,758	22,955	24,815	30,956	30,245	25,557	23,433	25,128	7%
Nicaragua	929	712	815	983	922	924	971	763	444	143	-68%
Panama	2,956	3,254	3,612	4,130	3,966	4,652	4,314	4,917	3,686	627	-83%
Dominican Republic	2,277	3,142	1,991	2,209	2,205	2,407	3,571	2,535	3,021	2,554	-15%
Saint Kitts and Nevis	110	108	136	151	133	124	42	36	90	54	-41%
Saint Vincent and the Grenadines	86	115	160	119	116	89	143	34	97	76	-21%
Saint Lucia	81	74	92	98	129	149	59	67	48	54	13%
Suriname	67	173	188	164	267	300	98	119	-20	...	
Trinidad and Tobago	-26	-2,094	-1,192	679	48	2	-445	-767	-138	...	
Total	24,938	11,544	45,373	38,959	39,498	45,338	46,597	41,340	37,956	31,736	-16%
Caribbean	1,696	505	1,015	2,757	2,546	1,955	1,611	2,530	2,667	367	-86%
Central American Common Market (CACM)	5,627	5,058	5,836	6,810	5,859	5,264	6,481	5,696	5,074	3,059	-40%
The Caribbean Community (CARICOM)	1,815	661	1,177	2,856	2,652	2,060	1,986	2,635	2,742	367	-87%

Source: CEPALSTAT

5.5.3 Selection of Priority Sectors in Each Country through Analysis of Macroeconomic Indicators

(1) Method of Analysis of Macroeconomic Indicators

Based on the above economic overview, in order to investigate the sectoral impact of COVID-19 in each country, a survey of macroeconomic indicators was conducted as follows: 1) the industrial structure and other conditions before COVID-19 in each country, 2) sectoral trends (growth trends) up

to COVID-19, and 3) a comparison survey of economic indicators in 2019 and 2020, the period before and after COVID-19.

In order to understand the impact of COVID-19, the Study Team has tried to obtain monthly (or quarterly) information on 2020 values as well as annual values. Although there are variations in the indicators available and the countries where the information is available, those that are available are summarized as reference materials.

(2) Selection Method for Priority Sectors

The priority sectors of each country were selected, in addition to the analysis of macroeconomic indicators, by studying and organizing the policies taken by the government for COVID-19, referring to the results of the survey of development partners, and analyzing the priority areas of support as indicated in the country development cooperation policies in the items shown in Table 5-8.

Table 5-8 Analytical Work for Selection of Priority Sectors in Each Country

Analysis of macroeconomic indicators	Comparable data before and after COVID-19 (GDP, imports/exports, foreign investment, debt, overseas remittances, etc.) <ul style="list-style-type: none"> ▪ Industry composition ▪ Change in GDP by sector before and after COVID-19 (comparison between 2020 and 2019) ▪ Trends in key economic indicators before COVID-19 (2011-2019)
Research and compilation of government policies related to COVID-19	1) Mitigate the spread of infection and the severity of illness and death 2) Support for affected industries and people <ul style="list-style-type: none"> ▪ Sectoral classification of policies related to COVID-19 control ▪ Directly or indirectly affected policies
Survey results of development partners	<ul style="list-style-type: none"> ▪ Research on reports on analysis of social and economic impacts of COVID-19 by international organizations, etc. (quantitative analysis, qualitative analysis, organization of recommendations)
Development Cooperation Policy by Country	<ul style="list-style-type: none"> ▪ Priority areas of Japan's development cooperation with the country

Source: Study Team

5.5.4 Evaluation of Government Policies Related to COVID-19

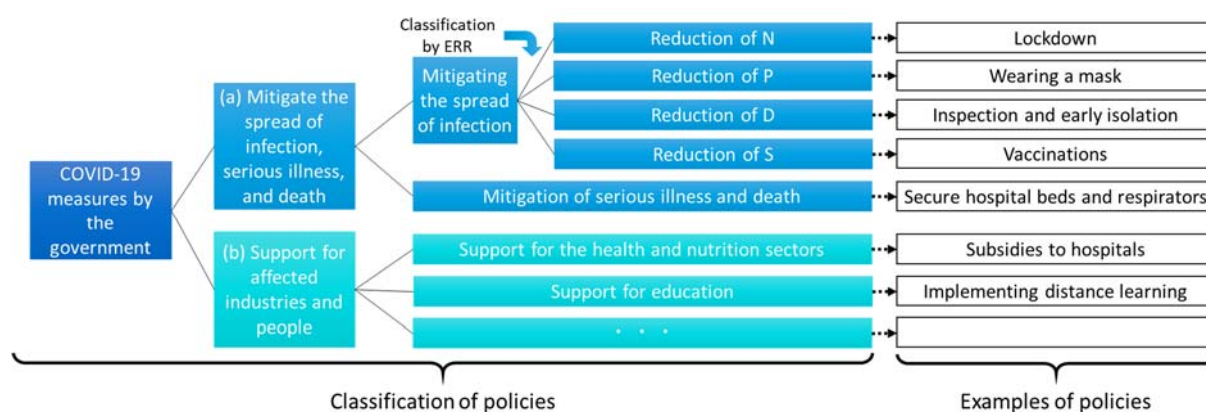
While various reports have been published on the policies of governments toward COVID-19, the policies of the "COVID-19 Observatory in Latin America and the Caribbean" (<https://cepalstatprod.cepal.org/forms/covid-countrysheet/>), a website of ECLAC that compiles information on 23 countries have been compiled and analyzed. The number of policies taken by the government is organized by sector using the method shown in Figure 52.

The governments' COVID-19 measures are categorized as follows:

- (a) Mitigating the spread of infection and the severity of illness and death
- (b) Assistance to affected industries and people.

In addition, in terms of support for the affected industries and people, the following information were collected and analyzed: information on subsidies and income guarantee policies in return for business restraint, subsidy policies to promote telework, and various subsidy policies (travel subsidies, meal subsidies, etc.) taken to revive the economy. These were categorized as to which policies were relevant to which sectors.

The sectoral classification is based on the classification of policies presented in the ECLAC COVID-19 Observatory as shown in Table 5-9.



ERR: Effective Reproduction Rate is the product of N (number of contacts), P (likelihood of infection by contact), D (number of days an infected person is on the move), and S (percentage of the population likely to be infected).

Figure 5-2 Methods of Organizing Policies Taken by Governments

5.5.5 Japanese Gov. Country Assistance Policy

The Japanese government has made education and human resource development a priority area for assistance in the following seven countries.

Table 5-9 Policy Classification as Presented in ECLAC COVID-19 Observatory

[Follow-up of the evolution of COVID-19 Measures](#) |
 [Measures details](#) |
 [Timeline](#)

Vaccination
1. Vaccination measures
Movements across and within countries
1. Restrictions or prohibition on the entry of foreign travelers
2. Border closures and controls
3. Border controls
4. Restriction or closure of public places and mass gatherings
5. Others
Health
1. Health emergency
2. Mandatory coverage
3. Mandatory quarantine for foreign travelers, confirmed or suspected cases
4. Mandatory general quarantine
5. Type of policy on testing (universal, reduced to certain groups, etc.)
6. Free test coverage expansion
7. Hospitals (mechanical ventilators, additional ICU beds, protection equipment, temporary hospitals, others)
9. Others
Economy
1. Fiscal policy
2. Monetary policy
3. Business policy
4. Restriction of economic activity (including shops and shopping centers)
5. Price and quantity controls
6. Economic stimulus (includes aggregate value of fiscal measures and separately of credit guarantees)
7. Regulation of the personal hygiene and cleaning products market
8. Debt relief and suspension of credit payments (individuals, microentrepreneurs)
9. Others
Labor
1. Labor protection
2. Elective work leave
3. Reduction of working hours
4. Prohibition of dismissal from work

5. Others
Social protection
1. Cash transfers (new transfers, increase in existing transfers, expansion of cash transfers to new recipients, early disbursement of transfers)
2. Food transfers / In-kind transfers
3. Guarantee of basic services
4. Others
Education / schools
1. Suspension of classes
2. Provision of tools for distance learning (online platforms, TV, radio, distance-learning materials)
3. Maintenance of school feeding program (indicating under which modalities)
4. Others
Other
Gender
1. Gender-based violence against women
2. Care economy
3. Employment and income generation
4. Benefits, transfers and other social protection measures
5. Women's participation in the digital era
6. Others

Source: Study Team based on the ECLAC COVID-19 Observatory

Table 5-10 shows the number of measures taken by each government as summarized in the COVID-19 Observatory in Latin America and the Caribbean. There are differences in the number of policies implemented and sectoral classifications. In the Caribbean, the number of measures taken is generally small, with the exception of the Dominican Republic.

Table 5-10 Summary of the Number of Measures Taken by Governments as Summarized in the COVID-19 Observatory in LAC

対策の分類項目	MEX	BLZ	GTM	SLV	HND	NIC	CRI	PAN	BHS	CUB	HTI	DOM	JAM	ATG	KNA	DMA	LCA	VCT	BRB	GRD	TTO	GUY	SUR
a N	5	14	5	17	4	0	14	10	5	23	5	6	15	5	5	9	19	2	5	22	7	10	21
P	0	0	0	0	0	0	1	1	0	1	1	4	1	0	0	0	0	1	0	0	0	0	1
D	2	10	5	16	10	1	4	3	2	4	3	10	3	5	1	0	1	3	2	2	4	3	3
S	6	2	18	12	2	6	19	12	0	3	0	13	0	0	0	0	7	0	4	1	0	0	4
Travel restriction	1	14	7	14	5	4	8	8	4	7	8	6	10	10	4	4	7	3	3	8	7	4	6
Mitigation of exacerbation and	2	2	12	19	14	1	10	0	0	5	0	10	1	0	0	2	0	1	1	1	1	0	0
b Socioeconomic policy	18	16	37	49	20	4	48	25	5	17	13	53	11	2	3	1	4	5	6	7	11	5	8
Health care & nutrition	9	9	31	39	15	10	14	13	4	7	8	26	9	6	2	3	5	4	2	0	5	3	1
Education	3	2	9	18	1	1	10	2	0	2	1	6	5	0	1	2	1	1	2	1	2	1	0
Agriculture & rural development	0	0	0	4	2	0	3	1	0	3	1	4	1	0	1	0	0	0	0	0	0	1	1
Private sector	11	12	24	12	8	4	38	13	3	14	2	20	5	2	0	9	2	4	7	6	9	7	1
Environment & disaster prevention	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Governance and social security	10	2	15	5	8	5	13	3	4	4	7	5	3	3	1	1	3	1	3	1	4	2	4
DX and innovation	2	1	3	6	1	2	6	3	0	1	1	2	1	0	0	0	1	0	0	0	0	2	0
Infrastructure & energy	3	2	2	1	1	1	4	2	0	0	0	2	0	0	0	0	0	1	0	0	0	1	0
Tourism	0	0	0	0	1	1	10	0	1	1	0	2	2	0	0	0	0	0	0	0	0	1	0
PPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Others (b)	3	1	9	4	1	1	1	0	1	7	4	2	0	1	1	0	0	0	4	3	7	0	0
Total	59	45	130	138	58	29	150	62	18	56	37	123	37	14	9	16	16	16	24	18	38	23	15

Source: Study Team

5.5.6 Trends in Development Partners

In addition to governments, the Central American Integration Agency (SICA), the Caribbean Community (CARICOM), the United Nations (UN), International Monetary Fund (IMF), The World Bank (WB), the Inter-American Development Bank (IDB), and the Bank for Central American Economic Integration (BCIE) have also provided support, including various analyses and policy recommendations as the final report. Some of these research and analysis reports include studies on specific sectors affected by COVID-19 in each country, and recommendations for the recovery and reconstruction periods after COVID-19. In this survey, the information from these previous surveys is adopted as one of the indicators to make effective use of the information, and recorded the frequency of descriptions and statistics on specific sectors.

Six reference materials were used: as shown in Table 5-11 List of Collected Materials.

Table 5-11 List of Collected Materials

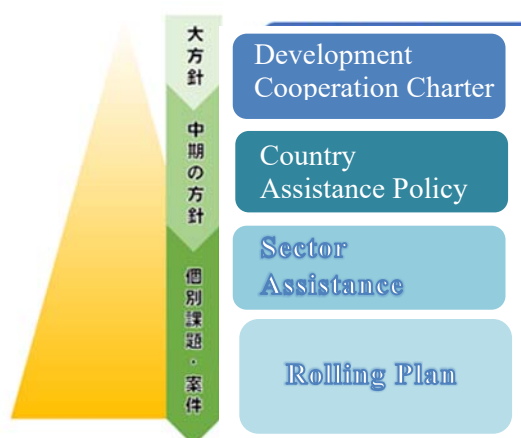
Name of Information / In hand / Year of Issue	Organization	Year of Issue
Economic Survey of Latin America and the Caribbean 2020, Response to COVID-19	ECLAC	2021
Opportunities for Stronger and Sustainable Post-pandemic Growth	IDB	2021
Renewing with Growth~Semi-annual Report of the Latin America and the Caribbean Region	WB	2021
WEO Regional Economic Outlook for Western Hemisphere	IMF	2021
Centroamérica en Cifras (Central America Yearbook) 2020	BCIE	2021
COVID-19 in Latin America and the Caribbean: Regional Socio-economic Implications and Policy Priorities	OECD	2020

Source: Study Team

5.5.7 Country Assistance Policy

(1) Development Cooperation Policy Framework

The Government of Japan (GOJ) formulates country-specific and sector-specific assistance policies under the Outline of Development Cooperation Framework, and ensures consistency in development cooperation policies with the Development Cooperation Charter at the top.



Source: Development Cooperation Framework (ODA), Ministry of Foreign Affairs, Japan

Figure 5-3 Development Cooperation Framework

(2) Country Assistance Policy

It is intended to indicate Japan's priority areas of assistance and direction for each recipient country over a period of five years, based on the development needs of each country and taking into account the country's development plans, development issues, and other factors in a comprehensive manner.

- Aims of development cooperation to the country concerned
- Basic policy of Japan's official development assistance (ODA) (major goals)
- Priority areas (medium-term goals)
- Points to note



Source: Official Development Assistance (ODA), Ministry of Foreign Affairs, Japan

Figure 5-4 Characteristics of Japan's Development Cooperation

In principle, all ODA target countries are targeted for development cooperation policy formulation, and of which policies for the 23 countries in this project have also been formulated. Development cooperation policies for each country are referred in Appendix-3: 3A Country Reports by Sector. As the purpose of this study is "to provide analysis and recommendations that will contribute to JICA's future cooperation policy for the countries in Central America and the Caribbean", the sectors listed in the indicator "Country Assistance Policy" were given points in order to give importance to the related sectors that are treated as priority areas in the development cooperation policy (Table 5-12).

Table 5-12 Example of the Evaluation Based on Survey on Reports of Development Partners and Country-specific Development Cooperation Policies

Sector classification by this study	Survey results of development partners	country development cooperation policy	Survey results of development partners	country development cooperation policy	Total	
	Weighting	0.1000	0.1000			
Social and economic policy	1	1	0.0091	0.0125	0.0216	4
Health Care and Nutrition		1	0.0000	0.0125	0.0125	7
Education		1	0.0000	0.0125	0.0125	7
Agriculture and rural development	1	1	0.0091	0.0125	0.0216	4
Manufacturing	2	1	0.0182	0.0125	0.0307	1
Environment and disaster prevention		1	0.0000	0.0125	0.0125	7
Governance and Public Safety		1	0.0000	0.0125	0.0125	7
DX/Innovation	3		0.0273	0.0000	0.0273	3
Infrastructure and energy	2	1	0.0182	0.0125	0.0307	1
Tourism	2		0.0182	0.0000	0.0182	6
Public-Private Partnership			0.0000	0.0000	0.0000	

Source: Study Team

5.6 Selection of Priority Sectors by Country

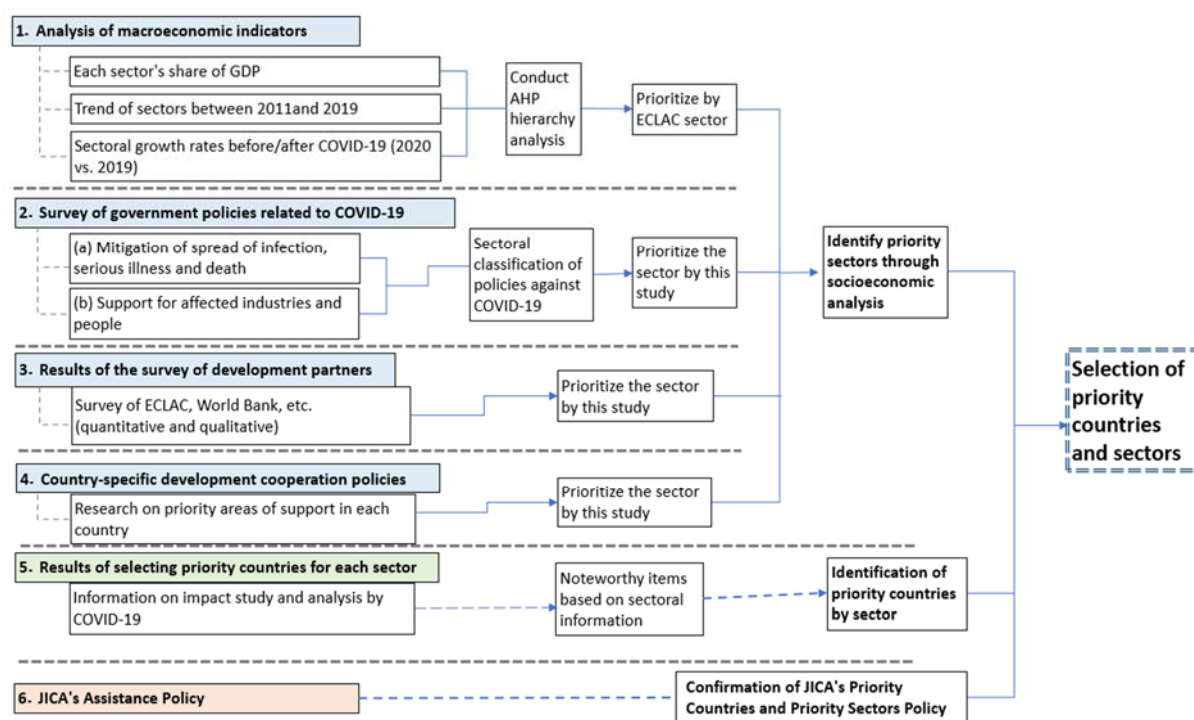
(1) Selection Process

In order to select the priority sectors for each country, macroeconomic indicators based on ECLAC, which allow for quantitative comparisons, were first analyzed, and then the results were used to transfer the sectors to the sectoral classification specified in this case ("Transfer from ECLAC Classification"). This was followed by an additional analysis ("Baseline Analysis") based on the "Evaluation of Non-Macroeconomic Indicators" (various surveys and compilation related to COVID-

19 measures taken by the government, results of surveys of development partners, and development cooperation policies by country). In addition, to the baseline analysis, sensitivity analysis was conducted, in which adopted different weights to three analyses, which are "assessments other than macroeconomic indicators.

(2) Application of the Hierarchical Analysis Method

The hierarchical analysis method, Analytic Hierarchy Process (AHP), was applied for the selection of country priority sectors. Four evaluation criteria were set as the primary criteria in accordance with the special specifications for the work: 1) analysis of macroeconomic indicators, 2) survey and compilation of policies taken by the government for COVID-19, 3) reference to the results of the survey of development partners, and 4) country-specific development cooperation policies (see Figure 5-5).



Source: Study Team

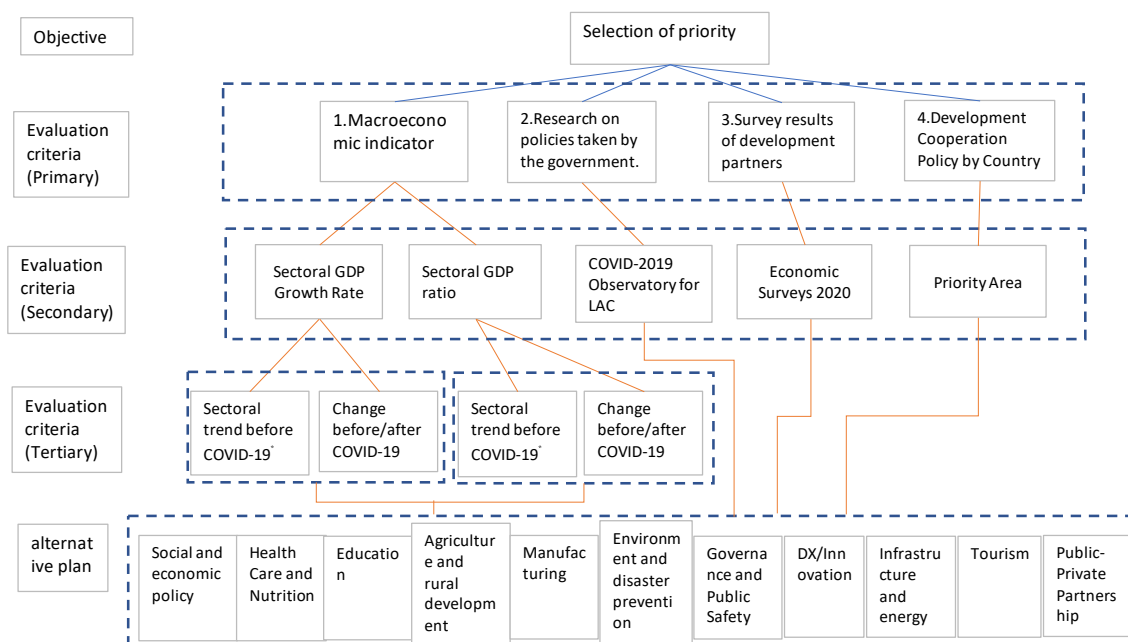
Figure 5-5 Selection of Priority Countries and Sectors

(1) Evaluation Standard

For the Analytic Hierarchy Process (AHP) evaluation indicators, as shown in Figure 5-6, first set the weighting (distribution) among the four indicators, the first evaluation criterion, and then set the weighting for the second and third evaluation criteria, respectively.

The analysis of macroeconomic indicators was evaluated based on 1) sectoral growth rates (2020 vs. 2019), 2) revisions based on trends from 2011 to 2019, and 3) each sector's share of GDP. The government's policies against COVID-19 were sorted by sector and evaluated by the number of policies implemented for each sector.

In addition, the number of key sectors identified by the analysis of development partners was extracted from the report. The number of key sectors for each country as listed in the Ministry of Foreign Affairs' Country Development Cooperation Policy was evaluated.



Source: Study Team

Figure 5-6 AHP Hierarchy Diagram of Goals, Evaluation Criteria, and Alternatives

1) Primary Evaluation Criteria

The four indicators were weighted 6:2:1:1 as the primary evaluation criteria based on the following: (Table 5-16)

(1) Analysis of economic indicators that allow quantitative comparative evaluation by sector is weighted as the main criterion.

(2) Next, the sectoral classification of the measures implemented by the government against COVID-19 was used as the second criterion.

(3) Survey results of development partners.

(4) Priority sectors listed in the country development cooperation policy.

As for the weighting to be applied to the primary evaluation criteria, the Study Team decided to conduct a sensitivity analysis and set several cases for weighting.

2) Secondary Evaluation Criteria

Among the macroeconomic indicators, the GDP growth rate by sector, the ratio of each sector to the total GDP, and the working population by sector¹ were set as secondary evaluation criteria as quantitative and time-series comparable indicators by sector, and the comparison among the evaluation criteria and the weights were calculated using the AHP hierarchy method.

For the comparison of the evaluation criteria, a questionnaire with nine categories was prepared using the AHP method (Figure 5-7).

¹ The Study Team finally abandoned the use of sectoral working population because such statistics could not be found in many countries.

	Left is most important	Left is very important	Left is important	Left is somewhat important	About the same on both sides	Right is somewhat important	Right is important	Right is very important	Right is most important	
	9	7	5	3	1	1/3	1/5	1/7	1/9	
GDP Growth by Sector		7								Sectoral GDP as % of total GDP
GDP Growth Rate by Sector			5							Working population by sector
Sectoral GDP as % of Total GDP				3						Working population by sector

Source: Study Team

Figure 5-7 Comparison Between Evaluation Criteria

The results of the comparisons between each criterion of "GDP growth rate by sector," "total GDP ratio of each sector," and "sectoral working population" are summarized in a paired comparison table below (Table 5-13).

Table 5-13 Weighting Between Each Evaluation Criteria

	Sectoral GDP Growth Rates	Sectoral GDP as % of Total GDP	Working Population by Sector
Sectoral GDP Growth Rates	1	7	5
Sectoral GDP as % of Total GDP	1/7	1	3
Working Population by Sector	1/5	1/3	1

Source: Study Team

As mentioned earlier, it was decided not to use the working population by sector because of the unavailability of data in many countries. For this reason, the pair-wise comparison table has been updated as Table 5-14.

Table 5-14 Weighting Between Each Evaluation Criteria (Updated)

	Sectoral GDP Growth Rates	Sectoral GDP as % of Total GDP
Sectoral GDP Growth Rates	1	7
Sectoral GDP as % of Total GDP	1/7	1

Source: Study Team

3) Tertiary Evaluation Criteria

A pair-wise comparison table for "Change before and after COVID-19" and "Trend before COVID-19", the tertiary evaluation criteria for "GDP growth rate by sector" and "ratio of sectoral GDP to total GDP", was prepared as shown in Table 5-15.

Table 5-15 Pair-wise Comparison Table for "GDP Growth Rate by Sector" and "Ratio of Sectoral GDP to Total GDP"

Pairwise comparisons on "GDP growth by sector"		
	Changes before and after COVID-19	Trends before COVID-19
Changes before and after COVID-19	1	7
Trends before COVID-19	1/7	1
Pairwise comparisons on "Sectoral GDP as a percentage of total GDP"		
	Changes before and after COVID-19	Trends before COVID-19
Changes before and after COVID-19	1	3
Trends before COVID-19	1/3	1

Source: Study Team

Based on the above, the four indicators and their weighting in the lower evaluation criteria are summarized in Table 5-16.

Table 5-16 Weighting Results by AHP Evaluation Criteria

No.	Primary Criteria	weight	Secondary Criteria	weight	Tertiary Criteria	weight
1	Analysis of macroeconomic indicators	0.6	GDP growth by sector	0.525	Changes before and after COVID-19	0.459
					Trends before COVID-19	0.066
			Sectoral GDP as a % of total GDP	0.075	% before COVID-19	0.075
			<i>If central bank statistics are not available, see Economic Survey 2020 and Statistical Year Book for LAC 2020.</i>			
2	Evaluation of the policies taken by the government for COVID-19	0.2	COVID-2019 Observatory for Latin America and the Caribbean (CEPAL)	0.2		
			<i>Survey of sector classification of measures taken and number of measures by sector</i>			
3	Survey results of development partners	0.1	Economic Surveys 2020_CEPAL	0.1		
4	Country development cooperation policy	0.1	Priority Area	0.1		
	Total	1.0				

Source: Study Team

(2) Baseline Analysis

The case of El Salvador is summarized in Table 5-17 for the statistics that can cover 23 countries by sectoral indicators that could be collected in this study. These indicators include GDP growth rate by sector (change before and after COVID-19, trend before COVID-19), the share of each sector in total GDP, and does not include the working population by sector. Also included is the amount of overseas remittances, which is an issue for the social and economic policy sector.

For the year 2020, the Study Team tried to obtain monthly or quarterly data from the Central Bank of each country because of the large monthly volatility

Table 5-17 Key Economic Indicators Used (Example of El Salvador)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gross Domestic Product (Annual Growth Rates)	3.8	2.8	2.2	1.7	2.4	2.5	2.3	2.4	2.6	-7.9
Per Capita Gross Domestic Product (Annual Growth Rates)	3.4	2.4	1.8	1.2	1.9	2.0	1.7	1.9	2.4	-9.2
Gross Domestic Product, by Sector (Annual Growth Rates)										
Agriculture, livestock, hunting, forestry, and fishing	-4.2	4.4	-7.2	0.9	-5.5	8.4	0.7	-3.3	-0.4	-2.4
Mining and quarrying	18.2	-7.1	8.3	-4.2	-5.4	3.9	1.2	4.9	4.1	-11.2
Manufacturing	4.2	1.5	0.8	2.5	3.0	1.3	1.3	2.2	2.0	-11.8
Electricity, gas, and water	5.5	1.5	-2.4	3.9	-0.9	-1.3	-0.4	-0.3	6.1	4.6
Construction	13.4	4.4	3.2	-1.5	-0.5	2.9	5.6	7.1	9.8	-15.1
Wholesale and retail commerce, restaurants, and hotels	2.1	5.9	5.9	3.7	1.0	1.1	1.5	3.1	3.1	-11.8
Transport, storage, and communications	6.1	-1.3	2.9	-4.1	8.3	8.2	1.8	2.4	1.5	-9.1
Financial institutions, insurance, real estate, and business services	-0.8	-3.3	2.8	4.5	4.7	2.8	4.5	2.3	3.7	-4.6
Community, social, and personal services	7.7	-3.6	-2.4	-2.5	3.1	-1.3	0.8	-0.3	1.5	-6.2
Gross Domestic Product, by Sector (Constant Prices in USD)										
Agriculture, livestock, hunting, forestry, and fishing	1,234	1,288	1,195	1,206	1,139	1,235	1,243	1,202	1,309	1,260
Mining and quarrying	52	49	53	51	48	50	50	53	78	72
Manufacturing	3,102	3,148	3,173	3,253	3,352	3,396	3,439	3,514	4,172	3,670
Electricity, gas, and water	781	795	775	806	799	791	808	809	948	779
Construction	1,022	1,067	1,101	1,084	1,079	1,110	1,172	1,255	1,588	1,345
Wholesale and retail commerce, restaurants, and hotels	2,614	2,768	2,932	3,041	3,071	3,105	3,152	3,250	3,906	3,440
Transport, storage, and	1,588	1,570	1,616	1,549	1,679	1,817	1,850	1,895	2,037	1,843

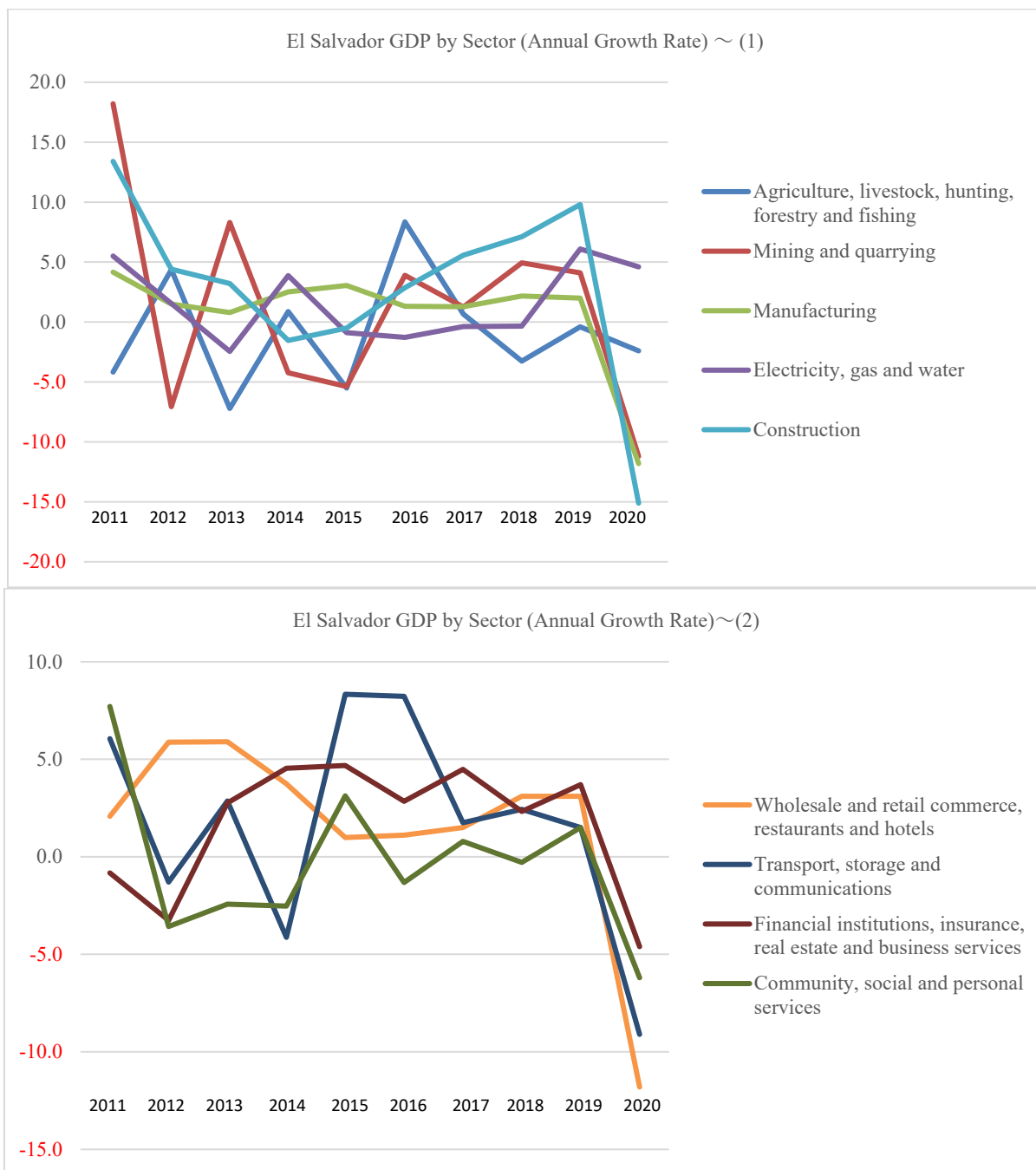
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
communications										
Financial institutions, insurance, real estate, and business services	1,240	1,200	1,233	1,289	1,298	1,330	1,335	1,352	5,355	5,128
Community, social, and personal services	6,105	5,887	5,744	5,599	5,773	5,698	5,742	5,726	4,944	4,744
Total	17,738	17,771	17,821	17,878	18,238	18,531	18,790	19,055	24,337	22,281

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Net foreign direct investment	218	466	179	306	396	348	889	826	-636	-201
Other capital movements	479	1,425	1,013	874	470	654	-116	402	437	-556
Remittances from emigrant workers	3,627	3,887	3,944	4,139	4,257	4,544	4,985	5,391	5,656	5,930

Source: Study Team based on the Economic Survey of Latin America and the Caribbean 2020

GDP growth rates by sector (change before and after COVID-19, trend before COVID-19) (purple box in Table 5-17) are summarized in the graph (case of El Salvador, Figure 5-8). For the changes before and after COVID-19 (growth rate in 2020 compared with 2019), all sectors show a decrease in growth rate compared with the previous year, and many sectors have negative growth rates, which shows the magnitude of the impact of COVID-19. Detailed monthly or quarterly statistics for 2020 indicators are being released (different for each country), and they fluctuate wildly from month to month, so more detailed analysis is needed. In the country analysis, detailed evaluation should be conducted for those countries for which monthly (or quarterly) data are available.

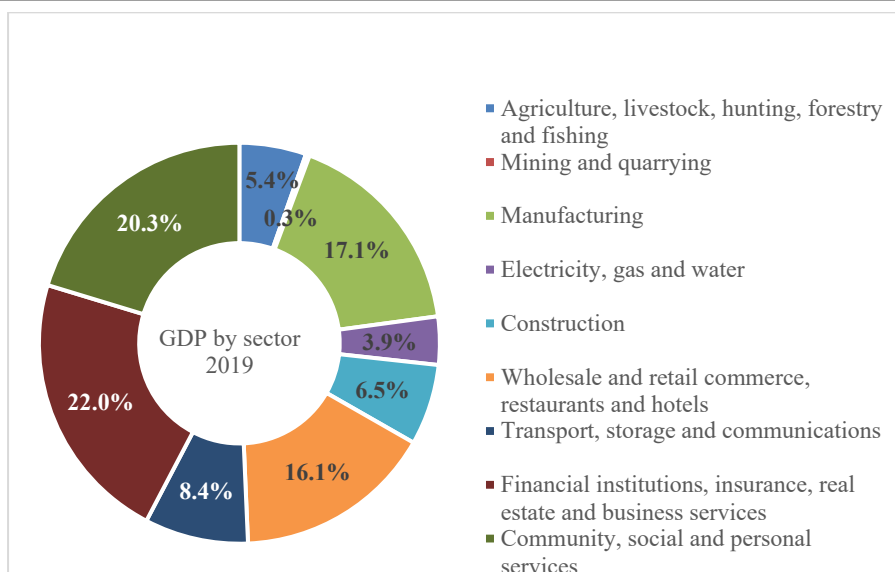
In this case study of El Salvador, the trend before COVID-19 was also very volatile and difficult to grasp, but it can be seen that the trend was generally flat or slightly increasing, and then plummeted in 2020.



Source: Study Team

Figure 5-8 (1)(2) GDP Growth by Sector (Change Before and After COVID-19, Trend Before COVID-19)

As for the ratio of each sector to total GDP (second box in Table 5-17), the ratio of each sector to total GDP in 2019 is summarized in Figure 5-9. In terms of GDP growth by sector (change before and after COVID-19), the “Construction” sector has plummeted and the “Electricity, gas and water” sector is the only sector that has maintained positive growth. However, Figure 5-9 shows that all of these sectors account for a small percentage of total GDP and do not have a large impact on the economy.



Source: Study Team

Figure 5-9 Share of Total GDP in Each Sector

The results of the analysis for each criterion are shown as a numerical value from 1 to 9 according to the magnitude of the change, and the results calculated by multiplying by the respective weighting are ranked in order of magnitude as the impact of COVID-19 (Table 5-18). The results of the analysis in Table 517 (in light green) show the sectors with the largest impact from COVID-19. The magnitude of the impact by sector is summarized in Table 518.

Table 5-18 Results of the Analysis; Rank as Impact by COVID-19

Sector classified by ECLAC	Changes before and after COVID-19	Trends before COVID-19	Sectoral GDP as a % of total GDP	Evaluation	
Weighting	0.4590	0.0660	0.0750		
Agriculture, livestock, hunting, forestry and fishing	2	1	3	0.027	8
Mining and quarrying	8	6	1	0.092	3
Manufacturing	6	4	7	0.079	4
Electricity, gas and water	1	3	2	0.018	9
Construction	9	9	4	0.112	1
Wholesale and retail commerce, restaurants and hotels	7	8	6	0.093	2
Transport, storage and communications	5	7	5	0.070	5
Financial institutions, insurance, real estate and business services	4	5	9	0.063	6
Community, social and personal services*	3	2	8	0.047	7

*Public administration, defence, compulsory social security, education, health and social work, and other community, social and personal service activities

Source: Study Team

Table 5-19 Ranked as Impact by COVID-19 (ECLAC Category)

Analysis Results (Rank)	Sector (ECLAC Category)
1	Construction
2	Wholesale and retail commerce, restaurants and hotels
3	Mining and quarrying
4	Manufacturing
5	Transport, storage, and communications
6	Financial institutions, insurance, real estate, and business services
7	Community, social and personal services
8	Agriculture, livestock, hunting, forestry, and fishing
9	Electricity, gas and water

Source: Study Team

(3) Transfer of Sector Classification by ECLAC to the Sectors in this Study

ECLAC has adopted nine sector classifications to be applied to 23 countries, which are different from the 12 sectors in this project. These nine sectors are assigned as follows in order to replace them with this sector.

1) Sorting of this Sector Classification into Vertical Sector and Cross-cutting Sector

First, of the 12 sectors, 1) Robust Social Systems was excluded from the analysis because it is a sectoral overview. Next, the remaining 11 sectors were classified into cross-cutting sectors and vertical sectors and the cross-cutting sector is not classified, but is considered as a priority sector (no weighting is given).

Table 5-20 Classification of Sectors in this Study

Vertical Sector	Cross-cutting Sector
Health Care and Nutrition	Social and Economic Policy
Education	Environment and Disaster Prevention
Agriculture and Rural Development	Governance and Public Safety
Manufacturing	DX/Innovation
Infrastructure and Energy	Public-Private Partnership
Tourism	

Source: Study Team

2) Allocation of ECLAC-classified Sectors to Vertical Sector Classification

- Of the nine sectors identified by ECLAC, the three sectors, 1) Agriculture, livestock, hunting, forestry and fishing, 2) Mining and quarrying, and 3) Electricity, gas and water, are almost interchangeable and can be read as agriculture and rural development, infrastructure and energy, infrastructure and energy respectively, and are assigned 100% of the analysis results. The agriculture and rural development sector is limited to the primary industry and does not include the food industry.
- The food industry was defined as being included in the manufacturing sector, and as a result, 100% of the manufacturing sector was allocated to the manufacturing sector.
- For the construction sector, the allocation was set at 20:80 for the manufacturing sector and the infrastructure and energy sector, based on the idea that building materials and construction equipment are included in the manufacturing sector.
- The wholesale and retail commerce, restaurants, and hotels sector is divided 50:50 between tourism and manufacturing, as the tourism sector accounts for a large share in this region.
- The transport, storage and communications sector will be split 60:20:10:10 between the infrastructure and energy, manufacturing, tourism, and health and nutrition sectors.
- The financial institutions, insurance, real estate and business services sectors are related to each sector, but the allocation is slightly weighted toward manufacturing and tourism.

- The community, social and personal services sector is listed in the ECLAC annotations as public administration, defense, compulsory social security, education, health and social work, and other community social and personal security services. When considering the community sector, it was deemed appropriate to allocate it to the Agriculture and Rural Development sector as well, so the Study Team has decided to allocate 40:30:30 to the Agriculture and Rural Development, Health and Nutrition, and Education sectors, respectively.

Table 5-21 Allocation of ECLAC-classified Sectors to Vertical Sector Classification

	①Health Care and Nutrition	② Education	③ Agriculture and Rural Development*	④ Manufacturing*	⑤ Infrastructure and Energy	⑥ Tourism	
Agriculture, livestock, hunting, forestry and fishing			100				①Social and Economic Policy ②Environment and Disaster Prevention ③Governance and Public Safety ④DX/Innovation ⑤Public-Private Partnership
Mining and quarrying					100		
Manufacturing				100			
Electricity, gas and water					100		
Construction				20	80		
Wholesale and retail commerce, restaurants and hotels				50		50	
Transport, storage and communications	10			20	60	10	
Financial institutions, insurance, real estate and business services	15	15	15	20	15	20	
Community, social and personal services*	30	30	40				

* : ③Agriculture and rural development is limited to primary industry, ④Manufacturing includes the food industry.

Source: Study Team

(4) Evaluation Items Other than Macroeconomic Indicators

Next, the results of the analysis for indicators 2-3 (evaluation of policies related to COVID-19 taken by the government, survey results of development partners, and development cooperation policies by country) are shown in Table 5-22 and Table 5-23.

Table 5-22 Results of Evaluation of Various Government Policies for COVID-19

Policies taken by the government for COVID-19(COVID-19 Observatory for LAC)

			Ranking
Socioeconomic policy	44	0.0677	1
Health care & nutrition	38	0.0585	2
Education	14	0.0215	3
Agriculture & rural development	0	0.0000	
Manufacturing sector	11	0.0169	4
Environment & disaster prevention	0	0.0000	
Governance and social security	4	0.0062	6
Digital and innovation	5	0.0077	5
Infrastructure & energy	0	0.0000	
Tourism	0	0.0000	
PPP	0	0.0000	
Others (b)	14	0.0215	3

Source: Study Team

Table 5-23 Results of Survey of Development Partners and Development Cooperation Policies by Country

Sector classified by this study	Survey results of development partners	Country development cooperation policy	Survey results of development partners	Country development cooperation policy	
Weighting	0.1000	0.1000			Total
Socioeconomic policy	1	1	0.0091	0.0125	0.0216
Health care & nutrition		1	0.0000	0.0125	0.0125
Education		1	0.0000	0.0125	0.0125
Agriculture & rural development	1	1	0.0091	0.0125	0.0216
Manufacturing sector	2	1	0.0182	0.0125	0.0307
Environment & disaster prevention		1	0.0000	0.0125	0.0125
Governance and social security		1	0.0000	0.0125	0.0125
DX and innovation	3		0.0273	0.0000	0.0273
Infrastructure & energy	2	1	0.0182	0.0125	0.0307
Tourism	2		0.0182	0.0000	0.0182
PPP			0.0000	0.0000	0.0000

Source: Study Team

(5) Results of Selection of Priority Sectors by Country

The results of the analysis of the impact on each sector by COVID-19, which synthesizes the analysis of the four indicators, are summarized as the base case in Table 5-24

Table 5-24 Results of Country-specific Priority Sector Selection

Sector classified by this study	Analysis of macroeconomic indicators	Evaluation of the policies taken by the government for COVID-19	Survey results of development partners	Country development cooperation policy	Basecase		Priority Sector
					Weighting		
Socioeconomic policy	0.0000	0.0677	0.0091	0.0125	0.0893		○
Health care & nutrition	0.0305	0.0585	0.0000	0.0125	0.1015	3	○
Education	0.0235	0.0215	0.0000	0.0125	0.0576	6	
Agriculture & rural development	0.0551	0.0000	0.0091	0.0125	0.0767	5	
Manufacturing sector	0.1742	0.0169	0.0182	0.0125	0.2218	2	○
Environment & disaster prevention	0.0000	0.0000	0.0000	0.0125	0.0125		○
Governance and social security	0.0000	0.0062	0.0000	0.0125	0.0187		○
DX and innovation	0.0000	0.0077	0.0273	0.0000	0.0350		○
Infrastructure & energy	0.2506	0.0000	0.0182	0.0125	0.2812	1	○
Tourism	0.0662	0.0000	0.0182	0.0000	0.0843	4	
PPP	0.0000	0.0000	0.0000	0.0000	0.0000		○

Source: Study Team

(6) Sensitivity Analysis

Three case analyses were conducted as sensitivity analyses for the primary evaluation indicators. Each case setting is shown in Table 5-25.

Table 5-25 Setting Up a Case for Sensitivity Analysis

	Basecase	Sensitivity 1	Sensitivity 2	Sensitivity 3
Analysis of macroeconomic indicators	0.6	0.6	0.5	0.5
Evaluation of the policies taken by the government for COVID-19	0.2	0.1	0.1	0.1
Survey results of development partners	0.1	0.2	0.2	0.3
Country development cooperation policy	0.1	0.1	0.2	0.1

Source: Study Team

Table 5-26 Sensitivity Analysis Results

	Basecase	Sensitivity 1	Sensitivity 2	Sensitivity 3
Socioeconomic policy				
Health care & nutrition	3	5	5	5
Education	6	6	6	6
Agriculture & rural development	5	4	4	4
Manufacturing sector	2	2	2	2
Environment & disaster prevention				
Governance and social security				
DX and innovation				
Infrastructure & energy	1	1	1	1
Tourism	4	3	3	3
PPP				

Source: Study Team

(7) Selection of Priority Sectors by Country

Table 5-27 shows the summary of the priority sectors for the 23 countries covered in this report. The results show that the top sectors in order as follows: infrastructure and energy, manufacturing, and tourism. The agriculture and rural development sector follows by a small margin.

Table 5-27 Aggregate Results for Priority Sectors

Basecase			CA											Caribbean													
Nº	Sector		MEX	BLZ	GTM	SLV	HND	NIC	CRI	PAN	BHS	CUB	HTI	DOM	JAM	ATG	KNA	DMA	LCA	VCT	GRD	BRB	TTO	GUY	SUR		
Vertical sector																											
1	Health Care and Nutrition	5	100	4	5	3	3	4	4	5	5	3	4	4	3	4	5	5	5	4	5	6	5	5	5	4	
2	Education	6	136	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	6	6	5	6	6	6	6	
3	Agriculture and rural development	4	88	5	3	5	5	5	3	3	3	5	3	3	5	5	4	2	4	5	3	4	4	3	3	3	
4	Manufacturing	2	44	1	2	2	2	2	2	2	2	2	2	2	2	2	4	2	2	1	1	2	2	1	2		
5	Infrastructure and energy	1	29	2	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	2	2	1	1	2	1		
6	Tourism	3	86	3	4	4	4	3	5	4	4	4	5	6	4	3	3	1	3	3	4	3	4	4	5		
Cross-cutting sector																											
7	Social and economic policy																										
8	Environment and disaster prevention																										
9	Governance and Public Safety																										
10	DX/Innovation																										
11	Public-Private Partnership																										

Source: Study Team

As in the case of El Salvador, a sensitivity analysis was also conducted for the 23 countries, and the summary of results is shown in Table 5-28. The sensitivity analysis did not show significant changes, and the results were close to the base case results.

Table 5-28 Aggregate Results of Sensitivity Analysis

N°	Sector	Basecase		Sensitivity 1		Sensitivity 2		Sensitivity 3		Total	
1	Health Care and Nutrition	5	100	5	111	5	113	5	112	5	436
2	Education	6	136	6	135	6	130	6	132	6	533
3	Agriculture and rural development	4	88	4	84	4	85	4	87	4	344
4	Manufacturing	2	44	2	43	2	42	2	45	2	174
5	Infrastructure and energy	1	29	1	27	1	29	1	27	1	112
6	Tourism	3	86	3	83	3	84	3	80	3	333
7	Social and economic policy	0	0	0	0	0	0	0	0		0
8	Environment and disaster prevention	0	0	0	0	0	0	0	0		0
9	Governance and Public Safety	0	0	0	0	0	0	0	0		0
10	DX/Innovation	0	0	0	0	0	0	0	0		0
11	Public-Private Partnership	0	0	0	0	0	0	0	0	-	0

Source: Study Team

The results of the sensitivity analysis were also aggregated and the final selected priority sectors are shown in Table 5-29.

Table 5-29 Aggregation of Priority Sectors Reflecting the Results of Sensitivity Analysis

N°	Sector	C.A.								Caribbean															
		MEX	BLZ	GTM	SLV	HND	NIC	CRI	PAN	BHS	CUB	HTI	DOM	JAM	ATG	KNA	DMA	LCA	VCT	GRD	BRB	TTO	GUY	SUR	
Vertical sector																									
1	Health Care and Nutrition			○																					
2	Education																								
3	Agriculture and rural development		○				○	○	○		○	○				○			○				○	○	
4	Manufacturing	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
5	Infrastructure and energy	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
6	Tourism	○		○	○	○		○		○		○	○	○		○	○	○	○	○	○	○	○	○	
Cross-cutting sector																									
7	Social and economic policy	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
8	Environment and disaster prevention	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
9	Governance and Public Safety	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
10	DX/Innovation	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
11	Public-Private Partnership	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Source: Study Team

5.7 Selection of Priority Countries by Sector

5.7.1 Grouping of Countries for Sectoral Surveys

In the previous section, the Study Team analyzed the impact of COVID-19 based on ECLAC's economic statistics, and also examined the priorities of each sector. As shown in the results of the analysis, the magnitude of the impact of COVID-19 is clear, especially in the infrastructure and energy, manufacturing, and tourism sectors, and the vulnerability of these sectors has become apparent.

As for the pandemic, the increase in the numbers of infected people and applicants in large countries with large areas, populations, and economies such as Mexico and Brazil have been widely reported, but if looking at the impact of the pandemic from the perspective of economic growth, the Caribbean and Central American countries have a large rate of decline, which indicates the massive negative impact on the economic activities of each country. (Table 5-30).

Table 5-30 GDP Growth Rates at Constant Prices

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Mexico	3.66	3.64	1.35	2.85	3.29	2.63	2.11	2.19	-0.18	-8.31
Guatemala	4.16	2.97	3.70	4.44	4.09	2.68	3.08	3.32	3.87	-1.52

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
El Salvador	3.81	2.82	2.24	1.71	2.40	2.54	2.25	2.41	2.64	-7.94
Honduras	3.84	4.13	2.79	3.06	3.84	3.89	4.84	3.84	2.65	-8.96
Nicaragua	6.32	6.50	4.93	4.79	4.79	4.56	4.63	-3.36	-3.67	-1.98
Costa Rica	4.40	4.88	2.49	3.54	3.65	4.20	4.16	2.06	2.17	-4.09
Panama	11.31	9.78	6.90	5.07	5.73	4.95	5.59	3.60	3.04	-17.95
Belize	1.92	2.42	1.30	4.04	2.63	-0.03	1.81	2.91	1.76	-14.15
Bahama	0.61	3.09	-3.58	2.29	1.59	0.09	1.63	2.77	0.70	-14.51
Cuba	2.80	3.01	2.75	1.05	4.44	0.51	1.81	2.25	-0.22	-8.30
Haiti	5.10	0.50	4.32	1.72	2.56	1.81	2.51	1.67	-1.68	-3.30
Dominican Republic	3.13	2.72	4.88	7.05	6.93	6.66	4.67	6.98	5.05	-6.72
Jamaica	1.73	-0.61	0.52	0.69	0.92	1.38	1.00	1.89	0.89	-9.92
Antigua and Barbuda	-1.96	3.37	-0.60	3.80	3.83	5.50	3.14	6.95	3.35	-15.97
Saint Kitts and Nevis	1.83	-2.23	5.38	6.28	1.03	2.83	-1.98	2.92	2.05	-10.74
Dominica	-0.22	-1.06	-1.00	4.45	-2.69	2.56	-6.80	2.30	3.46	-16.71
Saint Lucia	4.33	-0.11	-2.01	1.33	0.10	3.43	3.49	2.64	1.73	-23.79
Saint Vincent and the Grenadines	-0.42	1.38	1.83	1.21	1.33	1.90	1.00	2.16	0.49	-2.73
Grenada	0.76	-1.15	2.35	7.34	6.45	3.74	4.44	4.14	1.98	-11.23
Barbados	-0.69	-0.43	-1.45	-0.08	2.45	2.52	0.44	-0.59	-1.29	-17.60
Trinidad and Tobago	-0.29	1.29	2.23	-0.91	1.48	-5.60	-2.99	0.07	-1.25	-6.85
Guyana	5.20	5.28	3.65	1.69	0.69	3.81	3.73	4.44	5.35	43.50
Suriname	5.85	2.69	2.93	0.26	-3.41	-4.91	1.57	4.95	1.10	-14.50

Source: ECLAC

According to ECLAC, the average debt-to-GDP ratio in the Caribbean was 68.2% (2019), and the same ratio in Central America was 50.3% (2019), which is one of the highest public debt ratios in the world². According to interviews in Barbados, where the Study Team conducted their field research, the country's health and welfare system has maintained the substantial system that existed in the United Kingdom before the 1980s, and this has become a major burden on the country's financial base.

In addition to the external debt problem, other major issues in the socio-economic policy sector in Central America and the Caribbean that have been identified in previous studies include industrial upgrading and diversification, lack of employment opportunities, agricultural productivity, high dependence on the tourism sector, and lack of access to finance. The points raised in the expert meetings on these issues are summarized in Table 5-31.

Table 5-31 Issues in the Socio-economic Sector and Points Raised at the Expert Meetings

Major Policy Issues for the Sector	Points Raised at the Experts' Meeting Regarding the Current Situation as Revealed by COVID-19
Diversification and sophistication of industrial structure	<ul style="list-style-type: none"> While some countries show improvement, many are increasing family remittances from migrants abroad due to lack of domestic employment opportunities
Agricultural production and food self-sufficiency	<ul style="list-style-type: none"> Transportation issues in the agricultural sector Increasing need for mechanization and digitalization in terms of productivity improvement
Income disparity	<ul style="list-style-type: none"> View the U.S. as a great employment opportunity next door (remittances abroad) Vulnerable and poor people are mostly in rural areas
High dependence on tourism	<ul style="list-style-type: none"> Domestic and international tourism have different characteristics, so different strategies need to be developed for different targets.
Infrastructure development	<ul style="list-style-type: none"> In a regional comparison of ICT evolution, Central America and the Caribbean have large gaps in ICT development within the region and among countries.
Promotion of foreign investment	<ul style="list-style-type: none"> Linking foreign debt and FDI to COVID is difficult in a short survey.
External debt and public finance	<ul style="list-style-type: none"> Linking foreign debt and FDI to COVID is difficult in a short survey.
Improve financial system	<ul style="list-style-type: none"> Overseas remittances represent a vulnerability in the industrial structure of the destination country.
Improving access to finance	<ul style="list-style-type: none"> U.S. Economy and Labor Policy With regard to financial inclusion, the weaknesses that existed even in normal times have clearly become apparent in the wake of the Corona disaster. Analysis of overseas remittances by conventional, latest DX, and intermediate types

Source: Study Team

All of these issues have been pointed out before COVID-19, but the following issues have been clarified by the COVID-19 disaster.

² The coronavirus disease (COVID-19) pandemic: an opportunity for a systemic approach to disaster risk for the Caribbean (ECLAC UNDRR COVID-19 Report, March 2021)

- The lack of employment in the country has not improved and the number of migrants overseas, especially the poor, has been increasing.
- Although agriculture is said to be a sector that was relatively unaffected by COVID-19, the suspension of distribution due to restrictions on outings has resulted in the inability to sell the production, resulting in disposal, discounted sales, and other forms of government support. Issues with the financial system became clearer, such as the many cases where loans from agricultural banks to small and marginal farmers were abandoned due to inadequate real estate collateral procedures and credit guarantee systems.
- The increasing number of family remittances from overseas migrants is not only a problem of domestic employment and poverty, but also a positive idea that it can be seen as a factor to support the domestic economy through overseas remittances adjacent to the huge job market of the U.S. (economic benefits can be expected).
- Overseas remittances represent a vulnerability in the industrial structure of the recipient country, and an increase in remittances is the reverse of the need to strengthen the industrial structure.
- The sharp drop or increase in overseas remittances is greatly influenced by the economic downturn in the U.S. and the policies of the country, such as labor support (unemployment measures and unemployment benefits for immigrant groups) and subsidized overseas remittance fees.
- It is important to include new approaches, such as the adoption of Central Bank Digital Currencies (CBDC), that countries are implementing in the analysis.

Financial inclusion is not only relevant to many of these sectoral issues, but is also identified as a key indicator for achieving Goal 1, "Eradicate Poverty" of the Sustainable Development Goals (SDGs), and as an important tool for achieving the seven goals of the SDGs. JICA's sectoral cooperation frameworks have also suggested the benefits of incorporating a financial inclusion perspective³.

Taking these factors into consideration, the socio-economic sector has decided to treat financial inclusion as a sectoral issue that requires attention in terms of vulnerability to COVID-19.

Prior to the selection of the focus countries, grouping was conducted based on the economic statistical indicators for the 23 countries in question. By grouping the countries, it becomes clear to which group the priority countries to be selected and the countries to be studied in detail belong to, and the relationship with the selection criteria becomes clear.

Financial inclusion, as mentioned above, is relevant to many issues in the socio-economic policy sector in the Central American and Caribbean regions, as well as to the achievement of seven of the 17 goals of the SDGs (1 poverty, 2 hunger, 3 health, 5 gender, 8 economic growth and employment, 9 infrastructure, industrialization, innovation, and 10 inequality). It is also a broad issue. JICA has been providing assistance in the fields of agriculture, health, microfinance, and livelihood improvement for benefit-recipient households, but the main component of this project is the utilization of overseas remittances, which sharply decreased in the first half of 2020 immediately after the outbreak of COVID-19, and the problem has become clearer. In this case, the target countries were grouped in terms of overseas remittances.

Since the target countries differ in terms of national land area, population, and economic scale, the grouping was based not on the amount of overseas remittances but on the ratio of overseas remittances to the country's GDP (Table 5-32).

³ "Study on Innovative Financial Inclusion Approaches in Global Agriculture and Health Sector Final Report", JICA, 2020.

Table 5-32 Comparison of Overseas Remittances and Major Economic Indicators in Target Countries (1) (2)

US\$ million

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020e	Remittances as a share of GDP in 2020e (%)
El Salvador	3,644	3,914	3,966	4,160	4,275	4,562	4,996	5,392	5,661	5,936	24.1%
Honduras	2,811	2,920	3,098	3,370	3,666	3,864	4,323	4,777	5,401	5,576	23.5%
Haiti	1,551	1,612	1,781	1,977	2,196	2,359	2,722	3,142	3,327	3,111	21.8%
Jamaica	2,106	2,168	2,172	2,269	2,361	2,433	2,463	2,502	2,563	2,956	21.2%
Nicaragua	914	1,016	1,081	1,140	1,198	1,268	1,395	1,505	1,686	1,855	15.3%
Guatemala	4,533	4,965	5,304	5,751	6,482	7,363	8,394	9,438	10,656	11,403	14.8%
Dominican Republic	4,241	4,262	4,486	4,810	5,196	5,508	6,178	6,814	7,421	8,332	10.6%
Dominica	23	23	24	51	56	44	44	49	49	49	9.5%
Guyana	412	469	328	330	303	269	322	334	380	361	6.3%
Belize	75	76	74	80	85	97	90	93	97	93	5.63%
St. Vincent and the Gren	29	31	32	44	42	45	46	47	47	44	5.60%
Grenada	29	29	30	41	43	45	47	48	48	48	4.7%
Mexico	23,446	23,209	23,189	24,802	26,233	28,691	32,271	35,768	39,022	42,880	4.0%
St. Kitts and Nevis	45	51	52	22	24	23	25	26	26	26	3.0%
Barbados	147	152	191	189	198	156	108	108	108	108	2.5%
St. Lucia	29	30	30	35	41	38	42	43	43	41	2.4%
Antigua and Barbuda	20	21	21	32	31	27	24	25	25	25	1.8%
Panama	368	411	461	756	554	503	533	538	581	447	0.84%
Trinidad and Tobago	162	139	145	145	155	145	135	139	143	178	0.83%
Costa Rica	520	562	596	594	552	545	560	534	553	500	0.81%
Suriname	4	8	7	9	7	1	1	1	1	1	0.02%
Bahamas											-
Cuba											-

Source: World Bank, May 2021

Country	Remittances as a share of GDP in 2020e (%)	2020e /2011	2020e /2019	Population (thousand)	GDP (\$ mil)	GDP/capita	Turism to GDP	External Debt	GDP Rate 2020
El Salvador	24.1%	163%	105%	6,486	27,023	4,187	11.0	74.0	-7.94
Honduras	23.5%	198%	103%	9,905	25,095	2,575	11.7	45.2	-8.96
Haiti	21.8%	201%	93%	11,403	13,577	1,205	8.4	*15.5	-3.30
Jamaica	21.2%	140%	115%	2,961	15,907	5,395	31.1	66.1	-9.92
Nicaragua	15.3%	203%	110%	6,625	12,521	1,913	10.1	91.8	-1.98
Guatemala	14.8%	252%	107%	17,916	76,710	2,363	6.2	32.6	-1.52
Dominican Republic	10.6%	196%	112%	10,848	88,941	8,282	16.3	37.3	-6.72
Dominica	9.5%	214%	100%	72	582	8,111	36.9	*41.5	-16.71
Guyana	6.3%	88%	95%	787	5,174	6,610	4.4	18.9	43.50
Belize	5.63%	123%	96%	398	1,838	4,708	37.2	65.0	-14.15
St. Vincent and the Gren	5.60%	151%	94%	111	825	7,458	28.6	*48.0	-2.73
Grenada	4.7%	167%	100%	113	1,201	10,809	40.5	-	-11.23
Mexico	4.0%	183%	110%	128,933	1,268,868	9,946	15.5	34.7	-8.31
St. Kitts and Nevis	3.0%	58%	100%	53	1,053	19,939	28.2	*13.6	-10.74
Barbados	2.5%	74%	100%	287	5,205	18,133	30.9	37.4	-17.60
St. Lucia	2.4%	139%	95%	184	2,123	11,611	40.7	*29.3	-23.79
Antigua and Barbuda	1.8%	122%	100%	15	1,662	17,113	42.7	-	-15.97
Panama	0.84%	121%	77%	4,315	66,801	15,731	13.6	54.7	-17.95
Trinidad and Tobago	0.83%	110%	124%	1,399	23,208	16,637	7.8	*18.2	-6.85
Costa Rica	0.81%	96%	90%	5,094	61,801	12,244	12.0	49.1	-4.09
Suriname	0.02%	13%	100%	587	3,697	6,360	2.6	56.1	-14.50
Bahamas	-								
Cuba	-								

Source: World Bank, May 2021

(2020) (2019) (2019) (2019) (2020)
(ECLAC) (WTTTC) *2019

Next, for the remittance value, the 2020 value and the contrast of the 2020 value with the 2011 value were retained, and the values for 2011-2019 were deleted, and each item was ranked based on its impact (Table 5-33). For example, for the ratio of remittances to GDP, the remittances were ranked in order of the ratio, with the remittances ranked in order of the amount, and the 2020 values compared with 2011 ranked in order of the ratio. The Bahamas and Cuba, for which no remittance statistics in 2020 were collected, were excluded. As supplementary information, the Study Team has also added the availability of local travel (whether there are travel restrictions), the existence of pilot projects in this survey, and the location of the headquarters of regional international organizations.

Table 5-33 Sorting Based on Each Item of Overseas Remittance Amount

	Remittances as a share of GDP in 2020e (%)	Remittance amount 2020	2020e /2011	2020e /2019	Population (thousand)	GDP (\$ mil)	GDP/ capita	Tourism to GDP	External Debt 2020 vs 2019		GDP Decreath Ratio 2020	Total		
El Salvador	1	4	9	7	7	6	17	15	2	7	13	88	4	2
Honduras	2	5	5	8	5	7	18	14	9	5	11	89	5	
Haiti	3	6	4	19	3	10	21	17	18		17	118	14	
Jamaica	4	7	11	2	10	9	15	6	3	8	10	85	3	
Nicaragua	5	8	3	4	6	11	20	16	1	12	19	105	7	
Guatemala	6	2	1	6	2	3	19	19	14	11	20	103	6	3
Dominican Republic	7	3	6	3	4	2	10	10	11	2	15	73	1	1
Dominica	8	15	2	14	19	21	11	5	10		4	109	12	8
Guyana	9	11	18	17	12	13	13	20	16	14	21	164	21	
Belize	10	14	13	15	14	16	16	4	4	12	7	125	13	9
St. Vincent and the G	11	17	10	18	18	20	12	8	8		18	140	19	
Grenada	12	16	8	9	17	18	8	3			8	99	8	4
Mexico	13	1	7	5	1	1	9	11	13	4	12	77	2	
St. Kitts and Nevis	14	19	20	9	20	19	1	9	19		9	139	18	
Barbados	15	13	19	9	15	12	2	7	11	5	3	111	10	6
St. Lucia	16	18	12	16	16	15	7	2	15		1	118	14	10
Antigua and Barbuda	17	20	14	9	21	17	3	1			5	107	11	7
Panama	18	10	15	21	9	4	5	12	6	1	2	103	9	5
Trinidad and Tobago	19	12	16	1	11	8	4	18	17		14	120	16	
Costa Rica	20	9	17	20	8	5	6	13	7	10	16	131	17	11
Suriname	21	21	21	9	13	14	14	21	5	9	6	154	20	12

	Remittances as a share of GDP in 2020e (%)	Remittance amount 2020	2020e /2011	2020e /2019	Population (thousand)	GDP (\$ mil)	GDP/ capita	Tourism to GDP	External Debt 2020 vs 2019		GDP Decreath Ratio 2020	Total		
St. Lucia	16	18	12	16	16	15	7	2	15		1	118	4	2
Panama	18	10	15	21	9	4	5	12	6	1	2	103	5	
Barbados	15	13	19	9	15	12	2	7	11	5	3	111	14	
Dominica	8	15	2	14	19	21	11	5	10		4	109	3	
Antigua and Barbuda	17	20	14	9	21	17	3	1			5	107	7	
Suriname	21	21	21	9	13	14	14	21	5	9	6	154	6	3
Belize	10	14	13	15	14	16	16	4	4	12	7	125	1	1
Grenada	12	16	8	9	17	18	8	3			8	99	12	8
St. Kitts and Nevis	14	19	20	9	20	19	1	9	19		9	139	21	
Jamaica	4	7	11	2	10	9	15	6	3	8	10	85	13	9
Honduras	2	5	5	8	5	7	18	14	9	5	11	89	19	
Mexico	13	1	7	5	1	1	9	11	13	4	12	77	8	4
El Salvador	1	4	9	7	7	6	17	15	2	7	13	88	2	
Trinidad and Tobago	19	12	16	1	11	8	4	18	17		14	120	18	
Dominican Republic	7	3	6	3	4	2	10	10	11	2	15	73	10	6
Costa Rica	20	9	17	20	8	5	6	13	7	10	16	131	14	10
Haiti	3	6	4	19	3	10	21	17	18		17	118	11	7
St. Vincent and the G	11	17	10	18	18	20	12	8	8		18	140	9	5
Nicaragua	5	8	3	4	6	11	20	16	1	12	19	105	16	
Guatemala	6	2	1	6	2	3	19	19	14	11	20	103	17	11
Guyana	9	11	18	17	12	13	13	20	16	14	21	164	20	12
	Remittances as a share of GDP in 2020e (%)	Remittance amount 2020	2020e /2011	2020e /2019	Population (thousand)	GDP (\$ mil)	GDP/ capita	Tourism to GDP	External Debt 2020 vs 2019		GDP Decreath Ratio 2020	Total		
Antigua and Barbuda	17	20	14	9	21	17	3	1			5	107	4	2
St. Lucia	16	18	12	16	16	15	7	2	15		1	118	5	
Grenada	12	16	8	9	17	18	8	3			8	99	14	
Belize	10	14	13	15	14	16	16	4	4	12	7	125	3	
Dominica	8	15	2	14	19	21	11	5	10		4	109	7	
Jamaica	4	7	11	2	10	9	15	6	3	8	10	85	6	3
Barbados	15	13	19	9	15	12	2	7	11	5	3	111	1	1
St. Vincent and the G	11	17	10	18	18	20	12	8	8		18	140	12	8
St. Kitts and Nevis	14	19	20	9	20	19	1	9	19		9	139	21	
Dominican Republic	7	3	6	3	4	2	10	10	11	2	15	73	13	9
Mexico	13	1	7	5	1	1	9	11	13	4	12	77	19	
Panama	18	10	15	21	9	4	5	12	6	1	2	103	8	4
Costa Rica	20	9	17	20	8	5	6	13	7	10	16	131	2	
Honduras	2	5	5	8	5	7	18	14	9	5	11	89	18	
El Salvador	1	4	9	7	7	6	17	15	2	7	13	88	10	6
Nicaragua	5	8	3	4	6	11	20	16	1	12	19	105	14	10
Haiti	3	6	4	19	3	10	21	17	18		17	118	11	7
Trinidad and Tobago	19	12	16	1	11	8	4	18	17		14	120	9	5
Guatemala	6	2	1	6	2	3	19	19	14	11	20	103	16	
Guyana	9	11	18	17	12	13	13	20	16	14	21	164	17	11
Suriname	21	21	21	9	13	14	14	21	5	9	6	154	20	12

Source: Study Team

For each of the categorized items in Table 5-33, the items are categorized into three groups: the top 1-7, 8-14, and 15-21, and grouped them by totaling the number of each as high impact (☆), medium impact (○), and low impact (△) (Table 5-34).

Table 5-34 Grouping of Countries Surveyed

影響度大のグループ

	Remittances as a share of GDP in 2020e (%)	Remittance amount 2020	2020e /2011	2020e /2019	Population (thousand)	GDP (\$ mil)	GDP/ capita	Tourism to GDP	External Debt	GDP Decrease Ratio 2020	Total			Travel restriction	Pilot Project	Access to information
											☆	○	△			
El Salvador	☆	☆	○	☆	☆	☆	△	△	☆	○	6	2	2			
Honduras	☆	☆	☆	○	☆	☆	△	○	○	○	5	4	1	X	*	
Haiti	☆	☆	☆	△	☆	○	△	△	△	△	4	1	5	X		
Jamaica	☆	☆	○	☆	○	○	△	☆	☆	○	5	4	1	X	*	
Nicaragua	☆	○	☆	☆	☆	○	△	△	☆	△	5	2	3	X	*	
Guatemala	☆	☆	☆	☆	☆	☆	△	△	○	△	6	1	3		*	
Dominican Republic	☆	☆	☆	☆	☆	☆	○	○	○	△	6	3	1		*	

影響度中のグループ

	Remittances as a share of GDP in 2020e (%)	Remittance amount 2020	2020e /2011	2020e /2019	Population (thousand)	GDP (\$ mil)	GDP/ capita	Tourism to GDP	External Debt	GDP Decrease Ratio 2020	Total			Travel restriction	Pilot Project	Access to information
											☆	○	△			
Dominica	○	△	☆	○	△	△	○	☆	○	☆	3	4	3			
Guyana	○	○	△	△	○	○	○	△	△	△	0	5	5	X		#
Belize	○	○	○	△	○	△	△	☆	☆	☆	3	4	3			
St. Vincent and the Grenadines	○	△	○	△	△	△	○	○	○	△	0	5	5	X		
Grenada	○	△	○	○	△	△	○	☆	○	○	1	5	3			
Mexico	○	☆	☆	☆	☆	☆	○	○	○	○	5	5	0	X		
St. Kitts and Nevis	○	△	△	○	△	△	☆	○	△	○	1	4	5	X		#

影響度小のグループ

	Remittances as a share of GDP in 2020e (%)	Remittance amount 2020	2020e /2011	2020e /2019	Population (thousand)	GDP (\$ mil)	GDP/ capita	Tourism to GDP	External Debt	GDP Decrease Ratio 2020	Total			Travel restriction	Pilot Project	Access to information
											☆	○	△			
Barbados	△	○	△	○	△	○	☆	☆	○	☆	3	4	3			#
St. Lucia	△	△	○	△	△	△	☆	☆	△	☆	3	1	6		*	#
Antigua and Barbuda	△	△	○	○	△	△	☆	☆	○	☆	3	2	4			
Panama	△	○	△	△	○	☆	☆	○	☆	☆	4	3	3		*	
Trinidad and Tobago	△	○	△	☆	○	○	☆	○	△	○	2	4	4	X		#
Costa Rica	△	○	△	△	○	☆	☆	○	☆	△	3	3	4			
Suriname	△	△	△	○	○	○	○	△	☆	☆	2	4	4			

Source: Study Team

5.7.2 Selection Criteria for Priority Countries

Based on the grouping in accordance with the ratio of the amount of overseas remittances to GDP and the aggregation of the impact of each item shown in Table 5-33, the priority countries were selected from the group with the highest impact (☆). In addition to the total impact (☆), supplementary information (existence of travel restrictions, existence of pilot projects in this study, and existence of the headquarters of regional international organizations) was taken into consideration, and the size of the impact was used as a criterion for selecting priority countries.

In addition, in order to compare countries where the ratio of overseas remittances to GDP is small, it was decided to select three countries from the group of countries with small impact (△). In the same way, the selection criteria for the countries to be included in the comparative analysis took into account the size of the impact (☆) within the group and the presence of local offices of international organizations from the perspective of obtaining information on the Caribbean Region.

5.7.3 Selection of Priority Countries

El Salvador, Guatemala, and the Dominican Republic were selected as priority countries based on the aforementioned selection criteria.

Table 5-35 Selection of Countries for the Survey

	Remittances as a share of GDP in 2020e (%)	Remittance amount 2020	2020e /2011	2020e /2019	Population (thousand)	GDP (\$ mil)	GDP/ capita	Tourism to GDP	External Debt	GDP Decrease Ratio 2020	Total			Travel restriction	Pilot Project	Access to information
											☆	○	△			
El Salvador	☆	☆	○	☆	☆	☆	△	△	☆	○	6	2	2			
Honduras	☆	☆	☆	○	☆	☆	△	○	○	○	5	4	1	X	*	
Haiti	☆	☆	☆	△	☆	○	△	△	△	△	4	1	5	X		
Jamaica	☆	☆	○	☆	○	○	△	☆	☆	○	5	4	1	X	*	
Nicaragua	☆	○	☆	☆	☆	○	△	△	☆	△	5	2	3	X	*	
Guatemala	☆	☆	☆	☆	☆	☆	△	△	○	△	6	1	3		*	
Dominican Republic	☆	☆	☆	☆	☆	☆	○	○	○	△	6	3	1		*	
Dominica	○	△	☆	○	△	△	○	☆	○	☆	3	4	3			
Guyana	○	○	△	△	○	○	○	△	△	△	0	5	5	X		#
Belize	○	○	○	△	○	△	△	☆	☆	☆	3	4	3			
St. Vincent and the Grenadines	○	△	○	△	△	△	○	○	○	△	0	5	5	X		
Grenada	○	△	○	○	△	△	○	☆		○	1	5	3			
Mexico	○	☆	☆	☆	☆	☆	○	○	○	○	5	5	0	X		
St. Kitts and Nevis	○	△	△	○	△	△	☆	○	△	○	1	4	5	X		#
Barbados	△	○	△	○	△	○	☆	☆	○	☆	3	4	3			#
St. Lucia	△	△	○	△	△	△	☆	☆	△	☆	3	1	6		*	#
Antigua and Barbuda	△	△	○	○	△	△	☆	☆		☆	3	2	4			
Panama	△	○	△	△	○	☆	☆	○	☆	☆	4	3	3		*	
Trinidad and Tobago	△	○	△	☆	○	○	☆	△	△	○	2	4	4	X		#
Costa Rica	△	○	△	△	○	☆	☆	○	☆	△	3	3	4			
Suriname	△	△	△	○	○	○	○	△	☆	☆	2	4	4			

Source: Study Team

5.8 Detailed Survey by Sector

5.8.1 Selection of Countries for Detailed Study

Against this background, the Socio-economic Policy Sector selected the target countries (priority countries) for the detailed study, and as shown in Table 5-36, three countries, namely: El Salvador, Guatemala, and the Dominican Republic, were selected for the study. In addition, Barbados, Saint Lucia, and Panama were selected as countries where the ratio of overseas remittances to GDP is low for comparison.

Table 5-36 Selection of Countries for the Survey

	Remittances as a share of GDP in 2020e (%)	Remittance amount 2020	2020e /2011	2020e /2019	Population (thousand)	GDP (\$ mil)	GDP/ capita	Tourism to GDP	External Debt	GDP Decrease Ratio 2020	Total			Travel restriction	Pilot Project	Access to information
											☆	○	△			
El Salvador	☆	☆	○	☆	☆	☆	△	△	☆	○	6	2	2			
Honduras	☆	☆	☆	○	☆	☆	△	○	○	○	5	4	1	X	*	
Haiti	☆	☆	☆	△	☆	○	△	△	△	△	4	1	5	X		
Jamaica	☆	☆	○	☆	○	○	△	☆	☆	○	5	4	1	X	*	
Nicaragua	☆	○	☆	☆	☆	○	△	△	☆	△	5	2	3	X	*	
Guatemala	☆	☆	☆	☆	☆	☆	△	△	○	△	6	1	3		*	
Dominican Republic	☆	☆	☆	☆	☆	☆	○	○	○	△	6	3	1		*	
Dominica	○	△	☆	○	△	△	○	☆	○	☆	3	4	3			
Guyana	○	○	△	△	○	○	○	△	△	△	0	5	5	X		#
Belize	○	○	○	△	○	△	△	☆	☆	☆	3	4	3			
St. Vincent and the Grenadines	○	△	○	△	△	△	○	○	○	△	0	5	5	X		
Grenada	○	△	○	○	△	△	○	☆		○	1	5	3			
Mexico	○	☆	☆	☆	☆	☆	○	○	○	○	5	5	0	X		
St. Kitts and Nevis	○	△	△	○	△	△	☆	○	△	○	1	4	5	X		#
Barbados	△	○	△	○	△	○	☆	☆	○	☆	3	4	3			#
St. Lucia	△	△	○	△	△	△	☆	☆	△	☆	3	1	6		*	#
Antigua and Barbuda	△	△	○	○	△	△	☆	☆		☆	3	2	4			
Panama	△	○	△	△	○	☆	☆	○	☆	☆	4	3	3		*	
Trinidad and Tobago	△	○	△	☆	○	○	☆	△	△	○	2	4	4	X		#
Costa Rica	△	○	△	△	○	☆	☆	○	☆	△	3	3	4			
Suriname	△	△	△	○	○	○	○	△	☆	☆	2	4	4			

Source: Study Team

The reasons for the selection of the countries for the detailed survey are summarized in Table 5-37.

Table 5-37 Results of the Selection of Countries for the Detailed Survey

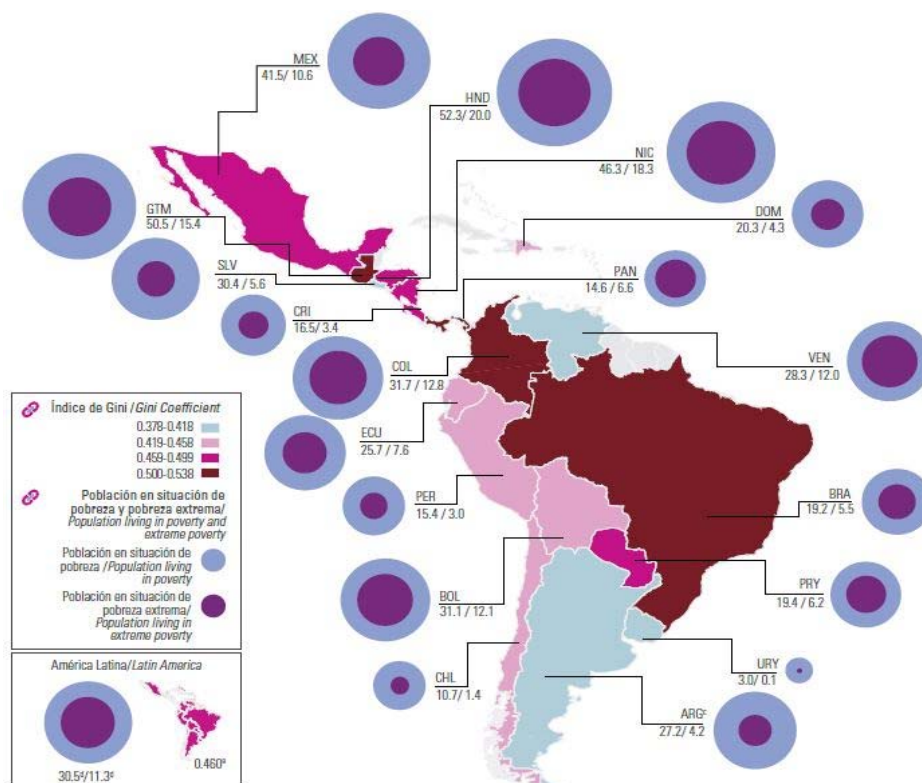
Priority Country	Reasons for selection	Countries with low overseas remittances as a percentage of GDP	Reasons for comparison and characteristics	
El Salvador	<ul style="list-style-type: none"> ▪ Largest GDP rate for overseas remittances. ▪ GDP/person as low as USD 4,187 ▪ Relatively large population (64.86 million) ▪ 11.0% GDP contribution from tourism ▪ GDP growth rate in 2020: -7.94% ▪ Currently experimenting with financial services using digital currency. 	Countries with low overseas remittances as a percentage of GDP	Barbados	<ul style="list-style-type: none"> ▪ Overseas remittances as a percentage of GDP is low at 2.5%. ▪ Overseas remittances (2020) down (74%) from 2011 ▪ High GDP/person (USD 18,133) ▪ Small population (280,000) ▪ 30.9% GDP contribution from tourism ▪ GDP growth rate in 2020: -17.6% ▪ Improved health and welfare system
Guatemala	<ul style="list-style-type: none"> ▪ GDP rate of overseas remittances is large ▪ Second largest amount of overseas remittances ▪ Low GDP/person (USD 2,363) ▪ Large population (179.16 million) ▪ 6.2% GDP contribution from tourism ▪ GDP growth rate in 2020: -1.52% ▪ Mobile banking and smartphone-based services available (pilot project candidate project) 		Saint Lucia	<ul style="list-style-type: none"> ▪ Low GDP rate of overseas remittances (2.4%) ▪ Overseas remittances (2020) will decrease compared to 2019 (95.1%) ▪ High GDP/person (USD 11,611) ▪ Low population (180,000) ▪ 40.7% of GDP contribution from tourism ▪ GDP growth rate in 2020: -23.8%
Dominican Republic	<ul style="list-style-type: none"> ▪ GDP rate of overseas remittances is large ▪ Third largest amount of overseas remittances ▪ GDP/person is USD 8,282 ▪ Large population (10.848 million) ▪ Tourism contributes 16.3% of GDP ▪ GDP growth rate in 2020: -6.72% ▪ Information on challenges of financial access issues available 		Panama	<ul style="list-style-type: none"> ▪ Low GDP rate of overseas remittances (0.8%) ▪ Overseas remittance amount (2020) will decrease compared to 2019 (76.9%) ▪ Amount sent is larger than amount received ▪ GDP/person is high at USD 15,731 ▪ GDP growth rate in 2020: -17.9%

Source: Study Team

5.8.2 Conducting Detailed Survey

(1) Issues of Socio-economic Policy Sector in Central America and the Caribbean

As shown in the previous section (Table 5-31), there are many socio-economic policy sector issues in the countries of Central America and the Caribbean, and financial inclusion is one of them, but the fundamental issues are income growth for the poor and access to education and health care. Prior to conducting the detailed survey, it is worth to review once again the income disparity and poverty rate in the target region.



Source: ECLAC Statistical Yearbook for LAC 2020

Figure 5-10 Income Inequality and Poverty Rates in Latin American and Caribbean Countries

Figure 5-10 shows income disparity in terms of poverty rate and Gini coefficient for the Central American and Caribbean countries. Many countries in the region have high Gini coefficients and poverty rates. Among the three priority countries, Guatemala has a high Gini coefficient of over 0.5, a poverty rate of 50.5%, and an extreme poverty rate of 15.4%, while El Salvador has a lower Gini coefficient than the Dominican Republic, but higher for both the poverty rate and the extreme poverty rate than Dominican Republic.

As for the dependence of the economy on tourism, the average contribution of tourism to GDP and employment in the 23 countries is high at 21% and 28%, respectively, and industrial diversification is an urgent issue. The Dominican Republic's efforts to develop domestic tourism and to reach out not only to foreign tourists but also to domestic tourists can be considered as a reference for neighboring countries in the region.

(2) Maquiladora Industry

The impact of COVID-19 on production and recovery in the socio-economic sectors varies from sector to sector, and employment has a high level of resilience in the agricultural sector, in El Salvador, the labor-intensive textile industry was severely impacted. In this section, the Study Team analyze the impact of COVID-19 on the maquiladora industry (maquilas), which is considered to be a characteristic of the manufacturing sector in the Central American countries.

The maquiladora industry was established in the 1990s as a strategy to attract foreign investment by creating special export zones and providing incentives for companies⁴ to set up operations in Mexico. The maquiladora system was originally created as an industrial policy to help increase employment in response to the increase in unemployment in Mexico as a result of the U.S. government terminating its policy of accepting Mexican migrant workers.

⁴ A bonded processing system that allows Central American countries to export products to the U.S. duty-free because they are subject to the U.S. Caribbean Development Initiative (CBI), and to import raw materials, parts, and machinery used in the manufacture of those products duty-free.

Maquiladoras (bonded export processing industries) were first introduced to develop labor-intensive export-oriented industries in the Mexican Border Industrialization Plan, which aims to develop the economy of the northern border region with the U.S. Later, the rule limiting the establishment of maquiladoras to the border region was abolished, and maquiladoras can now be established anywhere in the country. In Central American countries, most of the companies that have set up maquiladoras are textile and sewing related companies, but in Mexico, there is a wide range of companies that have set up maquiladoras, including electrical equipment, machinery, and car parts.

Looking at the total value of import/export items and maquila industries by sector in El Salvador since 2016 and the 2020 value compared with the previous year (2019 value) (Table 5-38), the decline in maquila industries has been above average for both imports and exports. The rate of decline in garments and textile was particularly large, suggesting that the impact of COVID-19 was significant. Since the textile industry is labor-intensive, the impact of the shutdown of factories is also estimated to have been significant.

Table 5-38 El Salvador Imports, Exports, and Maquila Industry Trends (2016-2020)

	USD in Million					
	2016	2017	2018	2019	2020	VS 2019
1. Exports (FOB)	5,420.13	5,760.02	5,905.42	5,904.73	5,044.01	85.4%
Agriculture	161.56	175.87	170.10	170.25	168.15	98.8%
Mining and quarrying	0.23	0.37	0.44	0.36	0.54	150.0%
Manufacturing	4,141.01	4,475.40	4,549.85	4,549.67	3,970.33	87.3%
Electricity, water, gas	3.30	2.40	0.77	12.72	10.30	81.0%
Commerce	10.20	7.29	5.77	6.05	5.59	92.4%
Manufacturing of Maquila	1,103.83	1,098.67	1,178.50	1,165.68	889.12	76.3%
Maquilla of other products	228.33	295.47	357.04	297.45	262.33	88.2%
Maquilla of point dress garments	787.86	720.53	745.17	802.49	585.49	73.0%
Maquilla of textiles	87.63	82.68	76.29	65.74	41.30	62.8%
2. Imports	9,825.78	10,571.51	11,464.32	11,603.84	10,326.58	89.0%
Agriculture	471.70	436.97	534.59	591.34	589.82	99.7%
Mining and quarrying	12.03	12.12	12.74	10.66	10.52	98.7%
Manufacturing	8,840.53	9,390.28	10,090.83	10,157.73	9,153.16	90.1%
Electricity, water, gas	51.53	105.78	166.93	176.54	75.54	42.8%
Commerce	15.51	18.93	21.12	21.03	17.28	82.2%
Manufacturing of Maquila	434.47	607.43	638.11	646.55	480.26	74.3%
Maquilla of other products	138.53	258.46	174.33	141.99	148.05	104.3%
Maquilla of point dress garments	118.05	190.81	326.53	374.84	243.71	65.0%
Maquilla of textiles	177.89	158.16	137.25	129.72	88.5	68.2%
3. Balance of trade	-4,405.65	-4,811.49	-5,558.91	-5,699.11	-5,282.57	92.7%

Source: BCR

(3) Other Industries

Other brand-name industries that are competitive in Central America and the Caribbean include sugar, a traditional industry in the region, and its related industries, rum, cigars, and coffee, such as Blue Mountain, as well as Sea Island cotton, which is produced in small quantities but is regarded as one of the best in the world.

Sea Island cotton (scientific name: *Gossypium barbadense*), which has the longest fiber length in existence, is said to have originated in the upper reaches of the Amazon River, but is thought to have spread along the coasts of Ecuador, Colombia, and Venezuela, and then migrated with people to the Lesser Antilles, including Trinidad and Tobago. The scientific name *Barbadense* is not derived from its origin in South America, but from the island of Barbados in the Lesser Antilles. The quality of *Barbadense* is symbolized by the fact that in 1792, cotton grown on the island of Tobago was made into 278 count yarn, which was priced 400 times higher than the upland cotton generally distributed in Europe. Since then, it has maintained a high reputation, becoming the cotton of choice for the British Royal Family. In spite of this high reputation, its production and distribution are not necessarily widely recognized, and there is little information on the status and potential for expanding production and attracting investment.

Sea Island cotton was grown in the Caribbean countries of Jamaica, Barbados, Antigua, Nevis and Belize, but due to various conditions, it is now grown in two countries, Jamaica and Barbados. During the third field survey, the Study Team visited the Barbados-based production company Exclusive Cottons of Caribbean Inc. (ECCI). According to ECCI, it is difficult to secure human resources due to the rise of tourism, difficult to mechanize the cultivation and picking process, and unsuitable for mass production. In addition, although Japanese companies used to import the products until a few years ago, they now export 100% of their products to Italian companies. Interview was made to Sea Island Club Co., Ltd. which is mainly involved in the production, import, and sale of Sea Island cotton in Japan. At present, the company is concentrating on business in Jamaica and Texas, but there is still a difference in quality between the U.S. products, which have been mechanized, and the Caribbean products, which are produced by hand. In the long term, they see expansion of Jamaican production and revival of production on the island of Barbados and Antigua, which are the source of the Jamaican production. The Embassy of Jamaica in Tokyo also acknowledged that the company's investment has created 5,000 new jobs in the Jamaican cotton industry and expressed their desire to expand production in the future. According to the company, there are no records of soil and other research on the suitability of Sea Island cotton for cultivation in other areas of the five countries of origin. They expressed interest in conducting a feasibility study in Cuba and other areas, which are close to Jamaica and has a large land area and population.

In the case of Sea Island cotton, which is highly regarded for its quality but has room for development in terms of market development and expansion of productivity and production, it is desirable to support development and conduct research in the region, not only in the British Commonwealth, which has been the center of development, but also in other countries in the Caribbean regions. In the Caribbean region, the relationship between English-speaking and other-language countries in terms of information exchange and technical cooperation is not very active, and the growth of these few branded products will require research and development that transcends borders and regions, led by regional organizations.

(4) Financial Inclusion

In the research on financial inclusion, which is an issue in the social and economic policy sector, effort is attempted to collect information available in the form of economic indicators prior to the field survey and interviews on the status of access to financial services for the socially vulnerable. One of the socio-economic problems in Central America and the Caribbean is the lack of employment opportunities and the resulting disparity between the rich and the poor within the country as well as the migration of people overseas, mainly to the United States.

In addition, the World Bank estimates that only 30% of the population over the age of 15 in El Salvador has a bank account. In other words, the financial system in El Salvador is only working in one part of the economy. The lack of access to finance makes ordinary people and small and medium-sized stores, whose livelihood is limited to the use of cash, easy targets for criminals, and the lack of credit makes it difficult to start businesses and create quality employment. The lack of inclusiveness of the existing financial system is thought to play a part in the vicious cycle. Lack of employment opportunities at home is pushing people abroad, the majority of whom are heading for the U.S. The dependence of migrants abroad (in the U.S.) on sending remittance to their families and relatives who remain at home is increasing every year.

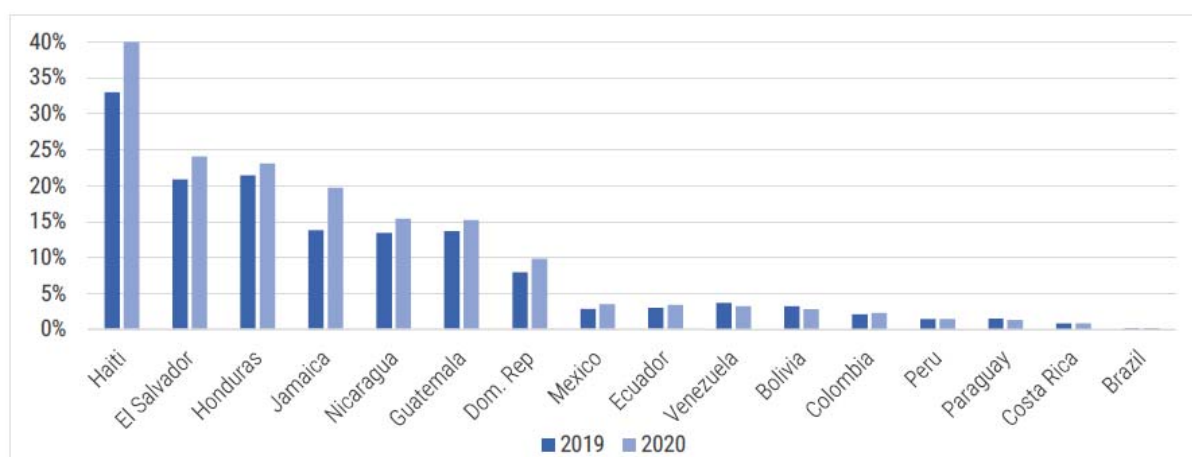
Table 5-39 shows the World Bank's figures for remittances from abroad in Latin America and the Caribbean for the period 2011-2020. In El Salvador, Honduras, Jamaica, and Haiti, the amount of remittances from abroad exceeds 20% of GDP.

Table 5-39 Family Remittances from Abroad and as Percentage of GDP in Central America and the Caribbean

Migrant remittance inflows (US\$ million)											
Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020e	Remittances as a share of GDP in 2020e (%)
Antigua and Barbuda	20	21	21	32	31	27	24	25	25	25	1.8%
Bahamas, The											-
Barbados	147	152	191	189	198	156	108	108	108	108	2.5%
Belize	75	76	74	80	85	97	90	93	97	93	5.6%
Costa Rica	520	562	596	594	552	545	560	534	553	500	0.8%
Cuba											-
Dominica	23	23	24	51	56	44	44	49	49	49	9.5%
Dominican Republic	4,241	4,262	4,486	4,810	5,196	5,508	6,178	6,814	7,421	8,332	10.6%
El Salvador	3,644	3,914	3,966	4,160	4,275	4,562	4,996	5,392	5,661	5,936	24.1%
Grenada	29	29	30	41	43	45	47	48	48	48	4.7%
Guatemala	4,533	4,965	5,304	5,751	6,482	7,363	8,394	9,438	10,656	11,403	14.8%
Guyana	412	469	328	330	303	269	322	334	380	361	6.3%
Haiti	1,551	1,612	1,781	1,977	2,196	2,359	2,722	3,142	3,327	3,111	21.8%
Honduras	2,811	2,920	3,098	3,370	3,666	3,864	4,323	4,777	5,401	5,576	23.5%
Jamaica	2,106	2,168	2,172	2,269	2,361	2,433	2,463	2,502	2,563	2,956	21.2%
Mexico	23,446	23,209	23,189	24,802	26,233	28,691	32,271	35,768	39,022	42,880	4.0%
Nicaragua	914	1,016	1,081	1,140	1,198	1,268	1,395	1,505	1,686	1,855	15.3%
Panama	368	411	461	756	554	503	533	538	581	447	0.8%
St. Kitts and Nevis	45	51	52	22	24	23	25	26	26	26	3.0%
St. Lucia	29	30	30	35	41	38	42	43	43	41	2.4%
St. Vincent and the Grenadines	29	31	32	44	42	45	46	47	47	44	5.6%
Suriname	4	8	7	9	7	1	1	1	1	1	0.0%
Trinidad and Tobago	162	139	145	145	155	145	135	139	143	178	0.8%

Source: The World Bank staff calculation based on data from IMF Balance of Payments Statistics database and data releases from central banks, national.
<https://www.worldbank.org/en/topic/migrationremittancesdiasporaissues/brief/migration-remittances-data>

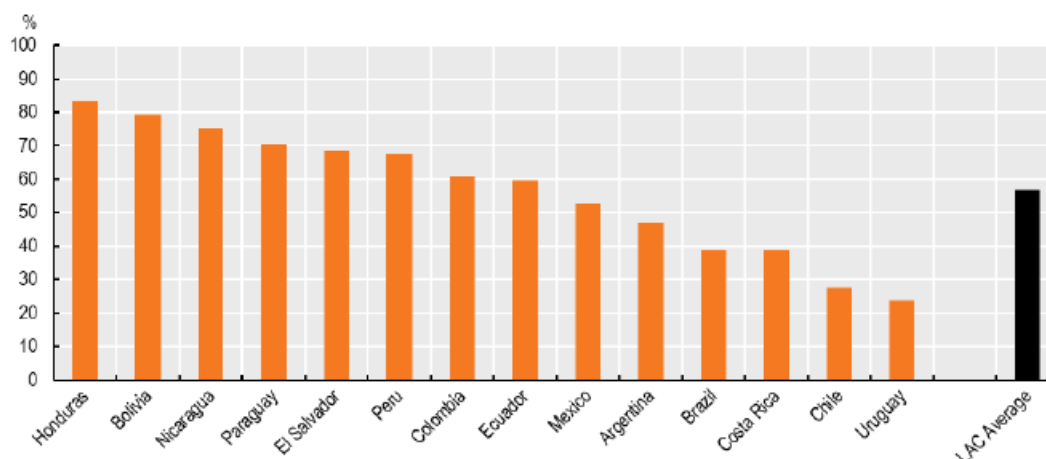
Some research institutions report that the actual amount of overseas remittances from abroad is much larger. According to Inter-American Dialogue, a US think tank, overseas remittances in Haiti account for 40% of the country’s GDP (Figure 5-11).



Source: A Commitment to Family: Remittance and the COVID-19 Pandemic, Inter-American Dialogue, June 2021

Figure 5-11 Remittances to LAC as a Share of GDP, 2019 and 2020

Figure 5-12 shows the OECD’s informal employment rate in Latin America and the Caribbean (LAC), which is close to 60% on average in LAC (COVID-19 in Latin America and the Caribbean: Regional Socio-economic Implications and Policy Priorities, OECD, 8th December, 2020). The same report analyzes that informal employment is increasing its rate due to COVID-19.



Source: COVID-19 in Latin America and the Caribbean: Regional Socio-economic Implications and Policy Priorities, OECD, 8th December 2020

Figure 5-12 Percentage of Informal Employment in Selected Latin American Countries (2018 or Latest Available Year)

The report emphasizes the role of international cooperation in combating the pandemic through COVID-19, emphasizing the need for support for debt according to poverty level and especially for the very poor strata of the population that do not have access to finance⁵.

According to the aforementioned Inter-American Dialogue report, by 2020, agent-based remittances have declined by 67%. In 2016, 84% of international remitters used agents, but internet-based remittances are surging, especially after the COVID-19 outbreak, with a clear shift to bank accounts, mobile apps and website-based remittances.

(5) Overseas Remittance

The characteristics of the priority countries selected in the previous chapter are summarized in Table 5-40, along with the countries with the lowest ratio of overseas remittances to GDP.

Table 5-40 Key Economic and Statistical Characteristics of the Three Priority Countries

	Remittances as a share of GDP in 2020e (%)	2020e /2011	Population (thousand)	GDP/ capita	Tourism to GDP	External Debt	GDP Rate 2020
El Salvador	24.1	163%	6,486	4,187	11.0	74.0	-7.94
Guatemala	14.8	252%	17,916	2,363	6.2	32.6	-1.52
Dominican Republic	10.6	196%	10,848	8,282	16.3	37.3	-6.72
Barbados	2.5	74%	287	18,133	30.9	37.3	-17.60
Saint Lucia	2.4	139%	184	11,611	40.7	29.3	-23.79
Panama	0.8	121%	4,315	15,731	13.6	54.7	-17.95

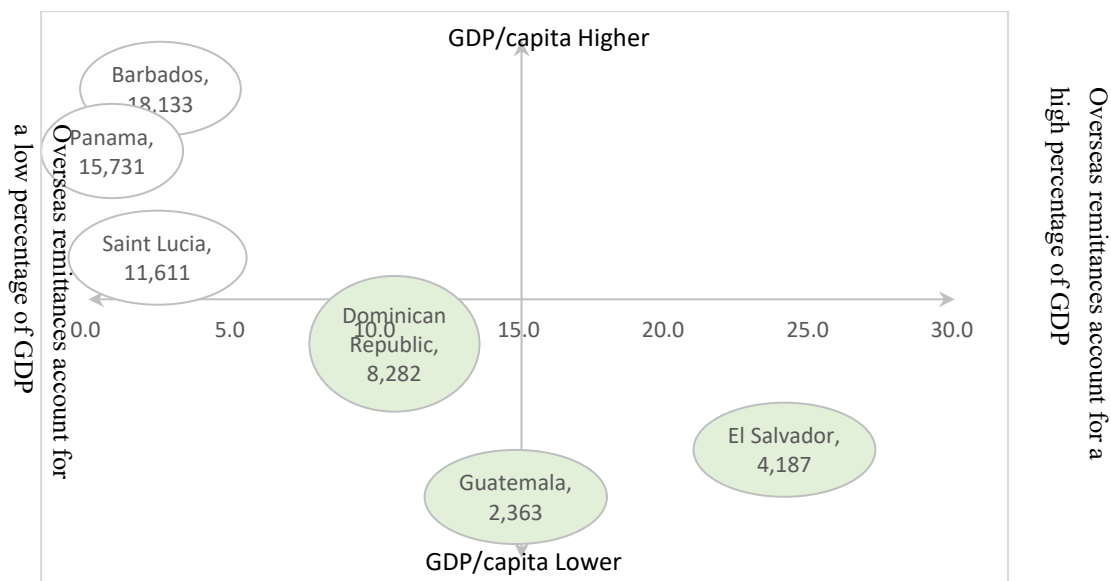
Source: Study Team based on ECLAC statistics

Although there are variations among countries, the following contrasts in characteristics can be seen between the three priority countries that generally have a large percentage of GDP accounted for by overseas remittances (hereinafter referred to as “priority countries”) and the three countries that have a small percentage of GDP accounted for by overseas remittances (hereinafter referred to as “comparison countries”).

- Priority countries generally have lower GDP/capita than comparison countries. (Figure 5-13)
- In terms of overseas remittances between 2011 and 2020, the trend for priority countries is increasing, while the trend for comparison countries is decreasing, remaining flat, or increasing slowly.

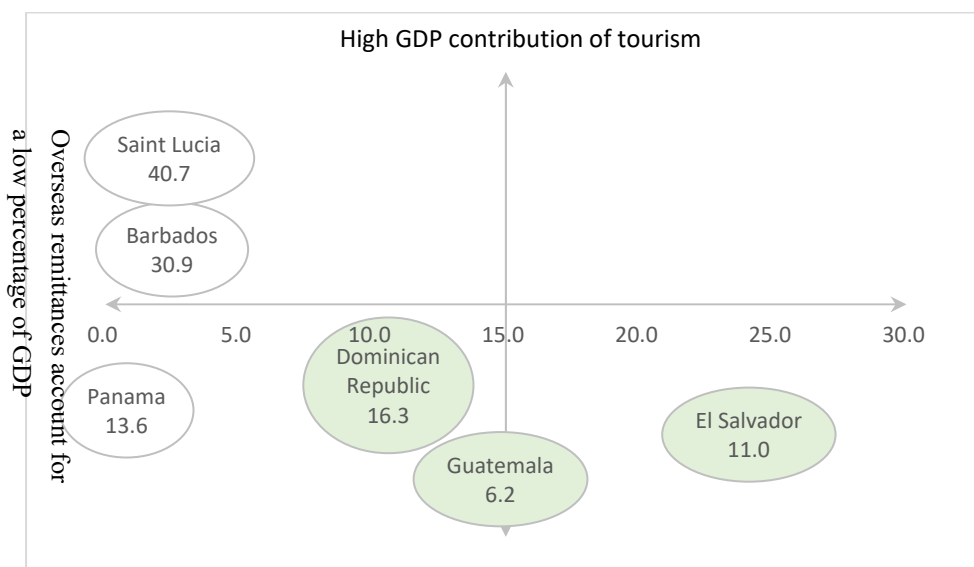
⁵ Source: A Commitment to Family: Remittance and the COVID-19 Pandemic, Inter-American Dialogue, June 2021

- Comparison countries are generally highly dependent on tourism (Figure 5-14).
- The economic growth rate in 2020 declined more in comparison countries than in the priority countries, suggesting that the economic impact of COVID-19 was significant (Figure 5-15).



Source: Study Team

Figure 5-13 Relationship between GDP/Capita and Overseas Remittances as a Percentage of GDP



Source: Study Team

Figure 5-14 Relationship between GDP Contribution of Tourism and Overseas Remittances as a Percentage of GDP

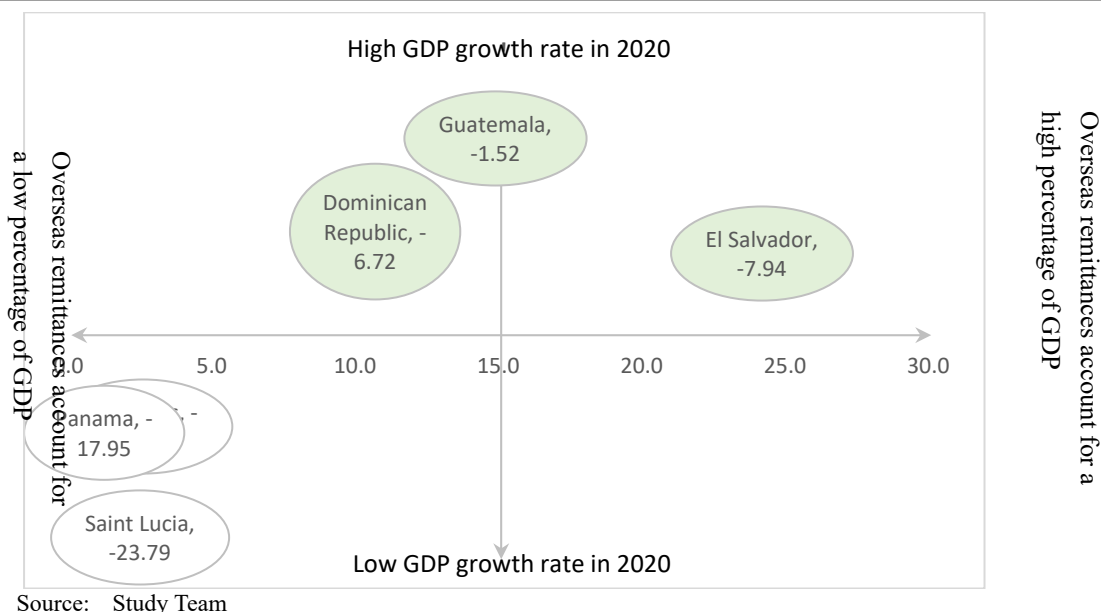


Figure 5-15 Relationship between GDP Growth Rate (2020) and Overseas Remittances as a Percentage of GDP

1) Overseas Remittances by Month

Table 5-39 shows the trends in remittances to family members from residents abroad in El Salvador, with the United States accounting for an overwhelming 96% of the total (followed by Canada 1%, Spain 0.4%, and Italy 0.3% in 2020). By district, the recipients of remittances are 37.8% in Central El Salvador, 31.7% in Eastern El Salvador, 16.8% in Western El Salvador, and 11.8% in Sub-Central El Salvador (2020). The annual trend varies from year to year, but generally shows a gradual increase from January to May, a slight decrease from summer to autumn, and an increase at the end of the year (Fig. 5-16). The 2020 annual trend shows a slight increase from January with a slight decrease in March, but a significant month-on-month decrease of 35% in April, and a 40% decrease from the previous year. According to an analysis by the Central Bank of El Salvador, the slowdown in the growth rate is attributed to a slowdown in economic activity and a significant increase in unemployment due to measures to control COVID-19 infection, particularly in the United States, where the largest number of El Salvadorans live⁶.

Remittances rebounded sharply in June, up 44% from the previous month, and continued to rise in July and August. The bank cited the easing of mobility restrictions in the U.S., the approval of the U.S. government’s unemployment assistance program and the second economic stimulus package, and the decline in the unemployment rate as the main factors, and remittances to supplement the income of family members living in El Salvador in the face of declining employment and local income as secondary factors⁷.

According to the IDB, the first factor that explains the resilience of remittances is the early recovery of employment in the U.S.⁸ The decline in remittances that occurred in March and April was due to the decline in U.S. employment and a rise in the Latino unemployment rate (to a record high of 18.6% in April) due to a decline in sales in sectors such as construction, retail, education and health services, entertainment, and restaurants and hotels, where many of the region’s immigrants work. Later, as economic activity picked up in these Latino-majority states (California, Texas, Arizona, New York, New Jersey, and Florida), Latino unemployment rates gradually declined and remittances recovered.

Second, the U.S. government’s financial support for immigrants’ savings and low-income families also helped to mitigate the decline: CARES Act financial assistance was targeted at low- and middle-income households to help them cope with unemployment and declining incomes, and many

⁶ Informe Económico Mensual Abril 2020 & Mayo 2020, BCR

⁷ Informe Económico Mensual Julio 2020 & Diciembre 2020, BCR

⁸ Migración y remesas en 2020 en Centroamérica, Haití, México, Panamá y República Dominicana, 2021.04, IDB

legal immigrants from Central America and Mexico likely benefited from this support. Similarly, the analysis shows that the impact of COVID-19 on remittances from the US was largely dependent on local crisis management. (Table 5-41).

Table 5-41 Top Five States for Number of Latinos Residing from Mexico, Central America, and the Dominican Republic

Mexicanos		Dominicanos		Salvadoreños	
California	34,6	New York	42,1	California	32,2
Texas	26,1	New Jersey	14,9	Texas	15,2
Arizona	5,4	Florida	11,4	Maryland	8,0
Illinois	4,7	Massachusetts	8,0	Virginia	7,9
Colorado	2,5	Pennsylvania	6,6	New York	7,9
Guatemaltecos		Hondureños		Nicaragüenses	
California	29,6	Texas	18,2	Florida	40,9
Florida	9,2	Florida	16,5	California	27,3
Texas	7,1	New York	9,6	Texas	6,1
New York	5,8	California	8,6	New York	3,7
Georgia	4,2	New Jersey	5,6	New Jersey	2,5

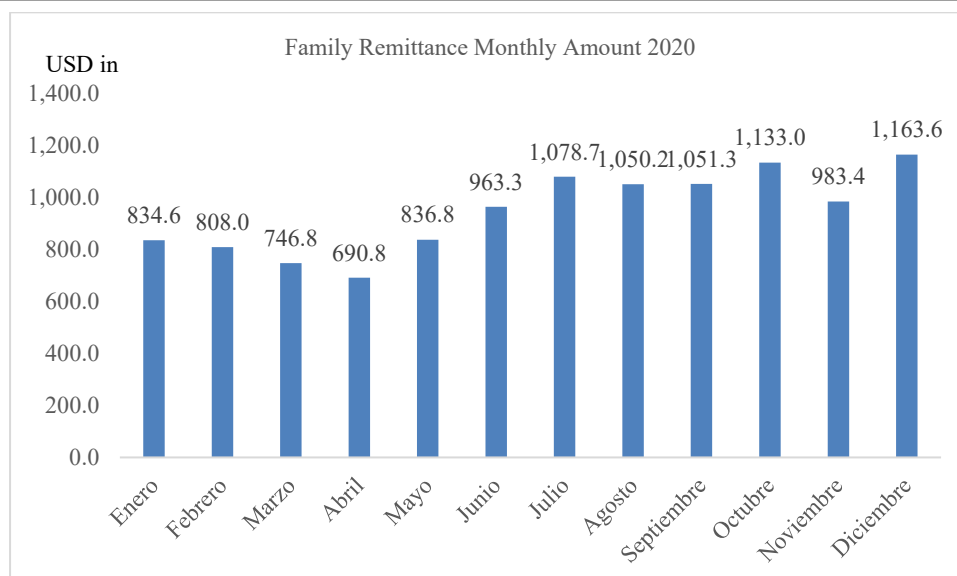
Source: Study Team



Source: Informe Económico Mensual, BCR

Figure 5-16 Family Remittances by Month in El Salvador

The central banks of Guatemala and the Dominican Republic do not publish monthly analysis of overseas remittances like the Central Bank of El Salvador, but as shown in Figures 5-17, the monthly remittance trends show that remittances declined from January to April (like El Salvador, remittances fell particularly sharply in April: Guatemala – 17.5%, Dominican Republic – 24.1%) and then recovered sharply from May to July, showing generally similar trends.

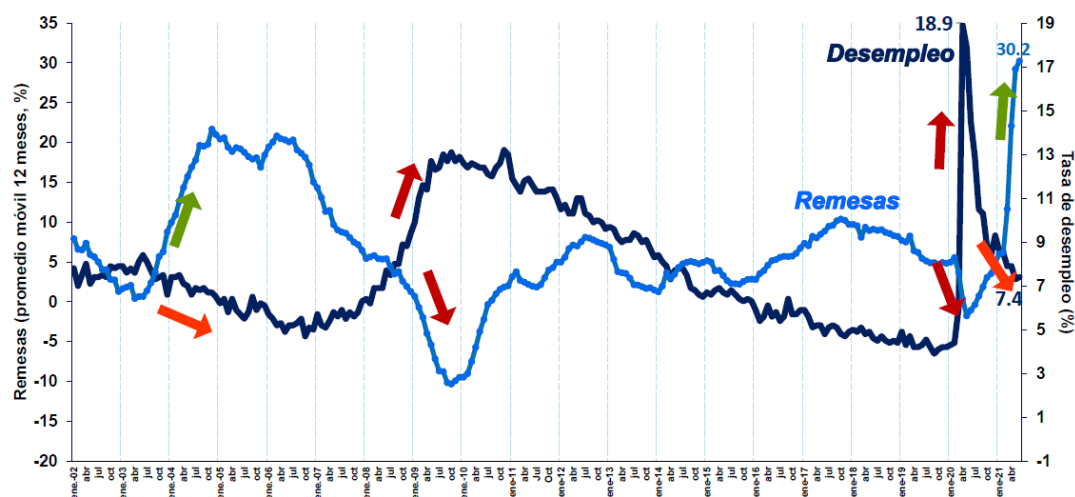


Source: Banco Central de Republica Dominicana (BCRD)

Figure 5-17 Family Remittances by Month in the Dominican Republic

2) Relationship with Unemployment Rate

Comparing the trend of remittances with the movement of the U.S. Hispanic unemployment rate, an inverse correlation is apparent. Figure 5-18 shows the monthly remittance amount and unemployment rate from 2004 to April 2021, showing that the amount of remittance decreases when the unemployment rate increases, although there is a difference in the size of the swing. The 12-month trend in remittances, which was affected by the COVID-19 pandemic in 2020, is similar to the phenomenon that occurred during the international financial crisis in 2009.



Fuente: Gerencia Internacional, Banco Central de Reserva y U.S. Department of labor. Bureau of labor Statistics www.gov.

Source: Remesas familiares alcanzarán un monto extraordinario en 2021, Análisis económico 57, Julio de 2021, FUSADES

Figure 5-18 U.S. Hispanic Unemployment Rate and Monthly Family Remittances (2002-2021)

3) Hispanic Population in the U.S.

The Hispanic population in the United States is approximately 60.5 million (2019), of which 37.2 million are from Mexico, followed by El Salvador (2.3 million), Guatemala (2.2 million), Honduras (1.0 million), Nicaragua (0.4 million), Costa Rica (0.2 million), and Panama (0.2 million).

4) Main Uses of Remittances Received

From the 2019 Multipurpose Household Survey (EHPM) of the Directorate General of Statistics and Census (DIGESTYC), the main uses of households receiving this remittance are 90.0% for

consumption, 6.6% for education, 3.0% for health needs, and 0.4% for investment and entrepreneurship, with no details on consumption. There are more details in the Mexican report on the use of remittances (Table 5-42).

Table 5-42 Comparison of Remittance Receiving and Non-receiving Families

	Recipients of Overseas Remittances	Non-recipients of Overseas Remittances
Home ownership	71.2%	68.8%
Holding a home deed	82.2%	82.3%
Buying a home	30.4%	23.3%
Building a home	37.9%	31.4%
Owning a refrigerator	92.1%	87.6%
Owning a car	45.7%	47.2%
Owning a motorcycle	14.6%	12.1%
Internet	47.5%	54.0%
Computer	30.9%	38.6%

Source: Yearbook of Migration and Remittances 2021, Gobierno de Mexico, Fundacion BBVA

It is difficult to make simple comparisons in some respects, such as the fact that non-recipients of remittances have higher rates of ownership of cars, internet, and computers, but if the funds are used to purchase homes and refrigerators, it can be assumed that the remitters (migrants) of family remittances are not necessarily all poor. In El Salvador as well, in La Union and other provinces, there are magnificent houses built with remittances, and there are also stories of people who are no longer engaged in agriculture, the family business, because they have been enriched by remittances.

5) Recipient of Remittance

According to the analysis of the interview survey conducted by the Central Bank of Honduras⁹, the main recipient of overseas remittances in Honduras is the mother (39.8%), followed by siblings (16.2%), spouse (15.8%), children (11.0%), father (7.8%), and other relatives (grandparents, aunts, uncles, cousins) (9.4%).

6) Remittance Method

The total number of remittances in El Salvador in 2020 was 25.0 million, a slight increase of 3.4% from the 24.6 million transactions in 2019. When remittances are broken down, 37.8% were sent by banks, 61.4% by other money transfer companies, 0.4% by cash, and 0.4% by mobile top-ups (Table 5-43).

The number of banked transactions was 7.9 million (32.3%) in 2018, 8 million (32.5%) in 2019, and 7.4 million (29.6%) in 2020. In terms of remittance value (USD in million), it decreased from 2,223.4 (41.2%) in 2018 to 2,262.1 (39.9%) in 2019 and 2,240.4 (37.7%) in 2020. Meanwhile, other remittance financial institutions handled 12.0 million (49.2%), 12.8 million (52.0%), and 13.7 million (54.8%) remittances in 2018, 2019, and 2020, respectively, in terms of usage. In terms of values (USD in million), it showed an increase from 3,033.3 (56.2%) in 2018 to 3,269.6 (57.8%) in 2019 and 3,641.5 (61.4%) in 2020.

Both the number and amount of remittances sent through banks decreased at a higher rate in 2020 than in 2019, while the number and amount of remittances sent through other financial institutions grew at a higher rate in both 2019 and 2020, especially in 2020. Although factors other than COVID-19 are unclear, the increase in remittance handling using other financial institutions in 2020 is partly due to the development of technology such as smart phone applications, but it is also likely that institutions with better remittance fees and convenience were preferred in the wake of COVID-19.

⁹ Resultados Encuesta Semestral De Remesas Familiares, 2021.01, Banco Central de Honduras. This report presents the results of the Semi-Annual Survey on Family Remittances conducted by the Central Bank of Honduras (BCH) from January 2-6, 2021.

Table 5-43 Family Remittance Receipt by Remittance Institution, 2018-2020

(USD in Million, transactions per year)

Agente liquidador	Millones de US\$			Número de operaciones (en millones)			Participación del valor en 2020	Variación 2020/19	
	2018	2019	2020	2018	2019	2020		Valor	Porcentual
Total de remesas	5,394.7	5,656.2	5,929.9	24.4	24.6	25.0	100.0%	273.8	4.8%
Instituciones bancarias	2,223.4	2,262.1	2,240.4	7.9	8.0	7.4	37.8%	-21.8	-1.0%
Otras empresas remesadoras	3,033.3	3,269.6	3,641.5	12.0	12.8	13.7	61.4%	371.9	11.4%
Efectivo o bolsillo	107.0	100.0	22.7				0.4%	-77.3	-77.3%
Recargas móviles	31.0	24.5	25.4	4.5	3.8	3.9	0.4%	0.9	3.8%

Source: FUSADES based on BCR

The concept of pocket remittances is used as a measure of the money that migrants carry themselves from their country of residence and pass on (by or on behalf of the sender) to recipients in their country of origin. In relation to the above, 69.1% of all respondents indicated that they had provided this type of financial support to their relatives during their visit to Honduras, with an average amount of USD 1,425.8¹⁰.

The Inter-American Dialogue survey also mentions pocket remittances (not remittances, but the return of the migrant or his/her relatives to the home country with cash). 69.1% of those interviewed had done this "pocket remittance. In the case of Hondurans, the average amount was USD 1,425.8¹¹.

The overall picture of pocket remittances is difficult to grasp and there is little information available. Due to the restrictions on cross-border movement imposed by COVID-19, the amount of pocket remittances in 2020 is expected to decrease, which may have led to a shift to overseas remittances, but the actual situation is difficult to ascertain.

4) Cost of Overseas Remittance

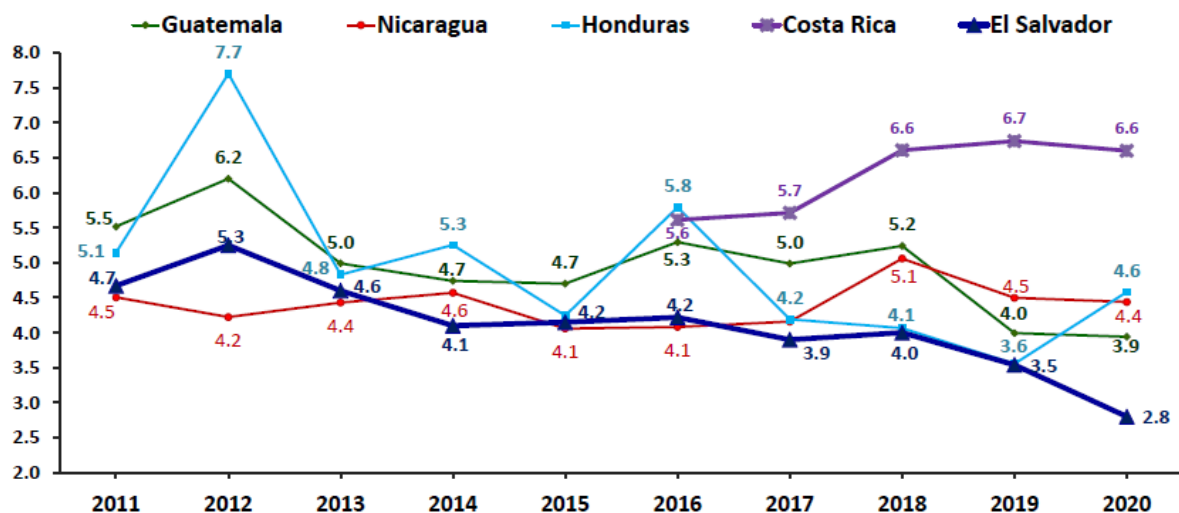
El Salvador, which has the lowest average cost per remittance transaction, showed the cost of overseas remittance at 2.8% in 2020, down from 5.3% in 2012.

The cost of remittances to countries in the Central American region is decreasing in the trend from 2011 to 2020 (Figure 5-19). According to the Government of El Salvador, Salvadorans living abroad during the pandemic were able to send money through Money Gram, Vigo (a Western Union company), Viamerica, and Ría at no extra charge during May. The costs of remittances in 2020 were: in Guatemala at 3.9%, followed by Nicaragua at 4.4% and Honduras at 4.6%, with Honduras up one percentage point compared with 3.6% in 2019. From 2016 to 2020, Costa Rica's remittance costs were the highest and increasing annually, at 6.6 percent in 2020. There is no detailed information on the costs mentioned here, but it is assumed that they refer to the costs paid to the remittance providers, and that there are usually additional costs such as taxes or payment costs in the recipient country. The Government of El Salvador announced on May 2, 2020 that it would reduce or exempt this additional cost in order to support overseas remitters¹².

¹⁰ Resultados Encuesta Semestral De Remesas Familiares, 2021.01, Banco Central de Honduras

¹¹ The numbers suggest the same source.

¹² <https://www.laprensagrafica.com/economia/Salvadorenos-en-el-exterior-podran-enviar-remesas-a-costo-cero-anuncia-Gobierno-20200502-0014.html>



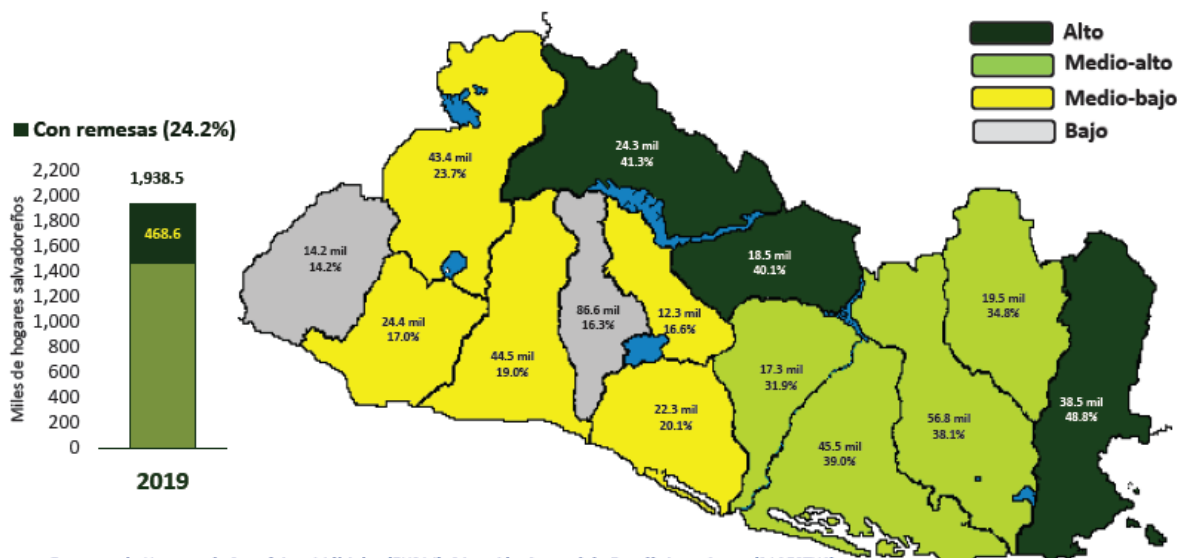
Fuente: Elaborado con base en datos del Banco Mundial <https://datos.bancomundial.org/indicador/SI.RMT.COST.IB.ZS?contextual=aggregate&locations=HN>

Source: Remesas familiares alcanzarán un monto extraordinario en 2021, Análisis económico 57, Julio de 2021, FUSADES

Figure 5-19 Average Cost per Remittance to Each Country, 2011-2020 (% of Remittance Amount)

7) Remittances Received by Province in El Salvador

According to official figures published in the 2019 Multi-Purpose Household Survey (EHPM) of the General Directorate of Statistics and Census (DIGESTYC), 24.2% of households in El Salvador received remittances, representing 468,550 recipient families (54% urban, 46% rural) and a total of 1.6 million people (52% urban, 48% rural). As mentioned above, remittance recipients by district are in the Central, Eastern, and Western regions, in that order, while by province they are as shown in Figure 5-20.



Fuente: Encuesta de Hogares de Propósitos Múltiples (EHPM), Dirección General de Estadística y Censo (DIGESTYC).

Source: Remesas familiares alcanzarán un monto extraordinario en 2021, Análisis económico 57, Julio de 2021, FUSADES

Figure 5-20 Percentage of Households Receiving Family Remittances by Province, 2019

La Unión (48.8%) in the east, Chalatenango (41.3%) and Cabañas (40.1%) in the north-central region are the high recipient provinces, while Usulután (39.0%), San Miguel (38.1%), Morazán (34.8%), and San Vicente (31.9%) are the medium and high recipient provinces.

(6) Access to Finance

1) Survey of the Current Situation in the Dominican Republic

During the interviews conducted at the field survey in the Dominican Republic, the Ministry of Agriculture and Junta Agroempresarial Dominicana (JAD), a non-governmental organization (NGO) related to agriculture, pointed out that although the impact of the pandemic on the agricultural sector in the country does not appear to be significant according to the statistical figures, in reality, there were serious problems due to the suspension of distribution and transportation routes. This makes it impossible to sell the agricultural products and the government (Ministry of Agriculture) has been providing a lot of support.

As will be discussed in detail later in the chapter on the agricultural sector, many farmers have been hit by food shortages and loss of income due to a sharp decline in sales and exports of agricultural products to the tourism sector, the closure of markets in the city, and the inability to store products due to the lack of cold storage facilities for refrigeration and freezing, forcing them to be bought at low prices or disposed of. The government rationed two chickens to each farmer and the needy, and also bought surplus agricultural products and sold them to low-income people at low prices.

At the same time, it was found that there are many problems in the agricultural financing system and that the necessary funds are not reaching small and marginal farmers. Specifically, loan schemes of banks are mainly short-term loans, which do not match the growth and harvest cycle (period) of agricultural products (under the current scheme, loans have to be repaid before harvest). In the Dominican Republic, it is common for banks to require land as collateral for loans. However, the real estate registration system is not sufficiently developed, and there are many cases where the land is not registered in the person's name (e.g., in the name of a grandfather who has already passed away), which is the reason why bank loans are not properly obtained for the person in need. The registration of changes in land name is often complicated and time-consuming, so many people give up on borrowing. As a result, although agricultural banks have funds and would like to increase their lending, they are unable to provide loans and funds due to these systemic issues, resulting in a backlog of funds. At the time of the COVID-19 pandemic, there were many cases where small and marginal farmers whose incomes have decreased significantly applied for loans, but the loans were not granted.

During the third field survey, it was found out that the mobile banking system "cosechando Esperanza" is scheduled to be operational at Banco Agricola in January 2022. However the digital currency by the emerging banks and central banks was unknown. With regard to loans for small and marginal farmers, loans to farmers and SMEs basically require collateral and guarantees, and that unsecured loans are not provided (also told that unsecured loans are probably not provided by other institutions in the country). In addition, cooperative societies and joint ventures are not widespread in the Dominican Republic, and there is no organization like Japan's agricultural cooperatives, where members can receive funds, equipment, and technical guidance, nor is there an organization like Japan's credit guarantee association, which is a potential area for future cooperation. The bank has a policy of providing technical assistance in the ratio of 80% credit and 20% technical assistance (Ley de Fomento Agricola 908), emphasizing the importance of providing technical assistance rather than just financial assistance. During the visit to the bank's La Vega Branch, its client Font Gamundi, a major rice milling company, and the Ministry of Agriculture's rice research facility, the exchange of information with the bank's technicians was confirmed.

With regard to the issue of land collateral, it is now possible under the current system to transfer the name of the land to another person/company, which is not a problem for large and medium-sized companies with capital, but it seems to continue to be a disincentive for small and marginal farmers who cannot afford the legal fees incurred in the process. In La Vega and Bonao, where the Study Team visited, rice cultivation is very active, but water buffaloes were used to cultivate the rice field after harvesting, therefore there is a need to introduce medium-scale tractors and cultivators to improve efficiency. Banco Agricola would also like to receive support from international organizations for mechanization and digitalization (e.g., drones for spraying pesticides) that would help to alleviate the labor shortage of farmers.

2) Survey of the Current Situation in Guatemala

Guatemala's strategy to strengthen financial inclusion and improve access to finance for micro, small, and medium-sized enterprises (MSMEs) was set out in la Estrategia Nacional de Inclusión Financiera (ENIF) 2019-2023 (BCR, 2019). In line with this strategy, banks are promoting digitalization, such as mobile banking using smartphones.

El Banco de Desarrollo Rural S. A. (BANRURAL) is promoting online banking and kiosk banking in its "Technology Strategy". Caja Rural is a system that allows account holders to make deposits, make payments, and receive remittances at branch offices set up in some supermarkets and general stores in areas where there are no branches. With the support of the government, it has been expanding, and there are now 2,200 stores nationwide that carry it. Caja Rural does not allow new accounts to be opened, but it does allow deposits, but most transactions are for receiving payments and remittances (up to Q3,000/day). The number of institutions (partner institutions) that Caja Rural deals with is increasing, and currently it has partnerships with Western Union, Money Gram, and 15 other institutions, many of which are used to receive overseas remittances. In order to open an account, a bill of service (water and electricity) or Cuentos de vivo or moneterior is required, for those who cannot read or write, a fingerprint authentication system has been introduced. The bank is also investigating the structure of emerging banks (transactions without accounts), but it is difficult due to regulations by the authorities, and as mentioned above, with the spread of Caja Rural, they believe that there is not much need for it.

In a meeting with Banco de Guatemala (Macroeconomic Analysis and Forecasting Dept.), the Central Bank announced that it has started to study Quetzal Digital for CBDC (Central Bank Digital Currency). The Central Bank is still conducting an overall study of the CBDC, including regulatory aspects and international trends, as announced in the news, and is making a distinction from countries such as El Salvador, where the president is taking the lead in promoting digital currency. As stated in the announcement, the realization of the digital currency is still expected in about three years.

In the third round of research, the Study Team was able to meet with the Cooperativa and an agricultural NGO to hear from the perspective of smallholders. According to the Quatro Pinos Cooperativa in Chimaltenango, about an hour's drive from the capital, many women in Guatemala have no access to finance because they do not own land or houses. They also have fewer opportunities to receive capacity development than men, and since there are few job opportunities, many of them go to the United States or other countries to find work. In order to obtain a loan from a bank, they need to own real or personal property, such as land, buildings, cars, etc., and provide them as collateral (mortgage). In addition, the applicant must have a guarantee (four times the amount of the loan) and a job with income. Vista Volcanes is an NGO that has been in business for 40 years, mainly providing research and capacity building on organic farming, but banks do not want to lend them money. Basically, banks in Guatemala do not want to lend directly to farmers, and the same is true for insurance companies. According to the MAGA office in Chimaltenango, most of the people in the country are classified under poverty or extreme poverty, which means that they can barely produce enough food to feed themselves. There are two types of cooperatives, Cooperativa and Association, which are engaged in similar activities (Cooperativa is more official). Guatemala is rich in resources in many ways, and the country is prosperous, but there is no support for agriculture in the country, especially for smallholders. Smallholders basically have no access to finance, especially to loans. There is no organization like Japan's credit guarantee association in Guatemala, and if the government or an organization like a guarantee association will provide a guarantee, banks would provide loans, but the current Guatemalan government is not likely to provide such support to small farmers.

From the above, it appears that although banks are making efforts to improve access to finance, there is still a large gap in access to finance.

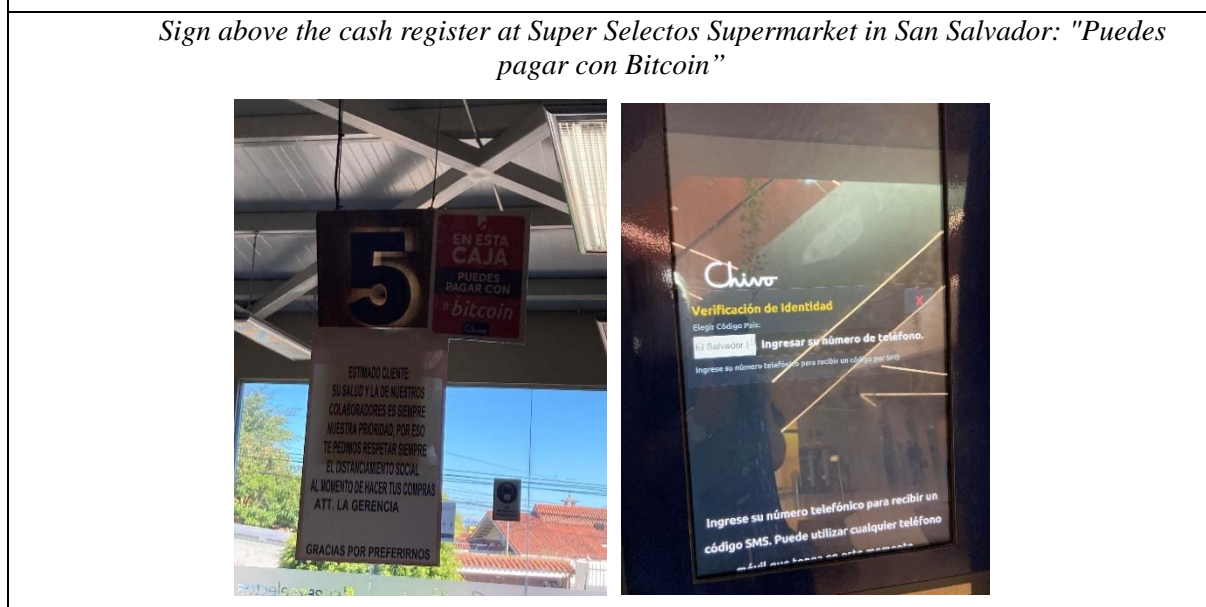
3) Bitcoin Demonstration in El Salvador

① Overview of Current Situation

In July 2021, the Government of El Salvador announced that Bitcoin will become the country's legal currency (it will be treated as legal currency starting September). According to President Bukele,

one of the purposes of adopting Bitcoin is to reduce the burden on senders and recipients of overseas remittances, which account for more than 20% of GDP, by lowering remittance fees through the use of Bitcoin, and at the same time, to leverage El Salvador's economy by increasing overseas remittances¹³.

From 2019 onwards, a demonstration experiment on the use of Bitcoin is being conducted in Playa El Zonte. Users will be provided with a wallet named "Chivo", the location of the experiment, and as long as they use it within this wallet, the fees will be close to zero. Normal transactions such as buying a coke or a loaf of bread are possible, while if they want cash (dollars), they can withdraw dollars at a Bitcoin ATM. During the third field survey in November 2021, Chivo ATMs were seen in many supermarkets in the capital city of San Salvador and at the international airport, along with ATMs of private banks, but the Study Team could not see them in use. For example, in supermarkets, Chivo payments were available at the cash registers, but when asked about their usage, they did not seem to be in use.



In 2021, President Bukele gave a speech to the nation about the Bitcoin Act, which would make Bitcoin a legal tender, but it is said that the purpose of the Act is not to make Bitcoin a legal tender per se, but to improve the convenience of remittances from abroad and to enable financial services to be used by people who do not have bank accounts. For those who do not have bank accounts in El Salvador,

¹³ Source: La Paz Times 29 de Junio 2021

there has been some consideration of whether it would be possible for family members living abroad to send money to El Salvador in Bitcoin without going through a bank, and for those who receive the money to use it in El Salvador.

Most international organizations have been reluctant to support El Salvador's adoption of Bitcoin. The World Bank has refused to support the adoption, and the International Monetary Fund (IMF) and the Bank for International Settlements (BIS) have expressed concerns. The U.S. investment bank JP Morgan has also analyzed the possibility of jeopardizing the country's rapidly growing debt and its relationship with the IMF. There have been voices of doubt from both inside and outside the country, and many companies have refused to accept payments in Bitcoin, partly because of the volatile and fluctuating market price of Bitcoin.

The Bank of America (BoA), on the other hand, believes that El Salvador's unique financial situation will enhance the benefits of Bitcoin adoption. The BIS estimates that the average cost of remittances from abroad via banks is over 10%, which means that at least 2.4% of GDP is lost to remittance fees. The use of Bitcoin for international remittances could reduce such fees, according to BoA. In addition, since 70% of the adult population in El Salvador does not have a bank account and cash is the primary method of payment, the widespread use of electronic payments in Bitcoin will lead to the financial inclusion of this segment of the population. BoA also predicts that the introduction of Bitcoin will expand consumer choice and increase business opportunities with the U.S. companies as they embrace innovation.

It is a controversial situation, and the situation will need to be monitored closely for some time.

② Commission of Bitcoin

Private money transfer companies such as Western Union and MoneyGram are usually used for international money transfers. For example, MoneyGram charges about USD 5 per dollar transfer from the U.S. to El Salvador. This is 10% of a typical transfer of USD 50, which is close to the minimum wage of USD 5.6 per day for agricultural labor in El Salvador. The network fee for Bitcoin transfers using a new network that is recently becoming popular, called Lightning, is a few cents per transfer, which is certainly much less expensive.

The Bitcoin transfer mechanism refers to the transfer of Bitcoins from one wallet of a virtual currency provider to another. As a general rule, there are no exchange fees for sending Bitcoins anywhere in the world, but one needs to pay a fee for the verification process (mining) of the transfer request sent to the network. There is no particular difference in remittance time or mining fees between domestic and overseas remittances, but since the remitter specifies the mining fee as a reward, specifying a larger fee may result in the remittance being processed in a shorter time. Also, no tax is due when sending Bitcoins, but if the recipient sells the received Bitcoins, miscellaneous income tax will be due if there is a profit from the difference in price between the price at the time of receipt and the price at the time of sale. In any case, the time and fees involved are less than those through a bank, but it should be noted that there is a risk of losing the entire virtual currency that should have been transferred due to the lack of a bank-like administrator, as well as the risk of a sharp drop in the price of Bitcoin at the time of sale.

According to the IMF, GDP growth tends to be higher in countries with greater financial inclusion, where anyone can make payments and send money, and there is a growing number of financial technology (FinTech) companies around the world that offer mobile payments, digital banking, and international money transfers¹⁴. M-Pesa, a small payment service using mobile phones that started in Kenya in 2007, has spread rapidly not only to African countries but also to Europe, and in South America, Brazil's NuBank is developing a digital bank for low-income people, and the COVID-19 crisis is accelerating the shift to cashless banking around the world.

Until now, credit cards and debit cards have been the only means of payment other than cash, but in developing and emerging countries, the hurdle of opening an account has been high due to the

¹⁴ Asian economies need greater access to financial services to grow, IMF Blog, 18.09.2018 <http://www.imf.org/external/ns/loec/cs.aspx?id=104>, Is Digital Financial Inclusion Unlocking Growth?, IMF Working Paper WP/21/167, June 2021

lack of banks nearby. By going cashless with these FinTech banks, low-income earners will be able to make payments and send money with their smartphones without an account, and when users bring cash to a retail store in town, they can deposit it into their mobile account, which will play a significant role as a financial institution.

The digital remittance of money to the local area not only by overseas migrants but also by migrant workers in urban areas within the country is expected to improve the circulation of money between urban and rural areas, bringing about economic growth and reducing the income gap. The systems by these emerging banks have in common, the use of smartphones, and while there are many people in Latin America who do not have bank accounts, the widespread use of smartphones can be said to provide an environment suitable for the development of digital financial services.

4) M-Pesa

Kenya's M-Pesa is well known for its financial services using cellular phone. M-Pesa started its service in Kenya in 2007, and in ten years, it has expanded to ten countries in Africa and Europe, and is used by about 30 million people.

According to a case study by IFC (2010), before the development of M-Pesa, less than 20% of the population in Kenya had access to the banking system, while cell phones were used by about 83% of the population (2008). The literacy rate among those aged 15 and above was relatively high at 72%, and there was a latent need for urban migrants to send family remittances to their rural communities of origin. In other words, the environment was very similar to the situation in Latin America. Incidentally, "Pesa" means money in Swahili and "M" means mobile. The main functions of M-Pesa are as follows:

- ① Remittance function: Remittance can be sent to the other party's cell phone or to a bank account (can be used with a cell phone instead of a smartphone).
- ② Payment function: Payment of utility bills, educational expenses, and receipt of salary.
- ③ Withdrawal function: Cash withdrawal at M-Pesa participating stores
- ④ Charge function: Prepaid charge (top-up) of cell phone usage fees
- ⑤ Postpay function: Payment of cell phone usage fees to cell phone

According to a study by MIT, M-Pesa has contributed to poverty reduction in Kenya, with approximately 194,000 families having been lifted out of extreme poverty through the use of M-Pesa, and occupations having been shifted from hired labor in the agricultural sector to higher income sectors such as business and retail¹⁵. Since then, in order to expand the service area, the company has partnered with Western Union and Paypal to provide M-Pesa users with international money transfer function using the partner's money transfer platform¹⁶.

Even without seeing the name of M-Pesa directly in Latin America, there is a possibility of using M-Pesa's functions indirectly through remittances using Western Union and other services. According to the MIT report, the M-Pesa service is also used by people living in extreme poverty at the rate of USD 1.25/day, and as mentioned above, it has contributed to breaking out of extreme poverty. Further investigation shall be made if the service is used to improve the lives of indigenous people in Guatemala and other countries with a large disparity in wealth.

5) NuBank

a) Overview of Current Situation

As mentioned above, Central and South America are in an environment suitable for the development of emerging banks utilizing FinTech, and in recent years, they have been quick to adopt digital banking technology and have established themselves as a base for emerging banks. While the number and amount of funds raised by startups in this field are increasing every year (Figure 5-20), Brazil is the most developed country in Latin America for digital banking, with the top three in Latin

¹⁵ 186,000 women made this transition to higher-paying jobs (Suri and Jack, 2016, MIT).

¹⁶ CNBV: Comision Nacional Bancaria y de Valores, Government of Mexico

America being NuBank (USD 1.8 billion), Neon (USD 420 million), and C6Bank (USD 349 million), all of which are based in Brazil.

Mexico is said to be the second largest hub after Brazil. NuBank is the largest FinTech company in LAC and the second largest in the world, currently operating in Mexico and Colombia in addition to Brazil, and its strategy is to tap into the emerging banking services market by partnering with the credit card and insurance industries, which have large user bases.

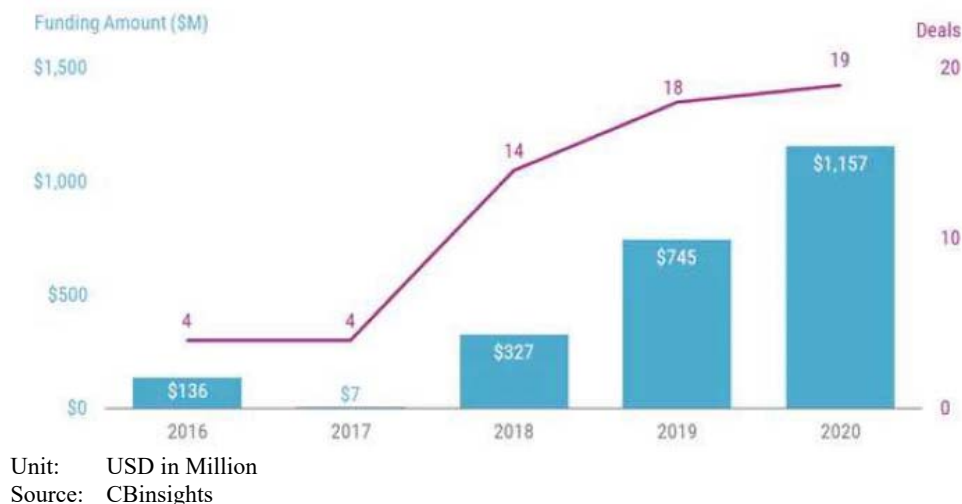


Figure 5-21 Number and Amount of Funding Raised by Emerging Banks in Latin America

In Brazil, there are many people who are unable to open a bank account, and without a bank account, it is impossible to issue credit cards, withdraw money from bank accounts, or make transfers.

The founders took note of that in Brazil, the penetration of cell phones and smartphones is as high as in Japan, even among those who cannot hold an account. In 2013, NuBank launched an online financial service targeting those who could not open a bank account. The main features of NuBank are as follows:

- Feature 1: NuBank is 100% online: Carrying cash around in Brazil, a country with security problems, is dangerous and carries a high risk of theft, so NuBank aims to make all transactions 100% online to manage money safely and easily. As NuBank becomes more widespread, there will be fewer opportunities to carry cash, which will reduce the risk of theft and improve public safety.
- Feature 2: Keep interest rates at one-third: In Brazil, the mainstream is to pay the card usage fee in installments to keep monthly payments low and maximize consumption. However, the interest rate on the installment card fees is very high, amounting to about 400% per year. For this reason, NuBank has reduced the interest rate to 1/3 to provide a user-friendly service (but the interest rate is still over 100% per year, which is much higher than in Japan, even though it has been reduced to 1/3, considering that the average annual interest rate for installment payments in Japan is about 15%).

b) NuBank's Business Model (Source of Income)

- Payment fee when using NuBank's card (shared with Mastercard)
- Interest on installment payments for NuBank users

NuBank's initial go-to-market strategy in Brazil was to start with frequently used products like credit cards to build initial relationships with customers, and then focus on higher-margin products like insurance. This strategy led to the company surpassing one million users in 2016 and doubling the number of users every year since. In addition, 2020 saw a dramatic increase in the number of users, as the pandemic forced several consumers to enter the digital economy. This led to a 48% increase in

revenue in 2020 compared with 2019, doubling the number of transactions and tripling the number of users to 30 million. In 2020, the company expanded and began operations in Mexico and Colombia.

NuBank, which has become the world's largest digital bank, has applied to be listed on the U.S. NASDAQ market in October 2021. It is said that the market capitalization after listing will exceed USD 55 billion (about JPY 6 trillion) of Banco Itaú Unibanco. If realized, it will be the largest private financial institution in Brazil, and this would mean the birth of the world's largest FinTech company. Traditional banking in Brazil is bureaucratic, with high interest rates and fees charged for basic services, and much of the population have been excluded from financial services. Despite the fact that the banking industry is stagnant due to the lack of competition caused by the oligopoly of the five major financial institutions, a number of digital start-up banks have emerged (such as the aforementioned Neon and C6 Bank).

6) Central Bank Digital Currency (CBDC)

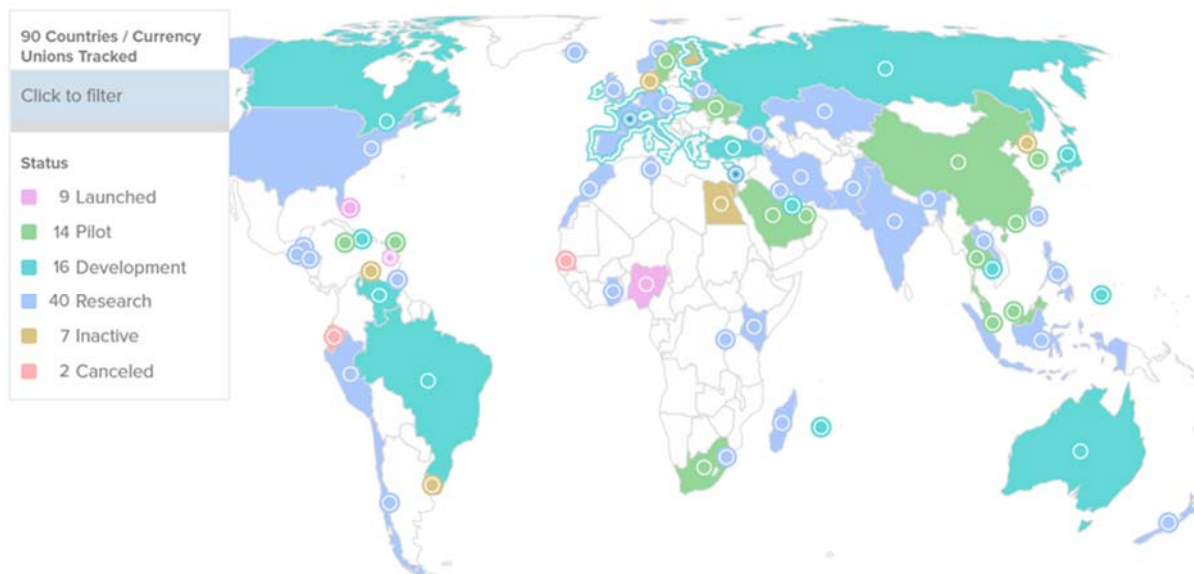
Central bank digital currencies (CBDCs) have been studied by the central banks in recent years for their potential to promote financial inclusion in the economy by simplifying the implementation of monetary and fiscal policies and bringing the unbanked into the financial system. While cryptocurrencies and virtual currencies called "stable coins" are becoming increasingly popular, and these virtual currencies, such as Bitcoin, do not have any asset backing, CBDCs are digitalized national banknotes, which are also claims on the central bank. Instead of printing money, the central bank issues electronic coins or accounts that are backed by the full faith and credit of the government.

The reasons for considering electronic currencies vary depending on the country's economic situation, but according to the International Monetary Fund (IMF), CBDCs are more cost effective than physical cash due to their lower transaction costs, and they can promote financial inclusion by allowing the unbanked to access their money more easily and securely on their cell phones. It can also compete with the private sector, which needs incentives to meet transparency standards and limit fraud, making the flow of monetary policy faster and more seamless, according to the report.

There are several issues to the practical implementation of CBDCs, each of which needs to be carefully considered before countries launch CBDCs: the possibility of inducing banks to withdraw large amounts of funds at once to purchase CBDCs; opposition to centralizing privately designed systems through governments; the possibility of creating cyber security risks; and regulatory processes that have not been updated to accommodate new forms of money.

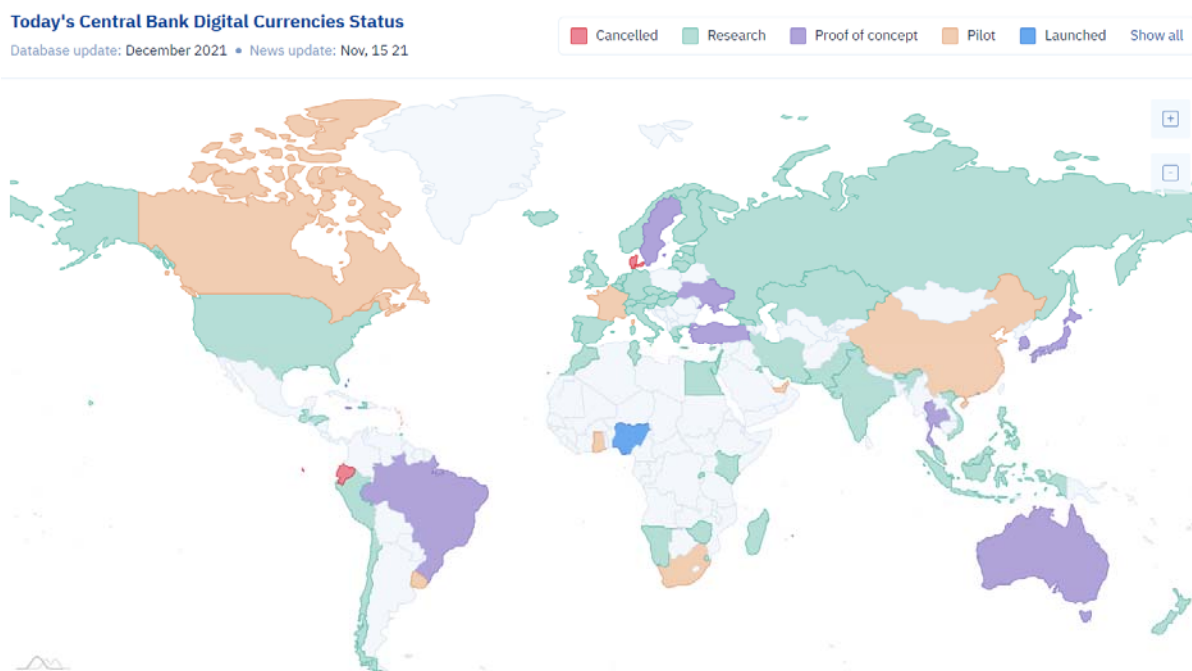
According to information from the Atlantic Council, CBDC Tracker, PwC CBDC global index and other sources, there are five countries/regions (Bahamas, Brazil, Cambodia, ECCB (5 countries), and Nigeria) where CBDCs are currently in practical use (see Figure 5-22 and Figure 5-23). The Atlantic Council summarizes the characteristics of CBDC as follows;

- Countries with the world's four largest central banks (the US, Eurozone, Japan, and the UK) are in the research phase, of which the US is the most cautious (some consider it to be lagging behind).
- Fourteen countries, including China and Korea, are currently in the pilot phase of CBDCs, preparing for a possible full-scale launch.
- Without new standards and international coordination, the financial system could face serious interoperability problems in the future.



Source: Atlantic Council <https://www.atlanticcouncil.org/cbdctracker/>

Figure 5-22 Country Status of Central Bank Digital Currencies



Source: CBDC Tracker <https://cbdctracker.org/>

Figure 5-23 Today's Central Bank Digital Currencies Status

Project Maturity – Retail CBDC development

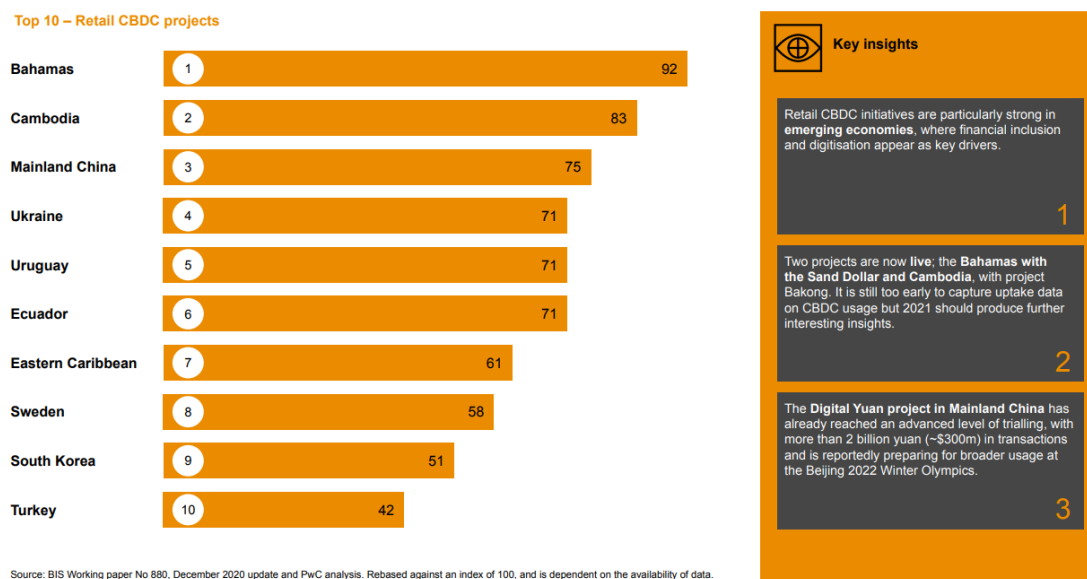


Figure 5-24 Project Maturity of Retail CBDC Development

As shown in Table 5-44, the Study Team was able to obtain information on 14 of the 23 countries in this case, including the Bahamas, which was the first country in the world to issue the CBDC Sand Dollar, and five ECCB member countries that issue the East Caribbean Dollar, a currency common to seven countries under the Eastern Caribbean Development Bank.

Table 5-44 Status of CBDC Development in the Target Countries

	País	CBDC Status	Purpose	Technology	Architecture	Infrastructure	Access	Corporate Partnership	Crossborder Partnership
1	Belize	Research						Bitt Inc.	
2	Guatemala	Research							
3	Honduras	Investigation							
4	Bahamas	Launched	Retail	NZIA Limited	Hybrid	Both	Both	NZIA Limited	
5	Haiti	Development	Both		Hybrid	Both			
6	Jamaica	Pilot	Retail		Hybrid	Conventional	Account	eCurrency Mint	
7	Antigua and Barbuda	Launched	Retail	Fabric	Hybrid	DLT	Both	Bitt Inc.	Eastern Caribbean
8	Saint Kitts and Nevis	Launched	Retail	Fabric	Hybrid	DLT	Both	Bitt Inc.	Eastern Caribbean
9	Dominica	Pilot	Both		Hybrid	DLT	Both	Bitt Inc.	Eastern Caribbean
10	Saint Lucia	Launched	Retail	Fabric	Hybrid	DLT	Both	Bitt Inc.	Eastern Caribbean
11	Saint Vincent and the Grenadines	Launched	Retail	Fabric	Hybrid	DLT	Both	Bitt Inc.	Eastern Caribbean
12	Barbados								
13	Grenada	Launched	Retail	Fabric	Hybrid	DLT	Both	Bitt Inc.	Eastern Caribbean
14	Trinidad and Tobago	Research							

Source: Study team based on information from the Atlantic Council

Systems developer Bitt Inc. is a Barbados-based FinTech company that provides digital currency management systems (DCMS) to central banks, commercial banks, credit unions, merchants, and consumers, providing them with the digital currency components they need to conduct digital

transactions. It was responsible for the design and development of "DCash", the central bank's digital currency adopted by the Eastern Caribbean Currency Union (ECCU) member countries, Antigua and Barbuda, Grenada, St. Lucia, St. Vincent and the Grenadines, and St. Kitts and Nevis.

It also developed the pilot CBDC "NBB Pay" launched in Belize in early 2021, and recently announced that the Central Bank of Nigeria will work with Bitt as a technology partner to launch its own cryptocurrency "eNaira". Bitt is currently considered to be at the forefront of financial innovation in digital currency management systems (DCMS) using blockchain-based technology.

As mentioned in the Atlantic Council's information system, the Central Bank of Cambodia's (NBC) DLT-based interbank decision making system project "Bakong" (CBDC) was developed in collaboration with Japanese FinTech company Solamitsu. Solamitsu is also actively expanding overseas in this field, including a demonstration project with PT Bank Central Asia Tbk (BCA) of Indonesia to reduce the time and cost of business processes for companies within the BCA group.

In Latin America, PIX, a CBDC developed by the Central Bank of Brazil, has spread rapidly, with 87.1 million transactions (equivalent to 78% of all bank remittances in Brazil) between January 1 and 17, 2021, and nearly 80% of all domestic remittances in a short period of time. This is in sharp contrast to the low usage of PIX in the Bahamas, where the world's first CBDC, Sand Dollar, was issued. Since then, PIX has continued to add new services, increasing the number of both corporate and individual users, and in November 2021, it was awarded the Central Banking FinTech & Regtech Global Awards 2021. The Central Bank of Brazil has not provided any support or cooperation for CBDC development to neighboring countries or other countries.

① Dominican Republic

Banco Central de República Dominicana, the Central Bank of the Dominican Republic, announced at the FinTech Market RD 2021 in July 2021 that it is preparing to participate in an international sandbox to test CBDCs with other central banks. The sandbox will also analyze the operation of cryptocurrencies in the economy, and the impact of digital currencies, decentralized finances, and cryptocurrencies is being analyzed and studied, the announcement said. In the third round of field research, the Study Team asked Banco Agricola about the development of the CBDC, but they said they had no information, so it seems that they are currently in the research stage of participating in the sandbox.

② Guatemala

According to the Bank of Guatemala (Banguat), the Central Bank of Guatemala, issuing a digital currency would be less costly, faster to transact, and promote financial inclusion, with 81 central banks agreeing that it is positive. However, there is a need to set transparency standards and limit its use to avoid fraudulent transactions. It is currently in the research phase, followed by platform (software and hardware) configuration and pilot testing, and a two to three year time frame for commercialization.

Although the Guatemalan Superintendency of Banks (SIB) has warned that cryptocurrencies are not valid in the country based on the provisions of the Monetary Law, which states that only the quetzal is applicable in Guatemala (February 2021), according to Banguat, it has already prepared a preliminary bill on cryptocurrencies with the Superintendency of Banks and is working on the implementation of a digital currency (Quetzal Digital) issued by the Central Bank. However, according to Banguat, it will not replace physical banknotes and coins, but rather complement them.

③ El Salvador

On September 7, 2021, El Salvador became the first country to adopt Bitcoin as a legal tender, following the approval of the Bitcoin Law by the Legislative Assembly three months earlier. The exchange rate between Bitcoin and the U.S. dollar will be set "freely by the market" and will not be subject to capital gains tax as is the case with other legal tender.

However, international organizations such as the IMF and WB have been negative about Bitcoin's characteristic large volatility, pointing out the danger that rapid fluctuations could encourage speculative attacks, throw El Salvador's monetary system into chaos, and affect the value of deposits,

pensions, and salaries. The government has established a USD150 million trust fund in the country's development bank to automatically exchange Bitcoins of El Salvadorans who wish to do so, and has also announced the construction of the world's first "Bitcoin City" as part of its plan to turn the country into a global financial center, and other digitalization developments centered on Bitcoin, and there is no development information about the CBDC.

5.8.3 Analysis of Detailed Survey Results

Table 5-45 summarizes the issues identified in each country and in the wider region through the analysis based on the information collected in the detailed survey, dividing them into those that existed before COVID-19 and those that became apparent in COVID-19.

Table 5-45 Analysis Based on Detailed Survey Results

Fields	Issues that Emerged during COVID-19
Export Industries	<ol style="list-style-type: none"> 1. The impact and recovery of COVID-19 on production in the socio-economic sectors varies from sector to sector, with high resilience in the agricultural sector and low resilience in the manufacturing sector with respect to employment. 2. Exports have been on an upward trend until 2018 and remained flat in 2019, but both agriculture and manufacturing, which are major industries, declined in 2020. 3. The maquila industry, a unique feature of the region, has shown a particularly large decline. 4. Countries with a high dependence on tourism do not have a high dependence on overseas remittances. Countries with low dependence on tourism (often with low economic levels) have high dependence on overseas remittances.
Financial Inclusion	<p>Cash flow impasse due to declining income (small and medium-sized enterprises, agriculture) led to financial needs (borrowing), but bank loans did not increase much (could not be increased). →Obstacles to accessing loans</p> <p>The rapid spread of financial services that do not involve bank accounts through the development of smartphone applications and other forms of DX is evidence that the need for financial services was high.</p> <p>Stagnation in lending due to problems in the financial system</p> <p>Issues related to the financing system (real estate collateral and credit guarantees)</p> <p>Overseas remittances peaked in April 2021 and declined significantly, but have since recovered, with total remittances in 2020 exceeding those of the previous year.</p> <p>Increase/decrease in overseas remittances will be greatly affected by the economy of the destination country (mainly the U.S.) and its employment measures.</p> <p>Trends in remittances are inversely related to changes in the unemployment rate.</p> <p>Majority of the remittances received are used for consumption, with education, health needs, investment and entrepreneurship being the other main uses. According to information from Mexico, however, consumption includes many things related to home and refrigerators, so the remitters are not necessarily poor.</p> <p>Remittance costs vary from country to country.</p> <p>Most remittance senders come from relatively poor rural areas, but there are a reasonable number from urban areas such as the metropolitan area.</p> <p>The development and rapid spread of unbanked remittance mechanisms by emerging banks also indicates that remittance fees are a major burden for migrants.</p> <p>The successful cases of M-Pesa and NuBank are reaching out to a segment of the population that has a low rate of bank account ownership but a high rate of cell phone and smartphone penetration, a situation that is common to many of the countries in this project, and similar services are likely to spread.</p>

Source: Study Team

5.8.4 Summary of the Detailed Study

Table 5-46 shows the vulnerabilities in each country and wide area revealed by the analysis based on the information collected in the detailed survey, divided into the issues that have existed before COVID-19 and the issues that have become apparent with COVID-19.

Table 5-46 Vulnerabilities in the Socio-economic Policy Sector Revealed by COVID-19

Fields	Issues before COVID-19	Issues that Emerged during COVID-19
Export Industries	<ul style="list-style-type: none"> ▪ Diversification of industrial structure ▪ Development of domestic market (high dependence on imports and exports) 	<p>Exports trending upward through 2019, but both agriculture and manufacturing declined in 2020</p> <p>The maquila industry experienced a larger-than-average decline.</p>
	<ul style="list-style-type: none"> ▪ High dependence on tourism (GDP and employment) 	<p>Countries with a high dependence on tourism do not have a high dependence on overseas remittances.</p>
Financial Inclusion	<ul style="list-style-type: none"> ▪ Low access to finance 	<p>Funding impasse due to declining income (small and micro enterprises, agriculture)</p> <p>→Obstacles to accessing loans</p> <p>The rapid spread of financial services that do not require</p>

Fields	Issues before COVID-19	Issues that Emerged during COVID-19
		a bank account through the development of DX, such as smartphone applications, is an evidence that the need for financial services is high.
	<ul style="list-style-type: none"> Issues in the financial system 	Stagnation in lending due to problems in the financial system Problems with the financing system (real estate collateral and credit guarantees)
	<ul style="list-style-type: none"> Lack of domestic employment and dependence on remittances from overseas migrants 	Increase or decrease in overseas remittances is greatly influenced by the economy and employment measures in the destination country (mainly the U.S.) Remittance costs vary from country to country Remittance fees have become apparent with the development and rapid spread of non-bank account remittance mechanisms by emerging banks

Source: Study Team

5.9 Development of Hypotheses on the State of Sectoral Development Cooperation in With/Post COVID-19 Society

5.9.1 Analysis of Vulnerabilities in the Countries and Priority Sectors under Study

(1) Vulnerabilities in the Social and Economic Policy Sector

1) Summary of Vulnerabilities Revealed in COVID-19

Based on the analysis of the surveys conducted so far, Table 5-47 summarizes the issues of the sector from before COVID-19 and the vulnerabilities that have become apparent in COVID-19.

Table 5-47 Vulnerabilities Revealed in COVID-19

Fields	Issues before COVID-19	Issues that emerged during COVID-19
Industry Structure	<ul style="list-style-type: none"> Diversification of industrial structure Development of domestic market (high dependence on imports and exports) 	Unable to ship produced goods due to suspension of import, export and distribution Agricultural products were sold at a discounted price or disposed of
	<ul style="list-style-type: none"> High dependence on tourism (GDP and employment) 	Dependence on international tourism and sharp decline in income Lack of market development and sales at the community level Lack of development of domestic tourism market
	<ul style="list-style-type: none"> Low agricultural production (agriculture as a percentage of GDP) 	Food shortage due to import suspension Low food self-sufficiency
	<ul style="list-style-type: none"> There is a gap in employment resilience by sector 	Manufacturing sector less resilient to employment than agriculture sector
Infrastructure Digitalization	<ul style="list-style-type: none"> Labor shortage and slow response to digitalization 	Delay in responding to digitization Delay in purchasing digital equipment to compensate for labor shortage
Economy	<ul style="list-style-type: none"> High reliance on foreign debt and foreign investment 	Increase in foreign debt and decrease in foreign investment
Financial Inclusion	<ul style="list-style-type: none"> Low access to finance 	Funding impasse due to declining income (small and micro enterprises, agriculture) Obstacles to accessing loans
	<ul style="list-style-type: none"> Issues in the financial system 	Stagnation in lending due to issues in the financial system Issues with the financing system (real estate collateral and credit guarantees)
	<ul style="list-style-type: none"> Lack of domestic employment and dependence on remittances from overseas migrants 	Decrease in overseas remittances (unstable income)

Source: Study Team

2) Issues in the Social and Economic Policy Sector

The Central American and Caribbean regions have been working to diversify its industrial structure for many years, and in addition to cases such as Mexico's concentration of the automobile industry and Costa Rica's attraction of the IT industry, there have also been successful cases (El Salvador, Nicaragua) of attracting the harness and other automobile parts industries. However, this has not led to a significant change in the industrial structure, and the issues of insufficient domestic employment remains, leading to overseas migration and remittances.

The percentage of agricultural production to GDP averages 7.8% in the region (5.6% in the Caribbean, 2019), and even in agricultural countries such as Honduras and Nicaragua, it is around 15-20% (Table 5-48), making food self-sufficiency a challenge. The closure of the border, which was one of the measures implemented to combat COVID-19 infection, resulted in a major blow to the tourism sector, as tourists could not enter the country due to the suspension of trade and distribution, and to the industrial sector, as the production and sale of processed trade goods, and the sale and export of agricultural products were halted.

The share of the agricultural sector in the GDP of the countries in the region is relatively low, so they are dependent on imports for many food products. Fourteen of the 23 countries in the Caribbean region are islands, and the other nine are surrounded by seas with many coastlines, but there is still ample room for development in fisheries.

Table 5-48 Agricultural Sector Contribution to GDP as Share of GDP

Country (Caribbean)	Percent		Country (CA & SA)	Percent	
	2011	2019		2011	2019
Antigua and Barbuda	2.0	1.7	Costa Rica	5.9	5.2
Bahamas	2.2	0.7	El Salvador	7.0	5.4
Barbados	1.4	1.5	Guatemala	13.6	10.4
Belize	14.5	10.2	Honduras	12.5	14.8
Cuba	3.9	3.9	Mexico	3.2	3.5
Dominica	11.5	9.1	Nicaragua	19.1	17.3
Dominican Republic	6.8	6.1	Panama	3.2	2.7
Grenada	5.1	6.1	Guyana	27.2	26.3
Haiti	23.7	20.1	Suriname	12.2	16.1
Jamaica	6.3	6.8			
Saint Kitts and Nevis	1.4	1.5			
Saint Vincent and the Grenadines	6.2	6.9			
Saint Lucia	2.5	3.0			
Trinidad and Tobago	0.5	0.8			
Total	6.3	5.6	Total	11.5	11.3

Source: Study Team based on the ECLAC statistics

Dependence on tourism is generally high, with average regional contributions to GDP and employment in 2019 of 21.3% and 28.1%, respectively. In some Caribbean countries, the GDP contribution exceeds 40% and 90% of employment is in tourism (Table 5-49), pointing out the risk of over-dependence on one industry.

In the tourism sector, some countries, such as the Dominican Republic, are actively promoting the development of domestic tourism as well as international tourism, but it is desirable to exchange and share information with other countries in the region.

Table 5-49 Contribution of the Tourism Sector to GDP/Employment (2019)

Country (Caribbean)	in %		Country (CA & SA)	in %	
	GDP	Employment		GDP	Employment
Antigua and Barbuda	42.7	90.7	Costa Rica	12.0	11.7
Bahamas	43.3	52.2	El Salvador	11.0	11.6
Barbados	30.9	33.4	Guatemala	6.2	6.5
Belize	37.2	39.3	Honduras	11.7	12.2
Cuba	10.3	11.0	Mexico	15.5	13.3
Dominica	36.9	38.7	Nicaragua	10.1	10.4
Dominican Republic	16.3	17.3	Panama	13.6	14.7
Grenada	40.5	42.9	Guyana	4.4	4.7
Haiti	8.4	8.6	Suriname	2.6	2.8
Jamaica	31.1	32.8			
Saint Kitts and Nevis	28.2	59.1			
Saint Vincent and the Grenadines	28.6	45.2			
Saint Lucia	40.7	78.1			
Trinidad and Tobago	7.8	8.5			
Total	28.8	39.8	Total	9.7	9.8

Source: Study Team based on WTTC statistics

3) Impact on Tourism Resources, Impact on Tourism-dependent Economy

Based on the field research in Barbados and Saint Lucia, which were selected as comparators for the Caribbean countries that are heavily dependent on tourism, the economic and social vulnerability due to their dependence on tourism and low agricultural production was revealed in the significant drop in GDP and shortage of food-related goods as a result of the border blockade by COVID-19. JICA has been implementing global cooperation for the promotion of the blue economy of fisheries with the aim of increasing economic benefits through sustainable use of marine resources in small island of developing countries and least developed countries. In the Caribbean region, Saint Vincent and the Grenadines is implementing a Caribbean-wide area project such as the "Strengthening Conservation and Management of Coastal Fisheries Resources through Joint Efforts between Fishermen and Government". Coastal damage caused by the recent abnormal outbreak of Sargassum Hondawara in the Caribbean Sargasso Sea has become a problem for tourism, fisheries and the environment in many countries in the region. JICA has conducted a situation survey and shared the report with related organizations. The impact of sargassum on the tourism sector is described in the chapter on tourism as tourism risk management.

Under the Blue Economy for Green Islands Approach, UNDP Barbados and Eastern Caribbean, which is UNDP's Eastern Caribbean Office, aims to use marine resources to diversify the economy, create jobs and strengthen resilience. The approach can be coordinated with JICA's Blue Economy Concept. UNDP is working with the University of the West Indies (UWI) and other organizations to the ongoing community innovation projects new projects are also currently being organized (Table 548). UNDP projects are also funded by Japan as a grant in cooperation with international organizations (BRB, TTO, LCA, KNA, ATG), and UNDP is in charge of implementation, thereby realizing long-term efforts through cooperation among international organizations.

In addition, the Integrated Coastal Management Project launched last year by the IDB's Japan Special Fund also covers dikes, sargassum countermeasures, and disaster prevention, and it can be said that Japan's Blue Economy Program for Fisheries has been taken over by several international organizations to realize long-term support. This is a good example of how cooperation and collaboration with international organizations in a region with limited information, funds, and projects can realize long-term support. Cooperation within the region and with international organizations from the perspective of the "blue economy" will be necessary in the future.

Table 5-50 Community Innovation Projects, Blue Economy Projects, and Initiatives

Imp. Yr.	Project Name	Donors	Country	About
2020	Bioplastics - Sargassum	German Cooperation, Qatar Fund and UN Core Partners	Barbados	To develop and test a non-food, bioplastic packaging alternative made out of starch from local food waste and sargassum seaweed collected from beaches around Barbados
2020	Biogas - Sargassum	German Cooperation, Qatar Fund and UN Core Partners	Barbados	To determine the potential of local fish wastes generated from Oistins Market and Bay Gardens and other organic waste in the production of bio-methane for energy and heating generation.
2020 to 2021	De Blue Green Gully Phase 1 and Phase 2	UNDP GEF SGP	Barbados	The use of alcohol to meet the requirement to sanitize hands due to COVID-19 has caused increased dryness of hands. This can be improved by extraction of alginates from the seaweed which can also be used as moisturizer for hand sanitizer and other products in a similar manner to aloe vera gel.
2020 to 2021	Co-developing a Sargassum Adaptive Management Strategy	UNDP GEF SGP	Barbados	The overall goal is to assist the government and people of Barbados to be resilient to threats from influxes of sargassum seaweed, adaptively addressing the potential threats with environmentally responsible responses that, where possible, turn sargassum into an opportunity for sustainable development (social, economic, and environmental).

Imp. Yr.	Project Name	Donors	Country	About
2015	Sargassum Bio-energy	UNDP GEF SGP	Barbados	The project seeks to develop a proposal to determine the most suitable use of sargassum to produce bioenergy.
2015	The Removal and Utilization of Sargassum from the East Coast of Saint Lucia to Create Organic Compost for the Farming Industry.	UNDP GEF SGP	Saint Lucia	This project will help to solve the negative impact of the build-up of sargassum seaweed on the East Coast of Saint Lucia, by using the invasive species to produce a liquid organic fertilizer and compost organic fertilizer.

Source: UNDP BB and Eastern Caribbean, <https://www.bb.undp.org/content/barbados/en/home/blue-economy-for-green-islands/projects-and-initiatives.html>

(2) Vulnerabilities Related to Financial Inclusion

Despite regional differences, the potential vulnerabilities for financial inclusion in the countries for the project can be summarized as follows:

Potential Vulnerabilities	Vulnerabilities Revealed in COVID-19
Lack of job opportunities	Loss of income in key tourism-related industries
Lack of financial institutions (access problem)	Low per capita ownership of bank accounts
Difficulty in borrowing (financial access problem)	Lack of borrowing capability (repayment capacity) and issues in the loan system
Barriers due to fees	High overseas remittance fees

Source: Study Team

1) Access to Finance

As for the issue of physical distance to branch offices of banks and other financial institutions, financial institutions are actively developing systems such as kiosk banking and Caja Rural, where branches are set up in the eaves of supermarkets and other stores in rural communities, and mobile banking using smartphones, cell phones, and PCs to improve convenience and promote use by the customers. On the other hand, with regard to borrowing, financial institutions are actively working to develop businesses and industries by providing technical assistance as well as funds to medium and larger enterprises and farmers. However, because many countries require collateral and guarantees as conditions for loans, there are still challenges in providing loans to small farmers and small businesses. Financial services without bank accounts using smartphone applications, etc., which have been developed in South America, Asia and Africa, have not yet been developed in a significant way in Central America and the Caribbean.

As for CBDCs, the Sand Dollar in the Bahamas, the world's first CBDC, has not been widely used, with only 0.05% of cash being used in the first eight months of implementation, but ECCB has started using DCash as a CBDC in the region. In Belize, the National Bank of Belize (NBB) is expected to start using electronic services using NBB Pay, a smartphone application, and Jamaica is also conducting a pilot and plans to put it to practical use as early as 2022. In contrast, Central American countries are conducting research and studies, but they are taking a wait-and-see attitude and are cautious about implementation. El Salvador is the first country in the world to make Bitcoin a legal tender, and has announced plans to develop a Bitcoin city. However, the IMF and the World Bank have a negative view of Bitcoin as a speculative currency without asset backing, and the Central Bank of Guatemala and others have a different view from CBDC. Brazil's PIX, a CBDC in South America, has become popular in a short period of time, and Brazil's emerging bank NuBank has expanded into Colombia and Mexico.

With regard to CBDC, Japan, like the US and European countries, is conducting research, but is also taking a cautious approach in terms of various regulations and other factors. This may reflect the fact that in Japan, Europe, and the United States, related regulations are well established, while in relatively small countries and countries with concentrated state power, it is easier to implement CBDC based on top-down instructions rather than the existence or relaxation of regulations. In terms of social implementation, Latin America and the Caribbean are more advanced and have more experience than Japan and Western countries. On the other hand, some Japanese FinTech companies are actively involved in the digitization of the systems of central and private banks in Southeast Asia, and can be said to possess cutting-edge technology in this field. It would be highly significant for LAC to be actively

involved in collaboration with regional financial institutions such as CDB, CDF, ECCB, BCIE, etc., in order to establish regional standards and a regional cooperative system to avoid future financial system instability by making good use of the experience and know-how of the region and neighboring countries such as Brazil, as well as the technology of Japanese companies. In this process, it will be important for LAC to learn from the progress made in Brazil and other countries. By involving advanced countries such as Brazil in the process, it will be possible to consider the possibility of future South-South cooperation with Central American countries.

2) Solidarity Economy and Nostalgia Market

After the outbreak of COVID-19, family remittances began to show their impact around March 2020, and showed a significant decline in April, with many international organizations and experts predicting a drop in total remittances for 2020. However, thanks to the U.S. government's unemployment measures and support for migrant workers, remittances began to recover around June, and by the end of December, remittances for the year were higher than in 2019.

It is difficult to explain why family remittances exceed the previous year's level when everyone, including the migrants themselves, are struggling to make ends meet due to COVID-19, but it can be interpreted as a solidarity economy between the migrants and their communities of origin, or nostalgia for home for those migrants who live away from home. The following are some of the economic activities of migrant workers that transcend the national boundaries.

- Family remittance
- Entrepreneurship
- Investment
- Charities and donations
- Purchase and consumption of homeland products
- Passing on knowledge about home

The results of the survey on these activities are summarized in Table 5-51.

Table 5-51 Transnational Economic Activities by Migrant Workers

Engagement Economic Activity	Adult Migrants Participating	Host Country	Intermediation	Home Country
		Associated Activity		
Family remittances	60%-80%	The decision to remit a share of the workers' income	The work of remittance service providers	The effects of remittances on household economics for the recipient family
Nostalgia trade	80%-90%	The consumption of home-country goods, including but not limited to foods	The supply chain of products and services	The production chain of home country goods
Philanthropy	10%-20%	Fundraising, donations for charitable causes in migrants' hometowns	The method of donating	The funds received and projects implemented
Entrepreneurship	5%-10%	The decision to create or maintain a migrant-owned business	The enabling environment to create a business	A micro or small enterprise created by an immigrant or family member in homeland
Investment	5%-10%	The capital for a particular investment or business venture	The investment environment	Allocating capital for a particular asset or venture in the hometown
Knowledge transfer	5%	Sharing information and skills acquired as development tools	The institutions building skills or sharing knowledge	The methods to share information, knowledge and skills that enhance local and national development

Source: Nostalgia Trade and Migrant, The Dialogue, May 2017

Products in the nostalgia market include clothing, books, crafts, and food, but the food items that remind people of home are cheese, beer, spices, candy, and tea. According to a survey, 90% of migrant workers pay more than USD 1,000 per year or USD 130 per month for these hometown items. In addition, many of the product handlers in this nostalgia market are small family businesses. According

to a survey on the nostalgia market in El Salvador, the most popular items purchased by Salvadoran migrant workers at the nostalgia market are cheese, beans, fruits, and rice.

El Salvador's major exports are T-shirts, knitwear, other clothing, sugar, coffee, and electrical appliances, but many of the products handled by the nostalgia market are not major exports, which contribute to economic diversification and resilience.

Table 5-52 Products Imported from El Salvador in Nostalgia Markets (2014)

Product	Declared Customs Value, 2014 ¹⁸
Cheese	1,625,040
Beans	1,839,934
Candy	538,996
Soda	7,744,744
Beer	3,061,508
Bread Products and Tortillas	18,189,088
Condiments and Sauces	3,672,903
Rice	71,932
Fruit (Bananas and Plantains)	636,968
Sum of select Salvadoran food items	USD 37,381,113

Source: Nostalgia Trade and Migrant, The Dialogue, May 2017

5.9.2 Hypothesis on the With/Post-COVID-19 Society Development Cooperation in Central America and the Caribbean

Table 5-53 summarizes the vulnerabilities of the socio-economic policy sector in Central America and the Caribbean that were revealed by COVID-19, which was analyzed by sector in the previous chapter, and the corresponding directions for overcoming them.

Table 5-53 Vulnerabilities Revealed in COVID-19 and Measures to Overcome Them (draft)

Field	Vulnerabilities Revealed by COVID-19	Measures to Overcome (draft)
Industry Structure	Unable to ship produced goods due to suspension of import, export and distribution <ul style="list-style-type: none"> ▪ Agricultural products were sold at a discount or disposed of 	Improving the efficiency of distribution and production Development of storage and storage mechanisms Promotion of industrial diversification Development of fishery and fisheries industry
	Dependence on international tourism and sharp decline in income <ul style="list-style-type: none"> ▪ Lack of market development and sales at the community level ▪ Lack of development of domestic tourism market 	More diverse utilization of marine resources and environmental improvement Dealing with abnormal seaweed blooms caused by climate change (environmental improvement) Promotion of the introduction of renewable energy
	Food shortage due to import suspension <ul style="list-style-type: none"> ▪ Low food self-sufficiency 	Improvement of the environment to increase the number of agricultural workers (especially young people) Introduction of examples of marine resource utilization and fishing technology in the region
	Manufacturing sector less resilient to employment than agriculture sector	Support for manufacturing and maquiladora industries
Infrastructure DX	Delay in responding to digitalization <ul style="list-style-type: none"> ▪ Delay in purchasing digital equipment to compensate for labor shortages 	Introduction of ICT technologies such as drone spraying of pesticides in the agricultural sector Infrastructure development for remote work
Economy	Increase in foreign debt and decrease in foreign investment	New scheme to promote cost efficiency and use of private funds
Financial Inclusion	Funding impasse due to declining income (small and micro enterprises, agriculture) <ul style="list-style-type: none"> ▪ Obstacles to accessing loans 	Improving access to finance by improving systems for real estate collateral, land registration, and expanding credit guarantee programs
	Stagnation in lending due to problems in the financial system Issues with the financing system (real estate collateral and credit guarantees)	Collaborate with the LAC and Caribbean region, which is ahead of other regions in CBDC implementation, especially Brazil, which has been successful in spreading CBDC, and work with CARICOM and SICA to address the risk of financial instability such as formulation of unified regional standard.
	Decrease in overseas remittances (unstable income)	Support for lowering remittance fees and simplifying remittances through the use of smartphone applications (DX promotion) Support for the development of solidarity economy and nostalgia market

Source: Study Team

(1) Socio-economic Policy (Industrial Structure)

- Although the situations differ between the land-linked Central American countries and the island nations of the Caribbean, the border closures implemented as a response to COVID-19 have revealed the issue in the sector that had been pointed out before COVID-19. In particular, in the Caribbean and other countries with high economic standards (GDP/capita), the cessation of tourism income and imports was unexpected, and it is thought that structural transformation such as industrial diversification was difficult to pursue. In particular, it is necessary to update functions such as distribution and storage. Diversification of industry is not easy, especially in a country with a small land area and small population like the Caribbean. However, international organizations are treating the utilization of marine resources and the introduction of renewable energy, which are blessed by being surrounded by the sea, as areas of assistance and can be considered as a direction to overcome vulnerabilities.
- The high dependence on tourism from abroad is the flip side of the advantage of high demand, so it is recommended that further development be promoted. However, the development of domestic tourist markets and the attraction of intra-regional tourists, as is being done in the Dominican Republic for example, can be considered as a way to diversify risks and develop new markets. The introduction of renewable energy is a priority from the perspective of the SDGs, not only from the standpoint of environmental impact and sustainability, but also to prepare for the risk of fuel imports ceasing, which became apparent in COVID-19.
- Improving food self-sufficiency is likewise an urgent issue, as evidenced by the border closure. While the lack of agricultural workers, especially young people, is a similar issue in other regions, the Study Team will promote the sharing of case studies and provision of information on the use of information technology (drones, computerized management of soil quality). Although it is not simple because it is also related to food culture, the promotion of fisheries and the introduction of marine products is desirable from the perspective of effective utilization of resources for countries in the region that are blessed with marine resources.
- The decline in the maquiladora industry has been above average for both imports and exports, with particularly large declines in garments and textiles. The textile industry is a labor-intensive sector that requires support because of its large impact on workers.
- In Central America and the Caribbean, there are only a few industries with international competitiveness, such as tourism and rum, making it difficult to diversify¹⁷. In the past, cotton from the West Indies was traded under the brand name of Sea Island Cotton as the world's highest quality cotton. However, due to high labor costs, the loss of manpower to tourism, and the improvement of breeding and mechanization in the U.S., the number of producing countries has been reduced from four to almost all of Jamaica (with some production in Barbados). According to the Japanese company that has been responsible for the development of the variety and its production in the U.S., following the development in Jamaica, it is now considering the possibility of reproducing the variety in three other countries of origin and investigating the possibility of producing it in other West Indies countries. In particular, since it has historically been produced in Commonwealth countries, there have been no studies on the suitability of soil, climate, and other growing conditions in other countries in the region (mainly Spanish-speaking countries). It is possible that development assistance could be provided in collaboration with regional organizations such as CARICOM Competition Commission (CCC), Caribbean Export and Investment Agency (Carib-Export) and SICA.

(2) Infrastructure and Digitalization

- In a region where there are many small countries with relatively small populations, it is important to increase efficiency and secure human resources through digitalization and remote work. In particular, in the agricultural sector, where there are few young workers, there is a lack of refrigeration facilities to store perishable products, a lack of markets for local products to be used locally, a lack of road networks and distribution facilities to smoothly transport agricultural

¹⁷ Tourism resources, rum, coffee, tropical fruit trees, etc. are highly valued, but limited and competition is stiff.

products to markets, a lack of agricultural machinery (no machinery or inappropriate use of large machinery), and the introduction of drones to address the issue of securing labor. However, small-scale farmers do not have the initial capital to invest in such new technologies, and there is a need for a loan program to promote the introduction of such technologies.

(3) Social-Economic Policy Sector (Economy and Finance)

- As for the increase in foreign debt and decrease in foreign investment, although it is difficult to verify the relationship with COVID-19, the efficient use of limited public funds is important for both the country and its development partners in a region that is small and does not have a very large economy. The development of new schemes such as pay-for-performance schemes¹⁸ to promote the use of private funds is progressing globally, and it is desirable to proactively adopt such schemes.

(4) Financial Inclusion

- With regard to access to finance, the current systemic issues such as improving the system of real estate collateral and land registration, and expanding the credit guarantee system, have been pointed out in the past, but in some cases, it has not been easy due to historical problems. However, as this is an obstacle to small and medium-sized enterprises, small farmers, and other vulnerable groups, improvements should be promoted.
- As for regulations such as physical reasons like the remoteness of bank counters and income level standards, emerging banks are rapidly developing new services using digital technology and applications, and it is considered important to support the promotion of these services.
- There are several countries where overseas remittances account for more than 20% of GDP, and this is an important issue for the local economy. The number of migrants going abroad continues to rise, and it is desirable for the government to provide support to reduce the burden on remitters and recipients, as well as to contribute to economic revitalization by lowering overseas remittance fees.
- In CBDC, South America and the Caribbean are in a leading position in the world in terms of its implementation, with Brazil's CBDC penetration being particularly rapid. China and South Korea are moving from the pilot stage to practical application, and as the research institutes warn, there are concerns about the serious risks facing the financial system in terms of future interoperability and other issues due to the expansion of the number of implementing countries at a stage where new standards and cooperative relationships have not been established. While many Western countries, including Japan, are cautious, it is believed that Japanese FinTech companies have advanced technology in this field, and it is important for Japan to contribute to the stabilization of the regional financial system such as cooperation in the formulation of regional international standards in cooperation with Caribbean countries Brazil, and regional organizations. In this regard, the advanced technology and experience of Japanese FinTech companies in this field could be used for cooperation and by inviting the participation of Brazil, which has been successful in spreading the technology, and by promoting cooperation across regions, the possibility of future South-South cooperation can be considered.
- The target area is considered to have strong family ties as it is known as a solidarity economy. In fact, there is a nostalgia market where migrants purchase goods made in their country of origin. Although the size of this market varies from country to country in terms of the number of people living abroad, it has led not only to the purchase of goods from developing countries, but also to an increase in overseas remittances, and appropriate support is desired.

5.9.3 Analysis and recommendations to contribute to sectoral cooperation policies

1) JICA's Ongoing Projects in Central America and the Caribbean

In considering the policy for cooperation in the social and economic policy sector, relevant JICA projects that are currently being implemented in Central America and the Caribbean are listed in

¹⁸ For example, Social Impact Bonds (SIBs).

Table 5-54. It is important to utilize the knowledge and know-how of these existing projects and pursue synergy to achieve higher development effectiveness and sustainability.

Table 5-54 JICA Projects Related to Social and Economic Policy Sectors Currently Being Implemented in Central America and the Caribbean

Country	Project	Department in charge	Type of Cooperation
El Salvador	Rural Development Capacity Enhancement Project in Eastern Region based on Livelihood Improvement Approach	Agriculture and Rural Development Group 1	Project
Guatemala	Facilitator Capacity Improvement Project for Quality and Productivity Improvement in Small and Medium Enterprises (Phase 2)	Private Sector Development Group	Project
Nicaragua	Capacity building project for quality and productivity improvement of small and medium-sized enterprises	Private Sector Development Group	Project
Honduras	Poverty Alleviation Project through the Promotion of Community-Based Financial Inclusion	Office of Gender Equality and Poverty Reduction	Project
Honduras	Training of facilitators for supporting quality and productivity improvement in small and medium-sized enterprises	Private Sector Development Group	Individual experts
Mexico	Automobile Industry Cluster Promotion Project [Regular Budget].	Private Sector Development Group	Project
Dominican Republic	Capacity building advisor for micro, small, and medium-sized enterprises	Private Sector Development Group	Individual experts
Dominican Republic	Project to strengthen and modernize the National Tax Agency	Dominican Republic Office	Project
Cuba	Investment Promotion Advisor	Central America and Caribbean Division	Individual experts
Cuba	Information collection and confirmation survey on human resource development needs for economic reform	Central America and Caribbean Division	Information collection and confirmation survey
Saint Vincent	Project for Strengthening Conservation and Management of Coastal Fisheries Resources through Cooperation between Fishermen and Government	Agriculture and Rural Development Group 1	Project

Source: Study Team

Table 5-55 summarizes the direction of cooperation based on the proposed measures to overcome the vulnerabilities shown in the previous section (focused on financial inclusion and economic and fiscal issues in the sector).

Table 5-55 Direction of Cooperation in the Socio-economic Policy Sector (draft)

Field	Measures to Overcome (draft)	Direction of Cooperation (draft)
Economy	New scheme to promote cost efficiency and use of private funds	Preparation of the groundwork for the introduction of new schemes such as SIB (efficiency improvement, setting of KPI)
Financial Inclusion	Continued support for existing poverty alleviation programs (ACTIVO, etc.) Adoption of digital technology by emerging banks such as smart phone applications	Continue to support efforts to reduce income inequality and poverty, which are essential problems in Central American society. Cooperation in the development of digital technology for finance
	Improving access to finance by improving systems for real estate collateral, land registration, and expanding credit guarantee programs	Introduction and technology transfer of systems such as Japan's credit guarantee associations and credit risk information databases
	Collaborate with the LAC and Caribbean region, which is ahead of other regions in CBDC implementation, especially Brazil, which has been successful in spreading CBDC, and work with CARICOM and SICA to address the risk of financial instability such as formulation of unified regional standard.	As a common issue in the region, provide support through regional organizations such as ECCB, CDB, CDF and BCIE in collaboration with the private sector.
	Support for lowering remittance fees and simplifying remittances through the use of smartphone applications (DX promotion) Support for the development of solidarity economy and nostalgia market	With regard to community remittances, support for nostalgia market development through sharing of experiences and introduction of technical cooperation cases, such as Japan's hometown tax payment, cloud-funding, and development of prefectural antenna stores

Source: Study Team

5.9.4 Recommendations to contribute to sectoral cooperation policies

Regarding financial inclusion, which has been the focus of the social and economic policy sector of this study, there are issues such as lack of job opportunities, access to financial institutions, difficulty in borrowing (financial access problem), and barriers due to fees. Support for poverty reduction, income disparity reduction, and financial digital technology development, as well as support for financial access improvement and nostalgia market development by sharing Japan's experience, are considered.

In addition, to cope with the increasing public budget (debt) targeted for COVID-19, it is necessary to raise funds more efficiently than ever before. Particularly in the Caribbean region, where there are many small countries with relatively high economic standards, it is desirable to implement efficient and sustainable projects and to continue to work closely with international organizations for this purpose.

In terms of sectoral cooperation, further support should be provided to strengthen regional competitiveness through CARICOM and SICA in order to create employment opportunities and develop competitive industries.

(1) Financial Inclusion

1) Ongoing poverty alleviation and support for the introduction of emerging technologies

- Continuation of long-term support closely linked to communities, financial institutions, etc., such as the Honduran model for alleviating poverty (ACTIVO), as long-term support to address poverty as a fundamental issue in the region.
- Cooperation in the development of technology to further improve access to finance by supporting the development of financial digitalization and smartphone applications.
- Support for financial education, which is essential for improving financial access and combating poverty.

2) Support for improving financial system issues

- To investigate the possibility of supporting financial institutions in improving their lending by introducing and transferring technology to Japanese systems such as the guarantee system by credit guarantee associations and the credit risk information database, which are not widely used in the target area.
- CBDC is expected to contribute to the reduction of user costs in the financial system, but it has not yet been evaluated worldwide, and its implementation needs to be carefully assessed. It is necessary to study and establish a desirable system for the region, such as the creation of regional standard standards, in order to deal with the risk of financial instability in the future. Japan has FinTech companies that are considered to be leading the way in this field, and it is important to encourage the OECS countries that are ahead of us in implementation, the Central Bank of Brazil that has already achieved a high penetration rate in Japan, and regional institutions such as SICA and CARICOM to promote regional financial stability.

3) Sharing of technical experience in Japan

- One of the countermeasures against immigration in this region is to strengthen and support the solidarity economy and nostalgia market. The nostalgia market includes "community remittances," in which immigrants donate money for the development of their hometowns, and the ordering and selling of products from their hometowns. In the case of Mexican immigrants
- In the case of Mexican immigrants, community development through matching funds such as the 3x1 Program and the 2x1 Program implemented with the Mexican government is also being promoted, and supporting the development of the nostalgia market is one of the measures that should continue to be investigated and examined, along with the context of Central American immigration.

(2) Economy and Finance

1) Support for the development of new schemes using private funds

- As a countermeasure to the growing debt caused by the subsidies and grants implemented in various countries as a COVID-19 measure, investigate and introduce a system that facilitates the entry of private funds, such as pay for success-based SIBs, to deal with the efficient use of public funds that will be increasingly required in the future.
- Regarding wide-area cooperation in finance, continued and strengthened cooperation with CDB, CDF (CARICOM), BCIE (SICA), and ECCB as regional financial institutions, in addition to IDB and WB, mainly to support SMEs.

(3) Others

1) Support sustainable and efficient development by expanding cooperation with international organizations

- Realization of long-lasting support through collaboration and coordination between JICA and multiple international organizations, such as the Blue Economy Program implemented mainly in the Caribbean and connections with business networks (IDB Connect America, etc.). Especially in the Caribbean region, where many countries are small in size and lack a diversified industrial structure but have a high level of income, efficient project implementation is required, and efficient project formation through collaboration with international organizations is desirable.

2) Brokering cross-regional cooperation to enhance competitiveness

- Support for the expansion of best practices through collaboration between CARICOM and SICA

There are few globally competitive industries in the target region, and future development is desired. For future development, investigate and support the expansion of the regional brand by providing assistance in areas where information exchange and cooperation between English-speaking and Spanish-speaking countries has been limited. For example, a study on the possibility of producing the regional brand West Indian Sea Island Cotton (WISIC) in other countries in the region could be supported by the CARICOM Competition Commission (CCC) as a study and project to strengthen the brand power through technical cooperation. In addition to the above, there are a number of other projects that could be considered.

6. Health and Nutrition Sector

6.1 General

The Study Team collected major indicators on Coronavirus Disease 2019 (COVID-19) confirmed cases and death, demography, health, and nutrition of the target countries from published databases such as the World Development Indicators, as well as reports and articles by the Organization of Economic Cooperation Development (OECD) and the Pan American Health Organization (PAHO). Characteristics and issues on health systems were reviewed based on reports published by the international and regional organizations such as PAHO and the Caribbean Public Health Agency (CARPHA). Through interviews with the Japan International Cooperation Agency (JICA) experts and concerned departments, the Study Team gathered perceptions on issues and priorities as well as future cooperation strategy on the health and nutrition sector in the target countries. By desktop review of reports and articles by the United Nations Children’s Fund (UNICEF), PAHO, The World Bank, and Economic Commission for Latin America and the Caribbean (ECLAC), the response of each country and impacts on health service coverage of COVID-19, as well as the estimated excess mortality were reviewed.

Based on the collected information, the 23 countries were categorized by characteristics of issues on health status and health system. Also, the criteria for priority countries and issues were set. Then, three countries were selected, and priority issues were identified for future JICA cooperation in the health and nutrition sector. In addition, the relevance between health system characteristics and COVID-19 impact on health service coverage was considered.

According to the results by the above information analysis, hypothesis on JICA’s future cooperation for the health and nutrition sector in the Latin American and Caribbean regions was developed.

6.2 Summary of Sector Survey

Table 6-1 Sectoral Hypothesis on Development Cooperation (draft) (Health and Nutrition)

No.	Item	Healthcare and Nutrition	
1	Issues pre COVID-19	Individual <ul style="list-style-type: none"> ▪ Triple burden of health issues; communicable issues and maternal and child health, noncommunicable diseases, and injury caused by violence/ accident ▪ Aging ▪ Malnutrition (under/ over) 	Health system <ul style="list-style-type: none"> ▪ Fragmented health service providing system ▪ High out-of-pocket expenditure ▪ Insufficient quantity and quality of doctors and nurses ▪ Gap in service access due to ethnic groups, gender, household economy, urban/rural, and education,
2	Grouping of the target countries	Central America <ul style="list-style-type: none"> ▪ Maternal and child health, undernutrition ▪ Fragmented service providing system in public sector ▪ Gap in service access 	Caribbean <ul style="list-style-type: none"> ▪ NCDs, Aging ▪ Vulnerable to disaster and health emergency due to small size of countries
3	Vulnerability under COVID-19	<ul style="list-style-type: none"> ▪ Due to insufficient health and nutrition status, low immunity and high risk of infection/ aggravation ▪ Expanded gap in access to information and health services ▪ Inability to flexibly and appropriately reallocate and share resources, resulting in inefficiencies such as uneven distribution of human resources, equipment, hospital beds, and medicines. ▪ Pandemic beyond the borders ▪ Essential health services could not be maintained 	
4	Issues emerged under COVID-19	<ul style="list-style-type: none"> ▪ Increased medical waste could bring negative impact to concerned workers, community people, and environment for long term 	
5	Proposed Countermeasures	Individual health	<ul style="list-style-type: none"> ▪ Improve fundamental health status ▪ Nutrition improvement during the first 1000 days in pregnant and childhood ▪ Early detection and intervention of health risks (malnutrition, NCD and the risk factors, risks during pregnancy)
		Health system	<ul style="list-style-type: none"> ▪ Improve health literacy to acquire knowledge of healthy lifestyles, signs of and responses to disease, and available health services and social support

No.	Item	Healthcare and Nutrition	
6	Proposed Cooperation Strategy	PHC for individual health	<ul style="list-style-type: none"> ▪ Provide multilingual information ▪ Utilize affordable media such as local radio ▪ Update and strengthen of PHC ▪ Telemedicine for counselling, diagnosis, and support for health personnel. ▪ Improve service access by the poor ▪ Protection of health personnel and improve employment condition ▪ Strengthen leadership of the ministry of health ▪ Restructure/ Integration of health service providing system and referral system ▪ Continuous collaboration for human resource development beyond the border ▪ Strengthen human network based on mutual trust ▪ Prompt situation analysis and information sharing under emergency situation ▪ Development and update of a business continuity plan (BCP) ▪ Safe treatment and management of medical waste ▪ Improvement of primary treatment at health facilities
		Health system	<p>< Central America ></p> <ul style="list-style-type: none"> ▪ Maternal and child nutrition improvement <p>< Caribbean ></p> <ul style="list-style-type: none"> ▪ Strengthen of inter-regional collaboration <p>< Common ></p> <ul style="list-style-type: none"> ▪ Promotion of behavior change for healthy lifestyle ▪ Early detection, follow-up and treatment of health risks <p>< Common ></p> <ul style="list-style-type: none"> ▪ Improvement of digital health with base of pyramid (BOP) ▪ Mental care for health personnel ▪ Ensuring human resources in collaboration with private sector ▪ Capacity development of national reference laboratories ▪ Development of BCP at public health and clinical service institutions ▪ Capacity development of medical waste management
7	Recommendations	Regional collaboration	<ul style="list-style-type: none"> ▪ Health emergency response: strengthening of collaboration based on the existing frameworks ▪ Development regional reference laboratory network in cooperation with PAHO ▪ Promoting information and data sharing through regular experience sharing activities to strengthen collaboration and communication
		Inter-sectoral collaboration	<ul style="list-style-type: none"> ▪ Education, IEC materials, community development sectors for increasing health literacy ▪ Food production and processing sectors for nutrition improvement ▪ Local administration and environmental sectors to improve medical waste management capacity ▪ ICT and private sectors to promote retention of health personnel and improve service providing system
		Innovative technology	<ul style="list-style-type: none"> ▪ Minimize gap in service access by telemedicine ▪ Sharing health record of migrant people moving beyond the borders
		Health emergency response	<ul style="list-style-type: none"> ▪ Development of business continuity plan (BCP) at PHC level

Source: Study Team

6.3 Sectoral Scope of Work

Table 6-2 presents the scope of work for the health and nutrition sector.

Table 6-2 Sectoral Scope of Work (Health and Nutrition)

No.	Sub-sector	Scope of Work
1	Sector Objectives	To develop a resilient health system and strengthen regional coordination to maintain essential health services and equality in access under health emergency. To strengthen the health literacy of individuals throughout their life course.
2	Modification of the Scope	Through discussions with JICA, target countries and priority issues are identified, and the scope of work is modified.
3	【Task 2】	Identifying interviewees

No.	Sub-sector	Scope of Work
4	Conducting interview survey	
5	Basic information collection (health)	<ul style="list-style-type: none"> •Health indicators (outcomes, access to services, COVID-19 cases and deaths) •Priority issues (region-wide, JICA, Japanese government) •Service providing system (referral system, facility, IT, human resources, etc.) •Health finance, regional cooperation
6	Basic information collection (nutrition)	<ul style="list-style-type: none"> •Nutrition-related indicators and implementation mechanism
7	Categorizing of the target countries and selection of the priority countries	<ul style="list-style-type: none"> •Based on the results of analysis of the collected basic information, priority countries, and issues are selected. •Initial responses of each country against COVID-19 pandemic
8	Country report	<ul style="list-style-type: none"> •Results of Tasks 5 to 8 are compiled into the country report.
9	COVID-19 response and impact in the priority issues in priority countries	<ul style="list-style-type: none"> •COVID-19 impact on primary health care (PHC) and the nutrition sector in the priority counties •COVID-19 impact on NCDs prevention and control in the region •Useful cooperation resources of Japan (existing projects)
10	Policy studies	<ul style="list-style-type: none"> •Relevant policies/ donors' activities on COVID-19 responses in PHC, nutrition, and NCD sub-sectors.
11	Country reports	<ul style="list-style-type: none"> •Compile results of 【Task 2】 in the country reports.
12	【Task 3】 COVID-19 impacts on JICA projects	<ul style="list-style-type: none"> •Impact survey on the on-going projects designated by JICA, which have strong relevance with the survey through fixed-point observation (April, June, September and December 2021)
13	Basic survey on the priority issues	<ul style="list-style-type: none"> •Impacts of COVID-19 on PHC and MNCH in the priority countries, as well as elderly's health
14	Policy survey	<ul style="list-style-type: none"> •Prevention and reconstruction policy in the priority countries and the region
15	【Task 4】 Sector vulnerability and cooperation strategy	<ul style="list-style-type: none"> •To identify existing issues and vulnerability in the health and nutrition sector •To consider cooperation strategy to tackle with the above
16	Hypothesis for future cooperation	<ul style="list-style-type: none"> •To develop a hypothesis on future development cooperation in accordance with MOFA's country cooperation strategy and rolling plan and JICA's strategy •To confirm the hypothesis in accordance with cooperation needs of each country
17	Sector hypothesis report	<ul style="list-style-type: none"> •To compile the results of 【Task 4】 into the sector hypothesis report
18	【Task 5】	Visit concerned international and regional organization to collect additional information relevant to 【Task 2】 and 【Task 4】 , as well as to discuss on future cooperation strategy
19	【Task 6/7/8】	Provide advices on selection, implementation, and conclusion of a pilot project in the health and nutrition sector
20	【Task 9】	To provide necessary material for external experts' committee including presentation
21	【Task 10】	To develop a policy recommendation on health and nutrition sector cooperation
22	【Task 11】	To prepare the health and nutrition part of an academic paper

Source: Study Team

6.3.1 Sectoral Work Schedule (Health and Nutrition Sector)

The latest work schedule of the health and nutrition sector is presented in Figure 6-1.

Activities	2021											2022	
	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb		
	Initial Analysis Stage			Pilot Stage			Finalization Stage			Closing Stage			
	ICR			PR								DFR	FR
1 Preparation of inception report	■												
2 Selectin of target countries based on discussion with JICA	■												
3 Overview of health and nutrition in the target countries	■												
3.1 Health and nutrition indicators	■												
3.2 Health system overview and priorities	■												
4 Impacts of COVID-19													
4.1 Impact on health and nutrition sector in each country													
4.1a Impact on health and nutrition sector in priority countries													
4.2 Prevention and reconstruction measurements													
4.2a Response of priority countries and region-wide actions													
4.3 Useful cooperation resources of Japan/ JICA													
5 Hypothesis on future cooperation													
6 Pilot project													
6.1 Planning													
6.2 Implementation and monitoring													
6.3 Review of effectiveness and lessons learned													
7 Preparation of progress report													
9 Additional information collection and analysis													
10 Finalization of policy recommendation													
11 Preparation of draft final report													
12 Preparation of final report													

Source: Study Team

Figure 6-1 Sectoral Work Schedule (Health and Nutrition)

6.4 Collecting Basic Information on 23 Target Countries

6.4.1 Data Collection and Analysis

Table 6-3 presents data and materials collected and analyzed.

Table 6-3 Collected Data and Materials: Health and Nutrition Sector

	Name of Data/ Reference Materials	Source
Online databases	Institute for Health Metrics and Evaluation, Country Profiles	IHME
	World Development Indicators	The World Bank
	World Health Statistics 2020	WHO
	Nutrition Landscape Information System (NLIS), Country Profile	WHO
	Follow-up of the Evolution of COVID-19 Measures (COVID-19 Observatory in Latin America and the Caribbean Economic and Social Impact)	ECLAC
	Statistics and Research, Coronavirus (COVID-19) Cases, Research and Data	Our World in Data
	PLISA Health Information Platform for the Americas	PAHO
Cooperation strategies	IADB, WHO/PAHO, CARPHA	
Reports by independent institutes and donors	OECD: Health at a Glance: Latin America and the Caribbean 2020 PAHO: Core indicators 2019, COVID-19 Updates, Health in Americas Independent institutes, ECLAC, UN agencies, and NPOs: situation analysis of the health sector of each country, impacts of COVID-19 on Maternal, Newborn, Child and Reproductive Health (MNCRH), essential health services, etc.	
Government policies/ strategies	Mid-term strategies, development plans, etc., of the ministries of health	

Source: Study Team

6.4.2 Health and Nutrition Indicators

(1) Pre-COVID-19

In the health and nutrition sector, as COVID-19 might have made existing problems or vulnerabilities become apparent, the health and nutrition indicators of pre-COVID-19 were collected and analyzed as follows:

1) Health Status of the People

As presented in Table 6-4, life expectancy is over 70 years except in Guyana and Haiti. Some are aged society (65 and over >14%, Barbados and Cuba), and aging society (65 and over >7%, Bahamas, Costa Rica, El Salvador, Grenada, Jamaica, Panama, Saint Lucia, Saint Vincent and Grenadine, as well as Trinidad Tobago.

Non-communicable diseases (NCDs) are the most popular cause of mortality in most of the countries except in Belize, El Salvador, Guatemala, Guyana, and Haiti.

Table 6-4 GDP per Capita, Demography, and Non-communicable Diseases

	Courtiers	GDP per Capita (Constant 2010 USD) ¹	Life Expectancy at Birth (years) ¹			Population Ages 65 and Above (% of Total Population) ²	Non-communicable Diseases (NCDs)		
			Female	Male	Total		Mortality Rate of Cardiovascular Diseases (per 100,000 Population) ²	Prevalence of Diabetes (per 100,000 Population) ²	Cause of Death by Non-communicable Diseases (% of Total) ¹
			Year	2019	2018		2018	2018	2021	2021	2018
Central America	Costa Rica	10,170.16	82.73	77.54	80.10	9.47	137.97	8.78	82.0
	Cuba	6,804.87	80.71	76.76	78.73	14.74	190.97	8.27	83.3
	Dominican Republic	8,002.44	77.20	70.81	73.89	6.98	266.65	8.20	71.9
	El Salvador	3,580.53	77.64	68.23	73.10	8.27	167.30	8.87	65.1
	Guatemala	3,364.78	76.94	71.12	74.06	4.69	155.90	10.18	61.6
	Honduras	2,244.45	77.38	72.77	75.09	4.65	240.21	7.21	71.4
	Mexico	10,267.50	77.84	72.12	74.99	6.86	152.78	13.06	80.4
	Nicaragua	1,777.77	77.77	70.74	74.28	5.45	137.02	11.47	81.6
	Panama	11,902.33	81.59	75.24	78.33	7.92	128.35	8.33	77.9
Caribbean	Antigua and Barbuda	15,445.05	77.98	75.72	76.89	6.93	191.51	13.17	84.8
	Bahamas	28,908.25	75.91	71.50	73.75	9.00	235.95	13.17	75.4
	Barbados	16,100.05	80.39	77.68	79.08	14.95	170.05	13.57	82.8
	Belize	4,245.74	77.67	71.58	74.50	3.85	176.96	17.11	65.2
	Dominica	6,910.54	..	..	..	..	227.38	11.62	..
	Grenada	9,226.55	74.94	70.06	72.38	7.30	243.96	10.71	82.8
	Guyana	6,121.72	72.97	66.78	69.77	5.31	373.16	11.62	69.6
	Haiti	1,245.01	65.83	61.50	63.66	4.80	430.55	6.65	64.7
	Jamaica	4,874.17	75.99	72.79	74.37	9.68	206.54	11.28	79.3
	Saint Kitts and Nevis	17,162.07						12.84	
	Saint Lucia	9,350.49	77.43	74.72	76.06	9.72	204.62	11.62	82.1
	Saint Vincent and the Grenadines	6,862.67	75.01	70.18	72.42	7.72	252.68	11.62	79.1
	Suriname	8,341.93	76.09	70.75	73.38	6.93	258.31	12.54	78.6
	Trinidad and Tobago	14,920.62	74.94	68.37	71.57	10.01	228.47	10.97	82.7

Source: 1=The World Bank, World Development Indicator (WDI), 2=Hannah Ritchie et al, Statistics and Research, Coronavirus (COVID-19) Cases, Research and data, Our World in Data

According to OECD/The World Bank, diabetes brought serious burden in this region. In addition, the life-saving rate of ischemic heart disease and stroke tend to be low and mortality attributed by cancer is increasing. This is due to the lack of advanced medical technology (CT, MRI, mammography, and radiotherapy) and specialized medical personnel.

Regarding maternal, newborn and child health (MNCH), there are certain gap among the countries (Table 6-5). Mortalities of mother and children are still high in Dominica, Guyana, and Haiti. Especially, the maternal mortality ratio (MMR) is high in Saint Kitts and Nevis, Saint Lucia, and Suriname. According to OECD/The World Bank, the proportion of low birth weight is over 10% in most of the countries except in Antigua and Barbuda, Belize, Costa Rica, Cuba, Grenada, and Mexico. As for the service coverage, the proportion of pregnant women who completed more than four times of antenatal care (ANC) is less than 70% in Grenada and Haiti. Although the World Health Organization (WHO) recommends that more than 90% of one-year-old children should complete the diphtheria, pertussis, and tetanus (DTP) vaccine, El Salvador, Guatemala, Haiti, Mexico, and Panama did not achieve this target. As for the meningococcal vaccine (MCV), the Bahamas, Barbados, Costa Rica, Dominica, El Salvador, Grenada, Guatemala, Haiti, Honduras, Jamaica, Saint Lucia, and Trinidad and Tobago did not achieve WHO's recommendation of 95% vaccination rate.

Table 6-5 Maternal, Newborn and Child Health, and Nutrition

Countries	Maternal, Newborn and Child Health (MNCH)					Nutrition					
	Year	Infant Mortality Rate (IMR, per 1,000 livebirths) ¹	Maternal Mortality Ratio (MMR, per 100,000 livebirths) ²	Antenatal Care +4 (% among Pregnant Women) ³	DTP3 Immunization Coverage, Aged Around 1 (%) ³	MCV1 Immunization Coverage, Aged Around 1 (%) ³	Prevalence of Undernourishment (% of population) ¹	Stunting among Under 5 (%) ³	Overweight among Under 5 (%) ³	Overweight among Adult Male (%) ³	Overweight among Adult Female (%) ³
Central America	Costa Rica	7.5	27	98	94	94	3.2	5.6	8.1	39	33
	Cuba	3.9	36	98	99	99	2.5	7.0		36	32
	Dominican Republic	24.1	95	95	94	95	5.5	7.1	7.6	36	31
	El Salvador	11.8	46	82	81	81	8.9	13.6	6.4	38	33
	Guatemala	21.4	95	86	86	87	16.1	46.7	4.9	36	34
	Honduras	14.9	65	89	90	89	13.8	22.6	5.2	36	33
	Mexico	12.6	33	94	88	97	7.1	10.0	5.3	45	43
	Nicaragua	14.9	98	88	98	99	17.2	17.3	8.3	37	32
	Panama	13.2	52	99	88	98	6.9	19.0	9.7	38	34
	Caribbean	Antigua and Barbuda	6.0	42	83	95	96				29	30
Bahamas		11.1	70	83	90	89				36	30
Barbados		12.1	27	98	95	85	4.3	7.7	12.2	30	29
Belize		11.2	36	93	96	97	7.6	15.0	7.3	32	30
Dominica		30.3	251*	85	94	84	5.8			35	30
Grenada		14.7	25	67	96	84				30	30
Guyana		25.2	169	87	95	98	5.7	11.3	5.3	29	30
Haiti		49.4	480	67	64	69	48.2			33	31
Jamaica		12.3	80	86	97	89	8.7	6.0	8.3	32	30
Saint Kitts and Nevis		13.2	155*	n.a.	97	96				30	29
Saint Lucia		19.7	117	90	95	86		2.5	6.3	27	29
Saint Vincent and the Grenadines		13.8	68	73	97	99	5.7			32	30
Suriname		16.1	120	67	95	98	5.5	8.8	4	35	31
Trinidad and Tobago		16.6	67	100	99	90	8.1	9.2	11.4	26	29

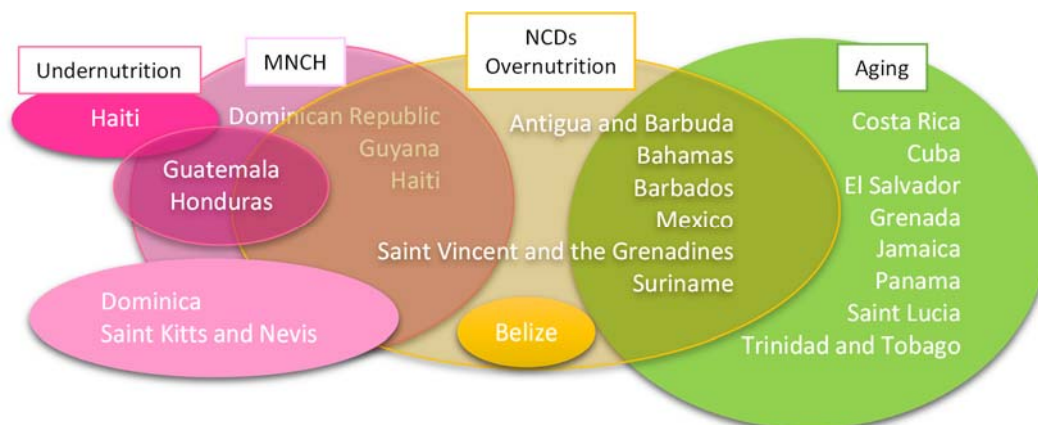
Note: Dominica – 2016, Saint Kitts and Nevis – 2014

Source: 1=WDI, 2=World Health Statistics 2020; Dominica and Saint Kitts and Nevis- PAHO/WHO, Communicable Diseases and Health Analysis / Health Information and Analysis. Health Situation in the Americas: Basic Indicators 2017, 3=OECD/The World Bank (2020), Health at a Glance: Latin America and the Caribbean 2020

Many countries have the double burden of malnutrition. According to OECD/The World Bank, obesity among adolescents has been increasing. As shown in Table 6-5, around 30% of adults are overweight in most of the countries. These situations might cause an increased burden of diet-related NCDs such as diabetes, hypertension, and cardiovascular diseases. On the other hand, stunting among children is one of the nutrition issues in Belize, El Salvador, Guatemala, Guyana, Honduras, Nicaragua, and Panama. Especially in Haiti, malnourishment among all population is high.

In addition, health protection of migrants has been a challenge especially in Central American countries. Migrants from the Northern Triangle (El Salvador, Guatemala, and Honduras) and politically unstable countries such as Nicaragua travel in large groups to North America, staying in or passing through Panama and Costa Rica. Many of them travel in poor and unsafe condition which is harmful to their health.

In accordance with the health issues in each country (Section 6.4.2), the target countries were categorized as shown in Figure 6-2. Most of the countries face aging and NCDs or other risk factors. Meanwhile, MNCH and nutrition are still the concern in Honduras, Nicaragua, Guatemala, Dominica, Saint Kitts and Nevis, Dominican Republic, Guyana, and Haiti.



Source: Study Team

Figure 6-2 Groups of the Target Countries According to Health Issues

2) Health System

As presented in Table 6-6, the current health expenditure (CHE) per capita differs by around five times between the lowest and the highest. Out-of-pocket (OOP) expenditure accounts for more than 50% of the CHE in the Dominican Republic, Grenada, and Guatemala, while less than 30% in Antigua and Barbuda, Belize, and Cuba. Only Cuba ensured that 6% of public health expenditure against gross domestic products (GDPs), which is necessary to achieve universal health coverage (UHC). According to OECD/The World Bank, major causes of high OOP are overtreatment such as high rate of cesarian section, preventive prescription of antibiotics, not using generic medicines, as well as extra payments for preferable treatment. Also, health service providing system is fragmented vertically (from primary to tertiary) and horizontally (public and private, different service providers such as the Ministry of Health and a social insurance agency). For instance, in Dominican Republic, El Salvador, Honduras, and Nicaragua, both ministries of health and social insurance authorities operate health facilities. In other countries, the private sector and civil society such as churches and non-governmental organizations (NGOs) are involved in the health service providing system. Generally, budget allocation and procurement system are also correspondingly fragmented. Such situation could cause duplication of health services and costs and decrease cost effectiveness of health services.

To tackle such situation, countries in this region prioritize the enhancement of primary health care (PHC) since the Regional Declaration on the New Orientations for Primary Health Care (The Declaration of Montevideo) in 2005 under the leadership of PAHO. In general, multidiscipline health team is organized at the primary level to provide holistic health care. As the existing PHC is rather focused on maternal and child health, the team consists of a general physician, specialized doctors of obstetrics and pediatrics, a midwife, nurses, and community health workers. Recently, to respond to changing health needs, the team is dealing with NCDs prevention and control. However, most of the countries except Cuba have not succeeded to establish and/or sustain effective PHC model. The governments set the target number of PHC teams against the population; however, it has not been fulfilled due to shortage of health workers in many countries.

Regarding service providing capacity, hospital beds and human resources are not sufficient to cover the population. Only Belize and Cuba are more than the OECD average (4.7/1,000) in terms of hospital beds. Guatemala, Guyana, Haiti, Honduras, Saint Lucia, as well as Saint Vincent and Grenadines did not achieve the WHO recommendation on the number of health personnel, which is one doctor and three nurses per 1,000 population. The Dominican Republic, El Salvador, Mexico, Nicaragua, and Suriname did not have sufficient number of nurses.

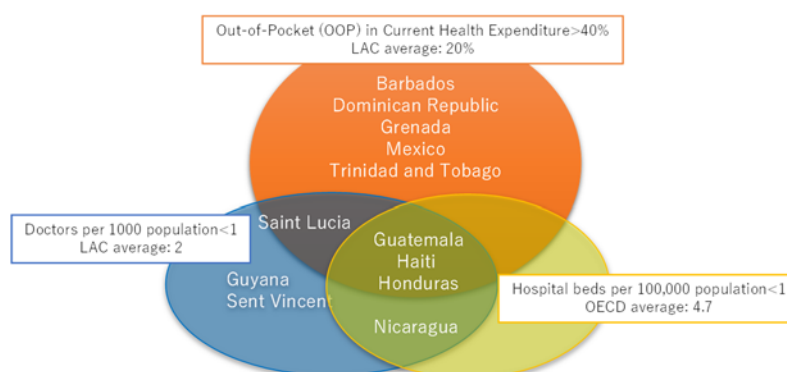
Public-private partnership (PPP) has been introduced according to change in demography and epidemiology, as well as epidemiology. In Mexico, since the first pilot program of healthcare PPP was launched in 2005, PPP has been introduced in hospital operation¹.

Table 6-6 Health Finance and Service Provision

Countries	Health Finance						Service Provision		
	Health Expenditure per Capita (USD) ¹	Current Health Expenditure (CHE) (% of GDP) ²	Domestic General Government Health Expenditure (% of GDP) ²	Domestic General Government Health Expenditure (% of General Government Expenditure) ²	Out-of-Pocket Expenditure (% of CHE) ¹	Hospital Beds per 1,000 Population	Doctors per 1,000 Population ¹	Nurses per 1,000 Population ¹	
	Year	2019	2019	2019	2019	2019	2019	2019	
Central America	Costa Rica	1,285	7.6	5.5	27.8	22	1.1	3.1	3.4
	Cuba	2,484	11.2	9.9	15.2	10	5.2	8.4	7.6
	Dominican Republic	978	5.7	2.5	15.4	45	1.6	1.5	1.4
	El Salvador	582	7.1	4.5	18.8	29	1.3	1.6	1.8
	Guatemala	470	5.7	2.1	16.7	54	0.6	0.4	0.1
	Honduras	373	7.0	2.8	10.7	49	0.7	0.3	0.7
	Mexico	1,138	5.4	2.7	10.5	41	1.4	2.4	2.9
	Nicaragua	468	8.6	5.1	18.8	33	0.9	1.0	1.5
	Panama	1,786	7.3	4.6	21.4	33	2.3	1.6	3.1
	Antigua and Barbuda	1,071	5.2	2.9	11.7	15	3.8	3.0	4.5
Caribbean	Bahamas	1,746	6.2	3.1	15.9	31	2.9	2.0	4.6
	Barbados	1,317	6.6	2.9	9.9	46	5.8	2.5	3.1
	Belize	473	5.7	3.9	12.5	24	1.3	1.1	2.3
	Dominica	636	6.6	4.3	7.0	31	3.8	1.1	6.4
	Grenada	714	4.5	1.7	7.7	52	3.7	1.4	6.3
	Guyana	385	5.9	3.7	10.7	32	1.6	0.8	1.0
	Haiti	83	7.7	0.9	4.8	40	0.7	0.2	0.7
	Jamaica	532	6.1	3.9	13.0	17	1.7	1.3	0.8
	Saint Kitts and Nevis	1,442	5.3	2.5	7.4	48	2.3	2.7	4.2
	Saint Lucia	661	4.4	2.1	8.2	45	1.3	0.6	3.2
	Saint Vincent and the Grenadines	522	4.5	3.1	10.1	31	2.6	0.7	0.7
	Suriname	944	8.0	5.3	16.8	26	3.1	1.2	2.8
	Trinidad and Tobago	2,206	6.9	3.4	11.0	40	3.0	4.2	4.1

Source: 1= OECD/The World Bank (2020), Health at a Glance: Latin America and the Caribbean 2020, 2 = WDI

Figure 6-3 presents the grouping of the target countries according to health system issues. The OOP seems to be a common issue among the countries. Finance, hospital beds, and health personnel are the concerns in Guatemala, Haiti, and Honduras.



Source: Study Team

Figure 6-3 Groups of the Target Countries According to Health System Issues

¹ Llumpo, A., Montagu, D., Brashers, E., Foong, S., Abuzaineh, N., Feachem, R. (2015). Lessons from Latin America: The Early Landscape of Healthcare Public-Private Partnerships. Healthcare Public-Private Partnership Series, No. 2. San Francisco: The Global Health Group, Global Health Sciences, University of California, San Francisco and PwC. Produced in the United States of America. First Edition, November 2015.

3) Gap in Service Access

In general, access has been improved, but the gap has been widened depending on household economy, gender, area (urban and rural), ethnic group, disability, and migrants. The OECD/The World Bank pointed out that gap in household income could be relevant to child mortality and access to MNCH services such as ANC, delivery attended by skilled birth attendants, and immunization. Also, between urban and rural areas, there are certain gaps due to the concentration of hospitals with specialized care and intensive care unit (ICU) in urban areas and/or by the private sector. As a result, the poor could not access such quality health services both in urban and rural areas.

(2) COVID-19 Situation

1) Cumulative Numbers of Confirmed Cases and Deaths

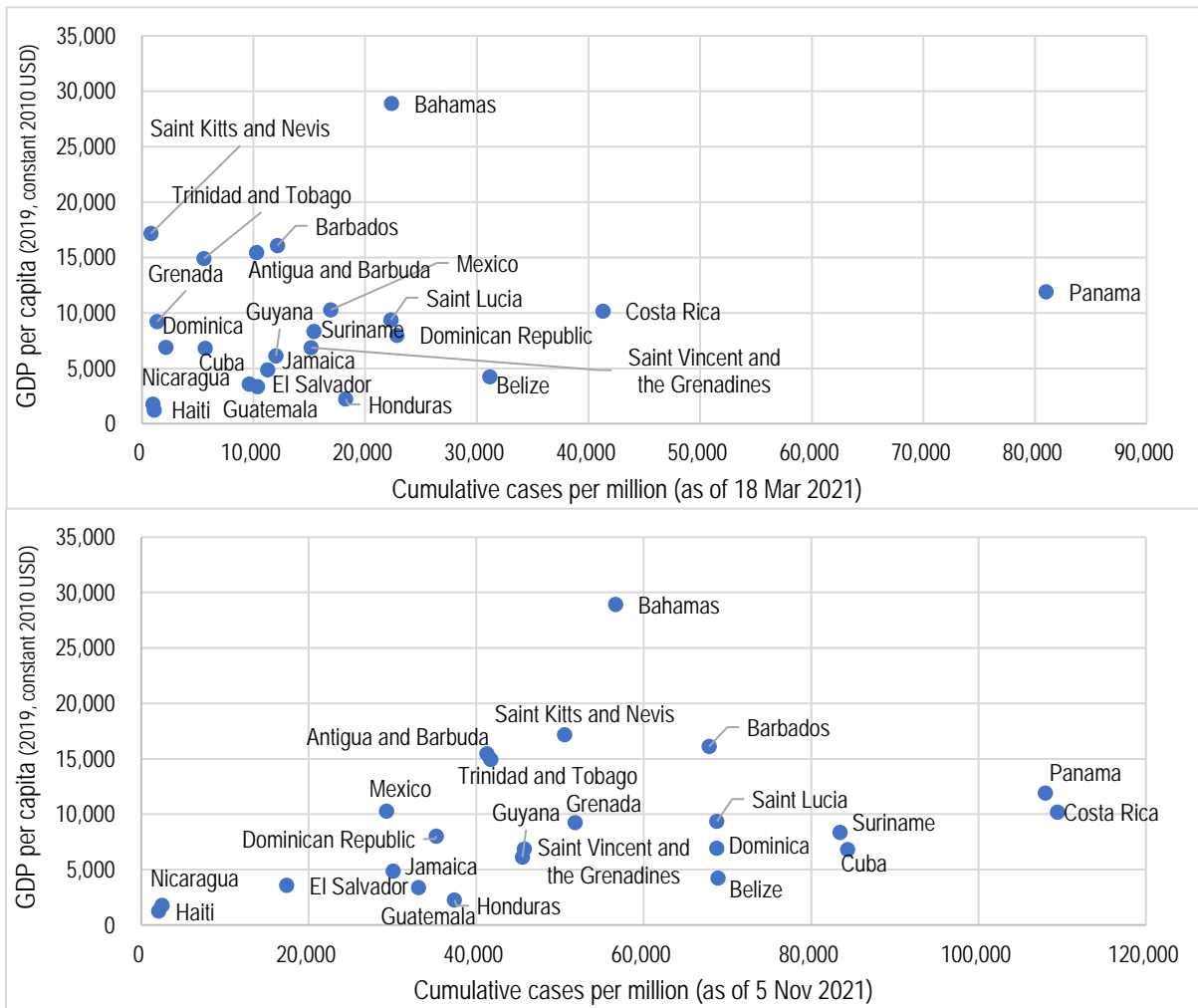
Table 6-7 presents cumulative numbers of confirmed cases and deaths among the target countries of the survey. Confirmed cases per 100,000 population were higher in Costa Rica and Panama. Deaths per 100,000 population are higher in the countries with higher proportion of urban population such as Costa Rica and Mexico. On the other hand, Dominica reported no death and confirmed cases in Grenada and Saint Kitts and Nevis were less than ten.

Table 6-7 Cumulative Numbers of Confirmed Cases, Deaths, and Vaccine Completed Schedule per 100 Population

Countries	Population	Urban Population (%) ²	Cumulative Confirmed Cases		Cumulative Deaths		Death/Cases (%) ⁴	Vaccine Completed Schedule per 100 Population ³	
			Number ³	Per 100,000 ⁴	Number ³	Per 100,000 ⁴			
Central America	Costa Rica	5,094,114	80.08	377,091	7,402.5	4,753	93.3	1.26	16.37
	Cuba	11,326,616	77.11	218,396	1,928.2	1,431	12.6	0.66	0.00
	Dominican Republic	10,847,904	81.83	331,826	3,058.9	3,870	35.7	1.17	38.11
	El Salvador	6,486,201	72.75	80,392	1,239.4	2,428	37.4	3.02	22.61
	Guatemala	17,915,567	51.44	311,342	1,737.8	9,609	53.6	3.09	1.76
	Honduras	9,904,608	57.73	270,689	2,733.0	7,175	72.4	2.65	3.13
	Mexico	128,932,753	80.44	2,558,369	1,984.3	234,192	181.6	9.15	19.35
	Nicaragua	6,624,554	58.76	6,819	102.9	192	2.9	2.82	2.43
	Panama	4,314,768	68.06	411,226	9,530.7	6,599	152.9	1.60	17.52
Caribbean	Antigua and Barbuda	97,928	24.51	1,265	1,291.8	42	42.9	3.32	47.57
	Bahamas	393,248	83.13	13,024	3,311.9	252	64.1	1.93	11.07
	Barbados	287,371	31.16	4,108	1,429.5	47	16.4	1.14	26.03
	Belize	397,621	45.87	13,444	3,381.1	330	83.0	2.45	12.27
	Dominica	71,991	70.79	197	273.6	0	0.0	0.00	26.37
	Grenada	112,519	36.40	162	144.0	1	0.9	0.62	14.37
	Guyana	786,559	26.69	20,645	2,624.7	484	61.5	2.34	17.32
	Haiti	11,402,533	56.19	19,220	168.6	471	4.1	2.45	0.00
	Jamaica	2,961,161	55.99	50,497	1,705.3	1,108	37.4	2.19	4.11
	Saint Kitts and Nevis	53,192	30.80	519	975.7	3	5.6	0.58	36.36
	Saint Lucia	183,629	18.75	5,363	2,920.6	85	46.3	1.58	13.24
	Saint Vincent and the Grenadines	110,947	52.61	2,240	2,019.0	12	10.8	0.54	10.12
	Suriname	586,634	66.10	22,788	3,884.5	559	95.3	2.45	9.58
	Trinidad and Tobago	1,399,491	53.19	33,920	2,423.7	918	65.6	2.71	13.49

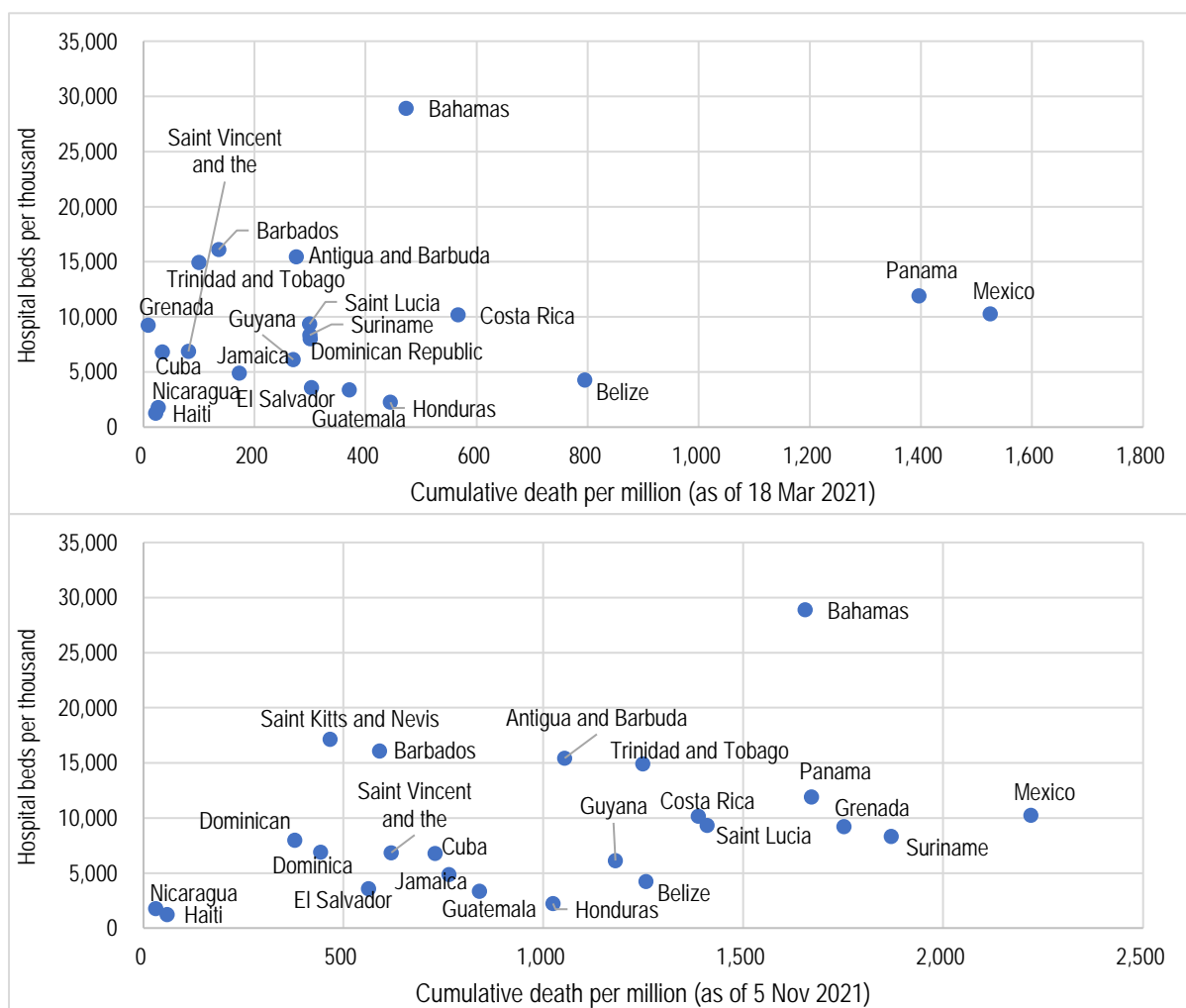
Source: 1- Statistics and Research, Coronavirus (COVID-19) Cases, Research and data: Hannah Ritchie, Esteban Ortiz-Ospina, Diana Beltekian, Edouard Mathieu, Joe Hasell, Bobbie Macdonald, Charlie Giattino, Cameron Appel and Max Roser / 2- World Development Indicators, the World Bank/ 3- PAHO/WHO, Region of the Americas Update, 3 PM WDC. 8 July 2021/ 4- Calculated by Study Team

As shown in Figure 6-4, cumulative confirmed cases per million population seems to be lower in higher GDP countries, and number of deaths seems to be lower in countries with higher number of hospital beds per population (Figure 6-5). However, as these statistics could depend on the capacity and number of testing, the relevance between the COVID-19 situation and economic status or hospital beds could not be discussed based on this data.



Source: Prepared by Study Team referring to Hannah Ritchie et al., Statistics and Research, Coronavirus (COVID-19) Cases, Research and data, and the World Bank, World Development Indicator (WDI)

Figure 6-4 Cumulative Number of Confirmed COVID-19 Cases (Upper: as of 18 March 2021, Lower: as of 05 November 2021) and GDP per Capita



Source: Prepared by Study Team referring to Hannah Ritchie et al., Statistics and Research, Coronavirus (COVID-19) Cases, Research and Data

Figure 6-5 Cumulative Number of COVID-19 Deaths (Upper: as of 18 March 2021, Lower: as of 05 November 2021) and Number of Hospital Beds

2) COVID-19 Impacts on Health of the People

According to the situational analysis of the Inter-American Development Bank (IDB) published in April 2021², COVID-19 brought impacts on the existing triple burden of health issues as follows:

- Infectious disease along with Maternal, Newborn and Child Health (MNCH) conditions Although vaccine-preventable diseases (VPDs) are generally well-controlled, there are still measles, mosquito-borne diseases (malaria, Zika fever, chikungunya fever), drug-resistant malaria, and tuberculosis, zoonotic diseases, and emerging infectious diseases such as COVID-19. Immigration and human trafficking have increased the flow of people into the region. People who enter the country through these means are often exposed to risks such as dense and unsanitary living conditions, lack of access to health services, and difficulties in obtaining and understanding knowledge.
- Non-communicable diseases (NCDs)
NCDs especially cardiovascular diseases and diabetes are the leading causes of death in many countries. Even if these NCDs do not lead to death, they cause disability and interfere with social and productive activities, and are a burden to the financial and social sectors.

² The Health Sector Framework Document, Social Sector, April 2021, IDB

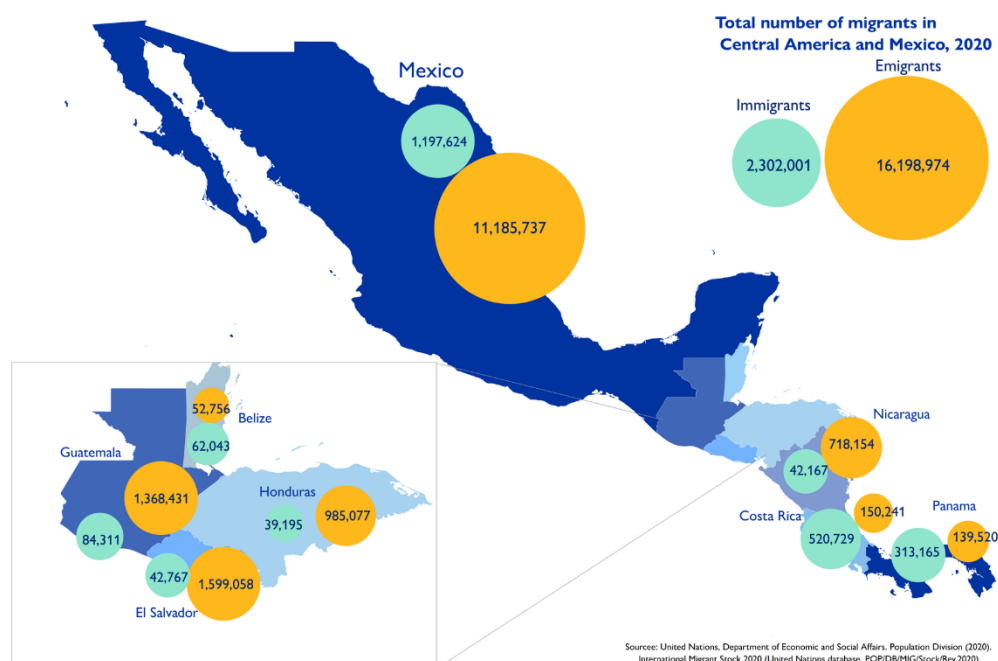
As for malnutrition, which is one of the background factors of NCDs, many countries have a double burden of obesity/overweight and chronic malnutrition (stunting), and with the increase in stress caused by COVID-19, there are concerns about the deterioration of nutritional balance and increase in overweight.

- Physical injuries caused by violence and traffic accidents
 Violence and traffic accidents among adolescents were significant issues even before COVID-19. Under COVID-19 situation, suicide has increased.

According to PAHO, comorbidities that increase the risk of COVID-19 severe illness and hospitalization are diabetes, hypertension, obesity, and chronic kidney disease³. According to the rapid assessment of PAHO⁴, some or all NCDs staff that were reassigned to COVID-19 response in 27 countries are among the 28 respondents including all the target countries of the survey. As a result, some services were disrupted in many countries, such as management of hypertension and diabetes, dental care, and rehabilitation, although emergency cardiovascular service was maintained in 22 countries. As for planned activities on NCDs control, 57% postponed the survey, and 43% suspended screening.

According to ECLAC/PAHO, the most affected group is women in the informal sector. Because of lower education level, they could not access to appropriate information, or could not understand. Then, they could not take proper action to protect themselves from infection. In addition, many of them were in high-risk environment such as crowded housing and/or insufficient hygiene facility. Poor nutrition condition and their working condition, which cannot be done by remote work.

In addition, migrants also affected by nonpharmaceutical measurements of each country such as border closure and change in migrant policy. Although many of them are stranded across the region, and forced to return to their place of origin where it is not safe for them, certain number of people moved across the countries as shown in Figure 6-6.



Source: Migration Data Portal (<https://www.migrationdataportal.org/regional-data-overview/migration-data-central-america#recent-trends>, accessed on 21 Jan2022)

Figure 6-6 Movements of Migrants in Central America in 2020

There have been challenges in the prevention of COVID-19 among migrant populations as a result of poor public health communication, reduced access to public health prevention measures, and

³ Non-communicable Diseases in the Region of the Americas in the Era of COVID-19: Policy brief series, PAHO 2021

⁴ Rapid Assessment of Service Delivery for NCDs during the COVID-19 Pandemic in the Americas, PAHO 2020

living or working in conditions where it is difficult to isolate. The deteriorating determinants of migrants' health and well-being, revealed and increased by COVID-19, strain health systems in the Latin American and Caribbean countries (LACs), and governmental, regional, and international organization's efforts to advance inclusive health policies⁵.

According to interviews with JICA experts and collected information, the church plays a certain role in providing information and promote behavior change. However, it sometimes spread incorrect information or rumor, and caused "info-demic".

The United Nations Development Programme (UNDP) and UNICEF estimated impacts of COVID-19 to service coverage as presented in Table 6-8. School nutrition program was most damaged due to school closure. Coverage of MNCH and family planning services and screening and follow-up of NCD patients also decreased.

Table 6-8 Impact of COVID-19 on Health and Nutrition Service Coverages

Countries	GDP per Capita (Constant 2010 USD)	Urban Population (% of Population)	Emergency Obstetric Care (EmOC)	Water, Sanitation, and Hygiene in Health Facilities	Antenatal Care	Immunization	NCDs Services	Infant and Young Child Feeding Support	Nutrition Support for Pregnant and Lactating Women	Wellness Checkups/ Nutrition Monitoring	Contraception	School-based Nutrition Programs
Central America	Costa Rica	10,170.16	80.1									
	Cuba	6,804.87	77.1									
	Dominican Republic	8,002.44	81.8									
	El Salvador	3,580.53	72.7									
	Guatemala	3,364.78	51.4									
	Honduras	2,244.45	57.7									
	Mexico	10,267.50	80.4									
	Nicaragua	1,777.77	58.8									
Panama	11,902.33	68.1										
Caribbean	Antigua and Barbuda	15,445.05	24.5									
	Bahamas	28,908.25	83.1									
	Barbados	16,100.05	31.2									
	Belize	4,245.74	45.9									
	Dominica	6,910.54	70.8									
	Grenada	9,226.55	36.4									
	Guyana	6,121.72	26.7									
	Haiti	1,245.01	56.2									
	Jamaica	4,874.17	56.0									
	Saint Kitts and Nevis	17,162.07	30.8									
	Saint Lucia	9,350.49	18.8									
	Saint Vincent and the Grenadines	6,862.67	52.6									
	Suriname	8,341.93	66.1									
	Trinidad and Tobago	14,920.62	53.2									

Note: Green= no impact, Yellow= less than 50% decrease, Red= 50% or more decrease, Blank= no information

Source: Compiled by Study Team based on WDI and Arachu Castro et al, Challenges posed by the COVID-19 pandemic in the health of women, children and adolescents in Latin America and the Caribbean, UNDP Latin America and Caribbean, #COVID19 Policy Documents Series, UNDP LAC C19 PDS No.19, UNDP, New York, September 2020

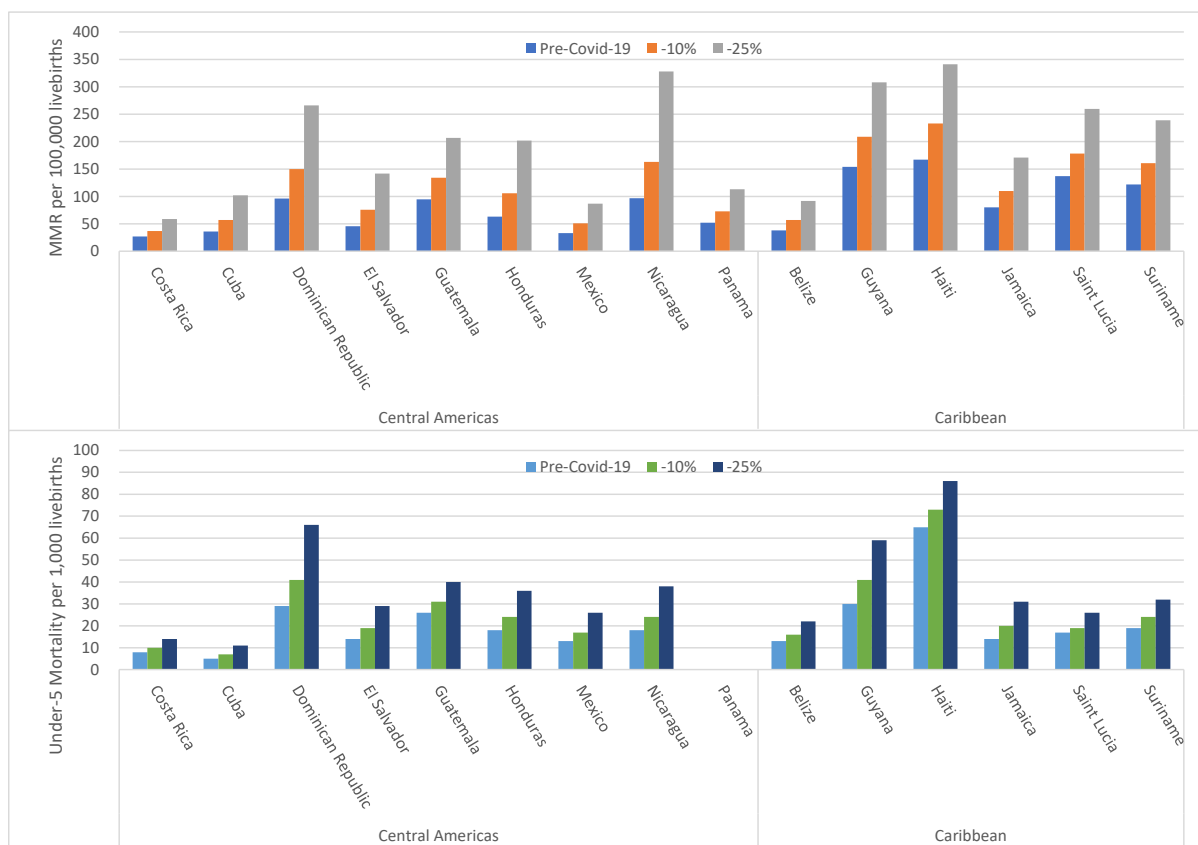
According to UNICEF⁶, suspension of routine health services including family planning, antenatal/postnatal care, delivery, immunization, as well as prevention and basic treatment, and decreased access to foods could cause excess mortality of mothers and children for the long term. When services related to NCDs prevention and control are suspended, the incidence could increase due to less screening opportunity. Early detection and early treatment could be possible because the high-risk and suspected cases could be identified in the screening. Also, reduction in the follow-up of the high-risk

⁵ Migration and Health in Latin America during the COVID-19 Pandemic and Beyond, Letza Bojorquez, et al., the Lancet, Vol 397 April 3, 2021

⁶ <https://www.unicef.org/jp/news/2020/0118.html> (accessed on 3 August 2021)

and existing patients of NCDs, especially diabetes and hypertension, might cause increase of severe patients, disability, or death. On the other hand, when nutrition services for the first 1,000 days from birth are not sufficiently provided to children, various health issues may occur throughout their lifetime. These include maladies such as malnutrition, NCDs, or hindering physical health and intellectual development.

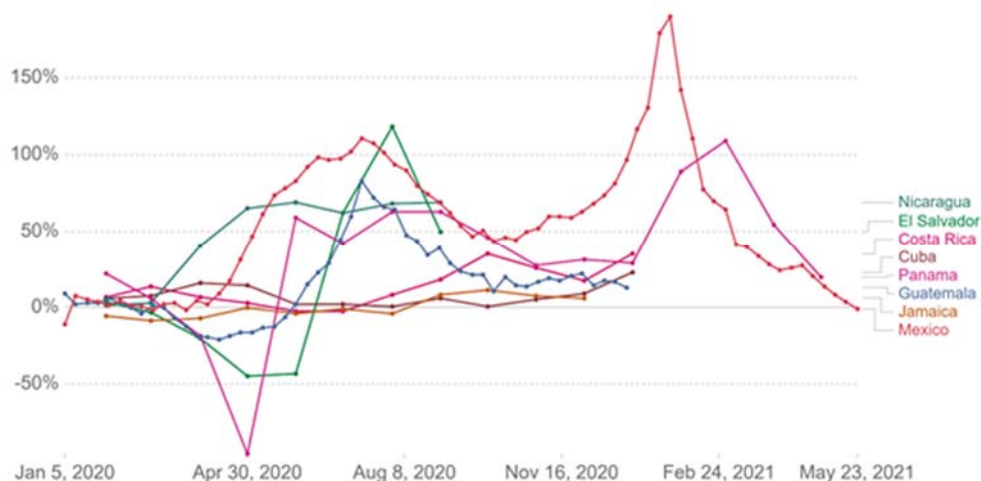
The UNICEF/UNDP estimated the excess mortalities due to decrease of service coverage as presented in Figure 6-7. Both maternal and under-five mortalities will increase in all the countries if the service coverages drop by 10% and 25%. Especially, MMR will be more affected than under-five mortality. Among the countries, in El Salvador, Honduras, and Nicaragua, MMR will be three times of pre-COVID-19 condition when service coverages decrease by 25%.



Source: Arachu Castro, Challenges posed by the COVID-19 pandemic in the health of women, children and adolescents in Latin America and the Caribbean, UNDP Latin America and Caribbean, #COVID19 Policy Documents Series, UNDP LAC C19 PDS No.19, UNDP, New York, September 2020

Figure 6-7 Excess Maternal Mortality (Upper) and Under-five Mortality (Lower) due to Decrease of Service Coverage

Ritchie, et al. estimated excess mortality due to COVID-19 as shown in Figure 6-8. It included COVID-19 deaths and other diseases caused by the worsening access to essential health services due to COVID-19. On the other hand, it was also suggested that some causes such as traffic accident injury may decrease because of curfews and restrictions. The excess mortality significantly increased in Mexico during May 2020 and February 2021, and in Guatemala from July to August 2020. In Panama, it decreased in April 2020, but increased from January to February 2021.



Source: Hannah Ritchie, Esteban Ortiz-Ospina, Diana Beltekian, Edouard Mathieu, Joe Hasell, Bobbie Macdonald, Charlie Giattino, Cameron Appel, Lucas Rodés-Guirao and Max Roser (2020) – “Coronavirus Pandemic (COVID-19)”. Published online at OurWorldInData.org. Retrieved from: ‘<https://ourworldindata.org/coronavirus>’ [Online Resource] (Accessed on 3 August 2021)

Figure 6-8 Excess Mortality Due to COVID-19 (Compare With the Same Months in 2015-2019)

3) Impacts on Health System

According to the latest analysis of IDB (April 2021), most of the countries face serious fiscal constraints, exacerbated by the COVID-19 pandemic. Reforms to allocate funds to cost-effective services, to create incentives for quality, and to address differential access due to income, are all needed to assure that any increases in spending make a positive impact on healthcare services and health outcomes of the population.

Regarding preparedness and response to health emergency, compliance to the requirements of the International Health Regulation (IHR) has progressed. Under the COVID-19 situation, more investments to strengthen resilience of the health systems have been planned or committed by the governments and development partners. Although disaster management frameworks include response and management to disease outbreak, the continuity of health service provision and flexible resource allocation may not have been well considered. Therefore, hospital services were disrupted due to overflow of patients and infections of health workforce, and then, PHC was affected therefore suspending essential services.

In addition, medical waste management provided another challenge under COVID-19 situation. Although statistics have not been available, significant increase of medical waste including face masks and personal protection equipment (PPE) from both health facilities and households could bring negative impact on human health and environment⁷. Solid waste management has a challenge even before COVID-19 because of limited treatment capacity and technology. PAHO developed the recommendations for solid waste management, which is explained in a very simple way. It applies to hospital staff, common waste transportation, and special considerations for waste management to be treated outside of hospital facilities, but it does not address waste management in homes⁸.

Despite such negative impacts, innovative solutions have been introduced to overcome challenges to continue health service provision, such as bed control system, digitalization of testing and surveillance, and telemedicine.

⁷ CARPHA, Solid Waste Management (SWM) Fact Sheet on COVID-19 and the Human Health and Environmental Impacts, Technical Guidance: COVID-19 Series No 44, 2020

⁸ Melissa Gómez Tagle and Virginia Gabriela Cilia-López, The Massive Misuse of Face Mask as a Risk to COVID-19 Pandemic in Latin American: The Case of Mexico, March 2021

6.4.3 Measurements of Each Government

(1) Overview

ECLAC/PAHO pointed out that the outcome depends on action taken by each government when cumulative confirmed cases was at 100. Cuba, Guyana, and Jamaica could take timely and appropriate actions, while Costa Rica, Honduras, and Mexico seemed to have failed to control the spread of community transmission. As presented in Table 6-9, many countries issued state of emergency pronouncements in March 2020 and initiated national responses, followed by border control, and curfew. At the same time, each government enhanced testing and prevention capacity, through procurement and/or increase of production of necessary medical materials, expansion of ICU and development of isolation wards. In the ECLAC/PAHO report, relevance between such initial action and transmission situation could not be clarified. For instance, Panama took various investment such as telemedicine and additional health personnel; however, cumulative confirmed cases still increased. Mexico initiated early warning in January 2020, but the number of deaths could not be reduced.

Table 6-9 Overview of COVID-19 Responses in Health Sector

Countries	Initial Responses	Mandatory Quarantine for Foreign Travelers	Mandatory General Quarantine	Policy on Testing	Hospitals (medical ventilators, additional ICU beds, PPE, temporary hospitals)	Others	Per 100,000 Population, Cumulative, as of 8 July 2021		
							Cases ¹	Deaths ¹	
Central America	Costa Rica	2020/3/9 Declaration of caution 2020/3/16 State of emergency			PCR at major hospitals	Donations from several organizations for medical equipment of public and private institutions	Free hygiene kits for general population Mask mandate in closed space Pilot activities of community response Mandate of vaccination for health workers Mental health support Additional doctors' employment Strategy development in Mat 2020	7,402.5	93.3
	Cuba	2020/3/23 State of emergency	Restriction of entry, etc.		Suspected cases Rapid testing	Equipment and facility enhancement	Increase of production of hygiene products	1,928.2	12.6
	Dominican Republic	2020/2/26 Direction of procurement 4/2 State of emergency	PCR for the entry		Testing of returnees from infected countries, testing of people who work in crowded places, random selection of travelers	Improvement of facilities and equipment, addition of hospital beds, regulation of food sales in facilities, etc.	Disinfection of workplaces, public facilities, etc. Awareness raising, etc.	3,058.9	35.7
	El Salvador	2020/1/24 Activation of expanded health cabinet 2020/3/14 State of emergency	Restriction of entry, etc.	Curfew Suspension of public health services expect emergency care and chronic disease care	Free suspected cases	Expansion of hospital function Enhancement of community response	Free transportation for health workers Plasma collection from the survivors Experts from Spain Community screening	1,239.4	37.4
	Guatemala	2020/3/21 Decision of emergency response in hospitals	Ban of entry	Curfew	High-risk workplaces and neighbors, etc.	Enhancement of hospital functions	Mask mandate Additional health workers Enhancement of data management Activation of response unit and technical committee Checkpoints along highways Medical kits for the	1,737.8	53.6

Countries	Initial Responses	Mandatory Quarantine for Foreign Travelers	Mandatory General Quarantine	Policy on Testing	Hospitals (medical ventilators, additional ICU beds, PPE, temporary hospitals)	Others	Per 100,000 Population, Cumulative, as of 8 July 2021		
							Cases ¹	Deaths ¹	
						slight symptoms			
Honduras	2020/2/20 State of emergency	Restriction of entry, etc.		Free for persons with symptoms	Equipment and facility enhancement National hospital expansion by IDB's support	Donation of masks and hygiene materials from domestic and foreign organizations	2,733.0	72.4	
Mexico	2020/1/22 Declaration of caution 3/31 State of emergency		Curfew request	Free for persons with symptoms	ICU expansion	MOU between the government and private institutions on cooperation	1,984.3	181.6	
Nicaragua					Enhancement of public hospitals' function	The World Bank loan Distribution of disinfectants Awareness raising campaign	102.9	2.9	
Panama	2020/3/13 State of emergency	Restriction of entry, etc.	Curfew	Entries from designated countries Free for close contacts		Homecare via telemedicine Non-contact thermometer Community tracking Employment of foreign doctors Experts from Cuba	9,530.7	152.9	
Caribbean	Antigua and Barbuda	2020/3/11 Activation of multisectoral task		PCR at CARPHA (48 hours) Domestic PCR testing under development		Awareness raising campaign at hotels	1,291.8	42.9	
	Bahamas	2020/3/17 State of emergency	Restriction of entry, etc.	Curfew, lockdown, public facility closure, restriction on domestic travel	Free for the close contact	Additional budget for health centers Disinfection of public facilities and transportation	3,311.9	64.1	
	Barbados		Restriction of entry, etc.	Curfew, public facility closure	Free for suspected cases	National bank donated for medical equipment	Additional budget for health sector Increase domestic food production	1,429.5	16.4
	Belize	2020/1/23 Activation of national surveillance team 2020/3/23 State of emergency	Restriction of entry, etc.	Isolation/quarantine regulations, etc.	Depends on travel history and symptoms Random testing in the airports and hospitals	Isolation areas in each health facility	Received medical experts since March 2020	3,381.1	83.0
	Dominica	2020/3/13 Activation of national coordinator				Equipment and facility enhancement by the World Bank support	Awareness on prevention and gender-based violence Psychological care	273.6	0.0
	Grenada		Restriction of entry, etc.			Upgrade through PAHO's support	Grant from the national bank Law on prevention and control	144.0	0.9
	Guyana	2020/3/18 State of public health emergency			Suspected cases			2,624.7	61.5
	Haiti	2020/3/20 State of emergency		Self-quarantine		Equipment and facility enhancement	Additional health workers	168.6	4.1
	Jamaica	2020/3/13 Declaration based on the disaster management	Restriction of entry, etc.	Curfew Restriction of hospital visit		Isolation wards at university hospitals		1,705.3	37.4

Countries	Initial Responses	Mandatory Quarantine for Foreign Travelers	Mandatory General Quarantine	Policy on Testing	Hospitals (medical ventilators, additional ICU beds, PPE, temporary hospitals)	Others	Per 100,000 Population, Cumulative, as of 8 July 2021	
							Cases ¹	Deaths ¹
	law							
Saint Kitts and Nevis	2020/3/22 Additional government investment		Self-quarantine of returnees				975.7	5.6
Saint Lucia	2020/121 Activation of the national health security committee 3/23 State of emergency	Enhancement of quarantine	Self-quarantine of returnees			Donation of PCR kits	2,920.6	46.3
Saint Vincent and the Grenadines	2020/3/18 Enhancement of prevention and control	Restriction of entry, self-quarantine		PCR at CARPHA (48 hours) Domestic PCR testing under development		Additional nurses Enhancement of outpatient department	2,019.0	10.8
Suriname	2020/3/21 Restriction of returns	Requirement of negative certificate		Walkthrough PCR		Mask mandate	3,884.5	95.3
Trinidad and Tobago	2020/3/26 Additional government investment	Restriction of entry, etc.		Person with symptoms PCR at CARPHA	Donation of PCR kits and PPE from China	Funds from the national bank Employment of foreign doctors Promote personal prevention behavior	2,423.7	65.6

Source: Compiled by Study Team based on “Follow-up of the Evolution of COVID-19 Measures (COVID-19 Observatory in Latin America and the Caribbean Economic and Social Impact)”, LAC Post COVID-19, Challenges and Opportunities, Country Department Caribbean, IDB, 2020
 1= calculated by Study Team based on data of PAHO/WHO, Region of the Americas Update, 3 PM WDC. 8 July 2021, and population from WDI

(2) Testing and Clinical Services

Regarding testing and surveillance, the Central American and Caribbean countries have been strengthening their capacities since H1N1 emergences in 2004 and the pandemic in 2009. PAHO continued to work with the countries in consolidating a regional system, part of the global network, for the surveillance of influenza and other respiratory viruses, as well as compliance to IHR requirements⁹. This global network is backstopped by a network of national reference laboratories, most of which are formally recognized as National Influenza Centers (NIC) and as a part of the Global Influenza Surveillance and Response System (GISRS). NICs in the Central American and Caribbean countries are listed in Table 6-10.

Table 6-10 List of National Influenza Centers in the Central American and Caribbean Countries, as of May 2021

Countries	Name of Institutions
Costa Rica	Instituto Costarricense de Investigación y Enseñanza en, Nutrición y Salud
Cuba	Laboratorio de Influenza, Instituto de Medicina Tropical “Pedro Kourí”
Dominican Republic	Laboratorio Nacional de Referencia de Influenza y otros, Virus Respiratorios
El Salvador	Laboratorio Central Ministerio de Salud Publica “Dr Max Bloch”
Guatemala	Laboratorio Nacional de Salud, Ministerio de Salud Publica y Asistencia Social
Honduras	Laboratorio Nacional de Vigilancia de la Salud – Sección de, Virología, Secretaría de Salud
Mexico	National Influenza Centre, Departamento de Virología, Instituto Nacional de Diagnóstico y Referencia, Epidemiológicos (INDRE), Secretaría de Salud (SSA)
Panama	Instituto Conmemorativo Gorgas de Estudios de la Salud
Haiti	Laboratoire de Santé Publique Biologie Moléculaire, LNSP
Jamaica	Virology Laboratory, Department of Microbiology, University of the West Indies, Mona Campus
Nicaragua	Laboratorio de Virología, Dirección de Microbiología, Centro Nacional de Diagnóstico y

⁹ 1. Legislation and financing, 2. IHR coordination and National IHR Focal Point functions, 3. Zoonotic events and the human–animal interface, 4. Food safety, 5. Laboratory 6. Surveillance, 7. Human resources, 8. National Health Emergency Framework, 9. Health service provision, 10. Risk communication, 11. Points of entry, 12. Chemical events, 13. Radiation emergencies

Countries	Name of Institutions
	Referencia (CNRD), Ministerio de Salud
Suriname	Central Laboratory of the Bureau of Public Health
Trinidad and Tobago	Laboratory Services and Networks, Division of Surveillance, Disease Prevention and Control, Caribbean Health Agency (CARPHA)

Source: https://cdn.who.int/media/docs/default-source/influenza/national-influenza-centers-files/national_influenza_centres_20210526_web.pdf?sfvrsn=698779a4_22 (accessed on 07 Nov 2021)

Under the COVID-19 situation, the region leveraged the above existing network so that each country established an in-country testing or access to subregional laboratories. PAHO provided trainings and necessary supplies to the network. The remaining challenges were insufficient supplies despite of external support and to scale up testing capacities, for instance, by decentralization at the subnational level so that all COVID-19 cases can be detected and contacts traced. Restriction also affects supplies required for the sampling of patients, and, at the regional level, available supplies fall far short of local needs¹⁰.

As shown in Table 6-11, the number of COVID-19 testing per 1,000 population is the lowest in Mexico due to its largest population size among the target countries. Hospitalization, ICU, and ventilation situations vary among the countries. In Cuba, no patients were hospitalized, although there were nearly 200,000 people who sought care. Guatemala had also low hospitalization rate. According to the interviews, hospitals were over capacitated due to lack of human resources in Guatemala. Many hospital staff would not like to resume working because of fear of infection in their workplaces.

Regarding vaccination per 100 population, there were gaps among Central American countries. While five countries reported the figures more than the population, three countries, especially Guatemala and Nicaragua, still have low coverage. Among the Caribbean countries, Haiti has extremely low coverage, but generally it was more than 50% except for two countries.

**Table 6-11 Testing, Hospitalization and Vaccination in the Target Countries
(as of 6 November 2021)**

Countries	Total COVID-19 Tests per 1,000 People ¹	Sought Healthcare ²	Hospitalized Among Sought Care ²	ICU among Hospitalized ²	Ventilated Among Hospitalized ²	Vaccine Completed Schedule per 100 Population ¹	
Central America	Costa Rica	393.819	63,857	65.63%	9.62%	0.00%	127.79
	Cuba	468.015	190,519	0.00%	0.00%	0.00%	230.32
	Dominican Republic	200.104	377,270	0.10%	100.00%	100.00%	122.45
	El Salvador	136.928	99	46.46%	93.48%	93.48%	133.08
	Guatemala	159.207	202,551	0.42%	72.47%	28.00%	48.15
	Honduras	n.a.	5,817	97.39%	1.22%	0.04%	72.54
	Mexico	83.439	572,930	84.27%	19.50%	14.14%	97.41
	Nicaragua	n.a.	n.a.	n.a.	n.a.	n.a.	38.53
	Panama	932.805	37,974	85.04%	0.30%	0.30%	124.82
Caribbean	Antigua and Barbuda	169.152	7	42.86%	0.00%	0.00%	107.76
	Bahamas	371.952	17,702	11.23%	5.08%	3.17%	66.46
	Barbados	n.a.	4,129	0.27%	27.27%	27.27%	96.35
	Belize	n.a.	5,754	5.07%	28.08%	9.93%	94.94
	Dominica	n.a.	n.a.	n.a.	n.a.	n.a.	73.86
	Grenada	n.a.	n.a.	n.a.	n.a.	n.a.	61.60
	Guyana	n.a.	n.a.	n.a.	n.a.	n.a.	79.94
	Haiti	n.a.	n.a.	n.a.	n.a.	n.a.	1.17
	Jamaica	216.883	9,541	86.99%	1.20%	1.05%	33.03
	Saint Kitts and Nevis	991.895	2,663	3.68%	0.00%	0.00%	94.51
	Saint Lucia	n.a.	231	73.59%	0.00%	0.00%	51.24
	Saint Vincent and the Grenadines	693.598	116	6.90%	25.00%	25.00%	40.58
	Suriname	n.a.	12	100.00%	16.67%	16.67%	77.28
	Trinidad and Tobago	254.695	n.a.	65.63%	9.62%	0.00%	88.43

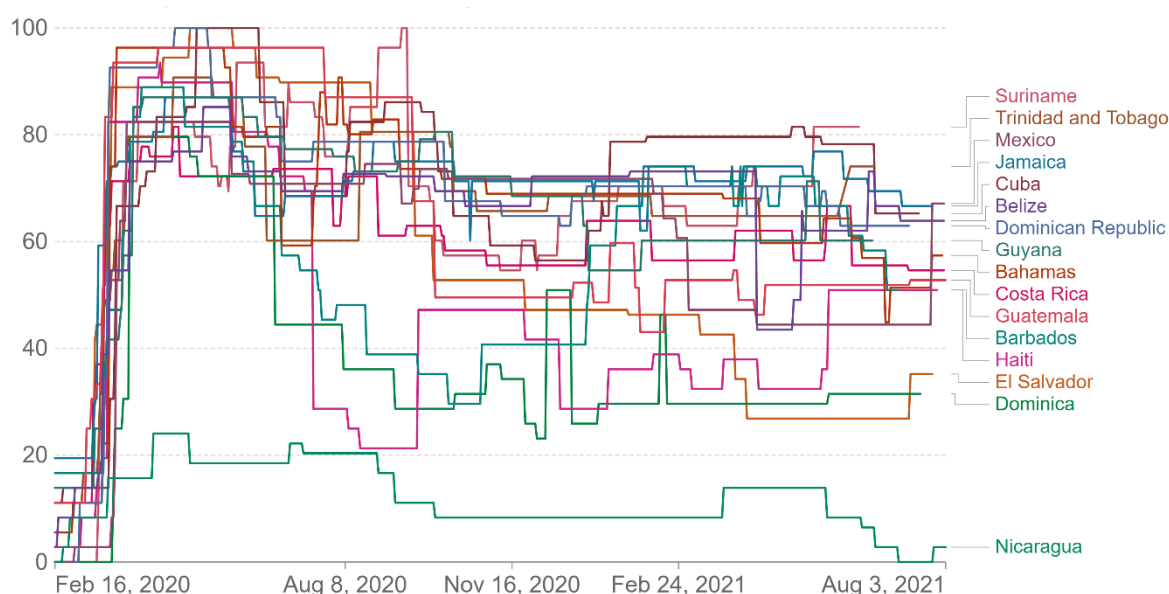
Source: 1=Statistics and Research, Coronavirus (COVID-19) Cases, Research and data, Our World in Data/
 2=PAHO, COVID-19 data reported by countries and territories in the Region of the Americas

¹⁰ Jon Kim Andrus, et al., Perspectives on Battling COVID-19 in Countries of Latin America and the Caribbean, *Am. J. Trop. Med. Hyg.*, 103(2), 2020, pp. 593–596 (<https://www.ajtmh.org/view/journals/tpmd/103/2/article-p593.xml>)

(3) Nonpharmaceutical Measures

Trends of stringency of each government (Figure 6-9) show that most of the countries started their response by early March 2020. However, the level varied. Nicaragua has not taken strict measures, while Cuba, Dominican Republic, El Salvador, Honduras, and Suriname took quite strict measures at certain periods.

Most of the countries targeted persons with symptoms for the polymerase chain reaction (PCR) testing, while Dominican Republic and El Salvador provide the test to all applicants regardless of the symptom. Contact tracing level varied among the countries. The Bahamas, Barbados, Belize, Cuba, Dominica, Guyana, and Trinidad and Tobago targeted all the confirmed cases, while sampling was applied in Dominican Republic, El Salvador, Guatemala, Honduras, and Suriname. Most of the countries required facial covering in all shared/public spaces outside their homes and with other people present or in all situations when social distancing is not possible. Mexico, Panama, Suriname, and Trinidad and Tobago required more strict measures, i.e., staying outside of the home all the time. Regarding vaccination, the Bahamas, Costa Rica, Guatemala, Mexico, and Panama started by the end of January 2021, while Belize, Cuba, Honduras, and Nicaragua started after late March 2021.



Note: Data was not available for Antigua Barbuda, Grenada, Saint Kitts and Nevis, Saint Lucia, and Saint Vincent and Grenadines

Source: Oxford COVID-19 Government Response Tracker, Blavatnik School of Government, University of Oxford. (<https://www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker>, Accessed on 5 August 2021)

Figure 6-9 COVID-19 Stringency Index (from February 2020 to August 2021)

Although contents and quality of reports on response vary among countries, the timing, quality and quantity of responses may not be relevant to the cumulative number of cases and deaths. For instance, Panama took early action and strengthened its medical system through telemedicine and additional health workers, but the number of cumulative cases was the most among the target countries. Although Mexico had activated a national warning system in January 2021, the cumulative number of deaths could not be well controlled.

Therefore, initial actions and early warning could be important, but moreover, the health system should be resilient even in peace time to take flexible actions and accelerate build back better. Also, health literacy of the general population should be improved to acquire adequate knowledge and take action to protect themselves.

(4) Maintaining of Essential Services

To minimize disruption of NCDs services, 70% of 23 responding countries of the PAHO rapid assessment¹¹ took triage patients and prioritize care based on the severity of condition, as well as telemedicine to replace in person consultations, and novel dispensing for NCD medicines.

As for maternal, newborn and child health, Every Woman Every Child Latin America and the Caribbean¹² recommended to maintain the following services:

- Reproductive health: family planning and support for gender-based violence survivors
- Maternal and child health: continuum of care from pregnancy to postnatal, growth monitoring and management of acute malnutrition, and immunization

At the same time, new technology was also encouraged to be introduced to continue maternal care, such as telemedicine using mobile phones and social media to complement access to information.

(5) Telemedicine

According to Market Data Forecast, the Latin American telemedicine market is expected to grow from USD 1.57 billion in 2020 to USD 3.48 billion by 2025 with a compound annual growth rate of 17.2% over the next five years.¹³ Telemedicine could be one of the effective solutions to fill the gap in access to quality services, and continuous opportunity of professional education for health personnel.

MDLink (<https://www.themdlink.com/>) was established in 2017 to provide telehealth services bridging doctors and patients in the Caribbean region. The services were expanded under COVID-19 situation to Central America. In addition to its existing services on online counseling on Psychiatry, General Practice, Urgent Care and Urology, Internal Medicine, and Dermatology, it started COVID-19 testing and AI screening.

TeleSAN (<https://fcm.unah.edu.hn/telesan>, established in 2017) of National Autonomous University of Honduras (UNAH) provides telemedicine in collaboration with the Secretariat of Health and COMSALUD (Cooperativa Mixta de Servicios de Salud) to remote areas. TeleSAN served more than 25,000 people especially children under-five, pregnant women, and diabetes and hypertension patients.

In Haiti, Laswenyay (<https://www.laswenyay.com/>) started remote counseling for the rural population in 2020. And in Mexico, SofiaSalud SA (<https://www.sofiasalud.com/>, established in 2018) launched video consultation by specialized doctors in 2020.

However, most of these technologies are provided in the private sector and urban areas. According to the detailed survey in Guatemala, digital transformation (DX) is not yet applicable for public sector because there is a huge gap in internet access and necessary infrastructure.

6.4.4 Activities of Major Development Partners

PAHO coordinates health sector partnership in this region. Under the COVID-19 situation, the Incident Management Support Team (IMST) was activated involving major development partners such as the United Nations (UN) agencies, international/regional banks, bilateral donors, foundations, and non-governmental organizations (NGOs). IMST supports incident management teams (IMTs) in each country to coordinate emergency response and reconstruction. PAHO provided guidelines and recommendations on testing, diagnosis, treatment and prevention, trainings (direct and remote), personal protective equipment (PPE) and PCR kits, as well as vaccination through COVAX.

¹¹ Rapid Assessment of Service Delivery for NCDs during the COVID-19 Pandemic in the Americas, PAHO 2020

¹² The Regional Interagency Mechanism for Coordinating the Adaptation and Implementation of the Global Strategy for the Women's, Children's and Adolescent's Health (2016-2030) consisting of IDB, UNAIDS, PAHO, UNFPA, UNICEF, UNWOMEN, and World Bank

¹³ <https://www.globenewswire.com/en/news-release/2020/08/18/2079966/0/en/MDLink-Announces-Plans-to-Expand-Into-Central-America.html>

IMST plans and monitors the activities according to the following ten subsectors:

- 1) Procurement, planning, financing, and monitoring;
- 2) Risk communication and community engagement (RCCE);
- 3) Surveillance, epidemiological survey, tracing, coordination of public health and social measurements;
- 4) Control of border and mass gathering;
- 5) Testing and diagnosis;
- 6) Infection prevention control (ICP) and protection of health workers;
- 7) Case management, clinical and curative services;
- 8) Operation, logistics and supply chain;
- 9) Enhancement of essential health services and health system; and
- 10) Vaccination

(1) Caribbean Public Health Agency (CARPHA)

The Caribbean Public Health Agency (CARPHA)¹⁴ develops a ten-year health cooperation plan. Strategic priorities and outcomes of the latest plan are illustrated in Figure 6-10. Even before COVID-19, CARPHA prioritizes resilience, although mainly on disaster. Also, life-long health is one of the priorities.



Source: Caribbean Cooperation in Health-IV Report 2020, CRPHA, 2020

Figure 6-10 Strategic Priorities and Outcomes of Caribbean Cooperation in Health-IV (2016-2025)

To response to COVID-19 pandemic, CARPHA activated Incident Management Team – Emergency Response (IMT-ER) on 21 January 2020. At the same time, CARPHA called the Regional Coordination Mechanism for Health Security (RCM-HS) to coordinate response and support among member countries, regional and international organizations such as Caribbean Community (CARICOM),

¹⁴ Member countries are Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago

PAHO, and IDB. Also, the regional reference laboratory helps member countries to provide testing services and verify testing capacity of member countries. In addition, regular dissemination for health experts, the general population, and travelers, as well as provision of technical guidance and trainings for health personnel are also conducted with support from the Regional Health Communication Network (RHCN)¹⁵.

(2) Council of Ministers of Health of Central America and the Dominican Republic (COMISCA)

Under COVID-19 situation, Council of Ministers of Health of Central America and the Dominican Republic (COMISCA)¹⁶ developed a regional contingency plan in March 2020 through discussion and coordination with member countries. Then, necessary assistances have been provided along with the contingency plan. It prioritizes to maintain or resume economic activities, and consist of three pillars: health and risk management, trade and finance, as well as security, justice and migration. Major assistances include providing medical goods such as laboratory equipment and supply as well as PPE, trainings for health personnel, technical assistance on infection control for public transportation and tourism sectors, etc. In the procurement procedure, COMISCA took joint procurement mechanism to reduce prices and minimize delivery time. As a result, the prices were 30% to 80% lower than the market price in each county and the delivery time was shortened from three to six months to one or two months. Also, mental health support was provided to health personnel to conduct counseling hotline in each country and other activities to protect mental health by themselves and the general population.

Based on experiences and lessons learned during COVID-19 response, the Health Plan for Central America and the Dominican Republic (PSCARD) 2021-2025 has been developed in accordance with the strategic objectives of the Health Agenda for Central America and the Dominican Republic (ASCARD) 2019-2030. ASCARD 2019-2030 and PSCARD 2021-2025 are summarized in Table 6-12 and Table 6-13, accordingly.

Table 6-12 Strategic Objectives of Health Agenda for Central America and the Dominican Republic (ASCARD) 2019- 2030

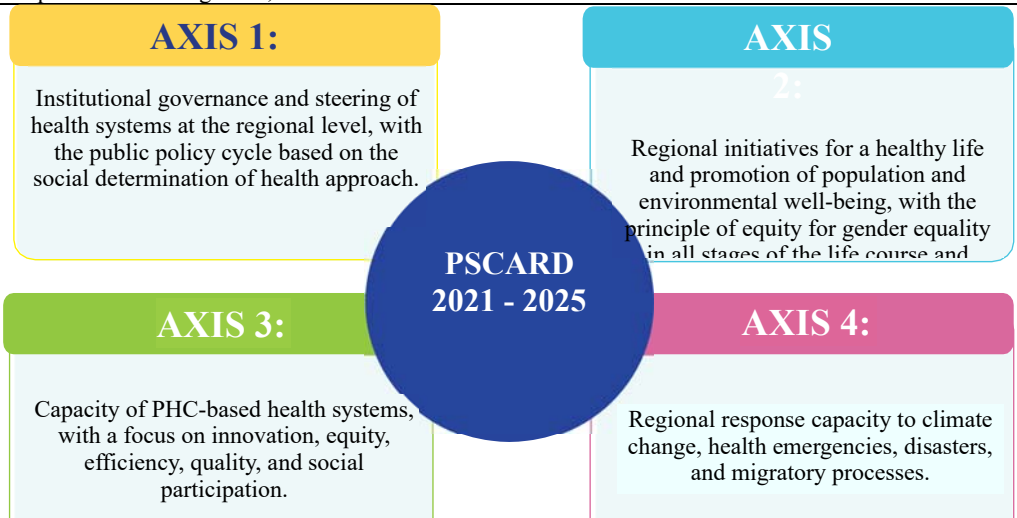
Target	Areas of Action
Strategic Objective 1: Strengthen governance and stewardship of health, with public policies that focus on social determination, promote intersectoriality and social participation.	<ul style="list-style-type: none"> ▪ Strengthening health steering capacity and governance at the regional level. ▪ Promote intersectoriality and interinstitutionality to generate regional community public goods. ▪ Guarantee adequate and sustainable financing of public health policies.
Strategic Objective 2: To guarantee a healthy life and promote well-being throughout the life course and with a gender focus.	<ul style="list-style-type: none"> ▪ Improve the health status of individuals throughout the life course. ▪ Reduce the risks and burden of communicable diseases. ▪ Halt the epidemic of chronic non-communicable diseases in Central America and the Dominican Republic. ▪ Prioritize intersectoral work from the Social Determination of Health, based on the commitments of the Regional Intersectoral Health Forum of Central America and the Dominican Republic (in migrant health, healthy environment, healthy food, mental health and women’s health).
Strategic Objective 3: Improve the capacity of health systems with equity, efficiency, quality.	<ul style="list-style-type: none"> ▪ Guarantee universal access and universal coverage to health services by promoting primary health care (PHC). ▪ Strengthen the management and development of human resources for health. ▪ Promote research and the use of evidence for the formulation of public policies and the incorporation of new technologies. ▪ Strengthen information systems and promote the use of information and communication technologies. ▪ Ensure the correct supply of medicines, vaccines and other health technologies. ▪ Strengthen the capacity to prevent, monitor, and respond to emergencies and disasters, and to adapt to climate change.

Source: Plan de Salud de Centroamérica y República Dominicana 2021-2025, SG-SICA / SE-COMISCA, June 2021

¹⁵ CARPHA. (2020). Commemorating the CARPHA 100th Situation Report: CARPHA COVID-19 Pandemic Response.

¹⁶ Member countries are Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, and Dominican Republic

Table 6-13 Outline of Health Plan for Central America and the Dominican Republic (PSCARD) 2021-2025

Principle	<ul style="list-style-type: none"> • Primary health care for universal health coverage • Health promotion by involvement of different actors • Gender mainstreaming to achieve gender equality • Equity in access to healthy living conditions • Human rights to ensure every person an adequate standard of living for health and well-being • Health in all public policies and intersectorality to improve social determinants of health • Social protection of health to overcome economic and environmental vulnerabilities • Social participation involving all stakeholders in policy formulation and evaluation process on health • Quality as a guiding principle for all interventions
Goal	By 2025, to achieve a better level of health, quality of life and well-being in the life course of the population of Central America and the Dominican Republic, guaranteeing their rights and strengthening regional cooperation and integration, within the framework of SICA
Four Pillars	

Source: Plan de Salud de Centroamérica y República Dominicana 2021-2025, SG-SICA / SE-COMISCA, June 2021

(3) IDB

Regarding the response and recovery from COVID-19 in the Caribbean region, IDB has been promoting enhancement of disaster response system and inter-country cooperation, and cooperation to maintain the supply chain¹⁷. The Health Sector Framework Document, Social Sector published in April 2021 aims to accelerate UHC with the following line of actions.

Table 6-14 Outline of the Health Sector Framework Document, Social Sector

Objective	To accelerate progress towards UHC in each country
Priority Issues:	Gender equity, inclusiveness, digital health such as electronic health records, response to health emergency caused by infectious diseases, result-based finance, institutional capacity strengthening, and financial and technical support and investment for private sector
Line of Actions:	<ol style="list-style-type: none"> 1) Multi-sector action to promote population health for life-long health promotion. 2) Addressing fiscal and financial sustainability by increasing resources for public health and improving its efficiency. 3) Improving the quality of healthcare service delivery particularly for marginal and disadvantaged groups.

Source: Health Sector Framework Document, Social Sector, April 2021, Inter-American Development Bank, Apr. 2021

(4) The World Bank

The World Bank has been providing support through new operations and by redirecting funds from existing projects. Table 6-15 summarizes supports in the health sector for Central American and Caribbean countries.

¹⁷ LAC Post COVID-19, Challenges and Opportunities, Country Department Caribbean, IDB, 2020

Table 6-15 The World Bank Support for COVID-19 Responses for the Survey Target Countries

Countries	Project	Amount	Objectives	Contents
El Salvador	COVID-19 Emergency Response Project	USD 20 million	To help prevent, detect, and respond to COVID-19, and strengthen the national public health system	Hospital equipment for treatment and patient management, medical supplies (medicines, vaccines, etc.), trainings for health personnel for public hospitals, communication and health communication among general population and health personnel
Guatemala	COVID-19 Response Project	USD 20 million	To strengthen capacity to prevent, detect and respond to COVID-19	Medical and laboratory equipment and supplies, capacity development on early identification, monitoring, notification and control of outbreaks
Honduras	COVID-19 Emergency Response Project	USD 20 million	To help prevent, detect, and respond to COVID-19	Hospital equipment, medical supplies (medicines, PPE, hygienic and biosafety materials, etc.), technical assistance and trainings for health workers, operational support for rapid response team
	Development policy credit	USD 119 million	To strengthen financial and institutional framework to health and disaster risk management	
Panama	Development policy credit	USD 41 million	To strengthen national agenda for disaster risk reduction and country action against health emergency	
Guyana	COVID-19 Emergency Response Project	USD 7.5 million	To support response and strengthen the health system	Investment for laboratory capacity, screening and surveillance, contact tracing, equipment for treatment and care
Haiti	IDA grant	USD 20 million	To help to prevent, detect and respond to COVID-19	To strengthen public health preparedness Support to boost early detection and rapid response teams Mobilization of additional health staff
	COVID-19 Response and Resilience Development Policy Operation	USD 20 million	To support long-term resilience	To enhance resilience to natural hazards and health emergency
Saint Lucia	COVID-19 Response, Recovery, and Resilience Development Policy Credit	USD 30 million	To enhance the capacity of the health sector and provide short-term relief to the poor	Mainly focusing on financial management
Trinidad and Tobago	COVID-19 Emergency Response Project	USD 20 million	To help response and strengthening the national public health preparedness	

Source: <https://www.worldbank.org/en/news/press-release/2020/04/16/el-salvador-y-honduras-recibiran-apoyo-del-banco-mundial-para-fortalecer-su-respuesta-al-covid-19-coronavirus> (last update 1 Oct 2021), <https://www.worldbank.org/en/news/factsheet/2020/04/02/world-bank-response-to-covid-19-coronavirus-latin-america-and-caribbean>

6.4.5 Japanese ODA Policy on Health Sector Cooperation

As shown in Table 6-16, the health sector is mentioned in the country cooperation policy for seven countries. However, only Haiti considers the health sector a priority area. For the others, the health sector is a part of social development or poverty alleviation.

Table 6-16 Health Sector in the Japanese Country Cooperation Policy for the Target Countries

Country	Priority Area	Policy on Health Sector
Cuba	(2) Sustainable socio-economic development	To support health and medical service development, which could be taken by PPP, with focusing on development and modernization of medical equipment as well as NCDs prevention and control
Dominical Republic	(2) Reduce inequity	To support health development for the poor in rural areas and other areas left behind by infrastructure development.
El Salvador	(3) Inclusive development	To continue cooperation for health human resource development
Guatemala	(1) Socio-economic development in poverty area	To promote sustainable and inclusive development through social development support (health and hygiene) to reduce inequity between urban area and rural areal especially where the poor and indigenous live To take close collaboration with other development partners for nutrition improvement
Nicaragua	(2) Social development for the poor and rural areas	To contribute in improving the quality of life through health and hygiene improvement for the poor in rural areas and urban slums
Belize	(2) Reduce inequity	To support economic and social development including medical services for the poor in rural area who were left behind in order to reduce inequity
Grenada	(2) Fishery	Nutrition improvement is one of the objectives of fishery development
Haiti	(1) Improvement of health and sanitation environment	To improve health services through development of infrastructure, human resource, and institutional capacity on management. For efficient infectious disease control, such as cholera, to support safe water supply, awareness raising for hygiene environment improvement, and infrastructure development

Source: Extracted from the Country Report on Economic Sector

Major cooperation projects of Japan for the past 20 years are listed in Table 6-17. Technical cooperation projects were mainly focused on primary health care, maternal and child health, and human resource development. Facilities and equipment have also been developed through grant aid. Regarding infectious disease control, capacity development for testing and surveillance were provided in Honduras. To strengthen COVID-19 treatment capacity, ICU using telemedicine will be provided with necessary technical assistances for El Salvador, Guatemala, and Mexico. In addition, a hospital for COVID-19 treatment has been developed using funds from the Stand-by Loan for Natural Disaster Recovery agreed in August 2016. Phase I started its operation with 400 beds in June 2021 and the hospital will operate 1,000 ICU beds when Phase III is completed¹⁸.

Regarding regional collaboration, a Memorandum of Collaboration (MOC) for Cooperation for Economic Recovery and Social Inclusion (CORE) in the Latin American and Caribbean (LAC) regions signed between JICA and IDB in March 2021 includes cooperation on global health toward UHC. The Japanese government has been cooperating with CARPHA through Japan-CARICOM Friendship and Cooperation Fund; awareness raising on salt intake reduction aiming to reduce hypertension and cardiovascular diseases in Grenada, Jamaica, and Trinidad and Tobago (2016), CARPHA forum on the economic aspects of NCDs in Caribbean countries (2019, but suspended due to COVID-19), and COVID-19 response project (2020)¹⁹. In November 2021, JICA and CARPHA agreed on new cooperation against COVID-19 prevention and control. “Advancing Regional Health Security for Prevention and Control of Outbreaks of Communicable Diseases in the Caribbean”²⁰. According to interview with SE-COMISCA, future partnership could be possible to collaborate on health sector development, especially human resource development, which is one of the challenges in Central America and JICA has been providing cooperation.

Inter-country cooperation has been conducted on common health issues such as infectious diseases and nursing personnel development. For example, under the nursing education project, El Salvador provides technical assistance to neighboring countries and promote experience sharing and co-learning.

¹⁸ <https://www.facebook.com/HEISalvador/>

¹⁹ <https://www.mofa.go.jp/mofaj/files/100227911.pdf>

²⁰ <https://www.jica.go.jp/stlucia/english/office/topics/press211111.html>

Table 6-17 Major JICA's Cooperation in Health Sector of the Target Countries

Countries	Projects	Scheme	Start ¹	End
El Salvador, Guatemala, Mexico	Project for Capacity Development of ICU Using Telemedicine under COVID-19 Pandemic	TC	2021	*2
El Salvador	The Project for Integrated Research and Development towards Chagas Disease Control	TC	2018	2023
	Project for Strengthening the Capacities of Medical Emergency Care in the Prehospital Care Setting in El Salvador		2016	2020
	The Project for Strengthening Nursing Education and In-service Training in El Salvador, Guatemala, Honduras, Nicaragua and the Dominican Republic		2007	2011
	The Project for Strengthening Nursing Education and In-service Training in El Salvador, Guatemala, Honduras, Nicaragua and the Dominican Republic		1997	2002
	Infrastructure and Equipment Rehabilitation Project for the Rosales National Hospital in San Salvador	GA	2005	
Cuba	Project to Promote Hospital Digitalization in Image Diagnosis	TC	2022	2025
	Project for Capacity Building of Medical Equipment Maintenance and Early Diagnosis of Cancer	TC	2017	2021
	The Project for Improvement of Medical Equipment for Strengthening Medical Services at Major Hospitals	GA	2016	
Guatemala	Project for Maternal and Child Health and Nutrition Improvement through Primary Health Care	TC	2021	2025
	Project for Maternal and Child Health and Nutrition Improvement		2016	2021
	Project for Maternal and Child Health in Quetzaltenango, Totonicapan, and Solola in the Republic of Guatemala		2011	2015
	Project for the Control of Chagas Disease (Establishment of Sustainable Surveillance System)		2009	2012
	The Project for Construction of Major National Hospitals in the Metropolitan Areas	GA	2006	
Dominican Republic	The Project for Construction of the National Puerto Barillies Hospital		2002	
	The Project for Strengthening Primary Health Care for Pregnant Women and Newborns in Health Region 3	TC	2013	2017
	Project for Prevention and Control of Uterine Cervical Cancer in the Southern States of Mexico		2004	2009
	Project for Strengthening Medical and Health Education		1999	2004
	The Project for Construction of Dominican Republic-Japan Friendship Medical Education Project	GA	1998	
Nicaragua	Project for Improving Primary Health Care through Strengthening Family and Community Health Model (MOS AFC)	TC	2020	2025
	Maternal and Child Health Project at SILAIS Chontales and SILAIS Yelaya Central		2015	2019
	Strengthening of Activities of Survey and Control for Chagas Disease		2009	2014
	Project to Strengthen Reproductive Health		2005	2009
	The Project for Strengthening of the Local System of Integral Health Care (SILAIS) of Granada		2000	2004
	The Project for the Construction of Department Hospital of SILAIS Yelaya Central	GA	2016	
	The Project for the Construction of the General Hospital in Boaco		2006	
	The Project for Improvement of Education Equipment of Nursing		2004	
	The Project for Strengthening Health Service and Reference System in the Departments of Chinandega and Granada		2004	
	Child Health Service Strengthening Project		2003	
The Project for Rehabilitation and Equipment of Health Centers in the Pacific	2002			
Honduras	The Project for the Strengthening of Health Service Delivery of Integrated Health Service Network	TC	2021	2026
	Project for Strengthening Primary Health Care System based on the "National Health Model"		2013	2018
	Project for Strengthening Adolescent Reproductive Health in Olancho Department		2008	2012
	Chagas Disease Control Project Phase 2		2003/08	2007/11
	The Vector Control of Chagas Disease		2000	2005
	The Reproductive Health Project in the Health Region No. 7		2016	
	The Project for Construction of National Laboratory of Health Surveillance	GA	2014	
	Project to Improve the Quality of Care in the Maternal and Child Health Service in the Departments of Lempira and El Paraíso		2005	

Countries	Projects	Scheme	Start ¹	End
	The Project to Strengthen the Hospital Network of Health Region No. 3		2002	
Mexico	The Project for Community Based Integrated Long Term Care for Elderly	TC	2021	2024
	Capacity Strengthening on Communicable Disease Control of Dr. Hideyo Noguchi Regional Research Center	TC	2021	2024
	Implementation Plan for “Project for Promotion of Minimally Invasive Techniques Focused on TRI Method” in Mexico	TC	2016	2019
Project for Prevention and Control of Uterine Cervical Cancer in the Southern States of Mexico	2004		2007	
Panama	Project to Strengthen Surveillance and Diagnostic Capabilities for COVID-19 and Other Emerging Diseases	TC	2021	2023
Guyana	The Project for Reconstruction of the New Amsterdam Hospital	GA	2002/03	
Haiti	Technical Advisor for the Ministry of Health and Population	TC	2022	
	The Development Project of the Jacmel Hospital in the Southeast Region	GA	2014	
Jamaica	Strengthening of Health Care in the Southern Region	TC	1998	2003
Suriname	The Project for Improvement of Basic Medical Equipment for Mother and Child Health Care Facilities	GA	2003	

Note: TC=Technical Cooperation, GA=Grant Aid, *1- Year of Exchange of Note Signing for GA, *2- 12 to 15 months from start

Source: Study Team referring to <https://www.jica.go.jp/oda/index.html>, https://www.jica.go.jp/topics/2021/20210825_01.html, and <https://libportal.jica.go.jp/library/Data/PlanInOperation/CentralAmericaCaribbean/CentralAmericaCaribbeanURLlist.pdf>

6.4.6 Grouping of Target Countries

Based on the analyses of pre-COVID-19 and the impacts, in the health and nutrition sector, the target countries are classified into two groups, i.e., Central American and Caribbean countries, as shown in Table 6-18.

Table 6-18 Grouping of the Target Countries in Health and Nutrition Sector

Countries		Pre-COVID-19 Situation	With/Post- COVID-19 Situation
Central America	Costa Rica	Health and Demography	<ul style="list-style-type: none"> ▪ Higher proportion of death to number of confirmed cases ▪ Better reporting practice to international/ regional database ▪ Gap in vaccine coverage ▪ Gap in access to proper information due to language, education, and household income
	Cuba	<ul style="list-style-type: none"> ▪ Undernutrition among children 	
	Dominican Republic	<ul style="list-style-type: none"> ▪ Higher fertility rate and population growth 	
	El Salvador	<ul style="list-style-type: none"> ▪ Emerging infectious diseases (Malaria, Zika, Chikungunya, etc.) 	
	Guatemala	Health System	
	Honduras	<ul style="list-style-type: none"> ▪ Higher coverage of MCH services 	
	Mexico	<ul style="list-style-type: none"> ▪ Fragmented health services in the public sector ▪ High out-of-pocket expense 	
	Nicaragua	<ul style="list-style-type: none"> ▪ Insufficient hospital beds and human resources 	
Caribbean	Panama	Health and Demography	<ul style="list-style-type: none"> ▪ More of confirmed cases and death ▪ Insufficient data submission to international/ regional database ▪ Lower vaccine coverage, especially Haiti ▪ Telemedicine is rapidly expanding in the private sector
	Antigua and Barbuda	<ul style="list-style-type: none"> ▪ Serious situation in Haiti in most health indicators 	
	Bahamas	<ul style="list-style-type: none"> ▪ Aging society 	
	Barbados	<ul style="list-style-type: none"> ▪ Higher burden of non-communicable diseases, especially cardiovascular disease, and diabetes 	
	Belize	<ul style="list-style-type: none"> ▪ Increasing obesity among adolescents 	
	Dominica	<ul style="list-style-type: none"> ▪ Higher maternal mortality ratio 	
	Grenada	Health System	
	Guyana	<ul style="list-style-type: none"> ▪ Vulnerable to disaster due to small countries 	
	Haiti	<ul style="list-style-type: none"> ▪ Fragmented health services between the public and private sectors 	
	Jamaica	<ul style="list-style-type: none"> ▪ Brain-drain of health personnel 	
	Saint Kitts and Nevis	<ul style="list-style-type: none"> ▪ Lower coverage of MCH and immunization services 	
	Saint Lucia	<ul style="list-style-type: none"> ▪ Advanced e-health as a part of e-government 	
	Saint Vincent and the Grenadines	<ul style="list-style-type: none"> ▪ Region-wide procurement system 	
	Suriname		
	Trinidad and Tobago		

Source: Study Team

As shown in Table 6-19, the economic status is better in the Caribbean, but health status seems to show significant difference in general. However, stunting among children is more serious in Central America. Life expectancy is longer in Central America, but aging rate is higher in the Caribbean. Overweight among adults are higher in Central America, but the burden of non-communicable diseases could be higher in the Caribbean.

Service providing capacity such as hospital beds and health personnel is better in the Caribbean. However, MMR and under-five mortality are higher and antenatal care coverage is lower in the Caribbean.

When the extreme cases, which are Cuba with high capacity of health service provision and Haiti under unstable condition, were excepted, undernourishment is better in the Caribbean, however, it is significantly high in Haiti. And Cuba contributed to health expenditure per capita and number of doctors.

Table 6-19 Pre-COVID-19 Indicators in the Central American and Caribbean Countries

Indicators	Central America	Caribbean	Central America exp. Cuba	Caribbean exp. Haiti
GDP per Capita, Constant 2010 USD	6,457.20	10,693.92	6,413.74	11,420.76
Life Expectancy at Birth, Total (years)	75.84	73.15	75.48	74.01
Cause of Death, by Non-communicable Diseases (% of Total)	75.03	77.26	73.99	78.4
Mortality Rate, under-5 (per 1,000 live births)	16.28	21.09	17.66	17.73
MMR 2017	60.78	108.42	63.88	74.64
Antenatal Care 4+	92.11	83.0	91.38	84.33
Population Ages 65 and Above (% of total population)	7.8	8.62	6.87	8.95
Prevalence of Undernourishment (% of population)	9.02	11.07	9.84	6.43
U5 Stunting	16.54	8.64	17.74	8.64
U5 Overweight	6.94	7.83	6.94	7.83
Overweight, Adult Men	37.89	31.14	38.13	31.0
Overweight, Adult Women	33.89	29.86	34.13	29.77
Health Spending per Capita (USD PPP)	1,062.7	909.4	885.0	973.0
Current Health Expenditure (% of GDP)	7.28	5.97	6.8	5.84
Out-of-Pocket Expenditure, % to Total Health Expenditure	35.11	34.14	38.25	33.69
Hospital Beds (per 1,000 population)	1.68	2.69	1.24	2.84
Doctors (per 1,000 population)	2.26	1.63	1.49	1.74
Nurses (per 1,000 population)	2.5	3.19	1.86	3.38

Source: Circulated by Study Team based on Statistics and Research, Coronavirus (COVID-19) Cases, Research and data: Hannah Ritchie, Esteban Ortiz-Ospina, Diana Beltekian, Edouard Mathieu, Joe Hasell, Bobbie Macdonald, Charlie Giattino, Cameron Appel and Max Roser, and World Development Indicators, The World Bank

Table 6-20 presents the comparison of COVID-19 relevant indicators between Central America and the Caribbean. The numbers of patients and deaths are not significantly different. The number of testing per 1,000 population is higher in the Caribbean, but vaccine completion coverage is lower. ICU and ventilation among hospitalized patients are also lower in the Caribbean.

Table 6-20 Indicators Relevant to COVID-19 in the Central American and Caribbean Countries (as of 06 November 2021)

	Central America	Caribbean
COVID-19 total cases per million	50,753.45	51,659.60
COVID-19 total death per million	982.90	1,026.61
Total COVID-19 tests per 1,000 people	339.19	449.7
Vaccine completed schedule per 100 population	110.57	69.08
Hospitalized among sought care (%)	47.4%	36.7%
ICU among hospitalized (%)	37.1%	11.5%
Ventilated among hospitalized (%)	29.5%	9.2%

Source: Circulated by Study Team based on Statistics and Research, Coronavirus (COVID-19) Cases, Research and Data, Our World in Data, and PAHO, COVID-19 data reported by countries and territories in the Region of the Americas

6.5 Selection of Priority Countries by Sector

6.5.1 Criteria for Priority Countries

Considering the above analysis, the Study Team assumes that the existing problems in the health status and vulnerability of health systems might be actualized under COVID-19 situation. Also,

considering high risk groups such as the aged, NCDs patients, women and children, as well as JICA’s cooperation strategy, the criteria for priority countries were set as listed in Table 6-21.

At the same time, in view of the current situation in the region where small countries and island nations come and go to maintain socio-economic activities, it is necessary to strengthen intra-regional cooperation in order to facilitate coordination and the sharing of information and resources in the event of health emergency. Therefore, region-wide cooperation could also be considered aiming to enhance regional coordination platform under common health concerns such as aging.

Table 6-21 Criteria for Priority Countries

Criteria	Viewpoints
Relevance with priority health issues in the Central American and Caribbean regions <ul style="list-style-type: none"> • PHC model development and implementation • Reduce inequity in access to health services • Strengthening of fragmented and vulnerable health system 	Issues in health system <ul style="list-style-type: none"> • Low service coverage of MNCH services at PHC level • Insufficient hospital beds and doctors • High OOP
Relevance with priority issues of JICA’s health cooperation strategy in the region <ul style="list-style-type: none"> • PHC • MNCH and nutrition • Aging 	Double or triple burden of health outcome issues <ul style="list-style-type: none"> • Mortality of mothers and children • Malnutrition (under and over) • NCDs • Aging

Source: Study Team

6.5.2 Priority Countries

The following countries were selected in accordance with the criteria (Table 6-22). As for regional program countries, interventions should be considered to apply common issues among the target countries.

Table 6-22 Priority Countries

Priority countries	Rationales
Guatemala	<ul style="list-style-type: none"> • High infant mortality rate • High stunting prevalence among children • Continuous JICA cooperation for maternal and child nutrition
Honduras and Nicaragua	<ul style="list-style-type: none"> • High stunting prevalence among children • NCDs risk due to high prevalence of overweight among adults • JICA’s cooperation plan on PHC
Regional program countries (Mexico, Antigua and Barbuda, Bahamas, Barbados, Saint Vincent and Grenadines, and Suriname)	<ul style="list-style-type: none"> • Burden of aging and NCDs/ overnutrition • Those could be risk factors of increase in NCDs, health expenditure, long-term care needs, and negative impact to national economy

Source: Study Team

6.6 Detailed Survey by Sector

6.6.1 Target Countries for the Detailed Survey

Target countries for the detailed survey are three priority countries as described in Section 6.4, which includes Guatemala, Honduras, and Nicaragua, as well as Dominican Republic where the pilot project is being conducted.

6.6.2 Methodology of the Detailed Survey

The detailed survey was conducted mainly by key informant interviews and data collection undertaken by local experts. The outline of the detailed survey is presented in Table 6-23.

As for the Dominican Republic, a Japanese member will conduct field survey. The survey results on Dominican Republic are presented in Table 6-23.

Table 6-23 Outline of the Detailed Survey

Countries	Period	Major Interviewees
Guatemala	20 Sep. – 31 Oct. 2021	<ul style="list-style-type: none"> ▪ National Nutrition Consultant PAHO/WHO ▪ Ministry of Public Health and Social Assistance (MSPAS) <ul style="list-style-type: none"> ➢ Comprehensive Health Care System (SIAS) Section ➢ Risk Management Unit ▪ Totonicapán Health Department ▪ Ixil Health Department
Honduras	20 Sep. – 30 Nov. 2021	<ul style="list-style-type: none"> ▪ Ministry of Health <ul style="list-style-type: none"> ➢ Statistics Department ➢ Health Surveillance Unit ➢ Integrated Health Service Network Department
Nicaragua	01 Oct. – 15 Nov. 2021	<ul style="list-style-type: none"> ▪ Due to strict information control, interviews were conducted in informal basis.

Source: Study Team

6.6.3 Results of the Detailed Survey

(1) Guatemala

Guatemala has been facing a double burden or malnutrition; the highest proportion of stunting among children under five in this region, and increasing obesity among both adults and children. The Government of Guatemala prioritizes nutrition improvement in the national long-term development strategy, K'atun 2032. Although Guatemala has taken multistakeholder approach for nutrition improvement ahead of other countries since 2005, the progress is slow to obtain the results. Background factors of such malnutrition in Guatemala include various factors of socio-economic and cultural aspects such as poverty, gender, gap in access to education, health, and other essential services.

The international society has been provided various forms of assistance to improve the above situation as presented in Table 6-24. As listed in Table 6-17, JICA has been providing cooperation to improve maternal and child health.

Table 6-24 Activities of Major Development Partners in Health and Nutrition Sector in Guatemala

Project Title	Project Description	
IDB		Approved
ALMA: Automated Medical Logistics Assistant to improve access to health services	The objective of the project is to expand access to and generate valuable epidemiological information for decision-making on health and development issues at the national level, through the creation and implementation of technological tools to contribute to the reduction of the incidence of acute respiratory infections, food- and waterborne diseases, and vector-borne diseases.	8-Oct-2021
Guatemala - Regional Malaria Elimination Initiative (RMEI) in Mesoamerica and Dominican Republic	The objective of the project is to contribute to the elimination of malaria in Guatemala, through the interruption of the transmission of the parasite from the human being, improving the diagnosis and management of cases, the strengthening of the country's epidemiological surveillance system for notification and investigation of cases and integrated vector management.	30-Jan-2020
Transition Grant and Technical Support for Malaria Elimination	The objective of the project is to support the country in the elimination of malaria by 2024 and prevent its reintroduction at the national level in a sustainable way.	Under preparation
Program to Strengthen the Institutional Healthcare Service Network (PRORISS)	The objective of the program is to help reduce maternal and child mortality primarily in the departments of Huehuetenango and San Marcos, by modernizing the national healthcare network so it can deliver timely, quality, and efficient services.	30-May-2019
Facing the challenge of undernutrition and obesity	The objective is to strengthen the community implementation of the Sustainable Program to Improve Nutrition (SPOON, the first regional project to tackle chronic malnutrition and obesity simultaneously in four countries at once (Colombia, Guatemala, Mexico, and Peru)) Project in Guatemala and conduct additional activities related to monitoring, evaluation and learning with the goal of preventing chronic malnutrition and the risk of obesity in children less than two years old living in poor and vulnerable regions of the country.	11-Dec-2015
The World Bank		Approved
Crecer Sano: Guatemala Nutrition and Health Project	To improve selected practices, services and behaviors known to be key determinants of chronic malnutrition (with an emphasis on the first 1,000 days of life) in the intervention areas. There are three components to the project: (1) providing inter-sectoral services to address chronic malnutrition risk factors. (2) results-based financing to: (i) promote the use of health services, including	24-Mar-2017

Project Title	Project Description	
	timely prenatal care; (ii) promote behavioral changes, including exclusive breastfeeding during the first six (6) months of life; and (iii) strengthen the CCT Program in the intervention areas. (3) supporting project management, monitoring and evaluation	
PAHO		Period
Primary Health Care and Nutrition Project (funded by European Union)	To improve nutrition status of children under five, adolescents, and women in reproductive age with prioritizing on the first 1000 days in the selected three departments.	(4 years)
USAID		Period
Health and Education Policy Project Plus (HEP+)	To support sector reform in the education, nutrition, and health sectors; and the development of civil society capacity to undertake advocacy and accountability efforts and promote a policy dialogue among national, departmental, and local stakeholders.	2016 - 2022
Improved Health and Nutrition	To improve the health and nutritional status of women and children in the Western Highlands by strengthening institutions implementing health and nutrition policies. Also, food assistance and social behavior change interventions are included.	2020 - 2025

Source: <https://www.iadb.org/en/projects>; <https://projects.worldbank.org/en/projects-operations/projects-home>;
<https://www.paho.org/es/proyecto-atencion-primaria-salud-nutricion-guatemala>;
<https://www.usaid.gov/guatemala/programs>

Regarding emergency response, based on experiences and lessons learned in responding in major disasters, the Ministry of Public Health and Social Assistance (MSPAS) has a risk management unit that provides the guidelines to the services, and the local health authorities and hospitals have emergency plans. However, under COVID-19, some were outdated, and even though a mechanism has been set up, it was not well functioning. Also, such emergency response bodies did not have financial resources for recovery and rehabilitation activities, but only for emergency response and disaster management.

1) Gap in Access to Appropriate Information

According to PAHO in Guatemala, there are 22 different languages and 48% of the population are ethnic minorities. This situation is one of the causes of information gap in the health sector. For instance, 34% of women does not know about cervical cancer screening and 62% have never been tested. It suggests that 28% knows but never had the screening. As for child vaccination, some groups especially in inland and rural areas believe inappropriate information (harmful for young women, etc.) and prohibit health personnel to come to their community. Even under COVID-19 situation, many people did not understand the reason of curfew. To fill such gap, the government sets up a telephone counseling center to provide appropriate information on COVID-19.

Due to variety of ethnic groups, public health information could not provide information in all languages used in Guatemala. Although there are community radios to provide information in the local language along with cultural context, most of those are in difficult financial situation.

Gender also affects access to health information. For example, men usually do not access to health facilities until they feel sick. Therefore, early intervention on NCDs prevention for adults and behavior change are also difficult. Behavior change communication through virtual communication should be combined with other activities such as peer education at the health facilities to promote and maintain healthy lifestyle and continue appropriate intervention of disease control. Some secondary hospitals operate diabetes clubs to provide opportunity of interactive awareness raising activities.

Interviewees pointed that social networking services (SNS) could be effective to provide in multiple language, but cultural context of each group should be considered to develop information and communication materials.

2) Human Resource for Health

Even before COVID-19, human resource for health was not sufficiently distributed especially at the primary level. Under COVID-19, many health workers left their workplaces because of infection or intimate contact, and deny returning to their workplace because of fear of infection, or insufficient protection and support from the management. Although the government sets up temporary hospitals for

diagnosis and treatment of COVID-19, there are not sufficient human resources to provide appropriate services.

At the primary level, there are security issues in rural areas as some communities or particular groups require commission to operate a health facility. Also, frontline health workers are usually overloaded because they have to do designated tasks each for different health programs. According to the interview, a nurse working at a primary health facility has to deal with more than 18 health programs.

The government provided PPE, but other types of support such as psychological care have not been provided. Although necessary knowledge and skills to deal with COVID-19 and infection prevention and control were provided through virtual trainings, the level of understanding and practice could not be monitored.

3) Gap in Service Access

Before COVID-19, there was a gap in access to quality health services caused by household economy, level of education, gender, etc. Although maternal and child health is prioritized in rural areas, there still were difficulties in accessing services such as distance to the nearest health facility, lack of specialized health personnel, etc.

Under COVID-19, the government ordered private institutions to provide necessary services. As a result, 3,796 beds including 3,043 isolation beds and 753 ICU beds were provided, but 70% of these were in urban areas. Also, due to high prices, the poor could not access to such private health facilities and affected by the closure of the outpatient department and postponement of surgeries of the public hospitals. In addition, necessary equipment and supplies, such as ventilators and PPE, were not sufficient and stable. On the other hand, some health facilities procured a certain volume of medicines according to the government's instruction and additional fund disbursement. However, because patients did not access to health facilities due to fear of infection, many medicines got expired.

At the household level, prices of sanitary goods such as face masks, soaps, and sterilizations have been sharply raised and caused additional burden to the household economy.

For the other health services such as immunization and reproductive health services, coverages declined due to fear of infection and closure of health facilities. However, exclusive breastfeeding was continuously supported through remote communication. Facility-based delivery was also maintained the coverage with active support of the communities. Information, education and communication (IEC) materials developed under the previous JICA project were effectively utilized to raise awareness of hypertension and diabetes prevention. Also, some community actively carried out emergency response, community involvement, follow-up of discharged patients, and detection of wasting children under good collaboration with community leaders. As for nutrition, due to delay or suspension of supply delivery, necessary programs such as Vitamin A supplementation were not conducted. Local health authorities pointed out that because follow-up of NCDs patients was less prioritized than maternal and child health and many patients hesitated to access to NCDs services, worsening of condition or death might be increased.

Pilot projects of telemedicine in some municipalities of two departments are implemented by PAHO. However, it will hardly be a national policy due to the lack of infrastructure and connection to internet networks, even in some remote areas where there is limited guarantee of electricity.

4) Response to COVID-19

In Guatemala, disaster medicine has been developed based on experiences of previous hurricanes. However, the budget covers emergency response only, not recovery nor reconstruction. Although local health authorities and hospitals have emergency response plans, those have not been updated and not well considered to protect the health personnel physically and psychologically.

To fill the gap of demand and supply of human resource for health for emergency response to COVID-19, Ministry of Health and Social Assistance (Ministerio de Salud Pública y Asistencia Social: MSPAS) proposed to hire 2,002 additional health workers in 2020. However, due to short-term contract and frequent delay of payment, it has been difficult to secure necessary number and retain them.

(2) Honduras

In Honduras, the National Health Model has been implemented to ensure health service delivery and access to all the people based on PHC enhancement since 2013. Then, maternal and child health indicators have been improved; MMR was 85 in 2000 to 65 in 2017, under-five mortality rate was 37 in 2000 to 16.8 in 2019. However, the burden of NCDs has been increasing and 71% of total death was caused by NCDs in 2019²¹. Also, risk factors have been increasing such as overweight among adult population (men 36%, women 33% in 2019)²².

To achieve UHC, the Ministry of Health has been working on health care reform under the Institutional Strategic Plan 2018-2022. It aims to strengthen the implementation of the national health model through improvement of the integrated health service network (Redes Integradas de Servicios de Salud: RISS) consisting of family health teams, primary and health facilities, and a network coordination team in a micro health service network, and national referral system (Sistema Nacional de Referencia y Respuesta: SINARR).

The international society has been providing assistance to support the government's effort as listed in Table 6-25. JICA also has been cooperating to enhance the national health model (Table 6-17).

Table 6-25 Activities of Major Development Partners in Health and Nutrition Sector in Honduras

Project Title	Project Description	Approved
IDB		Approved
Strengthening of pre-hospital and medical-surgical emergencies care services at the Hospital Escuela de Tegucigalpa	(Details are not yet published.)	NA
Innovative Energy Solutions for Health Service Delivery in Honduras	Reduce the saturation of the Honduran health system caused by COVID-19 pandemic, and improve the coverage and quality of health services, through the deployment of peripheral clinics designed with recycled maritime containers and with solar energy sources.	3-Dec-2020
Design of a Program for the Training of Specialists in Intensive Care and Emergencies in Honduras	Support the Government of Honduras through the Universidad Nacional Autónoma de Honduras (UNAH) in the design of a Program for the Training of Specialists in Intensive Care and Emergenciology and contribute to reduce the human resources gaps of these specialties in the country.	5-Nov-2021
Improving Early Detection and Timely Access to Rehabilitation Services for Children 0-5 years old	Aiming to contribute to the early detection of neurological risks and damages in children from 0 to 5 years old, caused mainly by complications in childbirth, in order to provide them with stimulation and rehabilitation services in a timely manner, to improve in the future their conditions and life opportunities both school and work.	1-Oct-2020
Support for the Transformation of the Public Health System	The objective is to support the Ministry of Health in the design and implementation of an efficient and transparent system of public procurement, and a management control system to improve coverage and quality in the provision of health services.	0-Oct-2019
Support for the preparation of the National Health Benefits Plan (PNBS) in Honduras	To provide technical assistance to the Secretary of Health (SESAL) of Honduras in the design and costing of the Guaranteed Set of Benefits and Health Services (CGPSS) as a tool to guarantee the right to health under equal conditions for the entire population and thus, access an equitable health system, which will provide higher quality services and opportunity.	8-Jun-2019
Design and Implementation of the Management and Financing Model for Tegucigalpa Trauma Hospital	To support the design of a systemic model of management, care and financing for the Hospital de Trauma of Tegucigalpa, which guarantees efficiency, opportunity and quality in the care of patients who access the hospital.	3-Jun-2019
HONDURAS-Regional Malaria Elimination Initiative (RMEI) in Mesoamerica and Dominican Republic	Support technically and financially to Honduras to co-finance investment in health, in the areas with the highest incidence of malaria, to implement cost-effective interventions that lead to elimination under a results-based financing scheme.	3-May-2019
Comprehensive Strengthening of Tegucigalpa's Trauma and Emergency Care Network	The objective is to strengthen the supply of trauma and emergency services in Tegucigalpa and the Central-Southeast region by building a new trauma hospital, to improve the quality of life and care of patients	12-Dec-2018

²¹ World Development Indicators, the World Bank, accessed on March 2021

²² OECD/The World Bank (2020), Health at a Glance: Latin America and the Caribbean 2020, OECD Publishing, Paris

Project Title	Project Description	
	with externally caused injuries and other pathologies through decongestion of services at the University Hospital.	
Program to improve the management and quality of maternal-neonatal health services	The objective is to contribute to the reduction of maternal-neonatal mortality in the poorest municipalities of the country and in the prioritized hospitals by improving the quality, management, and responsiveness of health services and supporting the policy for Accelerated Reduction of Maternal and Child Mortality.	03-Oct-2018
Support for the Implementation of the Integrated Human Resources Management and Control System of the SESAL	Support the Ministry of Health to improve the efficiency in the management of human resources both at the central level and at the health services.	17-Jul-2018
Mesoamerican Health Initiative in Honduras- Third Individual Operation	The main objective is to contribute to improving the access, coverage and quality of maternal and child health services, nutrition and women of childbearing age in the selected population of the poorest municipalities in the country.	16-Jul-2018
The World Bank		Approved
Corredor Seco Food Security Project	The objective is to enhance food and nutritional security of vulnerable households in selected areas of the dried regions. The project consists of three components; (1) food production and rural household income generation, (2) nutrition education and household hygiene to improve the nutrition status of pregnant and lactating women and children, and (3) monitoring, evaluation, and project management	24-Sep-2015
PAHO		Period
Diabetes Surveillance Project (funded by the Government of Denmark)	Aiming to improve diabetes information systems, and delivered new equipment to improve monitoring and surveillance, to create and agree a two-year national plan for the improvement of the health information systems, and to improve diagnostics and monitoring frameworks.	2020 – 2022

Source: <https://www.iadb.org/en/projects>; <https://projects.worldbank.org/en/projects-operations/projects-home>; <https://www.paho.org/en/stories/honduras-building-national-road-map-diabetes-surveillance>

1) Maternal and Child Health Services

The containment measures established to face the COVID-19 pandemic and reduce morbidity and mortality have had direct consequences on women's health²³.

At the beginning of the pandemic in 2020, pregnant women were not considered a vulnerable population against COVID-19. The main pandemic containment plans were aimed at other groups such as: the population with comorbidities and the elderly population, the population living in centers of temporary or prolonged stay (prisons, schools, geriatric homes, etc.)²⁴. However, it was recognized that pregnant women are a vulnerable population because COVID-19 has contributed worldwide to the ratio of maternal mortality and associated complications^{25,26}. During pregnancy, there are physiological changes that make women more susceptible to respiratory infections: acute respiratory syndrome (SARS) and Middle Eastern Respiratory Syndrome (MERS)^{27,28}.

In Honduras, few studies have been published about COVID-19 and its impact on health (Miranda 2020), for that matter it was necessary to conduct interviews with authorities from the Ministry of Health and PAHO to obtain useful information that reflected the maternal health view in the country. Currently, about 60% of maternal deaths in Honduras are due to hemorrhages, infections, and

- 23 Townsend R, Chmielewska B, Barratt I, Kalafat E, van der Meulen J, Gurol-Urganci I, et al. Global changes in maternity care provision during the COVID-19 pandemic: A systematic review and meta-analysis. *EClinicalMedicine*. 2021 Jun 19; 37:100947
- 24 Zhou F, Yu T, Du R, Fan G, Liu Y, Liu Z, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet*. 2020 Mar 28;395(10229):1054-1062
- 25 Takemoto MLS, Menezes MDO, Andreucci CB, et al. The tragedy of COVID-19 in Brazil: 124 maternal deaths and counting. *Int J Gynecol Obstet*. 2020;151(1): ijgo.13300.
- 26 Lumbreras-Marquez MI, Campos-Zamora M, Lizaola-Diaz de Leon H, Farber MK. Maternal mortality from COVID-19 in Mexico. *Int J Gynecol Obstet*. 2020;150(2):266-7
- 27 Rasmussen SA, Smulian JC, Lednický JA, Wen TS, Jamieson DJ. Coronavirus disease 2019 (COVID-19) and pregnancy: what obstetricians need to know. *Am J Obstet Gynecol* 2020; published online Feb 24
- 28 Wastnedge EAN, Reynolds RM, van Boeckel SR, Stock SJ, Denison FC, Maybin JA, et al. Pregnancy and COVID-19. *Physiol Rev*. 2021;101(1):303-18

hypertensive disorders; however, the pandemic has contributed to the maternal mortality ratio, turning pregnant women and those in the immediate puerperium into a vulnerable population²⁹.

To address the impact of COVID-19 on maternal health, it was considered important to obtain information on the main indicators of maternal health, evaluating prenatal, delivery, and postpartum care, due to the decrease or delay in seeking medical care in these groups during the pandemic^{16 30}. The decrease in seeking health care services during epidemics is not new. During the Ebola epidemic, the search for medical care was reduced by 18%, mainly in maternal care and hospitalization services³¹.

In Honduras, 20% decrease in access to prenatal care coverage is estimated due to the reduction of maternal care in the number of new pregnant women and pregnancy control during 2020 compared with 2019 (Table 6-26). Similarly, during the pandemic, the Study Team observed that 16% of early pregnancy uptake (before 12 weeks of gestation) were not done compared with 2019, and 16% of postpartum women were left unattended during the pandemic compared with 2019.

Table 6-26 Number of Maternal Care Services Provided in 2019 and 2020

Types of Services	2019 (n)	2020 (n)
Registration of new pregnant women	265,378	212,433
Pregnant women in control	602,373	481,561
Early pregnancy uptake (before 12 weeks)	79,899	67,570
New puerperal care during first 10 days	83,219	69,446

Source: Ministry of Health, Health Statistics Area, AT2-R

Currently, there are no studies explaining this decline in medical care in Honduras. However, some studies consider that the confinement measures that have been taken to contain the virus, the lack of access to public transport due to the confinement, as well as the fear of being infected while they are inside the health facilities, have been the main reasons why women have not sought medical attention²⁹.

It is significant to ensure that every pregnant woman has access to a safe delivery and to the continuum of prenatal and postnatal care to prevent risk situations that endanger her life and the fetus. During the pandemic, there was a decrease of about 10% in institutional delivery care throughout the country; however, the Maternal and Child Services and Polyclinics were the only primary level facilities that presented an increase of 10% and 15%, respectively, during the pandemic. This is important since it reflects that these first-level care facilities fulfill their objective of capturing all women who have barriers of access to some basic or general hospital, and it shows the concern of women to receive suitable medical care.

Remarkably, the percentage of women who had community birth (treated out-of-hospital) was not affected, since 3,667 women with out-of-hospital delivery in 2019 compared with 2,733 women in 2020 (Table 6-27). It is important to highlight the possibility of underreporting due to the drop-in maternal care that was found in 2020. Among the community birth during 2019 and 2020, 43% were attended. Attention to a delivery implies that all providers of these services receive adequate training to identify risks and refer in a timely manner to a health facility. Foregoing confirms the challenge that the Ministry of Health has in integrating community midwives into health services and obstetric-neonatal training, so that they can become a support for the community and the entire network of services.

Table 6-27 Number of Home Deliveries by Type of Birth Attendants 2019-2020

Types of Birth Attendants	2019 (n)	%	2020 (n)	%
Trained midwives	2067	56.37	1536	56.20
Untrained birth attendants	1600	43.63	1197	43.80
Total	3667	100.00	2733	100.00

²⁹ Secretaria de Salud. Vigilancia de la mortalidad materna por COVID-19. Unidad de Vigilancia de la Salud, semana epidemiológica 1-27, 2021

³⁰ Goyal M, Singh P, Singh K, Shekhar S, Agrawal N, Misra S. The effect of the COVID-19 pandemic on maternal health due to delay in seeking health care: Experience from a tertiary center. *Int J Gynaecol Obstet.* 2021 Feb;152(2):231-235.

³¹ Wilhelm JA, Helleringer S. Utilization of non-Ebola health care services during Ebola outbreaks: a systematic review and meta-analysis. *J Glob Health.* 2019 Jun;9(1):010406

Source: Ministry of Health, Health Statistics Area, Volunteers

In the second week of November 2021, a reorientation of the medical resource and of nursing staff that worked in COVID-19 triages towards Family Health Teams was conducted to strengthen the initiative of the new National Health Model in Primary Health Care³², and in this way, identify barriers to access, health promotion, and recruitment of vulnerable population.

2) Maternal Mortality in Honduras

Honduras is a low-income country, where maternal mortality continues to be high, even though from the 1990s to 2015, the initiatives and measures taken by the international organizations and the Ministry of Health, have contributed to slowing maternal mortality, going from 182 deaths to 60 deaths per 100,000 live births by 2015. In 2019, 93 maternal deaths were estimated, since then international organizations such as the IDB, PAHO, JICA, among others, have worked on issues related on maternal health to mitigate this indicator.

Until 2020, about 60% of maternal deaths in Honduras continue to be due to hemorrhages, infections, and hypertensive disorders. However, the COVID-19 pandemic has contributed to the maternal mortality ratio, making them a vulnerable population. At the end of 2020, there was an increase that estimated 103 maternal deaths. This negative impact can be explained by obstetric complications and other maternal-fetal alterations³³. Table No. 3 shows that, until May 31, 2021, 66 maternal deaths were reported, of these deaths, 40 are due to COVID-19 (60.6%) (Table 6-28).

Currently, the guidelines for the management of COVID-19 consider pregnant women and those in the immediate puerperium as a group with epidemiological risk, and this population has been encouraged to attend vaccination centers and receive the corresponding doses of Pfizer vaccine. To date, about 60,000 Honduran pregnant women have received the first dose of the COVID-19 vaccine and about half are inoculated with the second dose³⁴.

Table 6-28 Maternal Deaths from COVID-19 According to Sanitary Region Epidemiology Week No. 1 to 27 (First Semester 2021)

No.	Health Region	Maternal Deaths All Causes 2021	Maternal Deaths by COVID-19 2021	%
1	Atlántida	1	1	100
2	Colon	3	1	33
3	Comayagua	4	4	100
4	Copán	6	2	33
5	Cortés	8	5	62
6	Metropolitana SPS	6	4	66
7	Choluteca	3	3	100
8	El Paraíso	6	1	17
9	Francisco Morazán	0	0	0
10	Metropolitana DC	9	4	44
11	Gracias a Dios	1	1	100
12	Intibucá	1	0	0
13	Islas de la Bahía	0	0	0
14	La Paz	4	3	75
15	Lempira	0	0	0
16	Ocotepeque	0	0	0
17	Olancho	5	4	80
18	Santa Barbara	5	4	80
19	Valle	0	0	0
20	Yoro	4	3	75
Total		66	40	60

Source: Health Surveillance Unit, Ministry of Health Honduras 2021

³² Secretaria de Salud. Modelo nacional de Salud. Honduras. 2013

³³ Villar J, Ariff S, Gunier RB, et al. Maternal and Neonatal Morbidity and Mortality Among Pregnant Women With and Without COVID-19 Infection: The INTERCOVID Multinational Cohort Study. *JAMA Pediatr.* 2021;175(8):817–82

³⁴ Secretaría de Salud. BOLETÍN ESTADÍSTICO DE VACUNACIÓN CONTRA LA COVID-19 (No. 8). Honduras, Septiembre 2021.

3) Nutrition Services

The WHO recommends that newborns receive exclusive breastfeeding in the first six months of life and complementary feeding after six months³⁵. Nutrition in infants under two years is essential to achieve adequate growth and development. Also, early stage of pregnancy uptake and ensure at least four prenatal checkups to identify risk factors that affects both health of mothers and children.

The Ministry of Health of Honduras does not have statistical sources on the number of newborns who were breastfed in the first hour of life, the number of children who were exclusively breastfed for the first six months of life, and the number of children who began their supplementary feeding after six months of life. However, the Study Team can make an analysis of the nutritional situation based on some data that were provided by the Ministry of Health and by the new National Survey of Demography and Health (ENDESA Spanish acronym) published in October 2021³⁶.

ENDESA estimates that 51% of newborns were breastfed for the first time within the first hour after birth, and 80% started within the first day, with more than half coming from rural areas (n = 3,159), and 30% of children from zero to five months have been exclusively breastfed (n = 754) before six months.

Global malnutrition (acute and chronic) in children under five years of age is estimated to be 7% (n = 8185), being more frequent in rural areas with 59.7% and the low level of education of the mother is one factor associated with this finding³⁵.

Some data to define neonatal and infant health were provided by the Statistics Department of the Ministry of Health, and this helps the Study Team identify the impact of the pandemic in this population. An essential indicator to define neonatal health is low birth weight (newborn weight less than 2,500 g) because this is an indicator of development and poor nutrition during pregnancy. In Honduras by 2019, 9.6% of newborns at birth had low birth weight, compare with 2020 where the Study Team finds a decrease of this percentage (8.8%), probably because of the missing data caused by all the women that did not seek care because of the pandemic. However, in the first semester of 2021, it is estimated at 9.8%, which indicates that during the pandemic, there was an under-registration due to the lack of institutional care and deliveries (Table 6-29).

Similarly, it was identified about 6,000 women during 2019 with fetal growth deficit; however, during 2020 and 2021, the Study Team observed a decrease in this care. The above, instead of being a positive finding, reflects one of the great challenges that Honduras has in maternal and neonatal health, and shows the importance of encouraging pregnant women to fulfill with their prenatal controls, since the early detection of low weight fetal and anemia in women can prevent the newborn from possible malnutrition during early childhood³⁵.

Table 6-29 Total Number of Newborns with Low Birth Weight 2019-2021

New Born Status	2019	2020	2021 (First Quarter)
≥ 2,500 g	136,563	124,728	88,533
< 2,500 g	1,349	1,553	924
Total	137,912	126,281	89,457

Source: Ministry of Health, Health Statistics Area, Hospital Activities, Labor and Delivery Newborn

In addition, during 2019, it is estimated that close to two million visits of children under five years of age at the health facilities occurred, and during the pandemic, that number of services fell by half³⁷. Malnutrition is linked to the main causes of infant death in the world, for this reason the control of healthy children under five years of age is essential to carry out prevention, detection, and opportune treatment of conditions that alter their growth and development. The pandemic has accentuated the food security of the country, and due to confinement and unemployment, the income of families has decreased,

³⁵ Elyas L, Mekasha A, Admasie A, Assefa E. Exclusive breastfeeding practice and associated factors among mothers attending private pediatric and child clinics, Addis Ababa, Ethiopia: a cross-sectional study. *Int J Pediatr.* 2017;2017(8546192):9

³⁶ Instituto Nacional de Estadísticas y la Secretaria de Salud de Honduras. (2021). Encuesta Nacional de Demografía y Salud / Encuesta de Indicadores Múltiples por Conglomerados. Honduras 2019. Tegucigalpa

³⁷ Secretaria de Salud. Área estadística de la salud. Honduras, 2019-2021

causing changes in the diet of families^{38,39}. Also, school nutrition intervention is also one of the most affected services under COVID-19.

4) Non-communicable Disease Prevention and Control

Due to the pandemic, some health services have been negatively impacted. Proof of this are the care services for NCDs, where the assistance to routine care of the population with chronic diseases has been interrupted⁴⁰. The reorganization of these services, both in infrastructure and human resources, involves a loss of continuity of care in their health services, mainly in the provision of services for NCDs, as they are reoriented from their care areas to rooms or triages COVID-19.

In Honduras, health professionals working in services against NCDs have been reassigned to triages or COVID-19 services; however, the health ministry does not have a data source on this information. Nevertheless, some data provided by the statistical unit confirms a decrease in the search for medical attention for hypertension and diabetes, being that in 2020, about 25% of users with a diagnosis of diabetes mellitus (DM) and hypertension stopped attend compared with 2019 (Table 6-30).

Table 6-30 Number of Cases of NCDs Treated in 2019-2021

Notifiable Diseases	2019	2020	2021
Non-communicable Diseases			
Diabetes	55,949	43,376	26,740
Arterial Hypertension	96,671	74,448	44,384

Source: Ministry of Health, Health Statistics Area, TRANS

NCDs are one of the greatest challenges of public health. The WHO estimates that about 40 million people die from NCDs, among them, the leading causes of death are cardiovascular diseases, followed by cancer, respiratory diseases, and diabetes. These last four correspond to 80% of all deaths from NCDs⁴¹.

In Honduras, about 30% of deaths correspond to NCDs (2,553 deaths: n= 9,242 in 2019), with cardiovascular diseases, diabetes mellitus, and arterial hypertension as the first three causes of hospital mortality due to NCDs (Table 6-31).

Table 6-31 Number of Hospital Deaths from Major NCDs in Honduras 2019-2021

Main Cause of Death	2019	2020	2021
Diabetes Mellitus	887	678	257
Hypertensive Disease	468	319	181
Cardiovascular Disease	1103	763	346
Malignant Tumor of the Cervix Uterus	53	44	17
Malignant Tumor of the Breast	42	36	18
Total of Death from Major NCDs	9249	8548	5283

Source: Ministry of Health, Health Statistics Area, Hospital Deaths

During the 2020, this number decreased, instead of being a positive data, this reflects the reduction in the search for medical attention of this population, also, this registry does not show the number of people who died from COVID-19 and had medical history of NCD. This information was requested from the statistics service, although they do not have this information.

³⁸ Fore HH, Dongyu Q, Beasley DM, Ghebreyesus TA. Child Malnutrition and COVID-19: The Time to Act is Now. *Lancet*. 2020 Aug 22;396(10250):517-518

³⁹ UNICEF WHO WB. Levels and Trends in Child Malnutrition. Key findings of the 2021 edition. Available at: <https://doi.org/10.18356/6ef1e09a-en>

⁴⁰ WHO. The Impact of the COVID-19 Pandemic on Non-communicable Disease Resources and Services: Results of a Rapid Assessment. Geneva: World Health Organization; 2020

⁴¹ Serra MA, Serra M, Viera M. Las enfermedades crónicas no transmisibles: magnitud actual y tendencias futuras. *Finlay*. 2018, citado 23 Abril 2020;8(2)

5) Response and Measures Adopted by the Government of Honduras against COVID-19

After January 30, 2020, the day on which the WHO declared a health emergency due to COVID-19, Honduras declared a state of health emergency, and with the support of PAHO / WHO, the Ministry of Health began to prepare containment plans and response to the pandemic.

At the beginning of the pandemic, most of the health resources were redirected for the management of COVID-19, limiting themselves to offering emergency medical assistance to people with suspicious symptoms, and all other health services were suspended⁴².

On March 10, 2020, with the confirmation of the first confirmed case of COVID-19, Honduras has been facing the continuous challenge of having a vulnerable health system to give an effective response to this pandemic. Until epidemiological week 43 (10 November 2021), there has been 375,213 confirmed cases of COVID-19 nationwide, with 10,236 deaths. The crude mortality rate for this week is 2.3 per 100,000 inhabitants. It is important to note that the fatality rate continues to be the indicator of greatest concern, since it continues to be high, indicating that for every 100 people, 4.6 die from COVID-19⁴³.

a) **SINAGER:** the Government's National Risk Management System

SINAGER was activated (SINAGER Spanish acronym), which constitutes the Honduran framework that is directed so that the country has the capacity to prevent and reduce the risks of potential disasters and respond to real damages⁴⁴.

b) Strategic Approach to the Pandemic

The strategic approach developed along with PAHO / WHO guidelines aims to achieve the following objectives (Table 6-32):

Table 6-32 Outline of the Strategic Plan for Containment and Response to COVID-19

Objectives	<ul style="list-style-type: none"> • Mobilize: all sectors and communities to guarantee responsibility and response in the prevention of cases. • Control: the detection of suspicious cases, active search for contacts, isolation, and follow-up of these positive or suspicious cases. • Containment: through biosecurity measures to avoid community transmission and appropriate restrictions on national and international travel. • Reduction: mortality by ensuring continuity of care and protecting front-line personnel and vulnerable population.
Pillars	Pillar 1: National Coordination, Planning and Monitoring Pillar 2: Risk Communication and Social Mobilization Pillar 3: Surveillance, Rapid Response Teams, and Case Investigation Pillar 4: Entry Points Pillar 5: National Laboratory Pillar 6: Prevention and Control of Infection Pillar 7: Case Management Pillar 8: Operations and Logistics Support

Source: Secretaria de Salud. PLAN PARA LA CONTENCIÓN Y RESPUESTA A CASOS DE CORONAVIRUS (COVID-19) EN HONDURAS. Honduras, Feb. 2021

c) Plan for Containment and Response to Cases of Coronavirus (COVID-19) in Honduras⁴⁵

This plan constituted a guide defining strategic actions for the care of suspected cases, measures to restrict the transmission from person to person. Some key actions were developed in sectors of interest to the government with the purpose of generating epidemiological surveillance actions and risk communication strategies, in addition to contributing to the promotion, prevention, and control of the disease.

⁴² Organización Mundial de la Salud. El impacto de la pandemia de COVID-19 en los recursos y servicios relacionados con las enfermedades no transmisibles: resultados de una evaluación rápida. Organización Mundial de la Salud. 2020. Available at: <https://apps.who.int/iris/handle/10665/334136>

⁴³ Secretaria de Salud. Boletín epidemiológico semana 42. Honduras, 2021.

⁴⁴ La Gaceta. LEY DEL SISTEMA NACIONAL DE GESTIÓN DE RIESGOS. Gobierno de Honduras, Agosto 2009

⁴⁵ Secretaria de Salud. PLAN PARA LA CONTENCIÓN Y RESPUESTA A CASOS DE CORONAVIRUS (COVID-19) EN HONDURAS. Honduras, Feb 2021.

- Migration and customs
- Tourism sector
- Private company
- Education
- Non-public establishments that provide health services
- Academy and professional association
- Media

d) Health Care Institutions

Spaces were enabled to organize the care process at the level of health networks, according to geographical position, location, and infrastructure. The primary health facilities oversee attending and guiding all suspicious patients and, according to their health condition, they are referred for isolation or to a second-level health establishment. They are considered as the first containment.

The secondary level facilities function as COVID-19 Response Centers (Triages), which operate 24 hours a day, 7 days a week. And the tertiary level facilities carried out through massive isolation centers, coordinated through intersectoral coordination and SINAGER: some stadiums, schools, gyms, and churches were identified, equipped with beds, portable toilets, blankets, food, security, and it has been divided into two environments: suspect and confirmed cases for better control.

e) Rapid Response Teams (ERR):

These are multidisciplinary teams with the aim of conducting an active search for suspected cases of COVID-19 and their contacts, through taking nasopharyngeal swabs, implementing promotion and prevention measures, and making opportune referrals to a healthcare facility. Consist of a physician, microbiologist, nurse, environmental health technician, and a driver⁴⁶.

f) Human Resources:

Through the green code, Inter-American Development Bank (IDB) approximately 6,000 health professionals were hired, including: doctors, nursing graduates, nursing assistants, microbiologists, technicians, promoters (Presidential House Newsletter August 30, 2020). To protect the healthcare professionals from the transmission of COVID-19, PPE, which includes eye protection glasses, latex gloves, N-95 mask, and caps, were provided⁴⁴.

As of November 2021, despite having only 40% of the population vaccinated with the second dose, the indicators for monitoring the pandemic have been decreasing and the number of health professionals within the triages has decreased.

As a result, the Ministry of Health is seeking to redirect these human resources that are under contract, to form part of the Primary Health Care strategy permanently, with the goal of strengthening the Family Health Teams for the promotion and prevention of the population at the first level of attention.

In addition, during the first quarter of 2022, it is intended to concentrate all triages in a single service within each department of the country. However, this decision depends on the behavior of the pandemic, in the coming months (Source: Chief of General Department of Integrated Health Services Networks from the Ministry of Health in Honduras).

6) Information and Communication Technologies in Honduras (Telemedicine)

During the last ten years, some activities related to telemedicine have been implemented in Honduras through projects with various NGOs, of which several are in force, and some were carried out as pilot activities (Table 6-33). Just as the hiring of human resources aims to lead to a strengthening of the Primary Health Care strategy, telemedicine can help to strengthen and improve care coordination between health service networks.

⁴⁶ Secretaria de Salud. Lineamientos de equipos de respuesta rápida en el contexto del COVID-19. Honduras, 2019-2021

Table 6-33 Recent ICT in Health Section in Honduras

Organizations	Outline	Period
Ministry of Health	Through a project with Mesoamerica, social networks were created to carry out medical consultations with obstetrician-gynecologists in the western region and Olancho.	2012-present
Telehealth UNITEC	A program carried out by the Technological University of Honduras (UNITEC), in which pediatric and neurology consultations were carried out, as well as distance health update programs.	2017-2020
Hospital María de Especialidades Pediátricas	Medical consultations are carried out with specialists in neurology at an international level with a focus on childhood epilepsy.	2017-present
El Paraíso and the Cardiology service, Hospital Gabriela Alvarado/ PAHO support	A pilot project for the diagnosis of electrocardiography with the support of specialists in health facilities. And other telemedicine services that have been developed as a consequence of the pandemic.	2019-present
TeleSAN	TeleSAN formed by an alliance between the Autonomous University of Honduras (UNAH), Cooperative of Health Services (COMSALUD, trying to include this strategy at the Ministry of Health), it is an initiative that continues to be implemented for telehealth services and educational. Currently with 25 specialty and subspecialty services. Made up by 27 first-level care establishments and nine hospitals. They have mechanisms for advice and medical consultations between doctors in rural areas and specialist doctors in regional or referral hospitals ⁴⁷ .	April 2019-present
911	As a telephone unit for suspected cases of COVID-19, with coverage throughout Honduras, and allows interaction between doctors and the population.	April 2020-present
Doctor 1847-UNAH	It was a program developed by doctors in social service in response to suspected cases of COVID-19 in a medical orientation unit.	2020-present
Médecins Sans Frontières (MSF)	MSF has come to support the health of the community from a different component, implementing mental health care and monitoring patients to mitigate the impacts suffered by the pandemic, this strategy has been carried out since the month from May of this year to October in some health facilities in Tegucigalpa (Primary health Care center of Villadela and Alonso Suazo), which has a geographic area of influence of approximately 98,000 inhabitants and 112,000 inhabitants, respectively; however, the care in this service has already been regularized to a face-to-face form (source: Chief of Villadela and Alonso Suazo)	2021-present
Hospital de Especialidades San Felipe	The ophthalmology graduate managed the construction of an ophthalmic telesurgery laboratory for the purpose of training specialists and residents of the ophthalmology service of Honduras and subspecialists in the United States.	May 2021-present

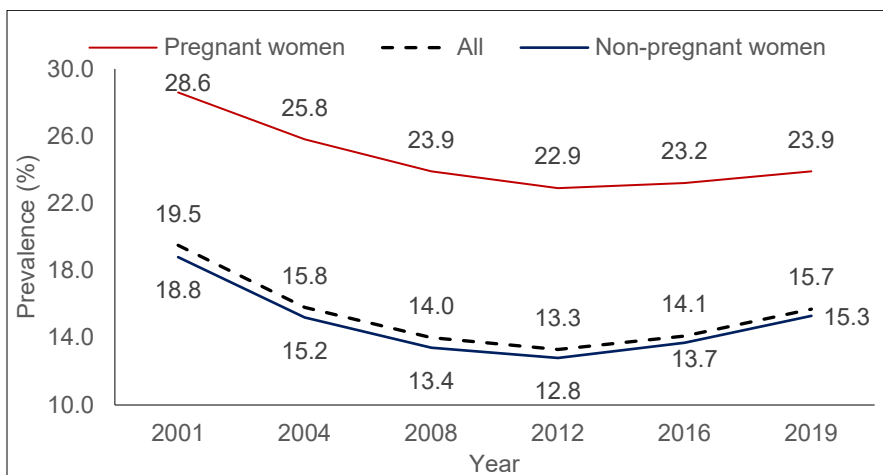
Source: Study Team based on interviews

(3) Nicaragua

Nicaragua is 'off course' to meet all targets for maternal, infant and young child nutrition (MIYCN). No progress has been made towards achieving the target of reducing anemia among women of reproductive age, with 15.7% of women aged 15 to 49 years now affected (Figure 6-11). Meanwhile, there has also been no progress towards achieving the low-birth-weight target, with 10.8% of infants having a low weight at birth (Figure 6-12). According to UNICEF estimates in 2015, it was 10.7% and almost twice of an average of Central America (5.4%)⁴⁸.

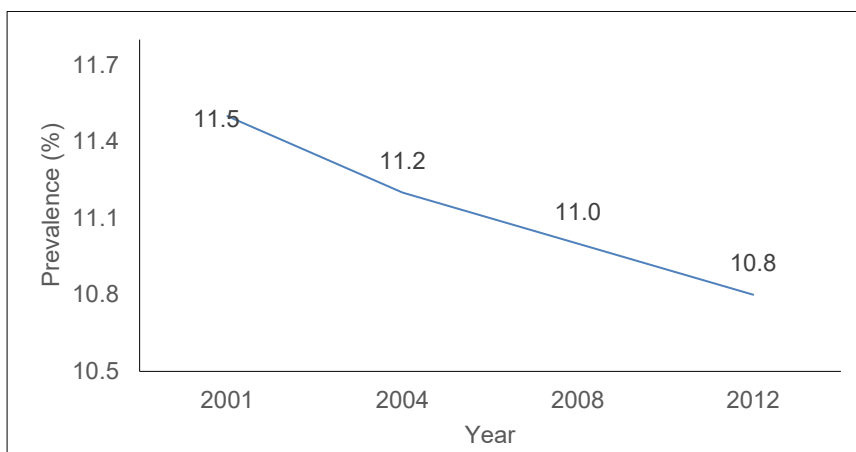
⁴⁷ Equipo TeleSAN Honduras 2021

⁴⁸ United Nations Children's Fund (UNICEF), World Health Organization (WHO). UNICEF-WHO Low birthweight estimates: Levels and trends 2000–2015. Geneva: World Health Organization; 2019



Source: UNICEF. Global databases: Infant and young child feeding. Published online July 2020. Available at: <http://data.unicef.org/nutrition/iycf>. Accessed 13 December 2021.

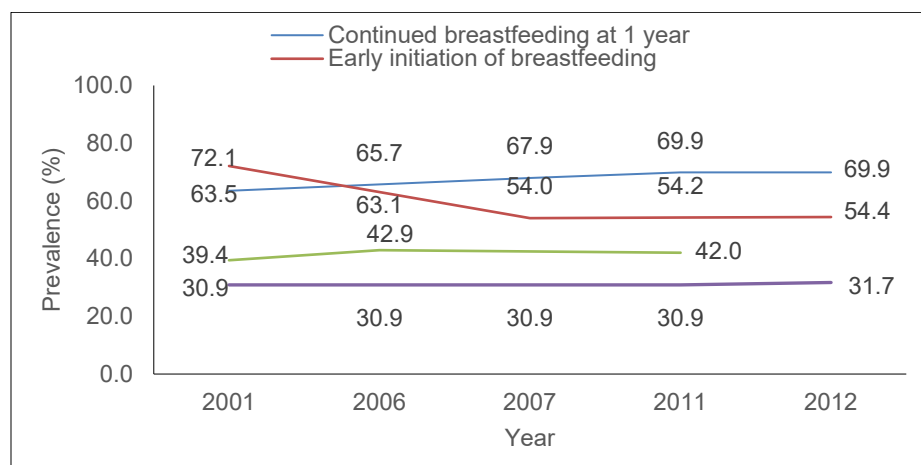
Figure 6-11 Prevalence of Anemia among Women of Reproductive Age in Nicaragua, 2001-2019



Source: UNICEF. Global databases: Infant and young child feeding. Published online July 2020. Available at: <http://data.unicef.org/nutrition/iycf>. Accessed 13 December 2021.

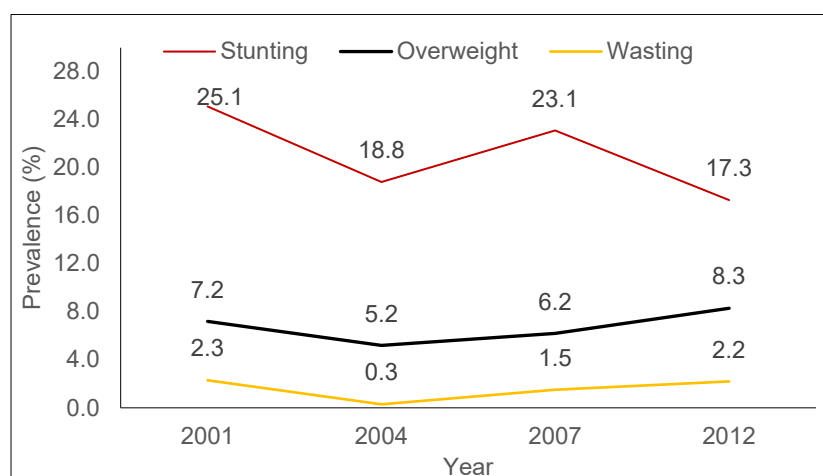
Figure 6-12 Prevalence of Infants with Low Birth Weight in Nicaragua, 2001-2012

There is insufficient data to assess the progress that Nicaragua has made towards achieving the exclusive breastfeeding target; however, the latest prevalence data shows that 31.7% of infants aged zero to five months are exclusively breastfed (Figure 6-13). Similarly, there is insufficient data to assess the progress that Nicaragua has made towards achieving the target for stunting; however, the latest prevalence data shows that 17.3% of children under five years of age are affected (Figure 6-14). There is also insufficient data to assess the progress that Nicaragua has made towards achieving the target for wasting; however, the latest prevalence data shows that 2.2% of children under five years of age are affected (Figure 1.4). This is higher than the average for the Latin American and Caribbean regions (1.3%). The prevalence of overweight children under five years of age is 8.3% (Figure 6-14), but there is insufficient data available to assess whether Nicaragua is on course to prevent the figure from increasing.



Source: UNICEF. Global databases: Infant and young child feeding. Published online July 2020. Available at: <http://data.unicef.org/nutrition/iycf>. Accessed 13 December 2021.

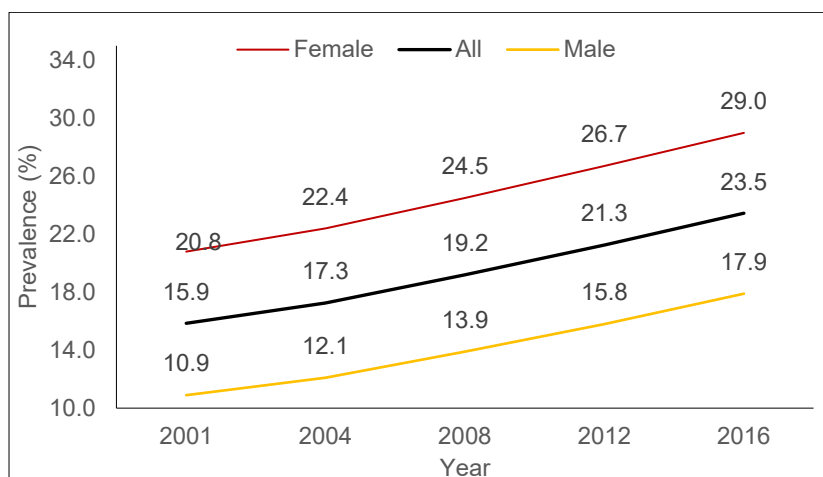
Figure 6-13 Prevalence of Infant and Young Child Feeding Indicators in Nicaragua, 2001-2012



Source: UNICEF. Global databases: Infant and young child feeding. Published online July 2020. Available at: <http://data.unicef.org/nutrition/iycf>. Accessed 13 December 2021.

Figure 6-14 Prevalence of Stunting, Wasting and Overweight among Children under Five Years of Age in Nicaragua, 2001-2012

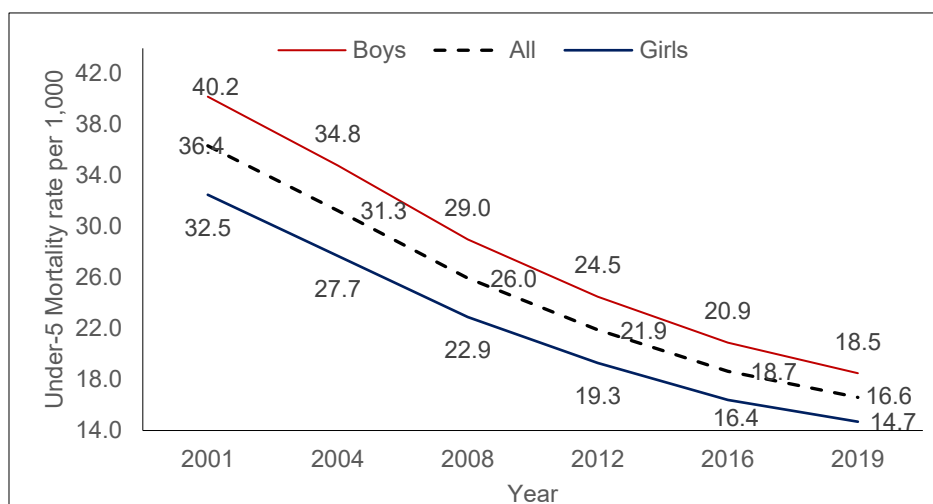
Nicaragua has shown limited progress towards achieving the diet-related NCDs targets. The country has shown no progress towards achieving the target for obesity, with an estimated 29.0% of adult (aged 18 years and over) women and 17.9% of adult men living with obesity (Figure 6-15). Also, according to The World Bank, 81% of total death in 2019 was caused by NCDs.



Source: UNICEF. Global databases: Infant and young child feeding. Published online July 2020. Available at: <http://data.unicef.org/nutrition/iycf>. Accessed 13 December 2021.

Figure 6-15 Prevalence of Obesity in Adults Aged 18 Years and Over in Nicaragua, 2001-2012

The report by UNICEF, showed in Figure 3 shows that the total infant mortality declined approximately 54.4% (from around 36.4 to 16.6 per 1,000 live births) during the 19-year period from 2001 to 2019 (Figure 6-16).



Source: UNICEF. Global databases: Infant and young child feeding. Published online July 2020. Available at: <http://data.unicef.org/nutrition/iycf>. Accessed 13 December 2021.

Figure 6-16 Under-5 Mortality Rate Per 1,000 Live Births in Nicaragua, 2001-2019

Since 2007, the Nicaraguan government has been implementing the family and community health model (Modelo de Salud Familiar y Comunitario: MOSAFC) to enhance PHC. In hard-reach areas, MOSAFC is carried out by community health team (Equipo de Salud Familiar y Comunitario: ESAFC) which involves various cadres in the coverage area to provide need-based health services. The National Human Development Program 2018-2021 aims the expansion of coverage and quality improvement of health services towards poverty alleviation and minimize inequality.

Regarding NCDs, prevention, early detection, and treatment mechanism have not been sufficiently developed including necessary human resources. The government would like to apply MOSAFC to NCDs prevention and control services.

International society has been providing assistance to support the government’s effort as listed in Table 6-25. JICA also has been cooperating to enhance the maternal and child health services (Table 6-17).

Table 6-34 Activities of Major Development Partners in Health and Nutrition Sector in Nicaragua

Project Title	Project Description	
IDB		Approved
Immediate Response of Public Health to Contain and Control Coronavirus and Mitigate its Effect on the Provision of the Service in Nicaragua	Help reduce COVID 19 morbidity and mortality and mitigate the other indirect health effects of the pandemic through technical inputs and provision of necessary supplies aligned with PAHO's guidelines.	31-Jul-2020
Improvement of Infrastructure and Health Management	Promote the improvement of quality in health care through: management of health infrastructure, risk management and ensure sustainability of maternal and child health in community health framework.	18-Dec-2019
Support for Investing in the Future: Program for Feeding Vulnerable Populations	Aimed at improving the nutritional status in vulnerable school populations and preventing acute malnutrition, the project supports the design and development of a diagnosis of the nutritional status and food and nutritional practices of the school-age population.	09-Aug-2019
Nicaragua – Regional Malaria Elimination Initiative (IREM) in Mesoamerica and Dominican Republic	Support technically and financially to Nicaragua to co-finance investment in health, in the areas with the highest incidence of malaria, to implement cost-effective interventions that lead to elimination under a results-based financing scheme.	27-Mar-2019
Mesoamerican Health Initiative Nicaragua – Third Individual Operation	Enhancing the use and quality of community and institutional services for maternal, infant and child, with special emphasis on interventions from the communities.	27-Jul-2018
Multisectoral Program for Attention to Health Determinants in the Dry Corridor	The objective is to improve the health and well-being of the population through the territorial management of health and its most significant determinants in priority areas, improving access and coverage to health services and health and quality, with a view to accelerating the reduction of maternal and infant morbidity and mortality and halting the progress of major chronic diseases.	01-Dec-2017
Fomenting Healthy Practices in Nicaragua	The objective is to facilitate the methodological analysis, the elaboration of strategies, and the dissemination of experiences and actions that promote behavioral changes of users of public services in the health, water and sanitation, transport, and energy sectors.	07-Nov-2017
Capacity-Building to Support Innovative Management of Health Public Investment	Build the capacity of the Ministry of Health to enter into long term contracts that integrate final design with construction and maintenance for hospital infrastructure.	08-Dec-2016
Community Health Program for Rural Municipios	Reduce health disparities and accelerate reductions in maternal and infant morbidity and mortality in priority Local Comprehensive Health Care Systems (SILAIS) in the North Caribbean, Jinotega, Matagalpa, and the Dry Corridor Region, specifically by broadening and improving access to and coverage of high-quality health promotion and health care services under the family and community health model.	23-Jun-2016
Strengthening Interventions to Reduce Malnutrition in Childhood	The aim is to evaluate the effectiveness of community health and nutrition and improve the quality of information and monitoring of both the production of services as the health and nutrition of children and women of childbearing age.	07-Dec-2015
SALUD MESOAMERICA 2015: Second Individual Operation	Enhancing the use and quality of community and institutional services for maternal, infant and child, with special emphasis on interventions from the communities.	19-Dec-2014
Modernization of Infrastructure and Management of Hospitals - Western Region	The program's goal is to improve public health services and access to those services in the western territory of Nicaragua, using state of the art in hospital management strategies, in order to help improve the state of health and welfare of the people of that territory.	29-Oct-2014
The World Bank		Period
Integrated Public Provision of Health Care Services	The objective is to extend the coverage and improve the quality of care for the most prevalent health conditions with an emphasis on vulnerable groups. It consists of four components; (1) results-based financing for quality improvement in prevention and provision of health care services to the poorest 66 municipalities, (2) support to the implementation of National Health Strategies for provision of quality health services, (3) provision of contingency financing in case of a public health emergency, and (4) project management.	2018-2023

Project Title	Project Description	Started
PAHO Virtual Health Library	Aiming to make available standards, guides, and research with technical assistance of the Latin American and Caribbean Center for Information on Health Sciences (BIREME) and the support of the Pan American Health Organization (PAHO), which will be coordinated by the National University Autonomous Community of Nicaragua (UNAN – Managua)	2021

Source: <https://www.iadb.org/en/projects>; <https://projects.worldbank.org/en/projects-operations/projects-home>;
<https://www.paho.org/es/proyecto-atencion-primaria-salud-nutricion-guatemala>;
<https://www.usaid.gov/guatemala/programs>

The Taiwan International Cooperation and Development Fund has been providing technical cooperation on prevention and treatment of chronic kidney diseases since 2019 for two years including capacity development at the primary and secondary levels.

Since the emergence of the COVID-19 pandemic in early 2020, the United States Agency for International Development (USAID) worked quickly to track the spread of the outbreak and provided direct assistance to affected countries. To date, USAID has granted USD 9 million to respond to the COVID-19 pandemic in Nicaragua. These resources are currently channeled through international and local organizations with experience in carrying out health and other appropriate sector activities in the country. The objective is to strengthen efforts to confront the pandemic in areas recommended by international health organizations, specifically risk communication and community participation, infection prevention and control, food security, and community case management.

1) COVID-19 in Nicaragua

In Nicaragua, from 3 January 2020 to 29 December 2021, there have been 13,563 confirmed cases of COVID-19 with 217 deaths, reported to WHO. As of 22 December 2021, a total of 7,308,467 vaccine doses have been administered⁴⁹.

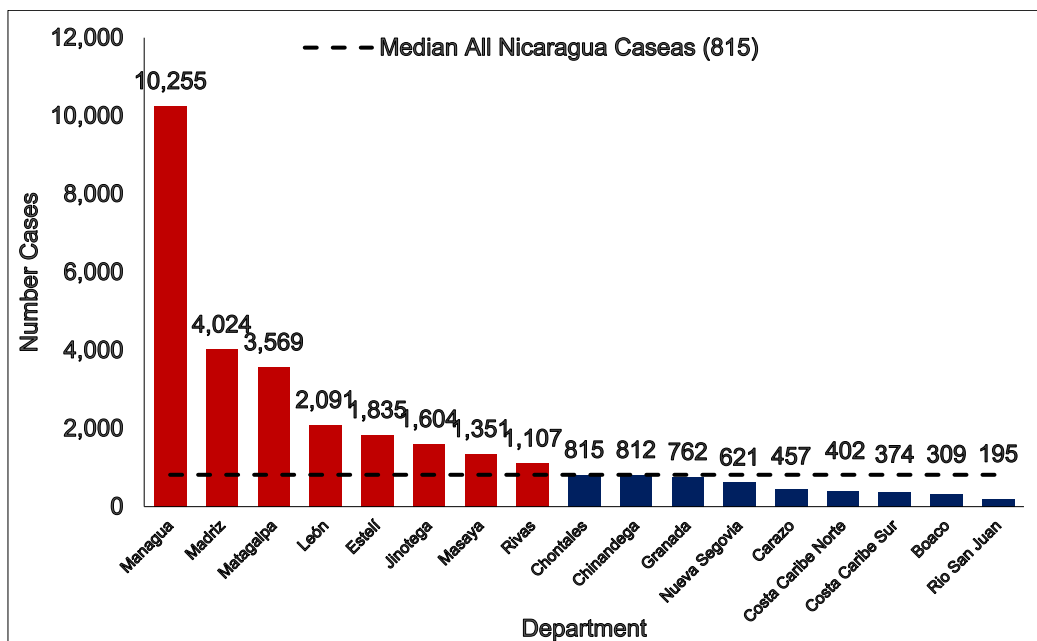
In Nicaragua, a country of 6.5 million people, 30,583 suspected cases of COVID-19 were reported between 2020 to 2021, the highest record of weekly infections registered by the Citizens' Observatory for COVID-19⁵⁰, in almost two of the pandemic crisis, "given the pandemic peak that Nicaragua is experiencing and the potential collapse of the health system, the Observatory calls on all citizens to keep a voluntary quarantine during the month of September to save as many lives as possible," its members warned.

As of December 29, a total of 5,771 people died with symptoms of COVID-19. This is the second highest death toll in the entire pandemic recorded by the independent monitoring of the Citizens' Observatory⁵¹. The highest report of deaths was 351 and was registered on May 26, 2020. The deaths identified in the latest report are 72.2%, higher than the previous week and three times higher than the previous month. Most of the deaths occurred in the departments of Managua, Matagalpa, Leon, Masya, Esteli, Madriz, Chontales, and Jinotega (Figure 6-17). These deaths include the loss of nine people from the medical profession (Figure 6-18).

⁴⁹ <https://covid19.who.int/region/amro/country/ni>

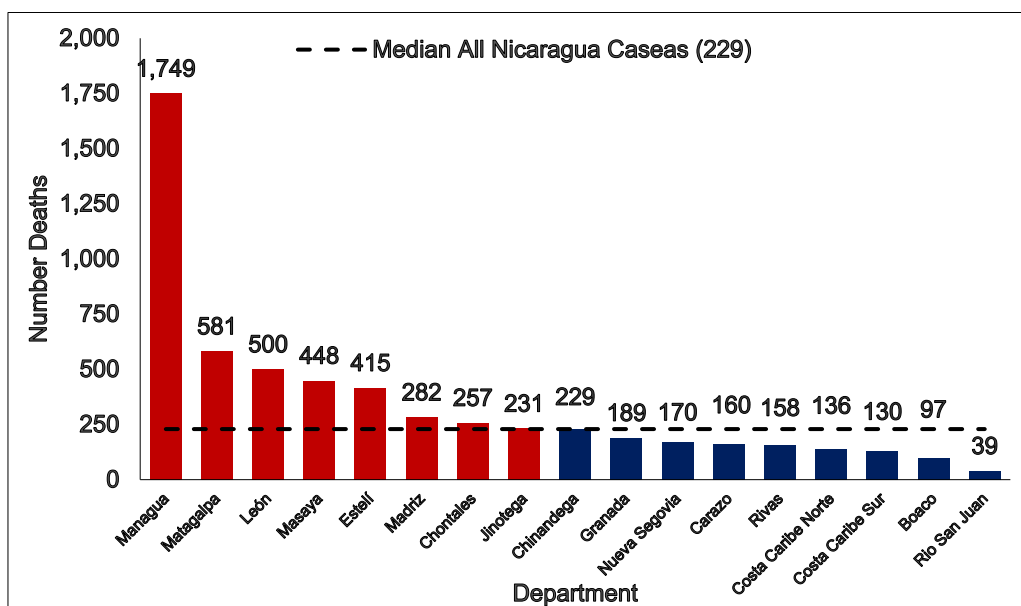
⁵⁰ <https://participedia.net/organization/7237>

⁵¹ <https://observatorioni.org/>



Source: Observatorio Ciudadano COVID-19 Nicaragua. Available at: <https://observatorioni.org>, Accessed 13 December 2021

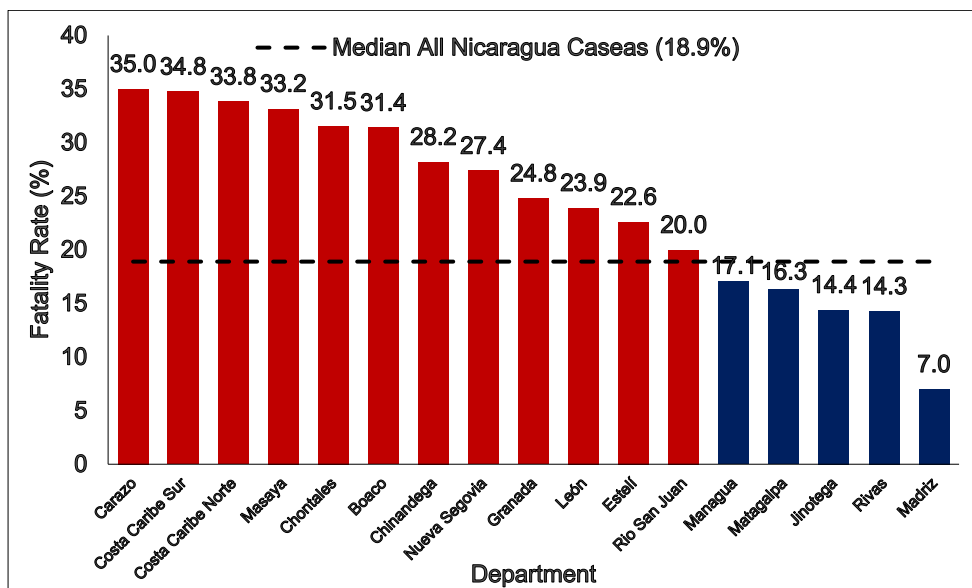
Figure 6-17 Number of Cases COVID-19. Nicaragua, 2020-2021



Source: Observatorio Ciudadano COVID-19 Nicaragua. Available at: <https://observatorioni.org>, Accessed 13 December 2021

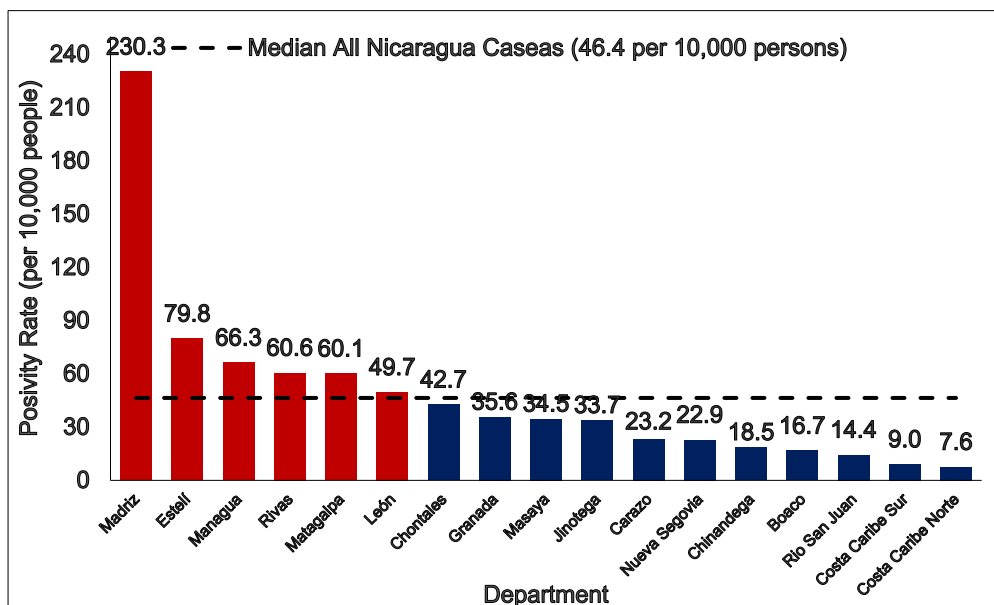
Figure 6-18 Number Deaths Related to COVID-19. Nicaragua, 2020-2021

The fatality rate is generally high among the departments as shown in Figure 6-19. The positive rate per 10,000 population is extremely high in Madriz Department (Figure 6-20).



Source: Observatorio Ciudadano COVID-19 Nicaragua. Available at: <https://observatorioni.org>. Accessed 13 December 2021

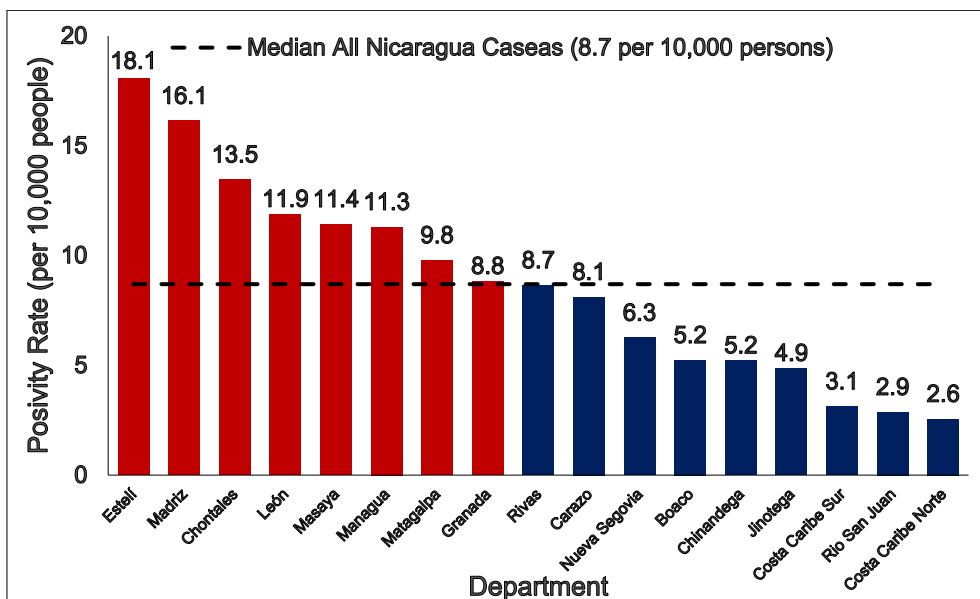
Figure 6-19 Fatality Rate (Percent) to COVID-19. Nicaragua, 2020-2021



Source: Observatorio Ciudadano COVID-19 Nicaragua. Available at: <https://observatorioni.org>. Accessed 13 December 2021

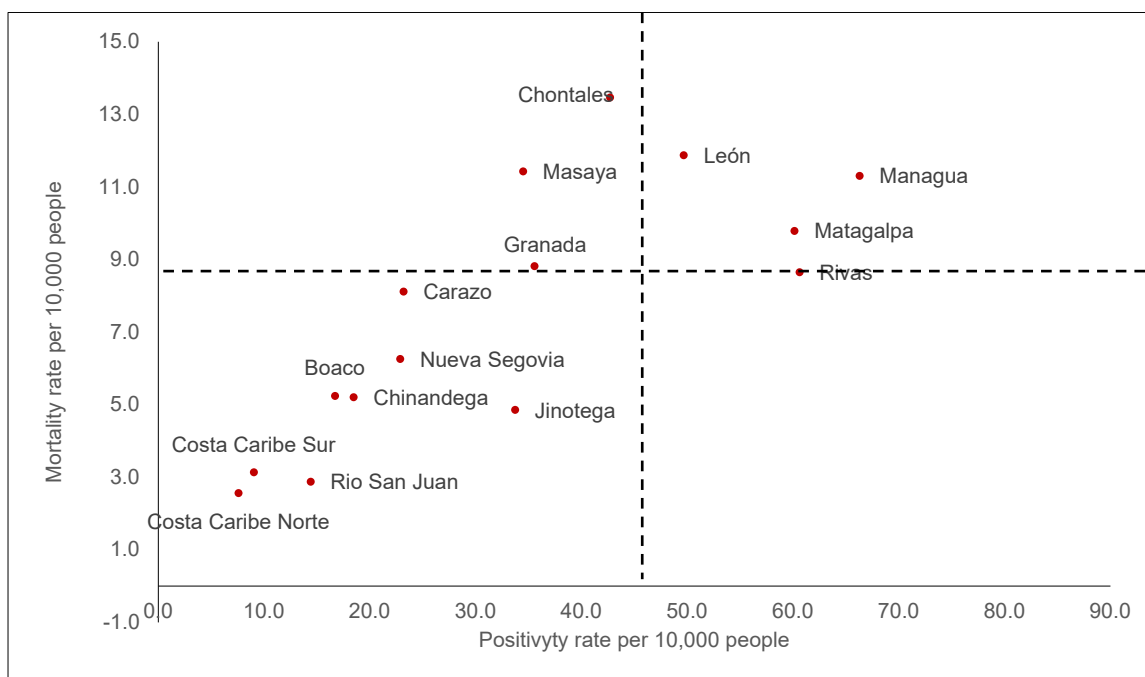
Figure 6-20 Positivity Rate Per 10,000 Persons. Nicaragua, 2020-2021

The mortality rate of COVID-19 varies among the departments (Figure 6-21). Generally, departments with high positive rate showed high mortality (Figure 6-22).



Source: Observatorio Ciudadano COVID-19 Nicaragua. Available at: <https://observatorioni.org>, Accessed 13 December 2021

Figure 6-21 Mortality Rate per 10,000 Persons. Nicaragua, 2020-2021



Source: Observatorio Ciudadano COVID-19 Nicaragua. Available at: <https://observatorioni.org>, Accessed 13 December 2021

Figure 6-22 Departments with High Positivity and Mortality Rates per 10,000 People (Managua, Matagalpa, Rivas y León)

In the first days of September, a cemetery received up to more than ten deaths from COVID-19. However, these deaths were classified by other causes, among them: obstructive, cardiogenic, or septic shock; pulmonary thromboembolism and acute myocardial infarction. Two of these causes of death are admitted as “deaths in people who have been under follow-up” in the weekly reports of the Ministry of Health (MINSa); but the authorities do not include them in the official tally of deaths from COVID-19 and do not reveal the number of patients who die.

The exclusion of these deaths is a practice that the health authorities have implemented since the arrival of the pandemic. As demonstrated by various national and international excess mortality

analysis, in the months of March to August 2020, Nicaragua had an excess of more than 7,500 deaths that would be attributable to COVID-19, but which were classified as diabetes, heart attacks, pneumonia, and hypertension.

This surplus placed the country in the top ten nations in the world that have registered excess mortality (number of deaths above the historical average), according to an analysis of data published by the prestigious British newspaper Financial Times (FT). According to the death certificates in the possession of Confidential, the practice of hiding deaths from other causes persists.

6.7 Development of Hypothesis on the State of Sectoral Development Cooperation in With/Post COVID-19 Society

6.7.1 Grouping of the Target Countries

As described in Section 6.3, the target countries were categorized into two groups: Central American and Caribbean countries.

6.7.2 Vulnerability of the Target Countries

Vulnerability was analyzed from both levels of health system and individual health. As summarized in Table 6-35, existing issues in the health and nutrition sector have been apparent under COVID-19 situation. In addition, some minor problems have worsened in responding to COVID-19 prevention and treatment.

As for individual health, several risk factors have been identified for infection and/or aggravation of COVID-19, including nutritional status and underlying diseases such as diabetes and hypertension. Obesity and aging are highly associated with these underlying diseases, and undernutrition affects the immune system. To improve the nutritional status and reduce the risk of diabetes and hypertension, it is important to intervene from the prenatal period, and the concept of a life course approach through MNCH services has been incorporated in JICA's cooperation. Guatemala, Honduras, and Nicaragua all have high rates of child undernutrition, and the undernourishment rate among the population also tends to be high. Due to disruption of essential health services, early interventions for high-risk people were not sufficiently provided. It might have caused increase of severe patients and/or mortality. In terms of the gap in access to appropriate information to protect health due to poverty, education level, language barrier, and ethnic minority has been enlarged under COVID-19. For example, many people in Guatemala did not understand why the government took strict curfew because necessary information was not delivered sufficiently to any groups of the people. In addition, "info-demic" (spread of rumor/ misinformation) on transmission routes and vaccination brought serious confusion among the people and prevent them to take appropriate actions. For example, mothers believing on some rumor on COVID-19 vaccination refuse to have their children to take any other vaccines.

In terms of health system, they have high OOP and low numbers of doctors, nurses, and hospital beds, which means that the people do not have access to adequate health services. Furthermore, it has been pointed out that the inequity in access to services between urban and rural areas, as well as the rich and the poor has widened, putting vulnerable groups at greater risk. In the Caribbean countries and some Central American countries, telemedicine has been introduced to provide consultation and counseling to the patients, and support to health personnel working in remote areas. However, most of the providers are in the private sector and require ICT infrastructure. Therefore, people who cannot afford and do not have access to Internet connection and equipment could be left behind. As for additional human resources for health hired by the government to enhance care of COVID-19, there might be issues on the working environment and contract conditions. In Guatemala for instance, such additional personnel were contracted for a short term and their salaries have not been paid on schedule (delay). Even for permanent staff, some refused to return to their workplace because of fear of infection.

Regarding testing and surveillance system of communicable diseases, a regional network has been developed and each country made an effort to fulfill the requirement of International Health Regulations (IHR) based on experiences and lessons learned from previous outbreaks. However, testing and surveillance under COVID-19 pandemic exceeded the existing capacity in the region and each country. Therefore, despite timely support from international and regional societies, the necessary

equipment and materials could not be supplied sufficiently. In addition, large volume of PPE and face masks were used and disposed daily. It causes serious concern on the safety of concerned personnel and the long-term environmental impact. The WHO issued guidelines on protecting concerned staff to collection and treatment of medical waste from health facilities and households with consideration on limitations of terminal treatment capacity of local governments.

Even before COVID-19, the countries have been taking various actions to strengthen PHC. However, the negative impact of COVID-19 on service coverage, especially immunization, nutrition monitoring, and antenatal care, might cause excess mortality. The UNDP/UNICEF estimated MMR might increase by twice or three times, under-five mortality rate might be 1.5 times or twice of the non-COVID-19 situation.

Access to appropriate and the latest information is limited for many people, especially the poor, women in informal sectors, and people in rural areas. Such people could not take proper action to protect themselves from infection and/or stigma, as well as seek quality care. A multisectoral approach should be taken to such care-seeking behavior and perception, from not only health but also education, gender, and community engagement.

Also, regional coordination may be another factor to spread infection. Border control, quarantine, and infection prevention and control (IPC) do not seem to be effectively coordinated among the countries in the initial stage. In addition, due to their small scale and geographic condition such as islands, it could be difficult for most of the countries to complete diagnostics and treatment on their own.

Table 6-35 Issues in Pre-COVID-19 and Vulnerabilities under COVID-19

	Issues Pre-COVID-19	Vulnerabilities under COVID-19	Sub-groups
Individuals	Undernutrition	<ul style="list-style-type: none"> Weak immunity against diseases might cause high risk of infection. Delay of detection and care might cause physical and intellectual maldevelopment. (“The first 1000 days”). 	Central America
	Overnutrition, aging, and NCDs	<ul style="list-style-type: none"> These factors might cause high risk of aggravation of COVID-19. Delay of detection and treatment might cause aggravation, complication, or death. 	Caribbean
	Gap in information access (language, ethnic minority, migrants, education level, gender, etc.)	<ul style="list-style-type: none"> These groups: Could not have access to information to protect themselves from health risks. Might be confused by info-demic (rumor and misinformation) Might be difficult to change their behavior and living condition to be healthy. 	Central America
Health System	Gap in service access (rural areas and the poor)	<ul style="list-style-type: none"> Gap in service access could be enlarged. Although telemedicine is introduced, those who have no access to ICT infrastructure could be left behind. 	Central America
	High proportion of OOP		
	Insufficient hospital beds and human resource for health	<ul style="list-style-type: none"> COVID-19 required overcapacity of existing service providing system. Inappropriate working condition for the additional human resources for health (short contract period, delay of salary payment, etc.). Physical and psychological protection of human resource for health could be rather left behind. 	Central America Common
	Fragmented service providing system	<ul style="list-style-type: none"> Flexible response could be hindered because human resources, equipment, beds, and drugs could not be efficiently shared. 	Central America
	Gap in compliance to IHR and response to health emergency	<ul style="list-style-type: none"> Pandemic was beyond the borders. Preparedness to maintain essential health services could be well considered. 	Common
		<ul style="list-style-type: none"> Medical waste from health facilities and sanitary waste from households have sharply increased. It may cause health hazards to concerned staff and long-term environmental impact. 	Common

Source: Study Team

6.7.3 Hypothesis on Development Cooperation for Health and Nutrition Sector in Latin American and Caribbean Regions With/Post COVID-19

Table 6-36 summarizes a hypothesis on the development cooperation for health and nutrition sectors in the Latin American and Caribbean regions With/Post-COVID-19 based on analysis of collected information as mentioned above.

Cooperation in MNCH and PHC can contribute capacity development on service provision and human resource development, as well as health system strengthening. As existing plans of JICA’s cooperation on MNCH and PHC in this region include nutrition aspects, accumulated know-how and resources of Japan/JICA could be effectively applied.

Regarding inequity of service access, a pilot project will be implemented on NCDs diagnostic support by telemedicine. Experiences and lessons learned of the pilot project will be carefully examined to consider applying to other countries. Also, a regional platform will be promoted through a common health agenda, aging, among most of the countries. Japan could provide rich cooperation resources based on more than 60 years experiences of aging countermeasures in various sectors and multi-sectoral coordination. Then, the strengthened platform could be one of the bases of regional network in the health sector.

Table 6-36 Hypothesis on Development Cooperation for Health and Nutrition Sectors in the Latin American and Caribbean Regions With/Post COVID-19

	Vulnerability Exposed by COVID-19	Proposed Countermeasures	Proposed Cooperation Strategy
Individual	Undernutrition <ul style="list-style-type: none"> Weak immunity against diseases might cause high risk of infection. Delay of detection and care might cause physical and intellectual maldevelopment. (“The first 1,000 days”) 	<ul style="list-style-type: none"> Improvement of basic health status Nutrition improvement during the first 1,000 days Early detection and intervention of health risks such as malnutrition, NCDs and risk factors, danger signs of pregnancy, etc.) 	<ul style="list-style-type: none"> Strengthening of PHC <Central America> <ul style="list-style-type: none"> Maternal and child nutrition improvement <Common> <ul style="list-style-type: none"> Behavior change to healthy lifestyle Early detection of health risks and follow up
	Overnutrition, aging, and NCDs <ul style="list-style-type: none"> Those factors might cause high risk of aggravation of COVID-19. Delay of detection and treatment might cause aggravation, complication, or death. 		
	Vulnerable groups <ul style="list-style-type: none"> could not have access to information to protect themselves from health risks. might be confused by info-demic (rumor and misinformation) might be difficult to change their behavior and living condition to be healthy. 		
Health System	Accessibility <ul style="list-style-type: none"> Gap in service access could be widened. Although telemedicine is introduced, those who cannot access ICT infrastructure could be left behind. 	<ul style="list-style-type: none"> Providing necessary information in multilanguage Utilizing accessible media such as local radios 	<ul style="list-style-type: none"> Expanding service access and minimize the gap <Central America> <ul style="list-style-type: none"> Promoting digital health Promoting Bottom of Pyramid concept on digital health Retention of human resource for health <Common> <ul style="list-style-type: none"> Promoting psychological care for health personnel Ensuring human resources in collaboration with private sector
	Insufficient health resources <ul style="list-style-type: none"> COVID-19 required overcapacity of existing service providing system. Inappropriate working condition for the additional human resources for health (short contract period, delay of salary payment, etc.) Physical and psychological protection of human resource for health could be rather left behind. 		

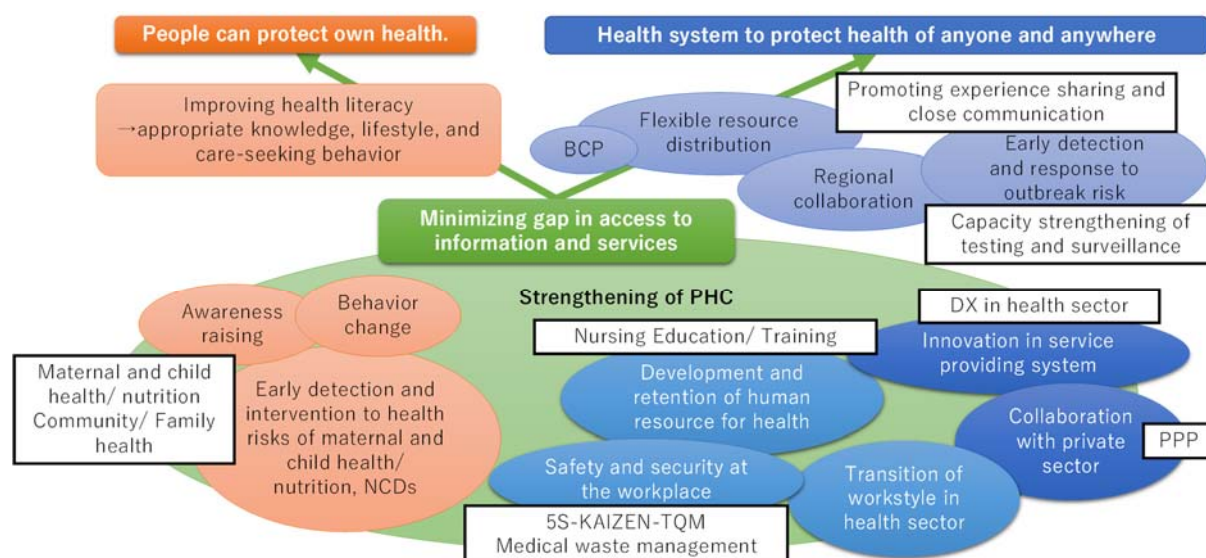
	Vulnerability Exposed by COVID-19	Proposed Countermeasures	Proposed Cooperation Strategy
	Fragmented service providing system <ul style="list-style-type: none"> ▪ Flexible response could be hindered because human resources, equipment, beds, and drugs could not be efficiently shared. 	<ul style="list-style-type: none"> ▪ Strengthen leadership of the Ministry of Health ▪ Integration or restructuring of referral system 	<ul style="list-style-type: none"> ▪ Capacity development on health administration/ referral system
	Regional coordination <ul style="list-style-type: none"> ▪ Pandemic was beyond the borders. ▪ Preparedness to maintain essential health services could be well considered. 	<ul style="list-style-type: none"> ▪ Continuous mutual communication and collaboration beyond the border ▪ Prompt situation analysis and information sharing ▪ Development of business continuity plan (BCP) for health emergency 	<ul style="list-style-type: none"> ▪ Close and reliable relationship among the concerned personnel <Caribbean> ▪ Strengthen of regional cooperation, coordination, and collaboration ▪ Flexible emergency response capacity <Common> ▪ Capacity development of the regional and national reference laboratories ▪ Development of BCP for clinical and public health services
	Medical waste	<ul style="list-style-type: none"> ▪ Extension of safe treatment of medical waste ▪ Capacity development of primary treatment at health facilities 	<ul style="list-style-type: none"> ▪ Sustainable environment <Common> ▪ Capacity development of safe management and treatment of medical waste at health facilities

Source: Study Team

6.7.4 Possible Measurements to Overcome Vulnerability

Based on the analysis and discussion in the previous section, the proposed cooperation framework to overcome vulnerability in health and nutrition sector was prepared as shown in Figure 6-23. As a result of overcoming individual vulnerability, people in the Central American and Caribbean regions could protect their own health with improved health literacy. When the health system vulnerability is solved, health system in the Central American and Caribbean regions could protect their people from health risks regardless of socio-economic and cultural variety and differences in living areas.

In order to contribute to this process, JICA could utilize accumulated cooperation resources in the health and nutrition sector (black lined box in Figure 6-23). Based on the accumulated experiences of cooperation for strengthening of PHC, the support could be expanded to maternal and child nutrition for the first 1,000 days, which is the foundation of health through the life, as well as early detection and intervention of NCDs and risk factors. On the other hand, in order to secure human resources, which is a major barrier in the practice of the PHC model, support for workplace improvement and 5S-KAIZEN-TQM including improvement of medical waste management and disposal for promoting safety of patients and health personnel, may be provided in order to contribute to the development of a working environment where health personnel can work comfortably. In addition, the possibility of reducing the workload by expanding the remote service provision system and improving treatment through collaboration with the private sector will also be considered.



Source: Study Team

Figure 6-23 Proposed Cooperation Framework Against Vulnerability

As the countries in this region mutually link to each other socio-economically, regional coordination and collaboration should be strengthened to take efficient action and complement the weaknesses of each other. Especially, public health emergency such as COVID-19 or other pandemic could bring impact regardless of national border. Therefore, it could be effective to promote a regional platform on a common health agenda to strengthen communication lines among the countries and regional coordination body. Through the platform, experiences, lessons learned, and good practices could be shared and accumulated to develop the capacity on health and nutrition improvement at the regional level.

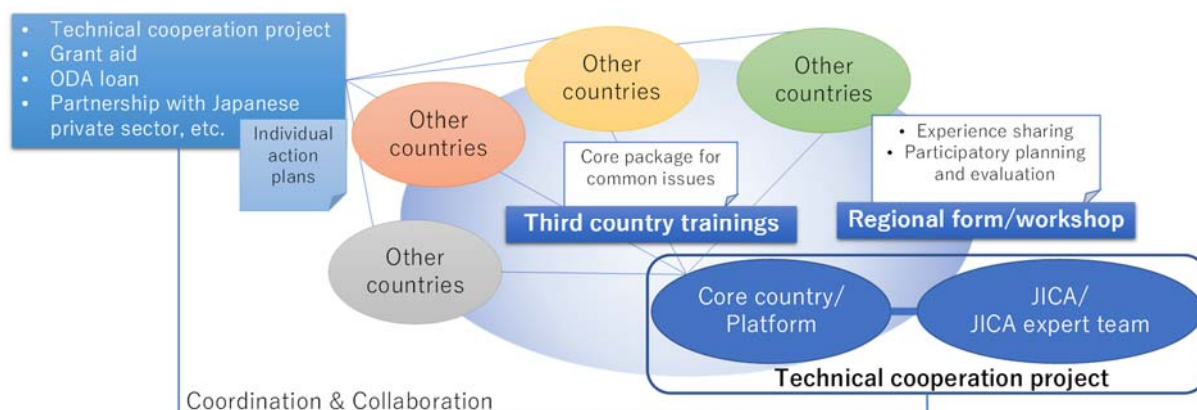
To promote region-wide cooperation in the near future, the existing cooperation activities could be core or platform. The current cooperation described in Section 6.4.5 and the above proposed cooperation framework could be matched as presented in Table 6-37. As for implementation, combination of several schemes could be considered as illustrated in Figure 6-24.

Table 6-37 Possible Matching between Existing Cooperation and Region-wide Cooperation Topics

Topic	Possible Core Country/Platform	Target Countries
PHC (nutrition and NCDs)	Cuba, Guatemala, Honduras, Nicaragua	Central America
NCDs (policy, diagnosis and treatment)	CARPHA Forum, Cuba	Caribbean
Health emergency response (test and surveillance, infection prevention and control, remote-ICU)	Panama, El Salvador, Mexico	Central America
	CARPHA	Caribbean

Source: Study Team

The region-wide cooperation could be implemented based on a core country or platform such as CARPAH or COMISCA. The core country could jointly take lead with such regional organization. Basically, sharing of experience and knowledge through trainings or workshops could be conducted by the core country. Through these activities, participant countries could be required to prepare their action plans to tackle with their individual issues. Then, individual interventions might be designed to support implementation of the action plans. Under such implementation mechanism, the existing project should play a role as a regional coordinator, therefore, the project design should be flexible.



Source: Study Team

Figure 6-24 Possible Implementation Mechanism of Region-wide Cooperation

6.8 Analysis and Recommendations Contributing to Sectoral Cooperation Policy

6.8.1 Health and Nutrition Sector Situation Analysis

In conclusion, the common health issue in this region is the triple burden of maternal and child health, communicable diseases, and violence/trauma. In Central America, maternal and child health and under nutrition are more focused. In the Caribbean countries, NCDs and overnutrition are more prioritized. Nutrition during the first 1,000 days could affect both under nutrition and over nutrition, as well as health status throughout the lifetime. It might bring impact on physical and intellectual development, disease burden, and finally, productivity⁵².

In Central America, where there are many multi-ethnic countries, differences in language, ethnicity, education, household income, residence (urban/rural), and security conditions affect the disparity in access to information, and many residents are unaware of available services and assistance, as well as health knowledge. In particular, in Central America, migration has been occurring even in the face of border blockades and restrictions on behavior under the COVID-19 disaster. Migrants often move and stay in poor conditions, and are likely to lack access to appropriate knowledge and services, which should be considered in reducing inequality.

To fill the gap in health services and achieve UHC, countries in the region have been prioritized, ensuring and strengthening the PHC model. JICA and other donors are providing support in this direction. The content of the PHC has traditionally been focused on maternal and child health, but with changes in the burden of disease, screening and follow-up for NCDs are now included.

Regarding the service delivery system, especially in some countries in Central America, the health service provider is divided between the Ministry of Health and the Social Insurance Agency, and budget allocation and referrals are conducted vertically. In the Caribbean, where the private sector has made relatively more inroads, cooperation between the public and private sectors is weak. Such fragmentation of health service delivery has resulted in the low cost-effectiveness of health services. In addition, the lack of human resources for health is an issue in both regions. In Central America, the required number of family health teams cannot be deployed due to the inability to secure the necessary human resources, which is a barrier to the implementation of PHC. In the Caribbean countries, the exodus of medical specialists abroad and to the private sector has resulted in inadequate professional services in the public sector that are accessible to the poor.

These disparities in individual health status, health literacy, and service provision and access have become apparent in the COVID-19 situation. In addition, the rapid increase in the volume of medical waste, which has not been the focus of attention in the past, has raised the issue of its management and safe disposal.

⁵² <https://thousanddays.org/why-1000-days/>

While innovative technologies such as telemedicine will become widespread in the COVID-19 situation, and new possibilities for achieving UHC will be shown, it will be necessary to devise ways to ensure that those who have difficulty accessing internet infrastructure are not left behind.

6.8.2 Recommendation

In the COVID-19 situation and reconstruction, it is important to reduce the long-term negative impact of the interruption of essential health services. In this effort, if innovative technologies introduced during the COVID-19 disaster can be used to solve previous problems such as disparities in access to services, a better recovery can be achieved. Towards build back better and Sustainable Development Goals (SDGs), the following recommendations were developed based on the accomplishment of the survey.

(1) Regional Coordination

Considering that globalization of economic activities and population movement will be accelerated in post-COVID-19 society, regional coordination could be more important to achieve UHC ensuring that no one is left behind, protecting all the people from health risks, and efficiently maximizing regional resources to respond and manage health emergencies. The proposed strategy is shown in Table 6-38.

Table 6-38 Proposed Strategy on Regional Coordination

Topics	Strategy
Health emergency response Laboratory testing	<ul style="list-style-type: none"> ▪ In collaboration with the existing efforts by PAHO and other regional agencies, all the countries should ensure compliance to IHR. ▪ Based on the contingency plan of COMISCA, the Central American countries develop the contingency plan and business continuity plan for the health sector both at the regional level and each country level. The regional plan should include efficient resource allocation such as early detection and warning of health emergency, diagnosis and treatment equipment, as well as human resource for health. The Caribbean countries could also develop the regional plan to overcome resource vulnerability for health emergency. ▪ Joint procurement mechanism should be established based on experience under COVID-19 response. ▪ In collaboration with the existing effort by PAHO, consolidation of regional laboratory testing network should be strengthened. Regional referral system by setting-up some regional reference laboratories could be considered to minimize duplication of investment for operation and maintenance of a national reference laboratory of each country.
Knowledge and experience sharing	<ul style="list-style-type: none"> ▪ To promote and maintain communication among the countries for strengthening of regional ties among health concerned stakeholders, regular knowledge sharing opportunity could be effective. ▪ To generate reliable information and data sharing mechanism regardless political affects. ▪ The topics could be on emerging health issues such as aging, NCDs, health ICT, etc. Japan can also provide accumulated experiences and lessons learned.

Source: Study Team

(2) Inter-sectoral Collaboration

COVID-19 revealed relationship between health and other sectors such as social, economic, education, culture, environment, political, etc. For instance, access to appropriate information might be affected by the level of education or community leadership, or availability of ICT tools. Rapidly increased medical waste could affect on environment. In addition, “new normal” make people realize usefulness of telemedicine. Also, other health issues have complex background including aging which is relevant to NCDs, social security, household economy, community tie, etc. The food industry could be one of relevant factors to NCDs and nutrition, and human resource for health should be approached by education, labor and welfare, living condition, psychology, etc. The proposed strategies on inter-sectoral cooperation are listed in Table 6-39.

Table 6-39 Proposed Strategy on Inter-sectoral Collaboration

Topics	Strategy
Health literacy	<ul style="list-style-type: none"> ▪ To increase health literacy among the people, the following intervention could be taken: <ul style="list-style-type: none"> ➢ Community engagement as a part of PHC activities in collaboration with community leaders, religious leaders, etc. ➢ Updating health education at school to suit post-COVID-19 society ➢ Health entertainment TV program in collaboration with mass media ➢ Gamification to gain health knowledge or behavior change in collaboration with SNS or IT
Nutrition improvement	<ul style="list-style-type: none"> ▪ To improve nutrition during the first 1,000 days, nutrient supplement for pregnant women and mothers as well as complementary food for young children could be developed in affordable price. ▪ To avoid excess energy in daily diet, food industry/ retailers could revise package volume, encourage local food industry instead of relying on imported processed foods.
Medical waste management	<ul style="list-style-type: none"> ▪ In collaboration with local administration and environmental conservation organizations, monitoring could be conducted to clarify impact of COVID-19 and develop effective solution. ▪ Hospitals should cooperate with waste management stakeholders and community to protect relevant workers, health personnel, patients and neighbors.
Retention of health personnel	<ul style="list-style-type: none"> ▪ To install IT infrastructure in rural areas to provide remote continuous medical/ nursing education, tele-consultation, remote imaging diagnosis, etc. ▪ To create incentive scheme for family health team in collaboration with civil society or private sector.
Restructure of health service providing system	<ul style="list-style-type: none"> ▪ The Ministry of Health should take strong leadership to establish health service providing network involving public, private, and civil society sectors without any fragmentation and duplication. ▪ It could be started with involving private and civil society sectors into primary health care model, or connecting public hospitals with private clinics.

Source: Study Team

(3) Innovative Technologies to Fill the Gap in Access to Health Service

In the Caribbean, the private sector is introducing telemedicine, and in Central America, public-private partnerships are beginning to provide services to residents in remote areas. The promotion of such initiatives is expected to reduce the disparity in service access among the population, reduce the workload of health personnel, and improve the quality of services. For example, if family health teams can provide health guidance and consultations remotely, and seek advice from doctors at higher-order hospitals, it will be possible to receive high-quality services with peace of mind even in remote areas.

Also, continuum of care could be promoted by promoting electronic health records. For example, if migrants could have access to their own health record, they could receive health care consistently without duplication beyond the border. It also could be good for health service providers to know the characteristics and medical history of the patients.

(4) Preparedness in PHC to Health Emergency

In the process of recovery, it would be useful to use the experience and lessons learned from the COVID-19 situation to develop a business continuity plan (BCP) for PHC. BCP is usually developed for hospitals to handle a large number of emergency patients and maintain essential services during a disaster. However, it can be applied to community health centers to consider in advance what to do in the event the onsite system is severely curtailed due to the use of emergency response personnel, and what measures should it take to protect health personnel from infectious diseases and psychological stress. At the same time, services that should be maintained and those that can be reduced or interrupted should be identified, and the gradual recovery of reduced or interrupted services should also be considered. In this way, concerns about long-term negative effects will not be experienced in the coming health crisis.

7. Education Sector Progress Report

7.1 General

Information on the education sector has been collected from various data of international organizations such as survey reports and literature materials via the web. In addition to the online interviews in the priority countries of Panama and El Salvador, a field survey was conducted (September 6 to 29, 2021). In Belize and the Dominican Republic, interviews were also conducted during the field survey (January 17 to February 5, 2022). Responses to the questionnaire were obtained through the educational officers of several countries belonging to the Central American Educational and Cultural Coordinating Council (CECC) of Central American Integration System (SICA). Based on the data and information obtained, the Study Team examined the impact of the Coronavirus Disease 2019 (COVID-19), formulated hypothesis on the state of development cooperation, and discussed measures for response and support.

7.2 Summary of Sector Survey

Table 7-1 Sectoral Hypothesis and Policy Recommendations on the State of Development Cooperation (draft) (Education)

No.	Item	Education	
1	Issues from before COVID-19	<ul style="list-style-type: none"> ▪ Low net enrollment rates (primary, lower and upper secondary) ▪ Low education completion rate (primary education) ▪ High out-of-school children rate (primary education) ▪ Low learning achievement (reading, math, science) ▪ Learning achievement gap due to economic disparity ▪ Disparities in educational opportunities (people living in remote areas, the poor, indigenous people, refugee and immigrants, people with disabilities) ▪ Inadequate school facilities 	
2	Grouping by Issue	<ul style="list-style-type: none"> ▪ Existence of traditional schooling issues ▪ Internet access at home for school-aged children ▪ Installation of water supply facilities in schools 	
3	Vulnerabilities Revealed COVID-19 in	<ul style="list-style-type: none"> ▪ Increased risk of drop-out ▪ Delays in learning for students ▪ Loss of educational opportunities for vulnerable groups who have difficulty accessing distance education ▪ Poor quality of education due to lack of preparation for distance learning ▪ Delay in reopening schools due to inadequate school sanitation facilities ▪ Lack of ICT capabilities and skills among teachers ▪ Undernourishment of poor students due to discontinuation of school feeding programs 	
4	New issues that emerged during COVID-19	<ul style="list-style-type: none"> ▪ Delayed or non-implementation of learning assessment and monitoring evaluation ▪ Inadequate Internet access environment at school or home ▪ Lack of ICT equipment (schools, teachers, families) ▪ Lack of digital teaching materials ▪ Lack of know-how in distance education planning and implementation ▪ Lack of ICT skills among teachers ▪ Lack of support for parents ▪ Loss of learning opportunities for students with disabilities ▪ Increased mental burden for students ▪ Discontinuation of school nutrition programs ▪ Reduction of public education budget 	
5	Countermeasures (draft)	Learning delay	<ul style="list-style-type: none"> ▪ Analysis of learning delay and academic decline by learning assessment surveys ▪ Development and enhancement of supplementary and digital teaching materials ▪ Capacity building of teachers (including ICT skills)
		Drop-out of vulnerable groups	<ul style="list-style-type: none"> ▪ Development of teaching materials and teacher guidebooks based on characteristics ▪ Expansion of remedial and supplementary learning ▪ Expansion and strengthening equitable educational opportunities. ▪ Continuation of school feeding and nutrition programs
		School Infrastructure	<ul style="list-style-type: none"> ▪ Strengthening of the school sanitation environment ▪ Development and enhancement of Internet access network

No.	Item	Education
6	Direction of development cooperation and Policy recommendations (draft)	<p><u>Intensive, Long-term, and Continuous Measures to Improve Learning Achievement</u></p> <ul style="list-style-type: none"> ▪ Intensive and continuous measures over a long period of time of year 2030 ▪ Create learning recovery programs and promote learning assessment and analysis, curriculum organization and development of teaching materials ▪ Increase of learning time (strengthening school management plan, increase of number of class days and hours, etc.) ▪ Targeted support for vulnerable groups, tailored to their individual challenges and needs <p><u>Application of Fundamental and Innovative Technologies and Improvement of School Facilities and Environment</u></p> <ul style="list-style-type: none"> ▪ Application of fundamental and innovative technologies to reduce educational disparities. Promotion of the development and use of digital teaching materials and applications. ▪ Private sector collaboration and intra-regional cooperation in the development of digital teaching materials and learning applications. ▪ Development and dissemination of basic technologies, such as communication infrastructure in schools. ▪ Improvement of the school sanitation environment (water facilities, toilets, etc.) to prevent infection in preparation for the reopening of schools. <p><u>Intra-Regional Cooperation and Establishment of a Base in Region</u></p> <ul style="list-style-type: none"> ▪ Promote the development of digital teaching materials and applications based on experience in distance education, and collaborate with other countries in regions (SICA, CARICOM, OECS, etc.) that share common language and educational issues. ▪ Measures to contribute to the transition from special education to inclusive education, accumulation of knowledge and experience in educational support for various disabilities, and regional cooperation and establishment of a base in region for the development of teaching materials and provision of equipment.

Source: Study Team

7.3 Sectoral Scope of Work

Table 7-2 Updated Scope of Works (Education) (October 10, 2021)

No.		Sub-sector	Work Scope
1	Sector Targets		Aiming to realize a society in which each individual can fully develop his or her talents and abilities and live with dignity, the Study Team will analyze and identify issues in the education sector that have emerged due to the impact of COVID-19 through information and data collection that fully takes into account historical assets, and propose effective support measures.
2	Work Scope Update		Based on consultations with JICA, select countries to be surveyed or confirm the priorities of the survey, and update and agree on the scope of the survey.
3	Domestic Information and Data Collection		Collection of information and sorting out of issues on Japan's existing assistance in the field of education
4	[Task 2]		Selection of interview-related institutions
5			Conduct of interview survey
6		Collection and analysis of basic information on school education	<ul style="list-style-type: none"> ▪ Educational policies, strategy and programs related to COVID-19 countermeasures in each country ▪ Program and implementation of COVID-19 assistance by major donors ▪ School education implementation status (including distance education implementation status) ▪ Utilization and access to ICT devices and digital teaching materials
7		Collection and analysis of basic information on School Health	<ul style="list-style-type: none"> ▪ School hygiene environment (measures to reopen schools)
8		Collection and analysis of basic information on other subsectors	<ul style="list-style-type: none"> ▪ Support for countermeasures for vulnerable groups ▪ Other statistics and indicator data ▪ Availability of ICT equipment and digital teaching materials (private sector)
9		Grouping of countries and selecting priority countries	<ul style="list-style-type: none"> ▪ Select priority countries and priority themes based on the results of the collection and analysis of basic information.

No.		Sub-sector	Work Scope
10		Additional survey in priority countries	<ul style="list-style-type: none"> ▪ Analyzing the impact of COVID-19 on priority countries and priority themes ▪ Interviews mainly with priority countries (obtaining supplementary information) ▪ General Interview
11		Preparation of Country Reports	[Task 2] Compile the contents of the survey as country-specific reports for each country.
12	[Task 4]	School education	<ul style="list-style-type: none"> ▪ Development of digital teaching materials and platforms for distance education ▪ Development of the Internet environment ▪ Provision of ICT equipment ▪ ICT training for teachers ▪ Promoting the provision of educational services using television and radio educational services ▪ Development of supplementary teaching materials and establishment of a system to restore delays in learning
13		School health	<ul style="list-style-type: none"> ▪ Development of school hygiene manuals (including provision of school meals) ▪ Maintenance of school facilities (hand washing, water supply) ▪ Teacher training on hygiene toward the reopening schools
14		Identifying vulnerabilities in the education sector and considering support measures	<ul style="list-style-type: none"> ▪ Definition and analysis of existing issues and vulnerabilities in the education sector ▪ Consideration of countermeasures and support measures to overcome vulnerabilities
15		Preparation of hypothesis on the modalities of development cooperation	<ul style="list-style-type: none"> ▪ Develop hypothesis on measures that can be taken to overcome each vulnerability in line with the Ministry of Foreign Affairs' Country Development Cooperation Policy and Project Deployment Plan and each-organization's PDM. ▪ The hypothesis created confirms priorities for cooperation needs on a country-by-country basis.
16		Preparation of sector-specific reports	[Task 4] Prepare the Sector-specific Hypothesis Report by compiling the results of the survey.
17	[Task 5]	Visit international/regional organizations and government agencies to collect additional information related to [Task 2] and [Task 4] and exchange views on how development cooperation should be conducted.	
18	[Task 6/7/8]	Advise on the selection, implementation, and conclusion of pilot projects from the perspective of the education sector.	
19	[Task 9]	Prepare necessary materials for expert meeting and make a presentation on a survey of the sector in charge.	
20	[Task 10]	Develop policy recommendations for the sector in charge	
21	[Task 11]	Prepare academic papers for the sector in charge	

Source: Study Team

7.4 Survey Method by Sector

Information on the education sector was collected through a web-based literature survey, a literature survey by local consultant, and an online interview survey. In addition, questionnaires were sent to priority countries to obtain their responses. For the literature review, the Study Team obtained the necessary information from the websites of the ministries of education in each country, as well as from various data such as research reports and literature materials available on the web of United Nations Educational, Scientific and Cultural Organization (UNICEF) headquarters and regional offices in Latin America, UNESCO, the World Bank, the Inter-American Development Bank (IDB), and other United Nations and international organizations. Based on the collected data, the impact of COVID-19 were verified. In some countries, there is a lack of publicly available information and data, and there are differences in the status of information collection among countries.

7.5 Collecting Basic Information on 23 Target Countries

7.5.1 Collected and Analyzed Data

The collected and analyzed data for each country are as follows. These collected data are organized in the volume 3: 3A Sectoral Country Reports (Basic Information).

- Education statistical data (Net enrollment rate, school completion rate, out-of-school rate for children, government expenditure on education as a percentage of gross domestic product (GDP))
- Government policies and guidelines for COVID-19 response
- School closure situation due to COVID-19
- Implementation of distance education and digital materials and its delivery
- Students' access to distance education services
- Implementation of teacher training for distance education
- Implementation of infection prevention measures for reopening schools
- Sanitary facilities in schools
- Food provision during school closure
- Measures and support for vulnerable groups (the poor, those in remote areas, and people with disabilities)
- Support plan and its implementation by major donors

7.5.2 Analysis of Indicators by Sector

Based on the data collected so far, the Study Team has divided the data into two categories: (1) issues that existed before COVID-19 and (2) impacts due to COVID-19. In addition, the impact of COVID-19 was analyzed and described, which include not only the amplification and seriousness of existing issues, but also new issues that have arisen because of COVID-19. The details of education statistics for each country are described in Section 7.6.

(1) Issues from Before COVID-19

1) Challenges in School Education Shown in Education Statistics Data

The UNESCO statistical data mentioned above such as the net enrollment rate (primary, lower and upper secondary education), primary education completion rate and out-of-school children's rate (primary education) show that more than half of the countries are facing challenges in school education.

In terms of the net enrollment rates, while some countries have generally achieved 95% or higher in primary education, there are still several countries where the net enrollment rates remain below 90% in primary education and even lower in lower and upper secondary education. In Haiti, the country with the lowest primary education completion rate at 53.6%, nearly half of the children drop out before Grade 6. There are three other countries (Bahamas, Guatemala and Honduras) that have not achieved 80% rate. In five countries (El Salvador, Panama, Honduras, Suriname and Guatemala) more than 10% of children are out of school or remain dropping out of school for one reason or another.

2) Low Learning Achievement

The Third Regional Education Quality Survey (TERCE, 2013), a unique Latin American education quality survey conducted regularly by UNESCO's Santiago office and the Latin American Institute for Quality Evaluation of Education, found that overall, the countries participating in the survey¹ had low levels of achievement in reading, mathematics and science in grades 3 and 6. The improvement of children's academic performance in math, reading and science is an urgent issue.

¹ Guatemala, Honduras, Mexico, Nicaragua, Panama, the Dominican Republic (countries targeted in this study)

In addition, the results for the nine countries targeted in this study in the Fourth Regional Education Quality Survey (ERCE, 2019) ², whose findings were released in November 2021, are shown in the table below. The average scores for all 16 Latin American countries participating in the ERCE were 697 points³ in reading, 698 points in math of third grade children, 696 points in reading, 697 points in math, and 702 points in science of sixth grade children. The countries with scores below the average for these Latin American countries were the Dominican Republic (all subjects), Cuba (math in Grade 6), El Salvador (math in Grade 3 and Grade 6), Guatemala (all subjects), Honduras (all subjects except math in Grade 3), Nicaragua (all subjects), and Panama (all subjects). Looking at the percentage of children who were able to achieve Level 2, which is defined as "understanding of basic content," less than half of the children in Grade 3 were in the Dominican Republic, Guatemala, Honduras, Nicaragua, and Panama, and less than half of the children in Grade 6 were in all nine countries and subjects except reading in Costa Rica.

According to the UNESCO ERCE survey report, the region continues to have low levels of learning achievement and, on average, has not made significant progress since the last third TERCE assessment (2013). The only Central American and Caribbean country where substantial progress has been made is the Dominican Republic. The study finds that Latin American countries are facing an education crisis and that raising basic learning achievement remains a concern for making the right to a quality education effective.

Table 7-3 Learning Achievement of Children by Country (ERCE 2019)

Country	Average Score in Grade 3 (Difference in TERCE2013)		Percentage of Grade 3 Children in Level 2 or Above (%)		Average Score in Grade 6 (Difference in TERCE2013)			Percentage of Grade 6 Children in Level 2 or Above (%)		
	Reading	Mathematics	Reading	Mathematics	Reading	Mathematics	Science	Reading	Mathematics	Science
Costa Rica	748 (-6)	725 (-25)	74.7	66.7	757 (+2)	726 (-4)	758 (+2)	54.4	20.9	38.9
Cuba	730 (N/A)	751 (N/A)	69.7	75.0	738 (N/A)	689 (N/A)	779 (N/A)	44.5	20.7	48.6
Dominican Republic	624 (+10)	624 (+22)	27.1	19.8	644 (+11)	636 (+14)	649 (+17)	16.4	2.1	5.6
El Salvador	697 (N/A)	691 (N/A)	56.4	50.1	699 (N/A)	676 (N/A)	705 (N/A)	29.4	7.6	18.6
Guatemala	656 (-22)	662 (-10)	39.3	35.1	645 (-33)	657 (-15)	661 (-23)	15.9	6.7	9.8
Honduras	675 (-6)	702 (+22)	47.2	53.5	661 (-1)	682 (+21)	674 (+6)	16.2	11.2	11.8
Mexico	713 (-5)	722 (-19)	62.6	65.3	726 (-9)	758 (-10)	726 (-6)	41.7	38.0	27.6
Nicaragua	646 (-8)	663 (+10)	36.1	34.6	654 (-8)	663 (+20)	669 (+1)	13.0	3.1	5.3
Panama	659 (-11)	654 (-10)	41.1	31.7	652 (-19)	645 (+1)	672 (-3)	17.5	3.3	11.8

Source: Prepared by Study Team from UNESCO survey reports

3) Education Issues Faced by Remote Area and Indigenous People

In Central America and the Caribbean, many countries have remote areas, so-called "hinterlands," such as mountainous regions far from urban areas and islands that cannot be accessed by land. In some countries, such as Guatemala and Mexico, there are many indigenous people who speak a different language than the official language. These people are economically impoverished, and their school enrollment rate tends to be lower than that of non-indigenous people and urban areas⁴. In addition, many areas do not have electricity or telephone lines, which limits access to distance education equipment (TV, radio, virtual platforms) for these areas and people, and for indigenous children, and

² Los aprendizajes fundamentales en América Latina y el Caribe, UNESCO, 2011

There are 16 participating countries in Latin America. Of these, nine countries were targeted in this study (Costa Rica, Cuba, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, and the Dominican Republic).

³ The results are presented on the scale of scores established in TERCE 2013, with the regional average being 700 points and the standard deviation being 100 points.

⁴ Latinoamérica indígena en el siglo XXI, Grupo Banco Mundial, 2015

also access to educational materials is limited due to their different mother tongues for indigenous children. It has been pointed out that distance education may not be sufficiently accessible for all⁵.

(2) Impact due to COVID-19

The most significant element of the impact due to COVID-19 on education is the prolonged closure of schools. It is easy to assume that this will exacerbate the existing challenges and vulnerabilities. The impact due to COVID-19 has also brought to light new issues that were not previously apparent. In this section, 1) the situation of school closures is described, and 2) the issues caused by them is discussed. In addition, as (3), the Study Team analyzes and discusses the issues that have newly emerged due to the impact of COVID-19.

1) School Closures

According to a joint research report⁶ by UNICEF, UNESCO and the World Bank, as of March 2021, one year after the spread of COVID-19, the Latin American region had the largest number of children out of class compared to the rest of the world, with an average of 158 school days lost.

According to the latest UNESCO data updated to November 30, 2021, the status of school closures in each country from March 2020 to October 2021 shown in the table below. “Full closure” refers to the closure of all schools at the national level due to COVID-19, while “partial closure” refers to the closure of some areas or some grades, and a reduction in face-to-face classes. The full closure period includes the normal summer and winter vacation periods. The average number of weeks of full closure and partial closure in Central American and Caribbean countries for one year and eight months from March 2020 to October 2021 was 31.9 weeks (about 159.6 days) and 27.7 weeks (about 138.5 days), respectively. In addition, the longest full closures were observed from March to August 2020, and partial closures were observed from September onwards in the same year.

Table 7-4 Number of Weeks of Full and Partial School Closure in the Central American and Caribbean Countries

Date	March 2020 to October 2021			March to August 2020		September 2020 to August 2021		September to October 2021	
Country	Full and Partial Closure	Full Closure	Partial Closure	Full Closure	Partial Closure	Full Closure	Partial Closure	Full Closure	Partial Closure
Antigua and Barbuda	65	28	37	16	0	10	28	2	9
Bahamas	66	32	34	14	0	5	34	13	0
Barbados	52	29	23	9	1	10	22	10	0
Belize	58	42	16	10	2	18	14	14	0
Costa Rica	79	43	36	21	0	22	22	0	14
Cuba	62	19	43	15	0	0	37	4	6
Dominica	28	28	0	17	0	0	0	11	0
Dominican Republic	55	33	22	13	0	20	16	0	6
El Salvador	80	46	34	24	0	22	21	0	13
Grenada	69	20	49	12	8	0	37	8	4
Guatemala	79	33	46	24	0	9	33	0	13
Guyana	68	27	41	18	0	9	29	0	12
Haiti	31	18	13	18	3	0	10	0	0

⁵ LACRO COVID-19 Education Response: Reaching the Most Vulnerable Children, UNICEF, August 6th, 2020

⁶ WHAT HAVE WE LEARNT? Overview of findings from a survey of ministries of education on national responses to COVID-19, UNESCO, WB, UNICEF, March 2021

Date	March 2020 to October 2021			March to August 2020		September 2020 to August 2021		September to October 2021	
Country	Full and Partial Closure	Full Closure	Partial Closure	Full Closure	Partial Closure	Full Closure	Partial Closure	Full Closure	Partial Closure
Honduras	81	58	23	25	0	33	10	0	13
Jamaica	61	26	35	14	0	3	31	9	4
Mexico	71	53	18	17	0	36	5	0	13
Nicaragua	15	0	15	0	15	0	0	0	0
Panama	81	55	26	25	0	30	13	0	13
Saint Kitts and Nevis	30	17	13	11	0	6	0	0	13
Saint Lucia	65	39	26	11	4	21	19	7	3
Saint Vincent and the Grenadines	52	26	26	6	10	16	12	4	4
Suriname	57	36	21	20	0	16	8	0	13
Trinidad and Tobago	66	26	40	13	0	5	35	8	5
Average for Central American and Caribbean countries	59.6	31.9	27.7	15.3	1.9	12.7	19.0	3.9	6.9
Number of days converted (5 days x week)	298.0	159.6	138.5	76.7	9.3	63.3	94.8	19.6	34.3

Source: UNESCO global dataset on the duration of school closures, <https://en.unesco.org/covid19/educationresponse>

The following table shows the implementation status of face-to-face classes in each country from April to December 2020, based on UNESCO's survey results, divided into three categories. Green color indicates all schools open for face-to-face classes, blue color indicates some schools open for face-to-face classes (per school or dispersed school attendance), and orange color indicates complete school closure (no face-to-face classes). In case of Nicaragua, which does not have a full school closure, is considered to be due to the summer vacation in the orange color in December, since summer vacation is included in the full school closure period.

Table 7-5 Implementation of Face-to-Face Classes in Schools

Country / 2020	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Antigua and Barbuda	Orange	Orange	Orange	Orange	Orange	Blue	Blue	Blue	Blue
Bahamas	Orange	Orange	Orange	Orange	Orange	Blue	Blue	Blue	Blue
Barbados	Orange	Orange	Green	Green	Orange	Blue	Blue	Blue	Blue
Belize	Orange	Orange	Blue	Orange	Orange	Blue	Blue	Blue	Blue
Costa Rica	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
Cuba	Orange	Orange	Orange	Orange	Orange	Blue	Blue	Green	Green
Dominica	Orange	Orange	Orange	Orange	Orange	Green	Green	Green	Green
Dominican Republic	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
El Salvador	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
Grenada	Orange	Orange	Blue	Blue	Orange	Blue	Green	Green	Green
Guatemala	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
Guyana	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Blue	Blue
Haiti	Orange	Orange	Orange	Orange	Blue	Blue	Blue	Green	Green
Honduras	Orange	Orange	Orange	Orange	Orange	Orange	Blue	Blue	Orange
Jamaica	Orange	Orange	Orange	Orange	Orange	Orange	Blue	Blue	Blue

Country / 2020	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Mexico									
Nicaragua									
Panama									
Saint Christopher and Nevis									
Saint Lucia									
Saint Vincent and the Grenadines									
Suriname									
Trinidad and Tobago									

All schools open for on-site classes
 Some schools open for on-site classes
 No face-to-face classes

Source: Excerpted by Study Team from “Las respuestas educativas nacionales frente a la COVID-19”, UNESCO

This shows that in many countries, schools did not reopen for six months from March to August 2020, when the decision to close schools was made. For example, schools opened in a decentralized manner where students are divided into groups and schools are partially opening in areas where COVID-19 infection is relatively low or where sanitation is well maintained.

An IDB report⁷ noted that in the first semester of 2020, when schools were closed in the Latin American region, some 154 million children between the ages of 5 and 18 stayed home instead of going to school. Schools are at risk of spreading the virus due to the long hours spent in classrooms and playing in close contact with each other during recess; schools in the region have poor access to basic sanitary services such as water and sewerage. The lack of those infrastructure has made it very difficult to prevent the spread of the disease, as recommended by the World Health Organization (WHO), such as hand washing and physical distancing, which has led to the closure of schools in most countries in the region.

As shown above, many students will have lost the equivalent of one year (about 200 days per year) of face-to-face classroom time in the 2020 school year (January-December 2020), and as of the end of October 2021, schools will still be completely closed in seven of 23 countries, including Cuba and Jamaica⁸. The fact that several months to nearly six months of the 2021 school year are already being lost is a major educational crisis.

The table below shows the situation in 23 countries as of October 31, 2021, based on UNESCO's constant monitoring of school openings.

Table 7-6 School Openings (as of the end of October 2021)

Completely Open	Haiti, Nicaragua (There were no consistent school closures) and Antigua and Barbuda (3 countries)
Partially Open	Costa Rica, Guatemala, Mexico, Honduras, El Salvador, Panama, Saint Lucia, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Trinidad and Tobago, Suriname, Guyana, the Dominican Republic (13 countries)
Completely Close	Cuba, Belize, Jamaica, Bahamas, Barbados, Grenada, Dominica (7 countries)

Source: Global Monitoring of School closures caused by COVID-19, UNESCO, compiled by Study Team on October 31, 2021.

2) Issues Posed by School Closures

UNESCO⁹ points out the 13 negative effects of the long period of school closure described in 1) in the table below. Among them, the Study Team examined and analyzed the issues related to children's learning and nutrition. "Loss of Learning Opportunities for Vulnerable Groups and Risk of Dropout" and "Delays in Learning for Students" are listed in the following sections, and the others are listed as (3) Issues Newly Revealed by COVID-19.

⁷ The Inequality Crisis, Latin America and the Caribbean Crossroad, IDB 2020

⁸ UNESCO Global Monitoring of School closures caused by COVID-19 in 2021/10/31

⁹ <https://en.unesco.org/covid19/educationresponse/consequences>

Table 7-7 Adverse Consequences of School Closures (UNESCO)

Adverse Consequences of School Closures (UNESCO)		Description in this report
Interrupted Learning	Schooling provides essential learning and when schools close, children and youth are deprived opportunities for growth and development. The disadvantages are disproportionate for under-privileged learners who tend to have fewer educational opportunities beyond school.	2)Issues Posed by School Closures→ Delays in learning for students 3)Issues Newly Revealed by COVID-19→6)Loss of Learning Opportunities for Students with Disabilities
Poor Nutrition	Many children and youth rely on free or discounted meals provided at schools for food and healthy nutrition. When schools close, nutrition is compromised.	(3)Issues Newly Revealed by COVID-19→8) Nutritional Challenges for Students
Confusion and Stress for Teachers	When schools close, especially unexpectedly and for unknown durations, teachers are often unsure of their obligations and how to maintain connections with students to support learning. Transitions to distance learning platforms tend to be messy and frustrating, even in the best circumstances. In many contexts, school closures lead to furloughs or separations for teachers.	(3)Issues Newly Revealed by COVID-19→3) Lack of Preparation of Teachers and Schools for Distance Education
Parents Unprepared for Distance and Home Schooling	When schools close, parents are often asked to facilitate the learning of children at home and can struggle to perform this task. This is especially true for parents with limited education and resources.	(3)Issues Newly Revealed by COVID-19→4) Lack of Support for Parents of Students
Challenges Creating, Maintaining, and Improving Distance Learning	Demand for distance learning skyrockets when schools close and often overwhelms existing portals to remote education. Moving learning from classrooms to homes at scale and in a hurry presents enormous challenges, both human and technical.	(3)Issues Newly Revealed by COVID-19→1) Inadequate Access to Distance Education and Internet Environment 2) Lack of Know-how on Digitalized Teaching Materials for Distance Education 3) Lack of Preparation of Teachers and Schools for Distance Education
Gaps in Childcare	In the absence of alternative options, working parents often leave children alone when schools close and this can lead to risky behaviors, including increased influence of peer pressure and substance abuse.	—
High Economic Costs	Working parents are more likely to miss work when schools close in order to take care of their children. This results in wage loss and tend to negatively impact productivity.	—
Unintended Strain on Health-Care Systems	Health-care workers with children cannot easily attend work because of childcare obligations that result from school closures. This means that many medical professionals are not at the facilities where they are most needed during a health crisis.	—
Increased Pressure on Schools and School Systems that Remain Open	Localized school closures place burdens on schools as governments and parents alike redirect children to schools that remain open	—
Rise in Dropout Rates	It is a challenge to ensure children and youth return and stay in school when schools reopen after closures. This is especially true of protracted closures and when economic shocks place pressure on children to work and generate income for financially distressed families	2)Issues Posed by School Closures→ Loss of learning opportunities for vulnerable groups and risk of dropout
Increased Exposure to Violence and Exploitation	When schools shut down, early marriages increase, more children are recruited into militias, sexual exploitation of girls and young women rises, teenage pregnancies become more common, and child labor grows	—
Social Isolation	Schools are hubs of social activity and human interaction. When schools close, many children and youth miss out of on social contact that is essential to learning and development.	—
Challenges Measuring and Validation Learning	Calendared assessments, notably high-stakes examinations that determine admission or advancement to new education levels and institutions, are thrown into disarray when schools close. Strategies to postpone, skip or administer examinations at a distance raise serious concerns about fairness, especially when access to learning becomes variable. Disruptions to assessments results in stress for students and their families and can trigger disengagement.	(3)Issues Newly Revealed by COVID-19→5) Delays in Implementation of Learning Achievement Assessment and Monitoring and Evaluation

Source: Prepared by Study Team based on information on UNESCO's website.

Loss of Learning Opportunities for Vulnerable Groups and Risk of Dropout

During the school closure period, governments have been making efforts to deliver educational services by taking various measures such as setting up virtual education platforms, conducting remote classes via the Internet, distributing classes through TV and radio, and distributing printed teaching materials to areas where electricity and radio waves are not available. However, UNICEF¹⁰ has pointed out that vulnerable groups may not be sufficiently reached. The vulnerable groups include children from poor families, children living in remote areas, indigenous peoples, refugees and children with disabilities. According to the latest UNICEF data¹¹, Internet access among school-age children in many countries (e.g., Barbados, the Dominican Republic, Guatemala, Haiti, Nicaragua, Panama) is 10% to less in rural areas and 0% among the poor (see Volume 3: 3A Sectorial Country Reports).

In some countries, there are still areas where electricity and radio waves do not reach, and children living in remote areas often do not have access to remote classes even if there are broadcasts via TV or radio. In particular, in poor areas and areas where many indigenous people live, there are cases where many children and adults live in a small house, and even if there is a TV or radio, they often do not have the environment to concentrate on learning. Hygiene education at home is also important because not only is it difficult to concentrate on learning, but also it is an environment with a high risk of COVID-19 infection. For vulnerable groups of children with weakness of self-control, concentration and motivation to learn at home, restrictions on school attendance can easily lead to disengagement from learning. The survey¹² of 17 countries in Latin America conducted by UNESCO's regional office in Chile in July 2020, the governments of Costa Rica, El Salvador, Mexico and Panama indicated that they had difficulties in dealing with distance education in remote areas.

The World Bank's report¹³ presented in March 2021 on the Latin America region pointed out that school closures could affect the lowest 20% of income earners, widen the pre-COVID-19 socioeconomic education gap by 12%, and increase dropouts of 6 -17 aged children by at least 15%. The World Bank¹⁴ also estimates that the pandemic could result in more than 7 million dropouts among children attending primary and secondary schools worldwide.

Delays in Learning for Students

In the Central American and Caribbean countries, where many pupils have not reached a basic level of proficiency in mathematics and reading in primary and secondary education, the continued school closure may make it worse the issue that has existed since before COVID-19. According to the World Bank's report¹⁵ presented in March 2021 on the Latin America region, the percentage of "learning poverty" defined as 10-year-olds who cannot read and understand simple sentences, may have increased from 51% to 62.5%. It is estimated that about 7.6 million children of primary school age in the region are in "learning poverty," an increase of more than 20% from the current estimate.

According to the aforementioned the World Bank report, it is estimated that the percentage of students in lower secondary education who are unable to understand textbooks, which was 55% in the Latin America region as a whole prior to COVID-19, will reach 77% due to the closure of schools for three months.

In addition, simulations based on data from the Programme for International Student Assessment (PISA) for Development Survey for Ecuador, Guatemala, Honduras, and Panama show that closing school for three months in Grade 3 would result in a year's worth of learning lost by the time

¹⁰ LACRO COVID-19 Education Response: Reaching the Most Vulnerable Children, UNICEF LACRO EDUCATION SECTION, August 2020

¹¹ <https://washdata.org/>

¹² Sistemas educativos de América Latina en respuesta a la Covid-19: Continuidad educativa y evaluación, UNESCO, July 2020

¹³ Acting now to protect the human capital of our children: The costs of and response to the COVID-19 pandemic impact on the education sector in Latin America and the Caribbean, the World Bank, March 2021

¹⁴ SIMULATING THE POTENTIAL IMPACTS OF COVID-19 SCHOOL CLOSURES ON SCHOOLING AND LEARNING OUTCOMES: A SET OF GLOBAL ESTIMATES, World Bank Group, June 2020

¹⁵ Acting now to protect the human capital of our children: The costs of and response to the COVID-19 pandemic impact on the education sector in Latin America and the Caribbean, the World Bank, March 2021

students reach Grade 10, unless remedial courses are provided. The Global Education Monitoring Report 2020¹⁶ notes that these gaps could be even larger.

(3) Issues Newly Revealed by COVID-19

Due to the hurried implementation of distance education in many countries following the closure of schools for a long period of time, some new issues have arisen or have become apparent, apart from the existing issues. The following is a summary of these issues.

1) Inadequate Access to Distance Education and Internet Environment

In order to continue providing learning opportunities during school closures, countries implement distance education in various ways, such as interactive distance learning through virtual platforms using the Internet, distribution of educational digital content from Ministry of Education websites and other sites, and distribution of educational programs through TV and radio. However, access to these educational services is only possible if households have not only an Internet connection but also an electricity line and ICT equipment or at least a smartphone that children can use. However, in Central America and the Caribbean, it is said that there are many children who do not have such a home environment. (For information on Internet access in each country, see volume 3: 3A Sectoral Country Reports (basic information).

According to the Global Education Monitoring Report 2020, for example, one in two of the poorest 25 % of rural households in Nicaragua and one in three in Honduras do not have access to electricity. In Guatemala, only 13 % of the poorest, 20 % of households, owned a television in 2014, and only 52 % of households have access to the internet and 45 % have access to a computer in 2017. Fewer than one in five students of 15-year-old students have Internet and computer access or had at least two mobile phones. In Mexico, as of 2018, 1.08% (257,146) of the population aged 7 to 17 lacked access to television (4.47%), radio (54.72%), or the Internet (24.84%), and therefore did not have access to distance education. In addition, one in five of the country's indigenous children between the ages of 3 and 17 do not have access to either electricity, television or the Internet at home. Even when they do have access to the Internet, there is often not enough capacity to download data or make video calls. Early childhood education has been noted as being particularly affected.

2) Lack of Know-how and Digitalized Teaching Materials for Distance Education

As many countries closed their schools at the same time, there was almost no know-how about distance education and no advance preparation of digitalized teaching materials. The governments of various countries hurriedly make policies on distance education and prepared plans to launch virtual platforms, digitize teaching materials, and distribute classes via TV and radio. Initially, most countries did not have a policy on distance education and it was left to the discretion of each school and teacher, and in many cases, it was implemented in a hands-on manner. In some countries where national textbooks had already been digitized, or where digitization had been promoted quickly, teacher guides and weekly curricula based on these textbooks were developed and used, and a system for providing remote educational services was gradually established. On the other hand, some countries have had to rely on video and digital teaching materials provided by the private sector, and many have pointed out that the quality of learning has declined.

According to a survey¹⁷ conducted by UNESCO's Regional Office in Chile in July 2020 in 17 countries in Latin America, the governments of Honduras, Mexico and the Dominican Republic cited the quality of learning materials used in distance education as a challenge. In addition, Cuba, Honduras, Mexico, Nicaragua, Panama, and the Dominican Republic indicated that they are reducing or centralizing curriculum content in their distance education programs.

3) Lack of Preparation of Teachers and Schools for Distance Education

According to the aforementioned questionnaire survey conducted by UNESCO's Regional Office in Chile, El Salvador, Honduras, Panama, and the Dominican Republic cited the lack of teacher training as a challenge in implementing distance education. Because the school closures were abrupt

¹⁶ Latin America and Caribbean Inclusion and education: All means all, UNESCO, SMAA, Global Education Monitoring Report, 2020

¹⁷ Sistemas educativos de América Latina en respuesta a la Covid-19: Continuidad educativa y evaluación, UNESCO, July 2020

and implemented without a system in place, there has been a lack of preparation for the distance education transition and support for teachers and parents of students regarding distance education. There is a lack of support for schools and teachers in terms of technical training on how to deliver classes via distance education and how to use the Internet and information and communications technology (ICT) devices, staffing for implementing distance education, and infrastructure development in schools. An officer from the Ministry of Education in Panama, who was interviewed by the Study Team, recognized that in a country where many teachers are older than 60 years old, it is difficult for them to acquire new knowledge and skills about ICT and online platforms in a short period of time. Many of them use the social networking site WhatsApp to continue their teaching. There is a need to create a system in which those who are relatively knowledgeable about ICT in each school or region can support those who are not familiar with ICT, and work as a team to provide training and guidance, as well as to create a manual that can be easily operated by anyone.

4) Lack of Support for Parents of Students

It has been pointed out by UNICEF and other organizations that there is a lack of guidance for parents on home study and distance education, and insufficient information on materials and access to distance education, especially in remote areas and vulnerable groups.

5) Delays in Implementation of Learning Achievement Assessment and Monitoring and Evaluation

Many countries have not implemented learning achievement assessments at the end of the 2020 school year due to the current situation where access to distance education is not equally available to all students, making it difficult to assess learning as usual, and teachers who are forced to stay home have limited means to measure academic achievement. In some countries, assessment is based on alternative learning outcomes such as portfolios because of the difficulty of assessing learning through tests as usual. There is an urgent need for strategic planning on how to assess learning during the school closure period after school reopening, how to measure learning loss and delays during the school closure period, how to connect to remediation, and how to reflect it in the next year's learning plan.

In addition, many countries have not been able to implement the education census by the education planning unit of the Ministry of Education because the lockdown has made it practically difficult for the ministry staff to work from home and to collect data on learning outcomes and students' school life. The census would normally be submitted by each school to the regional educational office due to school closures. According to a UNESCO survey¹⁸ conducted in July 2020 in 129 countries around the world (with 32 countries in Latin America), two-thirds of the countries said that they would have to cancel or postpone data collection for the 2020-2021 school year. This makes it difficult to conduct timely fact-finding surveys and reflect them in national education policy. According to the survey, more than half of the countries are seeking financial support for education data collection surveys, equipment such as computers and Internet access, and technical support and training for online data collection and analysis. In El Salvador, a Japan International Cooperation Agency (JICA) technical cooperation project (2021/4-2025/3) has started in April 2021, aiming to improve classes by revising and improving textbooks based on the results of learning evaluation.

6) Loss of Learning Opportunities for Students with Disabilities

According to a UNICEF survey¹⁹, while many countries are taking measures to accommodate students with disabilities, 30% of low-income countries have no support measures in place. Distance learning delivered via the Internet, television, and radio is not only a factor of physical disabilities of students, but also the lack of accessibility. For example, a survey in Guatemala showed that 79% of people with disabilities do not have a computer at home, 82% in rural areas, and 56% of those without a mobile phone (2018)²⁰.

¹⁸ Survey of COVID-19 Impact on National Education Planning Units, UNESCO, Oct. 2020

¹⁹ COVID-19: ARE CHILDREN ABLE TO CONTINUE LEARNING DURING SCHOOL CLOSURES? A global analysis of the potential reach of remote learning policies using data from 100 countries, UNICEF, <https://data.unicef.org/resources/remote-learning-reachability-factsheet/>, see in ^{13th} May 2021

²⁰ INFORMES COVID-19 Personas con discapacidad y sus derechos frente a la pandemia de COVID-19: que nadie se quede atrás, CEPAL, Jan 2021

Students with disabilities may not only have difficulty in accessing distance learning courses delivered via the Internet but may also lose out on learning opportunities due to lack of appropriate learning materials tailored to their disabilities and characteristics, as well as lack of knowledge and understanding of disabilities among teachers. The impact of the COVID-19 pandemic has been disproportionately felt by learners with disabilities. For example, many learning platforms and digital content are inaccessible to students who are blind or deaf, even if they have access to assistive technology. Students who are blind or deaf say that they struggle with information shared in images that software cannot read and with frequent changes in online platforms.

In addition, for children with disabilities, the absence of school also means the loss of support related to various disability-specific specialties. For example, children with mild learning disabilities, such as attention deficit hyperactivity disorder, may have difficulty working alone with a computer. For learners who are sensitive to change, such as children on the autism spectrum, losing the routine provided by the school can be a great challenge. And even if school is reopened, the support provided at school may be reduced or stopped to reduce the risk of infection. Daily learning routines are essential for their emotional stability and physical functioning, but it is difficult to provide the same support at home.

7) Underdeveloped Sanitation in Schools

The status of school sanitation, which is essential for preventing infections in schools, has also emerged as a new issue for the reopening schools. According to the latest survey²¹ conducted by WHO and UNICEF, the percentage of schools with basic water supply, toilets and hand-washing facilities is close to 100% in some countries, while in other countries, such as Guatemala, Haiti, Nicaragua and Panama, between 20% and nearly 50% of schools do not have such facilities. Each country is gradually reopening schools based on the standards for infection prevention set by WHO and their ministries of health, but many areas have not been able to reopen schools due to inadequate school sanitation facilities. (See Volume 3: 3A Sectoral Country Reports (Basic Information))

8) Nutritional Challenges for Students

School feeding programs in developing countries have been implemented as an incentive for vulnerable children to attend school, along with nutritional support, to ensure their completion of primary education, and have been found to have a positive impact on increasing school attendance. It is also an essential nutritional opportunity for poor children, who may fall prey to malnutrition if school meals are not provided during school closures. The interruption of school meals, the most reliable source of food for 10 million students in the Latin American region, and the face-to-face health and other services they used to receive at school, along with the economic hardships faced by many of their families, can have a significant negative impact on the physical, mental and emotional health of students, even increasing the likelihood of risky behavior (criminal behavior, sexual violence, adolescent pregnancy, etc.) they may act, the World Bank²² pointed out.

According to the UNDP report²³, school nutrition programs were cancelled due to the closure of schools by the COVID-19 pandemic, and some countries are implementing alternative measures such as distribution of food packages. However, there are nine countries²⁴ targeted in this study where nutrition programs have been reduced by 75-100%, and one country (Guyana) where nutrition programs have been reduced by 25-50%.

9) Education Budget Cuts

According to a World Bank report²⁵, while many countries have increased their budget for responses to COVID-19 in education with financial support from donors, most countries expect their

²¹ WHO/UNICEF Joint Monitoring Programme for water supply, sanitation and hygiene in schools, <https://washdata.org/>, on 1st July 2021

²² ACTING NOW TO PROTECT THE HUMAN CAPITAL OF OUR CHILDREN, World Bank Group, 2021

²³ Challenges posed by the COVID-19 pandemic in the health of women, children, and adolescents in Latin America and the Caribbean, UNDP, Sep 2020

²⁴ Antigua and Barbuda, Barbados, Dominica, Grenada, Belize, Mexico, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines

²⁵ SIMULATING THE POTENTIAL IMPACTS OF COVID-19 SCHOOL CLOSURES ON SCHOOLING AND LEARNING OUTCOMES: A SET OF GLOBAL ESTIMATES, World Bank Group, June 2020

national education budgets to decline during the economic crisis due to COVID-19, losing 16% of their investments, especially in basic education.

"The Education Finance Watch 2021"²⁶ report finds that two-thirds (65%) of low- and middle-income countries have cut their public education budgets since the start of the COVID-19 pandemic in order to secure emergency funding for infection prevention. As the economic impact of the pandemic continues and the financial situation worsens, there is a risk that future cuts will be larger. Furthermore, countries such as Haiti, Honduras, countries of the Caribbean Community (CARICOM) (GPE²⁷ grant countries) that rely on donor aid for their education budgets are expected to face a difficult environment, with UNESCO estimating that donor aid for education will decline by USD 2 billion from its peak in 2020 and may not return to 2018 levels for another six years, according to UNESCO Deputy Director-General Stefania Giannini.

In order to continue the distance education that was urgently implemented due to the school closures, many investments will need to be increased, including connectivity, educational technology, and the improvement of teachers' digital skills, but cuts in the education budget will reduce investments in national textbooks, learning materials, and school infrastructure, as well as in distance education. This could have a significant impact on learning.

As a result of hearing the ministries of education in eight member countries through the Coordinación Educativa y Cultural Centroamericana (CECC), the status of the five countries that responded is as follows. Additional information on Belize and Dominican Republic was obtained through field survey.

Table 7-8 Education Budget Situation in Five Countries

Country	Has Education budget for FY2022 increased due to COVID-19?	Is the FY2022 budget the same level as the FY2020 budget?	Has the FY 2022 budget been reduced?
Belize	No	No	Yes Teachers' salaries have been cut by 10% and work days have been reduced by one day, from five to four days/week. Since teachers will be off on Fridays, students will be studying at home. The plan is to return to normal as soon as the national economy recovers.
Costa Rica	No The education budget is capped by the Fiscal Strengthening Law, which aims to curb current spending and direct it towards substantive activities. This is in order to strengthen linkages with public-private partnerships that generate investment and employment.	No There is a reduction compared to FY2020.	No The proposed budget for FY2022 shows an increase of 0.26% compared to the previous fiscal year, but a decrease of 4% compared to FY2020.
Dominican Republic	No The budget of the Ministry of Education will increase by 17.84% in FY 2022 compared to 2021, not due to COVID-19, but due to the achievement of goals set in the institutional strategic plan, agreements with teachers' unions, and the implementation of programs aimed at improving the quality of education.	No The budget for FY 2022 has increased by 12.57% compared to FY 2020.	Yes The Ministry of Education's budget for FY 2021 decreased by 4.47% compared to FY 2020.

²⁶ Education Finance Watch 2021, World Bank & UNESCO, 2021

²⁷ Global Partnership for Education: GPE, GPE mobilizes partners and funds to help low-income countries transform their education systems so that all girls and boys have access to the quality education and they need to reach their full potential and contribute to building a better world.

Country	Has Education budget for FY2022 increased due to COVID-19?	Is the FY2022 budget the same level as the FY2020 budget?	Has the FY 2022 budget been reduced?
	The current budget of the Ministry of Education for FY 2021 amounts to DOP 196,159,106,466 (USD 3,423,370,095) from both internal and external sources, representing 3.68% of the projected GDP and 17.92% of public spending. According to the Director of the Department of Budget, Programs and Economic Research of the Ministry of Education, who was interviewed in the field survey, the FY2020 budget increased by 17% over the FY2019 budget. The reason was the investment in distance education, which was used for ICT technology, TV and radio education program development, digital materials creation, and teacher training. In addition, nutrition programs were continued to be distributed to families during school closures, so the cost of these programs was also included.		
El Salvador	Yes, education budget increased by 9.3%. The commitments included in the budget guarantee the continuation of education and the reduction of the digital divide.	No The education budget was increased from FY 2021.	No
Guatemala	Yes In the impact of COVID-19, the Ministry of Education has undertaken a budget plan to enhance access to technology for pupils and teachers. The purpose is to provide educational services to pupils in a hybrid and face-to-face manner as well as to guarantee biosecurity measures.	No The FY2022 budget is not the same as the FY2020 budget, as it is programmed to meet current needs.	No

Source: Prepared by Study Team based on the responses to the questionnaire and interviews.

In Central America and the Caribbean, many countries have not released information on their education budgets and expenditures for 2019 and beyond, making it difficult to survey and analyze the current status for countries other than those mentioned above.

10) Current Situation of Higher Education (Universities)

According to UNESCO's May 2020 report²⁸ on the impact of COVID-19 on higher education in the Latin American and Caribbean regions, 23.4 million higher education institutions were affected by the temporary closure of universities, with approximately 23.4 million students and 1.4 million teachers, representing more than 98% of the region's higher education student and teacher population. According to the interviews conducted by UNESCO, the main difficulties faced by students in higher education institutions during the pandemic were ICT equipment (more than 50%), Internet access (68%), maintaining class schedules (68%), and financial concerns (68%), which are higher in the Latin American region compared with the global survey. Online education programs vary widely in quality and completion rates, and some higher education institutions in more remote parts of the country do not have broadband Internet service or even basic connectivity.

Most countries have developed recommendations and guidelines for higher education institutions, some of which focus on pedagogical support. However, with the exception of Chile, which has developed a national action plan to address the impact of COVID-19 in higher education (guidelines for action ranging from technical and pedagogical support to financial aspects), governments in Latin America tend to limit themselves to the following three actions. (1) administrative measures to protect the functioning of the educational system, (2) financial measure, and (3) the provision of resources to continue educational activities. For (1), these include, for example, changes in course registration and examination timetables, changes in the way of examination are administered, and the continuation of degree accreditation and quality assurance procedures. With regard to (2), some countries provide support to promote improved conditions for access to ICT equipment and mobile connectivity packages that enable students and teachers to learn and improve their skills at a distance. In the case of the University of Panama, mobile operators have taken steps such as ensuring that downloads of teaching materials, class videos, and other learning items from the university's Internet domain do not count towards the number of subscriptions. Regarding (3), the resources include temporary lending of laptops and tablets, library literature, technical support for virtual platforms for students and teachers, and social and emotional support.

²⁸ COVID-19 y educación superior: De los efectos inmediatos al día después, UNICEF, 2020

According to the report, public institutions of higher education are expected to face significant cuts in public investment, while some private institutions of higher education are expected to be forced to close. Since most university faculty members in the Latin American and Caribbean countries are not formally employed but are mostly contracted based on the number of hours of teaching, their employment may be affected by public budget cuts. Students who have just entered university or who will graduate from high school in 2020-2021 and wish to enter university will be the most affected by the complete shift to distance learning and changes in class schedules. Students who graduate from university in 2020-2021 will also be affected. The report predicts that students graduating from college in 2020-2021 will have difficulty finding jobs due to the country's economic downturn and will also have difficulty repaying student loans and scholarships. There are also concerns that students in the most vulnerable situations will tend to drop out and be excluded from higher education due to financial reasons, such as increased cost of living, purchase of equipment to support distance learning and Internet connection costs, which will accelerate inequity and inequality in access to higher education.

At the same time, large public and private universities with research capacity are stepping up their efforts on coronaviruses. In the Central American region, a number of national universities in Costa Rica, Honduras, and Mexico are providing services and producing goods needed to deal with the effects of the pandemic. The Technological University of Panama, where the interviews were conducted, is also collaborating with the Ministry of Health to research, produce, and provide air purifiers and equipment for infection prevention.

The current situation at the National University of Panama and the National Technological University of Panama, where the interviews were conducted, is as follows: the university buildings were closed in March 2020 and the transition to distance education was made. As part of the transition, the department in charge of ICT at the university led a two-week training session for teachers on how to teach online classes and use tools such as virtual platforms and teleconferencing applications (Teams, Zoom, Moodle). In addition, in order to ensure access to online classes not only at campuses in central capital city but also at regional campuses, they have established an optical fiber internet environment and asked telecommunication companies to cooperate in making data communication free for students. In 2020 and 2021, university tuition is free of charge, and measures are being taken to ensure that students with financial difficulties do not drop out of university for financial reasons. Fewer students are dropping out, and in fact, more students are registering for courses due to the free tuition.

At the Technological University of Panama, in a survey of students conducted during the second semester of 2020, 88% of students reported taking distance education courses by cell phone, 78% by laptop, 13% by tablet, and 13% by desktop computer (duplicate responses).

Due to the impact of COVID-19, planned local activities such as exchange programs and academic exchanges with overseas universities were cancelled, but the online language courses (including Japanese) were positively affected by the increase in the number of students. JICA's dispatch of Japanese language instructors as overseas volunteers have been suspended, but there are high expectations that they will be dispatched again. They plan to continue expanding and promoting the JICA Chair (JICA's project to support the establishment of Japanese studies courses) at universities in Japan and dispatching international students for the Sustainable Development Goals (SDGs) Global Leader Training Program.

In addition, the National University of Belize, where interviews were conducted in the field, has fully shifted to distance learning from March 2020 to January 2022. In comparison to the policy-oriented basic education, the budget from the national government is small, and 50% of the university's operating expenses are covered by its own income such as tuition fees. The number of enrollment students in 2022 has decreased by more than 20% from about 5000 to 3700 students due to the impact of COVID-19, and the university's operating expenses are also in a difficult situation. For students in Belize, there is inequity in access to public higher education due to high tuition fees and few public student loans and scholarships, and this is being abetted by the impact of COVID-19. Universities are helping students who do not have the necessary ICT equipment or Internet access for distance learning by specially releasing computer labs.

The JICA Chair conducted a course online in March 2021, which was very well received and they hope to continue it.

The table below shows the implementation status of JICA Chairs in the Central American and Caribbean regions. In the Latin American and Caribbean regions, the JICA Chair is being actively promoted, and the soil is being created to accelerate its implementation while increasing the number of cooperating universities in the future.

Table 7-9 Initiatives of JICA Chairs in Central America and the Caribbean

Country	University	Activity	Conducted date
Mexico	National Autonomous University	Asia-Africa Research Program (8 classes in total)	From September 2021
Guatemala, El Salvador, Honduras	Honduras National Autonomous University, El Salvador University, Rafael Landívar University of Guatemala	Symposium commemorating the 200th Anniversary of Central America's Independence "Seven Chapters on Japanese Modernization"	September 23, 2021
Guatemala	ISTMO University	Online course "Japan's Development: The Process of Modernization" JICA Chair course with credits (12 classes in total)	July 21 to November 3, 2021
Nicaragua	Universidad Centroamericana	Online lecture "7 Chapters on Japanese Modernization" "Economic Development in Japan"	July 14, 2021
El Salvador	National University of El Salvador	Online lecture "The Path of Change from the Perspective of Development Experience in Japan"	June 24, 2021
Panama	National University of Panama	Online lecture "Educational Development in Modernization in Japan"	May 18, 2021
Belize	National University of Belize	Online lecture "7 Chapters on Japanese Modernization"	March 2021
Haiti	National University of Haiti	Online seminar "Development of Latin America and the Caribbean"	April 2021
Dominican Republic	Autonomous University of Santo Domingo	Lectures "Educational Development in Modernization in Japan" "Japan's experience and international cooperation on the topic of educational development in the Latin America"	December 3, 2021
Sant Lucia	Sir Arthur Lewis Community College	Lectures "Educational Development in Modernization in Japan" "Japan's experience and international cooperation on the topic of educational development in the Latin America"	February 8, 2022
Jamaica	the University of West Indies	Lectures "Educational Development in Modernization in Japan" "Japan's experience and international cooperation on the topic of educational development in the Latin America"	February 15, 2022

Source: Prepared by Study Team from JICA Homepage <https://www.jica.go.jp/dsp-chair/chair/case/america.html>

7.5.3 Evaluation of Policies Taken by the Government Related to COVID-19

(1) Policies Related to COVID-19

The following table summarizes the information collected by November 2021 regarding the education policies related to COVID-19 by country, divided into three categories: COVID-19 policies and strategies, guidelines and guidance for reopening schools, and measures for vulnerable groups. While some countries have prepared detailed and specific policies and guidance from an early stage such as Costa Rica, El Salvador and Panama, etc., published them on the web, and made them widely known to educators and the public, other countries have used those prepared by UN agencies such as UNICEF, or formulated them with the support of donors, and have a lack of information. There are differences among countries.

Table 7-10 Policies Related to COVID-19 in Each Country

Country	Policy and Strategy	School Reopening Guidelines	Countermeasures for Vulnerable Groups
Belize	<ul style="list-style-type: none"> 2020-21 Curriculum of study reduced by 40%; it will continue in 2022. 	<ul style="list-style-type: none"> - Guidelines and policies for reopening schools No.1-2 	<ul style="list-style-type: none"> Distribution of food packages for poor families
Costa Rica	<ul style="list-style-type: none"> Guidelines for Supporting Distance Education Implementation Policy for reopening face-to-face classes Policy for assessment of learning in 2021 	<ul style="list-style-type: none"> Return strategy Includes Teacher Training Guidelines, School Meal Service Guide, School Sanitation Guide, and Infection Emergency Procedures Guide. 	<ul style="list-style-type: none"> Guidelines for a comprehensive approach to vulnerable groups Food and nutrition programs for children and adolescents
El Salvador	<ul style="list-style-type: none"> Educational Strategies for Pandemic Crisis Preparedness An educational and administrative guide for the continuing education of pupils at all levels of education 	<ul style="list-style-type: none"> Guidelines for returning to the classroom (for educational institutions and for students and parents) 	-
Guatemala	<ul style="list-style-type: none"> Comprehensive plan for prevention, response, and recovery from coronavirus (COVID19) Home Study Strategies 	<ul style="list-style-type: none"> A guide for teachers, parents, and students on returning to school 	<ul style="list-style-type: none"> Development of infection prevention guidelines and educational materials in indigenous languages Distribution of audio materials for children with visual impairment
Honduras	<ul style="list-style-type: none"> Digital Education Strategy 	<ul style="list-style-type: none"> Strategies for getting back to the classroom safely (in preparation) 	-
Jamaica	-	<ul style="list-style-type: none"> Education COVID-19 Management Task Force established. A Guide to School Hygiene 	<ul style="list-style-type: none"> UNICEF-supported distribution of learning tablets to children with disabilities
Mexico	<ul style="list-style-type: none"> 10 Suggestions for Education in the COVID-19 Crisis 	<ul style="list-style-type: none"> COVID-19 preventive measures for the national education sector 	<ul style="list-style-type: none"> Conducting radio programs in 22 indigenous languages
Nicaragua	<ul style="list-style-type: none"> National strategies for basic and secondary education subsystems to face the challenges of the COVID-19 pandemic 	<ul style="list-style-type: none"> A Guide of Biosecurity (Education for Health Prevention) 	-
Panama	<ul style="list-style-type: none"> Action Plan of Education Strategy to confront COVID-19 (Education Stars Never Stop Strategy) Operational Rules for Distance Education Support 	<ul style="list-style-type: none"> Guidelines for Biosecurity Measures to Reduce the Risk of COVID-19 Infection Biosecurity Guide for Educational Institutions 	<ul style="list-style-type: none"> TV program on inclusive education (with sign language interpreters) Distribution of educational materials in indigenous languages
Bahamas	-	<ul style="list-style-type: none"> Safe School Reopening Strategic Plan, prepared by CARICOM 	-
Barbados	-	<ul style="list-style-type: none"> Guidelines for Safe School Reopening 	<ul style="list-style-type: none"> Loans for the socially vulnerable (IDB support)
Cuba	<ul style="list-style-type: none"> National Action Agenda for COVID-19 Education for socio-emotional care to face natural, technological, and health disasters (booklet) 	<ul style="list-style-type: none"> Measures for post-COVID-19 Measures to prevent infection before school resumes, etc. 	-
Dominican Republic	-	<ul style="list-style-type: none"> A Guide to School Hygiene Creation of the National Council for Education. 	<ul style="list-style-type: none"> Tuition exemption for high school students Food Supply Program
Guyana	-	<ul style="list-style-type: none"> Guidelines for reopening schools (supported by UNICEF) 	-
Haiti	<ul style="list-style-type: none"> COVID-19 Response Plan for Education 	-	-

Country	Policy and Strategy	School Reopening Guidelines	Countermeasures for Vulnerable Groups
Jamaica	-	<ul style="list-style-type: none"> Education COVID-19 Management Task Force established. A Guide to School Hygiene 	- UNICEF-supported distribution of learning tablets to children with disabilities
Eastern Caribbean countries (Antigua and Barbuda, Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines)	<ul style="list-style-type: none"> Apply the Education Sector Response and Recovery Strategies developed by the Organization of Eastern Caribbean States (OECS). 	<ul style="list-style-type: none"> Applying the Safe School Reopening Guide developed by UNICEF 	-
Saint Lucia	<ul style="list-style-type: none"> - Education Sector Continuity Plan for Schools (COVID-19) 	<ul style="list-style-type: none"> National COVID-19 Guidance for Administrative Centers Infection prevention strategies or protocols for reopening face-to-face classes 	- Not implemented.
Guyana	-	<ul style="list-style-type: none"> Guidelines for reopening schools (supported by UNICEF) 	-
Suriname	-	-	-
Trinidad and Tobago	-	<ul style="list-style-type: none"> Guidelines for Reopening of Schools 	-

Source: Compiled by Study Team based on information from various reports

(2) Distance Education Implementation Method

Based on the collected information so far, the following table summarizes the methods of implementing distance education that each country has used during the school closure period (○ indicates implementation by the government, △ indicates implementation by private body).

Table 7-11 Distance Education Implementation Methods by Countries

Country	Online Platform	Digital resource	Television	Radio	Distribution of Printed Educational Materials	Others (SNS and SMS)
Antigua and Barbuda	△	○	○	○	○	-
Bahamas	○	○	○	○	○	-
Barbados	○	-	○	○	-	-
Belize	○	○	○	○	○	-
Costa Rica	○	○	○	○	○	○
Cuba	○	○	○	○	-	-
Dominica	○	-	○	○	-	-
Dominican Republic	○	○	○	○	○	○
El Salvador	○	○	○	○	○	○
Grenada	△	-	-	-	-	-
Guatemala	○	○	○	○	○	-
Guyana	○	○	○	○	○	-
Haiti	○	△	○	○	△	-
Honduras	○	○	○	○	○	○

Country	Online Platform	Digital resource	Television	Radio	Distribution of Printed Educational Materials	Others (SNS and SMS)
Jamaica	○	○	○	○	○	○
Mexico	○	○	○	○	○	○
Nicaragua	-	○	○	-	-	○
Panama	○	○	○	○	○	○
Saint Kitts and Nevis	○	△	○	-	-	-
Saint Lucia	○	△	-	-	○	○
Saint Vincent and the Grenadines	○	△	-	-	-	-
Suriname	○	-	○	-	○	○
Trinidad and Tobago	○	○	○	○	-	-

Source: Compiled by Study Team based on information from various reports

(3) Distance Education Readiness

UNICEF has established the Remote Learning Readiness Index (RLRI), which measures the readiness of countries to provide distance education, and is surveying 67 countries around the world. The index is comprised of three domains: households, government policy response capacity, and system-level emergency preparedness. The "households" indicator comprehensively evaluates the availability in the home technological assets needed to access distance education, such as a radio, television, computer, mobile phone, and access to the internet as well as the degree of learning support at home, and the educational level of the mother (completed upper secondary education or higher). The "policy response capacity" is measured by the number of policies adopted by a country to deploy distance education and to support teachers during the COVID-19 pandemic, and the "emergency response capacity" assesses the extent to which the education system conducts risk assessments, develops risk reduction strategies, and allocates human and financial resources for these activities. There are five levels of evaluation, and the criteria for a rating of 1-5 are listed in the table below.

Table 7-12 UNICEF RLRI's Five-level Criteria

Level	Description
1	There is an urgent need for a country to invest in developing a remote learning system, as the current system is only available to a limited number of schoolchildren, making learning continuity during school closures very difficult.
2	While some pupils and students can benefit from distance education, it remains unavailable for the majority of students in the country due to a combination of factors.
3	Although distance education systems are considered to be relatively resilient, serious concerns remain about the potential for learning loss and the ability to continue equivalent learning when face-to-face classes are disrupted.
4	There is a well-established distance learning system that allows most pupils to continue learning when schools are closed, and there is a resilient system in place, although improvements are needed in some areas.
5	The country has the best preparedness for distance learning, but other factors beyond this assessment (such as actual learning conditions and inequalities within the country) need to be considered in policies to strengthen the system across the country.

Source: Translated and prepared by Study Team from "ENSURING EQUAL ACCESS TO EDUCATION IN FUTURE CRISES": Findings of the New Remote Learning Readiness Index, UNICEF, Oct 2021

According to the study²⁹ published in October 2021, the RLRI results for each level of education in the 11 countries of the Central American and Caribbean region targeted by the study are shown in the table below.

²⁹ ENSURING EQUAL ACCESS TO EDUCATION IN FUTURE CRISES: Findings of the New Remote Learning Readiness Index, UNICEF, Oct 2021

Table 7-13 Results of the Distance Learning Readiness (RLRI) Index for Central America and the Caribbean

Country/Education level	Preschool (not yet entered school)	Primary	Lower Secondary	Upper Secondary	Comprehensive
Barbados	5	5	5	5	5
Belize	3	3	2	2	2
Costa Rica	3	3	3	3	3
Cuba	4	4	4	4	4
Guatemala	3	3	4	4	3
Guyana	4	4	4	4	4
Honduras	4	4	4	4	4
Jamaica	5	5	5	5	5
Mexico	3	3	3	3	3
Saint Lucia	2	4	N/A	3	3
Trinidad and Tobago	2	3	3	3	2

Source: Prepared by Study Team based on excerpts of relevant countries from UNICEF research reports

Of the 11 countries, Barbados and Jamaica were the most prepared for distance learning, with a strong policy response to distance learning at almost all levels of education, and systematic training of teachers in distance learning. The assessment was that the efficient policy responses in these countries were supported by high levels of emergency preparedness and by household factors that supported remote learning. However, national disparities also need to be taken into account, the report noted.

Despite high RLRI scores at the national level, there is a large disparity between the proportion of children from the richest and poorest households who have access to distance learning tools. Children from the poorest households do not have access to distance learning and are at higher risk of learning loss. The disparities seen in access to the Internet and information and communication are due to differences in socio-economic status and show the potential to widen already serious learning gaps. Investing in the education system's readiness to learn in remote areas will play an important role in reaching out to the unschooled people and refugees, and in providing education to children in remote rural areas, the report says.

Cuba, Guyana and Honduras were rated on the scale of 4, with some areas in need of improvement, but with an established distance learning system that enables most children and young people to continue their studies even when schools are closed. In other countries, although not the worst one, the rating was two to three, indicating that the distance learning system is not available to all children and needs to be improved. In this context, Trinidad and Tobago and Belize are both below average in terms of RLRI, but the former has the highest GNP per capita among the countries assessed, while the latter has the lowest. This indicates that some countries, even those with relatively high incomes, are lagging behind in their measures.

According to the report, the level of preparedness for distance education at the pre-school level is the lowest among all countries. There is a lack of progress in distance education measures for pre-school education.

7.5.4 Development Partners/ Donor Action

The actions and main support policies of UNICEF, UNESCO, the World Bank (WB), and the Inter-American Development Bank (IDB), which are providing support to the education sector, are summarized as follows:

Table 7-14 Support Trends of Major Development Partners

Development Partners	Support Trends and Policies
UNICEF	Risk mitigation and preparedness: <ul style="list-style-type: none"> ▪ Government support in risk assessment, crisis management and response planning for the education sector. ▪ Policy support for school closure and preparedness for school reopening. ▪ Response 1: Work with government and local partners to introduce the Guiding Principles for Safe School Operations. ▪ Response 2: Development of context-specific strategies to enable flexible distance and home-based learning for continuing of learning. ▪ Monitoring and evaluation: A simple monitoring and evaluation system was developed to verify the implementation and post-implementation of learning activities and educational measures and plans.
UNESCO	<ul style="list-style-type: none"> ▪ Hosted by the High-Level Ministerial Meeting (a forum for dialogue on measures to restore education) ▪ Sponsored by the Global Education Coalition (Reaching the most at-risk children and youth) ▪ Implementation of global monitoring and disclosure of information (status of school closures, learning loss, vaccination status of teachers) ▪ Technical assistance (preparation and development of comprehensive distance learning) ▪ Webinars and workshops ▪ Issue notes (provides practical examples, practical tips, and links to references, such as distance education) ▪ Providing digital learning resources ▪ Storage and archiving of learning platforms
The World Bank	Emergency support for COVID-19 measures in March 2020, including initial crisis response, policy advocacy and technical assistance. Goal: To make education an opportunity to be more inclusive, active, and resilient than before the crisis. <ol style="list-style-type: none"> 1. Handling phase: supporting continued learning and parental involvement at home, distance education content, access and teacher training 2. Continuity assurance phase: sanitation and management for school reopening, curriculum and school calendar adaptation, support for vulnerable groups, learning assessment, teacher training 3. Improvement and acceleration phase: strengthening digital learning and its access, support for vulnerable groups, teacher training, funding for education system
UNICEF, UNESCO and the World Bank Joint Mission	"RECOVERING EDUCATION IN 2021." ³⁰ Collaborative policy advocacy and information analysis research for national governments until the end of 2021, with the aim of providing the necessary services that are responsive to the needs of all children and young people, helping them to catch up on lost learning, and preparing and supporting all teachers to address learning disabilities, including digital technology.
Inter-American Development Bank (IDB)	Funding policy proposals for the COVID-19 pandemic in Latin American countries Conduct study on the impact of COVID-19 on the education sector and prepare a report and recommendations Support for bridging the digital divide and accelerating DX in the education system Implementation of online teacher training in collaboration with UNESCO Japan Special Fund USD 1 million in total for El Salvador and Honduras Partnered with Sesame Street to deliver high quality educational TV content to preschool children.
Others	<ul style="list-style-type: none"> ▪ GPE: Provision of country grants to nine low-income countries in Central America and the Caribbean (learning support for vulnerable groups, distance education, school reopening support) ▪ USAID: Development of video materials for distance education (Honduras and others) ▪ FAO: School Nutrition Program Support

Source: Study Team

7.5.5 Japanese Government Country Assistance Policy

The Japanese government has made education and human resource development a priority area for assistance in the following seven countries.

³⁰ <https://thedocs.worldbank.org/en/doc/48a431d24d2d23eb1a2fc25a37a00a2b-0140052021/original/Recovery-mission-statement-5-pager-FINAL-4-45pm.pdf>

Table 7-15 Countries Where Education is a Priority Area by Japanese Government

Country	Priority Areas (Education or Human Resource Development)	Major Japanese Assistance (for the Past 10 Years)
El Salvador	Support for the promotion of inclusive development: Dissemination of basic education, improvement of quality of education	<ul style="list-style-type: none"> ▪ Project for the Improvement of Mathematics Learning based on the Result of Evaluation Process in Primary and Secondary Education (2021.4-2025.3) ▪ Project for the Improvement of Mathematics Teaching in Primary and Secondary Education (2015.11-2019.6) ▪ Project for the Strengthening of Teaching Quality of MEGATEC, La Unión (2009.1-2012.1) ▪ Project for Improvement on Mathematics Teaching in Primary Education (2006.4-2009.3) ▪ National Educational and Cultural TV Station Program Software Development Plan (2015.10-2016.4)
Guatemala	Social and economic development in poor areas: Improvement of livelihood of the poor (education)	<ul style="list-style-type: none"> ▪ Expert: Advisor for Mathematics Education (2021.2-2026-2) ▪ Project for the Improvement of Quality of Lower Secondary Mathematics Education (2016.11-2019.7) ▪ Expert: Education Advisor (2013.3-2015.3) ▪ Project for Improvement of Mathematics Education (Phases 1 and 2) (2006.4-2009.3) (2009.11-2012.10) ▪ Project for Improvement of Primary schools with Community Participation (2006.6-2008.5) ▪ Volunteer (Primary school, Mathematics education)
Nicaragua	Social development in poor communities and regions: Improvement of the quality of primary and secondary education, including facilities maintenance	<ul style="list-style-type: none"> ▪ Project for the Friendly Learning of Mathematics in Secondary Education (2017.1 - 2019.7) ▪ Project for Improvement on the Quality of Mathematics Teaching in Primary Education, Phase 2 (2012.9-2015.9) ▪ Project for Improvement of the Quality of Mathematics Teaching in Primary Education (2006.4-2011.3) ▪ Grant: Educational Facility Maintenance ▪ Volunteer: Youth Activity
Honduras	Rural development: support mainly for human resource development, etc.; alleviation of poverty issues →Basic education (quality enhancement)	<ul style="list-style-type: none"> ▪ Project for Strengthening of UNAH on Human Resource Development for Socio-economic Development (2021.2-2025.2) ▪ Project for the Improvement of Teaching Method in Mathematics Phase 3 (2015.11-2018.12) ▪ Project for Improvement of teaching method in Mathematics (2003.4-2006.3) ▪ Expert: Improving Mathematics in the Basic Education (2013.12-2015.12) ▪ Expert: Improving Mathematics in the 3rd Cycle 3 of Basic Education (2013.8-2015.8) ▪ Expert: Advisor for Strengthening Basic Education (2011.11-2012.12) (2007.10-2009.9) ▪ Volunteer: Primary Education
Panama	Reduction of inequality: Human resource development targeting the poor →Improvement of educational standards →Support for the socially vulnerable	<ul style="list-style-type: none"> ▪ Senior Volunteer (Mathematics Education)
Haiti	Promotion of Education: Basic Education → Infrastructure development →Education and Human Resource Development	<ul style="list-style-type: none"> ▪ Project for Supporting Development of Mathematics Materials for Students' Learning (2016.8 - 2019.11) ▪ Expert: Education Program Advisor (2015.5 - 2016.5) ▪ Country Study: Seminar on Educational Reconstruction and Development in Haiti (2012.5-2015.3)
Dominican Republic	Reduction of inequality →Support for education	<ul style="list-style-type: none"> ▪ Grassroots and Human Security Grant Aid in the Education Sector ▪ Expert: Development of the Cooperation Program on Basic Education (2007.5-2010.5) ▪ Project for Improvement of Quality of Teaching in Mathematics (2005.5-2010.5) ▪ Volunteer: Primary education, Youth Activity

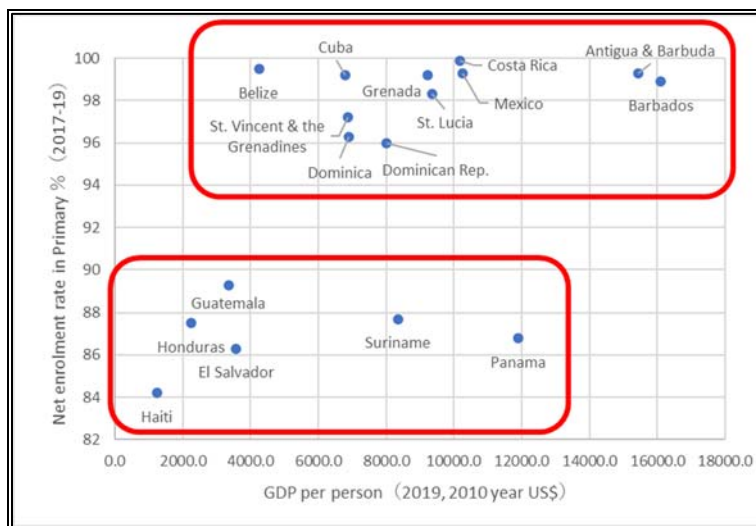
Source: Prepared by Study Team based on information from various JICA documents.

7.5.6 Grouping of Countries Surveyed by Sector

The grouping was done from several perspectives in countries where statistical data were available.

(1) Existence of Traditional Schooling Issues

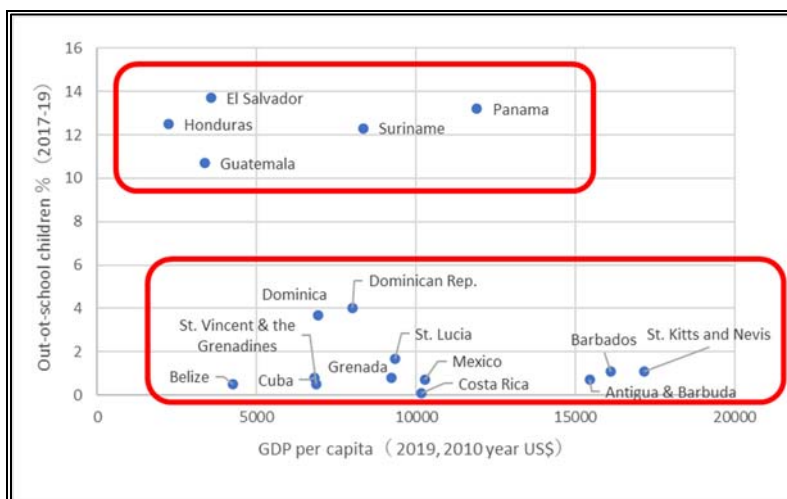
The relationship between GDP per capita and net enrollment in primary education in each country is shown in Figure 7-1. There are two groups of countries: those with enrollment rates below 90% and those with rates above 95%. In Haiti, Honduras, El Salvador, and Guatemala, where GDP per capita is low, the school enrollment rate is still low, at less than 90%. Antigua and Barbuda, Barbados, Mexico, and Costa Rica, which have a relatively high GDP per capita of USD 10,000, have generally achieved enrollment rates of 98% or higher.



Source: Institute for Statistics (UIS), UNESCO, and the World Bank, World Development Indicator (WDI) data.

Figure 7-1 GDP per Capita and Net Enrollment Rate in Primary Education

Similarly, the relationship between GDP per capita and the rate of out-of-school children in primary education in each country is shown in Figure 7-2. Although there is little relationship with economic conditions, it can be seen that there are two types of countries, one with a high rate of out-of-school children and the other with a low rate.



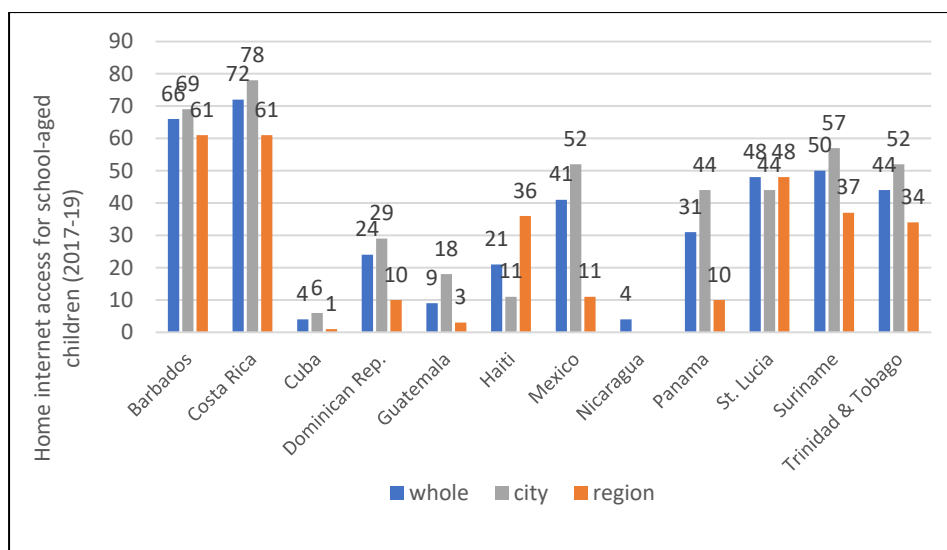
Source: Institute for Statistics (UIS), UNESCO, and the World Bank, World Development Indicator (WDI) data.

Figure 7-2 GDP per Capita and Percentage of Out-of-school Children in Primary Education

(2) Internet Access at Home for School-aged Children

As shown in Figure 7-3 and Figure 7-4, the percentage of school-aged children with Internet access in their homes was compared across countries for which data were available. Figure 7-3, which compares urban and rural areas, shows that there are three groups of countries: those where more than 60% of families have Internet access, such as Barbados and Costa Rica; those where about 50% of

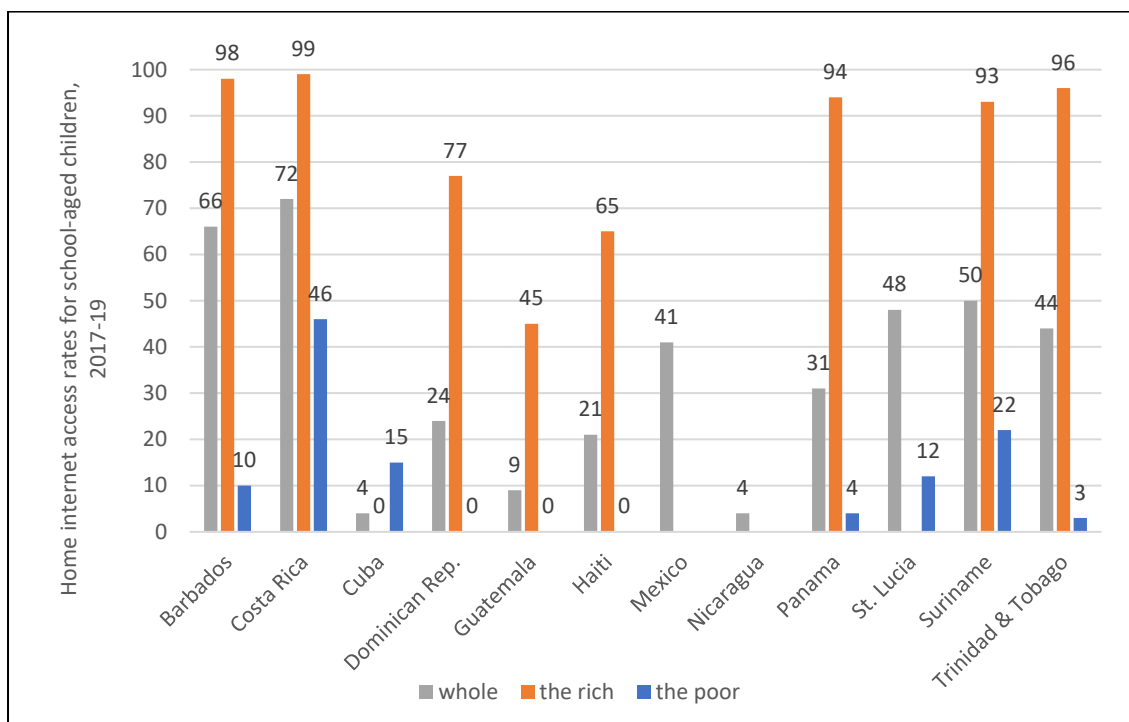
families have Internet access, such as Saint Lucia and Suriname; and those where less than 20% of families have Internet access, such as Cuba and Guatemala.



Source: Institute for Statistics (UIS), UNESCO, and the World Bank, World Development Indicator (WDI) data.

Figure 7-3 Internet Access Rate in Households of School-aged Children (Urban and Rural)

Figure 7-4, which compares the Internet access rates of rich and poor households, shows that, with the exception of Cuba, the difference between rich households (top 20% of income) and poor households (bottom 20% of income) tends to be large in all countries.



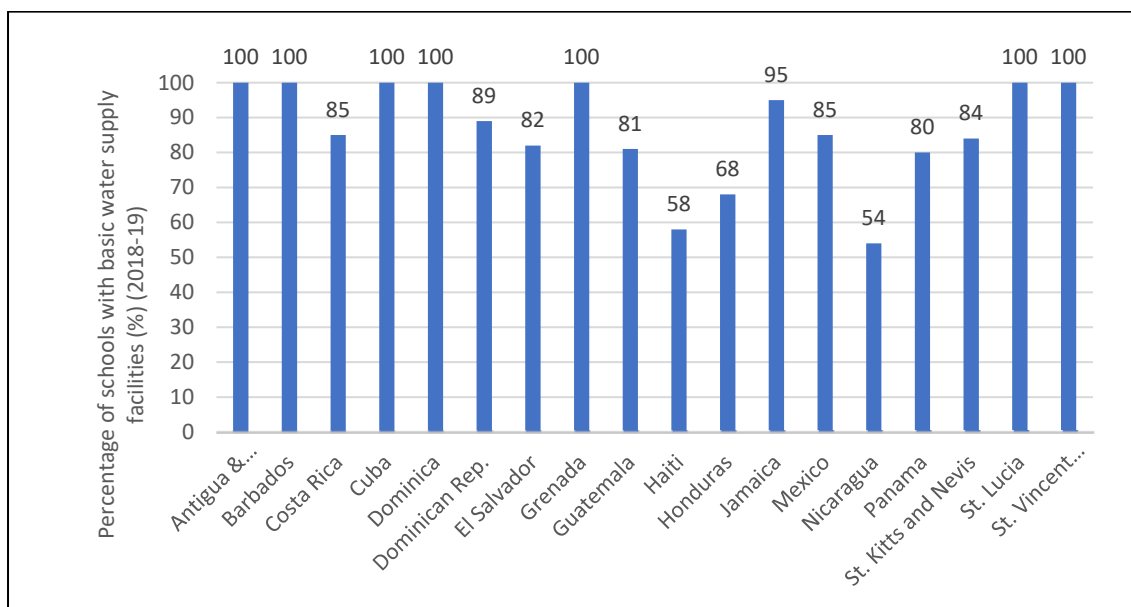
Source: Institute for Statistics (UIS), UNESCO, and the World Bank, World Development Indicator (WDI) data.

Figure 7-4 Internet Access Rates in Households of School-aged Children (Rich and Poor)

(3) Installation of Water Supply Facilities in Schools

As shown in Figure 7-5, the Study Team compared the percentage of schools with basic water supply facilities as sanitation services in schools. It can be seen that while some Caribbean countries such as Antigua and Barbuda, Cuba and Saint Lucia have achieved 100%, 30-40% of schools in Haiti,

Nicaragua and Honduras still do not have basic water supply facilities. Each country is gradually reopening schools based on the standards for infection prevention set by WHO and the ministry of health of each country, but many areas have not been able to reopen schools because hand washing is not possible due to inadequate water supply facilities for infection prevention in schools.



Source: Compiled by Study Team from WHO/UNICEF Joint Monitoring Programme for water supply, sanitation and hygiene in schools

Figure 7-5 Percentage of Schools with Basic Water Supply Facilities

7.6 Selection of Priority Countries by Sector

7.6.1 Criteria for Selecting Priority Countries

For the selection of priority countries in the education sector, the following data, which are generally available and comparable for the 23 countries, were used as criteria.

Table 7-16 Selection Criteria for Priority Countries

Selection Criteria	Point of View
1. Statistical data on education	There have been issues related to school attendance in the past, and there are concerns that COVID-19 will amplify and exacerbate these issues.
2. The number of school closure days that are highly affected by COVID-19	There is great potential for education issues to become more serious due to prolonged school closures.
3. Priority countries in Japan's cooperation program on education or human resources	Japan's cooperation experience and assets exist so far. In addition, the direction of cooperation support in the education sector will continue in the future.

Source: Study Team

(1) Statistical Data on Education

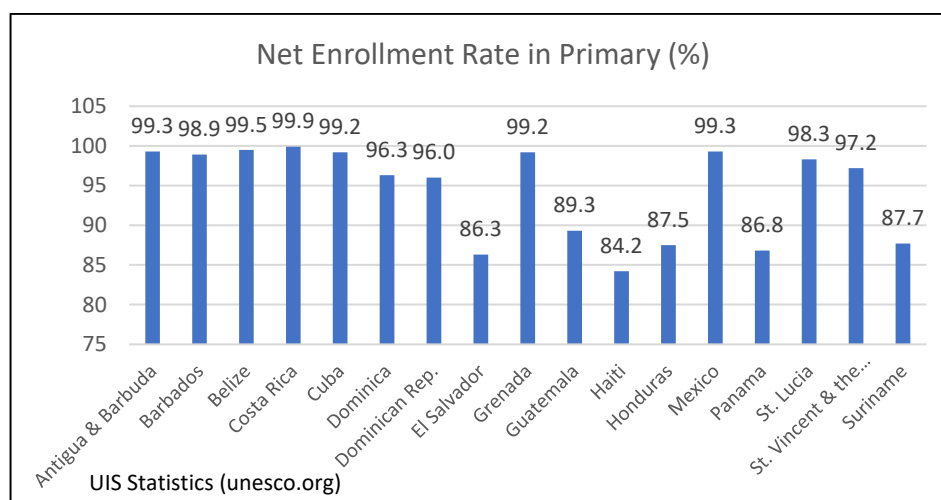
The latest data from the Institute for Statistics (UIS), UNESCO's Statistical Office that publishes internationally comparable statistics on education, science and technology, culture, and communication, was used as a reference to compare the net enrollment rates (primary, lower and upper secondary education), out-of-school children's rates (primary education), among the countries for which data are available. Noted that not all data are available for Guyana, Nicaragua, and Trinidad and Tobago, and some data are missing for the Bahamas, Saint Kitts and Nevis, Suriname, and Haiti.

Although there are differences in the year in which the most recent data was obtained, the order of the lowest net enrollment rates in the most recent data available is as follows. The net enrollment rate for primary education is low in Haiti, El Salvador, Panama, Honduras, and Suriname, while about half of the countries have achieved 95% or higher.

Table 7-17 Net Enrollment Rate (Primary Education), in Descending Order

Order	Country	Net Enrollment Rate (%)	Data Year
1	Haiti	84.2	2017
2	El Salvador	86.3	2018
3	Panama	86.8	2017
4	Honduras	87.5	2019
5	Suriname	87.7	2019
6	Guatemala	89.3	2019

Source: Institute for Statistics (UIS) UNESCO



Note: No data (Bahamas, Guyana, Nicaragua, Jamaica, Saint Kitts and Nevis, Trinidad and Tobago)

Source: Institute for Statistics (UIS) UNESCO

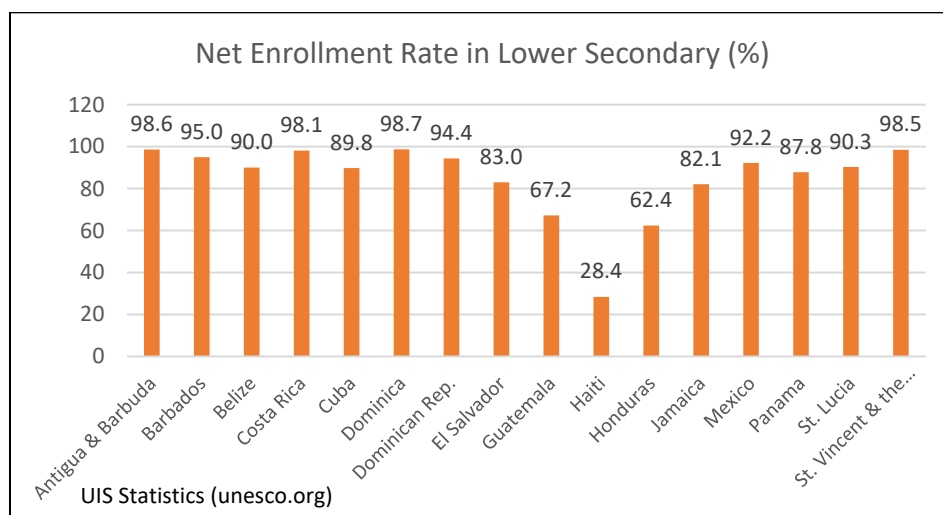
Figure 7-6 Enrollment Rates (Primary Education, 2017-19)

The net enrollment rate in lower secondary education is, in descending order, Haiti, Honduras, and Guatemala.

Table 7-18 Net Enrollment Rate (Lower Secondary Education), in Descending Order

Order	Country	Net School Enrollment Rate (Lower Secondary)	Data Year
1	Haiti	28.4	2017
2	Honduras	62.4	2019
3	Guatemala	67.2	2017
4	Jamaica	82.1	2019
5	El Salvador	83.0	2018
6	Panama	87.8	2017

Source: Institute for Statistics (UIS) UNESCO



Note: No data (Bahamas, Grenada, Guyana, Nicaragua, Saint Kitts and Nevis, Suriname, Trinidad and Tobago)
 Source: Institute for Statistics (UIS) UNESCO

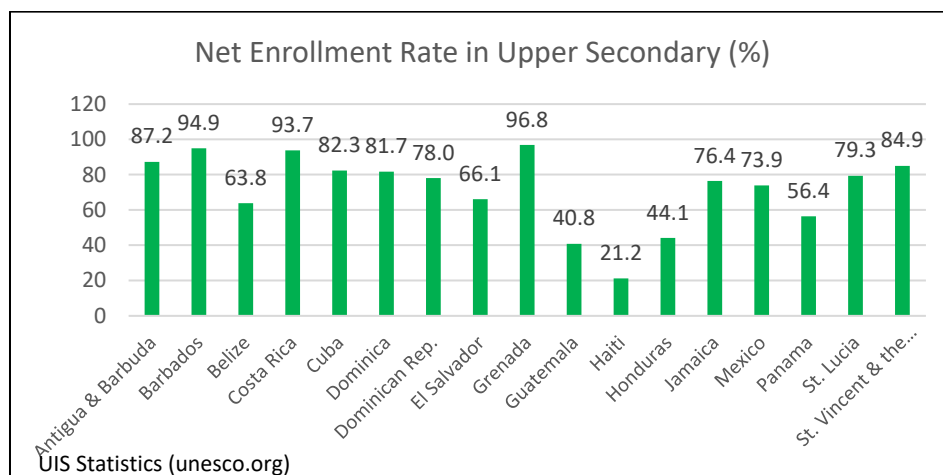
Figure 7-7 Net Enrollment Rates (Lower Secondary Education, 2017-19)

The net enrollment rate in upper secondary education (high school level) is, in descending order, Haiti, Guatemala, Honduras, Panama and Belize.

Table 7-19 Net Enrollment Rate (Upper Secondary Education), in Descending Order

Order	Country	Net Enrollment Rate (Upper secondary) %	Data Year
1	Haiti	21.2	2017
2	Guatemala	40.8	2018
3	Honduras	44.1	2019
4	Panama	56.4	2017
5	Belize	63.8	2019
6	El Salvador	66.1	2018

Source: Institute for Statistics (UIS) UNESCO



Note: No data (Bahamas, Guyana, Nicaragua, Saint Kitts and Nevis, Suriname, Trinidad and Tobago)
 Source: Institute for Statistics (UIS) UNESCO

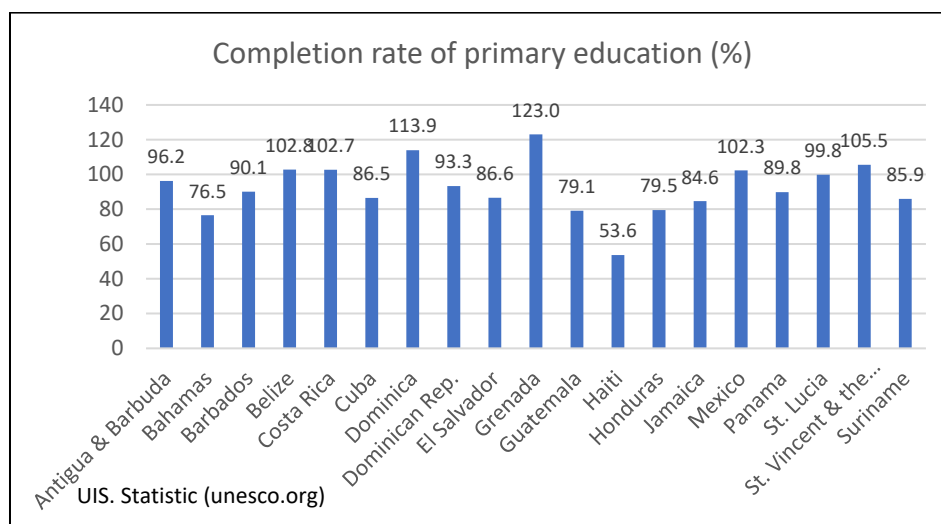
Figure 7-8 Net Enrollment Rates (Upper Secondary Education, 2017-19)

In terms of completion rate of primary education, the countries in descending order from lowest to highest were Haiti, Bahamas, Guatemala, Honduras, and Jamaica.

Table 7-20 Completion Rate of Primary Education, in Descending Order

Order	Country	Completion Rate (Primary)	Data Year
1	Haiti	53.6	2017
2	Bahamas	76.5	2018
3	Guatemala	79.1	2019
4	Honduras	79.5	2019
5	Jamaica	84.6	2019
6	Suriname	85.9	2019

Source: Institute for Statistics (UIS) UNESCO



Source: Institute for Statistics (UIS) UNESCO

Figure 7-9 Primary Education Completion Rates (2017-19)

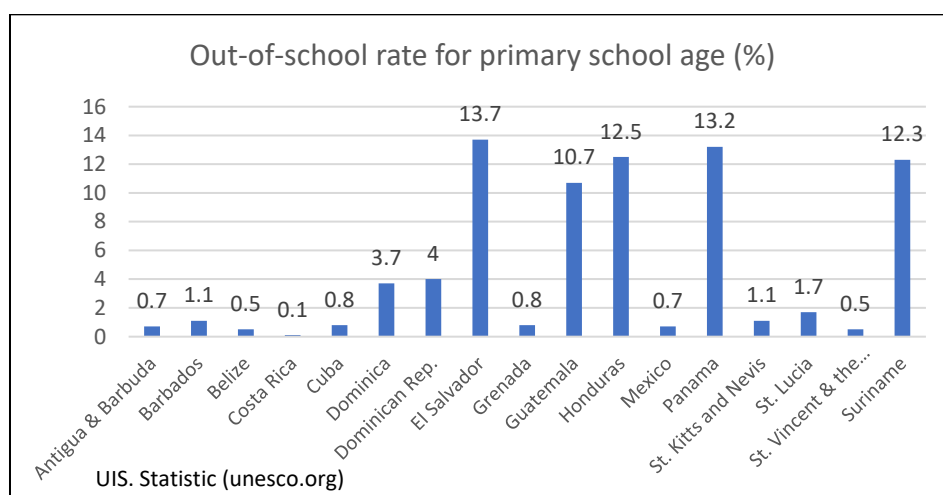
In terms of the percentage of out-of-school children³¹ (in primary education), the countries in ascending order from highest to lowest are El Salvador, Panama, Honduras, Suriname, and Guatemala.

Table 7-21 Out-of-School Children Rate (Primary Education), in Ascending Order

Order	Country	Out-of-School Children Rate (Primary)	Data Year
1	El Salvador	13.7	2018
2	Panama	13.2	2017
3	Honduras	12.5	2019
4	Suriname	12.3	2019
5	Guatemala	10.7	2019
6	Dominican Republic	4.0	2019

Source: Institute for Statistics (UIS) UNESCO

³¹ “Out-of-school children rate” defined by UNESCO is the percentage of children and young people of official age at a given level of education who are not enrolled in pre-school, primary, secondary or tertiary education. It is calculated by subtracting the number of students of official age enrolled in pre-primary, primary, secondary or tertiary education from the total population of the same age.



Note: No data (Bahamas, Guyana, Nicaragua, Haiti, Trinidad and Tobago)

Source: Institute for Statistics (UIS) UNESCO

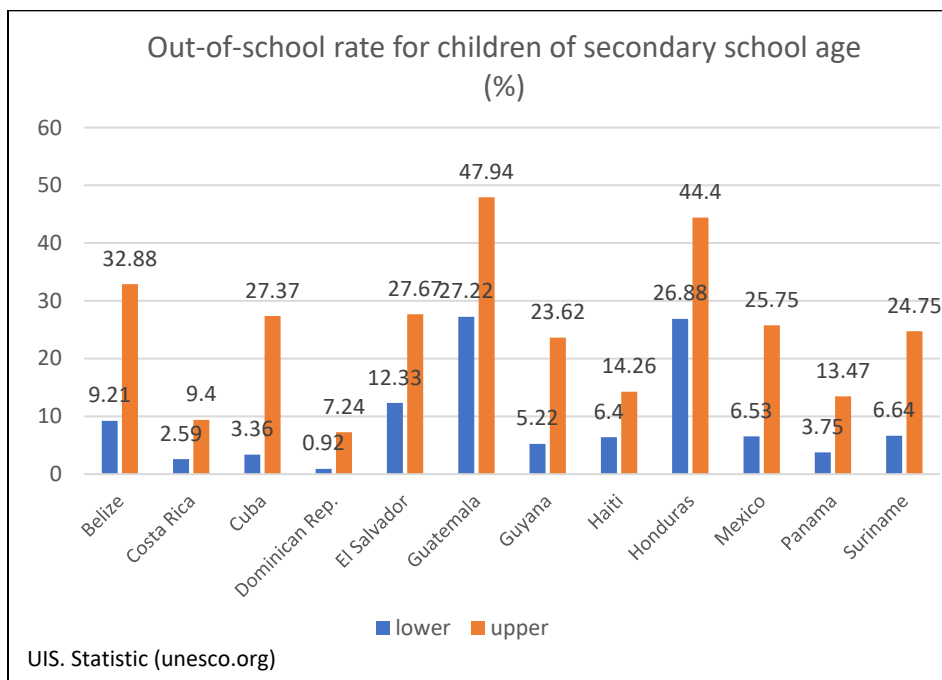
Figure 7-10 Percentage of Out-of-School Children (Primary Education, 2017-19)

Data on out-of-school rates (secondary education) for the 12 countries with available data are presented below. The rankings in the table are arranged according to the level of lower secondary education.

Table 7-22 Out-of-School Children Rate (Secondary Education) in Ascending Order (2015-2020)

Order	Country	Out-of-School Children Rate (Lower secondary)	Out-of- School Children (Upper secondary)	Data Year
1	Guatemala	27.22	47.94	2015
2	Honduras	26.88	44.4	2018
3	El Salvador	12.33	27.67	2018
4	Belize	9.21	32.88	2016
5	Suriname	6.64	24.57	2018
6	Mexico	6.53	25.75	2018
7	Haiti	6.4	14.26	2017
8	Guyana	5.22	23.62	2020
9	Panama	3.75	13.47	2018
10	Cuba	3.36	27.37	2019
11	Costa Rica	2.59	9.40	2018
12	Dominican Republic	0.92	7.24	2018

Source: Institute for Statistics (UIS) UNESCO



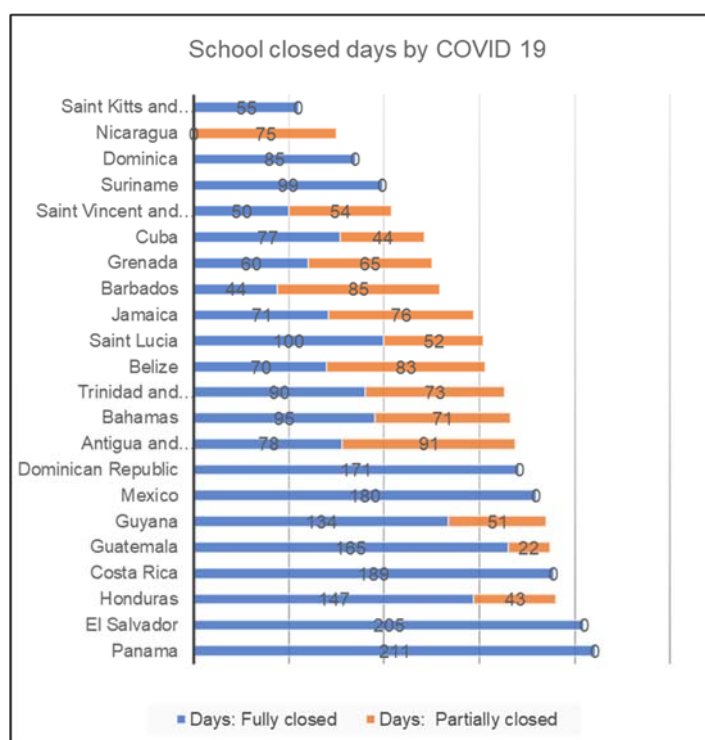
Source: Institute for Statistics (UIS) UNESCO

Figure 7-11 Percentage of Out-of-School Children (Secondary Education, 2015-20)

(2) Number of School Closed Days due to COVID-19

This report refers to UNICEF's own survey³² of school closures from March 11, 2020 to February 2, 2021 in more than 200 countries and territories around the world. Of the 23 countries included in this survey, only Haiti lacks data. Only the countries targeted in this survey were extracted from the UNICEF data and are shown in Figure 7-12 below in order of the number of days.

³² COVID-19 and School Closures: One year of education disruption, UNICEF, March 2021
<https://data.unicef.org/resources/one-year-of-covid-19-and-school-closures/>



Source: Prepared based on UNICEF data for the countries included in this survey, arranged in descending order of the number of days.

Figure 7-12 Number of School Closed Days due to COVID-19

Of the 22 countries (i.e., 23 excluding Haiti), the country with the longest school closure is Panama with 211 days (full closure), followed by El Salvador with 205 days (full closure), and the average of the 22 countries is 108 days of full closure, 40 days of partial closure, and 148 days of combined full and partial closure. Nicaragua is the only country that has continued to offer face-to-face classes without closing schools completely.

7.6.2 Selection of Priority Countries

In order to compare the 23 countries based on the aforementioned criteria, the Study Team ranked them in order of severity from the values of each statistical data and colored the fifth place as shown in Table 7-23 below. In addition, the countries with priority issues in the field of education by Japanese government are marked with ○.

Table 7-23 Priority Countries and Reasons for Selection

Country	Net School Enrollment Rate in Primary	Net School Enrollment Rate in Lower Secondary	Net School Enrollment Rate in Upper Secondary	Out-of-School Children Rate	Completion Rate of Primary Education	Number of School Closure	JICA Priority Countries	Result of Selection
Antigua and Barbuda	14	15	14	13	11	9		
Bahamas	...	...	...	...	2	10		
Barbados	11	12	16	9	9	15		
Belize	16	8	5	17	15	12		
Costa Rica	17	13	15	18	14	4		
Cuba	12	7	12	11	6	17		
Dominica	8	15	11	7	17	20		
Dominican Rep.	7	11	9	6	10	8	○	

Country	Net School Enrollment Rate in Primary	Net School Enrollment Rate in Lower Secondary	Net School Enrollment Rate in Upper Secondary	Out-of-School Children Rate	Completion Rate of Primary Education	Number of School Closure	JICA Priority Countries	Result of Selection
El Salvador	2	5	6	1	7	2	○	◎
Grenada	12	...	17	11	18	16		
Guatemala	6	3	2	5	3	5	○	◎
Guyana	...	...	...	...	...	6		
Haiti	1	1	1	...	1	...	○	○
Honduras	4	2	3	3	4	3	○	○
Jamaica	...	4	8		5	14		
Mexico	14	10	7	13	13	7		
Nicaragua	...	...	...	...	...	21	○	
Panama	3	6	4	2	8	1	○	◎
Saint Kitts and Nevis	...	...	...	9	...	22		
Saint Lucia	10	9	10	8	12	13		
Saint Vincent and the Grenadines	9	14	13	15	16	18		
Suriname	5	...	...	4	6	19		
Trinidad and Tobago	...	...	...	...	...	11		

Source: Study Team

As a result, El Salvador, Guatemala, Honduras, Panama, and Haiti were selected as the priority countries for the survey. The reasons for the selection are as follows:

- High vulnerability in education based on education statistics such as school enrollment rate, out-of-school children rate, and school completion rate.
- The school closure period is longer than in other countries, and there is a concern that learning may be delayed.
- They are the priority countries by the Japanese government in the field of education, and has a long term experience and achievement of technical cooperation projects and assets.

7.7 Detailed Survey by Sector

7.7.1 Selection of Priority Countries for the Detailed Survey

Among the five countries selected as priority countries, three countries, El Salvador, Guatemala, and Panama, were selected as the target countries for the field survey. The reason was that these three countries had been proposed as pilot projects in the education sector by JICA's overseas offices, and it was judged desirable to consider support measures based on these project proposals. In addition, Haiti, a priority country, was excluded from the survey in consideration of the tasks and duties during the survey period, because it is difficult to conduct a field survey due to the security situation, and it requires more time and effort to collect information than other countries because it is a French-speaking country.

7.7.2 Conduct Detailed Surveys

As shown in Table 7-24 below, the field survey to El Salvador and Panama was conducted from September 6 to 29, 2021. In addition to the field survey in Panama, a hearing survey was also conducted in advance through an online connection between Japan and Panama. In Guatemala, the originally

planned field survey could not be conducted due to the COVID-19 pandemic, and online interviews with the Ministry of Education and university officials could not be conducted, so that questionnaires survey was conducted through the Coordinación Educativa y Cultural Centroamericana (CECC), the education sector’s body of the Central American Integration System (SICA). (For the transcript of the interview survey, please refer to Volume 7: Correspondence and Minutes.)

Table 7-24 Schedule of Detailed Survey and Places for Hearing or Visit

Country	Field Survey Schedule	Hearing Research/Visits
Panama	September 7-13, September 23-27, 2021	<ul style="list-style-type: none"> ▪ Ministry of Education ▪ University of Panama ▪ Technical University of Panama ▪ UNICEF Latin America Office
El Salvador	September 14-22, 2021	<ul style="list-style-type: none"> ▪ Ministry of Education ▪ Basic education school ▪ School for the blind ▪ Center for the Development of Teaching Materials for the Visually Impaired ▪ Evan Helica University ▪ UNICEF El Salvador Office ▪ SG-SICA and CECC
Guatemala	Questionnaire survey and literature review	<ul style="list-style-type: none"> ▪ Ministry of Education ▪ San Carlos University Teacher Training School

Source: Study Team

7.7.3 Analysis of Detailed Survey Results

(1) Panama

1) Distance Education Implementation Status

Panama had the longest school closure period in FY2020 among the 23 countries targeted in this study. As mentioned above, distance education has been implemented in a variety of ways during the school closure period. UNICEF has conducted three telephone household surveys³³ (about 1,000 households nationwide) throughout Panama in June, November 2020 and June 2021. The results show that access to distance education, which has been implemented in various ways, including virtual platforms, television and radio broadcasts, and distribution of printed materials, has improved from 47% in the first round to 87% in the third round. According to the Ministry of Education officer who was interviewed, it is difficult to increase coverage to the 23% of the population of pupils living in rural areas, especially in the protected areas where indigenous peoples live, known as Comarca³⁴, where there is insufficient Internet access and mobile phone reception, and where communication through social networking sites such as WhatsApp is not economical for them. Based on the results of this UNICEF survey, distance education in rural areas has been promoted by distributing classes via TV and radio to rural areas where there is no Internet or mobile phone signal, and by making free calls in partnership with mobile phone companies. As a result, 89% of the students have been covered of September 2021. However, as mentioned earlier, the UNICEF surveys and Ministry of Education surveys indicate that coverage of access to education is physically improving, but the extent to how much children are able to access these educational services (hours and days), study at home, and understand them is unclear, as no learning assessment surveys have been conducted yet.

According to the same survey, the following Table 7-25 shows the forms of distance education taken, indicating that the form of class attendance differs according to family income. Families with higher incomes tend to take more interactive classes.

³³ Situación de las Familias con Niños, Niñas y Adolescentes durante la pandemia por COVID'19 en Panamá, UNICEF, July 2021

³⁴ Ngäbe-Buglé, Guna Yala, Emberá-Wounaan District

Table 7-25 Enrollment Rates in Distance Education by Type

Family Income (1 month)	Virtual Platform (Interactive)	Radio or TV	Receive Educational Materials via WhatsApp	Web Platform (Download of Teaching Materials)	Printed Teaching Material
Less than USD 400	58	17	55	15	13
USD 400-900	74	14	39	21	13
USD 1000 or more	87	10	27	21	12
Total	73	14	39	19	13

Source: Prepared by Study Team from “Situación de las Familias con Niños, Niñas y Adolescentes durante la pandemia por COVID'19 en Panamá”, UNICEF

Mothers in Comarca do not have enough education to support their children's learning at home, and many parents cannot even read or write. About 15% of parents are worried that their children will drop out due to poor performance in distance education.

According to a Ministry of Education officer interviewed by the survey, students in the lower and upper secondary education are often given laptop computers and use the ministry's educational platform, ESTER, but students in primary education still benefit more from printed materials than from the platform. ESTER is a unique Panamanian platform developed by the Secretary of innovation which is designed to allow students to view educational materials, take tests, and ask questions. The system is designed so that students can use it offline without Internet access.

According to the Ministry of Education's website³⁵, ESTER is an educational platform designed by the National Authority for Government Innovation, a 100% localized virtual education platform that can be used online and offline, and content can be delivered in different media: print and digital. The content of ESTER is converted into digital format to make learning motivating and fun, with elements of interactivity, games and educational medals. The platform also has a reporting function that allows tutors and the Ministry of Education to keep track of students' progress, including how many students have achieved satisfactory results, which subjects are causing learning difficulties, the time spent on the platform, and the progress of students in real time. By downloading the contents, students can work and update the ESTER database even when they are not connected to the Internet. It also incorporates a digital library of more than 10,000 titles covering various fields of knowledge. Students will be able to use the system from anywhere, and the unified curriculum will allow urban and rural students to learn with the same quality. The first phase of the project, which costed PAB 30 million, including the platform, content development, and provision of equipment for Grade 12 students, is part of Panama's National Multi-System Education Strategy, and includes a Moodle platform based on open source code with no license fees. It supports a learning management system with a content factory adapted to the Panamanian curriculum and is the intellectual property of the Ministry of Education (MEDUCA).

In addition, the National Evaluation Office of the Ministry of Education (Dirección Nacional de Evaluación) has taken the lead in creating an evaluation team to conduct a nationwide survey on the evaluation of learning achievement. Measures will be taken based on the results of this survey. However, the ministry is concerned that distance education will lead to a decline in the quality of learning, particularly in reading and arithmetic at the primary education, and recognizes that the impact on the lower grades of primary education is the most serious.

2) Teacher Training

According to the Ministry of Education officer who was interviewed, the ministry's Department of Teacher Development (Dirección Nacional de Perfeccionamiento Docente) has been taking the lead in providing teacher training on ICT, platforms, digital teaching materials through agreements with private companies such as TITAN. However, the country has a relatively large number of teachers over the age of 60, making it difficult for them to learn new technologies and platforms. When teachers were asked how they conduct their classes remotely, many of them said they use the social networking service

³⁵ <https://verpanama.com/ester-proyecto-nacional-de-educacion-2020/>

WhatsApp, indicating that they only deliver classes through social networking services that they are familiar with.

In addition, the quality of teachers has always been an issue, especially in terms of classroom techniques and teaching methods, and while teachers from Escuela Normal de Santiago (a high school with a long history of teacher training) have reached a certain level, the quality of teachers from other schools is low. This is a challenge. The school enrollment rate has been over 90%, but the problem is the content. Teacher training is essential, and they feel it is especially necessary to develop teachers who can provide guidance in line with the current situation of students.

3) School Reopening

According to an officer of the Ministry of Education who was interviewed in the hearing survey, in order to open face-to-face classes, each school must use a checklist prepared by the Ministry of Health to evaluate whether measures are being taken to prevent infection in the school and report to the Ministry of Health. At present, 335 schools (at the time of the interview in June 2021) have reopened face-to-face classes, with plans to gradually expand this number. Approximately 88 % of the schools are small schools with 25 or fewer students, and it is relatively easy for these schools to take countermeasures, but in urban areas, there are schools with more than 45 students per class, and infection control is difficult for large schools.

In addition, the infrastructure team of the Ministry of Education is currently conducting a survey on the current status of school sanitation facilities in order to reopen schools. Based on the results of the survey, the team is applying for a loan program from the IDB to repair the school sanitation facilities.

4) Higher Education

According to the University of Panama and the Technical University of Panama, where the interviews were conducted, the university buildings have been closed since March 2020 and the transition to distance education has been made. For this transition, the department in charge of ICT at the university led a two-week training session for teachers on how to teach by online classes and use tools such as virtual platforms and teleconferencing applications (Teams, Zoom, Moodle). In addition, in order to ensure access to remote classes not only at campuses in the capital city but also at regional campuses, measures were taken to improve the Internet environment using fiber-optic networks and to request cooperation from telecommunication companies to make data communication charges free for students. In 2020 and 2021, university tuition fees have been made free, and measures are being taken to ensure that students with financial difficulties do not drop out of university for financial reasons. Fewer students are dropping out, and in fact more students are registering for courses because of the free tuition.

At the Technical University of Panama, in a survey of students conducted by itself during the second semester of the 2020 academic year, 88% of students indicated that they take distance education courses by mobile phone, 78% by laptop, 13% by tablet, and 13% by desktop computer (duplicate responses).

Due to the impact of COVID-19, planned local activities such as exchange programs and academic exchanges with overseas universities were cancelled, but the online language courses (including Japanese) were positively affected by the increase in the number of students. Japanese language instructors were dispatched by JICA's overseas volunteers, but there are high expectations that they will be dispatched again, and JICA plans to continue expanding and promoting JICA Chairs at universities and dispatching international students for SDGs Global Leader Training in Japan.

5) Child Nutrition

The government-supported Study without Hunger Program provided nutritious and healthy lunches to eligible vulnerable students from COVID-19 pandemic. This program has been implemented in indigenous communities and vulnerable urban schools with the support of the Food and Agriculture Organization of the United Nations (FAO). There was alternative nutrition program to school feeding program by distributing food baskets every two weeks through the Panamá Solidario (Panama Unity) program during school closure period due to COVID-19. On the other hand, according to a telephone

survey of households conducted by UNICEF, 60% of households reported that the quality and quantity of their children's food had been affected by COVID-19. In particular, the impact of the unavailability of school lunches that had been provided due to the closure of schools was significant. Especially, milk served at school lunches and breakfasts contains calcium, an important nutrient that is essential for children's growth, and its deficiency is serious for children's physical development and growth.

(2) El Salvador

1) Status of Education Implementation (Remote and Face-to-Face)

According to an education specialist at UNICEF's El Salvador office, who was interviewed during the fieldwork, the Ministry of Education has implemented distance education in various ways, including through a virtual platform (Google Classroom), TV, radio, printing and distributing teaching materials, and setting up a small space called Micro-sitio. According to the Ministry of Education officer who was interviewed, all distance education programs are implemented in accordance with the curriculum and weekly study guides compiled based on national textbooks, so that there is no deviation from face-to-face classes in schools. The math and arithmetic textbooks supported and developed by JICA have been distributed to all the target students, and at the same time, they have been digitized together with the teacher's guide and can be downloaded from the Ministry of Education website.

According to data from the Ministry of Education, as of June 2021, approximately 150,000 pupils are being educated on virtual platforms, 410,000 pupils are receiving some form of educational guidance through WhatsApp, 414,000 pupils are receiving printed materials, and textbook materials are being used by 870,000 students (duplicate count). It is difficult to determine how many students are watching educational programs on TV and radio, but it is estimated that more than one million students are watching them, and in many cases, they are being watched as a supplement to other methods. In addition, as of May 2021, about 600,000 people (from pre-school to secondary school age), or about half of the children population, attend school several days a week through dispersed attendance, and about 650,000 people do not attend school at all but study through distance education. There is a lot of opposition to the reopening of schools due to concerns about the spread of the infection, and school attendance is voluntary and left to the discretion of parents, with many parents not allowing their children to attend school, according to the interview survey.

At the public basic education school (Centro Escolar Santiago I Barberena) in San Salvador, which the Study team visited during the field survey, students are divided into two groups and attend school every two to three days during the week. Half of the pupils were at school for face-to-face lessons and the other half were at home for homework and TV streaming. The teachers gave the same lesson to two groups of students on two consecutive days, and even if the students studied at home through TV or homework, it is presumed that they could only complete half of the curriculum.

Official education statistics data, such as enrollment rates, are up-to-date for 2018, and data for 2020 and 2021 have not yet been released by the government. Due to the COVID-19 pandemic, school enrollment and registration (matricula) of pupils has not been properly rostered, so the statistical system does not have likely accurate due to the fact that data has not been collected. The situation is the same as if a year of schooling had been lost, and dispersed school attendance is still continuing. The impact of the decline in learning achievement and dropout is immeasurable.

According to UNICEF El Salvador's Education Specialist, there are approximately 900 schools that do not have the necessary infrastructure for infection control measure required to reopen schools, and more than 1,000 schools that need some kind of maintenance. The UNICEF El Salvador office counts the number of schools that have reopened each week and reports the results to the UNICEF Latin America office.

In order to promote distance education, the Ministry of Education is distributing free laptops to all students and teachers from 2020. The computers are equipped with the necessary learning applications and Windows 365, and through the cooperation of domestic Internet distribution companies (Claro, Tigo, Movistar, Digicel), students will be able to access the Internet free of charge for one year. However, according to the online news site elsalvador.com, the plan is to provide about 1.3 million computers, but as of October 2021, only 184,000, or 14.2%, had been distributed. It is assumed that this

is due to the fact that suppliers have not delivered the computers on time, and that in some cases, the computers have been distributed by each of the donors and projects that they support, and the timing and regions of distribution are in accordance with their schedules. Government agencies such as the Ministry of Education and aid contact agencies need to centrally manage the support from donors in each country, monitor the distribution status, and take action. In the basic education school that the Study Team visited in the field on September 14, 2021, computers had not yet been distributed to students or teachers. The purchase of the computers is financed by the government and from funds from the UNDP, UNICEF and other UN agencies.

2) Inclusive Education

Strengthening inclusive education is one of the measures promoted by the Ministry of Education, and the department in charge in the ministry has been upgraded from a department to a bureau.

According to the Director of the Inclusive Education of the Ministry of Education, who was interviewed on September 17, 2021, there are currently 38 special-needs schools, 5 schools for the deaf and mute (about 70 students), 1 school for the blind (about 80 students), and about 5,800 regular schools in El Salvador. The number of children with some kind of disability is approximately 12,000. According to the census data, there are about 3,200 children with disabilities. With the improvement of testing methods, the number of autistic children, which was previously unclear, is becoming clearer and is on the increase. There is also a need to urgently reexamine educational policies for autistic children, including the adaptation and adjustment of their learning environment and educational curriculum.

Basically, students in schools for the blind acquire basic literacy (literacy and simple calculation) from kindergarten to the third grade of primary education, after which they are transferred to regular classes and receive inclusive education to develop social and intellectual skills together with able-bodied children. Because of communication issues, it is more difficult for children in schools for the deaf and mute to transition to regular classes than children in schools for the blind, and they are transferred to regular classes between grades 3 and 6 based on their individual conditions.

Mathematics and Arithmetic are the most difficult subjects for pupils with visual impairment because they are unable to rely on visuals when learning spatial awareness and formulas using symbols, which are easier to understand when captured visually, such as diagrams and formulas. There is a resource center under the Direction of Inclusive Education that develops and produces teaching materials for visually impaired pupils and is staffed by three specialists. It develops and produces textbook-based teaching materials for visually impaired children for about 120 students (86 blind students and 34 students enrolled in inclusive education schools), including Braille textbooks and teaching materials with audio guides, which are packaged and distributed to the students. On the other hand, the understanding of students with dyslexia is still an issue to be addressed, and the conversion of textbooks to DAISY/EPUB has not yet been started. As computers and tablets are distributed to each student as a measure for distance education, a learning environment is being created to promote the development and use of DAISY/EPUB textbooks, and with the participation of wide-area webinars, the introduction of DAISY/EPUB textbooks will be considered within the Ministry of Education in the future.

3) National Budget for Education

According to the Ministry of Finance, the allocation for education from the national budget of FY2022 expected to increase by 6.3% compared to 2021 to USD 1.47 billion, accounting for 18.5% of the total budget and 5.1% of GDP³⁶. In FY2019, the public education budget accounted for 3.6% of GDP, 4.1% in FY2020, and 5% in FY2021, a trend that has been increasing every year due to the need to invest in education for facing the COVID-19 disaster. Approximately 70 % will be spent on teacher salaries, while the remainder will be allocated to technology measures, including distance education, to bridge the digital divide, teacher training, capital investments, and infrastructure improvements for schools damaged by the hurricanes.

³⁶ <https://www.mh.gob.sv/inicia-estudio-del-proyecto-de-presupuesto-2022/>

4) Donor Support

UNICEF is providing the following support to COVID-19 in the country of El Salvador

- Support for the reopening schools: distribution of masks and alcohol disinfectant, development of a school reopening plan (Plan de regreso a escuela), development and distribution of TV educational programs
- Support for schools in vulnerable communities in rural and remote areas: support for Internet access, provision of tablets and other equipment
- Capacity building of teachers: teacher training in distance education, ICT technology, social psychology, etc.
- Formation and dispatch of expert teams: Teams of lawyers, psychologists, public health nurses are dispatched to each school to provide various consultations for students and parents.
- Support for children with disabilities: support in the form of audio materials, teacher training, etc.
- Refugee Assistance, Disaster Relief

In addition, the World Bank and IDB are providing loan support to the education system. El Salvador is a recipient of donor-coordinated (Alianza de Plan Educativo Sectorial, about 50 UN agencies and international NGOs) support for the education sector from three perspectives: improving the quality of education, developing school infrastructure, and providing equal educational opportunities.

(3) Guatemala

1) Educational Implementation Status

Based on the "Governing System for Risk and Disaster Management for School Safety"³⁷ established by the Ministry of Education in 2014, the Ministry of Education developed a "Comprehensive Plan for Coronavirus (COVID-19) Prevention, Response and Recovery"³⁸ to address the situation. In addition, UNICEF and the Embassy of Canada collaborated to develop the "Home Learning Strategy" (#AprendoEnCasa), which included the development of a virtual learning platform, the delivery of classes via television and radio, and the distribution of printed materials to students with limited access.

According to the response to the questionnaire from the Ministry of Education, various measures have been taken with the support of citizens, civil society organizations, the private sector and national and international cooperation agencies to ensure the continuity of education during the period of school closure due to COVID-19. However, a significant proportion of pupils and students do not have adequate Internet connections and other facilities to access virtual education, and indigenous peoples, who live in rural areas and are particularly poor or extremely poor, are greatly affected. According to the 2018 national census data, indigenous peoples account for approximately 44 % of the total population and mostly reside in rural and mountainous areas. In addition to Spanish, the official language, there are 22 Mayan languages in the country, and the lack of language-specific teaching materials is also considered to be a barrier to equal educational opportunities.

According to UNICEF data³⁹ updated in May 2021, in Guatemala (2014-2015) the percentage of school-aged children with Internet access at home is 2-3% in rural areas, 16-20% in urban areas, and 0% in poor areas. It can be said that access to distance education via the Internet is quite limited in the country. In addition, the latest data from the International Telecommunication Union (ITU), one of the specialized agencies of the United Nations, shows that the Internet access rate in households in Guatemala is 22.73% (2019). Under these circumstances, according to information from the Ministry of Education, 4,112,057 students registered in the national education system (about 90% of the total) have access to educational programs using television, radio, or distributed printed materials. In 2020,

³⁷ Sistema de Gobernanza para la Gestión de Riesgos y Desastres para la Seguridad Escolar

³⁸ Plan Integral para la Prevención respuesta y Recuperación ante el COVID-19

³⁹ Global database on school-age digital connectivity

5,930,524 study guides for home study were distributed, and in 2021, 6,282,557 module materials and textbooks for the 2021-2022 school year were distributed. It said that 1,937,911 pupils and students have access to educational program delivery via television. On the other hand, according to the online information media, television delivery is limited to three hours per week for primary education and two hours per week for secondary education, and the Ministry of Education does not monitor and evaluate the learning situation, leading some reports to raise concerns about the delay and quality of learning⁴⁰.

The criteria for reopening schools are determined by the infection status alert signal issued by the Ministry of Health, which restricts civil society activities in the city or province. If the alert signal is red, the school is completely closed and students are expected to study at home. If the alert signal is yellow or green, the school will be reopened in accordance with the school's infection prevention measures, but even in this case, attendance at school is not compulsory but optional, and parents may choose to study at home.

2) National Budget for Education

Public spending on education in 2020 is 3.94% higher than the previous year, accounting for 21.14% of total public spending. This amounts to 3.3% of GDP, a slight increase from 2019. However, this is more than 1% lower than the OECD country average of 4.9% (2017), and only about half of the spending compared to Belize 7.6% (2018), Costa Rica 7.0% (2019) and Honduras 6.1% (2018) where are the highest spending countries among the Central American and Caribbean countries. In addition, about 80% of expenditures are permanent expenses such as teachers' salaries.

According to newspaper reports⁴¹, the national budget for education in 2021 was 18.7% of the total national budget and was allocated for school renovation, purchase of ICT equipment, school health insurance. In 2022, the education budget will be allocated for school feeding programs, printing and distribution of textbooks, renovation of school buildings, introduction of technologies such as virtual classrooms, and installation of virtual classrooms.

3) Donor Support

In 2020-2021, international cooperation support related to the COVID-19 pandemic for the education sector is shown in Table 7-26 below (provided by the Ministry of Education).

Table 7-26 International Cooperation Support Related to COVID-19 in Guatemala

Support Contents	Support Organization
Various technical cooperation	UNICEF /FAO/ JICA/ GIZ/ ISRAAID/ UNFPA/ USAID/ WFP/ The Behavioural Insights Team (BIT)
Design development and printing of digital teaching materials	UNICEF/UE/ UNFPA/PMA/FAO
Digital microsite	OEI/ UNFPA
Online training, webinars, conferences and high-level meetings and workshops	ISRAAID / Mashav / BID & UNESCO / Embassy of Israel / USAID / OEA
Video production on food, nutrition and COVID19 Support for School Meal Programs in Urban Areas	World Food Programme (WFP)
Educational video production on virtual education	USAID
Virtual library	Wikiguate/ Britannica/ Odilo y Bloom
Technical assistance for home study strategies	UNICEF/ OACNUDH
Disaster risk management	JICA
Cross-cutting areas such as violence prevention, employment promotion, prevention of illegal migration in the framework of Covid-19, youth reintegration, emotional and social skills	GIZ/UNFPA/FAO, UNESCO Y OIM/Unión Europea/DVV Internacional/Cool is Best
Technology equipment, teacher training, solar panels provided	Korea/ NEW SUN ROAD, P.B.C.
Health education, community leadership, vocational education, domestic violence prevention	Peace Corps Volunteers/US Government
Identifying and addressing learning loss due to COVID19 in mathematics	Inter-American Development Bank (IDB)

⁴⁰ <https://www.plazapublica.com.gt/content/educacion-en-2021-sin-internet-ni-mejores-planos-habra-mas-desigualdad>

⁴¹ <https://agn.gt/proyecto-de-presupuesto-2021-prioriza-salud-educacion-y-reactivacion-economica/>

Support Contents	Support Organization
Technical and operational support for the protection of refugees, returnees, Guatemalans at risk of displacement and socially vulnerable populations	United Nations High Commissioner for Refugees (UNHCR)
EDUVIDA-"Education for Life and Work Program": business networks, professional development, educational networks and technical assistance to support entrepreneurship	New Zealand Government
Organizational strengthening (financial support)	World Bank

Source: Ministry of Education data, translated and prepared by Study Team

4) Requests to the Japanese Government

The Ministry of Education's response to the questionnaire included the following requests for support from the Japanese government and JICA.

- Technical assistance to strengthen ICT technology and infrastructure for the promotion of equitable educational opportunities and continuing education
- Use of technological resources in the field of education and training of teachers on ICT
- Development of teaching materials that promote autonomous learning in each subject
- Development and creation of learning videos to teach logical and mathematical reasoning processes

7.8 Development of Hypothesis on the State of Sectoral Development Cooperation in With/Post COVID-19 Society

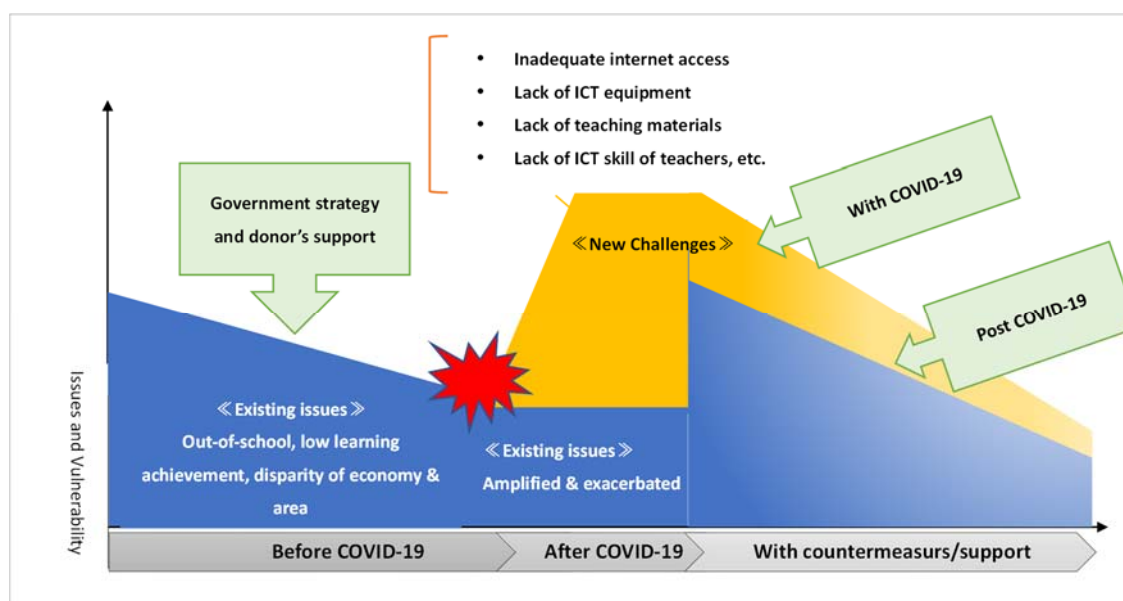
7.8.1 Grouping of Countries Surveyed by Sector

It is presented in 7.3.6.

7.8.2 Analysis of Vulnerabilities in the Priority Countries and Sectors

Vulnerabilities in the education sector were analyzed by organizing them into two categories: existing issues from before COVID-19 and new issues arising from the impact of COVID-19. The details are presented in 7.5.2 Analysis of Sectoral Indicators.

As shown in Figure 7-13 and Table 7-27 below, the challenges that existed prior to COVID-19 include the existence of children who are out-of-school or not enrolled in school, low achievement, academic disparity due to economic gap, educational disparity among vulnerable groups, and inadequate school facilities. In addition, the COVID-19 pandemic further amplified, exacerbated, and manifested the existing challenges and created new ones, such as "failure to conduct learning assessment," "inadequate Internet access," "lack of ICT equipment," "lack of digital teaching materials," "lack of know-how and preparation for distance education," and cancellation of the school nutrition program".



Source: Study Team

Figure 7-13 Challenges Before and After COVID-19

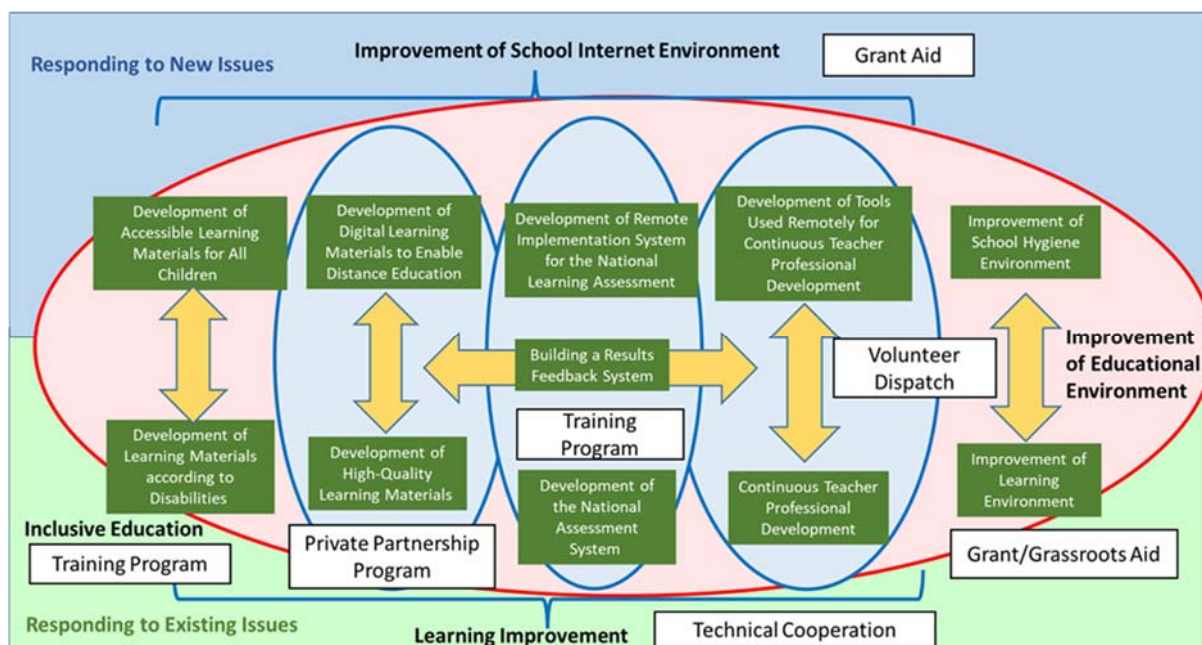
Table 7-27 Challenges and Vulnerabilities Revealed by COVID-19

Challenges		Vulnerabilities Revealed by COVID-19
Existing issues (school based)	Presence of out-of-school children and students	Increase in the number of out-of-school children and loss of re-enrollment opportunities due to school closures
	Low learning achievement	School closures and limited access to distance education, leading to further academic decline, advancement to higher education without the appropriate knowledge and skills for each grade level, and increased risk of dropout
	Learning achievement gap due to economic disparity	Further widening of inequality and increased dropout risk due to reduced parental income
	Disparities in educational opportunities (vulnerable groups: remote areas, poor people, indigenous people, refugee migrants, people with disabilities)	Expanded loss of educational opportunities for vulnerable groups who have difficulty accessing distance education
	Inadequate school facilities	Delayed maintenance due to education budget cuts Difficulty in hygiene control and infection prevention due to inadequate sanitation facilities Difficulty of school reopening Difficulty in implementing distance education due to inadequate ICT environment
Emerging Issues (Access to Learning)	Failure to assess learning	School closures make it difficult to conduct the learning assessments that were normally conducted
	Lack of Internet access	Disparities in access to distance education between areas with and without Internet access, or depending on the Internet environment of each household
	Lack of ICT equipment (schools, teachers, families)	Difficulty in delivering and receiving distance learning due to the unavailability of ICT equipment in schools, teachers and children's homes
	Lack of digital teaching materials	Learning delays, lack of content, and poor quality of learning through distance education due to lack and poor quality of digital learning materials
	Lack of know-how in distance education planning and implementation	Insufficient learning content and poor quality due to lack of preparation and technology of teachers and schools
	Lack of ICT skills among teachers	Differences in the content and frequency of learning due to the lack of competence of teachers who conduct distance learning
	Lack of support for parents	Home learning through distance education due to school closure, but lack of physical, technical, and emotional support for parents, and learning delays for students who have difficulty learning at home
	Mental burden on children and students	Increased emotional stress due to school closures, loss of connection with other children and teachers, and individual home study
Discontinuation of school nutrition programs	Poor children and students are undernourished due to the loss of nutritional support as a result of school closures	

Source: Study Team

7.8.3 Hypothesis on the State of Development Cooperation of With/Post COVID-19 Societies in Central America and the Caribbean

Based on the above analysis and discussion, as a hypothesis concerning the state of development cooperation in the education sector of With/Post COVID-19 societies in Central America and the Caribbean, the Figure 14 shows a conceptual diagram of JICA’s educational cooperation strategy in With/Post COVID-19 societies. The issues that have been clarified due to the impact of COVID-19, the proposed measures to overcome them, and the direction of cooperation are shown in Table 7-28.



Source: Study Team

Figure 7-14 Conceptual Diagram of JICA’s Educational Cooperation Strategy in With/Post COVID-19 Societies

Table 7-28 Hypothesis on the State of Development Cooperation in the Education Sector

Vulnerabilities Revealed in COVID-19	Measures to Overcome (draft)	Direction of Cooperation (draft)
Delay in learning and decline in academic achievement (loss of educational opportunities and widening of disparities)	Analysis of learning delay and academic decline by learning assessment survey Development and enhancement of supplementary and digital teaching materials Teacher Capacity Building (including ICT skills)	Technical assistance to improve academic performance (math and arithmetic) ← Technical cooperation, dispatch of volunteers, private sector cooperation
Increased dropout risk for vulnerable groups (children with disabilities, the poor, indigenous peoples, refugees and migrants, and people living in remote areas)	Support based on need Development of teaching materials and teacher guidebooks based on characteristics (for children with disabilities and indigenous people) Remedial and supplementary learning Enhancing equitable educational opportunities Continuation of school lunch and nutrition program	Support for the promotion of inclusive education through the development of teaching materials according to disabilities and linguistic and cultural characteristics ← Technical cooperation, dispatch of volunteers, private sector cooperation, issue-specific training and country-specific training in Japan
		Support for strengthening school management in local communities ← Technical cooperation, dispatch of volunteers, and grassroots cooperation
Delay in the development of school infrastructure (sanitation, ICT environment)	Strengthening of sanitary environment maintenance Development and enhancement of Internet access network	Support for school infrastructure development and equipment provision ←Grants, grassroots, cultural grants

Source: Study Team

7.8.4 Possible Actions and Support Measures to Overcome Vulnerabilities

Based on the hypothesis summarized above, the Table 29 shows the results of the study as possible and supportive measures by JICA to overcome the vulnerability in the With/Post-COVID-19 society. In order to overcome the existing and new issues that have arisen, not only education in schools as Post-COVID-19, but also technical support in the form of utilizing the experience and knowledge of distance education that With COVID-19 has cultivated in each country from 2020-2021 is required in the future.

Table 7-29 Support Measures by JICA to Overcome Vulnerabilities

1. Technical Assistance to Improve Learning Achievement (Mathematics and Arithmetic)	
Support Measures	<ul style="list-style-type: none"> ▪ Implementation of learning assessment survey ▪ Development of digital teaching materials and supplementary materials ▪ Capacity building of teachers
Support Contents	<p>Utilizing the assets of the technical assistance in the field of mathematics and arithmetic that has been provided for many years in the Central American and Caribbean countries, the project will provide technical assistance to halt the decline and improve the learning achievement of children and students, which has been pointed out to be seriously affected by COVID-19. The JICA technical cooperation project "Improvement of Learning Based on Evaluation of Academic Achievement in Primary and Secondary Arithmetic and Mathematics Education (ESMATE2)" in El Salvador, which is being implemented for four years from April 2021, is an attempt to improve teaching through the improvement of teaching materials based on the results of learning evaluation. The knowledge developed through this project can also be applied to other countries.</p> <p><u>Support for Existing Issues (Low Learning Achievement)</u></p> <p>First, the project will support the implementation of a learning achievement evaluation survey to ascertain the level of learning achievement through remote education and dispersed school attendance conducted during the school closure period and to take concrete measures at the national and regional levels. Next, the children's learning stumbling blocks and issues based on the results of the learning assessment survey will be narrowed down, and based on this, support for measures such as prioritizing the curriculum and focusing and adjusting the content of instruction. Support for the development of teachers' abilities will also be provided.</p> <p><u>Support for Emerging Issues (Distance Education)</u></p> <p>Technical support will be provided for actively use of ICT-based methods, which have been rapidly developed and introduced by COVID-19, such as the implementation of distance education and the development of digital teaching materials and applications, to support academic achievement. Technical support will be provided for development of tools for assessing learning achievement so that assessment surveys can be conducted online, as well as digital technologies that can collect and analyze data from all over the country, even remotely. In addition, it can be developed digital teaching materials and supplementary teaching materials based on the results of the assessment, and conducted teacher training on ICT skills, and provided support for ICT technology responding to distance education.</p>
2. Support for the Promotion of Inclusive Education According to Disability, Language and Cultural Characteristics	
Support Measures	<ul style="list-style-type: none"> ▪ Development of teaching materials and teacher skills to meet the learning needs of children with disabilities ▪ Development of teaching materials according to the language environment and culture of indigenous peoples
Support Contents	<p>With/Post COVID-19 society is also required to provide support to children with special needs, with a view to achieving SDG 4, "Every child should have access to quality education", which is a sustainable development goal. Support will be provided to vulnerable groups of children, especially children with disabilities and indigenous children, with the aim of improving educational opportunities that meet their specific needs.</p> <p>It can be also considered the possibility of creating a system that allows for the exchange of information and skills, such as collaboration and establishment of centers within the region (SICA, CARICOM, OECS) that have a common language and culture, in order to measure the exchange of people involved in inclusive education, conduct joint training to acquire skills, and establish centers where information, equipment, and tools can be shared, such as libraries and resource centers.</p> <p><u>Support for Existing Issues (Learning Gap for Vulnerable Children and Lack of Support for Them)</u></p> <p>In addition to ensuring physical access for distance education, support will be provided for the creation of teaching materials that are friendly to children with disabilities and indigenous children whose mother</p>

	<p>tongue is different from the official language, such as providing assistive devices, including sign language and subtitle explanations in textbooks and other teaching materials as a reasonable consideration, and making them multilingual. Guidance, training and support on inclusive education will be provided to teachers, as well as creating guidelines for teachers on what kind of support is effective for their teaching activities.</p> <p><u>Support for Emerging Issues (Lack of Access for Distance Education)</u></p> <p>It is necessary to change the education system to be equitable and inclusive so that the rights of children with disabilities are respected as agreed in the Convention on the Rights of Persons with Disabilities and the Montevideo Consensus on Population and Development, and virtual education has the potential to expand their learning opportunities. It should be supported policies to expand their learning opportunities in the medium and long term, proactively developing and introducing ICT, virtual platforms, digital teaching materials.</p>
3. Support for Strengthening School Management in Local Communities	
Support Measures	<ul style="list-style-type: none"> ■ Enhancing equitable educational opportunities ■ Expansion of supplementary learning ■ Support for the continuation of school lunch and nutrition programs (promotion of school vegetable gardens, educational activities on nutrition, etc.)
Support Contents	<p>Due to the impact of COVID-19, there are concerns that vulnerable groups (children with disabilities, the poor, indigenous peoples, refugees and immigrants, and people living in remote areas) may fall behind in learning and be at greater risk of dropping out of school. There is a need for support that is tailored to their specific challenges and needs. Since the challenges of vulnerable groups differ depending on their characteristics, support is provided to local communities to help children whose educational opportunities are limited by the region in which they live or by income disparity.</p> <p>Taking into account the security situation in each country, children and their parents should be supported, who are at risk of dropping out of school in target areas with large populations of vulnerable groups and areas with educational challenges, surveying and analyzing the issues and characteristics of the area, and using this information to strengthen school management and provide solutions to learning issues. In some cases, it is possible to take measures to overcome problems and needs by supporting the entire local community, even if it is not possible to solve the problems only by providing support to schools. For example, supplementary learning classes are held through cooperation between the local community and the school, and grassroots support measures are taken to support children with the help of students from nearby universities and residents, where there are limitations in the efforts of schoolteachers alone. Since some countries and regions are not suitable for holding supplementary learning classes after school or at night due to security concerns, it is necessary to take measures keeping in mind the security situation in each country.</p> <p>In addition, the resumption and continuation of school feeding program is essential to bring back pupils and students at risk of dropout to school and to ensure adequate nutrition for children in vulnerable groups. The project will support local communities to take the initiative in restarting and continuing school nutrition programs so that provision is not stopped due to cuts in education budgets. For example, it can be provided logistical support for the implementation of community-based school lunch programs through the introduction of school vegetable gardens, educational activities on nutrition for parents, and collaboration with neighboring farmers.</p> <p>There is an education program called Education with Community Participation (EDUCO) in Central America, which has been implemented in El Salvador since 1991, in Guatemala since 1995, and in Honduras since 1999. Several NGOs have organized support groups called EDUCO to provide technical assistance. The program has received support from international organizations such as the World Bank and USAID, and is said to be a successful case study, as children's learning achievement have improved in the targeted poor areas. There is a possibility that the program will be expanded based on these examples.</p>
4. Support for School Infrastructure Development and Equipment Provision	
Support Measures	<ul style="list-style-type: none"> ■ Maintenance of school sanitation facilities ■ Provision of Internet access and ICT equipment
Support Contents	<p>Even when the infection is under control and school classes have resumed, it is necessary to develop a learning environment in which education at school and education at a distance can coexist so that educational services, including distance education programs, can reach all children from the perspective of providing educational opportunities in the With COVID-19 society.</p> <p><u>Support for Existing Issues (Unmaintained School Sanitary Facilities)</u></p> <p>From the perspective of education in schools, it is necessary to provide support for the development of school facilities to protect the safety and health of children, such as water supply, handwashing facilities,</p>

	<p>and hygienic toilets, as well as for thorough hygiene management in schools, including social distance, handwashing instructions, and measures to prevent infection among students and teachers. As schools are effective for learning through face-to-face classes and serve as a safe and secure place, support should be provided for the development of hygienic environment so that all children can go to school with peace of mind.</p> <p><u>Support for Emerging Issues (Lack of Internet Access and ICT Equipment's)</u></p> <p>In order to deliver educational services to all children, in addition to education in schools, distance education is an effective way to continue learning and can be an opportunity for children who have not been enrolled in school to receive education. In order to provide safe and secure distance education programs that are accessible to all students, the development of Wi-Fi environments and ICT equipment in schools and public facilities will be supported. The support could also include the provision of equipment for broadcasting networks to facilitate the provision of interactive educational programs using radio broadcasting and other means.</p>
--	---

Source: Study Team

7.8.5 Support Measures (draft) Derived From the Results of the Pilot Project Implementation

As mentioned above in Section 7.5 in the results of this survey and analysis, one of the impacts of COVID-19 is the loss of learning opportunities for children with disabilities. In addition, through this field survey, the voices of those involved were heard about the issues that existed before COVID-19, such as the lack of understanding of children with disabilities and the lack of consideration for their individual disabilities.

Therefore, as a pilot project for the education sector, a wide-area webinar "Utilization of DAISY/EPUB Textbooks and Teaching Materials in Inclusive Education" was conducted. The details of the implementation are as follows (more details of the implementation are described in the pilot project report).

Table 7-30 Pilot Project wide-Area Webinar Implementation Details

Date and Time of Implementation	English-speaking countries: October 19-21, 2021, 14:30-17:00 Western speaking countries: October 26-28, 2021, 14:30-17:00
Target Country	English speaking countries: Belize, Saint Lucia, Saint Vincent Grenadines Spanish speaking countries: El Salvador, Honduras, Guatemala, Nicaragua, Panama, Costa Rica, the Dominican Republic
Participants	Education administration officials, inclusive education school officials and teachers
Objective	<ul style="list-style-type: none"> ▪ Promoting understanding of children with reading difficulties ▪ Introduction and simulated experience about DAISY/EPUB textbooks and materials ▪ Introduction and promotion of understanding of the role and benefits of accessible textbooks and materials
Expected Results	Webinar participants learn about the role of DAISY/EPUB textbooks and materials as a way to overcome learning barriers caused by a wide range of "reading disabilities," including dyslexia, which is difficult to determine medically, in addition to visual impairment. To understand the role of DAISY/EPUB textbooks and materials as a way to break down learning barriers caused by a wide range of reading disabilities, to understand how to reduce learning barriers by matching students' needs with textbooks and materials, and to formulate perspectives for applying them to inclusive education.

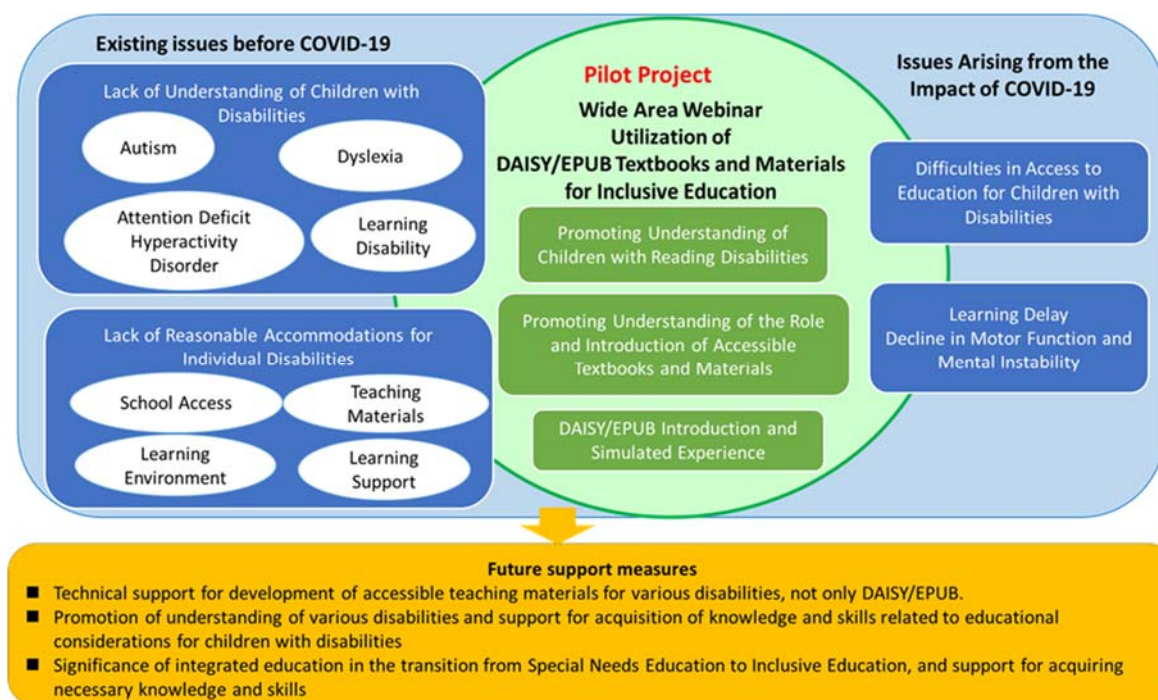
Source: Compiled by Study Team

In this pilot project, among the issues related to education for children with disabilities and inclusive education, such as understanding and reasonable accommodations for various disabilities, the theme focused on DAISY/EPUB, which is an audio-digital teaching material as an accessible textbook and teaching material for students with reading disabilities, and a wide-area webinar was held.

In a questionnaire survey conducted after the wide-area webinar, 88.9% of the participants in English-speaking countries and 54.6% in Spanish-speaking countries answered that "understanding about children with reading disabilities has improved". In addition, nearly 90% of both English-speaking and Spanish-speaking participants answered that "the increased use of DAISY/EPUB teaching materials would have a positive impact on my work". 88.9% of the English-speaking respondents and 54.5% of the Spanish-speaking respondents answered that they would like to create their own DAISY/EPUB materials. As for the implementation of DAISY/EPUB textbooks, the raised issues were technology transfer, human resource development, and awareness-raising activities regarding DAISY/EPUB as a

solution to reading barriers in both English and Spanish languages countries. Several factors could be behind the difference in responses between the English-speaking and Spanish-speaking countries, but one factor could be that the English-speaking respondents participated throughout 3 days, while almost of the Spanish-speaking respondents participated only on 1 day. In addition, as the implementation of digital textbooks is an international trend, it can be assumed that there is a high level of interest in the implementation of digital textbooks, especially in countries that have already accumulated educational practices in Braille or sign language for the education of visually and hearing- impaired children.

The Figure below shows a conceptual diagram of the issues in the education of children with disabilities, the positioning of the pilot project, and our ideas for future support measures (draft).



Source: Study Team

Figure 7-15 Conceptual Diagram of the Proposed Support Measures Derived from the Results of the Pilot Project

In El Salvador, Belize, and the Dominican Republic, where interviews were conducted during the field survey, there was a high level of interest in the implementation of DAISY/EPUB textbooks, which was the topic of a wide-ranging webinar. However, other issues that were raised included the lack of preparedness for newly diagnosed disabilities such as autism and Attention Deficit Hyperactivity Disorder (ADHD), as well as the lack of knowledge and skills of teachers and staff on how to support students with disabilities learning together in regular classes and how to take care of other students in the transition to inclusive education.

Therefore, for future support measures, it is important not to focus on a single theme of DAISY/EPUB version textbooks, but also to incorporate the introduction of materials that are accessible for other disabilities and how to introduce them, as well as to introduce a wide range of knowledge and examples of educational and rational considerations for each disability. Based on this, it is expected that the development and introduction of digital teaching materials as supplementary materials and teaching tools for students with disabilities and students with learning delays will be promoted in educational fields where distance education and digital teaching materials have been implemented which is also a positive impact of COVID-19.

In the transition from special needs education to inclusive education, which is being promoted in many countries, it is also important to provide opportunities to acquire new knowledge and skills, such as the importance and significance of integrated education in regular classes, and educational

considerations and support for other students who learn together with students with disabilities, by providing opportunities to observe practices in Japan through Subject-Specific Training Programs.

7.9 Analysis and Recommendations Contributing to Sectoral Cooperation Policy

7.9.1 Education Sector Analysis Summary

Based on the information collected and analyzed so far, one of the biggest challenges in the education sector in Central American and Caribbean countries is the wide disparity in education by family income, region of residence, multilingualism, security. The region had the longest school closure period compared to other regions in the world due to the COVID-19 pandemic. The countries took various measures to promote distance education during this period. However, vulnerable groups such as the poor, disabled people, people living in remote areas, indigenous peoples, refugees and immigrants, who do not have the necessary Internet environment or ICT devices to access distance education services, or who do not have a basic condition to learn at home, have not been able to fully benefit from these services. Therefore, there is a concern that the existed education gap is widening more and more. It has been pointed out that this is true not only for primary and secondary education, but also for early childhood education and higher education, and the impact on the acquisition of knowledge and skills of children and adolescents caused by prolonged school closure and dispersed or partial school attendance is immeasurably large.

It is essential that infection prevention measures and sanitary environments should be ready in schools to open and start face-to-face classes. However, in many cases, such measures and maintenance have not been able to keep up with the needs of schools in rural areas, islands, and densely populated urban areas. Schools are opened in urban areas, but are delayed in other areas due to lack of sanitation protocols.

7.9.2 Recommendations for Solving and Improving Problems in the Education Sector

The reopening of schools is a top priority and an urgent task in order to halt and recover from the major learning losses suffered due to COVID-19. On top of that, countries need to introduce learning recovery programs as soon as possible. These include :1) centralization and integration of curricula; 2) extension of learning hours; and 3) streamlining of learning. With this in mind, the following are some recommendations for solving and improving the problems of the education sector.

(1) Intensive, Long-term and Continuous Measures to Improve Learning Achievement

- It is predicted that learning achievement has further declined due to the prolonged closure of schools. It is not a level that can be regained in a few years, but continuous technical support over a long-term span, looking ahead to 2030, is essential.
- Urgently learning recovery programs should be created and advanced. Evaluation and analysis of the impact of prolonged school closures and distance learning on learning achievement should be done, and curricula and teaching materials should be developed based on the results.
- Measure of the increase in learning time should be taken through strengthening school management plan, increase of number of days and hours of class.
- Measures of remedial learning and development of special teaching materials for vulnerable groups (disabled children, indigenous people, refugees, etc.) and rural and urban poor areas should be taken. In particular, the provision of educational opportunities for children left behind, such as out-of-school children, girls, children with disabilities, indigenous people, refugees and immigrants, is an important issue, and measures will be promoted in line with their individual issues and needs.

(2) Application of Fundamental and Innovative Technologies and Improvement of School Facilities and Environment

- Measure of the application of fundamental and innovative technologies to reduce educational disparities should be taken. In particular, it should be promoted the development and application of digital teaching materials and applications based on the experience of distance education. It should be taken advantage of the fact that ICT devices (tablets and laptops) are

being distributed to children and students in various countries, and measures should be taken to enable effective use of the distributed devices, such as inserting teaching material applications and digital teaching materials that can be used offline into these devices.

- For the development of digital teaching materials and learning applications, it is also important to learn from the private sector and other countries that are making progress in development, such as collaboration with the private sector and building cooperative relationships within regions that share a common language.
- To develop and disseminate basic technologies such as communication infrastructure to schools.
- It should be to improve promptly the sanitary environment of schools (water facilities and toilets) to prevent infection before reopening school.

(3) Intra-Regional Cooperation and Establishment of Bases in the Region

- Based on the experience of distance education in each country, it should be promoted the development of high-quality learning materials using ICT and DX, and the professional development of teachers by obtaining the cooperation of the private sector in the development and use of digital teaching materials and applications, and by promoting cooperation within regions with common language and educational issues (SICA, CARICOM, OECS, etc.).
- Inclusive education is being promoted in countries in the Central American and Caribbean region (El Salvador, Belize, the Dominican Republic, Saint Lucia, Panama, etc.) to support children with disabilities. However, based on the results of this survey, the lack of professional technical skills, knowledge, and experience of teachers and others is raised as an issue. By collaborating within the region, it is possible to receive technical training, equipment, and other support from donors, such as support for the transition from special education to inclusive education, knowledge and experience to provide educational support for various disabilities, and development technology and equipment for Braille, audio materials, and digital materials. It is also possible to expand the scope of regional cooperation by setting up a base in each of the member countries of SICA and CARICOM, creating a database of teaching materials and books, creating a communication platform, accumulating knowledge and experience, and establishing a system that allows information sharing among all concerned peoples. There is also the possibility of broadening the scope of cooperation within the region.

Table 7-31 Establishment of Bases and Intra-Regional Cooperation

Cooperation	Regional Organization	Base Country	Target Area
Improving learning achievement (development of digital learning materials, teacher training, etc.)	<ul style="list-style-type: none"> ▪ SICA-SECC ▪ CARICOM (UG)(UWI) ▪ OECS 	<ul style="list-style-type: none"> ▪ El Salvador ▪ Guyana ▪ Saint Lucia 	<ul style="list-style-type: none"> ▪ Central America, ▪ Caribbean
Promotion of Inclusive Education (technical training, database creation, information exchange, etc.)	<ul style="list-style-type: none"> ▪ SICA-CECC ▪ CARICOM (UG)(UWI) ▪ OECS 	<ul style="list-style-type: none"> ▪ El Salvador ▪ Guyana ▪ Saint Lucia 	<ul style="list-style-type: none"> ▪ Central America, ▪ Caribbean

Source: Study Team

8. Agriculture and Rural Development Sector

8.1 General

From March 2021 to February 2022, the work described in 8.2 below was conducted through internet information gathering and field research (Guatemala, Belize, El Salvador, Panama, and the Dominican Republic).

8.2 Summary of Sector Survey

Table 8-1 Hypothesis and Policy Recommendations for the Agriculture and Rural Development Sector in the Development Cooperation (Draft)

No.	Item	Agriculture and Rural Development
1	Issues from before COVID-19	<ul style="list-style-type: none"> ▪ Lack of sanitation, testing techniques, equipment, and infrastructure ▪ Lack of storage technology, equipment, and infrastructure ▪ Dependence on specific economic sectors (vulnerability in terms of economic structure) ▪ Lack of competitiveness development in the domestic agricultural and rural sector ▪ Lack of farming techniques, including cultivation by producers ▪ Lack of efficiency improvement in the production system, such as the realization of planned production, stable production, shipment through producers' organization, etc. ▪ Lack of production incentives due to market structure ▪ Lack of production infrastructure ▪ Lack of operation and maintenance of production infrastructure ▪ Lack of trust among chain actors due to lack of understanding of each actor's role, absence of clear quality standards, etc. ▪ Lack of value-adding such as processing and certification ▪ Lack of market information ▪ Lack of efforts to mitigate climate change on both the production and consumption sides ▪ Lack of efforts on the part of producers to adapt to climate change ▪ Lack of climate change-related information such as weather, pests, and diseases ▪ Lack of information on resource management and monitoring ▪ Lack of access to finance ▪ Lack of access to insurance ▪ Lack of information related to the agricultural sector, including information on producers and products ▪ Lack of technological development and diffusion
2	Grouping by Issue	(1) Central American countries and large Caribbean countries where the presence of the agricultural sector is maintained, but the entire agricultural sector needs to be strengthened, both for domestic use and export; (2) Small Caribbean countries where very low food self-sufficiency rates and an economic structure dependent on tourism need to be corrected; and (3) Countries that, due to political or external factors, are in a state of socioeconomic turmoil and need to be stabilized or are in need of a significant revamping of the production system.
3	Vulnerabilities Revealed in COVID-19	<ul style="list-style-type: none"> ▪ Lack of sanitation, testing techniques, equipment, and infrastructure ▪ Lack of distribution and storage technology, equipment, and infrastructure ▪ Dependence on specific economic sectors (vulnerability in terms of economic structure) ▪ Lack of competitiveness development in domestic agricultural and rural sector ▪ Lack of efficiency improvement in the production system, including the realization of planned production, stable production, shipment through producers' organization, etc. ▪ Lack of trust among chain actors due to lack of understanding of each actor's role, absence of clear quality standards, etc. ▪ Lack of market information ▪ Lack of access to finance ▪ Lack of access to insurance for producers (limited insurance products) ▪ Lack of information related to the agricultural sector, including information on producers and products
4	New issues that emerged during COVID-19	<ul style="list-style-type: none"> ▪ Lack of regional and inter-sectoral collaboration (importance reaffirmed by COVID-19) ▪ Lack of agricultural value chain digitization (importance recognized by COVID-19)
5	Countermeasures (draft)	<p>Strengthen food hygiene management and storage capacity</p> <ul style="list-style-type: none"> ▪ Installation of post-harvest processing and distribution infrastructure, including packaging and cold chain facilities ▪ Strengthening of food safety and hygiene management technologies and systems through HACCP and other measures ▪ Strengthen food safety and hygiene management by enhancing border phytosanitary functions (regional level) ▪ Development of national and regional food stockpiling infrastructure (regional level)

No.	Item	Agriculture and Rural Development	
		Reducing dependence on food imports	<ul style="list-style-type: none"> ▪ Realization of planned production through the formation of producer organizations and strengthening of organizational management capacity, and realization of stable production in terms of both quantity and quality.
		Strengthen the agricultural value chain	<ul style="list-style-type: none"> ▪ Branding of local products through the introduction of OVOP (One Village One Product) and processing etc. ▪ Improvement of trust among stakeholders in the agricultural value chain by establishing quality standards, etc. ▪ Strengthen local-level agriculture and food cycle initiatives such as local production for local consumption.
		Strengthen measures against climate change	<ul style="list-style-type: none"> ▪ Promotion of low-carbon and energy-saving cultivation technologies such as irrigation and proper fertilizer management ▪ Introduction of weather and natural disaster risk monitoring system ▪ Strengthening of crop residue and food loss recycling ▪ Environmental education on the agricultural environment, food loss, and health ▪ Introduction of the certification systems such as Eco-Food Certification. ▪ Development and introduction of new varieties against climate change
		Strengthening of agricultural support system	<ul style="list-style-type: none"> ▪ Strengthening of financing, assistance, and subsidy programs for producers and producer organizations ▪ Support for the agricultural sector start-up companies ▪ Strengthening of farmer and agriculture-related information systems ▪ Strengthening of the agricultural technology development and extension system
6	Direction and Recommendations for Development Cooperation (Draft)	Strengthening of food resilience and mitigation of migration through integrated approaches to key issues	Set up “Strengthening food hygiene and storage capacity”, “reducing dependence on food imports”, “strengthening the linkage of agricultural value chains”, and “strengthening climate change countermeasures” as key issues and, “strengthening agricultural support system” as a key cross-cutting issue to strengthen the regional food resilience and reduce the migration problem in rural areas by increasing the attractiveness of the agricultural sector, which is the primary source of income for the area, as a result of comprehensive efforts in the key issues.
		Regional collaboration	COVID-19 has spread across borders and around the world, affecting the socio-economy. The number of regional and global level challenges such as diseases, climate change, and migration to other countries is increasing. To respond to these challenges effectively and efficiently in terms of both technology and cost, it is essential to strengthen regional cooperation. The monitoring of weather, disasters, and resources, as well as developing low-carbon production technologies, new varieties adapted to climate change, and providing extension services by using smart technologies can be considered to be examples of regional collaboration.
		Collaboration among sectors and actors	COVID-19 has had a negative impact across borders and also across different sectors such as commerce, especially tourism, health, and agriculture. At the same time, COVID-19 provided an opportunity to reaffirm the importance of inter-sectoral collaboration and to gain experience in such collaboration through food distribution done jointly by ministries related to agriculture and those related to health. Such inter-sectoral collaboration will be effective in strengthening the agricultural and rural development sectors in the future. For example, environmental monitoring through collaboration between the agricultural and environmental sectors, or education in schools on the food production system and nutrition through the collaboration of the agriculture and education sectors. Furthermore, taking into account the greenhouse gas emissions from waste food, for example, it is also important to incorporate consumers who cause losses at the consumption stage or excess supply, in other words, inter-actor collaboration
		Support of the entire agricultural value chain, including the private sector	The agriculture is a private sector consisting of many individual entrepreneurs. In this sector it takes a long time to introduce new technologies and products because of the long production cycle ranging from months to years, high affection by weather conditions, and many economically vulnerable producers who cannot engage in high-risk trial activities. Considering these two characteristics, it would be effective to provide them support by incorporating the agricultural product distributors and processors from the private sector who compose the agricultural value chain and are semi-permanently in the region. In addition, many of the actors that compose the chain were affected by instability in the distribution system caused by COVID-19. Therefore, it is essential to involve these actors in supporting the agricultural value chain, from production

No.	Item	Agriculture and Rural Development	
			to consumption, as one productive unit, not only production or sales, etc. An example of the activities would be the reinforcement of the cold chain, standardization of product quality, management through the participation of producer associations, distributors, and processors, and reinforcement of the systematic production and shipment system by producer associations and middlemen (e.g., the establishment of a production system where producer associations carry out planned production in both quality and quantity, provide stable shipment to middlemen, and the middlemen make distribution with fixed transportation fees which allows both parties to reduce risks). In addition, the provision of financial support (loans and subsidies) by the government and donors is also very important to make it easier for the private sector to take on these very important yet at the same time high-risk actions that require a lot of coordination between many participants.
		Support the active use, development, and diffusion of smart technologies	The number of private companies using smart agricultural value chain technologies is increasing, and the technologies range from cheap and simple ones using smartphones to advanced ones such as production environment management devices equipped with analyzers and automatic machines. It is important to utilize and support such actions in the private sector to further advance agriculture and rural development. Specifically, this includes the accumulation of sector-related information on producers and markets (open data), and financial support for product development and dissemination by private companies, especially start-ups.
		The direction of Japan's development cooperation	In order to make a comprehensive effort in key issues ("strengthening food hygiene and storage capacity", "reducing dependence on food imports", "strengthening the linkage of agricultural value chains", and "strengthening climate change countermeasures" as key individual issues and "strengthening agricultural support") and thereby strengthen food resilience and address the migration issue, the countermeasures shown in point 5 should be developed. At the same time, "improved efficiency in the use of existing infrastructure," "PR support for the creation of a development model through intensive investment and financing of a wide range of existing efforts", "engaging the private sector and consumers," "regional and inter-sectoral collaboration," "positive utilization of JICA's existing assets.

Source: Study Team

8.3 Scope of Work by Sector

8.3.1 Sectoral Scope of Work

Table 8-2 below shows the scope of work by sector. The three main changes from the original plan are (i) the establishment of sub-sectors (agriculture, livestock, and fisheries), (ii) the selection of countries for in-depth surveys, and (iii) the addition of a simplified agricultural value chain survey.

Table 8-2 Scope of Work by Sector (Agriculture and Rural Development)

No.	Task	Sub-Sector	Scope
1	Sectoral Objective		Identify issues and challenges in the agriculture and rural development sector (agriculture, livestock, fisheries) (agricultural value chain) with particular emphasis on strengthening resilience to COVID-19 (pandemic) and climate change, also focusing on the use of smart technologies, and make recommendations for Japanese cooperation to strengthen this sector. However, "rural development" is not included in the scope of work to avoid duplication with other sectors.
2	Update of the Scope		Updating and agreement on the scope through discussion with JICA.
3			Selection of target organizations to be interviewed
4			Execute an interview survey
5	[Task 2]	Basic data collection and analysis of agriculture/ fishery/ livestock/ rural development (23 countries)	<ul style="list-style-type: none"> ▪ Latest national development plan ▪ Related statistical information (past 10 to 20 years) ▪ Major, related national projects ▪ Major, related projects financed by international institutions ▪ Documents related to the sector published in the last three years. ▪ COVID-19 countermeasures taken by government (by socioeconomic group)

No.	Task	Sub-Sector	Scope
6		Grouping of countries and selection of priority countries and the countries for the detailed survey	<ul style="list-style-type: none"> Select priority countries and the countries for the detailed survey based on the results of basic data collection and analysis.
7		Basic data collection and analysis of agriculture/ fishery/ livestock/ rural development in selected priority countries	<ul style="list-style-type: none"> Latest national development plan Related statistical information (past 10 to 20 years) Major, related national projects Major, related projects financed by international institutions Documents related to sector published in the last three years. COVID-19 countermeasures taken by the government (by socioeconomic group)
8		Additional survey in the countries for the detailed survey	<ul style="list-style-type: none"> Analysis of impact of COVID-19 and climate change Selection of target food chain for the food chain value analysis Collection of information of related DX technologies Interview (to obtain complementary information)
9		Prepare country report	<ul style="list-style-type: none"> Prepare Country Report as a result of [Task 2]
10		Simple food value chain analysis of the target food chain in the countries for the detailed survey	<ul style="list-style-type: none"> Confirm the challenges and impact of COVID-19 on the food chain Establish the concept for making recommendations to the cooperation strategy, especially for strengthening COVID-19 (pandemic) and climate change resilience, by focusing on the use of smart technology Select the priority food chain and analyze the its challenges
11	[Task 4]	Identify vulnerabilities of the sector and cooperation measures	<ul style="list-style-type: none"> Analysis and definition of existing challenges and vulnerabilities of the sector Preparation of countermeasures and cooperation measures to overcome the vulnerabilities
12		Preparation of hypothesis for development cooperation	<ul style="list-style-type: none"> Prepare hypothesis of countermeasures to overcome the vulnerabilities that is in line with the Ministry of Foreign Affairs' country assistance policy / project development plan and JICA's PDM Confirm the priority of the hypotheses based on the cooperation needs of each country
13		Preparation of sector hypothesis report	<ul style="list-style-type: none"> Prepare sector hypothesis report as a result of [Task 4]
14	[Task 5]	Collect additional data related to Task 2 and Task 4 from international and regional organizations and government agencies of the countries and exchange opinions with these organizations regarding the principle of development cooperation.	
15	[Tasks 6/7/8]	Advise on the selection, implementation, and completion of the pilot projects from the point of view of the agriculture and rural development sector	
16	[Task 9]	Prepare necessary materials for meeting with knowledgeable persons and give the presentation	
17	[Task 10]	Prepare policy recommendations for the agriculture/rural development sector	
18	[Task 11]	Prepare the sector's input for an academic paper	

Source: Study Team

8.3.2 Updated Work Schedule by Sector

The following table shows the work schedule by Sector reflecting the scope review and other adjustments shown in 8.3.1.

Activities	2021											2022		Total (MM)			
	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb					
	Pre.	Initial Analysis Stage				Pilot Stage			Finalization Stage			Closing Stage					
	IR					PR1				PR2	DFR	FR					
1	Preparation of Inception Report																
2	Data Collection and Analysis																
1.0	Latest National Development Plan																
1.1	Long Term (10 to 20 years) Statistics																
1.2	Major National Projects																
1.3	Major Projects Financed by International Institutions																
1.4	Documents Related to Sector Published last 3 Years																
1.5	COVID-19 Countermesasures taken by Government (by Economic Group)																
1.6	1.0-1.5 & Others mainly for Target Countries and Food Chains for the Detailed Survey																
3	Grouping of countries and selection of Priority Countries and Target Countries and Food Chains for the Detailed Survey																
4	Analysis of the Affection by COVID-19 and Climate Change affected by the Sector in selected Priority Countries																
5	Selection of Food Chain in the Target Countries for the Detailed Survey																
6	Data Collection on Smart Agriculture Technology, Company, Project																
7	Conduct Interviews to Important Stakeholders mainly in the Target Countries and Food Chains for the Detailed Survey (Collection of Complementary Data)																
8	Simple Value Chain Analysis for Selected Food Chain																
9	Preparation Summary of Initial Analysis & Concept of Cooperation Strategy (Creation of Hypothesis)																
10	Preparation of Project List																
11	Selection of Pilot Project																
12	Preparation of Pilot Project Implementation Plan																
13	Progress Report																
14	Implementation and Monitoring of Pilot Project																
15	Finalization of Cooperation Strategy																
16	Draft Final Report																
17	Final Report																
Assignment																	
Luis Rosado	Field Assignment	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.40
	Home Assignment	0.00	0.95	0.50	0.80	0.25	0.55	0.25	0.55	0.40	0.12	0.00	0.00	0.00	0.00	0.00	4.37
Total		0.00	0.95	0.50	0.80	0.25	0.55	0.45	0.55	0.60	0.12	0.00	0.00	0.00	0.00	0.00	4.77
Michinori Yoshino	Field Assignment	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33
	Home Assignment	0.15	0.25	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
Total		0.15	0.25	0.10	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93
Total	Field Assignment	0.00	0.00	0.00	0.33	0.00	0.00	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.73
	Home Assignment	0.15	1.20	0.60	0.90	0.25	0.55	0.25	0.55	0.40	0.12	0.00	0.00	0.00	0.00	0.00	4.97
Total		0.15	1.20	0.60	1.23	0.25	0.55	0.45	0.55	0.60	0.12	0.00	0.00	0.00	0.00	0.00	5.70

Source: Study Team

Figure 8-1 Updated Work Schedule by Sector (Agriculture and Rural Development Sector)

8.4 Survey Method by Sector

The agriculture and rural development sector study was carried out according to the methodology shown in the table below.

Table 8-3 Methodology of Study by Sector (Agriculture and Rural Development)

Procedure	Relevant Chapters/Sections in the Report	
1) Collection of basic information on the 23 target countries	8.5	
2) Selection of priority countries through the grouping of the 23 target countries	8.6	
3) Selection of the target countries for detailed study, field survey, and of the target country and products for food value chain analysis	8.7.1	
4) Implementation of detailed study, field research, and food value chain analysis	8.7.2	
Preparation of hypothesis regarding the development cooperation	5) Analysis of vulnerabilities, challenges, and measures of the sector based on the results of 1) and 4) above	8.5.3, 8.7.3, 8.8.2, 8.8.4
	6) Recommendations for development cooperation	8.9

Source: Study Team

8.5 Collecting Basic Information on the 23 Target Countries

8.5.1 Collected and Analyzed Data

The list of data collected and analyzed is shown in Volume 4: List of Collected Data.

8.5.2 Analysis of Sectoral Indicator

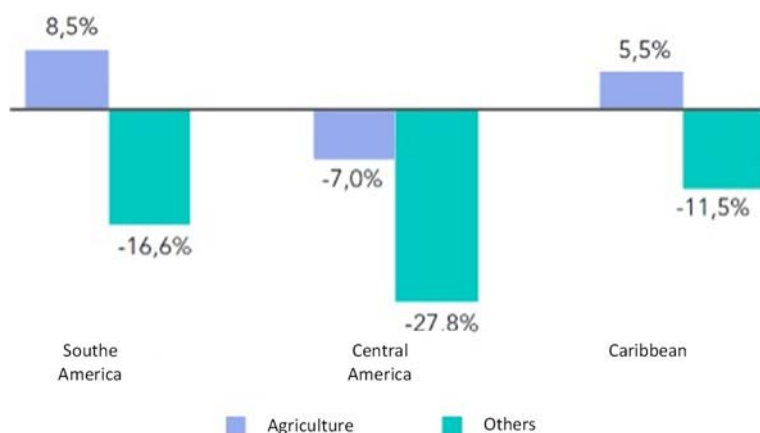
An analysis of the key issues on the agriculture and rural development sector, such as COVID-19 and climate change, which is a global issue similar to COVID-19 and strongly related to the sector, is presented below.

8.5.3 COVID-19

As well as the other countries of the world., countries in Central America and the Caribbean have taken measures to restrict the movement of people and goods, including border closures and curfews, to stop the spread of COVID-19. This has resulted in sanitary achievement in reducing the risk of the spread of infection, but at the same time, it has had a negative impact in the form of economic

stagnation. The agriculture and rural development sector was not immune facing problems such as a decline in the functioning of the distribution system, which is essential for the sale of products, resulting in losses, especially of perishable products, and a decline in demand for food in the tourism sector, which experienced a significant downturn. However, since food is essential for human life, governments took measures to facilitate food distribution at an early stage, and the negative impact on this sector was limited compared to other sectors. Reports by FAO, ECLAC, IDB, SICA, OECS, etc., indicate that the nature and extent of the negative impact vary by country and product. Although there are some differences in the nature and degree of negative impacts among countries and products, most of the reports by FAO, ECLAC, IDB, SICA, OECS, etc. indicate that the negative impacts of COVID-19 on the agriculture and rural development sector as a whole are small or moderate.

COVID-19 caused a significant drop in food demand in the tourism sector; however, no extreme changes in overall demand. The following chart shows the changes in the value of exports in agriculture and other sectors during the January-August period of the year, including 2020 March-August of 2020 when COVID-19 was in full swing and many countries around the world were imposing the most severe restrictions on the movement of people and goods. All regions saw a sharp decline in exports from -11.5% to -27.5% over the previous year in the other sectors. However, In the agricultural sector, the Central American region showed a decrease of -7.0%, only a quarter of the -27.8% of the other sectors, and the Caribbean region showed an increase of +5.5%. This result indicates no significant change in the demand for food products in the international market, especially in the major export destinations such as the US, Europe, and China.



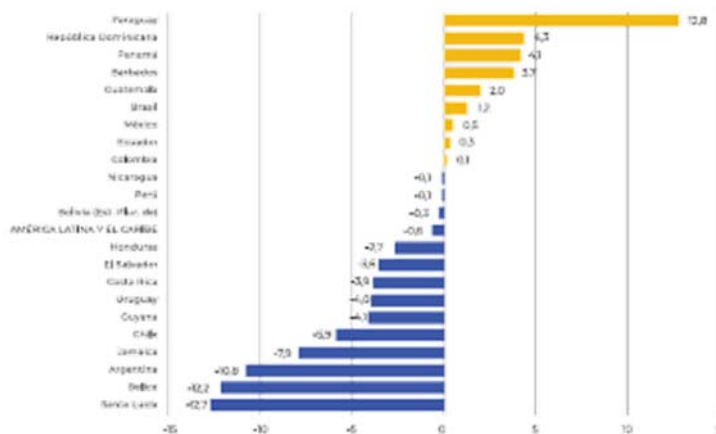
Source: COVID-19 Impact to Food System (FAO-ECLAC)

Figure 8-2 Change in Exports by Region and Sector (2020 Jan-Aug, % against the same period 2019)

The figure below shows the change in GDP of the agriculture, livestock and fisheries sectors in Latin America and the Caribbean in the first quarter of 2020. The change in the agriculture, livestock and fisheries sector was -0.6% for Latin America and the Caribbean as a whole, which is a very small decrease compared to the negative 14.7% of total GDP. In addition, while some countries have seen significant fluctuations of -12.7% and +12.8%, most countries are generally in the range of -4.0% to +4.0%, which is a very stable range considering the significant downturn in global economic activity during this period. In particular, large fluctuations of more than 10% are likely to be influenced not only by COVID-19 but also by other factors such as the occurrence of extreme weather events and political developments.

In the interviews made by this study, it was mentioned that "basic foods such as cereals, oilseeds, and Sugar, and foods that can be stored for a long period maintained a stable supply, while highly palatable and difficult-to-store foods such as seafood, meat, vegetables, and fruits were disrupted and took time to recover. In the figure below, Saint Lucia and Belize had a large decline of -10%. This decline was probably because these countries produce non-grocery products such as lobster, and Saint

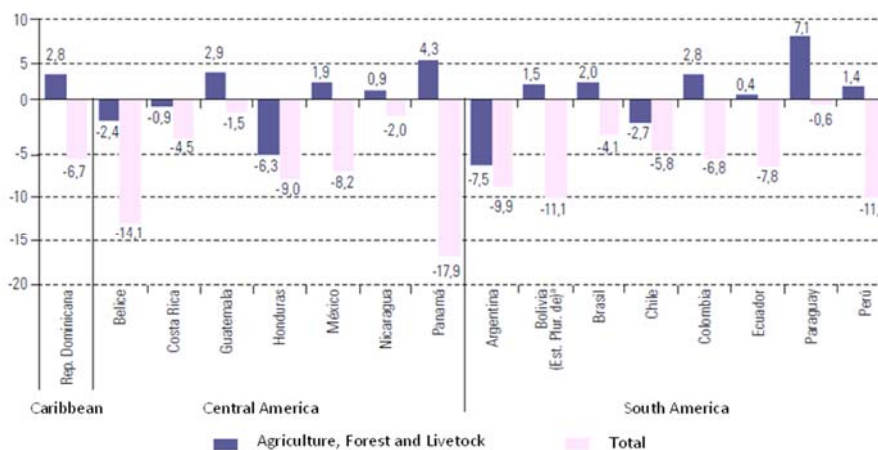
Lucia is an isolated island with a high dependence on tourism, making it easy for distribution to be cut off for sales to be lost. However, as described below, the sales price of lobster in Belize increased due to COVID-19. This was mainly by the appropriately linked agricultural value chain, with the cooperative having centralized control over catching, freezing, processing, and sales and has established good relationships with the sellers. In addition, in a survey conducted by the IDB for 105 family farmers in Argentina, Dominican Republic, Paraguay, Peru, and Bolivia, only 23% of the farmers responded that COVID-19 had affected their production, while 65% of the farmers said that COVID-19 had affected their sales, including making it more difficult to distribute their products. This result indicates that in many agricultural value chains, the negative impacts of COVID-19 occurred on distribution and sales.



Source: Sistemas alimentarios y COVID-19 en América Latina y el Caribe: Desafíos en un Escenario Pos-pandémico (FAO)

Figure 8-3 Change in GDP of Agriculture, Livestock, and Fisheries Sectors in Latin America and the Caribbean in the First Quarter of 2020 (%)

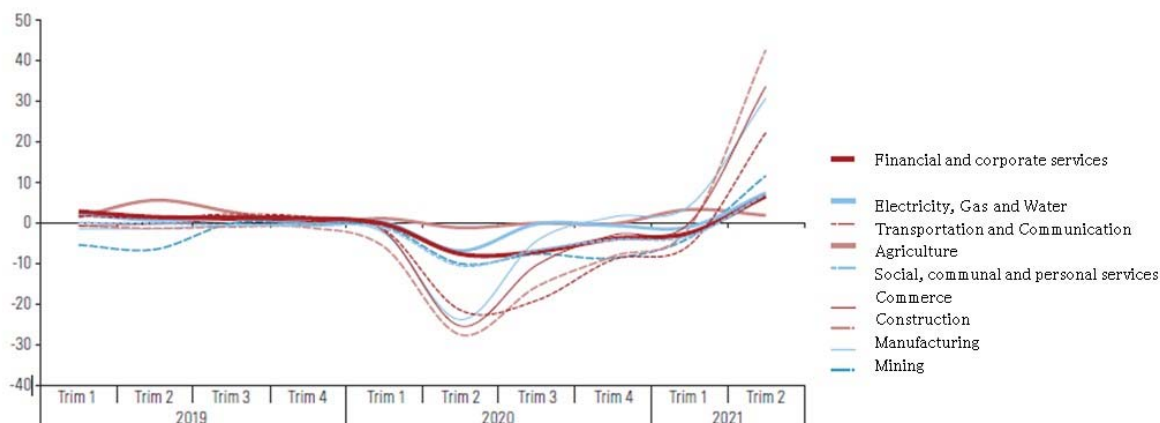
The figure below shows the changes in total GDP and agriculture, forestry, livestock, and fisheries sector GDP in Latin America and the Caribbean in 2020. Some countries recorded positive changes in agriculture, forestry, livestock, and fisheries sector GDP, and the changes in sector GDP were more favorable than the changes in total GDP in all countries. Guatemala was one of the countries where the agriculture, forestry, livestock, and fisheries sector GDP increased. An analysis conducted by ECLAC and the Ministry of Economy of the government of Guatemala in 2020 found that "Guatemala was the country in Central America with the less negative economic impact from COVID-19, especially in the agriculture, forestry, livestock, and fisheries sectors. According to information from the Bank of Guatemala, the agricultural sector is the third-largest contributor to the country's gross domestic product (GDP), accounting for 9.7% of GDP as of 2019. There are various reasons for the low negative impact, including the good fortune that the full-scale spread of COVID-19 occurred after the harvest season of the country's main products, such as coffee and sugar cane.



Source: COVID-19 Impact to Food System (FAO-ECLAC)

Figure 8-4 Changes in Agriculture, Forestry, Livestock, Fisheries Sector GDP, and Total GDP in Latin America and the Caribbean in 2020

The figure below shows the change in GDP of different sectors from the first quarter of 2019 to the second quarter of 2021 in Latin American countries. In this mid-term observation, the agriculture sector also showed the slightest fluctuation and was stable even in the first quarter of 2020, when the spread of COVID-19 began in earnest

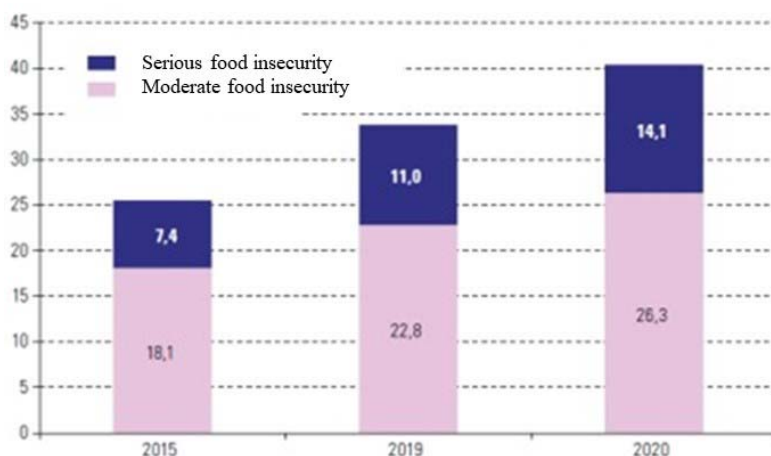


Source: ECLAC

Figure 8-5 Change in GDP of Different Sectors from the First Quarter of 2019 to the Second Quarter 2021 for Latin Countries (%)

As described above, the negative impacts of COVID-19, such as stagnation of distribution, loss of sales destination, and increase in food losses, were particularly pronounced in non-grocery goods, products with low shelf life, areas with weak storage and distribution networks, and areas with high dependence on the tourism sector. Overall, however, the negative impact of COVID-19 on the agriculture and rural development sector was small, proving that this sector should be prioritized in the event that movement restrictions are imposed and that its activities can be sustained.

While the agriculture and rural development sector, which is responsible for food supply, maintain its activities, the number of food-insecure populations is increasing due to the economic downturn caused by COVID-19 and the associated income decline. As shown in the figure below, the number of food-insecure people has increased from 2019 to 2020. Increase also be seen in the four years from 2015 to 2019, however, the increase from 2019 to 2020 is much larger than this. In an interview with the SICA Regional Programa Regional Seguridad Alimentaria Nutricional on food and nutrition security, it was mentioned that "there is enough food production, however, due to the economic structure, many households do not have access to food.



Source: FAO

Figure 8-6 Changes in Awareness of Food Security Concerns

The figure below shows the increase or decrease in international remittance receipts for El Salvador, Guatemala, Honduras, and the Dominican Republic during 2020. In all of these countries, the amount of remittances decreased significantly from March to May 2020 when COVID-19 began to spread around the world. However, despite the sluggish economies of the U.S., Spain, and other migrant-receiving countries that are considered to be the source of overseas remittances, remittances recovered in June to exceed the same period of the previous year, and the total amount for the year reached a record high for all countries. This is considered a result of the distribution of livelihood support money by the receiving countries of the migrants. These remittances are certainly a major factor that has supported the purchasing power of goods, including food, in Central America and the Caribbean.



Source: FAO

Figure 8-7 Monthly Overseas Remittance Receipts in 2020 (El Salvador, Guatemala, Honduras, The Dominican Republic, % against Previous Year)

The table below shows the percentage of the undernourished population worldwide and by region. In Latin America and the Caribbean as a whole, the 9.1 % is about the same as in Asia. However, for the Caribbean region alone, the 16.1 % is higher than the global average 9.9%, and even higher than the 15% for the South and West Asia.

Table 8-4 Changes in Undernourished Populations Worldwide and by Region

	Prevalence of undernourishment (%)							
	2005	2010	2015	2016	2017	2018	2019	2020*
WORLD	12.4	9.2	8.3	8.3	8.1	8.3	8.4	9.9
AFRICA	21.3	18.0	16.9	17.5	17.1	17.8	18.0	21.0
Northern Africa	8.5	7.3	6.1	6.2	6.5	6.4	6.4	7.1
Sub-Saharan Africa	24.6	20.6	19.4	20.1	19.5	20.4	20.6	24.1
Eastern Africa	33.0	28.4	24.8	25.6	24.9	25.9	25.6	28.1
Middle Africa	36.8	28.9	28.7	29.6	28.4	29.4	30.3	31.8
Southern Africa	5.0	6.2	7.5	7.9	7.3	7.6	7.6	10.1
Western Africa	14.2	11.3	11.5	11.9	11.8	12.5	12.9	18.7
ASIA	13.9	9.5	8.3	8.0	7.8	7.8	7.9	9.0
Central Asia	10.6	4.4	2.9	3.2	3.2	3.1	3.0	3.4
Eastern Asia	6.8	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
South-eastern Asia	17.3	11.6	8.3	7.8	7.4	6.9	7.0	7.3
Southern Asia	20.5	15.6	14.1	13.2	13.0	13.1	13.3	15.8
Western Asia	9.0	9.1	14.3	15.0	14.5	14.4	14.4	15.1
Western Asia and Northern Africa	8.8	8.2	10.5	10.9	10.7	10.6	10.7	11.3
LATIN AMERICA AND THE CARIBBEAN	9.3	6.9	5.8	6.8	6.6	6.8	7.1	9.1
Caribbean	19.2	15.9	15.2	15.4	15.3	16.1	15.8	16.1
Latin America	8.6	6.2	5.1	6.2	6.0	6.1	6.5	8.6
Central America	8.0	7.4	7.5	8.1	7.9	8.0	8.1	10.6
South America	8.8	5.7	4.2	5.4	5.2	5.4	5.8	7.8
OCEANIA	6.9	5.3	6.1	6.2	6.3	6.2	6.2	6.2
NORTHERN AMERICA AND EUROPE	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5

NOTES: * Projected values based on the middle of the projected range. The full ranges of the projected 2020 values can be found in Annex 2 in the report. For country compositions of each regional/subregional aggregate, see Notes on geographic regions in statistical tables inside the back cover of the full report.
 SOURCE: FAO.

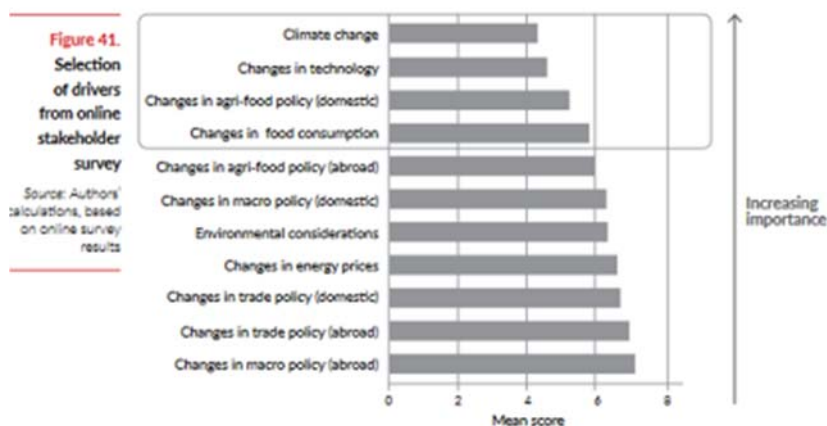
Source: The State of Food Security and Nutrition in the World 2021 (FAO)

In case the global economic stagnation caused by COVID-19 is prolonged, incomes and overseas remittances decline, and further threats such as climate change as described below are combined, food insecurity may increase significantly. This concern is particularly strong for small-scale producers in the agriculture and rural development sector, many of whom have low incomes and are economically vulnerable, and whose production activities, as a source of income, are directly affected by climate change.

Positive impacts have also been observed in COVID-19. For example, in a survey of global consumers conducted by Global Data in July 2020, 52% of respondents indicated that locally grown food is important. This is a positive impact of increased demand for the domestic agriculture and rural development sector. Another positive impact is the increase of interest in the agricultural sector by the government and local residents, as well as the increase of producers' awareness of product hygiene management. Furthermore, as described below, some of the COVID-19 measures have been implemented in collaboration with different organizations, including several ministries, and this experience is an important experience that can be utilized in the future as cross-country and cross-sectoral issues such as COVID-19 and similar infectious diseases and climate change become more apparent.

8.5.4 Climate Change

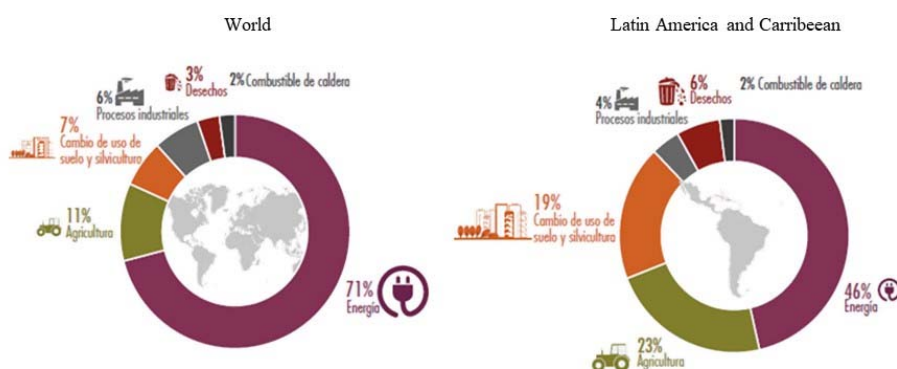
Climate change has been identified as a top priority issue for the agriculture and rural development sector by international organizations and many national governments. The figure below shows the results of the "Questionnaire on Threats Affecting Agriculture and Food Systems in Latin America and the Caribbean for 2030" conducted by the WB through the preparation of its report Re-imagining agriculture in Latin America and the Caribbean published on November 2020. More than 2,000 out of the 20,000 people survey target responded, and again, climate change was selected as the biggest threat.



Source: Re-imagining agriculture in Latin America and the Caribbean (WB)

Figure 8-8 Threats Affecting Agriculture and Food Systems in Latin America and the Caribbean by 2030

As shown in the figure below, in Latin America and the Caribbean, "Agriculture" and "Land Use change and Forestry" occupy 23% and 19%, respectively, total 42% of GHG emissions, which is much higher than the world average of 11% and 7%, total 18%.



Note: Energía (Energy), Agricultura (Agriculture), Cambio de uso de suelo y silvicultura (Land use Change and Forestry), Procesos Industriales (Industry), Desechos (Waste), Combustible de Caldera (Boilers).

Source: La economía del cambio climático en América Latina y el Caribe (ECLAC 2018)

Figure 8-9 Greenhouse Gas Emission Sources Worldwide and in Latin America and the Caribbean

The table below shows the share of greenhouse gas emissions from the agricultural sector in the world and in the Central America, Caribbean, and South America regions. Although it is not directly comparable to the above table due to different categories and year of the data, in Central America and the Caribbean, the agricultural sector accounts for 36.7 to 41.7% of total GHG emissions, which is higher than the world average of 30.6%, although not as high as 72.0% in South America.

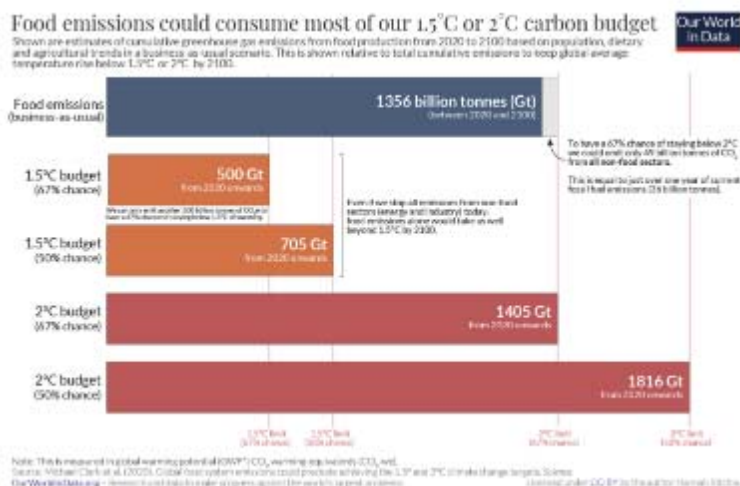
Table 8-5 Share of Greenhouse Gas Emissions of the Agricultural Sector in the World and in Central America, Caribbean, and South America (2019 %)

Region	Farm-gate emissions	Land Use change	Pre- and post-production	Total
Central America				
Methane (CH4)	42.2	0.3	30.2	72.7
Carbon dioxide (CO2)	2.5	9.4	11.2	23.1
Fluorocarbon gases (F-gases)	0.0	0.0	13.7	13.7
Nitrogen Monoxide (N2O)	37.2	0.4	1.6	39.2
Carbon Dioxide Equivalent Total (CO2eq) (AR5)	16.4	5.8	14.5	36.7
Caribbean				
Methane (CH4)	34.1	0.0	22.2	56.4
Carbon dioxide (CO2)	5.1	1.1	24.9	31.1
Fluorocarbon gases (F-gases)	0.0	0.0	50.0	50.0
Nitrogen Monoxide (N2O)	78.2	0.1	10.0	88.3
Carbon Dioxide Equivalent Total (CO2eq) (AR5)	17.6	0.7	23.4	41.7
South America				
Methane (CH4)	61.6	1.0	12.5	75.1
Carbon dioxide (CO2)	3.3	58.9	7.5	69.7
Fluorocarbon gases (F-gases)	0.0	0.0	5.8	5.8
Nitrogen Monoxide (N2O)	87.3	3.1	1.8	92.2
Carbon Dioxide Equivalent Total (CO2eq) (AR5)	29.9	33.6	8.6	72.0
World				
Methane (CH4)	38.1	1.7	13.4	53.2
Carbon dioxide (CO2)	3.1	8.4	9.9	21.4
Fluorocarbon gases (F-gases)	0.0	0.0	26.7	26.7
Nitrogen Monoxide (N2O)	71.4	1.8	4.9	78.0
Carbon Dioxide Equivalent Total (CO2eq) (AR5)	13.4	6.5	10.8	30.6

Source: FAOSTAT (FAO)

According to a report released by the World Wildlife Fund for Nature (WWF) in July 2021, "Driven to Waste: Global Food Loss on Farms," 1.2 billion tons, or 15.3% of total produced food, is discarded on farms during production and after harvest. The total amount of waste could be as high as 2.5 billion tons considering food waste in retail and households. Waste that is incinerated produces carbon dioxide, and abandoned or buried in landfills produces methane gas, similar to cow burps, which has a greenhouse effect 25 times greater than carbon dioxide.

The Intergovernmental Panel on Climate Change (IPCC) report "Climate Change and Land" states that 8-10% of greenhouse gas emissions between 2010 and 2016 came from food loss mentioned above, which is comparable to the emissions from cars (10.0%). The data below from an independent scientist shows that "if this situation continues, the amount of greenhouse gases emitted from food loss by 2100 will be significantly greater than the amount that would raise global temperatures by 1.5 °C."



Source: Michel Clark, 2020 (Our World in Data)

Figure 8-10 Greenhouse Gases Emitted from Food Loss

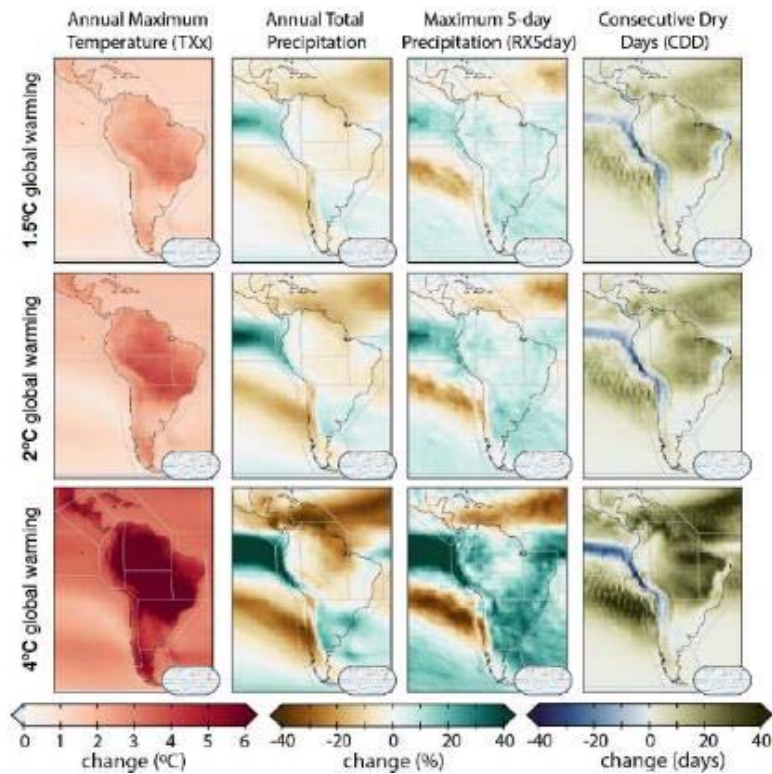
As mentioned above, the greenhouse gas emissions from the agriculture and rural development sector, or the agricultural value chain from production to consumption, are very large. As shown in the figure below, the sector is heavily dependent on the natural environment, using 71% of the total freshwater, and is therefore directly affected by changes in precipitation patterns due to global warming.



Source: La Emergencia del Cambio Climático en América Latina y el Caribe ¿seguimos esperando la catástrofe o pasamos a la acción? (CEPAL)

Figure 8-11 Freshwater Use in 24 Countries in Latin America and the Caribbean

The figure below shows the IPCC's projection of changes in climate conditions in Latin America and the Caribbean in 2050 due to climate change. This region will be particularly affected by climate change, with a significant decrease in precipitation and an increase in the number of dry days. The Corredor Seco (arid corridor), which extends from southern Mexico to western Panama and is said to have a fragile natural environment and a large number of poor people, overlaps with the areas of high change particularly in precipitation.



Source: Regional fact sheet-Central and South America (IPCC)

Figure 8-12 Projected Changes in Temperature and Other Climatic Conditions in Latin America and the Caribbean

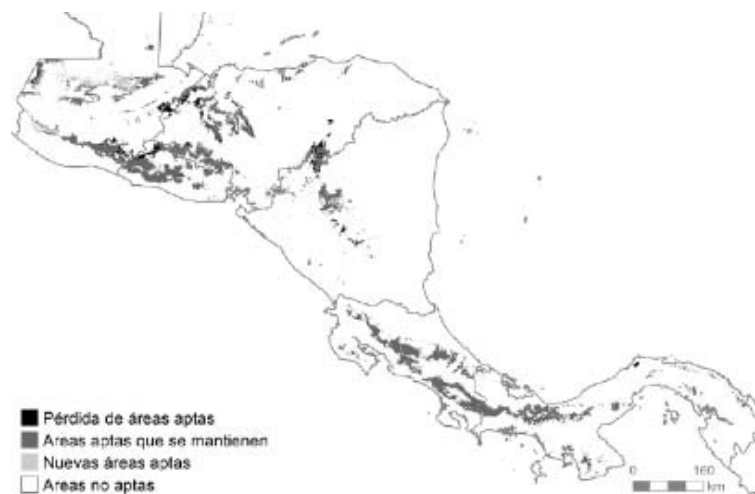
The figure below shows the International Center for Tropical Agriculture (CIAT)'s assessment of changes in suitable areas for coffee cultivation in 2050 due to climate change, and The Tropical Agricultural Research and Higher Education Center (CATIE)'s assessment of changes in suitable areas for bean cultivation also in 2050. Coffee cultivation is expected to become difficult in a wide area including the Corredor Seco. Similarly, the production of beans is expected to decrease by 43% in Central America, with a significant decrease in suitable land for cultivation and a decrease in yield in most areas. In addition, rice production is expected to decline by about 50% overall, mainly in Nicaragua and Belize.



Notes: Red (Not cultivatable), Yellow (Almost not cultivatable), Beige (Unsuitable but cultivatable), Green (No change), Blue (Cultivatable)

Source: CIAT

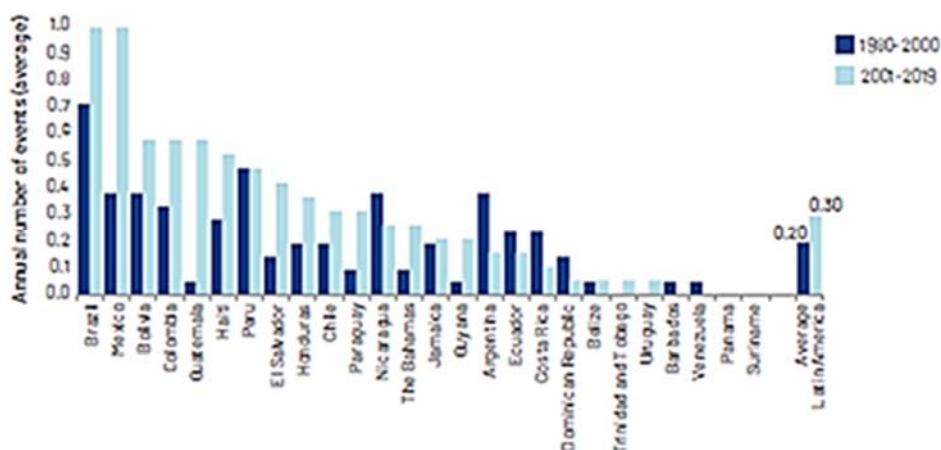
Figure 8-13 Projected Changes in Suitable Coffee Cultivation Areas due to Climate Change (2050)



Note: Black (Area to be not cultivable), Dark gray (No change), Gray (New suitable cultivable area), White (Non cultivatable)
 Source: CATIE

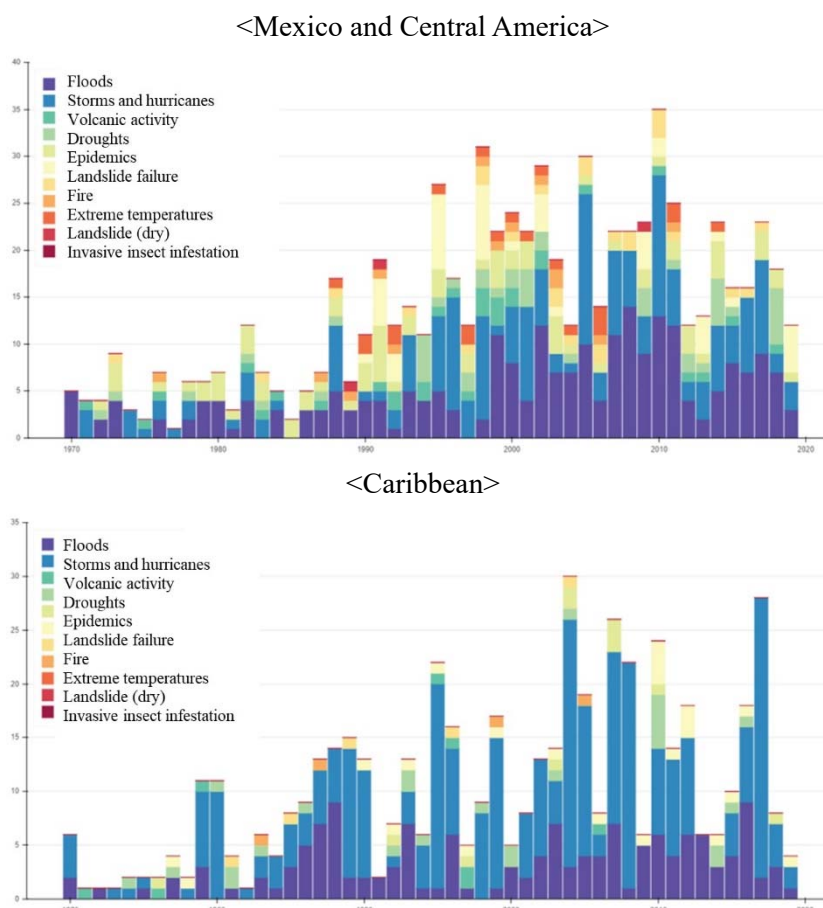
Figure 8-14 Projected Changes in Suitable Land for Bean Cultivation due to Climate Change (2050)

The following three figures show changes in the frequency of extreme weather events and natural disasters in Latin America and the Caribbean. The figures indicate that the number of occurrences is on the rise in the medium to long term.



Source: IDB Calculations based on data from EM-DAT (Centre for Research on the Epidemiology of Disasters, 2009) and Alejos (2018)

Figure 8-15 Changes in the Number of Extreme Weather Events in Central America and the Caribbean



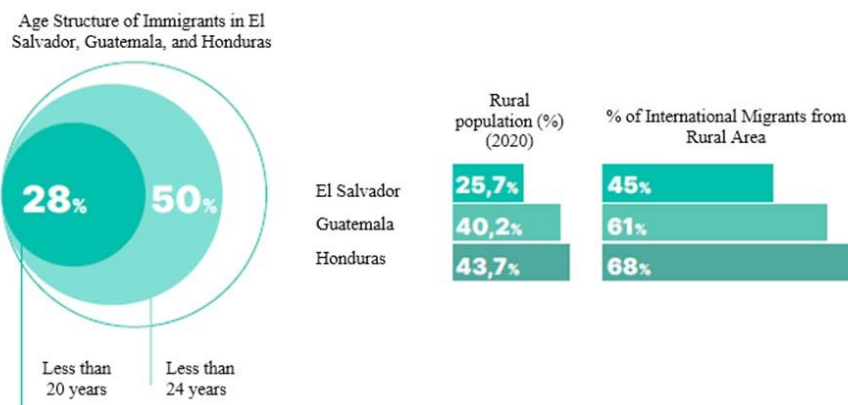
Source: Planificación para la reducción del riesgo de desastres en el marco de la Agenda 2030 para el Desarrollo Sostenible (CEPAL 2020)

Figure 8-16 Changes in the Number of Extreme Weather Events and Natural Disasters in Central America and the Caribbean

As mentioned above, the agricultural and rural development sector or the agricultural value chain from production to consumption is a major source of greenhouse gas emissions that accelerate climate change. At the same time, this sector is at risk of suffering direct and serious negative impacts of under production due to the conditions caused by greenhouse gas emissions. Since many producers in this sector are economically vulnerable, the under production can easily lead to economic and social instability. In other words, the agriculture and rural development sector has very important role in Climate Change which is a cross-sectoral global problem.

8.5.5 Support and Investment in the Agriculture and Rural Development Sector and Migration from Rural Area

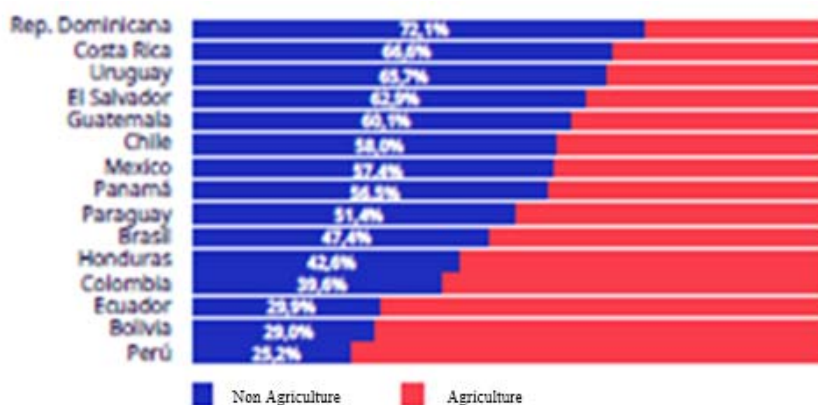
The issue of immigration to urban areas and to other countries such as the United States has been a long-time challenge in Central America and the Caribbean. The route from Central America to Mexico and the U.S. is one of the world's major migration corridors, and the number of migrants attempting to enter the U.S. through this corridor is estimated to around 500,000 per year. According to information from ECLAC, the number of immigrants has decreased over the past decade, and the inflow and outflow now seem to be balanced. However, illegal immigration is still an issue in the region, as it is a result of socio-economic problems or socioeconomic problems for both the country of origin and the receiving country. In recent years, given the political situation, there has been an increase in the number of immigrants from Nicaragua and Honduras in Central America, and from Venezuela in South America. The figure below shows the FAO's analysis of the characteristics of migrants from El Salvador, Guatemala, and Honduras. According to this analysis, 50% of immigrants are younger than 24 years old, and 45%, 61%, and 68% of all immigrants in each country are from rural areas, respectively.



Source: FAO

Figure 8-17 Characteristics of Migrants in El Salvador, Guatemala, and Honduras

The figure below shows the percentage of employment in the agricultural and non-agricultural sectors in rural areas of 15 countries in Latin America and the Caribbean. In some countries, employment in the agricultural sector, shown in red, has already fallen to below 30%, and overall employment in the sector has fallen to 41.5%, however, it is still a major sector in rural areas.

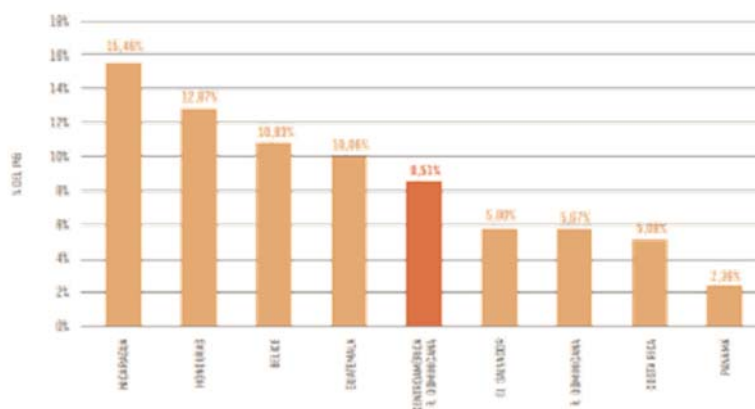


Source: FAO

Figure 8-18 Percentage of Agricultural and Non-Agricultural Sector Workers in Rural Areas

Like Central America, the Caribbean region also has a large number of immigrants, mainly from three countries, the Dominican Republic and, Cuba and Haiti where political reasons are significant. 7.7 million people, or approximately one-fifth of the region's total population, live abroad such as in the United States and Canada. Although data on the origin of these people is unconfirmed, it is likely that many of them come from rural areas, as the characteristics of rural areas and farmers in the Caribbean are similar to those in Central America.

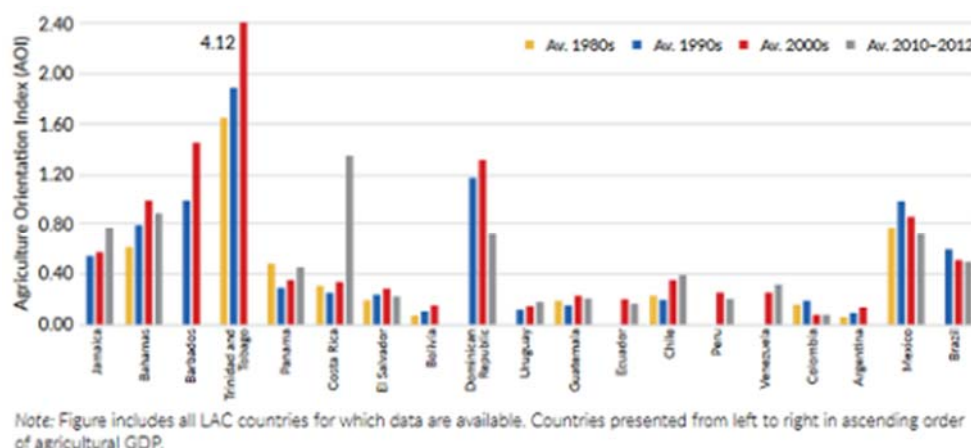
Revitalization of rural areas is important to confront the migration problem, however, public investment in the agriculture and rural development sector is currently low. The figure below shows the GDP contribution of the agricultural sector in 2017, with the highest being 15.46% in Nicaragua, the lowest being 2.36% in Panama, and the average for Central America and the Dominican Republic being 5.67%.



Source: Análisis de políticas agropecuarias en Centroamérica y República Dominicana (IDB)

Figure 8-19 GDP Contribution of the Agricultural Sector in Latin America and the Caribbean (2017)

On the other hand, budgetary measures for the agricultural sector are limited compared to the sector’s contribution to GDP. The figure below shows the Agricultural Orientation Index (AOI) for each country in Latin America and the Caribbean. This index is calculated by dividing the share of agricultural sector expenditures in total government expenditures by the share of agricultural sector GDP in total GDP, and the index is 1 when the two are proportional. With the exception of the Caribbean countries of Trinidad and Tobago, Barbados, and the Dominican Republic, all countries have an index below 1, a trend that has remained virtually unchanged over the past 40 years since the 1980s



Note: Figure includes all LAC countries for which data are available. Countries presented from left to right in ascending order of agricultural GDP.

Source: WB, OECD

Figure 8-20 Agricultural Preference Index in Latin America and the Caribbean

The low investment in the agriculture and rural development sector can be attributed to the following reasons: governments tend to prioritize investments in areas with high population density from the point of view of the investment effectiveness; high risk of failure due to the fact that agriculture is weather sensitive and requires time for changes such as the introduction of new technologies (long time to see results); and low collateralization capacity of small-scale farmers (according to the IDB's data in 2014, 80% of farmers and 35% of farmland in Latin America and the Caribbean are small-scale family farmers). Furthermore, removing the state policy factors of food security and poverty reduction, the fact that agriculture is a private business with a large number of proprietors is also considered a factor for low or difficult investment.

In summary, the above indicates that the root of migration is lack of attractiveness of the agriculture sector, which is the main industry in rural areas, due to low-income levels and instability. Therefore, improving the attractiveness of the sector is a major challenge, however the outflow of young

generation from rural areas is further reducing the potential of agriculture sector development. Under these circumstances, if the lack of investment in the agriculture sector continues, and if other negative impacts such as the emergence of climate change occur at the same time, the vicious cycle is expected to worsen further, as young people leave agriculture and emigration is unstoppable.

8.5.6 Evaluation of Policies Taken by the Government for COVID-19

Governments have taken various measures in response to COVID-19. In the agriculture sector, for example, provision of production inputs and granting of fishing rights to the general population, as measures indirectly related to the agriculture sector, support payments for livelihood, and food distributions were implemented. These measures were effective in maintaining the livelihood of farmers and residents. Regarding the granting of fishing rights, some problems arose in terms of resource management, such as the catching of fish of unsuitable size for shipment. The Ministry of Agriculture and Livestock Development bought agricultural products from farmers who had no place to sell them, and the Ministry of Health distributed them to households free of charge. This was a very important linkage for the agriculture and rural development sector, as it helped to alleviate food insecurity, and at the same time, removed concerns about the sale of agricultural products. The table below shows some of the measures taken by the government.

Table 8-6 Examples of COVID-19 Measures Taken by Governments related to the Agriculture and Rural Development Sector

Country	Summary	Note
Mexico	Lifting of restrictions on the movement of vehicles transporting agricultural products	▪ Early and rapid lifting of mobility restrictions compared to other sectors
	Deferment of loan principal and interest payments	▪ Economic sector including the agriculture sector
	Emergency food distribution to residents	▪ 1.2 million packages distributed in Baja California.
	Emergency food assistance for the poorest families	▪ Sonora Province
	Funding for fishermen with closed or low catches	▪ Campeche Province
El Salvador	Temporary suspension of principal and interest payments on agricultural sector loans	
Honduras	Seed distribution to small grain farmers	
Costa Rica	Exemption of sales tax on basic goods and services	▪ All sectors including agriculture sector
	Postponement of payment of fishing rights fees	
	Provision of agriculture sector development fund	▪ Non-redeemable fund to support entrepreneurial and innovative ideas in the agricultural sector.
	Provision of special loans to NGOs	▪ Fixed interest rate of 2%, 60 months.
Guyana	Support small farmers through in-kind donations	
	Support for materials for setting up kitchen garden (home garden)	
Cuba	Provision of special low-interest loans to farmers	
Dominican Republic	Provision of reefer vessels for storage of high-value perishable goods	
Barbados	Special granting of fishing rights to the general population	
	Employment retention programs	▪ Economic sector, including the agriculture sector. Support for maintenance of infrastructure and continued training of employees.
Saint Lucia	Small grants to women in the tourism and agriculture sectors	▪ Distribution of food vouchers and provision of agricultural inputs.

Source: Compiled and prepared by the Study Team based on various information.

There is a great concern regarding the food crisis in the small countries of the Eastern Caribbean, which are highly dependent on imports for both tourism and food supply and are at high risk of becoming isolated due to their location on an isolated island. For this reason, many of the OECS member countries have developed the COVID-19 Agricultural Sector Response Plan in anticipation of food supply disruptions. The government of Saint Vincent and the Grenadines is at the forefront of this effort, aiming not only to ensure its own food security but also to export surplus production to neighboring island countries. The Government of Saint Lucia is also supporting the agricultural sector through its Social

Stabilization Program. In addition to the provision of inputs (fertilizer, seedlings, etc.) to farmers to increase the supply of food to domestic and regional markets, this includes financial support for fair trade organizations.

OECS notes that "COVID-19 was also an opportunity to begin addressing the long-standing issue of agricultural decline" and recommends the following measures as necessary in the future. All of these are important in both Central America and the Caribbean.

Table 8-7 OECS Recommendations on Agricultural Sector Issues after COVID-19

Short-term measures	Long-term measures
<ul style="list-style-type: none"> ▪ Review of health, safety and hygiene measures throughout the food production value chain for social distance and sanitary phytosanitary compliance. ▪ Completion of the OECS Goods Distribution Liberalization Bill (Animal Health Bill, Food Safety Bill, and Plant Quarantine Bill). ▪ Strengthen intra-regional trade to reduce dependence on foods from outside the region. ▪ Promote buy-local campaigns to increase demand for nutritious, locally produced foods. ▪ Sustaining food production by subsistence farmers through the provision of inputs such as seedlings and fertilizer, and technical assistance. ▪ Create a platform for direct communication with key sector stakeholders, including information sharing and encouragement on best practices 	<ul style="list-style-type: none"> ▪ Consideration and implementation of a public-private partnership to stockpile food. ▪ Promote research on more nutritious and higher-yielding crops that are adapted to changing environments. ▪ Establishing social safety nets to protect vulnerable populations in times of crisis (e.g., setting up food pantries) ▪ Strengthen agricultural sector statistical data collection and analysis. ▪ Capacity building of agricultural extension workers to strengthen farmer support.

Source: OECS

8.5.7 Trends in Development Partners

The main support provided by development partners includes assessment of the impacts of COVID-19, policy and strategic recommendations and funding. FAO, ECLAC, SICA, IDB and others have published various reports related to COVID-19. FAO's "Sistemas alimentarios en América Latina y el Caribe, Desafíos en un escenario pos-pandemia" (Post-pandemic challenge scenarios in Latin America and the Caribbean) is one of the few that is specific to the agriculture and rural development sector with comprehensive analysis. The table below shows examples of support provided by development partners.

Table 8-8 Examples of Support by Development Partners

Organization	Country/Region	Cooperation name and details	Type
FAO	Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Belize, Dominican Republic, etc.	Recommendations on food and nutrition security, agricultural and non-agricultural subsistence family revitalization strategies, etc.	Policy Recommendation
FAO/CARICOM	Antigua and Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Lucia, etc.	Research on the impact of COVID-19 on food security, livelihoods, and market access	Study
FAO/IDB/WB	Mexico, Belize, Dominican Republic, Guatemala, etc.	Financing the purchase of agricultural products to provide food for poor families	Financing
FAO/IDB/WB	Mexico, Belize, Dominican Republic, Guatemala, etc.	Loans for the purchase and free distribution of agricultural materials and small equipment	Financing
IDB	Honduras	Project to revitalize the banana value chain through renewable energy and information development (objectives include recovery from hurricane damage)	Financing
WB	Guatemala	COVID-19 Response - Modern and Resilient Agri-Food Chain Development Project	Financing
IFAD	Haiti	COVID-19 Pandemic Smallholder Resilience Project	Loan
IFAD	Guatemala	School Feeding Support	-
IFAD	Guatemala, Haiti, Honduras	Agriculture Digitalization Project (strengthening market and financial access)	Loan
SICA	Costa Rica, Honduras, El Salvador, Panama, Guatemala	COVID-19 MSME Revitalization Fund	Loans
IDB/FAO	Dominican Republic	Producer Family Protection Project	Loans

Source: Study Team

8.5.8 Japanese Government Country Development Cooperation Policy

According to the latest version of the Japanese Ministry of Foreign Affairs' Country Development Cooperation Policy, 14 of the 23 countries listed agriculture (agriculture, fisheries or livestock) and rural development related issues as a priority area. In addition, 18 countries have identified climate change-related issues as a priority area. This is an indication that both the Japanese government and the governments of partner countries place importance on measures to combat climate change.

(1) Antigua and Barbuda (Fisheries)

(2) Fisheries

For the industrial diversification of Antigua and Barbuda, aim to increase employment, income, food security, and access to foreign markets by the fisheries sector, which is a sector with great potential for development. In addition, the implementation of the cooperation for sustainable development and management of the fisheries industry will be continued, taking into account the perspective of sustainable use of marine living resources.

Source: Japanese Government, Ministry of Foreign Affairs of Japan, Country Assistance Policy for Antigua and Barbuda (September 2016)

(2) Costa Rica (Agriculture, Rural Development)

(2) Correction of disparities

Costa Rica has a relatively stable socio-economic situation among Central American countries. However, in order to achieve sustainable growth, Costa Rica must continue to promote high value-added manufacturing, services, agriculture, forestry and fisheries, and create opportunities to improve the quality of life of its residents. The cooperation will be implemented particularly to improve technology in order to foster and promote small- and medium-sized enterprises (SMEs), which account for 98% of domestic enterprises and for strengthen international competitiveness. In addition, given the current situation that economic disparity between urban and rural areas is an issue, provide efforts to implement the support for the development of small-scale farmers and local industries in rural areas, and to the improvement of the lives of rural residents.

Source: Japanese Government, Ministry of Foreign Affairs of Japan, Country Development Cooperation Policy for Costa Rica (January 2009)

(3) Cuba (Agriculture)

(1) Agricultural development

In order to improve Cuba's food production capacity, which is a priority issue for the country, provide assistance to improve the production capacity of various foodstuffs in addition to the assistance to increase rice production, which has been the focus of Japan's assistance.

Source: Japanese Government, Ministry of Foreign Affairs of Japan, Country Development Cooperation Policy for Cuba (September 2018)

(4) El Salvador (Agriculture and Rural Development)

(1) Stimulate the economy and increase employment

The eastern region of El Salvador is geographically located at the center of Central America, facing the Gulf of Fonseca, which straddles three countries (El Salvador, Honduras, and Nicaragua), and occupies an important position as a transportation and logistics hub, however the development has been delayed due to the effect of the civil war which continued long year. In order to revitalize the economy of the country, which does not have specific resources or major industries, and to promote economic growth in Central America as a whole, it is important to develop the industrial base and improve the logistics function. Therefore, for supporting the realization of the Revised "Master Plan for Eastern Regional Development", provide human resource development and other support to maximize the functions of airports, ports, bridges, and other facilities that Japan has supported. In addition, the support will be provided for the promotion of local industries and domestic sales of agricultural products in order to foster local industries and create employment.

Source: Japanese Government, Ministry of Foreign Affairs of Japan, Country Development Cooperation Policy for El Salvador (September 2017)

(5) Dominica (Fisheries)

(2) Fisheries

In the mid-term plan formulated by the Dominican government (Growth and Social Protection Strategy 2014-2018), the fisheries industry is positioned as an important industry that plays an important role in food security, brings social and economic stability through job creation from the perspective of poverty reduction, and is expected to make a significant contribution to GDP in the future. Taking also the perspective of sustainable use of marine living resources into account, continue to provide cooperation for sustainable development and management of the fisheries industry in Dominica.

Source: Japanese Government, Ministry of Foreign Affairs of Japan, Country Development Cooperation Policy for Dominica (September 2016)

(6) Grenada (Fisheries)

(2) Fisheries

The Government of Grenada has positioned the fisheries industry as an important industry in Grenada from the perspective of improving the nutrition and food supply of the people, earning foreign currency through exports, creating employment opportunities, and increasing the income of local communities, and has been focusing on the development of this sector by formulating a fisheries development plan and promoting the modernization of fisheries. Therefore, continue to provide cooperation for the sustainable development and management of the fishery industry, taking into account the perspective of sustainable use of marine living resources.

Source: Japanese Government, Ministry of Foreign Affairs, Country Development Cooperation Policy for Grenada (September 2016)

(7) Guatemala (Rural Development)

(1) Social and economic development in poor areas

Regional disparity is a factor that causes political and social instability, finally hinders economic growth. Therefore, in areas where many poor and indigenous people live, contribute to reducing the gap with urban areas and promote sustainable and inclusive growth. To promote sustainable and inclusive growth through support for social development (health, sanitation, education, etc.) targeting basic needs and economic development (transportation infrastructure, small and medium-sized enterprises, rural development, etc.) targeting improvement of livelihoods.

Source: Japanese Government, Ministry of Foreign Affairs of Japan, Country Development Cooperation Policy for Guatemala (September 2017)

(8) Haiti (Agriculture)

(3) Strengthening agricultural development and food security

While agriculture is an important sector in Haiti, with more than 50% of the country's total employed population, food self-sufficiency is only about 45% due to the effect in production and distribution systems and natural disasters. Since domestic consumption is highly dependent on imported agricultural products, fluctuations in international market prices have a significant impact on the livelihoods especially for the poor peoples. From the perspective of food security and economic stability, it is necessary to provide support in the food and agriculture sector.

Source: Japanese Government, Ministry of Foreign Affairs of Japan, Country Development Cooperation Policy for Haiti (September 2017)

(9) Panama (Fisheries, Rural Development)

(1) Environmentally friendly economic infrastructure development

In order to improve the living environment in the growing metropolitan area of Panama and to support sustainable economic growth, support will be provided for the development of economic infrastructure, such as the improvement of urban transportation functions through the steady progress of the "Panama Metropolitan Area Urban Transport Line 3 Development Project". In addition, while the Panamanian government is working to improve the living environment through the development of infrastructure for economic development, such as electricity, water, and transportation, it has yet to properly control the environmental impact by socioeconomic activities and the risk of natural disasters. In this context, support the country's sustainable growth by cooperating in the development of environmentally friendly economic infrastructure. In the midst of the need to cope with the effects of climate change, support the various efforts in Panama (e.g., watershed management to secure water sources, improvement of disaster prevention capacity of communities, and management of fishery resources), taking into account the commencement of the operation of the expanded Panama Canal in 2016 and the future development around the Canal.

(2) Correction of disparities

In addition to the large economic disparity between the metropolitan area and the rural areas, Panama has various disparity issues including the gender gap. Utilizing the tools of Kusano-ne and human security grant aid and JICA volunteer, provide assistance to rectify the disparities through regional and rural development, improvement of education standards, support for socially vulnerable groups such as the disabled, women, and children, and human resource development targeting the poor.

Source: Japanese Government, Ministry of Foreign Affairs of Japan, Country Development Cooperation for Panama (September 2018)

(10) Dominican Republic (Rural Development)

(2) Correction of disparities

In order to address the problems of disparity which remains in the country, support efforts in the sectors of rural development, education, health care, health care, and livelihood improvement, and support for strengthening the capacity of government agencies to improve the financial base necessary to implement social development policies. In addition, support the development of systems to ensure that the voices of the people are appropriately reflected in government policies.

Source: Japanese Government, Ministry of Foreign Affairs, Country Development Cooperation Policy for the Dominican Republic (September 2018)

(11) Saint Kitts and Nevis (Fisheries)

(2) Fisheries

In Saint Kitts and Nevis, the fisheries industry contributes to the supply of high-quality animal protein to the nationals and plays an important role in securing employment opportunities for local peoples. However, in promoting the fisheries industry, the Government of Saint Kitts and Nevis is faced with challenges such as financial difficulties and lack of human resources. Therefore, continue cooperation for sustainable development and management of fisheries as well as for sustainable use of marine living resources.

Source: Ministry of Foreign Affairs of Japan, Country Development Cooperation Policy for Saint. Kitts and Nevis (September 2016)

(12) Saint Lucia (Fisheries)

(2) Fisheries

In St. Lucia, which aims to revitalize its economy through industrial diversification and job creation, the fisheries industry plays an important role in contributing to the supply of high-quality animal protein to the nationals and securing employment opportunities. Therefore, considering the perspective of sustainable use of marine living resources, continue cooperation for sustainable development and management of the fisheries industry in Saint Lucia.

Source: Japanese Government, Ministry of Foreign Affairs of Japan, County Development Cooperation Policy for Saint Lucia (September 2016)

(13) Saint Vincent and the Grenadines (Fisheries)

(2) Fisheries

It is considered that Saint Vincent and the Grenadines has fish resources which are currently not in use or developed. Saint Vincent and the Grenadines is focusing on promoting fisheries as an alternative industry to the banana industry, which has declined and is not competitive in the international market. Continues to provide assistance for sustainable development and management of fisheries with a view to promoting sustainable use of marine living resources

Source: Japanese Government, Ministry of Foreign Affairs of Japan, Country Development Cooperation Policy for Saint. Vincent and the Grenadines (September 2016)

(14) Suriname (Fisheries)

Disaster prevention and environment

"Development Plan 2012-2016" formulated by the Government of Suriname, indicates that the Government wishes to move away from a mineral resource dependent economy and aim for sustainable growth in areas such as waste management, renewable energy and sustainable management of water resources and natural resources. Provides appropriate support in the waste management and water resource management while ensuring these are aligned with the needs of Suriname.

Source: Japanese Government, Ministry of Foreign Affairs of Japan, Country Development Cooperation Policy for Suriname (September 2016)

Japanese government's major cooperation related to the agriculture and rural development sector in the past 10 years and planned are shown in the table below.

Table 8-9 Major Cooperation by Government of Japan in the Past 10 years and Planned (Agriculture and Rural Development Sector)

Country	Cooperation
North and Central America (wide area)	<On-going> ■ SICA Agriculture and Rural Development Advisor (Individual Expert)

Country	Cooperation
Mexico	<p><Completed></p> <ul style="list-style-type: none"> ▪ Diversity Assessment and Development of Sustainable Use of Mexican Genetic (Technical Cooperation) ▪ Development of Aquaponics Combined with Open Culture Adapting to Arid Region for Sustainable Food Production (Technical Cooperation) ▪ Improvement and diffusion of tropical fruits techniques for small scale farmers in the State of Veracruz (Technical Cooperation) ▪ Training Program on Genebank Management (Individual Expert) ▪ Training Program on GenBank Management (Training in Third Country) ▪ Capacity Development for Strengthening of Rural Extensionism (Training in Third Country) ▪ Diploma Course on Technology of Non-Traditional Tropical Fruits (Training in Third Country) <p><On-going></p> <ul style="list-style-type: none"> ▪ Introduction of Non-Traditional Tropical Fruit Growing Systems in the Countries of the Northern Triangle of Central America(Training in Third Country) ▪ Training Program on GenBank Management (Training in Third Country)
El Salvador	<p><Completed></p> <ul style="list-style-type: none"> ▪ The Project for Integrated Wetland Management in Laguna de Olomega and El Jocotal (Technical Cooperation) ▪ Production Improvement and Extension of Shellfish Aquaculture Project (Technical Cooperation) ▪ Project for Strengthening of Local Capacity to Promote Local Development with the Life Improvement Approach in the Eastern Region (Technical Cooperation) ▪ Horticultural Farmers' Profitability Improvement Project in the Eastern Region of the Republic of El Salvador (Technical Cooperation) ▪ Supporting the small-scale farmers in the Eastern Region (Technical Cooperation) <p><On-going ></p> <ul style="list-style-type: none"> ▪ Industrial Crop Value Chain Promotion Project (Technical Cooperation) ▪ Project for Strengthening of Local Capacity to Promote Local Development with the Life Improvement Approach in the Eastern Region (Technical Cooperation)
Guatemala	<p><On-going></p> <ul style="list-style-type: none"> ▪ Expert on Project Planning and Coordination in the Agricultural Sector <Individual Expert> ▪ Basic Data collection Study on the Establishment of a Sustainable Coffee Value Chain Model (Basic Study)
Honduras	<p><Completed></p> <ul style="list-style-type: none"> ▪ Project for strengthening of sustainable watershed management with community participation in the forest protected area of El Cajon dam (Technical Cooperation) ▪ Management of Natural Resources and Watersheds of Mesoamerican Biological Corridor of Honduran Atlantic (Technical Cooperation) ▪ La Union Biological Corridor Project for Sustainable Use and Conservation of Biodiversity (Technical Cooperation) ▪ Development of Agricultural Profit (Technical Cooperation) ▪ Strengthening The Export Competitiveness of Small and Medium Coffee Producers (Technical Cooperation) ▪ Strengthening The Export Competitiveness of Small and Medium Coffee Producers (Training in Japan)
Belize	<p><Planned></p> <ul style="list-style-type: none"> ▪ Advisor for Improving Agricultural Value Chains in With/Post COVID-19 Societies (Individual Expert)
Nicaragua	<p><On-going></p> <ul style="list-style-type: none"> ▪ Promotion of oyster farming for small-scale fishermen in Nicaragua (Individual Expert) ▪ Advisor for regional economic promotion through Michinoeki (Individual Expert) ▪ Adviser on Agricultural Development (Individual Expert)
Costa Rica	<ul style="list-style-type: none"> ▪ The Model Project of Rural Development through the Livelihood Improvement Approach (Technical Cooperation)
Panama	<p><Completed></p> <ul style="list-style-type: none"> ▪ International Course on Participatory Integrated Watershed Management (Training in Japan) ▪ International Course on Participatory Integrated Watershed Management (Training in Third Country)
Cuba	<p>< Completed></p> <ul style="list-style-type: none"> ▪ Fish Culture Project (Technical Cooperation) ▪ Project for Extension and Diffusion of Technologies for Certified Rice Seed Production in the Central Zone of Cuba (Technical Cooperation) ▪ Advisor on Agricultural Development (Individual Expert) ▪ Agricultural Equipment Maintenance Plan to Improve Rice Seed Production Technology (Grant Aid) <p><On-going></p> <ul style="list-style-type: none"> ▪ The Project on Improvement of Agricultural Extension System for Grain Production in Cuba (Technical Cooperation)

Country	Cooperation
Haiti	<Completed> <ul style="list-style-type: none"> ▪ Project on Technical Training in Agricultural Production System in Mountainous Areas to Technicians of the Republic of Haiti (Technical Cooperation) ▪ Project on Capacity Development of Agricultural and Forestry Technicians in Mountainous Areas (Technical Cooperation) ▪ Technical Advisor for Food Security Program (Individual Expert) <On-going> <ul style="list-style-type: none"> ▪ Strengthening the Capacity of Agricultural Technicians and Extension Workers to Improve Farmer Support (Training)
Saint Lucia, Saint Vincent, Saint Kitts and Nevis, Grenada, Antigua and Barbuda	<Completed> <ul style="list-style-type: none"> ▪ Fisheries related Equipment Maintenance Plan (Grant Aid) <On-going> <ul style="list-style-type: none"> ▪ The Project for Strengthening Sustainable Use and Management of Coastal Fisheries Resource in the CARICOM Countries (Technical Cooperation)
Dominica	<Completed> <ul style="list-style-type: none"> ▪ Fisheries related Equipment Maintenance Plan (Grant Aid) ▪ Fisheries building and equipment maintenance plans in Roseau and Marigot (Grant Aid) <On-going> <ul style="list-style-type: none"> ▪ The Project for Strengthening Sustainable Use and Management of Coastal Fisheries Resource in the CARICOM Countries (Technical Cooperation)

Source: JICA

8.5.9 Grouping of Study Countries by Sector

As shown in Section 8.6.2, the grouping of the study countries was carried out.

8.6 Selection of Priority Countries by Sector

8.6.1 Selection Criteria for Priority Countries

In order to select priority countries, the current status of the agriculture sector in 23 countries had been compared and evaluated, and groupings were determined. For the purpose of a fair and reliable evaluation, FAO data, which is generally available for 23 countries and has a high level of international reliability, was mainly used. In addition, since the Japanese government's policies and operational systems are also important factors in developing a feasible cooperation strategy, the "Japanese government's development cooperation policy" and "JICA's experience in supporting the agriculture and rural development sector in the past 10 years" were also used as selection criteria. For countries with no data, an average score was applied. The table below shows the evaluation criteria.

Table 8-10 Evaluation Criteria for Priority Countries Selection (Agriculture and Rural Development Sector)

	Criteria	Description
1	Production area	Agricultural land area per capita
2	Production volume	Agriculture, livestock, fisheries, and production per capita
3	GDP share	Agricultural sector contribution to GDP
4	Labor force share	Agricultural sector labor force participation as a share of the total labor force
5	Export value	Agriculture, livestock, and fisheries export value per capita
6	Export share	Agricultural sector export value as a share of total export value
7	Number of JICA projects	Number of agriculture and rural development sector projects in the past 10 years
8	Government of Japan Cooperation Policy by Country	Government of Japan, Country Cooperation Policy, Availability of Agriculture and Rural Development Sector in Key Areas

Source: Study Team

8.6.2 Selection of Priority Countries

By using the selection criteria shown in 8.6.1, 23 countries were comparatively evaluated, grouped, and selected priority countries for the study. The results are shown in the table below. This is the result of the comparative evaluation of 23 countries in terms of the current economic, social and political contribution of the agriculture and rural development sector, not in comparison with other sectors such as tourism and education in the same country. Therefore, although a country is not selected as a priority country, it does not mean that the sector is not important in that country.

Table 8-11 Result of Evaluation and Grouping of 23 Countries (Agriculture and Rural Development Sector)

Country	1	2	3	4	5	6	7	8	Total Score	Ranking	Group Indicator per Priority
	Production Area	Production Volume	GDP Share	Labor force Share	Export Value	Export Share	Number of JICA	Government of Japan			
Antigua and Barbuda	2.0	3.0	2.0	2.5	2.0	2.0	2.0	3.0	18.5	19	IV
Bahamas	2.0	3.0	1.0	1.0	2.0	2.0	1.0	1.0	13.0	23	V
Barbados	1.0	2.0	2.5	2.0	4.0	4.0	1.0	1.0	17.5	20	V
Belize	4.0	5.0	5.0	4.0	3.0	4.0	1.0	1.0	27.0	6	II
Costa Rica	4.0	3.0	3.0	3.0	4.0	4.0	3.0	1.0	25.0	13	III
Cuba	4.0	2.0	3.0	4.0	4.0	5.0	4.0	3.0	29.0	4	I
Dominica	4.0	3.0	4.0	2.5	2.0	4.0	4.0	3.0	26.5	9	II
Dominican Republic	3.0	1.0	3.0	3.0	4.0	3.0	1.0	3.0	21.0	16	III
El Salvador	4.0	3.0	3.0	4.0	4.0	3.0	4.0	3.0	28.0	5	I
Grenada	2.0	4.0	4.0	2.5	2.0	4.0	4.0	3.0	25.5	12	III
Guatemala	4.0	3.0	4.0	5.0	4.0	4.0	4.0	3.0	31.0	2	I
Guyana	5.0	4.0	5.0	4.0	4.0	3.0	1.0	1.0	27.0	6	II
Haiti	3.0	2.0	5.0	5.0	2.0	2.0	4.0	3.0	26.0	10	II
Honduras	4.0	3.0	4.0	5.0	4.0	4.0	5.0	1.0	30.0	3	I
Jamaica	3.0	2.0	4.0	4.0	4.0	3.0	1.0	1.0	22.0	15	III
Mexico	4.0	4.0	3.0	3.0	5.0	2.0	5.0	1.0	27.0	6	II
Nicaragua	4.0	4.0	5.0	5.0	4.0	4.0	5.0	1.0	32.0	1	I
Panama	4.0	4.0	2.0	3.0	4.0	2.0	4.0	3.0	26.0	10	II
St. Kitts and Nevis	1.0	1.0	2.0	2.5	1.0	4.0	3.0	3.0	17.5	20	V
St. Lucia	1.0	3.0	2.0	3.0	2.0	4.0	3.0	3.0	21.0	16	III
St. Vincent and Grenadines	1.0	4.0	4.0	3.0	2.0	4.0	2.0	3.0	23.0	14	III
Suriname	2.0	4.0	4.0	2.0	3.0	2.0	1.0	1.0	19.0	18	IV
Trinidad and Tobago	1.0	3.0	2.0	2.0	3.0	1.0	1.0	1.0	14.0	22	V

Source: Study Team

Note: The higher the total score, the more important the cooperation.

Table 8-12 Priority Countries (Agriculture and Rural Development Sector)

Group		Total	Agriculture (crops)	Livestock	Fishery
I	Top priority countries	Cuba, El Salvador, Guatemala, Honduras, Nicaragua	Cuba, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama	Costa Rica, Nicaragua	Antigua and Barbuda, Dominica, Grenada, Saint Vincent and Grenadines
II	Priority countries	Belize, Dominica, Guyana, Haiti, Mexico, Panama	Costa Rica, Dominican Republic, Haiti, Belize	El Salvador, Honduras, Jamaica, Mexico, Panama	El Salvador, Nicaragua, Panama, Saint Kitts & Nevis, Saint Lucia
III	-	Costa Rica, Dominican Republic, Grenada, Jamaica, Saint Lucia, Saint Vincent and Grenadines	Guyana, Saint Vincent and Grenadines	Barbados, Dominica, Dominican Republic, Guatemala, Guyana, Suriname, Trinidad and Tobago	Bahamas, Belize, Guyana, Suriname
IV	-	Antigua and Barbuda, Suriname	Barbados, Dominica, Jamaica, Saint Lucia, Suriname	Antigua and Barbuda, Bahamas, Belize, Cuba, Haiti, Saint Lucia	Costa Rica, Cuba, Honduras, Mexico, Trinidad and Tobago
V	-	Bahamas, Barbados, Saint Kitts and Nevis, Trinidad and Tobago	Antigua and Barbuda, Bahamas, Saint Kitts and Nevis, Trinidad and Tobago	Grenada, Saint Kitts and Nevis, Saint Vincent and Grenadines	Barbados, Guatemala, Haiti, Jamaica

Source: Study Team

8.7 Detailed Study by Sector

A Detailed Study was conducted through internet-based data collection, interviews and site visits to governments, universities, and agricultural cooperatives. This sector covers the agriculture,

fisheries, and livestock subsectors in 23 countries. Each of these subsectors has a variety of products, and each product has different characteristics. Furthermore, the activities to be covered are very extensive, from infrastructure to cultivation, processing, distributing, and marketing. In this study, an agricultural value chain analysis is also required, however, a full-scale analysis covering such a wide range of activities requires large inputs and a long period. Therefore, it was decided that this study would conduct a simple agricultural value chain analysis for some of the countries and products by assigning local experts to give an overview of the entire chain.

8.7.1 Selection of Target Countries for the Detailed Study

Among the priority countries listed in Table 8.6.2, seven countries (Mexico, Guatemala, Belize, Nicaragua, Cuba, Dominican Republic, and St. Lucia) were selected as target countries for the detailed study through the qualitative consideration of the JICA office location, the country's characteristics, and the region. For the food value chain analysis, different characteristics were comprehensively and qualitatively evaluated, such as "grains, vegetables, fruit trees, and craft crops", "domestic consumption and export", "arid regions, highlands, and lowlands", and "Central America and the Caribbean". The selected target countries and products are shown in the table below. Honduras is not included in the above detailed-study countries. However, since a suitable local expert was found, it was decided to carry out the analysis for coffee, which is common to all countries in Central America and the Caribbean.

Table 8-13 Target Countries and Products for Value Chain Analysis

	Country	Products
1	Mexico	Tilapia, Lemon
2	Guatemala	Cacao
3	Belize	Onion, Banana, Lobster, Conch Shell
4	Honduras	Coffee
5	Nicaragua	Beef, Dragon Fruit
6	Dominican Republic	Rice *Analysis without Local Expert
7	Saint Lucia	Lobster, Conch Shell, Fish

Source: Study Team

8.7.2 Implementation of the Detailed Study

The Detailed Study was conducted through three site visits to Guatemala, El Salvador, Belize, Panama, and the Dominican Republic, and data collection and interviews were done via the Internet. The table below shows the locations of the fieldwork visits and interviews.

Table 8-14 Visited and Interviewed Organization

Guatemala	<ul style="list-style-type: none"> ▪ The Ministry of Agriculture, Livestock and Food ▪ Producers
Belize	<ul style="list-style-type: none"> ▪ The Minister of Agriculture, Food Security and Enterprise ▪ University of Belize ▪ Belize Marketing and Development Cooperation ▪ Belize's Northern Fisherman Cooperative Society LTD ▪ Producers
El Salvador	<ul style="list-style-type: none"> ▪ SICA Regional Food Security and Nutrition Program ▪ FAO El Salvador Office ▪ JICA El Salvador Office
Nicaragua	<ul style="list-style-type: none"> ▪ Multisectorial Cooperative Café de Altura R. (COOMCAFE, R.L.)
Costa Rica	<ul style="list-style-type: none"> ▪ SICA Council of Ministers of Agriculture
Panama	<ul style="list-style-type: none"> ▪ Ministry of Agricultural Development ▪ JICA Panama Office
Dominican Republic	<ul style="list-style-type: none"> ▪ Ministry of Agriculture ▪ Dominican Agribusiness Board (JAD) ▪ JICA Dominican Republic Office

Source: Study Team

8.7.3 Analysis of the Detailed Study

The following is an overview of the agriculture and rural development sector in each country based on the results of the detailed study.

(1) Mexico

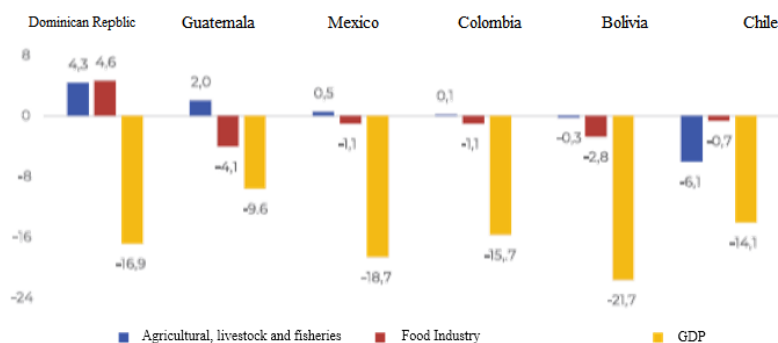
The agriculture sector in Mexico contributes only 3.4% of GDP (2018). However, it is an important economic sector, employing about 6.5 million people, equivalent to 12.5% of the total workforce, and generating 7.7% of total exports. On the other hand, the share of the national budget allocated to this sector is only 1.7%. According to an analysis by the Mexican government's "Sectoral Program for Agriculture and Rural Development 2020-2024", the current state of agriculture and rural development in Mexico is as follows:

"Large economic production units dominate in the northwest and northeast, and producers tend to focus on economically intensive crops with access to technologies and inputs to improve productivity and output, a significant portion of which is for export. The central and southeastern regions, on the other hand, are technologically backward and still lack resources and inputs. It is essential to recognize that these differences in agro-ecological diversity and service and infrastructure development gradually widen unequal gaps between regions. Mexico has thriving modern agricultural and aquaculture producers integrated into foreign trade. However, at the same time, there is a large amount of land and producers that need to be integrated into production-related efforts. This is the root of Mexico's north-south problem and the illegal migration problem to the United States and other countries and shows the importance of solving the agriculture sector's problems. In addition, a national household survey in 2018 conducted by the National Institute of Statistics and Geography (Instituto Nacional de Estadística y Geografía: INEGI) reported that the difference in household income between the country's southernmost state of Chiapas and the capital city of Mexico reaches to three times. There are approximately 5.4 million agriculture households in Mexico, of which 4.4 million, or 81%, are classified as family farmer with an area of 3-15 hectares. The challenges for this group are (i) slow human resource development (about 25% of small farmers in Mexico do not go to school and about 60% have only primary education); (ii) low assets and capital; (iii) low access to production technology; (iv) lack of access to credit, (v) weak or no integration with (or inclusion in) value chains, (vi) low or degraded land fertility, and (vii) high vulnerability to climate change (in 2011, about 40% of production was affected by extreme weather events). These challenges again highlight the vulnerability of smallholders. The vulnerability of small-scale farmers is also emphasized here. The current Mexican government's agricultural sector development plan also reflects these vulnerabilities, with the following three priority strategies:

- Increase food self-sufficiency by improving the production and productivity of agriculture and aquaculture.
- Improve the well-being of rural and coastal producers who have historically been excluded from production activities by engaging them and harnessing the potential of regional and local markets.
- Develop sustainable production methods for agriculture and aquaculture in the face of climate change risk issues."

Regarding the impact of COVID-19, the figure below shows the change in GDP participation of the agriculture (agriculture, livestock and fishery) and food industry sector was small, therefore it is evaluated that the impact is small compared to other sectors. However, for the small-scale family farmers mentioned above who are economically vulnerable, the impact on their households is likely significant, even if the level of decrease is small. At the same time, the fact is that the majority of these farmers produce crops for their own consumption, which acted as a safeguard.

Climate change is also a significant issue in the above analysis and plan. Mexico has historically been a country that experienced many natural disasters. However, in recent years, perhaps due to the effects of climate change, disasters such as severe storms and droughts have been on the rise. Unlike COVID-19, which mainly negatively affected storage, distribution, and marketing, these natural disasters are major threats that can affect the production itself and destroy the livelihoods of small-scale farmers at once. Therefore, response to climate change issues will become more critical in the future.



Source: FAO: Food Systems in Latin America and the Caribbean in a Post-pandemic Scenario (*Sistemas Alimentarios en America Latina y el Caribe: Desafios en un Escenario Pospandemia*)

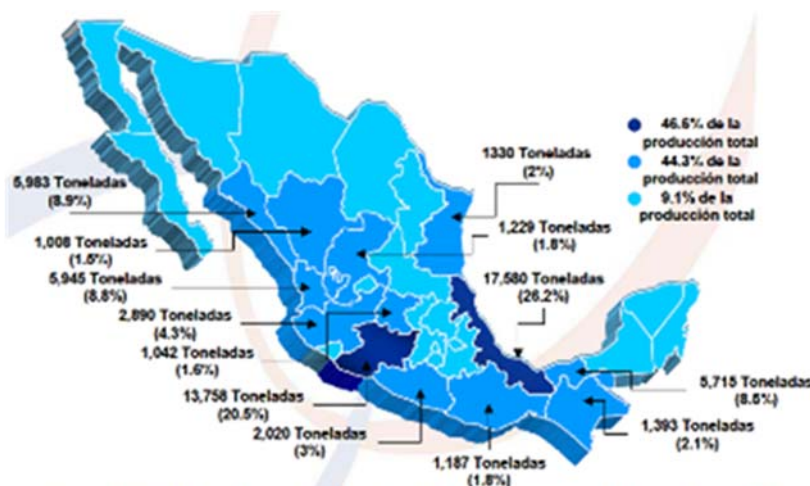
Figure 8-21 Growth of Total GDP and Agriculture, Livestock and Fisheries and Food Industry Sectors GDP in the Second Quarter of 2020

Agricultural Value Chain Analysis

a) Tilapia

Inland aquaculture (tilapia) and lemons were selected for the food value chain analysis in Mexico. These products have high market potential and can be produced in the southern regions where economic development has been delayed. The following are the problems and challenges facing tilapia aquaculture, based on the analysis results.

In Mexico, tilapia consumption is growing sharply, with an annual per capita consumption nearly tripling from 0.78 kg in 2008 to 2.21 kg in 2017, making it one of the most highly demanded seafood products. The best growing area for tilapia, a tropical fish, is between 25 and 35 degrees latitude. Although the data in the figure below is old, from 2003, it shows that tilapia production is widespread in Mexico, particularly in the central and southern regions. Under these circumstances, production has increased, and Mexico is considered to be the 13th largest producer of tilapia in the world. However, it is still unable to meet the demand, importing more than 100,000 tons of tilapia in 2017, equivalent to about USD 224 million.



Fuente: CEC-ITAM con base en SAGARPA-CONAPESCA, Anuario Estadístico de Pesca, 2003
 Source: Annual Statistics on Fishing (*Anuario Estadística de Pesca*) 2003, SAGARPA

Figure 8-22 Main Tilapia Producing States in Mexico (2003)

Tilapia production methods vary greatly depending on the economic situation and the characteristics of the producer. Financially strong producers have modern infrastructure, for example, access to highly productive fry and management of tilapia once they reach a saleable size in dedicated storage pools. On the other hand, small-scale producers use existing ponds for aquaculture or simply catch the fish in their natural habitat. Almost all or about 90% of the production is sold as fresh fish.

COVID-19 has had a significant impact on the tilapia food value chain in terms of labor availability and marketing of products. Some companies have had to reduce their production or change production processes. However, significant production losses have been avoided through agreements to exempt agricultural activities from movement restricting measures. The main issues and challenges in the tilapia chain are as follows:

- Availability of adequate quantity and quality of water.
- The impact of climate change. Variations will affect, for example, water temperatures for aquaculture and, ultimately, the production itself.
- Lack of technical and financial support for small-scale producers to improve their production infrastructure and techniques.
- Reduction of research activity, especially on feeding techniques and technology for adapting to changes in temperature.
- Lack of value-added products. Value-addition has not progressed well, and market participants are limited.

b) Lemon

Mexico is one of the leading producers of citrus fruits, with a production value of about USD300 million in 2019. Lemons are essential for the country, and due to the presence of a national strategy, production has increased in recent years. In 2019, lemons were produced in 28 of the country's 32 states, with harvested area and volume increasing by 3.7% and 5.0%, respectively, over the previous year. At least 29% of the production is exported to more than 20 countries worldwide, making it an essential source of foreign currency, unlike tilapia production, which still only targets the domestic market.

On the other hand, there are many aspects to improve in the value chain. Although some producers can apply modern cultivation techniques, many still rely on traditional cultivation techniques. Most products are sold fresh, and the chain process is simple. However, there are many areas that need improvement, such as the large number of middlemen, insufficient linkage between middleman and producer due to lack of planned production/shipment (unstable production/shipment) and unclear quality standards, etc. These problems, in many cases, cause low profitability to producers or an increase in the selling price to consumers. In addition, the negative impacts of climate change, such as lower production volume and deterioration of product quality (product coloration), are a common concern among producers.

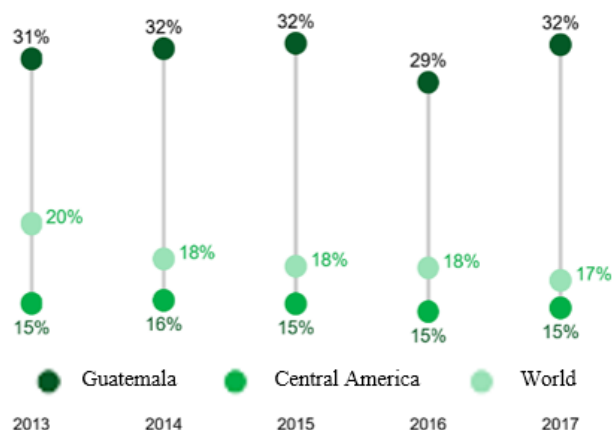
The main issues and challenges in the lemon value chain are "climate change response," "innovation in production technology and increased research and investment," and "optimization of linkages between producers and middlemen through clarification of quality standards," among others.

(2) Guatemala

Guatemala is the second-largest country in the 23 objective countries after Mexico, with more than 17 million people. Half of the population lives in rural areas, and many live below the poverty line, accounting for about 59% of the population. The country is also characterized by its indigenous people (43%).

The distribution of land is unequal, with less than 3% of the population owning almost two-thirds (66%) of all agricultural land and only one-sixth (17%) owned by small-scale producers, who are the majority in the agriculture sector. Furthermore, land ownership is unclear. This was one of the causes of the civil war that lasted for 36 years until 1996.

The country's agricultural sector contributes more to the economy and society than any other Central American country. About 36% of the country's land area is used for crop production and 18% for permanent pasture (livestock production), generating about 10% of the total GDP.

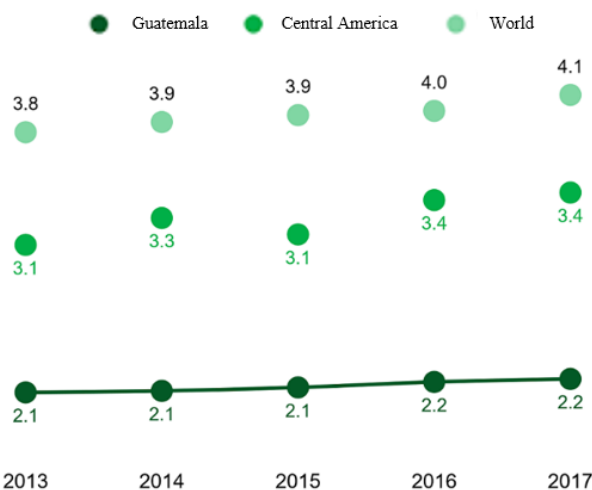


Source: FAOSTAT

Figure 8-23 Percentage of Agriculture Sector Employment against Total Employment

Taking advantage of the diverse natural environment, various products are produced, such as sugar cane, bananas, oil palm, fruit trees, corn, melons, potatoes, milk, pineapples, and rubber. Sugar (sugar cane), melons, broccoli, etc. are exported in large quantities.

On the other hand, the productivity of grains is low, such as corn, which is grown by many small-scale producers and is staple food in Guatemala. As shown in the figure below, the crop yield of grains is 2.2 tons per ha, far below the average of 3.4 tons for Central American countries. Thus, the agricultural sector still needs many improvements except for a few advanced producers and products.



Source: WB

Figure 8-24 Grain Crop Yield (Ton/ha)

In this context, the Institutional Strategic Plan 2021-2026, developed by The Ministry of Agriculture, Livestock and Food, states that the significant challenges for the agricultural sector are: (1) low productivity (many producers of corn, beans, rice, etc. do not even meet their own subsistence needs), (2) inadequate support and market access (small and medium farmers are unable to contribute fully to value addition in the agriculture sector due to lack of financial and technical support and lack of market access), (3) poor infrastructure (lack of production, processing, and marketing infrastructure), (4) low marketing capacity of producers (producers do not have sufficient marketing capacity not only for international markets, but also for domestic and regional markets), and (5) lack of solidarity and

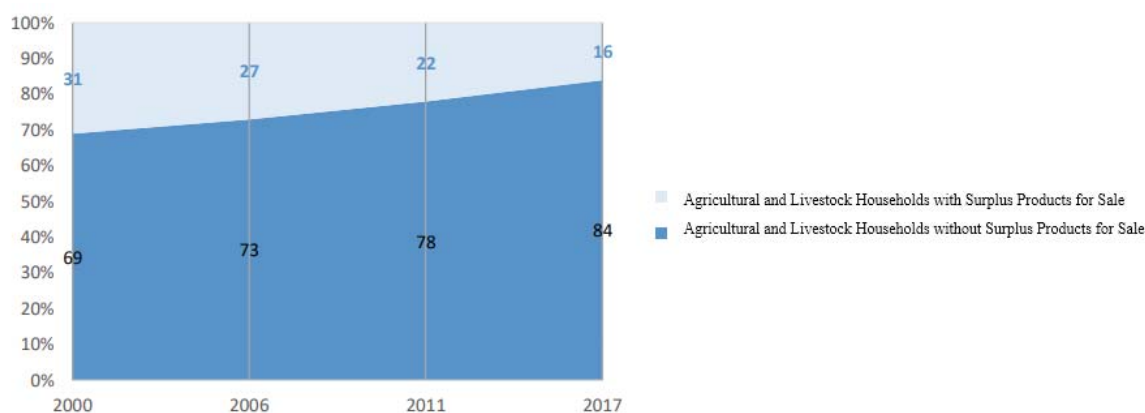
organization among producers (no joint production, unplanned production by individual producers does not allow them to produce and ship products in stable quality and quantity). Interviews with the ministry by this Study also revealed a wide range of challenges, especially for small-scale farmers, such as small farmland size, poor quality of seeds and other production materials, poor cultivation techniques, delay in infrastructure development, lack of access to funds necessary to solve these problems, and the threat of climate change. The plan identifies the following six strategies for addressing these issues.

- Strategy 1. Guarantee production resources and support for increasing production in the agriculture, livestock, and fisheries sectors
- Strategy 2. Establish an information platform to provide market information to agricultural, livestock, and fisheries sector producers.
- Strategy 3. Support the establishment of producers' organization and strengthen existing producers' organizations for the agricultural, livestock, and fisheries sector.
- Strategy 4. Strengthen the development of infrastructure, capacity for infrastructure operation and maintenance for the agriculture, livestock, and fisheries sectors.
- Strategy 5. Strengthen the regulation and oversight of sanitary inspection, phytosanitary, food safety, plant genetic testing, and natural resource testing
- Strategy 6. Enhance food availability and access
- Strategy 7. Strengthen the functioning of the Ministry of Agriculture, Livestock and Food

As for the impact of COVID-19 on the agricultural sector, due to the various movement restrictions initiated in the early stages of the spread of COVID-19 around March of 2020, the distribution and sales of products were negatively impacted, causing food losses. However, the early release of restrictions on the movement of foods prevented the impact from worsening. For the entire 2020, the production and export value of agricultural products exceeded that of the previous year.

However, as mentioned above, since most small-scale producers are in poor conditions with low production technology and low-incomes, there is a concern that even a slight negative impact would cause them to fall into a state of impoverishment.

The figure below shows that the percentage of agricultural and livestock households with surplus agricultural products for sale has declined from 31% in 2000 to 16% in 2017. In addition to the decline in productivity, this can be attributed to changes in the livelihood structure, such as a reduction in production activities due to increased off-farm income. However, it is clear that the function of self-sufficiency as a safety net has declined in the event of some obstacle to securing food from external sources.

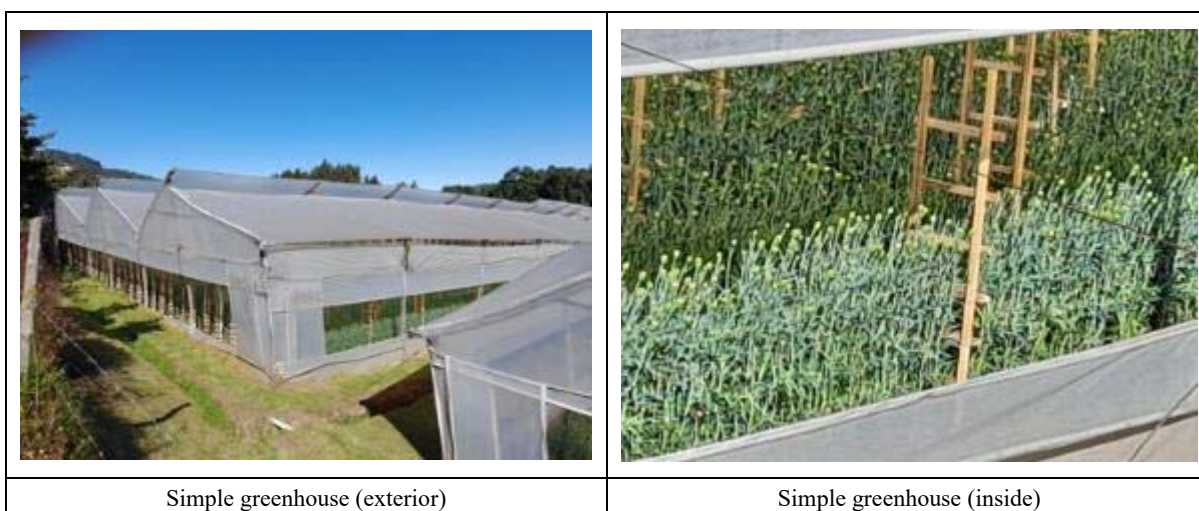


Source: WB

Figure 8-25 Percentage of Agricultural and Livestock Households with Surplus Agricultural Products for Sale

Climate change is also an important issue in Guatemala, which suffers from a high frequency of extreme weather events such as hurricanes, floods, and droughts, with the most recent examples being Hurricanes Eta and Iota, which occurred in 2020 in the midst of COVID-19 and caused significant damage to a wide range of countries in Central America, including Guatemala. In recent years, these extreme weather events have been on the rise. The country is also located in the Corridor Seco (dry corridor), where the natural environment is harsh and drought-prone, and there are many poor people.

The Vista Volcanes farm is producing organic vegetables in small-scale simple greenhouses in order to cope with the unstable production environment caused by climate change. The number of such greenhouses has been increasing in recent years. The farm has invested about USD4,615 in installing a 1,200m² greenhouse and producing green beans, about 1.7 tons every three months, or 5.1 tons per year. This is twice the minimum annual income of USD4,620 (minimum monthly wage of USD385) in Guatemala. This method of establishing a stable production environment even in a small area, concentrating production and increasing income is also linked to reducing the risk of negative impacts from climate change and the burden of labor. Although it is not an easy task, the application of such measures with relatively low initial investment is expected to accelerate rapidly if the following three conditions are met: procurement of initial investment funds, technical support, and the securing of stable customers to support the investment decision.



Source: Study Team

Agricultural Value Chain Analysis

In Guatemala, an agricultural value chain analysis was conducted for cocoa, which is also a traditional food in the country. The results are shown below.

Guatemalans consume cacao daily, mainly for beverages, and it is essential not only for the economy but also for cultural and nutritional reasons. Cacao production is concentrated in Alta Velazquez, Stitepequez, Retalhuleu, Quetzaltenango, and San Marcos. The value chain consists of five main processes: pre-production (e.g. seedlings), production, primary processing (post-harvest treatment), secondary processing and distribution, and marketing. Most of the products are sold by the producers to intermediaries, who then deliver them mainly to drink processors, together with cocoa imported from Nicaragua and Honduras. Most of the products are sold in the domestic market, mainly in the capital city of Guatemala City. Some small and medium-sized producers produce organic cocoa and add value by obtaining international certifications such as ECOCERT.

Some producers are huge, such as the Chimelb farm, with 250 ha (largest in Guatemala) and employ 400 workers, however, most are small-scale producers with less than 1.0 ha. The cocoa value chain still has a lot of room for improvement. The following are some examples of problems and challenges in each production process.

<Resources for production>

- Delay in variety development due to lack of genetic resources and research.

<Production>

- Low production techniques for all production processes, including management of grafting of seedlings and post-harvest processing.
- Market problems such as unclear price differences among dried, fermented, and washed cocoa, lack of producers' incentive to increase the value of the product,
- Lack of producers' awareness in fulfilling contract conditions and skill in contract management and lack producers' organizations (e.g non-delivery of promised shipments)
- Lack of financial services for producers' organizations and associations.

<Primary processing (post-harvest processing)>

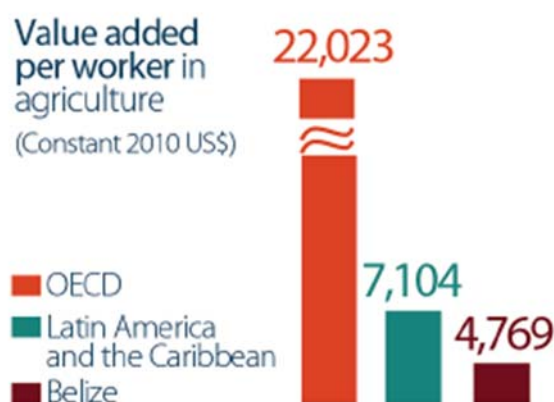
- Lack of standards and traceability systems for processing methods.
- Poor fermentation quality due to mixed varieties.
- Lack of modernization of technology and equipment for quality control and testing.

<Secondary processing and distribution>

- Lack of processing infrastructure and equipment for fermentation, drying, sorting and packaging.
- Lack of appropriate transportation vehicles. Since cocoa absorbs aroma, it is necessary to avoid contact with undesirable aroma during transportation.

(3) Belize

In Belize, 46% of the population lives in the rural areas. The agricultural sector accounts for approximately 18% of the workforce, 12% of GDP, and 75% of total exports, making it highly important compared with other countries within the Central American and Caribbean regions. On the other hand, the GDP of the agriculture and food sector is not growing, at BZD 237 million in 2010 and BZD 237 million in 2019. Moreover, the production cost is higher than in neighboring countries due to the following factors: low priority given in the national policy, consequent low government budgetary allocations, lack of support, and difficulty in getting funds for small-scale farmers. As shown in the figure below, the value added per agriculture worker is only about 20% of the OECD average, which is lower than the average for Latin America and the Caribbean. This situation also triggers the illegal importation of food.

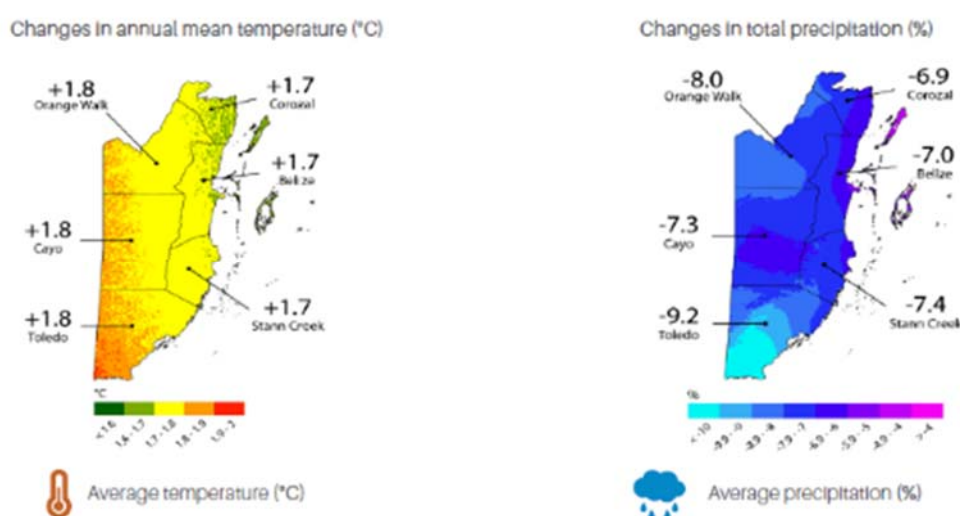


Source: Climate Smart Agriculture in Belize (Consultative Group on International Agricultural Research: CGIAR WB)

Figure 8-26 Value Added per Agricultural Worker in Belize and Other Countries

In terms of the impact of COVID-19, the negative impact on the agriculture sector has been limited. On the other hand, positive impacts have been noted such as (i) both the government and farmers have reaffirmed the importance of domestic agricultural production as contributing to food security and (ii) while demand for some food products has decreased, the increase in selling prices has compensated for the decrease in sales volume.

Belize is located in the famous route of hurricanes and the damage caused by them is significant. In addition, climate change could worsen the situation. The Ministry of Agriculture's Water Management and Climate Change Department is leading the effort to strengthen climate change resilience. The figure below shows that precipitation in Belize is expected to decrease due to climate change. The causes are not known precisely; however, even in the past three years the small rivers near the University of Belize's Central Farm have been observed to be drying up.



Source: WB, CGIAR: Climate Smart Agriculture in Belize (<https://cgspace.cgiar.org/handle/10568/100326>)

Figure 8-27 Climate Change Forecast for Belize in 2050

Interviews were conducted with the Ministry of Agriculture of the Government of Belize, the University of Belize, and cooperatives. The topics covered were the impact of COVID-19 and countermeasures, as well as general issues and measures in the agriculture sector. The main observations are as follows:

- After the transition to the new government, there has been a slight change in prioritization and policy making methods. Whereas previously it was top-down with the government setting priorities and telling farmers what to do, it is now bottom-up. The government puts farmers first and works closely with them at the same level to understand their priorities and provide support.
- In line with the above approach, the Ministry of Agriculture decided to support livestock, fruits (lemon, pineapple, pitahaya, coconut, etc.), and vegetables, based on the farmers' views. This is a demand for product diversification. The domestic market in Belize is very small. In particular, it is necessary to strengthen refrigeration and agro-processing facilities to ensure competitive prices for exports and sales during the off-season.
- Proper linkage of the food value chain is also important, including incorporating agricultural knowledge and making it more advanced, profitable, and attractive to the younger generation.
- Although the impact of COVID-19 was significant, production in the agricultural sector increased by about 24% compared with the previous year. This increase resulted from policies to restrict the importing of locally produced (and available) foods. It is also likely related to agricultural credit, in which the government and the banks worked together to promote its use.

- Some of the effects of COVID-19 have been positive. For example, before COVID-19, the agriculture sector had been barely considered. However, after COVID-19, people are increasingly trying to participate in the agricultural sector as they focus on food security. There is also a heightened interest in advanced technologies.
- The international price of lobster has risen from USD 16-19 per pound before COVID-19 to USD 25 per pound today. This price increase is due to a reduction in supply in the early years of COVID-19.
- The agricultural sector has been affected by the increasing frequency of extreme weather events (hurricanes, floods, droughts, heat waves) due to climate change, resulting in losses. Belize is vulnerable to the effects of climate change, and its geography (topography) exposes it to the risk of increased flooding due to rising sea levels. Tropical storms are also becoming more frequent and more intense, and climate change is already impacting agriculture in Belize. Small-scale farmers are highly vulnerable, many of whom do not have insurance to cover these risks. Therefore, climate change is not a single issue and needs to be considered as a critical issue in all projects.

Agricultural Value Chain Analysis

In Belize, the agricultural value chain analysis was conducted for lobster and conch shells, onions and bananas. The results of the analysis are presented below.

a) Lobster and Conch Shell

The total catch in 2018 was approximately 950,000 pounds (475 tons) of lobster, valued at about USD 24 million, and approximately 883,000 pounds (442 tons) of conch, valued at about USD 13 million, of which about 90% was exported and only 10% was destined for the domestic market.

There are approximately 1,850 fishermen engaged in lobster and conch fishing off the coast of Belize. More than 85% of the licensees belong to fishing cooperatives, and 90% of the landings are delivered to the cooperatives where they are processed and packaged for export and sale. Currently, there are only two fully functioning cooperatives based in Belize City that have export licenses. To prevent overfishing, both lobster and conch shells are allowed to be caught from July to February, and conch from October to June. The main problems and issues in the lobster and conch chain are described below.

- Decrease in resources due to climate change. There is a concern that water resources will decrease due to changes in water temperature caused by climate change, and the government of Belize is implementing a project to protect the fishing environment.
- Modernization of the fishing industry. Most fishermen use traditional fishing methods using small boats, and this needs to be modernized.
- Strengthening of equipment. There is a need to strengthen the equipment of fishing boats and cold storage facilities at landing sites. For example, the cooperative's refrigerators are decreasing in energy consumption efficiency due to aging, and operating costs are rising.
- Lack of marketing. Market research by the cooperative is limited or absent, resulting in the lack of a new market.
- Lack of product diversification. There is a lack of research on product diversification, for example, research on the use of seaweed.



Source: Study Team

Although there are some problems and issues in the delay of modernization and lack of product diversification, the value chain for lobster and conch shells is highly consolidated with clear roles for each participant. In addition to resource management by establishing catchable seasons, the subsequent works such as cleaning, sorting, packaging, freezing, exporting are appropriately managed by the cooperatives. The supporting system is also functioning adequately. For example, the Department of Cooperatives, a part of the Ministry of Agriculture, Food Security and Enterprise, establishes the necessary regulations and the Food Safety Division of the Department of Agriculture and Insurance provides proper hygiene certification for export products under the hygiene measures developed under the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS). Moreover, The Nature Conservancy and others provide technical and financial support for sustainable fisheries.

b) Onion

The government of Belize is aiming to diversify agriculture, and onion is considered one of the potential products. Due to the lack of storage facilities, the current onion value chain is simple in which fresh products are sold in local markets. Onion producers and sellers are broadly divided into two groups: local farmers and the Belize Development and Marketing Corporation (BMDC), a government agency that aims to guarantee food supply. BMDC allows imports when local products cannot meet the demand, also it considers the fact that production from neighboring countries such as Mexico is more competitive in price than the national product. As mentioned above, due to the shortage of storage facilities, a simple increase in production cannot satisfy domestic demand, forcing the country to rely on imports at certain seasons. The main problems and issues in the onion chain are as follows.

- Undeveloped cultivation techniques.
- Lack of post-harvest storage facilities. The lack of storage facilities results in the impossibility of long-term storage and high losses (10-15%).
- Lack of marketing.

The IFAD-funded Resilient Rural Belize (Be Resilient) Project will improve the onion value chain. Specifically, the project will improve drainage systems to reduce damage in flooding and improve collection and storage facilities to maintain quality and extend storage periods.



Source: Ministry of Agriculture, Food Security and Enterprise, Information Unit 2021

c) Banana

The banana industry in Belize is one of the country's three largest agricultural export industries. Although the industry is facing the issue of increasing market competition in recent years, it provides employment to 3,500 people and their families, and is important for obtaining foreign currency and for the socio-economic stability of the region. Due to the privatization of the banana industry in 1991 and the background of the industry being considered high risk, more than 100 small producers have been excluded from Banana Value Chain. The current value chain is organized and managed by the Banana Growers Association (BGA), which consists of eight plantation owners.

In this analysis, it was not possible to obtain information from the eight farmers or the Banana Growers' Associations. However, it is reported that there are nearly 2200 tons of bananas produced annually that cannot be exported due to quality and other problems. The reduction of these unexportable bananas, value-added products, and addressing the increased frequency and scale of hurricanes in recent years are considered to be the important issues.

(4) Nicaragua

The agriculture sector is important in Nicaragua, accounting for approximately 18% of total GDP and 32% of total exports. Livestock production, in particular, continues to grow steadily, with total exports of USD 541.5 million in 2020, equivalent to 19% of total exports. Furthermore, it is estimated that 913,000 people, or 22.6% of the total workforce, are involved in livestock production in some form. In addition, the FAO study, titled "Analysis of Agriculture Route of Public Investment in Agriculture and their Impact on Economic Growth and Rural Poverty Reduction in Nicaragua," in 2020, states that livestock and meat production has the potential for further expansion and that strengthening linkages between livestock production and meat and dairy production, including export meat production, is an attractive public investment destination. The government is aiming to develop the overall agriculture sector, stating for example, that the domestic processing of coffee has development potential, and that grain production needs to be promoted from the perspective of national food security.

COVID-19 hurt the agriculture sector, especially on distribution and sales of products rather than production due to movement restrictions. In the interview with the Café de Altura Coffee Producers Cooperative in Hinotea, which consists of 171 small-scale producers, they stated that "COVID-19 did not affect production and the 2020 harvest was good, but there were delays in transportation to Europe, the leading export destination, and increased export costs.

The impact of climate change on the agriculture sector is becoming apparent in various forms, such as the destabilization of precipitation and patterns and the increase of hurricanes. The strongest class hurricanes, Eta and Iota, which struck in November 2020 amid COVID-19, caused extensive damage to many countries in Central America, with economic losses in Nicaragua estimated at UD 750 million. The coffee producers' cooperative above also mentioned that they have felt changes in the weather in recent years, such as changes in temperature and rainfall patterns, and that there have been actual changes in coffee growth, such as shifts in the harvesting season, and that they are concerned about the impact on future production and quality.

Agricultural Value Chain Analysis

In Nicaragua, the agricultural value chain study was conducted for beef and dragon fruit, important export products.

a) Beef

The livestock sector in Nicaragua accounts for 19% of total exports, and the beef value chain, which is the mainstay of this sector, is very important to the country's economy. The five main export destinations are the United States, Mexico, Guatemala, El Salvador, and Costa Rica. In 2020, Nicaragua exported about 500,000 tons to the United States, the largest export destination, and about 170,000 tons to El Salvador, the second largest. As for El Salvador, beef from Nicaragua accounts for about 70% of total beef imports.

About 150,000 producers operate about 3.9 million hectares of farms, of which about 60% are small farms with an ownership of 7 hectares or less, and these own about 20% of the total farm area; the remaining 80% of farms are owned by medium and large producers with 7-350 hectares. Most of the producers produce both meat and milk for generating daily income. The most common production system is extensive pasturing, with one cow per 1.0 ha of cultivated or natural pasture. However, large farms are modernizing their production techniques, such as the generalization of artificial insemination, and the most advanced farms are using high-nutrient organic feed and introducing biogas facilities.

An outstanding recent progress in the beef value chain was the establishment of a cattle traceability information system that incorporates information from 125,000 producers, or about 75% of all producers, and the introduction of a production system that integrates pasture and various processing procedures. These measures are expected to significantly improve the productivity and quality of meat and the reliability of distribution.

The following are major issues and challenges in the beef value chain.

- Low productivity, especially among small- and medium-scale producers. Most of the small and medium-scale producers practice unproductive extensive livestock production of one animal per hectare, using large areas of natural or cultivated pasture with little use of concentrated feed.
- Low management skills, especially of small-scale producers. The majority of livestock producers do not have enough education to possess basic management skills, such as the monitoring of production costs.
- Lack of access to finance. As mentioned above, small-scale producers in particular do not have access to funds needed for technology adoption and other purposes due to low collateralization, low productivity and management capacity.
- Increase in prices of production inputs, due to end of tax exemption on agricultural production inputs in 2019, the slowdown in distribution due to COVID-19 and increase in transportation costs, the price of production inputs is rising.
- Impact of climate change. Droughts and hurricanes are causing a decrease in productivity and damage in meat production.
- Increasing deforestation. Deforestation caused by livestock development is leading to a reduction in water sources and soil degradation. According to Global Forest Watch, the total forest area in the country has decreased by 18% between 2001 and 2018.
- Strengthen distribution reliability. To increase exports and maintain credibility, traceability management needs to be enhanced.
- Lack of capacity to manage counterfeit production inputs. The issue of fake mineral salts that affect the growth of cattle has been uncovered. There is a need to strengthen the authorities' ability to crack down on fake production inputs.
- Lack of trust among value chain actors. There is a lack of trust among actors, for example, producers are often distrustful of carcass weight (yield) measurements by slaughterhouses.



Source: Study Team

b) Dragon Fruit

Dragon fruit is a perennial crop native to Central and South America, with a growing/production period of up to 30 years. It was introduced to Vietnam by the French in the early 19th century and is now widely produced in Asian countries such as Vietnam, China, and Indonesia. Although Nicaragua's dragon fruit export volume is not as large as these countries, it has increased significantly, from 41 tons in 2011 to 2,000 tons (equivalent to USD 6.7 million) in 2020. In particular, the country is increasing its presence as a supplier of red dragon fruit (fruit, dried, puree, etc.) to the United State of America. In addition, some producers are obtaining GAP (Good Agricultural Practices) and USDA organic certification to add value.

The Ministry of Agriculture and Forestry of Nicaragua estimates that the area under dragon fruit cultivation in Nicaragua is about 1,000 ha, but about 400,000 ha of farmland is suitable for planting. The average yield is 18,000 fruits (about 6 tons) per hectare, almost half that of Asian countries, leaving great development potential.

A limited number of actors manage the current dragon fruit value chain. The leading producers are the Asociacion de Productores de Pitahaya de Nicaragua (APPINIC), a 44-member association of organic dragon fruit producers with 280 ha of land; the Organic Pitahaya, a cooperative of 80 producers with 120 ha of organic dragon fruit; and Frank Huevo, a producer, and exporter with 176 ha.

As for wholesalers, Burke Agro is well known. 750 producers with 595 ha have a business relationship with this company

The following are the main issues in the dragon fruit value chain.

- Low cropping yields, especially among small-scale producers. Particularly, lack of irrigation facilities and delay in renewal of farmland (crops) are causing low cropping yields.
- Low education of small-scale producers. Inability to record production costs and other farm management practices, which result in affecting investment decisions for production improvement.
- Lack of financial and technical support. There is a lack of financial and technical support for small-scale producers with low capacity in both cultivation and management, as mentioned above.
- Impact of climate change. It is assumed that climate change will make the cropping management more difficult. According to the Humboldt Center, a Nicaraguan NGO that monitors environmental issues, "The weather is becoming more unstable and unpredictable, and producers are facing a situation where they have to constantly observe weather and review the work schedule, like the planting time.



Source: Study Team

(4) Honduras

Agricultural Value Chain Analysis

In Honduras, the agricultural value chain analysis was conducted for coffee, one of the country's main agricultural products.

In the past, global demand and production of coffee have increased in parallel, and coffee production in Honduras has also grown in the same manner, doubling the production from about 250 thousand tons in 2010 to about 500 thousand tons in 2019. Coffee cultivation is mainly carried out in areas above 900 meters above sea level. 92% of the coffee plantations have shade trees, which are considered important for a shade preference crop (coffee). The most widely grown species is Arabica, and more than 25% of the production is certified by Rainforest Alliance and Global GAP.

The coffee value chain consists of producers, middlemen, processors, exporters, retailers, and consumers. It is estimated that more than 120,000 families are involved in coffee production, of which 62% are classified as micro or small-scale producers producing less than 2.3 tons, 20% as medium-scale producers producing less than 4.6 tons, and 18% as large-scale producers producing more than 2.3 tons. Most of the producers belong to the four main producers' cooperatives. Seventy-seven percent of the production of micro or small farmers and 88 percent of the production of large farmers is sold through middlemen. The producer price is about 30% of the retail price, and there may be a potential for improvement.

Although there is no detailed data on the impact of COVID-19 on the coffee value chain, it is assumed that the impact was an increased difficulty in securing labor during harvest and an increased cost in production inputs and land and sea transportation. The latter is continuing to rise, and if this situation continues, it could have a negative impact on micro and small-scale producers with less economic capacity.

The main problems and issues in the coffee value chain are as follows.

- Increase in prices of production inputs. To respond to the increased price of production inputs such as fertilizers, it would be effective to expand information on input price and joint purchasing, and to strengthen financial support.
- Impact of climate change. Coffee producers are already aware of the impact of climate change on coffee production. As coffee is a crop sensitive to high temperatures, changes in flowering time, deterioration of bean quality, and yield loss due to lack of rainfall have been observed. Possible responses include the promotion of agroforestry and the establishment of agricultural insurance policies that are consistent with the nature of coffee.
- Low cropping technology. Cropping technology is still low, especially among small-scale farmers. To respond to this issue, technology extension in cooperation with cooperatives is considered as an effective measure.
- High cost of post-harvest processing. In order to improve the efficiency of post-harvest processing, acceleration of cooperative work and modernization of facilities is needed.

Low selling prices and limited market access. To increase market value, it is essential to improve coffee productivity, quality, and differentiation through certification systems. Marketing and enhanced traceability using DX and other methods will also increase differentiation and credibility.



Source: Study Team

(5) Cuba

In Cuba, COVID-19 has created difficulties in the import-dependent food supply system due to the stagnation of tourism, the most important means of earning foreign currency, and restrictions on imports due to the United States' economic sanctions. The disruption in the economic system complicates the situation even further: the abolition of the dual currency system that took effect in January 2021, the establishment of foreign currency stores that conflict with the general market and offer a wide variety of products, and on the other hand, the suspension of the conversion of foreign currency, which is indispensable for buying in these stores.

With the food supply worsening drastically, long lines to buy food and daily necessities have become a common sight even in the capital city of Havana. As of October 2021, food aid is also being provided by foreign governments such as Mexico.



Source: Study Team

The supply of agricultural inputs such as fertilizer, which depends on imports similarly to food, is also worsening.

According to an agricultural cooperative located near Havana City, its rice production area during this year's rainy season was limited to 650 hectares, due to a shortage of fertilizer. This is about half of the 1,200 hectares of paddy fields owned by the cooperative members. Even for these 650 hectares, the supply of phosphoric acid, one of the three major elements, is almost zero. Furthermore, the price of electricity (used for irrigation pumps, etc.), which is set per unit area for rice production in Cuba, has skyrocketed, spurring the abandonment of rice production.

Under these circumstances, in April 2021, Deputy Prime Minister Jorge Luis proposed "63 Measures to Increase Food Production." An analysis was carried out based on four categories of agricultural production problems: "system and organization," "production technology," "land use," and "finance, investment, and society" and based on the analysis results, 63 measures were proposed, 30 of which are top priority measures that need to be addressed immediately. The measures include various incentives such as "price reduction of production inputs such as electricity, water, and fertilizer," "increase in the purchase price of production products," "strengthening of financing and insurance," and "tax reduction." Furthermore, the government has increased flexibility on the purchase and sale of

agricultural inputs, such as the liberalization of the purchase and distribution of fertilizers and other agricultural inputs, which had been centrally controlled by state enterprises (farmers are free to select suppliers and purchase directly from them), and the liberalization of some sales of agricultural products, which had been centrally controlled by state enterprises (farmers are free to sell meat from small livestock directly to the market). The government has not only increased flexibility, it has also shown a stronger stance to deal with unprofitable areas, stating "dissolution of agricultural cooperatives whose production and economic performance are not expected to recover," and requiring the return of land to the government. Another notable feature is the "integration and strengthening of local food production systems based on food sovereignty and nutrition education programs." This means the promotion of local production and consumption, in other words, that is the promotion of local production for local consumption, which is the aim to increase the local ownership on food supply and to improve distribution efficiency.

With the successful implementation of vaccination of the population with the self-developed COVID-19 vaccine, the Government of Cuba has announced the resumption of international tourism from November 15, 2021. The revitalization of the tourism sector is indispensable for the recovery of the agriculture sector.

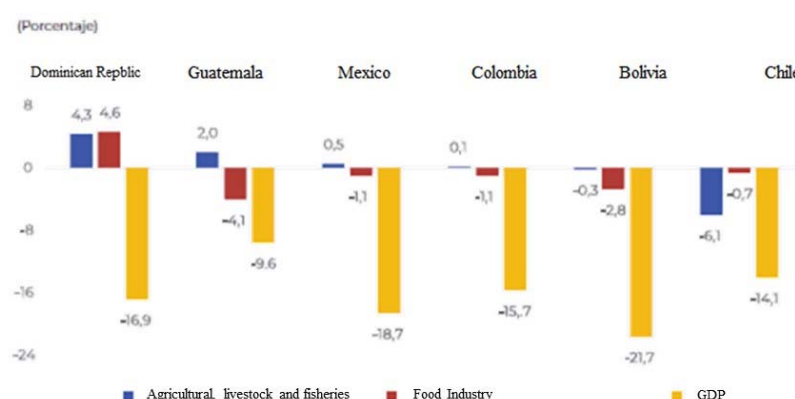
In addition, the Government of Cuba has also announced a Five-Year Social and Economic Policy in 2021. In the agricultural sector it consists of 15 policies.

There are no policies directly related to COVID-19. The most notable policies are the diversification of production systems, such as cooperatives and small and medium enterprises, diversification of agricultural production material sharing methods, and promotion of the participation of youth and women and nutrition education.

(6) Dominican Republic

The agriculture sector in the Dominican Republic is important for both the socio-economic and natural environment, generating approximately 8.8% of the labor force, 5.2% of GDP, and 20% of total exports, and occupying 50.3% of the country's territory.

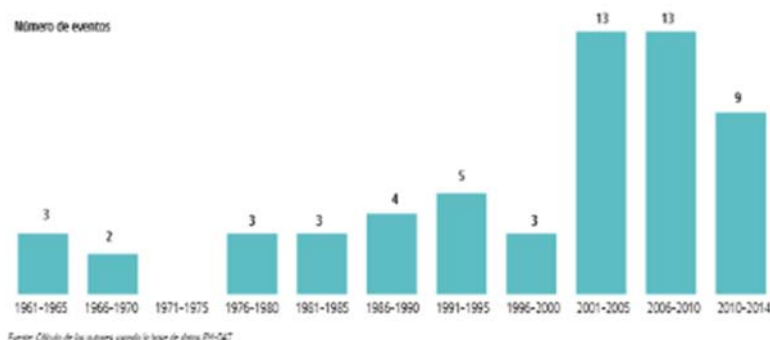
Regarding the impact of COVID-19, the data from various reports and the results of interviews indicate that the impact on the production side was relatively small, although the demand for agricultural products decreased due to the downturn in the tourism sector and food losses increased due to the lack of storage and distribution facilities. As shown in the figure below, GDP growth turned sharply downward to -16.9% in the second quarter of 2020, while the agriculture, livestock, fisheries, and food sectors maintained positive growth.



Source: FAO: Sistemas Alimentarios en America Latina y el Caribe: Desafios en un Escenario Pospandemia

Figure 8-28 Growth of Total Agriculture and Food Sector GDP in the Second Quarter of 2020

Climate change is one of the greatest threats to the agriculture sector in the Dominican Republic in the future. As shown in the figure below, it is clear that the number of climatic disasters has been increasing since 1961, especially since 2000. In the future, droughts, heatwaves, and severe storms are predicted to increase further.



Source: Gestión Financiera y Aseguramiento del Riesgo de Desastres en República Dominicana, WB, 2015

Figure 8-29 Number of Weather Disasters Impacting the Dominican Republic

In the Dominican Republic, there has been a lot of migration from rural areas to urban areas and to abroad due to the low income of small farmers caused by the underperformance of agriculture and resulting in increased urbanization. While there are migrants going to the United States by boat taking a high risk in losing their life, the seasonal agricultural workers from Haiti are increasing, doing such works as harvesting sugar cane, coffee, and cocoa, and transplanting and harvesting rice. The number of registered Haitians is approximately 750,000, which is 7.9% of the country's total population (about 10 million), while the number of non-registered Haitians is estimated to exceed 1 million. Thus, the labor market in the agricultural sector has a distorted structure where some poor small-scale farmers abandon agriculture, while at the same time, Haitians work on some farms. The increasing number of Haitians also intensifies social conflicts.

An interview was held with the Ministry of Agriculture of the Government of the Dominican Republic on the impact and measures of COVID-19 and general issues and measures in the agricultural sector. The main observations made were as follows:

- With the support from FAO, the Ministry of Agriculture assessed the negative impacts of COVID-19 on the agricultural sector. The significant food losses occurred in particularly perishable products, such as vegetables, meat, and fish. In addition, the downturn in the tourism sector, including the closure of hotels and restaurants, and a decline in family income, caused a reduction in food demand. However, the overall impact on the sector was assessed to be relatively mild.
- The Government of the Dominican Republic executed the following measures: (1) purchase of agricultural products from farmers (USD 200 million) and distribution to households, (2) cash grants to increase household purchasing ability, and (3) support for promoting domestic tourism. From the perspective of the agricultural sector, these measures stimulated food consumption and mitigated the impact of COVID-19 on the agricultural sector.
- The government has also adopted refrigerated container ships to reduce perishable foods such as meat and fish. Since the lack of refrigeration facilities has been identified as a weakness in the food chain, the government has identified the construction of refrigerated warehouses as one of its top priorities.
- COVID-19 has revealed several weaknesses in the Dominican Republic's food system. For example: 1) little value addition in most food value chains, resulting in large losses of both livestock and fishery products; 2) lack of refrigeration facilities for long-term storage of perishable products, including high-value items; and 3) lack of markets for local products for local use (the tourism industry, which annually purchased USD 879 million of agricultural, livestock, and fishery products before COVID-19, is also requesting such local markets), and (4) lack of adequate road networks in rural areas for the facilitated transport of agricultural products to markets. In addition, in the medium to long term, (5) strengthening of extension services to enhance agricultural technology (the service does not attend to at least 40% of the total agricultural land), and (6) introduction and strengthening of early warning systems for weather and other disasters to counter the vulnerability related to climate change.

- Even with the health risk of COVID-19, the government bureaucracy spent a long time in implementing measures. While government agencies took four months to initiate certain measures, the private sector was able to implement the same measures in a much shorter time.
- The government needs to increase engagement with farmers, especially for key foods such as rice, beans, and poultry.
- During an outbreak of a disease such as COVID-19, it is challenging to secure agricultural labor. In such cases, the use of modern technologies such as drones can be effective. However, small-scale farmers have limited investment capacity to acquire these technologies. Therefore, there is a need for financing programs to allow the farmers to introduce those technologies. Government banks such as Agricultural Bank and Savings Bank have sufficient funds, and large- and medium-scale farmers have access to these loans. In many cases, small-scale farmers do not have land ownership, which is necessary to apply for a loan. Therefore, in order to accelerate the loan, it is necessary to grant them land ownership and organize them to reduce transaction costs.

Agricultural Value Chain Analysis

In the Dominican Republic, rice was the subject of an agricultural value chain analysis. Bananas were not object to the analysis, however, as an example of product differentiation, the actions by organic certification are presented.

a) Rice

Rice is a very important crop that Dominicans eat almost every day. The annual rice cropping area is about 190,000 hectares, with an annual production of about 615,000 tons and a cropping yield of 3.2 tons/ha. The following are the problems and issues in the chain identified based on the results of the analysis:

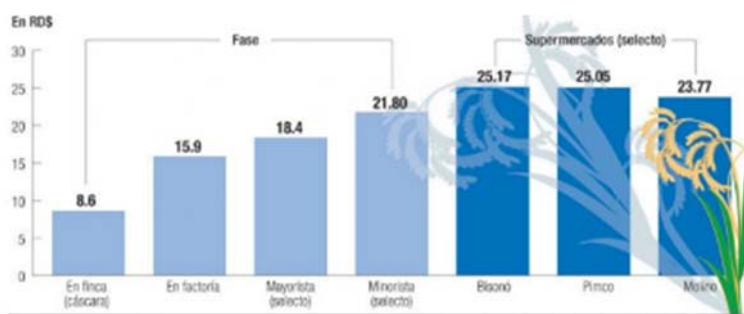
- Lack of economic capacity of small-scale farmers. Most of the rice-producing farmers are small, with about 61% of the total farmers owning less than 2 ha of farming land. Most of this land has been allocated to family farmers under the Agricultural Land Reform Program. Rice production is generally expensive for these farmers, and their access to loan funds is limited due to lack of land tenure and high-interest rates.
- Dependence on foreign labor. From transplanting to harvesting, much of the rice production activity depends on Haitian workers.
- Shortage of water resources. Since all rice production is “paddy”, a large amount of water is necessary. In addition, the required water volume is increasing due to low irrigation efficiency. About 82% of the water available in the country is used in the agricultural sector, mostly for rice production, however irrigation efficiency is estimated to be 30%. Some important rice-growing areas are located in semi-arid climates and receive irrigation water from distant sources. However, the increased impact of climate change may make it difficult to continue rice production in these areas. The government prohibited rice planting in some areas in 2019 due to water shortages.
- Inadequate water management, use of pesticides, herbicides and fertilizers, which pollute water and release large quantities of greenhouse gases into the atmosphere. Methane emissions from paddy fields and nitrous oxide from nitrogen fertilizers are among the world's leading gas emissions sources.
- Inappropriate farming practices. There are many inappropriate farming practices such as using degraded seeds, degradation of land due to the use of large agricultural tractor machinery unsuitable for the actual farmland, inefficient harvesting practices where harvested rice is left in the paddy field and transported to the farm road by hand. As a result, the crop yield is low at 3.2 tons/ha.
- Lack of storage and distribution facilities. This is an issue that has become particularly obvious with COVID-19. Strengthening of these facilities is essential to improve farmers' income by

reducing food losses, reducing greenhouse gas emissions, and strengthening hygiene management to provide safe food.



Source: Centro para Desarrollo Agropecuario y Forestal (CEDAF), Guía Técnica del Cultivo de Arroz

- High intermediate margins and/or distribution costs. As shown in the figure below, the farmer's gate price of rice is as low as DOP 8, only 33% of the DOP 23-25 sales in supermarkets. On the other hand, farmers are exposed to many risks such as crop failure due to weather factors.



Source: <https://eldinero.com.do/30705/las-factorias-elevan-el-precio-del-arroz-un-54-por-la-intermediacion/>

Figure 8-30 Price Variation in the Rice Food Value Chain in the Dominican Republic (2016)

b) Banana

The Dominican Republic is one of the major banana producers in the world, supplying bananas mainly to the European and US markets.

The majority of producers are small-scale farmers who have been allocated land under the Agrarian Reform Program. As of 2016, the total area under cultivation was about 15,940 ha, of which about 80% (12,563 ha) was organic or in the process of transitioning to organic. In addition, most of them are Fairtrade certified, which differentiates the country's bananas. This is largely due to the proper coordination of producers, cooperatives, exporters, and organic and Fairtrade certified companies that make up the banana value chain.

The country's 24 banana exporters play an important role in the development of the banana value chain. These companies are not just exporting, but are supporting the chain in a comprehensive manner, including setting quality standards, helping to improve cultivation techniques, helping to prepare for certification, and providing financing. In addition, they enter into direct purchase agreements with producers and provide loans as needed to better ensure a stable supply. Ademi Bank, for example, through its EU-financed banana support program called Medidas de Acompañamiento del Banano (BAM), has provided about Euro 7.7 million in dedicated banana microcredit, with about 550 producers benefiting. It should be noted that the monthly income of small-scale producers is RD\$11,681 (USD 208) for general bananas, while it is as high as about RD\$18,500 (USD 327) for organic bananas, indicating that efforts for differentiation are appropriately reflected in producer income

Banana in the Dominican Republic is a good example of product differentiation by all actors in the value chain, with the deep involvement of private sector and government support

(7) Saint Lucia

Saint Lucia is a small Caribbean country with a total area of 616 km² and a population of about 185,000. The agricultural sector is a crucial sector generating 21% of the country's full employment, while its GDP contribution has declined from 14% in 1990 to the 3% in 2015 and 1.9% in 2019. In 2020, the agricultural subsector produced 57.3 million East Caribbean dollars (USD 21.2 million), the livestock subsector 11.5 million East Caribbean dollars (USD 4.3 million), mainly from poultry and pork production, and the fisheries subsector produced 20.8 million East Caribbean dollars (USD 7.7 million) in 2020.

Most of the producers are small-scale, with about 10,000 producers owning 30,204 acres (12,223 hectares) of farmland according to the 2010 census, and the average area per producer is about 3.0 acres (1.21 hectares). By crop, banana and coconut, which are export products, account for 14,826 acres and 12,400 acres, respectively, and the total area of these crops is 27,726 acres, accounting for more than 90% of the total. On the remaining 10%, yam and sweet potatoes, cocoa beans, fruit trees such as mangoes and avocados, citrus fruits, and vegetables, mainly for the domestic market, are produced under the traditional rainfed production system.

The fisheries sub-sector is growing; for example, catches have grown at an average annual rate of 0.46% over the past six years, and aquaculture land has increased from about 6 acres (2.4 ha) in 2000 to 40 acres (16 ha) in 2015. However, imports of fishery products are also increasing, and the overall balance is excess imports.

Due to the long term stagnation of the agriculture sector, the dependency on food imports is very high, threatening the food security of the country. Due to COVID-19, the tourism sector, which accounts for about 40 percent of GDP, has stagnated. As a result, the GDP in 2020 was significantly reduced, and the agricultural sector was also affected by the reduced demand for products from the tourism sector and increased costs, including additional sanitation costs.

Food security issues also became apparent. In a survey on COVID-19 food access conducted in the country in April 2020 by CARICOM and the UN World Food Programme (WFP), 76% of respondents reported that market access had been affected, a much higher rate than the regional average. 37% of the respondents were involved in agriculture and 6% in fisheries production, both mainly for their own consumption, which may have mitigated the concerns of the food crisis.

In recent years, the Government of Saint Lucia has formulated the National Adaptation Plan (NAP) 2018-2028 to address the emerging threat of climate change to various sectors. The plan covers eight major sectors, namely tourism, water, agriculture, fisheries, infrastructure and space, natural resources, education, and health, and consists of cross-sectoral and sectoral adaptation measures, and sectoral Adaptation Strategies & Action Plans (SASAPs). Sectoral Adaptation Strategies & Action Plans (SASAPs) have been prepared for each sector.

According to the SASAPs for the agriculture sector, the sector is highly vulnerable to extreme weather events. In recent years has been severely affected and challenged by hurricanes such as Thomas, which hit the country in 2010, droughts, floods, and landslides caused by these events. The SASAPs consist of the following four outcomes considered essential for building climate-resilient agricultural systems.

Output 1: Enabling environment for agricultural sector's climate change adaptation measures

Improved legal, regulatory, and institutional frameworks to facilitate measures; strengthened research and development of resilient climate agriculture; climate-resilient varieties and locally produced inputs (e.g., organic fertilizers, natural pesticides); strengthened human and organizational capacity for design, implementation, monitoring, and evaluation of climate adaptation projects.

Outcome 2 Improvement of food nutrition, availability, and quality by promoting agriculture sector climate change adaptation measures.

Increased production of climate-resilient crops and livestock; enhanced ecosystem services through integrated land and watershed management; enhanced capacity to manage water availability through improved rainwater harvesting and storage infrastructure; enhanced ability to manage water demand through water and soil conservation activities; and sustainable wastewater management through reduction, reuse, and recycling of agricultural waste.

Outcome 3: Strengthening of partnerships for climate-resilient agriculture

Public-private partnerships strengthened to promote best practices and business development for climate-resilient agriculture / Increased use of private sector resources through improved access to finance and business support

Outcome 4: Establishment of Agricultural Sector Climate Change and Disaster Preparedness

Enhanced monitoring of agro-meteorological data to improve emergency planning and decision-making capacity / Adoption of ecosystem-based adaptation measures / Expansion of climate-resilient agricultural infrastructure, etc.

In addition, the Fisheries Sector SASAPs will consist of the following four outcomes similar to those of the agriculture sector.

Outcome 1: Improvement of environment for fisheries sector's climate change adaptation.

Improved legal, regulatory, and institutional frameworks to facilitate the measures/ Strengthened human and organizational capacity for design, implementation, monitoring, and evaluation of climate adaptation projects.

Outcome 2: Improvement of food nutrition, availability, and quality through promotion of fisheries sector climate change adaptation measures

Increased productivity through climate-resilient fisheries management systems; promotion of climate-resilient aquaculture; creation and development of alternative livelihoods to enhance fisheries sector climate change resilience, etc.

Outcome 3: Strengthening of partnerships for a resilient fisheries sector sustainable under climate change

Increased private sector resources through improved access to finance and business support.

Outcome 4: Establishment of Fisheries Sector Climate Change and Disaster Preparedness

Enhanced weather monitoring and communication to improve emergency planning and decision-making capacity / Expanded climate-resilient fisheries infrastructure, etc.

Agricultural Value Chain

In Saint Lucia, the agricultural value chain analysis was conducted for lobster and conch shells and important fish species. The results are presented below.

The fisheries sector of Saint Lucia consists of a high season from December to May and a low season from June to November when relatively large numbers of demersal fish species are landed. The main fish species are pelagic migratory fish such as dolphin fish (mahi-mahi) and tuna, while the main benthic species are lobsters and conch shells, which are also important for tourism.

According to 2017 data, there are 3328 direct employees in the sector, contributing to the country's socio-economy. However, according to the 2016 report, more than 822 identified power

vessels were undecked, and all but seven were less than 12 meters in length. These indicate that the country's fishing industry is small and underdeveloped.

a) Tuna and Dolphinfish

According to the FAO's 2018 Fishery and Aquaculture Profile of Saint Lucia, more than 65% of Saint Lucia's annual catch is pelagic migratory fish such as tuna and dolphinfish. Over the past ten years, the catch of tuna has fluctuated widely, from 541 tons in 2011 to 335 tons in 2020, and that of dolphinfish from 1,639 tons in 2014 to 302 tons in 2020. The catches of these species in 2020 are reported to be significantly lower due to COVID-19.

The value chain for tuna and dolphinfish is simple. The fish is generally sold to high-priced markets such as hotels and restaurants, or to middlemen, without any processing.

Although gutting is recommended, many fish are landed without gutting due to buyer preference. Only a few fishermen contracted by hotels, restaurants, and wholesalers practice gutting. In addition, there is little incentive for processing, as the end consumer prefers to buy fish fillets at a lower price. In many cases, the price bargaining power of the producers is low in the agriculture sector in other countries, however, in the interviews, the interviewees indicated that although the price depends on the market demand, the price bargaining power of the fishermen is relatively high. This is probably due to low needs of middlemen in the distribution of products in small country.

b) Lobster and Conch Shell

Lobster and conch are the most expensive and valuable for the tourism sector. Catches over the past decade from 2011 to 2020 have been highly fluctuating, similar to tuna and dolphinfish, ranging from 4 tons in 2016 to 28 tons in 2012/2013 for lobster and from 16 tons in 2016 to 99 tons in 2017 for conch. In 2020, the catch has decreased to 12 tons and 29 tons, respectively. According to one of the fisheries bureau staff, this was most likely due to the impact of COVID -19 as well as the degradation and loss of lobster and conch shell habitat due to soil inflow and sedimentation into the sea, and the resulting decline in stocks. As a response to resource management, size limits and regulations on fishing equipment have been applied, in addition to the establishment of fishing prohibited season.

The value chain is as simple as for tuna and dolphinfish. Normally, the fish is sold only after cleaning without any processing to high-priced markets such as hotels and restaurants or to middleman. Informal exports to neighboring countries such as French Martinique are also observed.

COVID-19 caused a negative impact in the form of decrease in demand in the tourism sector and increase in sanitation costs such as increased use of ice for proper storage. However, improved hygiene awareness is also considered as a positive impact in food safety. It was also observed that due to movement restrictions, fishermen are more likely to sell their own catch directly, and middlemen are excluded from the chain, resulting in loss of their income.

The value chains for both tuna and shiraz, lobster and conch are still undeveloped, and as with other products, it is important to develop chains to improve food security and creating jobs. The challenges for development include improving expertise and knowledge, strengthening cooperatives, cracking down on illegal fishing, enhancing promotion of fishery products, and development of infrastructure such as landing sites, cold storage, and processing plants.



Source: Study Team

(8) Non-target Countries of the Detailed Study and International Organizations

The interviews were held with the Ministry of Agriculture and Livestock Development of the Panamanian government, FAO El Salvador Office, and SICA. The following are the main observations of the interviews:

- Many problems are identified, from cultivation to distribution, processing, marketing, and consumption, most of which existed prior to COVID-19. The direct impact of COVID-19 is the low income of farmers (including non-farm income) due to the economic downturn. As a result, an increasing number of households in Central America have difficulty obtaining basic food. Among the problems, vulnerable agricultural finance and insurance systems and inadequate border sanitation management (phytosanitary management) have been more exposed by COVID-19.
- Similar to COVID-19, yet even more critical, is the climate change issue, which directly impacts agriculture production. In Central America, there is a particularly vulnerable region called Corredor Seco (Dry Corridor). In addition, both Central America and the Caribbean are experiencing an increase in droughts and hurricanes, causing damage to grains and various crops such as bananas and coffee. In order to support farmers in times of emergency, it is necessary to strengthen the agricultural finance and insurance systems, develop a farmer database, and diversify the varieties of crops produced.
- The majority of small-scale farmers have no education and are elderly, and the agricultural technology extension services provided by the government are minimal. Under these circumstances, DX, which can simplify a variety of tasks, can significantly contribute to improving farming techniques. On the other hand, old age can also cause poor familiarity with DX. Therefore, to make the most of DX, it is essential to promote rural youth as suppliers and supporters of private DX services.

8.8 Development of Hypothesis on the State of Sectoral Development Cooperation in With/Post COVID-19 Society

8.8.1 Grouping by Sector Issues

As explained in the previous sections, the agriculture and rural development sectors in Central America and the Caribbean generally face a wide range of common challenges across the entire value chain from production to consumption, although there are some differences among countries and products. A grouping based on a detailed analysis of these various issues is difficult. Therefore, the groupings were done based on factors such as location, dependence on food imports, and political situation, where differences are more apparent.

Excluding large countries such as Cuba and the Dominican Republic, many Caribbean countries such as Saint Lucia depend on imports from abroad for most of their food. This dependency rate reached 80 to 90 percent in the 2010s, which is outstanding in comparison to other Central American and Caribbean countries. Cuba has a unique production system and is facing a serious shortage of goods, including agricultural production materials, due to a combination of U.S. economic sanctions and the stagnation of tourism, the main source of foreign currency, as a result of COVID-19. In addition, Haiti has been in political turmoil for a long time, and disasters have occurred frequently. These countries are very different from other Central American and Caribbean countries in political and institutional aspects.

Based on the above, the 23 countries can be grouped into the following three: (1) Central American Countries and large Caribbean countries where the agriculture sector has been kept, but requires its overall strengthening for both domestic use and export; (2) Small Caribbean countries that need to improve their very low food self-sufficiency rate and tourism-dependent economic structure, (3) Haiti, where political and socio-economic stabilization is required, and Cuba, where macro-level reform of the production system is needed.

8.8.2 Analysis of Vulnerabilities in the Target Countries and Priority Sectors

The vulnerabilities and challenges in the agriculture and rural development sector are diverse, including infrastructure, cultivation techniques, farming patterns, lack of value addition through processing and other means, and lack of marketing. In this section, these issues are summarized below, especially from the viewpoint of impacts from COVID-19 and climate change.

<The vulnerabilities (issues) revealed by COVID-19>

- The negative impact of COVID-19 on the agriculture and rural development sector was lower than that on other sectors. This indicates that the sector is resilient and should be prioritized in the event of a pandemic. However, issues such as inadequate storage and distribution facilities became more apparent during COVID-19. In addition, the experience of the disruption caused by the infectious disease may have raised awareness of the importance of hygiene management for food products that pass through human hands in production and supply, but are an essential daily need.
- COVID-19 may have reaffirmed the importance of collaboration among different actors and organizations even at the local level in the event of unforeseen events. For example in the agriculture and rural development sector, this may be evidenced in the emphasis on hygiene management (e.g., phytosanitary management) and the strengthening of food reserves at the regional level as preventive measures.
- The value chains of many products are facing issues such as unstable quantity and quality in production and shipment due to lack of organization and production plan, lack of value-adding technologies in cultivation and processing, lack of trust among stakeholders due to meager marketing capacity, and lack of quality standards.
- The agriculture and rural development sector in Central America and the Caribbean continue to play an important role as a source of income and employment. However, investment in the sector is limited, and most small-scale producers have low incomes, causing migration of younger generations to urban areas and other countries. In addition, the gap is widening between commercially successful producers and weaker producers, as represented by the North-South gap in Mexico. Unforeseen events such as COVID-19 are also factors that increase such a gap.

<Vulnerability (issues) related to climate change>

- Climate change is the biggest threat to the agriculture and rural sector in the future. Being dependent on the natural environment, this sector will be strongly affected by climate change. On the other hand, the sector is also one of the major sources of greenhouse gas emissions that are believed to be responsible for climate change. However, climate change measures, both mitigation and adaptation, are delayed.

The above analysis reveals that the “strengthening of food hygiene and storage capacity”, “reducing dependence on food imports”, “strengthening of linkages in agricultural value chains”, “strengthening climate change countermeasures” are key measures, while the “strengthening of agricultural support system” is an overall measure to address these vulnerabilities. The table below lists these issues and the status of their impact from Covid-19.

Table 8-15 Vulnerabilities (Key Issues) in the Agriculture and Rural Development Sector and their Exposure by COVID-19

	Vulnerabilities (Key Issues)	Impacts from COVID-19	Region (note 1)
Strengthening food hygiene and storage capacity	<ul style="list-style-type: none"> ▪ Lack of sanitation and inspection technology, equipment, and infrastructure ▪ Lack of distribution and storage technology, equipment, and infrastructure 	Increase in losses due to stagnant distribution, particularly products that are difficult to store for long periods.	(1), (2) and (3)

	Vulnerabilities (Key Issues)	Impacts from COVID-19	Region (note 1)
Reduce dependence on food imports	<ul style="list-style-type: none"> ▪ Dependence on specific economic sectors (weakness in economic structure) ▪ Lack of domestic agriculture and rural sector competitiveness 	Stagnation in food supply due to shortage of foreign currency caused by sluggish distribution and sluggish tourism of the main economic sector.	(2) and (3) Cuba
Strengthening of agricultural value chain linkages	<p>The following are obstacles to the appropriate linkage of agricultural value chains</p> <ul style="list-style-type: none"> ▪ Lack of farm management skills, including cultivation skills of producers ▪ Lack of efficiency in the production system such as the realization of planned production, stable production, and shipment through producer organizations ▪ Lack of production incentives due to the market structure ▪ Lack of production infrastructure ▪ Lack of operation and maintenance of production infrastructure ▪ Lack of trust among chain actors due to lack of understanding of the roles of each actor and absence of clear quality standards ▪ Lack of value addition such as processing and certification ▪ Lack of market information 	<p>Income stagnation due to loss of sales channels from sluggish distribution and reduced demand in the tourism sector.</p> <p>Increase in production costs due to additional sanitation controls.</p> <p>Overfishing of resources by impromptu producers (fishermen) to compensate for income loss and food shortage.</p>	(1), (2), (3), *Market structure is for (3) Cuba
Strengthening of climate change countermeasures	<ul style="list-style-type: none"> ▪ Lack of efforts to mitigate climate change on both production and consumption sides ▪ Lack of efforts to adapt to climate change on the production side ▪ Lack of climate change-related information such as weather, pests and diseases ▪ Lack of information on natural resource management and monitoring 		(1), (2), (3)
Strengthening of agricultural support system	<ul style="list-style-type: none"> ▪ Lack of access to finance ▪ Lack of access to insurance ▪ Lack of information related to the agriculture sector, such as producer and product information ▪ Lack of development and extension of technology. 	<p>Delays in providing support for decreasing incomes.</p> <p>Delayed and inefficient support due to lack of information.</p>	(1), (2), (3)

Note 1: (1) Central American Countries and large countries in the Caribbean where the presence of the agriculture sector has been kept, but require the strengthening of the entire agriculture sector, for both domestic use and export, (2) Small Caribbean countries that need to improve their very low food self-sufficiency rate and tourism-dependent economic structure, (3) Haiti, where political and socio-economic stabilization is required, and Cuba, where macro-level reform of the production system is needed.

Source: Study Team

One of the vulnerabilities and issues that was newly or more strongly recognized due to COVID-19 was the need for "strengthening regional and sectoral collaboration. Under COVID-19, food distribution became stagnant across regions and countries. Like COVID-19, climate change issues and migration issues caused by various problems are also cross-border issues. To address these issues, it is important to strengthen regional collaboration, which is also important for efficient countermeasure in Central America and the Caribbean where there are many small countries.

8.8.3 Hypothesis on Cooperation in Societal Development with/post COVID-19 in Central America and the Caribbean

Focusing on the 5 key issues mentioned in 8.8.2 above would be an effective approach for Japan's development cooperation. The countermeasures and supporting measures for addressing these issues, as well those measures that could be implemented by Japan's development cooperation are presented in 8.8.4 below. Furthermore, points to be considered in executing development cooperation are also mentioned.

8.8.4 Countermeasure and Supporting Measures

The following table shows the measures and support that can be given to address the key issues (vulnerabilities) listed in 8.8.2, as well as the those that can be implemented by Japan's development cooperation.

Table 8-16 Countermeasures and Supporting Measures for Addressing the Vulnerabilities (Key Issues)

Vulnerabilities (Key Issues)	Countermeasures and Supporting Measures	Measures to be implemented by Japan's development cooperation (Note 2)
Strengthening of food hygiene and storage capacity	▪ Installation and maintenance of post-harvest processing and distribution infrastructure, including packaging and cold chain facilities	*
	▪ Strengthening of food safety and hygiene management technologies and systems through HACCP and other measures	*
	▪ Strengthening of food safety and hygiene management by enhancing border phytosanitary functions (regional level *Note 1)	
	▪ Development of food stockpiling infrastructure in each country and region (regional level)	
Reducing dependence on food imports	▪ Improvement of producers' farming techniques, including cultivation	*
Strengthen agricultural value chain linkages	▪ Development of production infrastructures such as irrigation and roads	*
	▪ Improving the efficiency of irrigation and operation and management of other production infrastructure	
	▪ Improvement of production incentives by reviewing the market structure	*
	▪ Realization of planned production and stable production in terms of both quantity and quality through the formation of producer organizations and strengthening of organizational management capacity	*
	▪ Improvement of trust among the parties involved in the agricultural value chain by establishing quality standards, etc.	*
	▪ Introduction of certification systems such as GAP and Eco-Products Certification (at the regional level, especially in small countries in the eastern Caribbean).	*
Strengthening of climate change countermeasures	▪ Development of market information	
	▪ Introduction of low-carbon and energy-saving cultivation technologies such as irrigation and proper fertilizer management	*
	▪ Introduction of meteorological and natural disaster risk monitoring systems (regional level)	*
	▪ Strengthening of natural resource management and monitoring systems (regional level)	*
	▪ Strengthen recycling of crop residues and food losses.	*
	▪ Strengthen agricultural and food cycle initiatives that include consumers, such as environmental education on agro-environment, food loss and health, and local production for local consumption	
	▪ Development and introduction of new varieties against climate change (local level)	
Strengthening of agricultural support system	▪ Strengthening of finance, assistance, and subsidy programs for producers and producers' organizations	*
	▪ Strengthen insurance for producers	
	▪ Support agricultural sector start-ups (regional level)	*
	▪ Strengthening of farmer and agriculture-related information systems (regional level)	*
	▪ Strengthen of agricultural technology development system	
	▪ Strengthening of agricultural technology extension system (regional level)	*

Note 1: Countermeasures and supporting measures that are considered to be efficient for extensive areas and regional levels.

Note 2: Countermeasures and support measures were selected based on a comprehensive evaluation of the following factors; "Japan's domestic and international experience in these measures", "trends in Japanese ODA, such as the reduction of infrastructure projects in the agriculture and rural development sectors in Central America and the Caribbean", and "the time required, such as the long time required for the development of new varieties".

Source: Study Team

Based on the countermeasures and supporting measures in the table above, the direction of development cooperation in the agriculture and rural development sector is summarized as follows.

- Provide cooperation in improving the region's food resilience by “strengthening food hygiene and storage capacity”, “reducing dependence on food imports”, “strengthening agricultural value chain linkages”, and “strengthening climate change countermeasures” as key individual measures and “strengthening the agricultural support system” as a comprehensive cross-cutting measure. As an overall result of these cooperation, the objective is to reduce the problem of migration in the rural area by increasing the attractiveness of the agricultural sector, which is the main source of income in rural areas.
 - Improve packaging technology and develop cold chain, including storage facilities, to improve food hygiene management capacity for reducing the risk of infectious diseases, such as COVID-19, and food poisoning, enhancing food safety, and improving the capacity for stable food supply in emergency situations.
 - For countries that are highly dependent on food imports, especially small countries in the Caribbean region that are prone to food crises, promote the branding of local products through OVOP, processing, direct sales, etc., to revitalize the domestic food industry and reduce dependency.
 - Improve the efficiency of food supply by optimizing the agricultural value chain, from production to distribution and consumption, by strengthening the linkages among actors and enhancing the operation of producer organizations.
 - The agricultural sector is one of the major sources of greenhouse gas emissions, which is considered to be a cause of climate change that is becoming more apparent every year. At the same time, the sector will be significantly affected by the negative impacts of climate change. In response to this issue, enhance the sector's response capability in mitigation measures, such as cultivation technology with less environmental impact and introduction of new crops and varieties compatible with climate change.
 - Strengthen financial support and information provision to producers and related private companies to accelerate the development and introduction of measures to address the key issues mentioned above.

The following are points to be considered in the implementation of development cooperation.

- To realize efficient cooperation for wider regions and stakeholders with a limited budget, prioritize the utilization and strengthening of existing infrastructures such as the strengthening of water user associations and improving water use efficiency by using applications
- The agriculture and rural development sector has a large number of stakeholders and issues. In addition, due to the long production cycle caused by climatic constraints, it takes a long time to improve this sector. As a result, it is impossible to address all the stakeholders and issues. Therefore, provide intensive support to specific regions, organizations, and products through technical cooperation projects and the dispatch of Japan Overseas Cooperation Volunteers (JOCV) to create development model.
- In cases where the provision of the development loan is possible, prioritize support for a wide range of existing efforts and organizations through two-step loan for specific issues or by providing competition type support to farmers, producers organizations and/or related private companies.
- Due to the long production cycle of the agricultural sector, it generally takes much time to introduce new technologies. In addition, although the agricultural sector is strongly related to the national policy for food security, the activities themselves are done by private businesses run by a large number of entrepreneurs. In consideration of these factors, emphasize collaboration with the private sector that is capable of developing sustainable local activities. In addition, since there

are many agriculture-related companies and human resources in Central America, the Caribbean, and the neighboring South American region, actively utilize these local resources.

- In the agriculture sector. The development of various smart technologies is accelerating. Provide cooperation for actively applying these technologies, at the same time, support the development and introduction of these technologies. Governments should prioritize cooperation in developing big data to support technology development and adoption by the private sector.
- Immigrants and climate change are global issues difficult to be addressed by one country or one sector. For these issues, prioritize regional cooperation and activities involving not only producers but also consumers and other sectors, such as environmental education related to agriculture and food.

In general, the challenges in the agriculture and rural development sector are wide-ranging and require long-term commitment for their resolution. Therefore, it is necessary to realize efficient and continuous cooperation by utilizing the results from ongoing and completed projects and JICA offices (JICA assets). The table below presents the proposal regarding locations for addressing each issue, taking into account the characteristics of each issue and the status of ongoing and completed projects.

Table 8-17 Bases for Addressing each Key Issues

Countermeasures (addressing key Issues)	Base	Similar Regions *Note 1	Partner organizations (candidates) for regional level actions
Strengthening of food hygiene and storage capacity	Guatemala, Honduras Dominican Republic	All Regions	FAO, IDB, SICA, OECS, CARICOM, Mesoamerican Integrated Development Project, IFAD, IICA
Reducing dependence on food imports	Guatemala, El Salvador, Honduras, Belize, Dominican Republic, Nicaragua	All Regions	
Strengthening of agricultural value chain linkages		Caribbean Region	
Strengthening of climate change countermeasures	Mexico, Belize, El Salvador, Panama	All Regions	
Strengthening of agricultural support system	El Salvador, Dominican Republic Cuba	All Regions Cuba	

Note 1: Regions where results expected to spread

Source: Study Team

8.9 Analysis and Recommendations Contributing to Sectoral Cooperation Policy

8.9.1 Summary of Assistance Policy Analysis by Sector

The negative impacts of COVID-19 have been significantly reduced in the agriculture and rural development sector in comparison to other sectors, due to the fundamental reason that food is essential for human beings and the support given by governments to meet the food demand through financial aid. However, COVID-19 and the resulting disruption of distribution revealed the vulnerabilities of the sector, such as the lack of sanitation, storage technology and infrastructure, and weak linkages throughout the agricultural value chain, with many producers experiencing difficulties in marketing their products. The sector has been facing various challenges in the overall agricultural value chain since before COVID-19, and many of the small-scale producers composing the sector are still in a low-income situation. This continues to be an incentive for the migration of large numbers of people, especially young people, from rural areas to cities and other countries. In addition, the negative impacts of climate change, symbolized by the increasingly violent hurricanes and droughts in recent years, have become a growing risk that could exacerbate this situation.

The agriculture and rural development sector needs support and investment to address the above challenges, which have not been realized for many years. COVID-19 brought the experience of food insecurity not only to the isolated countries of eastern Caribbean, which are highly dependent on food imports, but also to many other countries. This has resulted in increased public and government interest

in the domestic agricultural and rural development sector as a food supply base. It is also believed to have increased public interest in food safety, including hygiene management.

8.9.2 Recommendations for Recovery and Improvement by Sector

Based on the results of this study (summary of survey result analysis), presented in 8.9.1, the following recommendations are made for the recovery and improvement of agriculture and rural development.

(1) Strengthening of Food Resilience and Migration Reduction through Integrated Approaches to Key Issues

Establish the “strengthening of food hygiene and storage capacity”, “reducing of dependence on food imports”, “strengthening of the linkage of agricultural value chains”, and the “strengthening of climate change countermeasures” as key issues to be addressed and the “strengthening of agricultural support system (financial service, technological development/extension system, data management related to the agricultural sector)” as a comprehensive cross-cutting issue for strengthening regional food resilience and reducing the migration problem in rural areas by improving the attractiveness of the agricultural sector, which is the main source of income for the area.

(2) Regional Collaboration

COVID-19 has spread across borders and around the world, affecting the socio-economy. The number of regional and global level challenges such as diseases, climate change, and migration to other countries is increasing. In order to respond to these challenges effectively and efficiently in terms of both technology and cost, it is essential to strengthen regional cooperation. Weather, disasters, and resources monitoring, developing low-carbon production technologies and new varieties for adaptation to climate change, and providing extension services using smart technologies can be considered as examples of regional collaboration.

(3) Collaboration among Sectors and Actors

COVID-19 has had a negative impact across borders as well as across different sectors including commerce, especially tourism, health, and agriculture. At the same time, COVID-19 provided an opportunity to reaffirm the importance of inter-sectoral collaboration and to gain experience in such collaboration through food distribution done jointly by the health and agriculture ministries. Such inter-sectoral collaboration will be effective in strengthening the agriculture and rural development sectors in the future. For example, environmental monitoring done in collaboration between the agriculture and environment sectors or school education on the food production systems and nutrition done by the agriculture and education sectors. Furthermore, taking into account the greenhouse gas emissions from waste food, it is also important to incorporate consumers who cause losses at the consumption stage or encourage excess supply through their purchases, in other words, inter-actor collaboration is also needed.

(4) Support the Entire Agricultural Value Chain, including the Private Sector

The agriculture is basically a private sector consisting of many individual entrepreneurs. It takes a long time to introduce new technologies and products in this sector because of the long production cycle ranging from months to years with high affection from weather conditions and many economically vulnerable producers who cannot engage in high-risk trial activities. Considering the above two characteristics, it would be effective to provide support by incorporating the private sector, such as the agricultural product distributors and processors who, together with producers, compose the agricultural value chain and are semi-permanently in the region. In addition, many of the actors that compose the chain were affected by an unstable distribution system caused by COVID-19. Therefore, it is essential to involve them in supporting the agricultural value chain, from production to consumption, as one productive unit, and not just production or sales. Examples of this could be the reinforcement of the cold chain and standardization of product quality and management through the participation of producer associations, distributors, and processors; reinforcement of the systematic production and shipment system by producer associations and middlemen (e.g., the establishment of a production system where producer associations carry out planned production in both quality and quantity, provide stable shipment to middlemen, and middlemen provide distribution with fixed transportation fees which

allows both parties to reduce risks). In addition, the provision of financial support (loans and subsidies) by the government and donors is also very important to facilitate the private sector in taking on important yet high-risk actions requiring coordination among many participants.

(5) Support the Active Use, Development and Diffusion of Smart Technologies

The adoption of smart technology is also seen in the agriculture and rural development sector. The number of private companies using smart agricultural value chain technologies is also increasing. Such technologies range from cheap and simple ones using smartphones to advanced ones such as production environment management devices equipped with analyzers or automatic machines such as driverless tractors and drones. It is important to utilize and support such actions in the private sectors in order to develop the agriculture and rural development sector. Specifically, this includes the accumulation of sector-related information on producers and markets (open data), and financial support for product development and dissemination by private companies, especially start-ups.

9. Private Sector

9.1 General

For the private sector, this study initially collected data on all the target countries and reviewed the reports and publications on the impact of COVID-19 released by international organizations. Based on these data, three priority countries were selected, namely: Mexico, Costa Rica, and Panama. Reports, plans, laws and regulations, statistics, etc., for each priority country were collected. In these countries, a field survey and interview with relevant organizations were also conducted. Based on the above information, a hypothesis consisting of challenges, vulnerabilities, and measures to overcome them and proposals for cooperation policies was developed.

9.2 Summary of Sector Survey

The study in Private Sector is summarized in the table below.

Table 9-1 Hypothesis and Policy Recommendations for the Private Sector in the Development Cooperation (Draft)

No.	Item	Private Sector	
1	Issues from before COVID-19	<ul style="list-style-type: none"> ▪ Large informal sector ▪ Stagnation in productivity improvement ▪ Lack of government funding ▪ High unemployment rate among women and young people 	
2	Grouping by Issue	<ul style="list-style-type: none"> ▪ Above issues are common in the region ▪ In addition, each country has its own issues 	
3	Vulnerabilities revealed in COVID-19	1. Large informal sector	<ul style="list-style-type: none"> ▪ Difficulty in gathering information and providing public support to the informal sector in the event of a pandemic or other emergency
		2. Stagnation in productivity improvement	<ul style="list-style-type: none"> ▪ The limits of economic expansion through the input of labor while productivity growth remains stagnant have become apparent.
4	New issues that emerged during COVID-19	3. Lack of government funding	<ul style="list-style-type: none"> ▪ Lack of support for small businesses and workers affected by the pandemic
		4. High unemployment rate among women and young people	<ul style="list-style-type: none"> ▪ The pandemic further increased the unemployment rate among women and young people, reaffirming the challenges and revealing the vulnerability of working conditions.
5	Countermeasures (draft)	<ol style="list-style-type: none"> 1. Large informal sector 2. Stagnation in productivity improvement 3. Lack of government funding 4. High unemployment rate among women and young people 	<ul style="list-style-type: none"> ▪ Strengthen existing measures to promote industry and support SMEs ▪ Establish and strengthen productivity improvement support system ▪ Increase productivity by introducing and developing new technologies ▪ Creation of sophisticated industries through innovation ▪ Secure funds for long-term and global contingencies ▪ Seed money provision and entrepreneurial capacity building ▪ Strengthening the resilience of schools and other facilities
6	Direction and recommendations for development cooperation (draft)	<ol style="list-style-type: none"> 1. Large informal sector 2. Stagnation in productivity improvement 	<ul style="list-style-type: none"> ▪ Strengthen existing measures to promote industry and support SMEs <ul style="list-style-type: none"> ➢ Technical Assistance: Development of policies for the promotion of SMEs and regional industrial development plans (Panama) ➢ Regional expert: Technology transfer through collaboration with Japanese companies (Panama) ▪ Capacity building to support productivity improvement through regional cooperation <ul style="list-style-type: none"> ➢ Technical Assistance: Capacity building for a supporting organization for productivity improvement through South-South cooperation or triangular cooperation (Panama)

No.	Item	Private Sector	
			<ul style="list-style-type: none"> ▪ Support for developing a startup and innovation ecosystem <ul style="list-style-type: none"> ➢ Technical Assistance: Training and technical cooperation to promote innovation at universities (Panama) ➢ Technical Assistance: Assistance for promotion of social innovation (Mexico)
	3. Lack of government funding		<ul style="list-style-type: none"> ▪ Providing stand-by loans in case of a pandemic
	4. High unemployment rate among women and young people		<ul style="list-style-type: none"> ▪ Provision of seed money and capacity building for entrepreneurship <ul style="list-style-type: none"> ➢ Provision of seed money (bilateral government loan) and support for capacity building of loan recipient companies (technical assistance and volunteers) (Costa Rica)

Source: Study Team

9.3 Sectoral Scope of Work

The working scope of the private sector is shown in Table 9-2. This is based on JICA's work on "Private Sector Development" and the corresponding issue-specific guidelines on the small- and medium-sized enterprises (SME) promotion and trade and investment promotion. The definition of "small- and medium-sized enterprises" is in accordance with the JICA's "Guidelines by Issue - Promotion of Small- and Medium-sized Enterprises" (October 2013 Edition). In other words, in principle, the term "micro, small and medium enterprises" is used to refer to enterprises that are included in the category of small and medium enterprises as defined in each country. When the term "micro, small and medium enterprises" is used, it includes micro enterprises unless otherwise specified. In addition, considering the importance of relationships with large companies, these are not excluded from the scope of cooperation to achieve the purpose of promoting SMEs.

Table 9-2 Scope of Works by Sector

No.		Subsector	Work Scope
1	Sectoral goals	To support industrial development through the development and growth of private entrepreneurs and companies in developing countries, the promotion of trade and investment in developing countries, and the development of industrial policies and business environments, and to promote solutions to social issues through private business. Through these efforts, this study will contribute to the realization of high-quality growth and the creation of stable employment opportunities in developing countries.	
2	Work scope update	Based on consultations with JICA, select countries to be surveyed or confirmed survey priorities, and update/agree on the scope of work.	
3	【Task 2】	Selection of related organizations to be interviewed	
4		Conduct an interview survey	
5		Collection and organization of data that can be compared between countries before and after COVID-19	Unemployment rate Import / export value, etc.
6		Survey of support system of each country for COVID-19	Subsidies for SMEs Unemployment allowance and job assistance Efforts for the introduction of new technology
7		Grouping of countries and selection of priority countries	Select priority countries and priority themes based on the results of collecting and analyzing basic information
8		Additional research in priority countries	Analysis of the impact of COVID-19 on priority countries and themes Interviews focusing on priority countries (to obtain supplementary information) General interview
9		Case study	Investigate issues and new technologies that can be utilized through interviews with organizations that provide support for productivity improvement (kaizen, etc.) and startup

No.		Subsector	Work Scope
			Investigate issues related to productivity improvement through hearings with local companies Investigate new technologies that can create value with COVID-19 pandemic through hearings with local companies
10		Writing a "country report"	Summarize the survey contents of [Task 2] as "country report" for each country
11		Identification of sectoral vulnerabilities and consideration of support measures	Definition and analysis of vulnerabilities. Review of industrial development plans, SME development plans, etc., in each country. Consideration of countermeasures and support measures to overcome vulnerabilities.
12	【Task 4】	Development of hypothesis on how development cooperation should be	Development of hypotheses on possible countermeasures to overcome each vulnerability in accordance with the Ministry of Foreign Affairs' national development cooperation policy / business development plan and JICA's PDM The priority of cooperation needs will be established in each country
13		Writing "sectoral hypothesis reports"	Write a "Sectoral Hypothesis Report" by summarizing the survey results of [Task 4]
14	【Task 5】	Visit international / regional organizations and government agencies of each country to collect additional information related to [Task 2] and [Task 4] and exchange opinions on how development cooperation should be	
15	【Task 6/7/8】	Advise on the selection, implementation and closing of pilot projects from the perspective of the "private sector"	
16	【Task 9】	Prepare the necessary materials for the expert meeting and present the survey for the sector in charge.	
17	【Task 10】	Development "policy recommendations" for the sector in charge.	
18	【Task 11】	Write academic papers and other documents for the sector in charge.	

Source: Study Team

9.4 Collecting Basic Information on 23 Target Countries

9.4.1 Data Collected and Analyzed

Statistical information was collected in the 23 target countries by using public information from ECLAC, ILO, and statistical institutions, etc., in each country. The collected data and results are shown in Table 9-3.

Table 9-3 Results of Collection of Private Sector Macroeconomic Indicators

No	Survey Item	Result
1	Industrial composition	
1.2	Additional value by sector / company size	○ (Sector only)
1.3	Number of companies by sector / company size	△ (Classification is different at each country. Data accuracy is doubtful. Data by company size is limited.)
1.4	Number of workers by sector / company size	△ (Classification is different at each country. Sector only. Data by company size is limited.)
2	Employment	
2.1	Unemployment rate	○
2.2	Youth unemployment rate	○
2.3	Women unemployment rate	○
2.4	Number and percentage of informal workers	○
2.5	Average wages by sector / company size	△ (Collectable only in some countries.)
3	Economy	
3.1	Inflation rate	○
3.2	Forex rate	○
3.3	Scale of the informal economy	△ (Collectable only in some countries.)
3.4	Rating by private sector	○
4	Trade	
4.1	Import value	△ (Collectable only in some countries.)

No	Survey Item	Result
4.2	Export value	△ (Collectable only in some countries.)
5	Productivity	
5.1	GDP per person employed	○

Note: ○ means that the data was available in many countries, and △ means that the data was not available in many countries.

Source: Study Team

9.4.2 Analysis of Sectoral Indicators

JICA's pillars in the private sector are trade and investment promotion and SME promotion.¹ Therefore, in this survey, the indicators in these two fields were compared. Emphasis was placed on comparisons before and after the second quarter of 2020 or 2020 when the impact of COVID-19 became apparent, as well as comparisons between countries.

(1) Trade / Investment Promotion

To identify the impact of COVID-19 on trade, this study examined the quarterly import and export volume for the region. The data published by the World Trade Organization (WTO) provided information before and after COVID-19 for 7 of the 23 countries surveyed (Mexico, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, and Panama). Table 9-4 and Table 9-5 show the export and import volume for each country.

Mexico's imports and exports volumes are outstandingly large, showing its high importance as a production base for the North American market. On the other hand, Panama, which mainly relies on the service industry, is characterized by a lower export volume than the other five countries except Mexico. The other five countries do not have an insignificant difference in both imports and exports.

Table 9-4 Import Volume Around COVID-19

		(Million USD)						
Country	Quarter	2014	2015	2016	2017	2018	2019	2020
Costa Rica	First Quarter	2,860	2,376	2,501	2,614	2,823	2,813	3,262
	Second Quarter	3,019	2,509	2,787	2,851	2,994	2,979	2,684
	Third Quarter	2,830	2,280	2,516	2,642	2,804	2,924	2,987
	Fourth Quarter	2,541	2,257	2,556	2,662	2,723	2,997	3,240
Dominican Republic	First Quarter	2,380	2,266	2,254	2,414	2,587	2,655	2,708
	Second Quarter	2,538	2,506	2,490	2,609	2,833	2,816	2,064
	Third Quarter	2,546	2,473	2,619	2,475	2,775	2,805	2,723
	Fourth Quarter	2,435	2,198	2,477	2,638	2,713	2,942	2,860
El Salvador	First Quarter	1,297	1,435	1,299	1,438	1,482	1,466	1,454
	Second Quarter	1,386	1,405	1,468	1,448	1,565	1,568	743
	Third Quarter	1,360	1,402	1,375	1,502	1,470	1,506	1,382
	Fourth Quarter	1,258	1,266	1,278	1,373	1,387	1,403	1,452
Guatemala	First Quarter	2,677	2,769	2,617	2,914	2,848	2,815	3,047
	Second Quarter	2,777	2,823	2,730	2,828	2,721	2,823	2,497
	Third Quarter	2,706	2,658	2,563	2,634	2,584	2,753	2,808
	Fourth Quarter	2,643	2,427	2,537	2,614	2,617	2,784	3,215
Honduras	First Quarter	2,002	2,172	1,968	2,260	2,290	2,195	2,163
	Second Quarter	2,202	2,263	2,216	2,344	2,261	2,296	1,443
	Third Quarter	1,984	1,961	1,908	2,166	2,129	2,212	2,092
	Fourth Quarter	1,929	1,831	1,869	1,887	1,906	2,015	2,035
Mexico	First Quarter	90,759	90,461	85,147	94,711	105,297	108,095	108,522
	Second Quarter	101,870	97,977	93,746	102,659	113,879	119,268	74,531
	Third Quarter	101,121	95,890	94,920	101,853	113,988	116,370	111,189
	Fourth Quarter	103,162	96,222	100,135	110,209	117,549	116,970	123,428
Panama	First Quarter	187	168	145	154	170	155	523
	Second Quarter	215	181	179	180	201	218	275
	Third Quarter	220	187	169	172	160	639	506
	Fourth Quarter	188	160	143	154	142	492	422

Source: WTO

¹ https://www.jica.go.jp/activities/issues/private_sec/index.html

Table 9-5 Import Volume Around COVID-19

(Million USD)

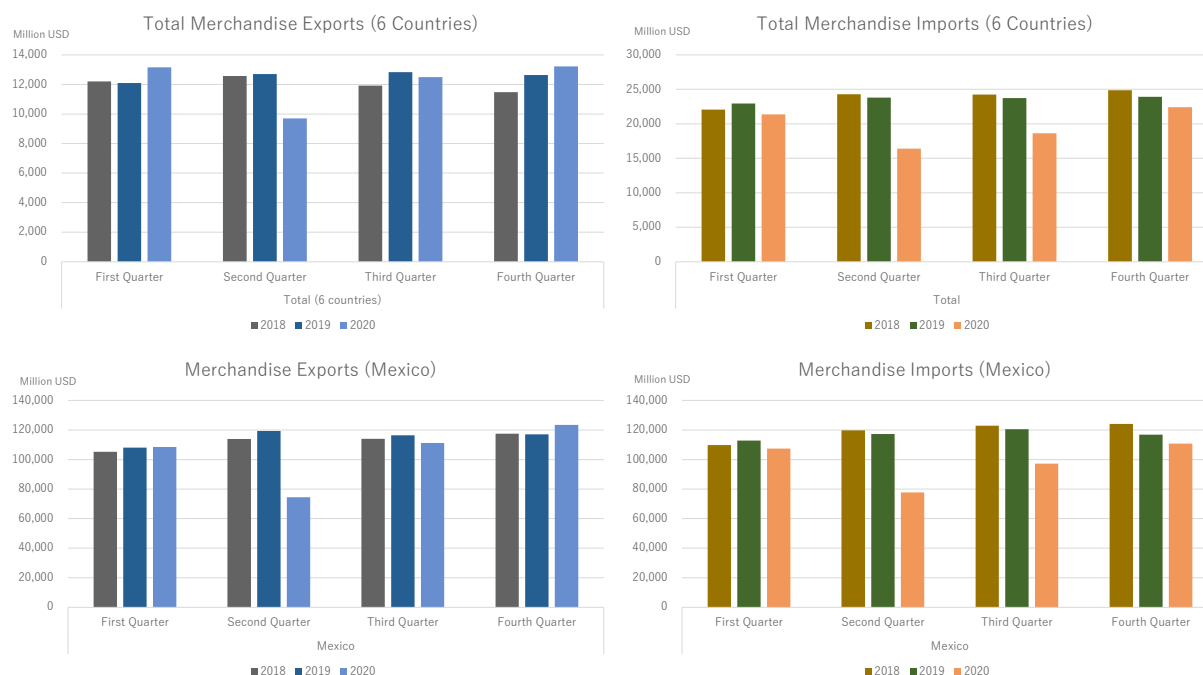
Country	Quarter	2014	2015	2016	2017	2018	2019	2020
Costa Rica	First Quarter	4,527	3,662	3,728	4,145	4,285	4,423	4,041
	Second Quarter	4,366	3,787	4,121	4,185	4,624	4,338	3,394
	Third Quarter	4,263	4,562	3,657	4,037	4,623	4,288	3,401
	Fourth Quarter	4,353	4,262	3,950	4,429	4,756	4,525	4,106
Dominican Republic	First Quarter	3,976	3,935	3,870	4,186	4,599	4,791	4,588
	Second Quarter	4,475	4,282	4,360	4,356	5,066	5,133	3,522
	Third Quarter	4,428	4,383	4,523	4,377	5,197	5,258	4,062
	Fourth Quarter	4,394	4,307	4,645	4,816	5,347	5,107	4,915
El Salvador	First Quarter	2,626	2,534	2,325	2,491	2,693	2,905	2,830
	Second Quarter	2,761	2,599	2,561	2,616	3,055	3,071	2,065
	Third Quarter	2,545	2,617	2,446	2,644	3,074	3,039	2,617
	Fourth Quarter	2,582	2,543	2,494	2,821	3,008	3,003	3,081
Guatemala	First Quarter	4,380	4,184	3,932	4,387	4,474	4,772	4,738
	Second Quarter	4,632	4,424	4,341	4,412	5,129	4,923	3,953
	Third Quarter	4,625	4,632	4,289	4,582	4,973	5,020	4,380
	Fourth Quarter	4,645	4,399	4,439	5,007	5,122	5,167	5,134
Honduras	First Quarter	2,554	2,853	2,470	2,672	2,801	2,897	2,728
	Second Quarter	2,849	2,873	2,692	2,811	3,173	2,919	1,920
	Third Quarter	2,893	2,760	2,757	3,022	3,172	3,010	2,382
	Fourth Quarter	2,756	2,690	2,641	2,904	3,104	3,000	2,841
Mexico	First Quarter	94,737	94,986	91,482	100,221	109,828	112,826	107,494
	Second Quarter	103,826	102,542	99,417	105,789	119,679	117,252	77,699
	Third Quarter	105,842	105,188	102,878	110,980	122,940	120,505	97,304
	Fourth Quarter	107,176	102,566	103,744	115,190	124,099	116,759	110,750
Panama	First Quarter	3,111	2,972	2,623	2,915	3,220	3,167	2,452
	Second Quarter	3,451	2,825	2,933	3,071	3,255	3,424	1,550
	Third Quarter	3,457	3,120	2,994	3,234	3,221	3,130	1,793
	Fourth Quarter	3,573	3,220	3,147	3,504	3,536	3,115	2,348

Source: WTO

Figure 9-1 is a graph of the value of imports and exports of Mexico and the other six countries. Since the values of imports and exports in Mexico are extremely large, these are shown in another graph. This shows that in the second quarter of 2020, when the worldwide outbreak of COVID-19 began and strict measures such as the closing of borders and lockdowns were implemented, there was a significant decline in both imports and exports. However, from the third quarter of 2020, the export value has recovered to the level of previous years. This indicates that although exports declined for the entire year of 2020, much of the decline was attributable to the second quarter, and that exports were in fact resilient.

On the other hand, the situation for imports is different. After falling in the second quarter as in the case of exports, it has been gradually recovering in the third and fourth quarters but have not reached the level of previous years. In addition, Table 9-6 shows the trading measures due to COVID-19 in Central America and the Caribbean. The majority of the restrictive measures are on exportation to secure medical and hygienic equipment and provisions, while there are few restrictive measures, such as restriction on border-to-border transit. Rather, there are many facilitating import measures, meaning that in total, the exportation has been limited and the importation promoted.

In summary, the major trading policy during the pandemic has been limiting exportation to secure necessities and facilitating importation to mitigate economic impact. However, the exportation recovered to the level of previous years, while the importation did not. From the above, it is considered that the impact of COVID-19 on the export industry is small, but the stagnation of domestic economic activities and the decline in purchasing power are issues.



*6 countries: Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Panama

Source: Created by the Study Team based on WTO

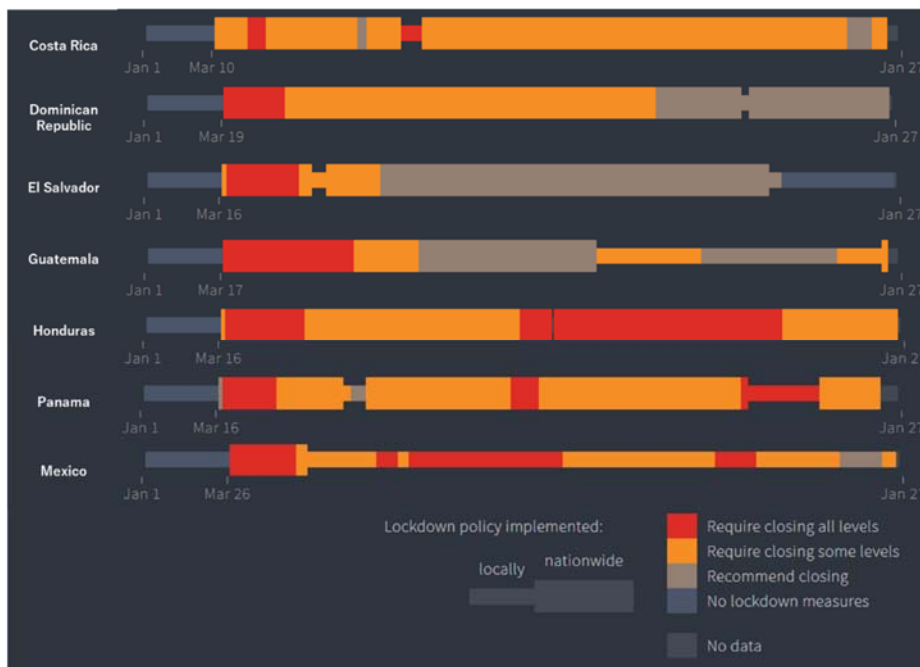
Figure 9-1 Import and Export Value of Central America and Caribbean Region

Table 9-6 Trading measures due to COVID-19 in Central America and the Caribbean

Country	Category	Measures
Costa Rica	Export restriction	Temporary export licensing requirements on certain personal protective equipment (e.g., face masks, gloves)
		Temporary export control requirements on certain personal protective equipment (e.g., face masks, disinfectant) and medical equipment
	Import restriction	Implementation of stringent maximum periods of stay in Costa Rica for road carriers
Updating the maximum periods of authorized stay. For border-to-border transit, truck drivers can stay in the country for a maximum of 72 hours, and, to perform the operations of load and/or unload of merchandise truck drivers can stay in the country for a maximum of 10 days.		
Dominican Republic	Import facilitation	Moratorium on import tariffs
	Import facilitation	Stricter import requirements on ethyl alcohol
	Export facilitation	Temporary exemption of VAT on imports of ethyl alcohol
Temporary elimination of import tariffs on certain personal protective equipment (e.g., gloves, face masks)		
El Salvador	Export restriction	Temporary export ban on certain dried leguminous vegetables
		Amendments introduced in the list of goods subject to import permits, authorization or approval (visado)
	Import facilitation	Temporary elimination of the Central American Common Tariff on imports of certain food products, pharmaceutical products and personal protective equipment. Certain products also exempted from VAT
		Temporary elimination of import tariffs under scarcity quotas on certain products, e.g. on rice in the husk (paddy or rough); on maize (maíz amarillo); and on maize (maíz blanco)
Honduras	Export restriction	Temporary export ban on certain dried leguminous vegetables (frijol rojo en grano)
Jamaica	Import facilitation	Temporary reduction of export fees and charges
Mexico	Import facilitation	Creation of 3 new tariff lines, resulting in the elimination of import tariffs on vaccines essential in combatting COVID-19 and aluminum containers for oxygen
Panama	Import facilitation	Temporary elimination of import tariffs on certain products
Saint Kitts and Nevis	Import facilitation	Temporary elimination of import tariffs on certain products, e.g. vegetables, fruits, fruit juices, cold preparations, vitamins, hand sanitizers, hands sanitizer dispensing machines, rubbing alcohol, gloves, masks, and cleansing or sanitizing wipes. Imports also exempted from VAT

Source: Created by the Study Team based on WTO “COVID-19: Measures affecting trade in services”, 13 Feb 2022

On the other hand, the drop in imports and exports that occurred in the second quarter of 2020 was in response to strong restrictions on action in the early stages of the pandemic (see Figure 9-2), and the recovery in exports does not indicate that the safety from infection in working environment is secured. In addition, labor-intensive industries such as textiles, as pointed out in the chapter of social and economic policy, are vulnerable to restrictions on going out and infection of workers. Therefore, while strengthening export industries will contribute to building a resilient economy, it is also important to promote digitalization, remoteness, and non-contact in their production and distribution processes.



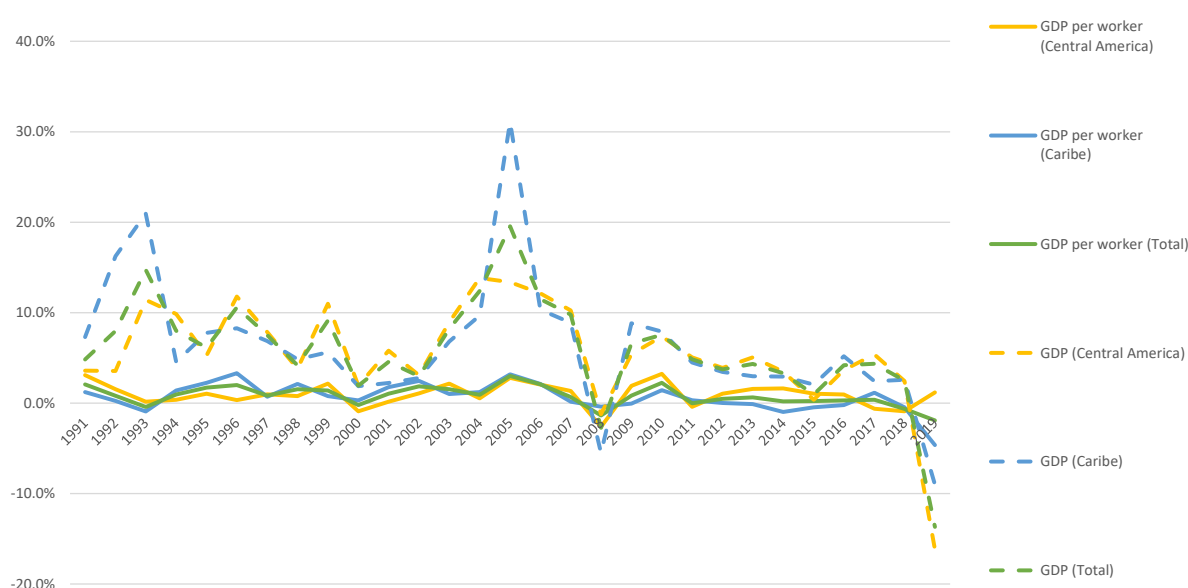
Source: Reuters (Viewed on January 27, 2022)

Figure 9-2 Restrictions on Economic Activity in each Country

(2) SME Promotion

The analysis of macroeconomic indicators for SME promotion is shown in Table 9-3. Comparable data related to SMEs were not collected. Therefore, this study focused on GDP per person employed to understand the situation of productivity and on the creation of stable employment opportunities, which is the objective of SME promotion, comparing the employment and unemployment situation before and after COVID-19.

First, the GDP and GDP per person employed in Central America and the Caribbean are shown in Figure 9-3. The trend that can be read from this figure is that the growth of GDP per person employed is low compared to that of GDP. In other words, GDP growth is realized through an increase in the number of workers, with little contribution from productivity growth. In addition, the growth rates of both GDP and GDP per worker are on a downward trend. In particular, GDP per person employed in the Caribbean has barely grown since 2012. In other words, improving productivity has been a challenge for the region since before COVID-19.



Source: World Bank

Figure 9-3 Growth of GDP and GDP per Person Employed in Central America and the Caribbean

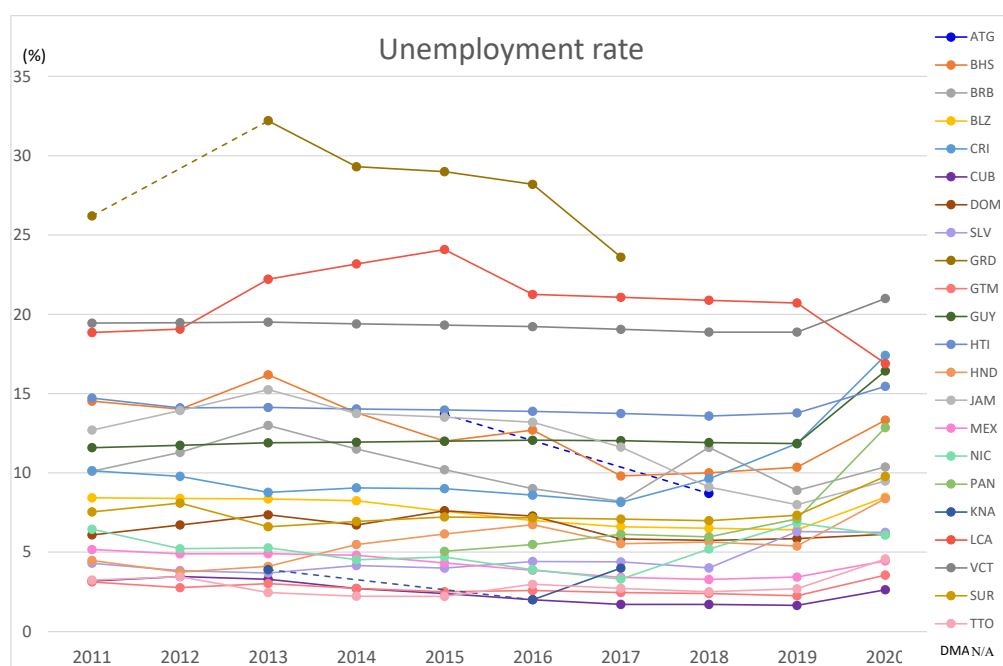
The collected data regarding employment situation were unemployment rate, women unemployment rate, youth unemployment rate, underemployment rate, and informal worker rate. Firstly, the unemployment rate is shown in Table 9-7 and Figure 9-4. This is the unemployment rate for men and women aged 15 and older. Although there are some missing data, data including 2020 for almost all countries were obtained. Island nations such as Grenada, St. Lucia, St. Vincent, and Haiti are showing higher unemployment rates than in the past. Meanwhile, in Panama and Costa Rica, unemployment spiked by more than 5% in 2020 when the effects of COVID-19 became apparent. Other countries, such as Honduras and Bahamas, were also severely affected. There are also differences in the trends before COVID-19; Jamaica, which has been working on economic reforms with the support of IMF, World Bank and IDB since 2013 and has succeeded in attracting business process outsourcing (BPO) companies by leveraging its strength as an English-speaking country, have seen an improvement in unemployment rates in recent years, while Costa Rica and Nicaragua have continued to worsen since 2017.

Table 9-7 2011-2020 Unemployment Rate

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2011-2019)	2019-2020 Increase
Antigua and Barbuda	-	-	-	-	13.7	-	-	8.7	-	-	11.20	-
Bahamas	14.52	14.02	16.18	13.8	12	12.7	9.8	10	10.36	13.32	12.60	2.96
Barbados	10.1	11.3	13	11.5	10.2	9	8.2	11.6	8.9	10.38	10.42	1.48
Belize	8.43	8.39	8.35	8.24	7.58	7	6.6	6.51	6.41	8.46	7.50	2.05
Costa Rica	10.14	9.78	8.77	9.06	9	8.6	8.14	9.63	11.85	17.41	9.44	5.56
Cuba	3.18	3.46	3.29	2.7	2.4	2	1.7	1.7	1.64	2.62	2.45	0.98
Dominica	-	-	-	-	-	-	-	-	-	-	-	0.00
Dominican Republic	6.09	6.72	7.35	6.72	7.61	7.28	5.83	5.74	5.85	6.13	6.58	0.28
El Salvador	4.3	3.84	3.69	4.15	4	4.42	4.39	4.01	6.3	6.25	4.34	-0.05
Grenada	26.2	-	32.2	29.3	29	28.2	23.6	-	-	-	28.08	0.00
Guatemala	3.12	2.77	3.02	2.72	2.51	2.58	2.46	2.4	2.25	3.55	2.65	1.30
Guyana	11.59	11.74	11.9	11.94	12	12.06	12.04	11.91	11.85	16.43	11.89	4.58
Haiti	14.72	14.1	14.13	14.03	13.97	13.88	13.74	13.59	13.78	15.45	13.99	1.67
Honduras	4.47	3.75	4.1	5.49	6.15	6.73	5.53	5.65	5.39	8.37	5.25	2.98
Jamaica	12.7	13.93	15.25	13.74	13.51	13.19	11.63	9.1	8	9.48	12.34	1.48
Mexico	5.17	4.89	4.91	4.81	4.31	3.86	3.42	3.28	3.43	4.45	4.23	1.02
Nicaragua	6.45	5.21	5.28	4.52	4.7	3.9	3.3	5.2	6.84	6.08	5.04	-0.76

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2011-2019)	2019-2020 Increase
Panama	-	-	-	-	5.05	5.49	6.13	5.96	7.1	12.85	5.95	5.75
Saint Kitts and Nevis	-	-	3.9	-	-	2	4	-	-	-	3.30	0.00
Saint Lucia	18.86	19.06	22.21	23.18	24.09	21.26	21.07	20.88	20.71	16.89	21.26	-3.82
Saint Vincent and the Grenadines	19.45	19.47	19.51	19.39	19.32	19.22	19.05	18.88	18.88	21.00	19.24	2.12
Suriname	7.54	8.1	6.6	6.94	7.22	7.17	7.08	6.99	7.33	9.78	7.22	2.45
Trinidad and Tobago	3.25	3.45	2.46	2.22	2.21	2.97	2.71	2.5	2.69	4.57	2.72	1.88

Source: ILO



Source: Created based on ILO

Figure 9-4 2011-2020 Unemployment Rate

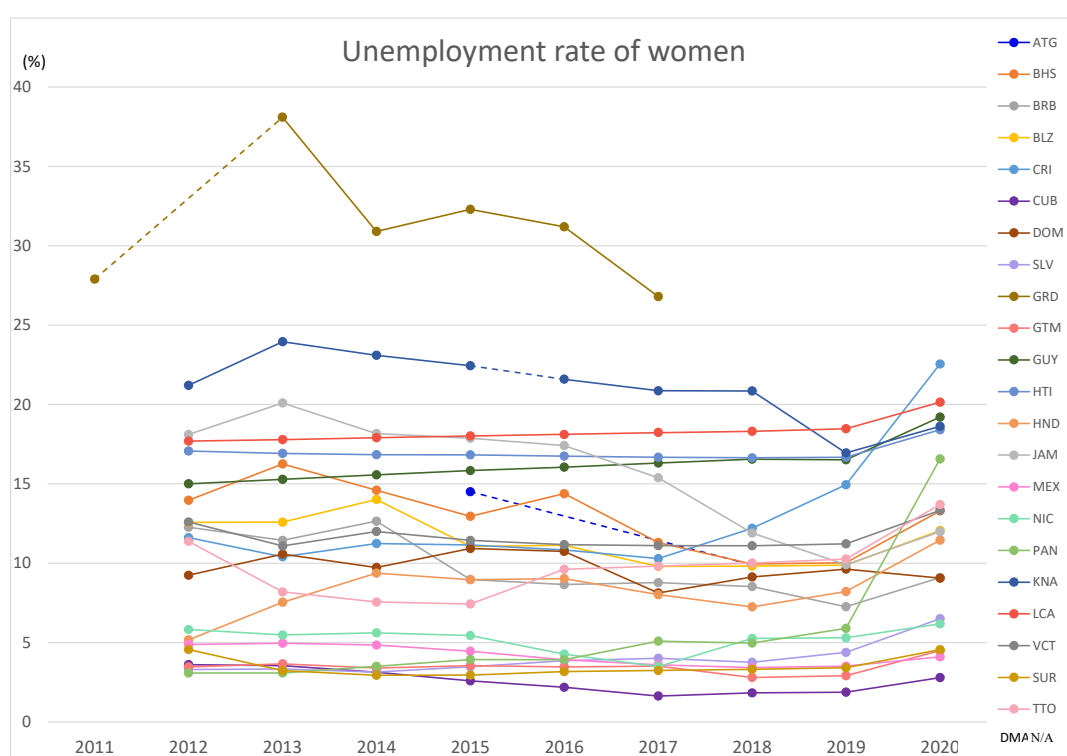
Table 9-8 and Figure 9-5 show the transition of the women unemployment rate from 2011 to 2020. Comparing between 2019 and 2020, Panama was most impacted, recording increase by more than 10%. Also in other countries, the women unemployment rate highly increased in 2020. Grenada, Saint Lucia, St. Vincent, and Haiti have high women unemployment rates as well as unemployment rates. Also, Guyana and Jamaica have high women unemployment rate. On the other hand, Costa Rica's transition in women unemployment rates is distinctive. It was 10.29% in 2017, average level in the region, but continued to deteriorate sharply to 12.19% in 2018 and 14.94% in 2019, reaching 22.56% in 2020 after COVID-19. Although there are positive signs, such as Jamaica, where the women unemployment rate is steadily declining and countries such as Cuba, Guatemala and Mexico, where unemployment rates remain low, women unemployment rates are higher than their total unemployment rates in general.

Table 9-8 2011-2020 Women's Unemployment Rate

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2011-2019)	2019-2020 Increase
Antigua and Barbuda					14.50			9.90			12.20	
Bahamas		13.97	16.26	14.60	12.95	14.38	11.30	9.95	10.04	13.29	12.93	3.26
Barbados		12.27	11.43	12.65	8.97	8.65	8.78	8.54	7.27	9.09	9.82	1.83
Belize		12.58	12.58	14.01	11.06	11.13	9.81	9.82	9.87	12.06	11.36	2.19
Costa Rica		11.61	10.40	11.24	11.15	10.84	10.29	12.19	14.94	22.56	11.58	7.62
Cuba		3.62	3.55	3.14	2.58	2.18	1.64	1.83	1.87	2.79	2.55	0.92
Dominica												0.00
Dominican Republic		9.24	10.57	9.73	10.92	10.75	8.13	9.13	9.63	9.06	9.76	-0.58
El Salvador		3.30	3.33	3.14	3.48	3.85	4.01	3.75	4.38	6.50	3.66	2.13

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2011-2019)	2019-2020 Increase
Grenada	27.9		38.10	30.90	32.30	31.20	26.80				31.20	0.00
Guatemala		3.47	3.66	3.39	3.54	3.46	3.52	2.81	2.92	4.48	3.34	1.57
Guyana		15.01	15.29	15.57	15.83	16.06	16.32	16.56	16.51	19.20	15.89	2.69
Haiti		17.07	16.92	16.84	16.82	16.76	16.68	16.64	16.68	18.41	16.80	1.73
Honduras		5.17	7.54	9.38	8.96	9.03	8.02	7.24	8.22	11.45	7.94	3.24
Jamaica		18.10	20.09	18.17	17.88	17.41	15.38	11.90	9.91	11.98	16.11	2.07
Mexico		4.88	4.95	4.85	4.45	3.91	3.60	3.43	3.52	4.10	4.20	0.58
Nicaragua		5.82	5.47	5.62	5.45	4.28	3.49	5.26	5.30	6.17	5.08	0.87
Panama		3.08	3.08	3.50	3.93	3.91	5.09	4.96	5.89	16.57	4.18	10.68
Saint Kitts and Nevis		21.20	23.95	23.11	22.44	21.59	20.87	20.86	16.94	18.62	21.37	1.68
Saint Lucia		17.69	17.79	17.91	18.02	18.11	18.24	18.31	18.47	20.15	18.07	1.68
Saint Vincent and the Grenadines		12.60	11.08	12.00	11.44	11.17	11.11	11.09	11.21	13.33	11.46	2.12
Suriname		4.56	3.24	2.93	2.95	3.16	3.24	3.32	3.41	4.56	3.35	1.15
Trinidad and Tobago		11.38	8.19	7.56	7.43	9.62	9.82	10.01	10.26	13.70	9.28	3.44

Source: ILO, The Global Economy (only for Antigua and Barbuda and Grenada)



Source: Created based on ILO and The Global Economy (only for Antigua and Barbuda)

Figure 9-5 2011-2020 Women Unemployment Rate

Table 9-9 and Figure 9-6 show changes in the youth (15-24 years old) unemployment rate. Grenada, St. Vincent, St. Lucia and Haiti have high unemployment rates. Similar to the women unemployment rate, Costa Rica's youth unemployment rate has also deteriorated sharply in recent years, from 25.89% in 2017 to 26.19% in 2018, 36.66% in 2019, and 50.23% in 2020, which is after COVID-19. Meanwhile, Panama's youth unemployment rate has been worsening for a long time, increasing from 17.45% in 2019 to 44.85% in 2020, an increase of 27.40% before and after COVID-19. Also, as with the women unemployment rate, the youth unemployment rate is higher than the total unemployment rate in general.

Table 9-9 2011-2020 Youth Unemployment Rate

Country	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2011-2019)	2019-2020 Increase
Antigua and Barbuda											
Bahamas	32.36	37.35	33.44	29.57	32.83	28.14	27.45	27.77	33.90	31.11	3.38

Country	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2011-2019)	2019-2020 Increase
Barbados	32.48	31.61	37.27	29.59	27.72	25.40	23.94	20.84	24.21	28.61	3.38
Belize	26.47	26.60	29.38	25.97	26.43	25.89	26.19	26.68	31.32	26.70	3.38
Costa Rica	27.46	25.88	30.01	26.78	28.47	25.98	32.14	36.66	50.23	29.17	13.57
Cuba	7.78	7.76	6.95	5.83	4.98	3.79	4.28	4.43	5.96	5.72	1.54
Dominica											
Dominican Republic	19.71	27.08	20.76	24.18	25.78	19.59	22.97	22.97	20.79	22.88	-2.18
El Salvador	9.27	10.38	9.24	10.05	10.08	12.33	11.70	12.94	17.16	10.75	4.22
Grenada											
Guatemala	6.59	5.88	8.46	9.98	8.24	8.09	7.09	5.84	8.14	7.52	2.29
Guyana	30.62	31.06	31.53	32.05	32.62	33.33	34.08	34.35	39.27	32.46	4.93
Haiti	41.63	41.35	41.22	41.25	41.22	41.17	41.15	41.36	44.26	41.29	2.90
Honduras	12.50	15.68	17.64	19.53	20.94	17.19	15.86	17.51	22.86	17.11	5.35
Jamaica	43.76	49.55	45.66	42.66	39.13	35.69	30.88	26.97	30.82	39.29	3.84
Mexico	10.27	10.67	10.62	9.90	8.63	7.92	7.56	7.95	8.61	9.19	0.66
Nicaragua	11.33	11.87	13.46	13.23	10.52	8.70	13.27	13.63	15.34	12.00	1.72
Panama	8.90	8.82	8.75	11.93	10.08	14.95	15.26	17.45	44.85	12.02	27.40
Saint Kitts and Nevis											
Saint Lucia	40.02	45.60	44.64	44.02	43.18	42.60	39.32	33.06	35.86	41.56	2.80
Saint Vincent and the Grenadines	37.66	38.05	38.52	38.94	39.07	39.31	39.46	39.81	42.77	38.85	2.96
Suriname	30.62	30.42	30.00	20.88	37.62	37.60	37.67	38.23	43.59	32.88	5.36
Trinidad and Tobago	10.23	7.85	7.70	6.76	8.32	8.57	8.81	9.07	11.02	8.41	1.95

Source: ILO



Source: Created based on ILO

Figure 9-6 2011-2020 Youth Unemployment Rate

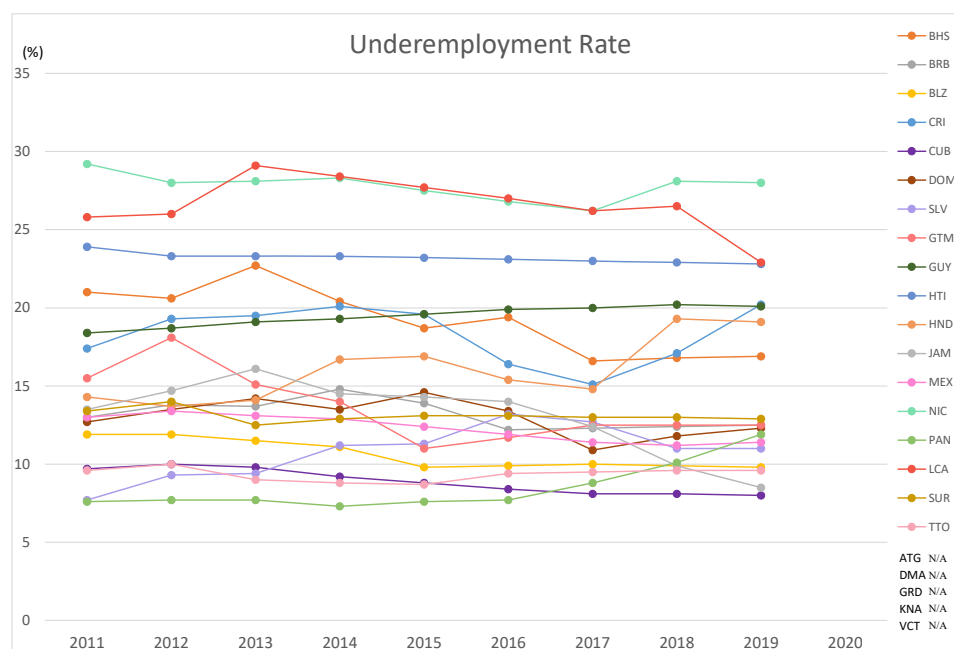
Table 9-10 and Figure 9-7 show the underemployment rate in each country. Data for some parts of the east Caribbean islands are not available, and data for 2020 adequate for comparison were not available. Saint Lucia (22.9% in 2019) and Haiti (22.8% in 2019) have high underemployment rates as well as unemployment rates. Also, in Central America, Nicaragua (28% in 2019 and 28.1% in 2018) has the highest underemployment rate in the region, and Central American countries such as Costa Rica (20.2% in 2019) and Honduras (19.1%) also have high values. Meanwhile Jamaica's underemployment rate has been declining steadily in recent years, as well its unemployment rate. In Panama and Costa Rica, the underemployment rate has increased since 2017. This trend coincides with the deterioration of the unemployment rate in both countries.

Table 9-10 2011-2020 Underemployment Rate

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2011-2019)
Antigua and Barbuda	-	-	-	-	-	-	-	-	-	-	-
Bahamas	21	20.6	22.7	20.4	18.7	19.4	16.6	16.8	16.9	-	19.23
Barbados	13	13.8	13.7	14.8	13.9	12.2	12.3	12.4	12.5	-	13.18
Belize	11.9	11.9	11.5	11.1	9.8	9.9	10	9.9	9.8	-	10.64
Costa Rica	17.4	19.3	19.5	20.1	19.6	16.4	15.1	17.1	20.2	-	18.30
Cuba	9.7	10	9.8	9.2	8.8	8.4	8.1	8.1	8	-	8.90
Dominica	-	-	-	-	-	-	-	-	-	-	-
Dominican Republic	12.7	13.5	14.2	13.5	14.6	13.4	10.9	11.8	12.3	-	12.99
El Salvador	7.7	9.3	9.4	11.2	11.3	13.2	12.7	11	11	-	10.76
Grenada	-	-	-	-	-	-	-	-	-	-	-
Guatemala	15.5	18.1	15.1	14	11	11.7	12.5	12.5	12.5	-	13.66
Guyana	18.4	18.7	19.1	19.3	19.6	19.9	20	20.2	20.1	-	19.48
Haiti	23.9	23.3	23.3	23.3	23.2	23.1	23	22.9	22.8	-	23.20
Honduras	14.3	13.7	14.1	16.7	16.9	15.4	14.8	19.3	19.1	-	16.03
Jamaica	13.5	14.7	16.1	14.5	14.3	14	12.4	9.9	8.5	-	13.10
Mexico	13	13.4	13.1	12.9	12.4	11.9	11.4	11.2	11.4	-	12.30
Nicaragua	29.2	28	28.1	28.3	27.5	26.8	26.2	28.1	28	-	27.80
Panama	7.6	7.7	7.7	7.3	7.6	7.7	8.8	10.1	11.9	-	8.49
Saint Kitts and Nevis	-	-	-	-	-	-	-	-	-	-	-
Saint Lucia	25.8	26	29.1	28.4	27.7	27	26.2	26.5	22.9	-	26.62
Saint Vincent and the Grenadines	-	-	-	-	-	-	-	-	-	-	-
Suriname	13.4	14	12.5	12.9	13.1	13.1	13	13	12.9	-	13.10
Trinidad and Tobago	9.6	10	9	8.8	8.7	9.4	9.5	9.6	9.6	-	9.36

Note: Underemployed refers to all employees who meet the following three criteria during the period:
 a) Willing to work additional hours.
 b) Are available and ready to do additional work if given the opportunity to do so.
 c) Working hours are shorter than the threshold for working hours in the country.

Source: ILO



Source: Created based on ILO

Figure 9-7 2011-2020 Underemployment Rate

Finally, Table 9-11 and Figure 9-8 show changes in the informal worker rate in each country. Due to the large amount of missing data and the differences in definitions and calculation methods among sources, it is difficult to make comparisons across the region, and only a few countries can track trends over several years. The only countries for which data for several years were available are the Central American countries such as Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Panama,

and the Dominican Republic, while data for the Caribbean countries were almost unavailable. The informal labor rate is not clear in the Caribbean countries where unemployment is chronically high. For the countries where data are available, there is a rather negative correlation between the unemployment rate and the informal labor rate, such that the informal labor rate is higher in Guatemala and El Salvador, where the unemployment rate is kept low (Figure 9-9).

Table 9-11 2011-2020 Informal Worker Rate

Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average (2011-2019)	Source
Antigua and Barbuda	-	-	-	-	-	-	-	-	-	-	
Bahamas	-	-	-	-	-	-	-	-	-	-	
Barbados	-	-	-	-	-	62.2	-	-	-	62.20	ILO
Belize	-	-	-	-	-	-	-	-	-	-	
Costa Rica	34.7	36.8	38.8	38.8	39.7	37.9	38.2	37.8	38.8	37.94	ECLAC
Cuba	-	-	-	-	-	-	-	-	-	-	
Dominica	-	-	-	-	-	-	-	-	-	-	
Dominican Republic	56.2	56.3	55.9	54.2	56.3	56.3	57.2	56.8	54.3	55.94	ECLAC
El Salvador	72.6	72.6	71.4	69.3	69.1	69.5	70.2	68.5	69.1	70.26	ILO
Grenada	-	-	-	-	-	-	-	-	-	-	
Guatemala	81.2	82.7	80.5	78.1	79.2	79.2	80.1	80.6	79	80.07	ECLAC
Guyana	-	-	-	-	-	-	-	46.73-51.44	-	-	ILO
Haiti	-	91.5	-	-	-	-	-	-	-	91.50	ILO
Honduras	81.9	83.7	93	91.7	88.8	90.2	82.6	-	-	87.41	ILO
Jamaica	-	-	-	-	-	-	-	-	-	-	
Mexico	59.41	59.62	58.78	57.84	57.85	57.3	56.99	56.69	56.49	57.89	INEGI
Nicaragua	-	81.8	-	-	-	-	-	-	-	81.80	ECLAC
Panama	46.5	47	47.9	48	47.8	48.5	49.4	51.4	44.9	47.93	ECLAC
Saint Kitts and Nevis	-	-	-	-	-	-	-	-	-	-	
Saint Lucia	-	-	-	-	-	-	31.7	33.1	31.9	32.23	ECLAC
Saint Vincent and the Grenadines	-	-	-	-	-	-	-	-	-	-	
Suriname	-	-	-	-	-	52.1	-	-	-	52.10	ILO
Trinidad and Tobago	-	-	-	-	-	-	-	-	-	-	

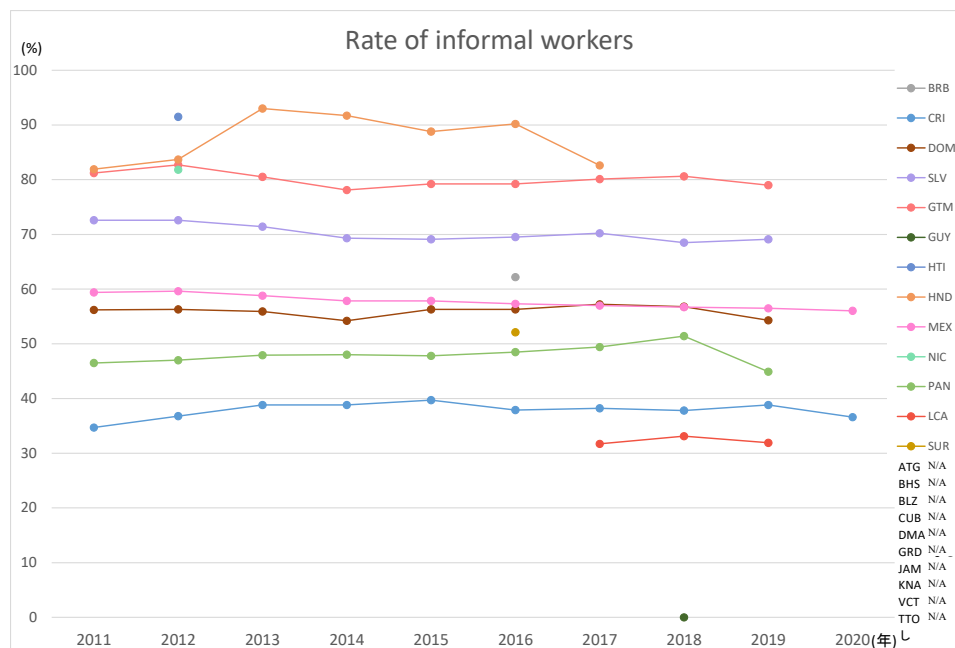
Note: The definition of informal labor is as below.

ECLAC: A person whose primary or secondary work belongs to any of the following categories: self-employed and producers' association members working in their own informal sector enterprises; self-employed persons who produce goods for own use only; family workers; workers in informal jobs or domestic workers. (Informal work is defined as work that is not, by law or custom, subject to national labor laws, income taxes, social security, or employment benefits.)

ILO: Workers who do not have protection under the national labor laws, including social security, annual leave, paid sick leave, etc.; employers, producers' association members and self-employed workers, and family workers in production units that are considered informal.

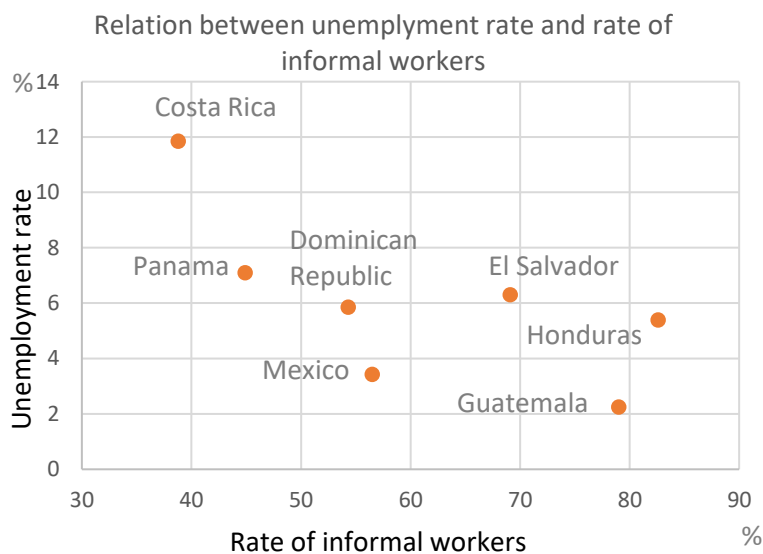
INEGI: Workers, whether independent or non-independent, who are unable to access the appropriate legal and institutional framework.

Source: ECLAC, ILO, INEGI



Source: Created from ECLAC, ILO, INEGI

Figure 9-8 2011-2020 Informal Worker Rate



Source: Created from ECLAC, ILO, INEGI

Figure 9-9 Relationship between Unemployment Rate and Informal Worker Rate

9.4.3 Evaluation of Various Policies Related to COVID-19 Taken by the Government

Table 9-12 summarizes the measures for the private sector from the COVID-19 measures of each country obtained from ECLAC's "COVID-19 Observatory". In this section, an overview of all the surveyed countries will be presented. The content and effects of policies will be analyzed only in priority countries.

In many countries, policies are implemented to temporarily mitigate the economic impact on SMEs and citizens, such as loans and deferment of debt payments for SMEs, deferment of debt payments for individuals, and unemployment and leave benefits. In contrast, there are few cases of capacity building and employment support (bold-type in Table 9-12). Table 9-13 shows these examples. There are many examples of assistance for women and young people, and the background is considered to be the poor employment situation as expressed in the relatively high unemployment rate for women and young people as mentioned above, and the accompanying severe impact of COVID-19.

Table 9-12 Private Sector Policies Taken by Each Country

Country	For SMEs					For Individuals				
	Subsidy	Lending	Deferment of payments	Tax reduction/exemption/and deferment	Capacity building	Subsidy	Lending	Deferment of payments	Unemployment and leave benefits	Employment support/capacity development
Antigua and Barbuda										
Bahamas		○							○	
Barbados		○						○	○	
Belize		○	○						○	
Costa Rica	○	○		○	○	○		○	○	○
Cuba									○	○
Dominica		○		○				○	○	
Dominican Republic		○	○	○		○	○	○	○	
El Salvador		○				○	○			
Grenada	○	○				○	○	○		
Guatemala		○				○	○		○	○
Guyana	○		○		○			○		
Haiti										
Honduras		○								○
Jamaica	○	○					○		○	
Mexico	○	○	○			○	○	○		○
Nicaragua			○	○						○
Panama		○	○			○		○		
Saint Kitts and Nevis										
Saint Lucia			○					○	○	
Saint Vincent and the Grenadines	○									
Suriname										
Trinidad and Tobago		○		○				○		

Source: Created based on ECLAC

Table 9-13 COVID-19 Examples of Capacity Building and Employment Support

Country	Measures	Case Study
Costa Rica	SEM capacity building	Alivio An initiative announced by the Trade and Investment Promotion Institute (PROCOMER), Development Banking System (SBD), National Capabilities Organization (INA) to mitigate the effects of pandemic. About 191 SMEs were selected and supported in three phases: stabilization, reorientation, and acceleration. The target companies reported 17% increase in the number of full-time workers, 26% increase in average monthly sales, and 12% increase in export volume. PROCOMER has developed training sessions for exporters to prepare for the economic crisis.
	Employment support / capacity development	Mujer y Negocios 2020 Provide capacity building, consultation, technical cooperation and parallel services for women entrepreneurs. From September 2020, workshops will be conducted to strengthen business capacity during the sanitation crisis.
Cuba	Employment support / capacity development	Proyecto Espumás Launched community laundry service to provide alternative employment opportunities.
Guatemala	Employment support / capacity development	Emprendi2 A project to develop innovative competitiveness announced by the National Youth Conference (Conjuve). Part of the Urban Governance Project (UMG) funded by the United States Agency for International Development (USAID).
Guyana	SEM capacity building	Provide small businesses with (1) subsidies and (2) training and development to help them establish and market their business, diversify their business, and build supply partnerships through online platforms.

Country	Measures	Case Study
Honduras	Employment support / capacity development	Opportunities for all An initiative by the Ministry of Development and Social Inclusion, with an investment of 23 million lempira. It aims to create and promote opportunities for entrepreneurship among people with disabilities.
Mexico	Employment support / capacity development	Jóvenes Construyendo el Futuro Organize virtual courses and seminars to strengthen the capacity of the youth and tutors of the program. The program targets unemployed youth between the ages of 18 and 29, and connects them with companies, workshops, and institutions that strengthen their employment skills. They will receive 3,748 pesos per month and medical insurance for the duration of their empowerment. The new courses and seminars are specifically targeted at those who lost their jobs due to the pandemic and affected businesses.
Nicaragua	Employment support / capacity development	Programas de Promoción de los Emprendimientos en el Campo Generated 17,940 new jobs and 3,588 startups mostly by women. Mujer Creativa Emprendedora Maintaining access to loans for women entrepreneurs and opening capacity building spaces for women entrepreneurs.

Source Created based on ECLAC

9.4.4 Trends in Development Partners

In the Central America and Caribbean regions, international and regional organizations such as the World Bank, United Nations, Inter-American Development Bank (IDB), and Economic Commission for Latin America and the Caribbean (CEPAL/ECLAC) are active and have published reports on the impact of COVID-19 on the private sector. The main publications are listed in Table 9-14.

Table 9-14 Major Publications of Development Partners in Central America and the Caribbean

No.	Date of Publication	Publisher	Title
1	2021	World Bank	Desatando el potencial de crecimiento de América Central (Releasing the Potential for Growth in Central America)
2	2021	IDB	Opportunities for Stronger and Sustainable Post-pandemic Growth
3	2021	World Bank	Employment in Crisis – The Path to Better Jobs in a Post-COVID-19 Latin America
4	2021	UNDP	Trapped: High Inequality and Low Growth in Latin America and the Carib
5	2021	CEPAL/ECLAC	Análisis de las políticas de apoyo a las pymes para enfrentar la pandemia de COVID-19 en América Latina (An Analysis of Policies to Support SMEs in Response to the COVID-19 Pandemic in Latin America)

Source: Study Team

“Releasing the Potential for Growth in Central America” provides a macroeconomic analysis and recommendations on the productivity growth needed for economic growth in six Central American countries (Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, and Panama). While these countries experienced economic growth between 1991 and 2017, most of that growth was due to labor force growth, with productivity growth contributing less. Total productivity growth in the region was negative, with only Costa Rica and Panama growing, but by only 0.5% per year. The report states that the productivity growth needed for future economic growth will require participation in global value chains, a shift to exports of sophisticated goods and services, and investment in productivity growth by companies. To achieve this, the government is required to reduce trade costs at the border, loosen restrictions on foreign direct investment in advanced services, and invest in human capital and infrastructure. As for the impact of COVID-19, while there will be a negative impact in terms of limiting public investment due to financial pressures, there will also be a positive impact in terms of increasing opportunities for Central America as an export base for the North American market due to the regionalization of global value chains.

CEPAL has summarized the COVID-19 measures taken by each country, and based on the information collected and interviews with stakeholders, An Analysis of Policies to Support SMEs in Response to the COVID-19 Pandemic in Latin America ("*Análisis de las políticas de apoyo a las pymes para enfrentar la pandemia de COVID-19 en América Latina*") was published. In this study, COVID-19 measures to support SMEs are divided into four categories: (1) securing short-term liquidity, (2)

protecting employment, (3) supporting production, and (4) improving access to credit. As a result of these analyses, the following issues have been pointed out: insufficient government funding for demand, difficulty in scoping out recipients of support, administrative costs of support, and inability to deliver support to necessary targets. In addition, support for digital technology introduction, promotion of formalization of companies, and biosecurity were cited as important areas for economic resumption.

9.4.5 Country Development Policy

In the Ministry of Foreign Affairs and JICA's Country Development Cooperation Policy, the private sector is listed as a priority area in five countries: Costa Rica, El Salvador, Mexico, Jamaica, and Dominican Republic. An overview of each is shown in Table 9-15.

Table 9-15 Country Development Policy in Private Sector

Country	ODA Basic Policy (Major Goals)	Priority Sector (Medium Targets)
Costa Rica	Support for sustainable development with focus on the environmental sector	(2) Correction of disparities Costa Rica faces the challenge of continuing to promote high value-added manufacturing, services, agriculture, forestry, and fisheries to achieve sustainable growth. In particular, it is necessary to provide cooperation in fostering SMEs, which account for 98% of domestic enterprises, improving technology, and strengthening international cooperation.
El Salvador	Support for self-sustaining and sustainable development	(1) Economic revitalization and expansion of employment opportunities Recognizing that development of industrial infrastructure and improvement of trade facility are important for the economic development of El Salvador and Central America, support implementation of revised eastern region masterplan, fostering local industries and creating employment opportunities
Mexico	Support for sustainable growth toward the goal of an inclusive state	(1) Industrial promotion Provide support to improve the technological capabilities of SMEs that comprise the supporting industries. Work on comprehensive industrial promotion from various approaches such as cooperation among industry, university, and government.
Jamaica	Overcoming vulnerabilities (common to all CARICOM member countries)	(2) Correction of disparities The correction of income disparity, unemployment, and poverty, which are obstacles to sustainable and stable economic growth over the long term, is an urgent issue. It is necessary to improve the productivity of SMEs and to support the expansion of employment training for people with disabilities as well.
Dominican Republic	Achieving Sustainable and Balanced Development	(1) Sustainable economic development Strengthening the competitiveness of domestic industries is essential to achieve sustainable economic development. Emphasis will be placed on improving the productivity of SMEs and supporting their human resource development effort.

Source: Study Team

The following table shows the list of assistance of JICA in the above five countries over the past ten years. The support shown in the table includes projects that are categorized as agriculture and tourism but are also relevant to the private sector, as well as projects in other sectors in El Salvador's Eastern Regional Development Program that address economic development issues integrally. It can be seen that assistance has been provided mainly to reduce disparities in rural areas in Costa Rica, integrated assistance as part of the Eastern Regional Development Program in El Salvador, assistance targeting to the automobile industry in Mexico, and tourism assistance in the Dominican Republic. On the other hand, no private sector related support was identified in Jamaica.

Table 9-16 Major Assistance of JICA in past 10 Years

Country	Priority sector	Major assistance of JICA in past 10 years
Costa Rica	Correction of disparities	Technical Assistance: Capacity building system development project for SME support personnel (2015.11-2018.11) Technical Assistance: Costa Rica Independent Living Promotion Project (2012.4 - 2017.4) Expert: Community Based Entrepreneurship for Rural Development to Promote One Village One Product Movement (2016.5-2017.3) Third Country Training: Community-Based Inclusive Development (2012.12-2015.3) Technical Assistance: Project for Strengthening Comprehensive Rehabilitation with Community Participation Focusing on Human Security in the Brunca Region (2007.3-2012.3)

Country	Priority sector	Major assistance of JICA in past 10 years
El Salvador	Economic revitalization and expansion of employment opportunities	Loan: Study on the formulation of a port plan for the revitalization of La Union Port [Technical Assistance for Paid-for Account]. Technical Assistance: Human Resource Capacity Enhancement Project to Support the Improvement of Management, Quality, and Productivity of Micro, Small, and Medium Enterprises (2016-2019) Technical Assistance: Integrated Wetland Management Project for Lake Olomega and Lake Jocotal (2016-2021) Technical Assistance: Eastern Region Rural Development Capacity Enhancement Project Based on Livelihood Improvement Approach (2018-2023) Expert: Regional Advisor for the One Village, One Product Movement (2018-2020) Expert: Advisor to the President on Development Planning (2017-2019) Expert: Advisor on Strengthening Gender Equality Institutional Functions (2016-2018) Technical Assistance: Eastern Region Vegetable Farmers Profitability Improvement Project (2014-2018) Technical Assistance: Capacity Building Project for Rural Development in Eastern Region Based on Livelihood Improvement Approach (2018-2023) Expert: OVOP Movement Advisor (2017-2018) Loan: Port Operations Advisor (2012-2014) Loan: La Unión Port Dredging Plan Development Project (2010-2014) Technical Assistance: Project for the improvement and dissemination of shellfish farming technology (2012-2015) Loan: Project for Capacity Building in Tourism Development in Eastern Region of El Salvador (2010-2013) Loan: MEGATEC La Unión School Leadership Project (2009-2012)
Mexico	Industrial promotion	Technical Assistance: Automotive Industry Cluster Promotion Project (2018-2023) Technical Assistance: Automotive Industry Human Resource Development Project (2015-2020) Technical Assistance: Automobile Industry Basement Enhancement Project (2012-2015) Technical Assistance: Plastic Molding Technology Human Resource Development Project (2010-2014) Technical Assistance: Human Resource Development Project for the Electrical Products Industry in the Maquiladora Region of Baja California (Public-Private Partnership) (2010-2012)
Jamaica	Correction of disparities	-
Dominican Republic	Sustainable economic development	Technical Assistance: Quality and Productivity Improvement Project for SMEs (2016-2019) Technical Assistance: Strengthening Mechanisms for Sustainable Community-Based Tourism Development in the Northern Region Project (2016-2021) Country Training: Community-Based Entrepreneurship for Rural Development (2017-2021) Technical Assistance: Public-Private Cooperation to Create a Prosperous Tourism Region Project (2009-2013) Technical Assistance: Project to Strengthen the Human Resource Development Center for Trade and Investment Promotion (2008-2011)

Source: Created by Study Team based on documents of JICA

(1) Costa Rica

In Costa Rica, JICA has continued to support CECAPRO (formerly CEFOF), which was established in 1992. From 1992 to 1997, JICA implemented the "Central American Regional Industrial Technology Development Project" as part of its project-based technical cooperation, and later conducted a training program for neighboring countries focusing on the 5S (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke), one of the results of the technology transfer, which was highly evaluated in Central America and the Caribbean. From 2001 to 2006, JICA implemented the "Productivity Improvement Project" with the aim that CEFOF continue to exist as a base for disseminating technology and information related to productivity improvement in Central America and the Caribbean. As one of the results of this project, 11 counterparts were certified as management consultants by JICA and the Japan Productivity Center. From 2009 to 2012, JICA implemented the "Facilitator Capacity Building Project for Quality and Productivity Improvement in SMEs". This was to utilize Costa Rican consultants as core human resources for the guidance and development of future human resources, and to provide a foothold for the spread of human resource development for quality and productivity improvement of SMEs through Japanese quality and productivity improvement methods in Central America and the Caribbean. After that, the technical cooperation project "Capacity Building System Development Project for Human

Resources to Support SMEs" was implemented from 2015 to 2018 to further strengthen the capacity to support SMEs within Central America and the Caribbean.

In this way, technical cooperation around CECAPRO has been conducted in Costa Rica for many years, and the organization has been strengthening its capacity as a base for supporting SMEs not only in Costa Rica but also in Central America and the Caribbean.

(2) El Salvador

In El Salvador, JICA has been integrally providing regional development assistance through the Eastern Regional Development Program. El Salvador faces the challenge of having the lowest economic growth rate in Central America due to the lack of competitive industries. In particular, there are many municipalities with high poverty indices in the eastern region, which has been greatly affected by the internal conflict that ended in 1992. Dependence on overseas remittances from family members who have gone abroad to work has created a structure in which industries are not nurtured and employment is not created in the region, making it necessary to build an autonomous and sustainable economic structure.

The above issues are also recognized in the Government of El Salvador's Five-Year National Development Plan (2014-2019), and JICA has been providing complex support from a wide variety of approaches, including advisors for the development plan, basic infrastructure development, the One Village, One Product movement, and the development of human resources to support small and medium-sized enterprises. As of 2022, JICA is conducting studies and providing support for the "Eastern Region Rural Development Capacity Enhancement Project Based on Livelihood Improvement Approach (2018-2023)," the "Integrated Wetland Management Project for Lake Olomega and Lake Jocotal (2016-2021)," and the "Study on the formulation of a port plan for the revitalization of La Union Port [Technical Assistance for Paid-for Account]".

(3) Mexico

In Mexico, the economic relationship with Japan has developed through the Japan-Mexico Economic Partnership Agreement (EPA), and due to the influence of the North American Free Trade Agreement (NAFTA), Japanese companies are expanding into the country. In particular, the Mexican automobile industry has become a major production base in the Americas due to the expansion of Japanese companies into Mexico. On the other hand, the percentage of Mexican companies in the Mexican automobile parts industry is less than 30%², and these companies have not been able to fully meet the requirements of Japanese companies in terms of quality, cost, and deadline. For this reason, JICA has been assisting in strengthening the supporting industries and matching Japanese companies with them.

Table 9-17 Private Sector Support by JICA in Mexico

No	Year	Project Type	Project Name	Outline
1	2006-2009	Technical cooperation project	Project on Technology Transfer for Supporting Industry (Stamping Technology)	Transferred basic knowledge of press processing technology to the Center for Industrial Technology Development (CIDESI), laying the necessary foundation for technical support to related SMEs.
2	2010-2014	Technical cooperation project	Project for Human Resource Development in the Technology of Plastic Transformation	With the aim of developing human resources for intermediate engineers, who are the scarcest in the industry due to the immaturity of molding technology in plastic material and shaping companies, JICA supported the Center for the Revitalization of Vocational and Technical Education to improve its teacher training functions related to plastic molding technology.
3	2010-2012	Technical cooperation project	Project for Human Resource Development in the Electrical Products Industry in the Maquiladora Region of Baja California	Strengthened programs for secondary and higher education in industrial technology to improve the quality of human resources needed by the television appliance industry in Tijuana.

² JICA(2015), Project for Automotive Supply Chain Development in Mexico.

No	Year	Project Type	Project Name	Outline
4	2012-2015	Technical cooperation project	Project for Automotive Supply Chain Development	Supported the strengthening of the supply chain between Japanese auto parts companies (Tier-1) and Mexican auto parts companies (Tier-2) by enhancing the competitiveness of Mexican auto parts companies.
5	2015-2020	Technical cooperation project	Project for Human Resource Development for the Automotive Industry	Support the development of skilled workers in model technical high schools to meet the human resource needs of the automotive industry, including Japanese companies, and the development of plans to expand the educational improvement methods in the target states.
6	2017-2022	Technical cooperation project	Project for Automotive Cluster Promotion	Strengthen the support programs of state governments and automotive cluster associations in the four target states for Mexican auto parts suppliers (Tier 2) to facilitate their entry into the Japanese automotive value chain.

Source: Created by the Study Team based on JICA's web site

(4) Jamaica

As for Jamaica, JICA has conducted task-based training and dispatched Japan Overseas Cooperation Volunteers, especially focusing on supporting small-to-medium enterprises and human resource development. Although the Jamaican economy had been experiencing negative growth since the economic crisis in 2008, it was starting to recover again until before COVID-19 due to the results of structural reforms performed by the government and the impact of lowering oil prices. As mentioned before, the unemployment rate and underemployment rate, which saw their peaks in 2013, are continuing to improve. The business development plan, which considers the impact of COVID-19, states that while building on the results of past support such as dispatching experts to support SMEs, the government will provide support for SME promotion through training and dispatch of JICA Overseas Cooperation Volunteers, expansion of employment opportunities for the socially vulnerable through promotion of social participation of the people with handicaps, and improvement of educational and medical environments through grant aid.

(5) Dominican Republic

Dominican Republic is classified as a middle-income country with a per capita income of over USD 6,000. However, domestic inequalities such as poverty and inadequate social infrastructure have been a problem. Also, there have been tasks such as development of human resources for domestic industry, enhancement of the capital strength, and competitiveness of SMEs, which account for 95% of the total number of enterprises in Japan. This is because of the international competition resulting from the issuance of the U.S.-Central America-Dominican Republic Free Trade Agreement (CAFTA-DR) in 2007 and the entry into force of the Economic Partnership Agreement with the EU in 2009.

9.4.6 Grouping of Surveyed Countries by Sector

In this sector, grouping was not used because the priority countries were selected based on the impact of COVID-19 on unemployment rates as described below.

9.5 Selection of Priority Countries by Sector

9.5.1 Criteria for Selecting Priority Countries

As mentioned before, the impact of COVID-19 on exports is limited, and the causes of the impact on imports are considered to be the stagnation of domestic economic activities and the decline in purchasing power. In addition, it is difficult to compare information on SMEs among the 23 countries, while information related to employment, which is the objective of SME promotion, is relatively comparable. Therefore, in considering the purpose of this study, which is to investigate the impact of COVID-19, the primary selection criterion will be the impact of COVID-19 on employment. For unemployment rates and youth unemployment rates for which relevant data can be collected, the Study Team will compare 2020, the year in which the impact of COVID-19 became apparent, with the previous year, 2019, and choose countries with the large differences.

In addition, trends in unemployment rates from before COVID-19 were also considered. This is because the recent worsening of the employment situation since before COVID-19 may have been hastened by COVID-19, and this situation is considered important in considering the future policy for

development cooperation. On the other hand, chronically poor employment conditions are not considered as a selection criterion. The reason for this is that this study is in the context of the impact of COVID-19.

The data used here were obtained as of April 2021. The data shown in 9.3 were updated in February 2022, and thus they do not coincide.

9.5.2 Selection of Priority Countries

The indicators for the first selection criterion above are shown in Table 9-18. Regarding the unemployment rate, there were large increases in Panama (3.85%) and Mexico (3.22%), followed by Bahamas (0.91%) and Costa Rica (0.88%). The youth unemployment rate is extremely high in Costa Rica (9.13%), followed by Barbados (1.36%). Based on these results, Panama, Mexico, and Costa Rica are the three priority countries.

Table 9-18 Impact of COVID-19 on Unemployment Rate

Rank	Unemployment Rate (2019-2020 Amount of Increase)		Youth Unemployment Rate (2019-2020 Amount of Increase)	
1	Panama	3.85	Costa Rica	9.13
2	Mexico	3.22	Barbados	1.36
3	Bahamas	0.91	Surinam	0.74
4	Costa Rica	0.88	Haiti	0.55
5	Barbados	0.61	Mexico	0.51
6	Nicaragua	0.52	Nicaragua	0.35
7	Haiti	0.14	Jamaica	0.27
8	Surinam	0.14	El Salvador	0.18
9	Trinidad and Tobago	0.11	Trinidad and Tobago	0.13
10	Dominican Republic	0.07	St Vincent and the Grenadines	0.1
11	Guatemala	0.05	Guatemala	0.05
12	St Vincent and the Grenadines	-0.01	Dominican Republic	0.05
13	Guyana	-0.04	Guyana	-0.05
14	Belize	-0.05	Belize	-0.09
15	Cuba	-0.05	Honduras	-0.22
16	Jamaica	-0.05	Cuba	-0.23
17	Honduras	-0.16	Panama	-0.29
18	St Lucia	-0.56	St Lucia	-0.85
19	El Salvador	-2.1	Bahamas	-
20	Antigua and Barbuda	-	Antigua and Barbuda	-
21	Saint Kitts and Nevis	-	Saint Kitts and Nevis	-
22	Dominica	-	Dominica	-
23	Grenada	-	Grenada	-

Source: Created based on ILO, Statista (As of May 2021)

The unemployment rate is then shown in Figure 9-4. As shown in this figure, the unemployment rate has been increasing in Costa Rica, Nicaragua, and Panama in recent years. Therefore, it was confirmed that Costa Rica and Panama could be priority countries. In the Bahamas and Barbados, which had higher values in the first selection criteria in addition to Panama, Mexico, and Costa Rica, the unemployment rate in the Bahamas decreased until 2017, but has continued to increase slightly since 2017. For Barbados, similarly, there was a downward trend until 2017, but it has been erratic, with a large increase in 2018 and a decrease again in 2019. Therefore, Nicaragua, Bahamas, and Barbados are candidates for the next priority countries after the above three countries.

9.6 Detailed Survey by Sector

9.6.1 Conduct a Detailed Survey

In the surveyed countries above, information was collected through interviews, reports, and other public information, and the results were compiled.

In addition, a pilot project, "Japan-Panama Joint Seminar on Open Innovation," was conducted in Panama. This was a trial project to promote innovation through collaboration between Japan and Panama to build a more resilient economic foundation in Panama, where the proportion of manufacturing and agriculture in the economy is low and it is difficult to strengthen traditional manufacturing and agriculture. In the private sector, the detailed survey and suggestions are prepared based on the information on the current status of start-up innovation in Panama and the interest of Japanese companies obtained through the implementation of this pilot project as well. The information collected in the pilot project is as follows

- Organizing seminars and collecting information on participants, etc.
- Hearing surveys conducted before and after the seminar
- Discussions and exchange of opinions with Fundación Ciudad del Saber, a subcontractor

Table 9-19 Hearings in the Private Sector

Country	interviewee	Date	Main contents
Panama	ADEDAPP (Asociación de Empresa del Area Panamá Pacífico)	2021/6/29	Impact of COVID-19 on Industrial Parks
	Ciudad del Saber	2021/9/8	Current Status and Issues of Innovation
	MICI (SEM)	2021/10/5	Current status and challenges of SEM and EMMA
	MICI (Industrial Development)	2021/10/12	Current status of national plans for industrial development and support for SMEs
	USMA (Universidad Católica Santa María la Antigua)	2022/1/5	Efforts for innovation in universities, challenges for innovation
	Japanese companies	2022/1/27	Impact of COVID-19, local interest in innovation
	Three local startups	2022/1/7	Startup support environment
	Japanese Startup	2021/12/27	Potential for collaboration with Panamanian startups and potential for entry into Panama
	Ciudad del Saber	2022/1/25	Potential for cooperation to support innovation in the future
	Japanese Company	2022/1/26	Possibility of participating in innovation in Panama
Mexico	Japanese Company	2022/1/16	Impact of COVID-19
	Japanese Company	2022/1/20	Impact of COVID-19, local interest in innovation
	Foreign company	2022/1/25	Impact of COVID-19, human resource development
	Discussion Group of Startups, Japanese Chamber of Commerce and Industry of Mexico	2022/2/2	Present situation of innovation in Mexico and State of Guanajuato
	IDEA GTO	2022/2/3	Initiatives of IDEA GTO
Costa Rica	CECAPRO	2021/9/20	Current status of CECAPRO
	Consejo de la Persona Joven	2021/9/23	Employment status of young people and employment support
Other	CENPROMYPE (SICA)	2022/1/25	Direction of support for SMEs in the region

Source: Created by the Study Team

9.6.2 Analysis of Detailed Survey Results

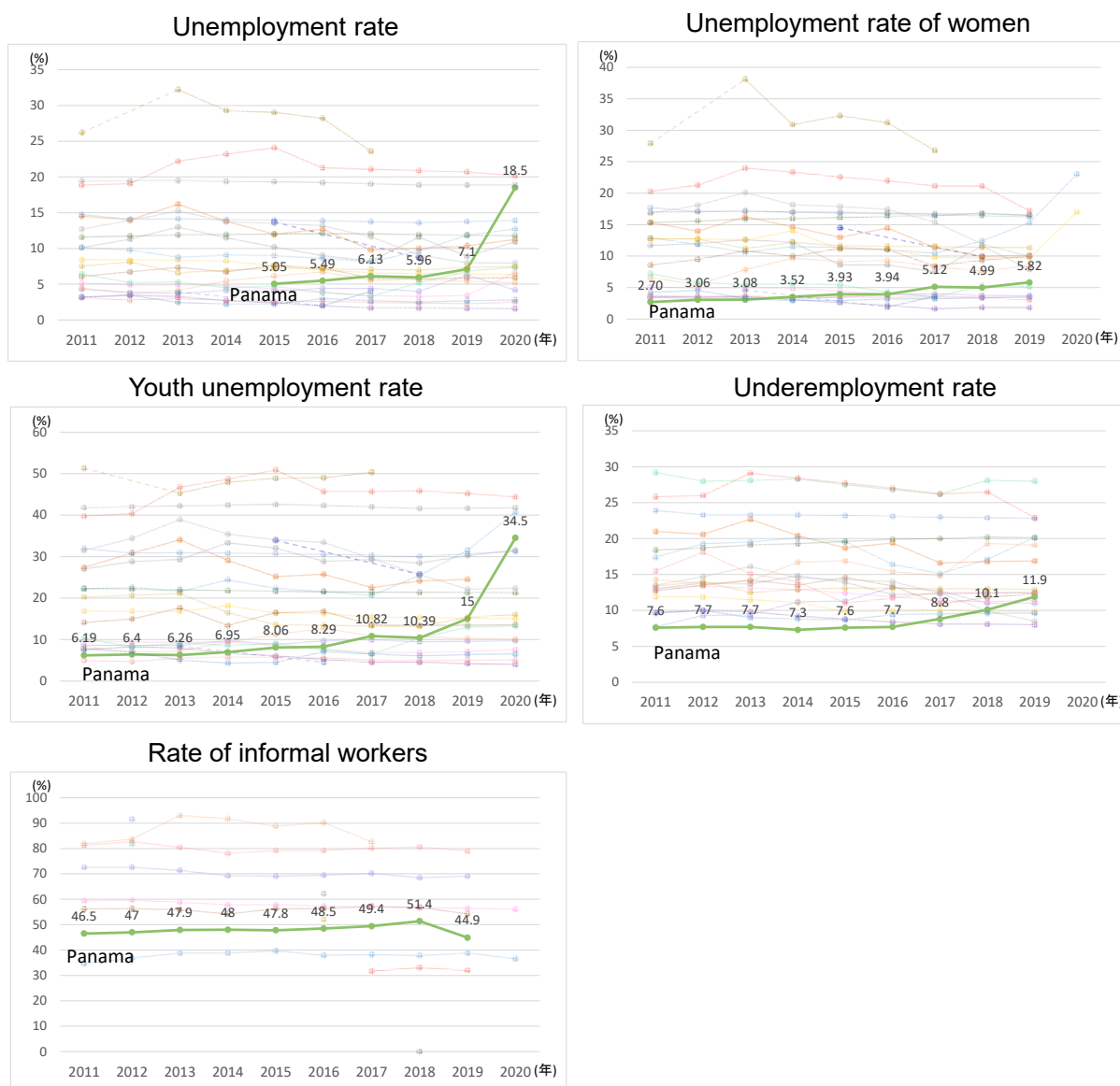
(1) Panama

1) Current Status

In Panama in recent years, the unemployment rate, underemployment rate, and informal worker rate have all been increasing (Figure 9-10). On the other hand, as shown in Figure 9-11, Panama's economy has been growing steadily, and there is a discrepancy between economic growth and the actual employment situation.

Comparing Panama's economic structure with that of other countries within the region (Figure 9-12), the proportion of agriculture and manufacturing industries is very small, while transportation, communication, construction, finance, and real estate account for a large proportion. In the case of construction, the influence of the Panama Canal's third bridge and the Metro Phase 2 project can be

assumed; similarly, in the case of transportation and communications, the presence of industries around the Panama Canal; while in the case of finance and real estate, the influence of investment in the center of Panama City and residential development in the suburbs of the metropolitan area. Under this economic structure, it has been pointed out that economic growth in recent years has depended on sectors that do not require labor³. While sectors related to the Panama Canal, which are carried by foreign companies and do not generate many local jobs, are growing, the growth of sectors that require more employment, such as agriculture and manufacturing, has been slow. Another reason is the lack of a national development plan that focuses on the growth of the manufacturing sector and the development of local human resources to meet the demands of the corporate sector⁴.

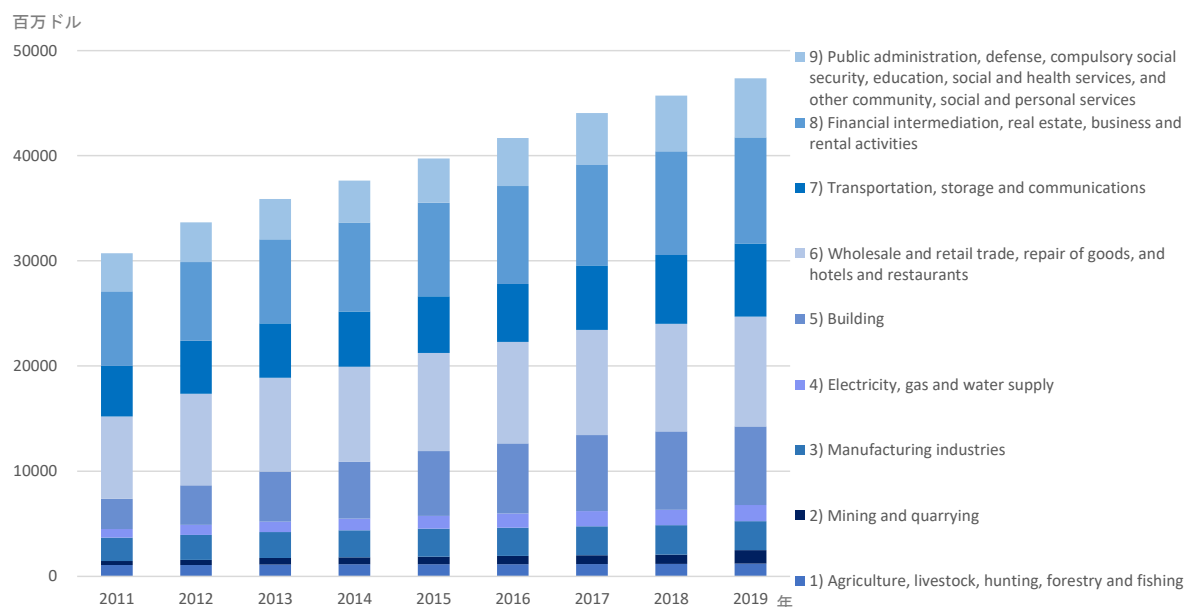


Source: Created based on Statista, World Bank, ECLAC, ILO

Figure 9-10 Change in Employment Situation (Panama)

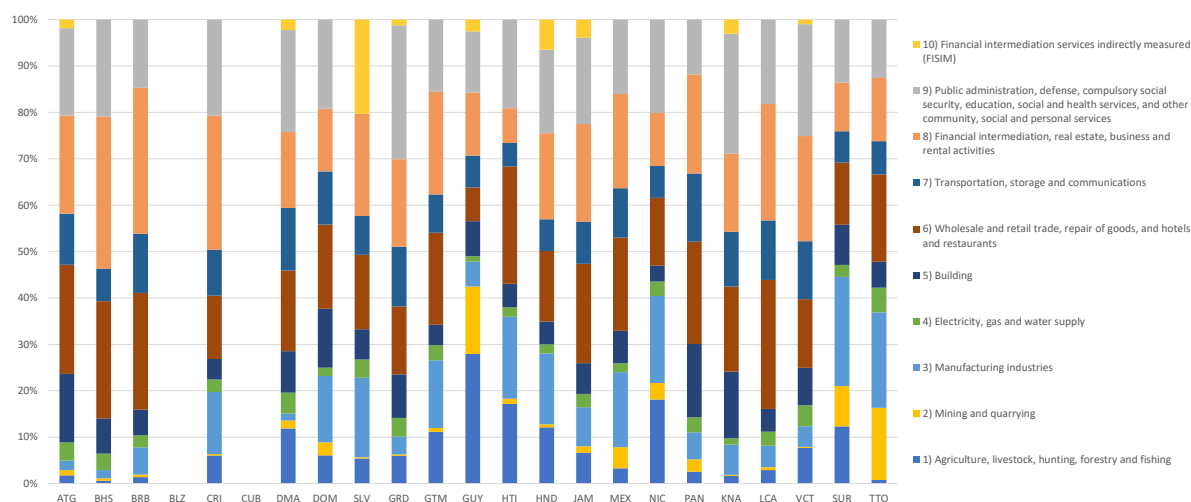
³ FUNTRAB, Perspectiva Laboral 2017

⁴ El Capital Financiero, diciembre 10 2018, El desempleo cierra el 2018 en 6.0%, pero la informalidad se eleva al 44%



Source: Created based on ECLAC

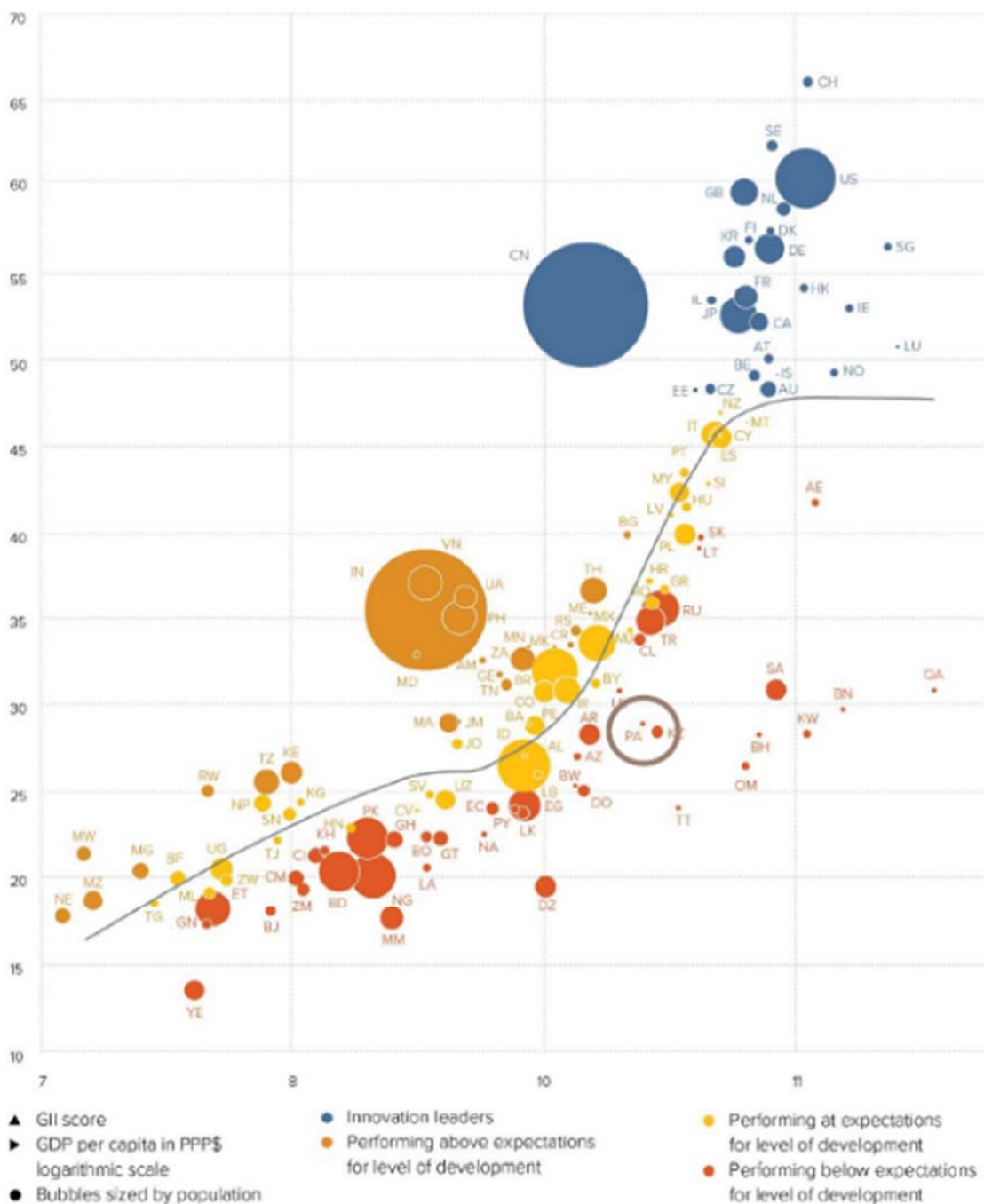
Figure 9-11 Added Value Amount by Sector (Panama)



Source: Created based on ECLAC

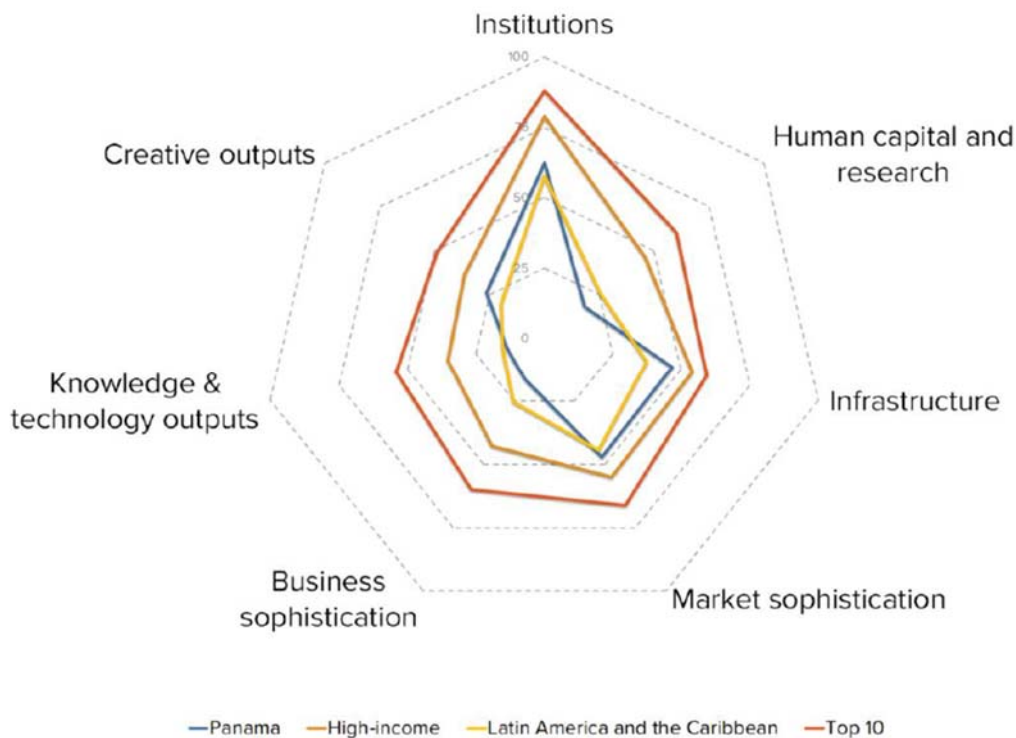
Figure 9-12 Added Value Amount by Sector in Central American and Caribbean Countries

In addition, as mentioned later, the Panamanian government is trying to promote innovation for economic development, but the current state of innovation in Panama is not satisfactory in the global scale. According to the Global Innovation Index 2020 (GII) published by the World Intellectual Property Organization (WIPO), Panama's ranking is not high, where it placed 73rd out of 131 economies, 45th out of 49 high-income economies, and 8th out of 18 economies in Latin America and the Caribbean, and its ranking will remain almost unchanged from 2018 to 2020. As shown in Figure 9-13, there is a correlation between GDP and GII in each country, but Panama's GII is low compared with its GDP. Figure 9-14 shows Panama's scores in the seven evaluation axes, with particularly low scores in "Human Resources and Research", "Business Upgrading", and "Knowledge and Technology". This is due to government funding, education level, absorption of knowledge by companies, provision of training by companies, investment in research and development by companies, and industrial design.



Source: WIPO

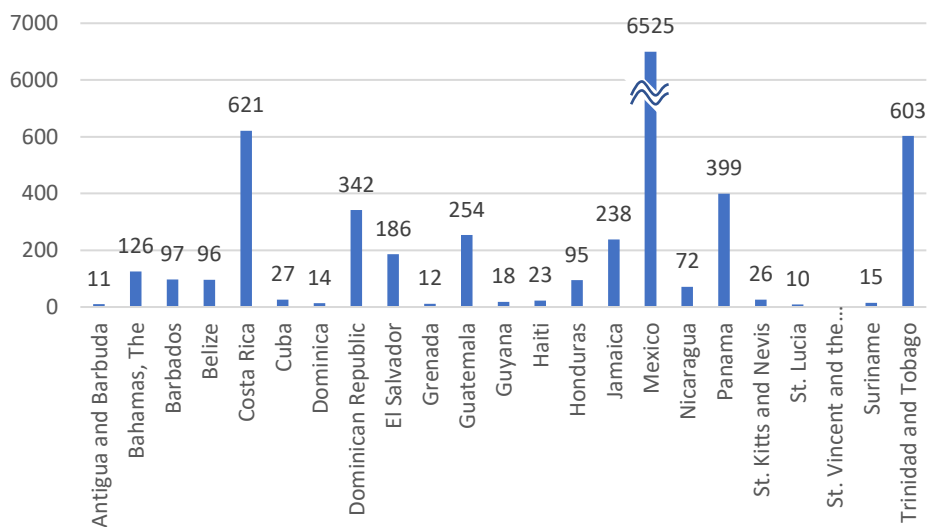
Figure 9-13 Relationship between GDP per Capita and GII (Panama)



Source: WIPO

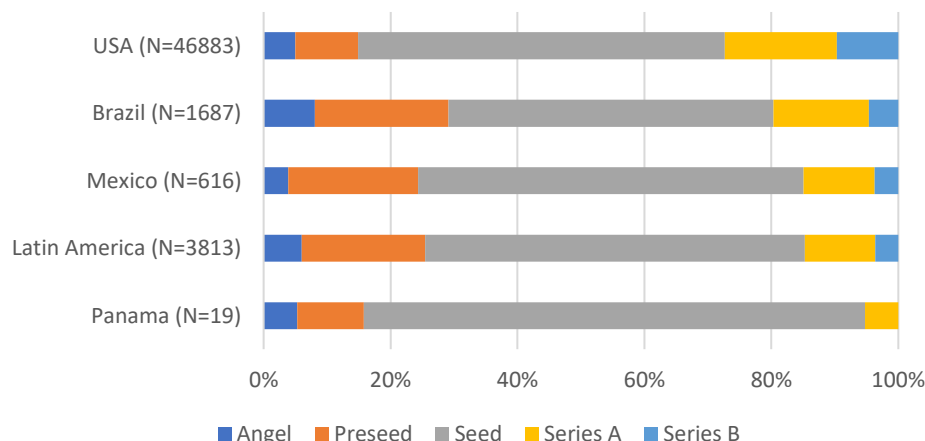
Figure 9-14 Breakdown of Panama's GII Score

Panama has 399 startups, which is the largest number in the Central American and Caribbean region, behind Mexico (6,525), Costa Rica (621), and Trinidad and Tobago (603), which are prominent in terms of population and economic scale (Figure 9-15). On the other hand, there are 15 unicorn companies from Brazil, 6 from Mexico, 2 from Colombia, 1 from Argentina, and 1 from Chile in Latin America. There are no unicorn companies originating from Panama. Although the sample size for Panama is small, Figure 9-16 shows the number of startups per recent funding, and shows that there are few startups after Series A, indicating that Panama is facing challenges in turning startups into businesses.



Source: Created from Crunchbase (based on search results as of January 23, 2022)

Figure 9-15 The number of startups in Central America and the Caribbean



Source: Created from Crunchbase (based on search results as of January 23, 2022)

Figure 9-16 Distribution of startups by Funding at Present (Panama)

2) Approaches by the Panamanian Government

a) Policies, etc.

In the Government Strategic Plan 2019-2024 (Plan Estratégico de Gobierno 2019-2024) by the Government of Panama, one of the pillars states “a competitive economy which creates employment (Economía competitiva que genere empleos)”. The challenges for the manufacturing sector include the absence of technical standards for high quality and efficiency, lack of export-ready capacity, and lack of quality labor. On the other hand, future policies include promoting value-added hubs and strengthening industries along the canals. In addition, as plans in line with the mentioned strategic plan, the Science, Technology, and Innovation Policy 2040 and the Strategic Plan for Science, Technology, and Innovation 2019-2024 (Política Nacional de Ciencia, Tecnología e Innovación Panamá 2040 y Plan Nacional Estratégico de Ciencia Tecnología e Innovación 2019-2024) have been formulated.

According to interviews with the Ministry of Commerce and Industry (Ministerio de Comercio e Industrias, MICI), the National Industrial Development Plan (Estrategia Nacional de Desarrollo Industrial) is also being formulated. Although it has neither been approved nor released, it focuses on agriculture, fisheries, livestock, pharmaceuticals, logistics, and advanced manufacturing as priority sectors. As for pharmaceuticals, the plan aims to develop as a regional constraint hub, based on its advantages in imports and exports. For logistics, it hopes to develop assembly industries including heavy industries by utilizing the existing port and airport hubs. In the field of advanced manufacturing, it is promoting innovation. On the other hand, there is no plan or other document that defines the policy for geographical development from a national land development perspective, and there are some concrete issues.

In addition, in the MICI's Manufacturing Competitiveness Program (Programa Nacional de Competitividad Industrial) created in 2017, strengthening human capital, enhancing finance and development of micro, small and medium enterprises, and promoting technological innovation are among the elements. Here, after the assessment of the development and export potential of enterprises, the target enterprises for capacity building are selected. The selected companies will be targeted for capacity development in areas such as quality and innovation. Since there is no public institution that provides capacity development for productivity improvement, the program is implemented in cooperation with private consultants and universities. Therefore, there is an issue that technical continuity has not been ensured.

The primary approach to economic development taken by the Panamanian government is to attract foreign companies. The government is working to improve the business environment for foreign companies by easing laws and regulations and reducing logistics costs. In addition, Law 76 of 2009, the Industrial Promotion Law, provides tax incentives for industrial development and human resource training.

In addition, AMPYME (Autoridad de la Micro, Pequeñas y Medianas Empresas) is an organization that provides support to SMEs (INEC, 2009), which account for 96% of the total number of enterprises⁵. AMPYME aims to provide information to MSMEs, promote industrial park development, coordinate among relevant organizations, improve labor conditions through the development of MSMEs, and increase competitiveness and productivity. It has provided support in the form of seed money and the establishment of Aprende Digital, a platform that consolidates online learning materials and courses for capacity building, but it has not confirmed any plans for SME promotion or capacity building by AMPYME itself.

b) EMMA

The Panamanian government enacted the Law on Special Measures for the Location and Operation of International Manufacturing Companies (*Ley 159 del Régimen Especial para el Establecimiento y Operación de Empresas Multinacionales relacionadas con la Manufactura*, commonly referred to as the EMMA Law) in September 2020, during the COVID-19 disaster, with the aim of attracting foreign companies that provide services related to the manufacturing industry. This allows foreign-funded companies that meet the conditions to receive preferential treatment in taxation, labor, and immigration.

EMMA Law is based on the model of Law 41 of 2007, which attracts regional centers of foreign investment (*Sedes de Empresas Multinacionales*: SEM). The SEM is limited in scope to management and administrative functions and attracts global companies to locate as regional headquarters in the Latin American region. As of October 5, 2021, 178 companies have SEM licenses and have achieved some success. Based on this SEM as a successful example, EMMA Law is a system designed to attract manufacturing companies. The EMMA framework covers services related to manufacturing, assembly, maintenance, repair, and product adjustment and development, and is intended to generate benefits to the Panamanian economy in the form of direct labor demand, technology transfer, and job development. In fact, the EMMA Law also includes requirements for human resource development, such as the creation of technical education centers.

For the companies, this law allows them to locate anywhere in the country, while taking advantage of Panama's geographical advantages within the region. The tax benefits include the following:

- Payment of tax on net taxable income of services at the rate of 5%.
- Exemption from taxes on transfers of movables and services (equivalent to ITBMS and VAT in other countries)
- Exemption from dividend tax, complementary tax, and branch tax
- Exemption from all taxes, assessments, fees, or import duties on goods, products, equipment, or other commodities of any kind for the provision of services
- Not covered by tax instruments or business notification licenses

However, as of October 5, 2021, there is only one company with an EMMA license, and the benefits of this program have not yet been realized. Traditionally, Panama has been developed by the service sector, and it is difficult for EMMA, which targets the manufacturing sector, to achieve the same results as SEM, which targets the service sector. The table below shows the strengths and weaknesses of Panama in attracting EMMA and manufacturing companies. Its strengths are that it is a hub for maritime and air transportation, as represented by the Panama Canal, and that it is politically and economically stable. On the other hand, its weaknesses are that there are few precedents for EMMA and that the scale of its manufacturing industry is small.

⁵ It follows the Panamanian definition of micro, small, medium, and large enterprises. That is, gross receipts of 150,000 balboas or less are classified as micro enterprises, gross receipts of 150,001 balboas or more but less than 1,000,000 balboas are classified as small enterprises, gross receipts of 1,000,001 balboas or more but less than 2,500,000 balboas are classified as medium enterprises, and gross receipts of 2,500,001 or more are classified as large enterprises.

One of the impacts of COVID-19 is that few companies are willing to set up new overseas offices in the changing and unstable economic and business environment. However, it will be difficult to formulate countermeasures against this impact and the possible way will be to wait for the situation to improve.

Table 9-20 Panama's Strengths and Weaknesses in Attracting Manufacturers

Strengths	Weaknesses
<ul style="list-style-type: none"> ▪ Political and economic stability ▪ Hub of maritime and air transportation ▪ Financial hub ▪ High quality of life ▪ Free trade agreements with 23 countries ▪ Stable exchange rate 	<ul style="list-style-type: none"> ▪ Lack of precedent examples of EMMA use (1 company) ▪ Lack of external image as a manufacturing base ▪ High wages compared with neighboring countries ▪ Small domestic market ▪ Small labor pool ▪ Absence of existing manufacturing clusters

Source: Study Team

c) Ciudad del Saber

Ciudad del Saber (The City of Knowledge) is a special zone established to promote research, development, and innovation. Located along the Panama Canal in the northwest of Panama City, it was once used as a U.S. military base, but when it was returned to Panama in 1999, it was decided to use it as Ciudad del Saber. The site covers an area of 120 hectares, with more than 200 buildings remaining from the US military base era. It is used as a hub for the creation of intellectual industries and the solution of social issues in Panama by attracting R&D centers of large corporations, international organizations, NGOs, and innovative companies.

By locating in the Ciudad del Saber, companies and other organizations will have access to infrastructure and facilities, as well as preferential tax and visa treatment. For entrepreneurs, Ciudad del Saber offers office space, co-working space, networking opportunities, seed capital programs, and programs to support women entrepreneurs.

The Ciudad del Saber is managed by Fundación Ciudad del Saber, a non-profit organization established for that purpose. It provides support to startups through investment and acceleration programs with the aim of strengthening innovative communities that bring about social change. As shown in Table 9-20, there are about 180 workers in the foundation, among which 12 workers are in charge of innovation.

Fundación Ciudad del Saber was assigned as a manager of Ciudad del Saber in the law 6 of 1998 by the government. It determines that the foundation carries out activities to develop Ciudad del Saber as a hub of research and innovation. The financial resources for such activities come from international and national support and the rents earned from renting out the buildings they manage. The stage of the startups it supports is up to Series A. It invests in about two startups per year and provides acceleration programs to about 20 companies per year. In addition, it sometimes receives orders from public institutions and international organizations to implement innovation-related projects.

The foundation works along its strategy for 10 years. The latest strategy is “Strategy 2018-2028”, published in December 2020. There are five main strategies: to model innovation, to enhance impact, to provide the appropriate environment, to evolve the business model, and to transform the organization. Especially for innovation, the first strategy, it will carry out activities such as to attract professionals, organizations and companies, to provide services for development and articulation of innovation and to consolidate and scale up the programs for entrepreneurship.

Table 9-21 Departments and Number of Workers in Fundación Ciudad del Saber

No.	Department	Workers	Others
1	Administration and Finance	46	The number of workers includes cleaning staff, etc. of accommodation facility.
1-2	Administration, Finance and Commercial Services	14	
2	Architecture and Urban	10	
3	International Center for Sustainable Development (CIDES)	1	

No.	Department	Workers	Others
4	Communications	5	
5	Innovation	12	
6	Business	8	
7	Operations	62	The number of workers include technicians, gardeners, drivers, etc.
7-1	Operation and Maintenance	3	
8	Executive Presidency	11	
9	Executive Vice Presidency	11	

Notes: The table is elaborated based on the website of Fundación Ciudad del Saber, not on any official document.

Source: Website of Fundación Ciudad del Saber

According to the Fundación Ciudad del Saber, COVID-19 has not had a significant negative impact; rather, the pandemic has become a good opportunity for startups. This is due to the fact that companies have become more digitally oriented, and the general public has become more familiar with buying and selling products online. In fact, some of the startups supported by Fundación Ciudad del Saber have successfully expanded their business during the pandemic. For example, there is a company that provides a labor management system based on facial recognition that meets the needs of contactless technology, and another company that provides a product shelf management system for retail stores such as grocery stores, which became more important during the pandemic.

3) Analysis of the Results of the Pilot Project

The seminar was held for the purpose of supporting local startups in collaboration with Japan. The contents of the seminar were: introduction of the support scheme by JICA, explanation of the start-up environment and introduction of case studies in Panama, and presentations by Japanese startups and investment companies on the possibility of collaboration between Japan and Panama. The program of the seminar held on December 17 is shown in the table below. The total number of registered participants was 224 (59 in Japanese and 165 in Spanish), and the total number of attendees was 82 (21 from Japan, 51 from Panama, and 10 from other countries). Because the seminar was held just before the Christmas vacations, the number of participants from Panama reached a reasonable level, but the number of participants from Japan was small, which clearly shows the lack of interest in startups in Panama. As a result of the hearings conducted during and after the pilot project, various issues were identified regarding the private sector collaboration between Japan and Panama in innovation and the start-up support environment in Panama. The table below shows the issues raised by the hearings and the related information obtained from the literature. The issues identified can be categorized into 1. collaboration with Japanese companies, 2. funding and provision, and 3. startup support. Therefore, in order to promote innovation through collaboration between Japanese and Panamanian companies, while it is important to provide information and build momentum for collaboration with startups in Panama, as well as in Central America and the Caribbean, it is more important to improve the local startup development environment in Panama and increase the number of startups with attractive solutions.

As for the startup development environment, Fundación Ciudad del Saber provides support activities up to before Series A, mainly through accelerations. On the other hand, the lack of entrepreneurship education at universities and the small number of startups after Series A are issues that need to be addressed. Fundación Ciudad del Saber also does not have any collaboration with universities at this time. Therefore, a series of start-up support environments such as the transition from R&D to business ideas, post-start-up support, incubation, acceleration, and further business expansion have not been established.

Table 9-22 Challenges for Innovation Startups in Panama

No.	Theme	Issues raised by the hearings	Relevant Information
1	Collaboration with Japanese companies	<ul style="list-style-type: none"> ▪ Few startups attract interest from abroad. Even if they can succeed in Panama, the domestic market is small, so it is necessary to provide solutions that will attract interest overseas. ▪ Language and time difference are issues for Japanese startups and SMEs to collaborate. ▪ Some large Japanese companies have CVC systems and a track record of investing in startups overseas, but their main markets are in Asia and developed countries, so there is little interest in the Central American and Caribbean regions. 	<ul style="list-style-type: none"> ▪ There are no unicorn companies in Panama. ▪ The number of startups is 399. There are few startups after Series A.
2	Fundraising and provision	<ul style="list-style-type: none"> ▪ Little investment in startups and R&D. ▪ Lack of access to financing and investment. 	<ul style="list-style-type: none"> ▪ In GII, the score for "Human resources and research" is low. ▪ In GII, the score for "government funding" is low.
3	Startup Support	<ul style="list-style-type: none"> ▪ Lack of opportunities for entrepreneurship capacity building. ▪ Lack of links between R&D and startups. ▪ Lack of incubation functions and capacity. 	<ul style="list-style-type: none"> ▪ In GII, the scores for "provision of training by firms," "investment in R&D by firms," and "absorption of knowledge by firms" are low.
4	Others	<ul style="list-style-type: none"> ▪ Lack of companies that can produce hardware, even if they have ideas. 	<ul style="list-style-type: none"> ▪ The manufacturing sector is small in Panama.

Source: Created by the Study Team based on result of hearings

(2) Mexico

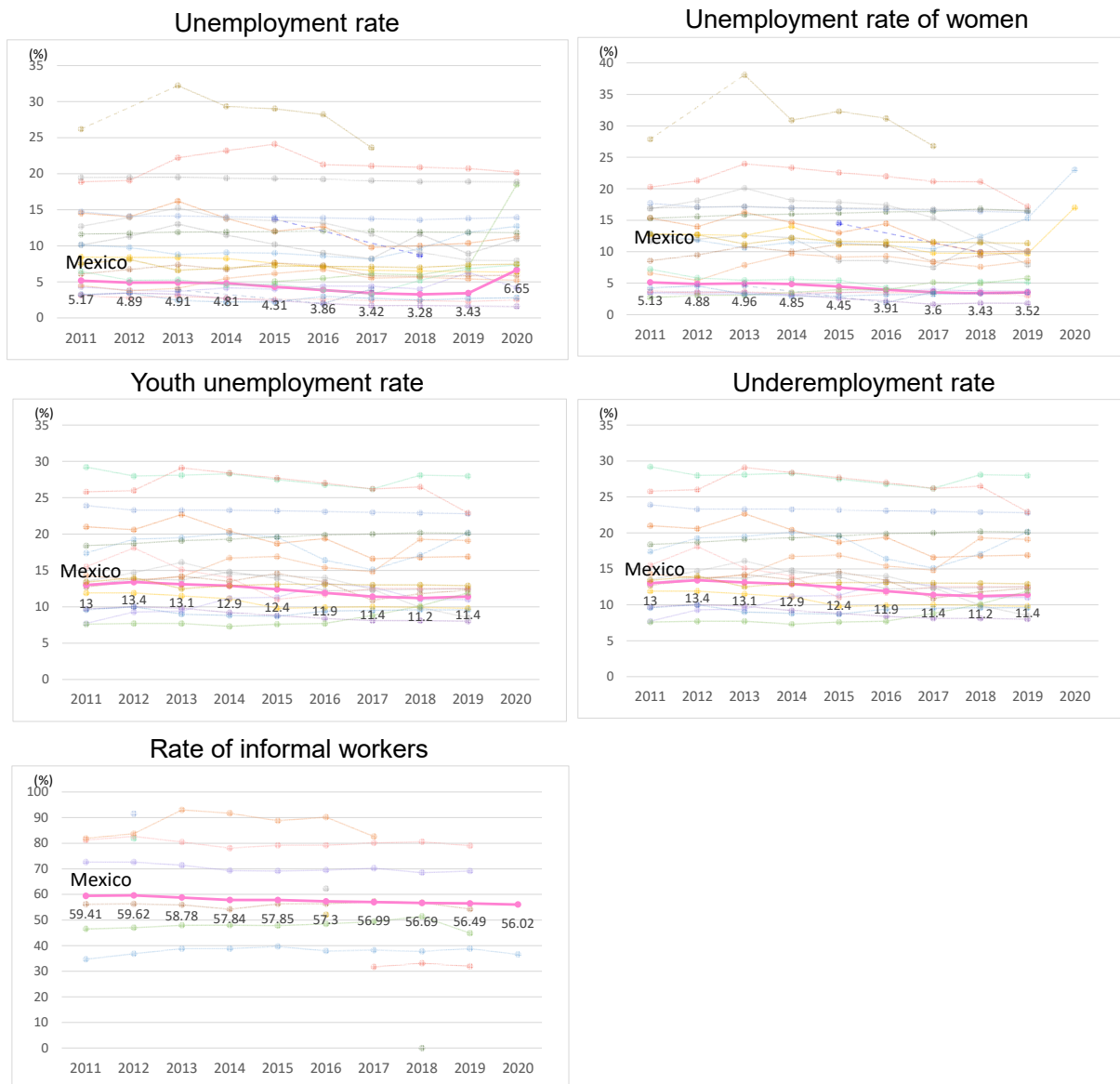
Many Japanese companies, mainly in the automotive industry, have established operations in Mexico, and JICA has been boosting industrial development by supporting the expansion of and collaboration with the base industries of the automotive industry. Also, the environment surrounding the automobile industry in Mexico has been changing in recent years with the issuance of the "New NAFTA" (United States-Mexico-Canada Agreement (USMCA)) in July 2020 and the revision of the Federal Labor Law in April 2021. In addition, it is necessary to adapt to the transition from gasoline vehicle to EV in the global trend of carbon neutrality. Also, initiatives are in progress in Mexico to promote innovation to break away from dependence on the automobile industry. In the context of such background and characteristics, this survey focuses on industrial promotion through the automobile industry where many Japanese companies have advanced and breaking away from dependence on the automobile industry and industrial diversification through innovation.

1) Current Status

a) Trade and Employment

Compared with other countries in the Central American and Caribbean regions, the employment situation in Mexico is favorable. The unemployment rate and underemployment rate remain very low and continue to improve gradually. The share of informal workers is also not particularly high in the region, although it is above 50%, and this is also continuing to improve. On the other hand, the unemployment rate has increased to 6.65% in 2020, the year affected by COVID-19, which is the highest value in the last decade.

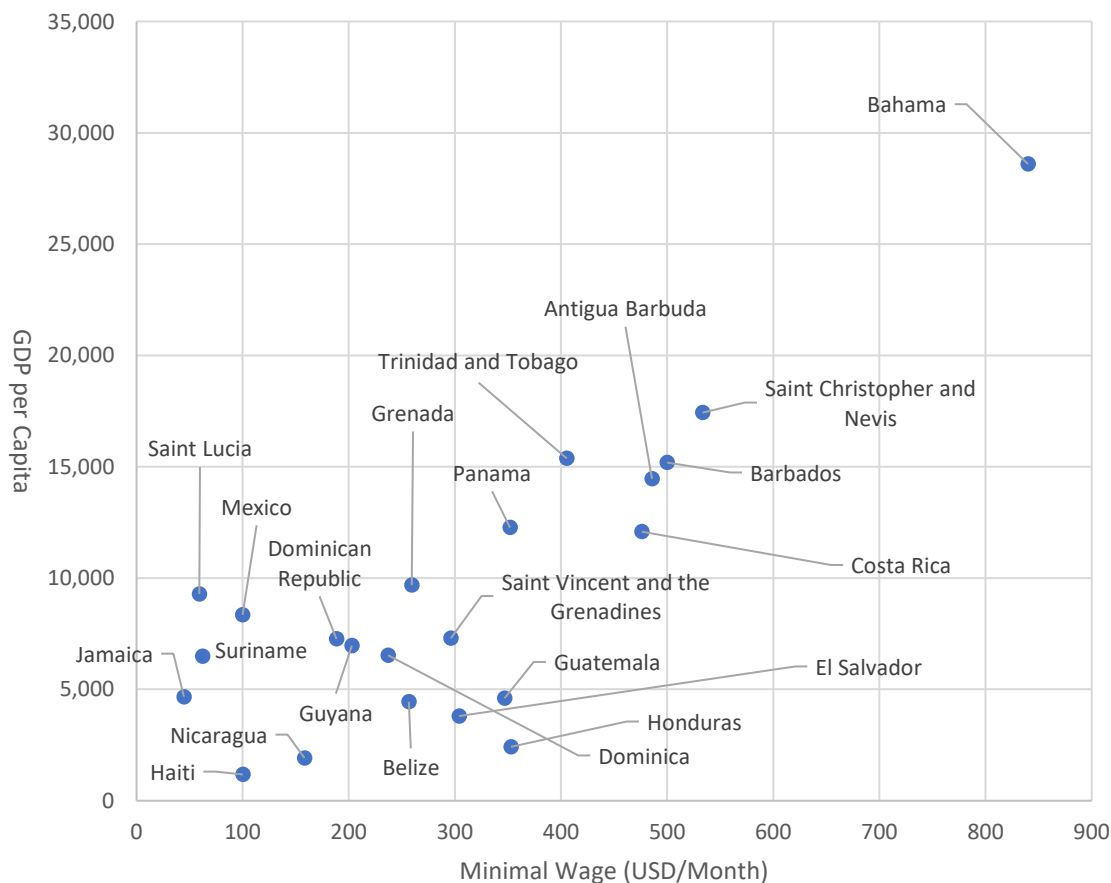
As shown in Section 9.4.2, Mexico's trade volume is much larger than that of other countries in the region. Due to its large land area and population, as well as its strong economic ties with the US, Mexico has become a production base for North America. Mexico also has strong economic ties with Japan, particularly in the automobile industry, and concluded an EPA with Japan in 2004.



Source: Created based on Statista, World Bank, ECLAC, ILO

Figure 9-17 Changes in Employment Situation (Mexico)

As mentioned above, Mexico is a major economic power and has a good employment situation, but it also has challenges. Figure 9-18 shows the gross domestic product (GDP) per capita and minimum wage for each country in the Central American and Caribbean regions. GDP per capita is higher than that of Central American countries such as Honduras, El Salvador, and Guatemala, but lower than that of Panama and Costa Rica. There is also a positive correlation between GDP per capita and minimum wage, indicating that Mexico's minimum wage is low relative to GDP per capita. Mexico's minimum wage is the lowest in Central America, below Honduras, El Salvador, and Guatemala, and it is thought that low wages support employment.



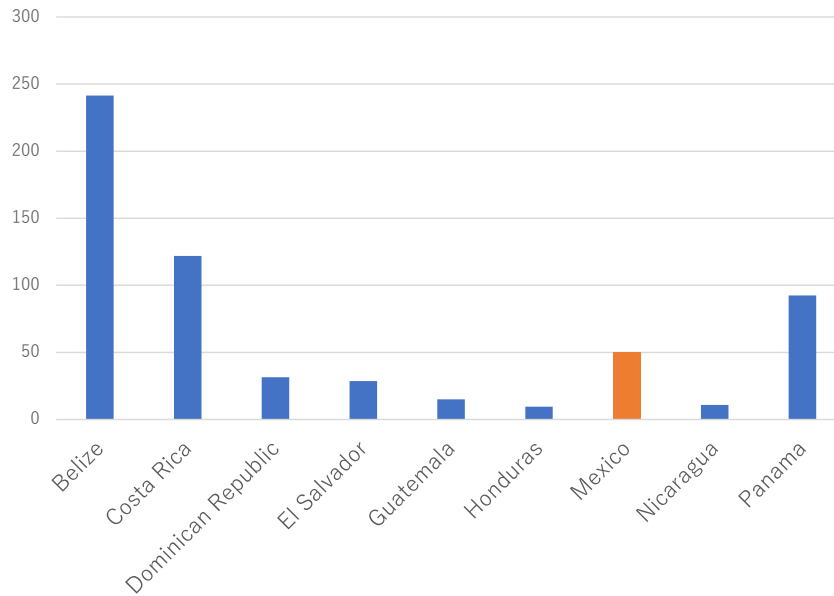
Source: Created by the Study Team based on World Bank, etc.

Figure 9-18 GDP per Capita and Minimum Wage in Each Country

b) Innovation

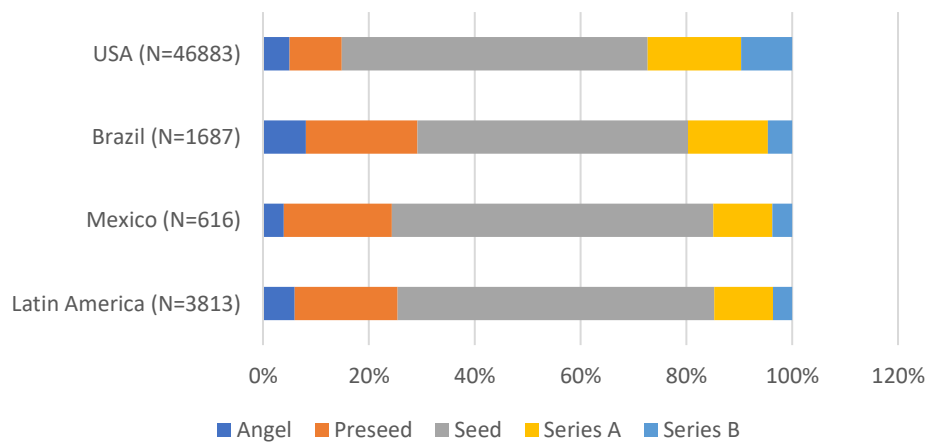
As Mexico has a prominent economy in Central America and the Caribbean, it also stands out in terms of the scale of innovation. On the other hand, the number of startups per population is not that high. Compared to Central America and the Dominican Republic (or SICA member countries and Mexico), excluding the less populated Caribbean Island countries, it is in fourth place behind Belize, Costa Rica, and Panama (Figure 9-19). As for the startup stage, there are fewer companies at Series A or later than in the neighboring countries of the United States and Brazil (see Figure 9-20), so Mexican startups may have challenges in productization. Another characteristic is that there are more companies that have been invested in angels but not yet in pre-seeds, which may be due to the lack of angel investment or the strength of high conversion to pre-seeds.

The number of unicorns in Mexico is six, including four fintech companies (Bitso, Clip, Konfio, Clara) and two e-commerce companies (Kavak, Merama). This is the 13th largest number in the world, the largest and the only country with unicorn companies in Central America and the Caribbean. In the Latin American region, Brazil leads the region in startup development with 15 unicorn companies. Mexico is characterized by rapid development in recent years, with five out of six companies becoming unicorn companies in 2021.



Source: Created by Study Team based on Crunchbase

Figure 9-19 Number of Startups per Capita in Mexico

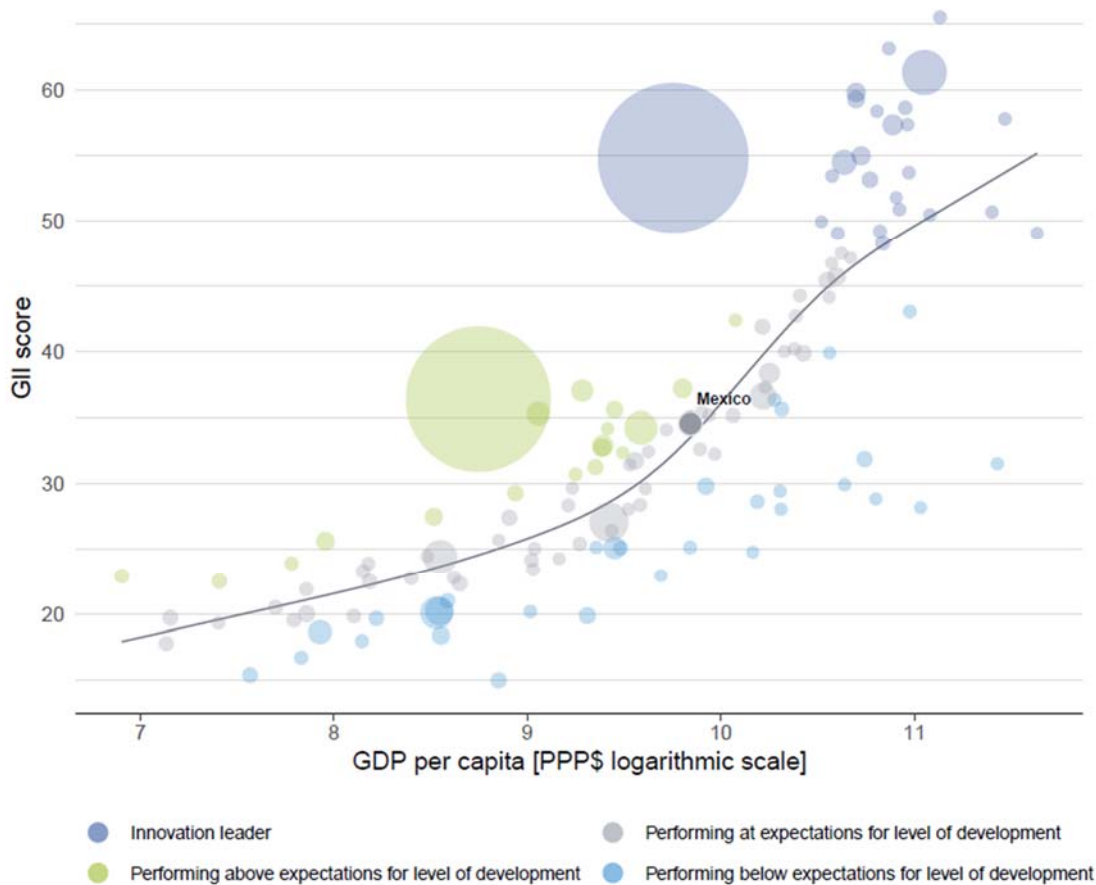


Source: Created by Study Team based on Crunchbase

Figure 9-20 Distribution of Startups by Funding at Present (Mexico)

In the Global Innovation Index, Mexico receives an innovation score commensurate with its GDP per capita. It is second only to Chile in Latin America, followed by Costa Rica in third place and Brazil in fourth place. The level of universities, the size of the market, and the size of the manufacturing industry are strengths, while the low number of venture capital investments, the low level of foreign investment in R&D, and the lack of industry-academia collaboration in R&D are weaknesses.

The positive relationship between innovation and development



Source: Global Innovation Index 2021

Figure 9-21 Relationship between GDP per Capita and GII (Mexico)

Regarding innovation in each state in Mexico, the Mexican Competitiveness Organization (Instituto Mexicano para la Competitividad, IMCO) publishes a competitiveness index for each state. In the report, an index called "Innovation Sophistication of the Economic Sector" is presented. The state of Guanajuato, which will be discussed below, is in seventh place and is rated as "medium-high". On the other hand, there is a regional bias in the index, with the states of Queretaro and Jalisco ranked second and third, respectively, from the Bajío region known as an industrial area, where the state of Guanajuato is also located.



Source: IMCO (edited by the Study Team)

Figure 9-22 Innovation Sophistication of the Economic Sector in Mexican states

2) Approaches by the Mexican Government

a) Support for SMEs

In 2013, the National Entrepreneurship Agency (*Instituto Nacional de Emprendedor*: INADEM) was established during the Enrique Peña Nieto administration of the Institutional Revolutionary Party (*Partido Revolucionario Institucional*: PRI). It was an independent institution aimed at providing support to entrepreneurs and MSMEs and providing direct assistance such as subsidies to them. However, under the subsequent government of Andrés Manuel López Obrador of the Morena Party, the program was abolished in 2019 and its functions were transferred to the *Unidad de Desarrollo Productivo* (UDP) within the Ministry of Economy. The decision has been criticized by the opposition, since INADEM had been successful in supporting 4.5 million entrepreneurs until it was abolished. The UDP works through the Microenterprise Finance Program (*Programa Nacional para el Financiamiento al Microempresario*: PRONAFIM), which provides microfinance and capacity building. Therefore, it is expected that small enterprises have become more important as a result of the change of government.

Support for SMEs affected by COVID-19 includes financial assistance such as *Programa de Crédito a la Palabra* and *Programa de Tandas del Bienestar*, and business assistance such as *Mipymes MX*, *Mercado Solidario*, and *E-ruedas de negocios*. The financial assistance targeted microenterprises, and the maximum loan amounts per enterprise are only MXN 25,000 and MXN 20,000, respectively. The former has a 6% interest rate, and the latter has a repayment period set at ten months instead of 0% interest, which could be a problem for repayment due to the prolonged pandemic. All business supports are online: *Mipymes MX* supports SMEs in five aspects: learning, starting, selling, growing, and exporting; *Mercado Solidario* is an online shopping platform that encourages economic circulation within the region; *E-ruedas de negocios* is a matchmaking service between small- and medium-sized exporters and foreign companies.

b) Industrial Promotion Efforts with JICA

The Mexican government, together with JICA, has been supporting the development of the automobile industry and other industries for many years. Technical cooperation projects have been implemented continuously since 2006, and support has been provided to develop local companies and human resources in areas where Japanese companies have expanded. In recent years, the state

governments of Guanajuato, Queretaro and other states have been working with JICA to promote the automobile industry.

Table 9-23 Collaboration for Industrial Development in Mexico Realized by JICA

No.	Year	Project Type	Project Name	Relevant government agencies and organizations	Outline
1	2006-2009	Technical Cooperation Project	Project on Technology Transfer for Supporting Industry (Stamping Technology)	Center for Industrial Technology Development (CIDESI)	Transferred basic knowledge of press processing technology to the Center for Industrial Technology Development (CIDESI) , laying the necessary foundation for technical support to related SMEs.
2	2010-2014	Technical Cooperation Project	Project for Human Resource Development in the Technology of Plastic Transformation	Department of Industrial and Technical Education (DIGETI)	With the aim of developing human resources for intermediate engineers, who are the scarcest in the industry due to the immaturity of molding technology in plastic material and shaping companies, JICA supported the Center for the Revitalization of Vocational and Technical Education to improve its teacher training functions related to plastic molding technology.
3	2010-2012	Technical Cooperation Project	Project for Human Resource Development in the Electrical Products Industry in the Maquiladora Region of Baja California	National Technical High School Teacher Training Center (CNAD)	Strengthened programs for secondary and higher education in industrial technology to improve the quality of human resources needed by the television appliance industry in Tijuana.
4	2012-2015	Technical Cooperation Project	Project for Automotive Supply Chain Development	Unknown	Supported the strengthening of the supply chain between Japanese auto parts companies (Tier-1) and Mexican auto parts companies (Tier-2) by enhancing the competitiveness of Mexican auto parts companies.
5	2015-2020	Technical Cooperation Project	Project for Human Resource Development for the Automotive Industry	State governments of Guanajuato, Nuevo León, and Queretaro	Support the development of skilled workers in model technical high schools to meet the human resource needs of the automotive industry, including Japanese companies, and the development of plans to expand the educational improvement methods in the target states.
6	2017-2022	Technical Cooperation Project	Project for Automotive Cluster Promotion	ProMexico	Strengthen the support programs of state governments and automotive cluster associations in the four target states for Mexican auto parts suppliers (Tier 2) to facilitate their entry into the Japanese automotive value chain.

Source: Created by the Study Team based on JICA's web site

c) Initiatives for Innovation

The Commission for Scientific Research, Technological Development and Innovation, established by the Law on Science and Technology, is the highest decision-making body in Mexico for innovation. The president, heads of ministries, CONACYT, and others participate here, and it has the authority to create and approve special programs and allocate budgets. The "Special Program for Science, Technology and Innovation 2021-2024" has been formulated as this special program. The challenges indicated in the program are that policies over the past six years (2013-2018) have been biased towards sectors such as manufacturing, automotive, and agro-industry favoring the private sector, while neglecting sectors such as social welfare and the social environment, and that the private funding in Mexico (19% private, 77% government, 4% other) is low compared to the average of OECD countries (62% private, 38% government and other).

The CONACYT (Consejo Nacional de Ciencia y Tecnología), which is responsible for science and technology in the country, has formulated the "Organizational Program CONACYT 2020-2024

(Programa Institucional CONACYT 2020-2024)" in line with the National Development Plan 2019-2024. The six priority goals are characterized by the explicit mention of the word "innovation," collaboration with a large number of actors, and the fact that the issues to be solved are socio environmental.

Meanwhile, until 2019, the National Institution for Entrepreneurship (INADEM), under the Ministry of Economy, was taking the lead in building the startup innovation ecosystem. In 2019, after the change of government in 2018, INADEM was abolished, and its role was transferred to the Department of Production and Development (UDP), but as mentioned earlier, this has been criticized and there is no confirmation that the UDP actually supports startups. Therefore, in the federal government, although CONACYT is responsible for innovation from the academic field, collaboration with the private sector is neglected, and there is no system in place to support startups from inception to commercialization, business expansion, and exit, and thus the ecosystem has not been established. On the other hand, emphasizing the socio-environmental sector, the country is directed to promote innovation to solve national and regional issues.

Table 9-24 Innovation-related Policies in Mexico

Laws, plans, etc.	Contents
Science and Technology Law (Ley de Ciencia y Tecnología) *Established in 2002 and updated from time to time, with the latest version updated on December 8, 2015	Establishment of Commission for Scientific Research, Technological Development and Innovation (Consejo General de Investigación Científica, Desarrollo Tecnológico e Innovación). Committee members include the President, ministries, and CONACYT. The committee can create and approve special programs, establish budget allocation guidelines, and approve projects.
Science, Technology and Innovation Special Program 2021-2024 (Programa Espcial de Ciencia, Tecnología e Innovación 2021-2024)	It has been pointed out that the government has raised a bias towards the private sector in sectors such as automobiles and agro-industry, neglecting social welfare and social environment initiatives, and that there has been little investment in research and development from the private sector. The following six objectives are listed as priority objectives: 1. To strengthen the scientific community 2. Frontier science 3. National strategic programs 4. Technology development and transfer 5. To promote universal access to knowledge and its benefits 6. Scientific information and future with social impact
CONACYT Organizational Program 2020-2024 (Programa Instiitucional CONACYT 2020-2024)	The following six priority goals are identified. 1. To strengthen the science, technology, innovation, and other knowledge communities to address national priorities 2. To build an innovation ecosystem that integrates various actors for natural culture and society 3. To increase the contribution to national priorities through knowledge 4. To strengthen capacity building to create knowledge that contributes to the well-being of the public and environmental care 5. To strengthen capacity building through collaboration with local actors 6. To expand the effectiveness of science through the development of standards

Source: Compiled by the Study Team from the documents in the table

d) Initiatives for Innovation in Guanajuato State

As mentioned above, innovation efforts in Mexico have been scaled back at the central government level and are now being undertaken by the states instead. For this reason, this study investigated the current situation of innovation at the state level in Mexico, using the state of Guanajuato, which has close ties to Japan, as a case study.

There are many Japanese companies in Guanajuato, the Consulate-General of Japan in León is located in León, the largest city in Guanajuato, the Japanese Chamber of Commerce and Industry in Mexico has a branch in Guanajuato, and the state has strong ties with Japan, such as the friendship between Hiroshima Prefecture and Guanajuato. JICA has been providing support for the promotion of the automotive industry through the "Automotive Industry Infrastructure Strengthening Project" (2012-2015), the "Automotive Industry Human Resource Development Project" (2015-2020), and the "Automotive Industry Cluster Promotion Project" (2017-2022), and thus Guanajuato has a close relationship with JICA.

On the other hand, the state of Guanajuato in recent years has been shifting away from dependence on the auto industry and pursuing policies that promote innovation. The "Programa de Gobierno del Estado de Guanajuato 2018-2024" shows a recognition of necessity regarding the state's dependence on the automobile industry, based on the changes in market conditions caused by the USMCA and the recent decline in automobile exports. The governor of the state, Diego Sinhue Rodríguez Vallejo, has adopted the slogan "Valle de la Mentefactura Guanajuato" (Valley of Mentefactura Guanajuato), which aims to develop Guanajuato as an innovation hub by linking resources within Guanajuato to create an ecosystem of entrepreneurship and innovation. It has already established collaborative relationships with India, Israel, the EU, Huawei, and Alibaba, and is actively pursuing external collaborations.

In addition, the IDEA GTO⁶ was established as the agency responsible for innovation in the state. Since the Guanajuato Action Plan (Plan de Acción GTO) uphold the theme of consolidation of the activities of various actors in the state, the establishment of IDEA is positioned as one of the activities to achieve this objective. IDEA aims to develop an economy guided by vision of *Mentefactura* and sustainable growth by promoting the global creation, growth and enhancement of corporate new initiatives. The activities listed at the time of its establishment were the creation of events and experiences to complement the educational and formative processes of students, support for the improvement of public services, and the implementation of innovative strategies and initiatives based on science and technology. In fact, IDEA is working to create an ecosystem for innovation throughout the state, and the main activity identified is to set up events and other venues to connect various actors such as universities and companies. It is also involved in human resource development for mentors, investors, and incubation/acceleration organizations.

In addition, the state of Guanajuato has created the *Fondo Mentefacturalo* to promote innovation in the region. Through the IDEA, it is funding companies that develop new products, research that leads to new products, and startups (entrepreneurs). The initial phase of the project is 100,000,000 pesos (about 560 million yen). Other initiatives include the establishment of an e-commerce platform for SMEs called Aldeas digitales in collaboration with Alibaba to help strengthen the sales of SMEs in the state, such as producers of handicrafts (*artesanias*).

Guanajuato's "Mentefactura" is a concept proposed by Juan José Goñi, a Spanish innovation researcher, and in his book, he stated, "Mentefactura is a way of understanding work that relates to two values: the ability to imagine and to collaborate."⁷ The State of Guanajuato describes it as "the talent-based capacity of people to create and improve processes, products, and services through knowledge, technology, and creativity"⁸. It has not been able to confirm any clear goals or systematization of activities based on this concept, but rather it is understood that it is stated for the purpose of transmitting direction both externally and internally. From the perspective of the difference from "innovation," the Study Team interpreted the concept of mentefactura in Guanajuato as follows, and confirmed it with the IDEA GTO, which did not raise any objections.

- A broader concept than innovation that includes not only the development of new technologies but also the improvement of productivity through their use.
- Mentefactura as the next stage of manufacturing
- Focus on ecosystem

As mentioned above, the IDEA GTO is engaged in activities such as organizing events to connect actors in the state, developing human resources such as mentors, and providing an innovation fund, which can be considered to be a multifaceted approach to the formation of an innovation ecosystem. On the other hand, the lack of specificity was identified as an issue. As mentioned above, there is no systematization of efforts to form the Mentefactura Valley, and the fields in which industries will be

⁶ The official name is el Instituto de Innovación, Ciencia y Emprendimiento para la Competitividad para el estado de Guanajuato (Innovation, Science and Entrepreneurship Organization for Competitiveness in Guanajuato), but it is commonly called IDEA GTO.

⁷ Juan José Goñi (2012), "Mentefactura: El cambio del modelo productivo"

⁸ From Valle de la Mentefactura's Youtube Channel

created through innovation and the issues to be solved are unclear. In particular, both the national and state governments have raised social innovation, but they have not made progress in identifying social issues and therefore have not promoted issue-based innovation. It was also confirmed that there is a lack of systematic implementation of initiatives such as entrepreneurship support in universities in the state.

3) Japanese Company

a) Changes in the Environment Surrounding the Automobile Industry

The USMCA is a free trade agreement signed between the US, Mexico, and Canada as a new agreement to replace NAFTA at the request of US President Trump, who considered the outflow of production and jobs to Mexico under NAFTA to be a problem. A particularly significant change is the tightening of restrictions on origin, which is a condition for tariff reductions to be applied in free trade agreements. One of the conditions for satisfying the restrictions on the origin of vehicles is the achievement of a certain ratio of "regional origin content" (RVC). The RVC for vehicles was 62.5% under NAFTA, but has been raised to 75% under the USMCA. In addition, a new "wage clause" was included, which requires that the amount of parts and materials purchased from auto plants produced by workers earning more than USD 16 per hour and the percentage of their wages must be at least 40-45%. It became more difficult to meet the rules of origin if much of the procurement is from factories in Mexico, where wage levels are lower⁹. In particular, the production of automotive steel sheets in Mexico is considered to be difficult, and the procurement of such parts that are not sufficiently produced locally is an issue.

The amendment to the Interlocking Labor Law was promoted by the current President Andrés Manuel López Obrador, commonly known as AMLO, and promulgated on April 23, 2021. As it regulates temporary staffing services, there are concerns about its impact on the manufacturing industry, including automobiles.

One of the reasons behind the ban on temporary staffing is the *Participación de los Trabajadores en las Utilidades de las Empresas* (PTU), a worker profit-sharing scheme that is a characteristic of Mexican labor law. This requires companies to distribute to their employees an amount equal to 10% of the company's taxable income plus certain adjustments. This had become a major burden for Mexican companies. As a countermeasure, there was a certain number of companies that adopted a scheme to reduce the PTU burden on the entire corporate group by reducing the number of workers directly employed by the operating company and receiving workers from service companies within the group or from staffing companies outside the group. In addition, the number of temporary workers in Mexico has increased from about 1 million in 2003 to about 4.6 million in 2018, and it has also been seen as a problem that some companies are exempted from providing benefits and paying social insurance premiums through temporary work, even for employees who are continuously employed¹⁰.

On November 12, 2020, President AMLO announced that he would amend the Federal Labor Law with the aim of regulating staffing services. Subsequently, due to significant opposition from the business community, the start of deliberations in the congress was postponed until February 2021 to consult with the private sector. After further postponements, it was promulgated on April 23. Even after consultations with the private sector, there was no significant change in the principal ban on temporary staffing. Instead, it was stipulated that the maximum PTU will be the higher of either three times the monthly salary of the worker concerned or the average of the PTU received over the past three years.

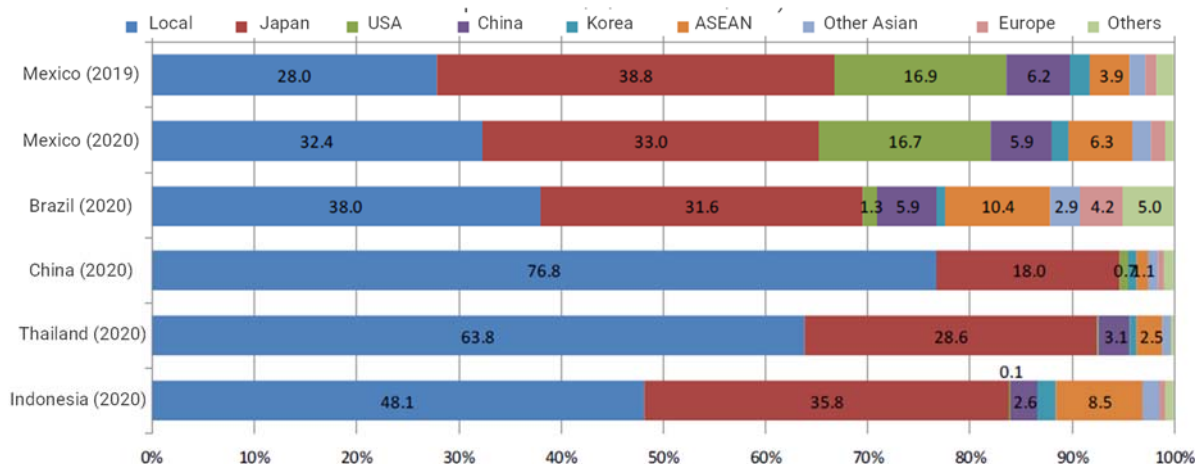
Also, the global trend toward carbon neutrality has been accelerating since the pandemic, and Mexico's automobile industry may be affected by this trend. In particular, the shift to EVs will eliminate the need for engines, which is expected to have an impact on supporting industries. In addition, the pandemic has led to an increase in telecommuting and time spent at home, which has increased the demand for electronic devices, causing a global shortage of semiconductors. The automotive industry has also been affected by the shortage of semiconductors, and it is recognized as a more serious problem than COVID-19.

⁹ Toshiki Takahasi, June 30 2020, NAFTA (USMCA) Finally Goes into Effect

¹⁰ Nishimura & Asahi, May 16 2021, Staffing Regulations and New PTU Twist in Mexico (May 17, 2021 issue)

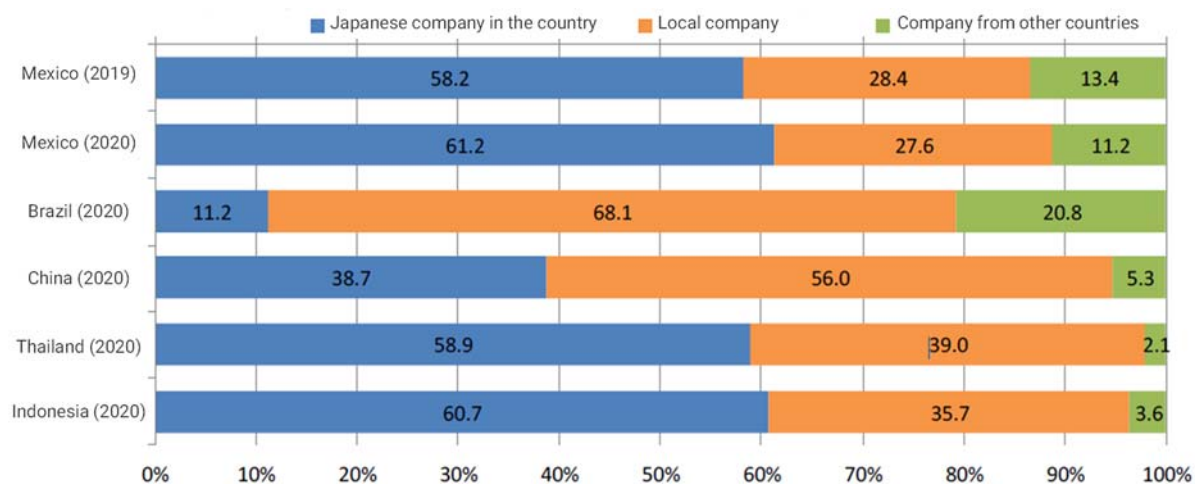
b) Relationship between Japanese Companies and Mexican Companies/ Workers

Although many Japanese companies have entered the Mexican market, the percentage of local procurement is small as shown in Figure 9-23. Also, the breakdown of local procurement is also high in Japanese companies that have expanded into Mexico, and low in domestic and local companies.



Source: JETRO

Figure 9-23 Procurement Sources of Parts and Raw Materials for Japanese Companies (Manufacturing of Transportation Equipment and Parts) by Region

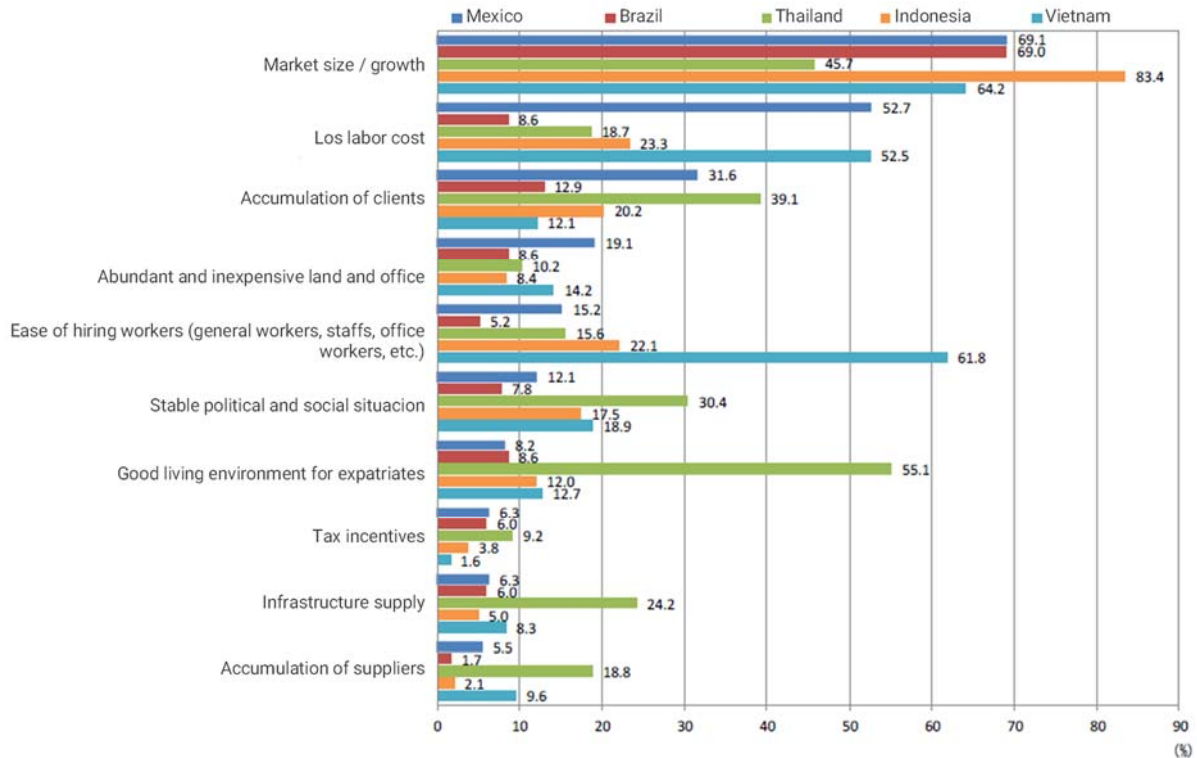


Source: JETRO

Figure 9-24 Origin of Nationality of Capital of Local Procurement Sources of Parts and Raw Materials for Japanese Companies (Manufacturing of Transportation Equipment and Parts)

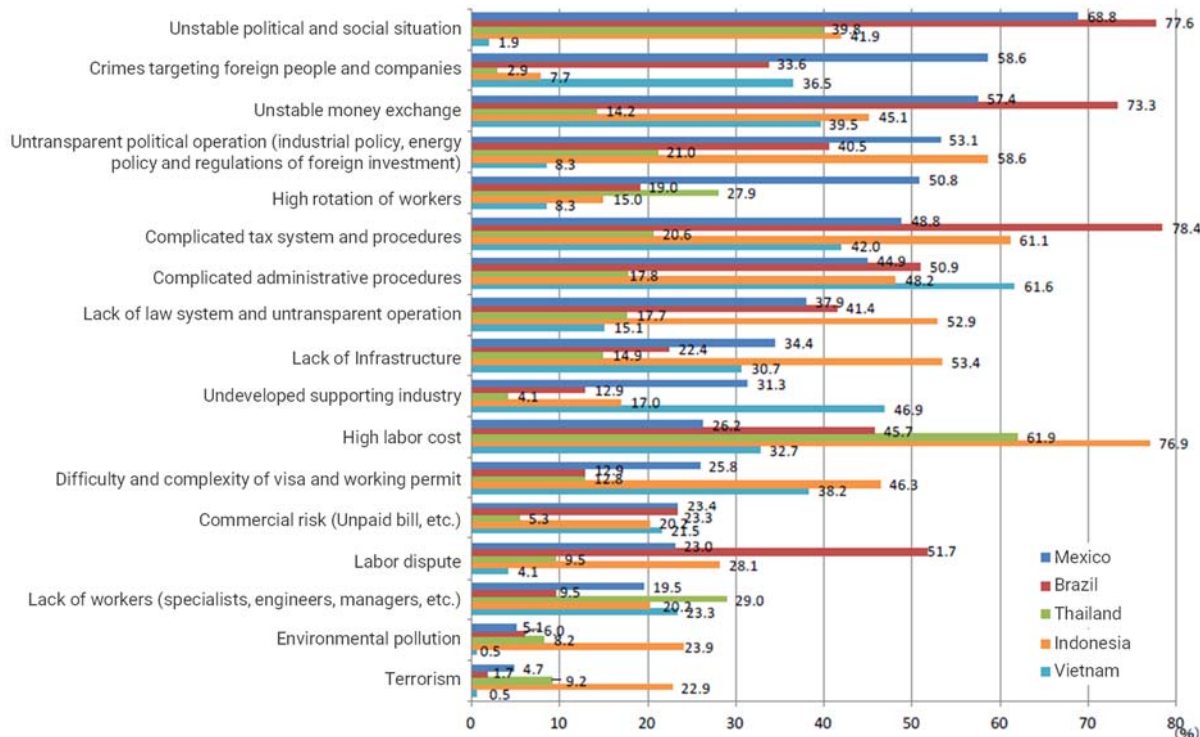
Figure 9-25 and Figure 9-26 show the merits and risks of the investment environment in the Latin American and ASEAN emerging countries, including Mexico, as viewed by Japanese companies operating in these countries. While "low labor costs" and "concentration of client (supplier) companies" were perceived as advantages of Mexico, "ease of hiring employees (general workers, general staff, clerks, etc.)" was not so high, and the advantage of "concentration of supporting industries (ease of local procurement)" was also not high. As for challenges, "high employee turnover" and "immature and underdeveloped supporting industries" were relatively common responses. "Labor shortage and difficulty in recruiting human resources (specialists, engineers, middle managers, etc.)" was also a reasonably high response. Thus, while Mexico has the advantage of proximity to the North American market and an environment in which a low labor force can be obtained, there are issues in the collaboration between Japanese companies and supporting local industries, as well as in the recruitment and retention of local human resources. Improvements are required for industrial promotion and stable employment creation through the advancement of Japanese companies.

Political risks such as "unstable political and social situation" and "opaque policy management by the local government (industrial policy, energy policy, restrictions on foreign investment, etc.)" are also perceived as relatively high. In terms of safety, the risk of "terrorism" is not so high, but "crimes targeting foreigners and foreign companies (murder, kidnapping, robbery/theft, fraud, etc.)" is particularly high. Therefore, these issues are also important in terms of the advancement of Japanese companies.



Source: JETRO

Figure 9-25 Advantages of Latin American and ASEAN Emerging Countries in Terms of Investment Environment



Source: JETRO

Figure 9-26 Risks Perceived by Japanese Companies in Latin American and ASEAN Emerging Countries in Terms of Investment Environment

(3) Costa Rica

1) Current Status

In Costa Rica, the unemployment rate was relatively high in the region and continued to decrease gradually until 2017. After 2017, however, it began to increase, reaching 11.85% in 2019, which is higher than the value in 2011. During this period, there was an increase in the working population but no increase in jobs, resulting in an increase in the unemployment rate. It was also caused by the strikes against the fiscal policies proposed by the Costa Rican government. From 2017 to 2018, the number of workers increased by 8.50% while the number of unemployed increased by 43.76% as the population over 15 years old grew by 1.39% while the labor force grew by 11.78%. The same phenomenon of increase in the number of unemployed and unemployment rate from 2018 to 2019 occurred as the number of jobs cannot support the increase in the labor force. However, in 2020, when the impact of COVID-19 became apparent, the number of unemployed rates increased by 36.54% while the labor force also decreased by 2.11%, although the unemployment rate increased by 7.56% to 19.98%.

Table 9-25 Changes in Employment Situation (Costa Rica)

Index	2017 (4Q)	2018 (4Q)	Var 17-18	2019 (4Q)	Var 18-19	2020 4Q	Var 19-20
1. Total Population	4,966,414	5,022,311	1.13%	5,075,372	1.05%	5,128,407	1.03%
2. Population Over 15 Years Old	3,856,937	3,910,428	1.39%	3,963,658	1.34%	4,014,151	1.26%
2.1 Labor Force Population	2,200,092	2,459,237	11.78%	2,492,283	1.33%	2,440,826	-2.11%
Number of Unemployed	1,995,640	2,165,323	8.50%	2,182,818	0.80%	1,953,151	-11.76%
2.2 Non-labor Force Population	204,452	293,914	43.76%	309,465	5.03%	487,675	36.54%
3. Percentage							
Labor Participation Rate	57.04%	62.89%	5.85%	62.88%	-0.01%	60.81%	-2.07%
Employment Rate	51.74%	55.37%	3.63%	55.07%	-0.30%	48.66%	-6.41%
Unemployment Rate	9.29%	11.95%	2.66%	12.42%	0.47%	19.98%	7.56%

Source: Created based on INEC

The unemployment situation of women is more serious than that of the entire population. The number of women in the labor force increased by 20.68% in 2018 and 2.43% in 2019, while the number of unemployed increased by 46.70% in 2018 and 12.60% in 2019. Furthermore, the number of unemployed increased by 32.74% in 2020 despite a 1.82% decrease in the labor force population. The women unemployment rate reached 25.22% in 2020.

The youth unemployment rate is also high, as mentioned above, although a simple comparison is not possible due to different sources. It has consistently been above 20% in the last decade, and has even increased sharply since 2017; as of 2020, it has risen to 40.68%.

Table 9-26 Changes in Women's Employment Status (Costa Rica)

Index	2017 (4Q)	2018 (4Q)	Var 17-18	2019 (4Q)	Var 18-19	2020 4Q	Var 19-20
1. Total Population	2,461,228	2,490,359	1.18%	2,517,474	1.08%	2,544,656	1.07%
2. Population Over 15 Years Old	1,920,254	1,947,874	1.44%	1,975,247	1.39%	2,001,084	1.29%
2.1 Labor Force Population	810,745	978,411	20.68%	1,002,827	2.43%	984,918	-1.82%
Number of Laborers	711,186	832,362	17.04%	835,724	0.40%	736,485	-13.47%
Number of Unemployed	99,559	146,049	46.70%	167,103	12.60%	248,433	32.74%
2.2 Non-labor Force Population	1,109,509	969,463	-12.62%	972,420	0.30%	1,016,166	4.31%
3. Percentage							
Labor Participation Rate	42.22%	50.23%	8.01%	50.77%	0.54%	49.22%	-1.55%
Employment Rate	37.04%	42.73%	5.70%	42.31%	-0.42%	36.80%	-5.51%
Unemployment Rate	12.28%	14.93%	2.65%	16.66%	1.74%	25.22%	8.56%

Source: Created based on INEC

According to SICA's explanation, the following hypotheses can be considered as the background to the increase in the labor force, which is the cause of the increase in the unemployment rate:

1. Unemployment of household members: It has become an incentive for other household members, especially women, to look for a job. Women accounted for 64% of the increase in the workforce.
2. Impact of protests: Of the new unemployed (89,462), about half (44,000) were between the ages of 15 and 24. Of the 44,000, 8,000 were between the ages of 15 and 18, and the remaining 36,000 were between the ages of 18 and 24.
3. Uncertainty in financial planning: In response to the depressed economic forecast experienced around the debate on financial planning, more people have started looking for jobs before the economic situation becomes more complicated.
4. High household debt: statistics show that a slowdown in household consumption and an increase in debt are occurring.

In addition to this, the Costa Rican government's response to COVID-19 has affected the employment of women and youth. The Costa Rican government has imposed restrictions on automobile traffic as a countermeasure against the infection. As a result, the service sector was affected, and the employment of women and youth decreased.

a) Employment Status of Women

Focusing on 2017 and 2018, the particularly large increase in the labor force was attributable to the large increase in the labor force of women between the ages of 35 and 59, largely due to population growth in this group. Looking at the education levels, there is an increase in employment among women with lower levels of education. However, this does not mean that women in the workforce have a lower level of education than men. The number of women with a college education who are employed is almost the same as the number of men with the same education level. Therefore, it can be assumed that women with lower levels of education did not need to work, but after 2018, due to economic conditions and

other factors, they need or have incentives to work. However, the employment situation for women is poor: out of 121,176 employed women, 100,635, or 83.0%, do not have access to social security.

Table 9-27 Breakdown of Employment Situation in Costa Rica (2017-2018)

Index	Q4 2017			Q4 2018					
	Men	Women	Total	Men (Amount of Increase)	Women (Amount of Increase)	Total (Amount of Increase)			
1. Population	2,505,186	2,461,228	4,966,414	2,531,952	1.07%	2,490,359	1.18%	5,022,311	1.13%
1.1 Age	2,505,186	2,461,228	4,966,414	2,531,952	1.07%	2,490,359	1.18%	5,022,311	1.13%
0-14 years old	568,503	540,974	1,109,477	569,398	0.16%	542,485	0.28%	1,111,883	0.22%
15-24 years old	429,118	393,603	822,721	433,418	1.00%	373,646	-5.07%	807,064	-1.90%
25-34 years old	392,257	364,119	756,376	385,032	-1.84%	357,949	-1.69%	742,981	-1.77%
35-44 years old	306,101	323,613	629,714	314,651	2.79%	341,547	5.54%	656,198	4.21%
45-59 years old	428,180	429,253	857,433	440,620	2.91%	477,154	11.16%	917,774	7.04%
60 years and over	380,506	409,250	789,756	388,456	2.09%	396,577	-3.10%	785,033	-0.60%
No answer	521	416	937	377	-27.64%	1,001	140.63%	1,378	47.07%
2. Population Over 15 Years Old	1,936,683	1,920,254	3,856,937	1,962,554	1.34%	1,947,874	1.44%	3,910,428	1.39%
2.1 Labor Force Population	1,389,347	810,745	2,200,092	1,480,826	6.58%	978,411	20.68%	2,459,237	11.78%
Laborers	1,284,454	711,186	1,995,640	1,332,961	3.78%	832,362	17.04%	2,165,323	8.50%
Unemployed	104,893	99,559	204,452	147,865	40.97%	146,049	46.70%	293,914	43.76%
2.2 Non-labor Force Population	547,336	1,109,509	1,656,845	481,728	-11.99%	969,463	-12.62%	1,451,191	-12.41%
3. Laborers	1,284,454	711,186	1,995,640	1,332,961	3.78%	832,362	17.04%	2,165,323	8.50%
3.1 Age	1,284,454	711,186	1,995,640	1,332,961	3.78%	832,362	17.04%	2,165,323	8.50%
15-24 years old	166,823	82,999	249,822	176,224	5.64%	94,933	14.38%	271,157	8.54%
25-34 years old	332,363	194,006	526,369	333,884	0.46%	208,906	7.68%	542,790	3.12%
35-44 years old	285,219	186,620	471,839	289,789	1.60%	216,311	15.91%	506,100	7.26%
45-59 years old	365,740	196,783	562,523	388,329	6.18%	252,526	28.33%	640,855	13.93%
60 years and over	134,079	50,624	184,703	144,443	7.73%	58,685	15.92%	203,128	9.98%
No answer	230	154	384	292	26.96%	1,001	550.00%	1,293	236.72%
3.2 Insurance*	1,284,454	711,186	1,995,640	1,332,961	3.78%	832,362	17.04%	2,165,323	8.50%
Do not have insurance	322,589	233,256	555,845	357,787	10.91%	333,891	43.14%	691,678	24.44%
Have insurance	961,865	477,930	1,439,795	975,174	1.38%	498,471	4.30%	1,473,645	2.35%
3.3 Education Level	1,284,454	711,186	1,995,640	1,332,961	3.78%	832,362	17.04%	2,165,323	8.50%
Below elementary school dropout	142,206	49,618	191,824	143,309	0.78%	65,061	31.12%	208,370	8.63%
Elementary school graduate	367,680	151,666	519,346	374,719	1.91%	172,098	13.47%	546,817	5.29%
Dropped out of junior high school	336,575	156,632	493,207	359,232	6.73%	197,992	26.41%	557,224	12.98%
Junior high school graduate	172,191	107,664	279,855	175,746	2.06%	128,228	19.10%	303,974	8.62%
University graduate (no degree)	54,438	35,631	90,069	56,722	4.20%	49,219	38.14%	105,941	17.62%
University graduate (with degree)	209,823	209,975	419,798	219,750	4.73%	218,567	4.09%	438,317	4.41%
No answer	1,541	0	1,541	3,483	126.02%	1,197	-	4,680	203.70%

Note: *Insurance means social insurance, not including pension, private insurance, etc.

Source: Created based on INEC

Table 9-28 shows the number of women workers by sector. Of these, Figure 9-27 shows the changes in manufacturing, commerce and repair, hotels and restaurants, education and healthcare, telecommunications and other, and households, which account for a high percentage of the total. It shows that the number of women workers dropped sharply in the second quarter of 2020 due to COVID-19, but the impact varies by sector. The education and healthcare sectors have been largely unaffected,

and the manufacturing sector, while showing a decline, was not affected in the second quarter, and the decline is likely due to the 2018-2019 decline trend and inter-seasonal variations. The numbers of workers lost in two sectors, i.e., commerce and repair and households, were high and have not recovered, as of the fourth quarter. On the other hand, hotels and restaurants, after falling in the second quarter, recovered significantly in the third quarter. This can be attributed to the resumption of domestic tourism in July 2020 and tourism from Europe in August 2020.

INAMU (2021) also contains the results of a survey of women entrepreneurs and businessmen between April 2 and May 19, 2020. According to the report, the most affected economic activities were services, agribusiness, textiles, agriculture, and crafts. It also found that 86% of these women had not received any public support to strengthen their businesses before the pandemic.

The INAMU (2021) also points out the digital divide between the urban and rural areas. Although the internet penetration rate is improving, there are still some rural areas that do not have access to the internet, and therefore, there are people who could not benefit from the digitization of public services. In addition, one of the issues for women in particular is that the pandemic has increased the amount of work they have to do at home. The results of the questionnaire survey of young people shown in Table 9-29 show that 0.0% of men answered "because of taking care of children, etc." as a reason for difficulty in employment, while 4.5% of women answered so. This indicates that the burden of housework and childcare has been shifted to women more than in the past, resulting in the loss of employment opportunities. During the COVID-19 pandemic, the increase in non-wage work, such as caring for children when conducting online classes and infection control at home, may hinder women's access to wage work.

Table 9-28 Number of Women Workers by Sector (Costa Rica)

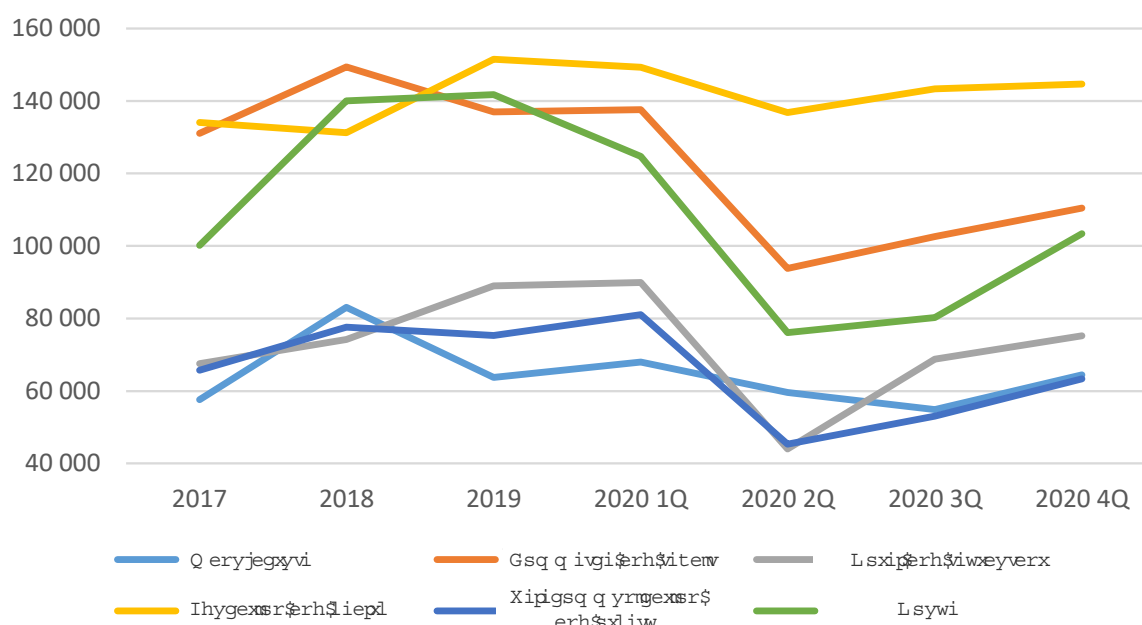
Sector	2017	2018	2019	2020 1Q	2020 2Q	2020 3Q	2020 4Q	% (2019)
Total number of workers (Women)	711 186	832 362	835 724	847 181	616 533	660 754	736 485	100.0%
1.1 Primary industry	34 825	36 759	34 180	42 567	26 061	29 503	33 489	4.1%
Agriculture, livestock farming, fishing	34 825	36 759	34 180	42 567	26 061	29 503	33 489	4.1%
1.2 Secondary industry	65 302	87 805	71 845	77 805	66 896	61 233	76 026	8.6%
Manufacturing industry	57 560	83 006	63 692	67 971	59 592	54 894	64 448	7.6%
Construction industry	4 349	2 424	2 522	6 208	4 759	2 162	6 398	0.3%
Other secondary industries	3 393	2 375	5 631	3 626	2 545	4 177	5 180	0.7%
1.3 Tertiary industry	607 423	700 488	727 879	725 773	521 115	569 836	623 122	87.1%
Commercial / repair	131 098	149 391	136 950	137 600	93 788	102 563	110 448	16.4%
Transportation	8 831	12 185	13 888	10 941	11 364	11 044	13 795	1.7%
Hotel / restaurant	67 506	74 162	88 953	89 891	43 976	68 807	75 234	10.6%
Financial / insurance brokerage business	19 330	18 415	21 671	24 662	20 684	15 931	19 671	2.6%
Professional and administrative support	53 511	63 611	60 833	70 371	60 465	65 672	57 345	7.3%
Administration	27 139	33 875	37 037	37 218	32 557	29 250	35 248	4.4%
Education / medical	134 117	131 230	151 511	149 293	136 830	143 297	144 677	18.1%
Communication / other	65 778	77 580	75 298	81 047	45 330	53 054	63 371	9.0%
Home	100 113	140 039	141 738	124 750	76 121	80 218	103 333	17.0%

Source: Created by Study Team based on INEC

Table 9-29 Reasons for Difficulty in Finding Employment (Costa Rica)

Reasons	Age group				Sex		Total
	15-17	18-24	25-29	30-35	Male	Female	
Lack of experience	10,2	29,8	17,4	14,9	24,7	20,3	22,1
Lack of study	1,5	19,2	26,5	20,7	15,6	21,1	18,9
There is no work	3,7	12,3	17,8	21,5	14,9	13,6	14,2
Recently started to find	10,3	12,0	8,2	8,5	10,0	10,7	10,4
Because of age	51,0	3,1	6,7	5,7	11,9	9,0	10,2
Do not know why	9,4	10,8	5,4	11,3	12,0	7,9	9,5
Waiting for response of past procedure	1,6	7,1	5,5	4,2	8,7	3,5	5,6
Lack of work of the speciality	0,0	2,7	6,2	1,7	2,0	3,7	3,0
To care children or other people	2,0	3,0	0,1	5,6	0,0	4,5	2,7

Source: Tercera Encuesta Nacional de Juventudes – Informe de Principales Resultados 2018



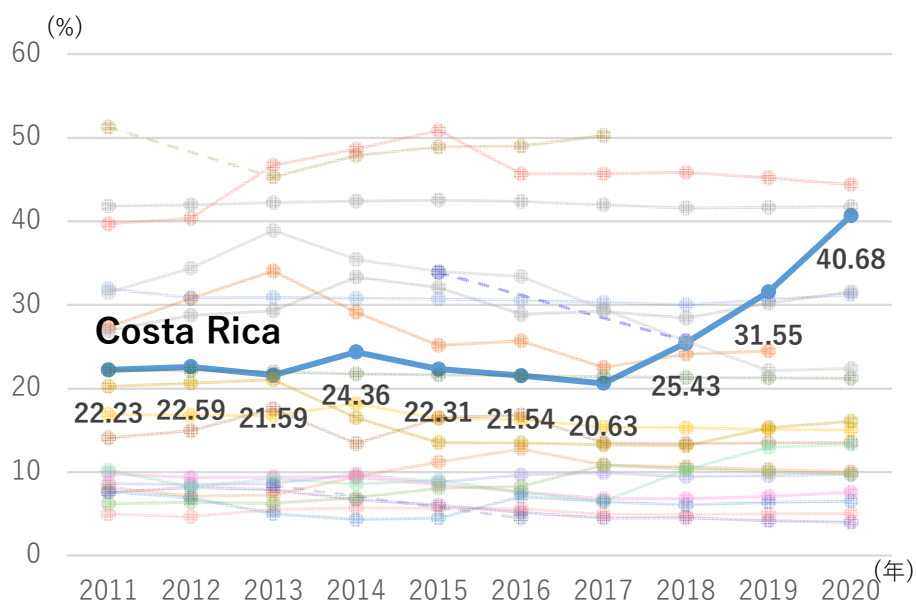
Source: Created by Study Team based on INEC

Figure 9-27 Number of Women Workers by Sector (Costa Rica)

b) Employment Status of Young People

According to CEPAL, the youth unemployment rate in Costa Rica (covering 15 to 24 years old) has been increasing rapidly since 2017, reaching 40.68% in 2020 (Figure 9-28). This is one of the highest values in the region and the largest increase. According to the survey conducted in 2018 among 15-35 years old¹¹, 49% of them were engaged in wage-earning work, while 51% were not. Of the latter, 75% were willing and able to work, which is 38% of the total. The reasons for difficulty in finding work include lack of experience (22.1%), lack of education (18.9%), and lack of work opportunities (14.2%) (Table 9-29), suggesting that there may be a gap between the skills and human resources that companies are looking for.

¹¹ Ministerio de cultura y juventud, Consejo de la Persona Joven (2018), “Tercera Encuesta Nacional de Juventudes – Informe de Principales Resultados 2018”



Source: Created by the Study Team based on CEPAL

Figure 9-28 Changes in Youth Unemployment Rate (Costa Rica)

However, it is questionable whether the youth unemployment rate is actually above 40%. In the above survey conducted in 2018, 27.3% and 10.2% of those who did not have a job answered “yes” when asked whether they had looked for a job in the past four weeks and past one week, respectively. The definition of "totally unemployed" in Japan is: "1. did not work at all during the survey week due to lack of work (not employed); 2. ready to take a job if one is available; and 3. was preparing to start a job search or business during the survey week (including waiting for results of previous job search activities)."¹² Therefore, it is appropriate to assume that those who answered "yes" to the above question are the totally unemployed. If the criteria for counting people as fully unemployed is the past four weeks, the unemployment rate is 22.1%, which is close to the SICA data. On the other hand, if the past week is set as the past one week, the unemployment rate is 9.6%. In addition, the Study Team conducted interviews with representatives of the *Consejo de la Persona Joven*, which conducted the above survey and is in a position to determine policies for young people, and they were not aware of any major problems with the unemployment rate for young people. Given this fact, it is possible that the actual unemployment rate is closer to 9.6%, and even if the impact of COVID-19 is added, it may not be much of a problem.

Table 9-30 Estimating the Actual Unemployment Rate for 15 to 35 Years Old (Costa Rica)

Contents	Percentage	Number	Unemployment Rate
Total	100%	1790196	-
Employed	51%	877196	-
Not employed	49%	913000	-
Not employed and looked for a job in the past 4 weeks	27.3%	249249	22.1%
Not employed and looked for a job in the past one week	10.2%	93126	9.6%

Source: Created by the Study Team based on “Tercera Encuesta Nacional de Juventudes – Informe de Principales Resultados 2018”

¹² Source : Statistics Bureau Ministry of Internal Affairs and Communications Japan, Revised on May 11, 2018, Labor Force Survey: Glossary of Terms

2) Approaches by the Costa Rican Government

The following organizations are involved in supporting SMEs, women's employment, and youth employment in Costa Rica. In this study, interviews were conducted with CECAPRO and *Consejo de la Persona Joven*, and INAMU provided the relevant research reports.

Table 9-31 Organizations Involved in Supporting SMEs, Women and Youth Employment in Costa Rica

No.	Organizations	Outline	Practical Example
1	CECAPRO	Provides consulting, advisory, technical assistance and other services to improve the productivity and quality of companies and organizations in Central America and the Caribbean.	Facilitator Capacity Improvement Project for Quality and Productivity Improvement in SMEs (<i>Programa de Formación de Facilitadores en Centroamérica y el Caribe</i> (JICA))
2	Ministry of Economy, Industry and Commerce (MEIC), SME Support Department (<i>Dirección General de Apoyo a la Pequeña y Mediana Empresa del MEIC</i> : DIGEPYME), (<i>Ministerio de Economía Industria y Comercio</i> : MEIC)	To coordinate, promote and evaluate promotion and support programs for MSMEs and entrepreneurship.	Youth Entrepreneurship Bootcamp (<i>Bootcamp de Emprendimiento Joven</i>) Women and Business (<i>Mujer y negocios</i> (department unknown)) Digitalization Plan for MSMEs (<i>Plan de digitalización de Mipyme</i>)
3	National Institution for Women (<i>Instituto Nacional de las Mujeres</i> : INAMU)	Formulate and promote national policies for gender equality. Protecting the rights of women. Monitoring public institutions for gender equality and equity. Promoting women's social, political, cultural, and economic participation.	Women and Business (<i>Mujer y negocios</i>)
4	Youth Affairs Agency (<i>Viceministerio de Juventud</i>)	Support for entrepreneurship and protection of human rights for the population between the ages of 12 and 35.	Youth Entrepreneurship Bootcamp (<i>Bootcamp de Emprendimiento Joven</i>)
5	Youth Committee (<i>Consejo de la Persona Joven</i>)	Technical agency of public policies for the promotion of development, social equality and equality of opportunities for young people.	Youth Entrepreneurship Bootcamp (<i>Bootcamp de Emprendimiento Joven</i>)
6	National Institute of Occupational Safety and Health (<i>Instituto Nacional de Aprendizaje</i> : INA)	Support individuals and companies in strengthening their capacity to contribute to growth, productivity, and competitiveness.	Women and Business (<i>Mujer y Negocios</i>) Provides skills development courses for individuals and companies.

Source: Created by the Study Team

a) CECAPRO

In Costa Rica, JICA has continued to support CECAPRO (formerly CEFOF), which was established in 1992. From 1992 to 1997, JICA implemented the "Central American Regional Industrial Technology Development Project" as part of its project-based technical cooperation, and later conducted a training program for neighboring countries focusing on the 5S (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke), one of the results of the technology transfer, which was highly evaluated in Central America and the Caribbean. From 2001 to 2006, JICA implemented the "Productivity Improvement Project" with the aim that CEFOF continue to exist as a base for disseminating technology and information related to productivity improvement in Central America and the Caribbean. As one of the results of this project, 11 counterparts were certified as management consultants by JICA and the Japan Productivity Center. From 2009 to 2012, JICA implemented the "Facilitator Capacity Building Project for Quality and Productivity Improvement in SMEs". This was to utilize Costa Rican consultants as core human resources for the guidance and development of future human resources, and to provide a foothold for the spread of human resource development for quality and productivity improvement of SMEs through Japanese quality and productivity improvement methods in Central America and the Caribbean. After that, the technical cooperation project "Capacity Building System Development Project for Human Resources to Support SMEs" was implemented from 2015 to 2018 to further strengthen the capacity to support SMEs within Central America and the Caribbean. Currently, they are implementing a project to train facilitators who will work to improve the productivity of SMEs in Nicaragua and Guatemala, and are planning to start one in Honduras soon.

In the country, there are three technical programs open to the public: (1) Advanced Technical Program - Productivity and Quality (*Programa técnico superior en productividad y calidad*), (2) Advanced Technical Program - Chemistry (*Programa técnico superior laboratorista químico*), and (3) Advanced Technical Program - Project Management (*Programa técnico superior de administración de proyectos*). Most of the participants are young people who take the courses for the purpose of advancement and employability in the company. In addition, UTN (*Universidad Tecnológica de Costa Rica*), to which CECAPRO belongs, is entrusted with the educational program of the city of Escazu, and CECAPRO is a part of it, teaching classes on client services.

Twenty years have passed since JICA started its support, and the organizational structure of CECAPRO has been changing. First of all, since it became a part of the university, its administrative and other functions have been absorbed by the university. Of the seven consultants, six were trained through JICA projects and the remaining one is in charge of the chemistry course. Although the former six consultants have many years of experience, they are in their fifties and will all be retiring within a few years. Although it is recognized that CECAPRO needs to train new resources to continue its activities, the difficulty is that CECAPRO is a part of the university and therefore cannot make decisions on its own. CECAPRO itself has not been significantly affected by COVID-19, as it continues to conduct its activities such as lectures online. No significant impact has been observed in the SMEs associated with CECAPRO.

b) Consejo de la Persona Joven

The *Consejo de la Persona Joven* is a committee attached to the Ministry of Culture and Youth, and its role is to oversee public policies for young people. In addition to conducting the Youth Survey of Costa Rica (*Encuesta Nacional de Juventudes Costa Rica*) every five years, it also formulates the Youth Public Policy (*Política Pública de la Persona Joven*) and its Action Plan every five years.

Also, a program called "*Impulso emprende joven*" is being implemented in collaboration with MEIC to support young entrepreneurs. The program aims to develop skills in the early stages of business and teaches issues such as cost accounting, marketing, and management. In addition, they also offer programs to improve employability such as interviewing and CV guidance.

As for the impact of COVID-19, the challenge is recognized that the service industry was affected by the infectious disease control measures that restrict automobile traffic. As for the traditional challenges, it was mentioned that while there is a shortage of human resources in the technical professions, the current education system is dominated by general education for university entrance, and that there is a lack of cooperation between schools and entrepreneurship.

On the other hand, the committee's focus in relation to SMEs is entrepreneurship. Although an entrepreneurial mindset has been fostered among the youth in recent years, there is a perceived lack of support and funding for entrepreneurship. Incubation is limited to the University of Costa Rica and the *Instituto Tecnológico de Costa Rica* and is insufficient for the demand. The committee has also been working to support entrepreneurs for four years but has only been able to support 80 people so far. The lack of access to seed money is also recognized as an issue.

9.7 Development of Hypothesis on the State of Sectoral Development Cooperation in With/Post COVID-19 Society

9.7.1 Grouping of Surveyed Countries by Sector

In this sector, grouping was not used because the priority countries were selected based on the impact of COVID-19 on unemployment rates as described above.

9.7.2 Analysis of Vulnerabilities in the Surveyed Countries and Priority Sectors

In general, the region was resilient to the pandemic in macroeconomic terms, as export industries were temporarily affected by strong behavioral controls but quickly recovered. However, in a labor-intensive production environment, this resiliency is partly realized at the expense of burden on workers, such as the risk of infection and overwork due to the shortage of personnel. Particularly in recent years, productivity improvement has been barely realized, and economic growth has been

supported by labor input. Therefore, improving productivity is both a traditional challenge and a vulnerability in a pandemic that restricts people to gather and move around.

In addition, although assistance was provided to small and medium-sized enterprises and workers affected by the pandemic in many countries, most of it was "life-saving measures" such as providing loans and exemption from paying taxes and public services to delay the economic impact of the pandemic. On the other hand, there was limited job training and other opportunities to improve productivity and acquire more resilient job skills for the BBB. In terms of financing measures, the government's lack of funds and support for the segments of the population that need assistance the most have also been pointed out as issues. These challenges may be due to a lack of government funding to respond to emergencies, difficulties in understanding the situation and providing public support due to the large size of the informal sector, and a lack of systems to improve productivity and capacity building.

As for the employment situation, the large informal sector is a challenge for the entire region, and as mentioned earlier, it leads to the vulnerability in the difficulty of public support in a pandemic. Unemployment rates among women and young people tends to be higher than the total unemployment rate, and the impact of the pandemic was also significant. The background to women's unemployment is that there was a lot of informal employment, a lot of employment in the service sector, and an increase in work in the home due to school closures.

The above vulnerabilities in the private sector fall into four main categories. The first is that due to the size of the informal sector, it is difficult to collect accurate information on pandemics and other emergencies to identify those who need support and provide appropriate public support to them. The second is that economic growth through labor input, with productivity growth stagnant for many years, is limited under a pandemic that limits the movement and aggregation of people, and its labor-intensive structure is re-recognized. Third, due to the lack of government funding, the government was unable to provide a sufficient amount of assistance to the businesses and people affected by the pandemic. Fourth, the traditionally high unemployment rates for women and young people have worsened further, revealing the vulnerability of their employment.

In addition, distinctive challenges and vulnerabilities in the three priority countries were identified. In Panama, the scale and growth of the agriculture and manufacturing industries have traditionally been small, and there is a lack of support systems and human resources to support the capacity building of enterprises. In addition, although those industries can continue their economic activities relatively unaffected under the conditions of restricted mobility by COVID-19, it is difficult to expand the traditional agriculture and manufacturing industries in Panama, where wages are higher than in neighboring countries.

Although Mexico has developed its manufacturing industry and boasts a prominent import and export value in Central America and the Caribbean, its GDP per capita is not very high, and its minimum wage is very low. Therefore, even in the event of a pandemic, the manufacturing industry can be expected to support the economy, but a large segment of the population is expected to be severely affected by the economic impact. In addition, since the change of government, recent policies to support SMEs have been biased toward loans to small businesses, and their effectiveness in the long-term impact of a pandemic is questionable. In addition, since many Japanese automobile companies have established operations in Mexico, it is expected to contribute to SMEs and employment by strengthening their local supply chains and hiring local human resources. However, there are issues such as the low local procurement rate by Japanese companies and the high employee turnover rate.

Also, recent policies to support SMEs since the new administration have been biased toward loans to small businesses, and their effectiveness in the long-term impact of a pandemic is questionable. In addition, since many Japanese automobile companies have established operations in Mexico, they are expected to contribute to SMEs and employment by strengthening their local supply chains and hiring local human resources, but there are issues such as low local procurement rates and high employee turnover rates in Japanese companies.

In Costa Rica, the unemployment rate among women and young people had been worsening before COVID-19, and COVID-19 made it worse. Women, in particular, are more likely to work in

informal jobs or in the service sector, and are therefore considered to have been greatly affected by COVID-19. In addition, the implementation of restrictions on going out of the home and online education has increased domestic work, undermining women's employment opportunities.

Above challenges and vulnerabilities revealed by COVID-19 in the Central America and the Caribbean and in each priority country are shown in the table below.

Table 9-32 Challenges for the Private Sector and Vulnerabilities Revealed by COVID-19

Country	Challenges	Vulnerabilities Revealed by COVID-19
Central America and the Caribbean	Large informal sector	Difficulty in gathering information and providing public support to the informal sector in the event of a pandemic or other emergency
	Stagnation in productivity improvement	The limits of economic expansion through the input of labor while productivity growth remains stagnant have become apparent.
	Lack of government funding	Lack of support for small businesses and workers affected by the pandemic
	High unemployment rate among women and young people	The pandemic further increased the unemployment rate among women and young people, reaffirming the challenges and revealing the vulnerability of working conditions.
Panama	Small size and growth of agriculture and manufacturing industries	Weakness of industrial base to support the economy when human mobility is restricted
	Insufficient systems to support corporate productivity improvement	Difficulty in shifting to advanced manufacturing industries that are resilient to pandemics
	Lack of human resource development, corporate sophistication, and specialized knowledge and skills for innovation	Difficulty in shifting to advanced manufacturing industries that are resilient to pandemic
Mexico	Low productivity and low-wage labor	Large economic impact
	Instability of national policies to support SMEs	Lack of economic measures utilizing the private sector
	Support for microenterprises with a focus on loans	Lack of effectiveness of small- and short-term loans due to prolonged impact
	Low rate of local procurement by Japanese companies	Loss of opportunity for manufacturing to support the economy
	High employee turnover in Japanese companies	Related to the low productivity described above
	Changes in the environment surrounding the automotive industry (USMCA, carbon neutrality)	Accelerating the trend toward carbon neutrality
Costa Rica	Dependence on the automobile industry	Transfer of risk and burden to factory workers Dependency on sole industry
	Increase in unemployment rate due to women's participation in the labor market	Further increase in women's unemployment
	Increase in informal employment through women's participation in the labor market	Increase in women's unemployment due to the impact of COVID-19
	Large share of women in the service sector in the labor force	Increase in women's unemployment due to the impact of COVID-19
	Disproportionate burden on women in domestic work	Further increase in women's role in the household and loss of employment opportunities
	Increase in youth unemployment	Further increase in youth unemployment

Source: Created by the Study Team

9.7.3 Hypothesis on Development Cooperation for With/Post COVID-19 Societies in Central America and the Caribbean

Hypotheses on effective ways to overcome the challenges and vulnerabilities of the Central American and Caribbean region in general, as well as directions for cooperation, were developed as shown in Table 9-33. In response to the difficulty of providing support to the informal sector in contingencies such as pandemics, efforts should be made to formalize the informal sector. This is an issue that has been addressed for many years, and after COVID-19 it is required to strengthen the existing efforts.

Regarding the issue of productivity improvement, one of the measures is to strengthen the productivity improvement support system. The effective direction of cooperation for this purpose would be regional cooperation using existing productivity improvement centers such as CECAPRO and regional collaboration organizations such as CENPROMYPE in SICA. However, since CECAPRO has

an aging consultant workforce and needs to address the issue of generational change, from the perspective of continuity, the use of productivity improvement support organizations developed in other countries should be considered.

In addition to the conventional efforts to improve productivity described above, the introduction and development of new technologies should also be incorporated as a means. In the state of Guanajuato, Mexico, under the concept of "*mentefactura*," the state is working to improve productivity through the use of new technologies. In Mexico and Costa Rica, online platforms for e-commerce have been established during the pandemic. It is also important to promote innovation from the perspective of creating new technologies and shifting to sophisticated industries. In particular, in order for startups to build and succeed in business, it is necessary to form a series of startup ecosystems through public initiatives, and it is necessary to provide the know-how and funds for this objective in cooperation.

Regarding the issue of insufficient funds to provide assistance to economically affected small and medium-sized enterprises and workers, it is important to secure funds in advance as in the case of natural disasters. Unlike natural disasters, pandemics are not short-term or localized, but long-term and global. As a result, the duration required for assistance is long and it is difficult to receive emergency assistance from other countries. One possible cooperation for this purpose is to provide stand-by loans for pandemics, using the framework of stand-by loans utilized for natural disasters.

With regard to the traditional issue of female and youth unemployment, which worsened under the pandemic, the measures to overcome this problem are to expand the provision of seed money, mainly targeting the younger generation, and to develop entrepreneurial capacity accordingly. In addition, increased work at home has been cited as a factor, especially for women, and it is important to strengthen the resilience of schools and other facilities so that they can continue to provide services even under a pandemic.

Table 9-33 Hypothesis on Measures and Directions of Cooperation for the Private Sector

Country	Vulnerabilities revealed by COVID-19	Measures (draft)	Direction of Cooperation (draft)
Central America and the Caribbean	Difficulty in gathering information and providing public support to the informal sector in the event of a pandemic or other emergency	Strengthen existing measures to promote industry and support SMEs	Strengthen existing measures to promote industry and support SMEs
	The limits of economic expansion through the input of labor while productivity growth remains stagnant have become apparent.	Establish and strengthen productivity improvement support system Increase productivity by introducing and developing new technologies Creation of sophisticated industries through innovation	Capacity building to support productivity improvement through regional cooperation Support for developing a startup and innovation ecosystem
	Lack of support for small businesses and workers affected by the pandemic	Secure funds for long-term and global contingencies	Providing stand-by loans in case of a pandemic
	The pandemic further increased the unemployment rate among women and young people, reaffirming the challenges and revealing the vulnerability of working conditions.	Seed money provision and entrepreneurial capacity building Strengthening the resilience of schools and other facilities	Provision of seed money and capacity building for entrepreneurship

Source: Created by the Study Team

9.7.4 Study of Possible Actions and Support Measures to Overcome Vulnerabilities

Based on the above directions in the region, specific measures and cooperation by JICA are proposed in the three priority countries, according to the situations in each country identified in the study (see Table 9-34). Among the directions of cooperation in the table, those in which cooperation by JICA is particularly expected are shown in bold, taking into account the demand of local authorities and the significance of JICA support. For these proposals, the direction of cooperation by JICA is also described below.

Table 9-34 Hypotheses on Measures to Overcome and Directions of Cooperation for the Private Sector

Country	Vulnerabilities Revealed by COVID-19	Measures to Overcome (draft)	Direction of Cooperation (draft)
Panama	Weakness of industrial base to support the economy when human mobility is restricted	Development of SME promotion policies Development of regional industrial development plans Capacity development of organizations and personnel to support productivity improvement Technology transfer by promoting cooperation with foreign companies	1. Development of policies for the promotion of SMEs 2. Development of regional industrial development plans 3. Capacity development of organizations and personnel to support productivity improvement through South-South cooperation or triangular cooperation (technical cooperation) 4. Technology transfer and innovation promotion through collaboration with Japanese companies (dispatch of regional experts)
	Difficulty in shifting to advanced manufacturing industries that are resilient to pandemic		
	Stagnation in technological development and business development for digitalization, remoteness, and non-contact	Building a supportive environment for innovation and startups	5. Implementation of training and technical cooperation to promote innovation at universities (technical cooperation)
	Difficulty in building new industries		6. Support for capacity building of small businesses (technical cooperation, dispatch of volunteers)
Mexico	Lack of effectiveness of small- and short-term loans due to prolonged impact	Support for SMEs that provide employment in contingencies and enhance capacity building of microenterprises	-
	Lack of opportunity for manufacturing to support the economy		
	Accelerating trend toward carbon neutrality	Capacity building of local SMEs that serve as subcontractors	-
	Transfer of risk and burden to factory workers	Creation of new industries through innovation	1. Support for the establishment of a system and capacity building for industry-government-academia collaboration (technical cooperation) 2. Assistance for promotion of social innovation (technical cooperation)
	Dependence on a single industry		
Costa Rica	Increase in women's unemployment due to the impact of COVID-19	Strengthening women's employability	1. Support for improving the employability of women by strengthening their technical capabilities
	Further increase in women's role in the household and loss of employment opportunities	Conducting educational activities for women's participation in society Enhancement of public and corporate services	2. Support for institutional development for the provision of services to reduce domestic work
	Further increase in youth unemployment	Provision of seed money and corporate capacity building	3. Provision of seed money (bilateral government loans) and support for capacity building of loan recipient companies (technical cooperation, dispatch of volunteers)

Source: Created by the Study Team

(1) Panama

1) Development of Policies to Promote SMEs and Regional Industrial Development Plans

In Panama, there is an agency responsible for SME promotion, but its policies and plans have not been formulated, so they need to be formulated for SME promotion. Also, although industrial development plans exist, they are conceptual in nature and lack specificity. In particular, since there is no spatial development plan from the perspective of land development, each region is required to formulate its own industrial development plan.

2) Capacity Development of Organizations and Personnel to Support Productivity Improvement

In Panama, efforts to improve the productivity of SMEs have been limited to the creation of a platform of educational materials from international organizations by AMPYME and the contracting of consultants by MICI, and there is no system in place to provide continuous public support. There is a need to establish an organization within or affiliated with MICI or AMPYME that specializes in supporting productivity improvement of SMEs.

JICA has continued to support the establishment of CECAPRO in Costa Rica as a base for improving the productivity of SMEs in the Central American region. It also has a track record of supporting human resource development in neighboring countries such as Nicaragua and Guatemala through CECAPRO. Therefore, it is possible to implement South-South or triangular cooperation in Panama by utilizing CECAPRO or the organizations and human resources of neighboring countries supported by CECAPRO. Also, when JICA's experience in supporting SMEs, including CECAPRO, was introduced to MICI, MICI's interests in similar support were confirmed. Also the collaboration with CENPROMYPE of SICA will facilitate to develop a sustainable regional cooperation system.

3) Technology Transfer by Promoting Collaboration with Foreign Companies

The Panamanian government is aiming for economic development through the use of foreign capital, and enacted the Law on Special Measures for the Location and Operation of International Manufacturing Companies (EMMA Law) in September 2020, during pandemic, with the aim of attracting foreign companies that provide services related to the manufacturing industry. However, as of October 5, 2021, there was only one company with an EMMA license, and the effects of this system have yet to be seen. As support to achieve the effect of this system, the dispatch of regional experts to strengthen cooperation with Japanese companies, such as disseminating information to Japanese companies and improving the details of the system to make it easier for Japanese companies to enter the market, is considered as cooperation.

In addition, Fundación Ciudad del Saber, which operates Ciudad del Saber, a special zone for R&D, wants to collaborate with Japanese companies to bring the benefits of open innovation opportunities and expansion into Asian markets to local startups. At present, Japanese companies have little interest in Panamanian startups, so it is necessary to promote Panama's efforts in startups and innovation to the outside of the country. Also, from the perspective of collaboration and co-creation with Japanese start-ups, it is necessary to raise awareness of Ciudad del Saber as a Panamanian start-up base and to provide information on local issues and key stakeholders to support the entry into the Panamanian market. Together with the above-mentioned support related to the EMMA Act, providing support from local experts to address these issues can be an effective form of cooperation. Expected supports are as follows:

- To deliver information of scheme of EMMA and benefits of locating in Panama under EMMA to Japanese companies
- To study demands of Japanese companies and to propose improvement of EMMA
- To deliver information of initiatives for startups and innovation in Panama to Japanese companies
- To provide a mentor service to Japanese startups to develop business in Panama

4) Create a Supportive Environment for Innovation and Startups

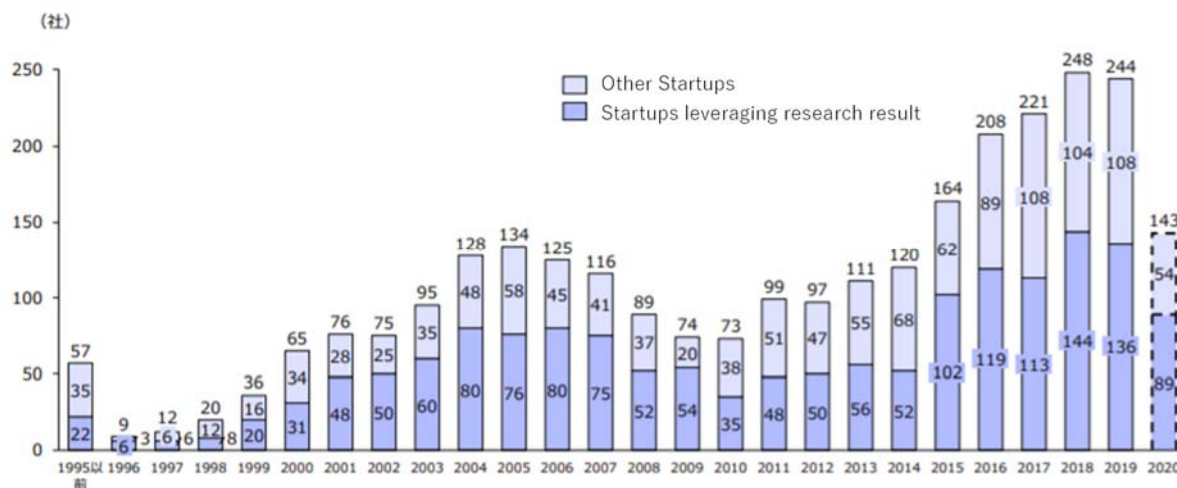
Panama's CENACYT has formulated the Science, Technology and Innovation Policy and Plan 2015-2019 and its revised version (2019-2024) to promote innovation, but there is a lack of funding for startups and R&D and provision of start-up support. While the Fundación Ciudad del Saber provides capacity building support from the establishment of the startup to Series A, the support before and after the establishment of the startup, i.e., to link research results at universities to entrepreneurship, and after Series A, should be enhanced to create a supportive environment throughout the startup growth process.

At present, there is no confirmed case of JICA supporting local startups in Central America and the Caribbean, but one of the characteristics of Japan's efforts to support startups is the promotion of

university-launched ventures. For many years, Japan has been promoting collaboration between industry, government, and academia, including the announcement of the "3-Year Plan for 1,000 University-Based Startups" in 2001, the enactment of the Industrial Competitiveness Enhancement Law in 2013 that allows national universities to invest in venture capital, etc., and the formulation of the "Guidelines for Strengthening Joint Research through Industry-Government-Academia Collaboration" in 2016. According to the "Survey on University-originated Startups in 2020", the number of university-originated startups reached 2,905 in 2020. As shown in Figure 9-29, the number of startups has been increasing, especially in the last 10 years, and since most of them are research-based ventures, it can be said that the establishment of the linkage between research results and start-ups has been successful. It would be effective to use the experience of promoting university-launched startups in Japan to establish a new cooperation direction of Japan to support for the startups and innovation.

In Panama, it is proposed to implement support to increase the connectivity between universities and entrepreneurship, leveraging the experience and achievements by Fundación Ciudad del Saber. Fundación Ciudad del Saber is a private organization, although it is officially designated as the administrator of Ciudad del Saber. Therefore, the direct support would be provided to Panamanian public universities, and the main stakeholders would be Fundación Ciudad del Saber, which implements acceleration programs, CENACYT, which is in charge of research and technological development in the country, and MICI, which is in charge of industrial development in the country. In order to provide support, it is first necessary to confirm the intentions of the CENACYT and identify the public universities to be supported. Then it is proposed to introduce Japan's industry-government-academia collaboration and university-launched venture initiatives and achievements, to propose to provide technical cooperation to support the establishment of entrepreneurship support programs and institutions at universities, while providing training as necessary.

In addition, cooperation should take into account subsequent developments. One of them is the continuation of collaboration between Japanese and Panamanian universities. In the process of providing support, the cooperation of Japanese universities that have a proven track record in university-launched startups and industry-government-academia collaboration is indispensable in terms of training, etc. It is desirable to promote sustainable development through mutual cooperation among universities after the establishment of entrepreneurship support programs and institutions. Secondly, cooperation with Japanese companies is also important. The connectivity between the university and entrepreneurship will contribute to the creation of a startup ecosystem in Panama, but a further development could be realized by the linkage with foreign ecosystems. For this reason, it is also important to disseminate information for collaboration with Japanese companies through technical cooperation. The third is inter-regional cooperation. CENPROMYPE of SICA has innovation as one of its pillars and is currently developing an innovation strategy for the region. It is important to consider the cooperation in Panama, one of the most economically developed countries in SICA, as a precedent in the region, and to utilize the experience and knowledge gained within the region.



Source: Ministry of Economy, Trade and Industry, "Survey on University-Based Ventures in 2020, Summary of Results"

Figure 9-29 The Number of University-Launched Venture Companies by Year of Establishment

(2) Mexico

In Mexico, there are issues such as lack of public support for formal SMEs and underdevelopment of local industries in manufacturing, especially in the automotive industry. On the other hand, given the fact that INADEM has been abolished in recent years, and that the local government has already stated its intention to move away from dependence on the automobile industry, it is not considered to be an appropriate support measure. Rather, future support measures could be to support the innovations that local communities are trying to promote, in order to respond to new themes such as carbon neutrality trends and industrial diversification. It is proposed that, as the next stage of the automobile industry promotion that has been ongoing for many years, JICA establishes supports for the country to break away from its dependence on the automobile industry and to sophisticate and diversify the industry.

1) Support for the Establishment of a System and Capacity Building for Industry-Government-Academia Collaboration

In Guanajuato, the IDEA GTO is working on multiple fronts to build an innovation ecosystem. On the other hand, in terms of collaboration with universities and other research organizations, the IDEA GTO is only involved in organizing events and other activities to bring together universities and universities with companies and other organizations. Although the state is home to universities such as the University of Guanajuato, there is no systematic support for innovation and startups such as entrepreneurship programs and incubation in the universities.

Since Japan has been making efforts to support startups at universities as mentioned in (1) Panama, it is meaningful to utilize this experience to support the establishment of entrepreneurship programs and organizations at universities. The same is true for strengthening ties with the many Japanese companies located in Guanajuato.

On the other hand, although the IDEA GTO has implemented the promotion of collaboration among actors related to innovation, its positive intention to support systematization within university organizations has not been confirmed. Therefore, it is necessary to identify public universities and other supportive institutions that show interest in the above support.

2) Assistance for Promotion of Social Innovation (Technical Cooperation)

In the state of Guanajuato, social innovation is mentioned in the "Guanajuato State Government Program 2018-2024", and the "Organizational Program CONACYT 2020-2024" of CONACYT, which is in charge of science and technology for the entire country, shows that innovation is the key to solving social and environmental challenges. However, as the approach of innovation to solve the problems based on the understanding of specific issues has not been taken, there is a lack of efforts toward social innovation.

In order to address the above issue, it is necessary to identify social issues to be solved through innovation and to match technologies and companies with the identified issues. In the interviews with the IDEA GTO, crime was mentioned as a social issue and waste management as an environmental issue. Both of these themes are related to local Japanese companies, and thus by considering the linkage with Japanese companies, it is expected to ensure sustainability after the support. The support of JICA could include conducting a survey to identify local issues in Guanajuato, including issues faced by Japanese companies, and then cooperating with the IDEA GTO to organize matching, pitch events, and business conferences based on these issues.

(3) Costa Rica

1) Support for Improving the Employability of Women by Strengthening their Technical Capabilities

In Costa Rica, COVID-19 is thought to have worsened the unemployment rate among women, since many women worked in the service sector, mainly in household services, and in informal employment. Therefore, there is a need to strengthen the capacity of women to work not in such traditionally female dominated jobs, but in jobs that are resilient under the pandemic, such as manufacturing.

2) Support for Institutional Development for the Provision of Services to Reduce Domestic Work

In Costa Rica, the division of labor within the household based on gender has taken root since before COVID-19. There is a concern that the increased burden of housework caused by COVID-19 may be disproportionately placed on women, thereby hindering their employment opportunities. As a society, it is necessary to conduct awareness-raising activities to change the gender-based division of labor within the home, and to enhance public and corporate services that enable both men and women to work.

3) Provision of Seed Money and Corporate Capacity Building

In Costa Rica, the high rate of unemployment among young people has become a problem. The Youth Commission aims to address this problem in the form of entrepreneurship support. In Costa Rica, there is a lack of access to seed money and incubation functions, even though an entrepreneurial mindset has been fostered among young people.

Costa Rica is classified as a middle-income country or above in the classification of countries eligible for yen loans. Also, in "the Country Development Cooperation Policy for Costa Rica", support for sustainable development, with a focus on the environmental sector, is listed as a major goal, and environmental conservation and the correction of disparities are listed as priority areas (medium goals). In general, SMEs have difficulty in accessing finance, and even more so in the seed money stage of starting up. Therefore, support for entrepreneurship can be provided in line with each of the medium and major goals through the use of two-step loans provided through yen loans, with conditions imposed on the project's environmental conservation and the economic status of the borrower.

In addition, it is suggested that incubation support, which is also lacking, be provided along with the supply of seed money. Given that the economic disparity between urban and rural areas is an issue in Costa Rica, grassroots support in rural areas is considered to be important. Therefore, the effectiveness of seed money can be enhanced by dispatching Overseas Cooperation Volunteers to target users of two-step loans to help them improve their businesses.

9.8 Analysis and Recommendations to Contributing to Sectoral Cooperation Policy

9.8.1 Summary of Analysis to Contribute to Sectoral Cooperation Policy

To summarize the above analysis, the major challenges in the private sector in Central America and the Caribbean are the size of the informal sector, stagnant productivity growth, lack of government funding, and high unemployment rates among women and young people. In addition, each of them has its own vulnerabilities revealed by COVID-19, and the cooperation policy to address the challenges and vulnerabilities is to strengthen the existing industrial promotion and SME support measures, strengthen the capacity to support productivity improvement through regional cooperation, support the

establishment of a startup and innovation ecosystem, provide stand-by loans in case of a pandemic, and provide seed money and entrepreneurial capacity building. Also, some specific supports in each country based on the study in three priority countries (Panama, Mexico, and Costa Rica) are proposed. Table 9-34 shows the issues, cooperation policies, and specific support measures for the cooperation policies.

Table 9-35 Issues, Direction and Recommendations for Development Cooperation

Issue	Direction and recommendations for development cooperation
1. Large informal sector	<ul style="list-style-type: none"> • Strengthen existing measures to promote industry and support SMEs <ul style="list-style-type: none"> ➤ Technical Cooperation: Development of policies for the promotion of SMEs and regional industrial development plans (Panama) ➤ Regional expert: Technology transfer through collaboration with Japanese companies (Panama)
2. Stagnation in productivity improvement	<ul style="list-style-type: none"> • Capacity building to support productivity improvement through regional cooperation <ul style="list-style-type: none"> ➤ Technical Cooperation: Capacity development of organizations and personnel to support productivity improvement through South-South cooperation or triangular cooperation (Panama) • Support for developing a startup and innovation ecosystem <ul style="list-style-type: none"> ➤ Technical Cooperation: Training and technical cooperation to promote innovation at universities (Panama) ➤ Technical Cooperation: Assistance for promotion of social innovation (Mexico)
3. Lack of government funding	<ul style="list-style-type: none"> • Providing stand-by loans in case of a pandemic
4. High unemployment rate among women and young people	<ul style="list-style-type: none"> • Provision of seed money and capacity building for entrepreneurship <ul style="list-style-type: none"> ➤ Provision of seed money (bilateral government loan) and support for capacity building of loan recipient companies (technical cooperation and volunteers) (Costa Rica)

Source: Study Team

9.8.2 Recommendations to Contribute to Sectoral Cooperation Policy

The impact of the COVID-19 pandemic on the private sector in Central America and the Caribbean has been profound. In particular, the impact of this has been seen in the increase in the unemployment rate. Most countries saw a sudden increase in unemployment between 2019 and 2020, before and after the pandemic. In addition, the impact tended to be greater for women and younger people, confirming the vulnerability of the employment status of these populations.

On the other hand, it also became clear that export industries are resilient. Although the value of exports fell in 2020 in total, the actual impact was only observed in the second quarter of 2020 during the early stages of the pandemic, with exports recovering to the same level as in previous years in the subsequent third and fourth quarters. Therefore, expanding export industries, including manufacturing, will contribute to the resilience of the economy against pandemics, where the movement of people is restricted but goods continue to move. However, in labor-intensive structures, there is also an aspect that production activities are sustained by workers taking the burden of risk of infection and overtime to fill vacancies.

In addition, the large informal sector makes it difficult to provide adequate public support to the segment of the population most likely to be affected by the pandemic, and in a pandemic with a global and prolonged impact, there is insufficient government funding to provide support to affected small businesses and individuals.

In light of the situation revealed by the pandemic, the following cooperation policies were proposed for the private sector: reinforcement of existing measures to support industrial development and small and medium-sized enterprises (SMEs), enhancement of capacity to support productivity improvement through regional cooperation, support for the establishment of a start-up and innovation ecosystem, provision of stand-by loans in preparation for a pandemic, provision of seed money and entrepreneurial capacity building. In order to enhance emergency response capabilities, it would be effective to have stand-by loans ready to provide assistance to affected SMEs and individuals. In addition, promoting entrepreneurship by supporting seed money and entrepreneurial capacity can contribute to recovery from unemployment, etc., and can be effective in supporting severely affected

young population. From the perspective that the expansion of export industries, including manufacturing, will itself lead to the building of a resilient economy, it is important to promote traditional support for industrial development and small and medium-sized enterprises, as well as support for productivity improvement.

In addition to the above, strong local needs for support were identified in the area of start-up and innovation support. Of the three priority countries studied in detail in this research, Panama and Mexico have set innovation a pillar of their industrial development to build back better from the impacts of COVID-19. CENPROMYPE is also currently developing an innovation strategy and is trying to strengthen its commitment to innovation in the region. On the other hand, in order to promote the development of startups and the realization of innovations, and also to enjoy the social benefits from them, it is necessary for public institutions to provide an appropriate environment, and it is also important for private companies in the region to engage in research and development. Therefore, in cooperation, it is important to support the establishment of the entire ecosystem and to incorporate the private sector into it. In addition, since support for start-up and innovation is a relatively new initiative, it is expected that each support to be implemented in the future will be duplicated within the region as a precedent, in cooperation with regional organizations such as CENPROMYPE.

10. Environment and Disaster Management Sector

10.1 General

Information on the environment and disaster management sectors was collected separately for the environment sub-sector and the disaster management sub-sector. For the basic information survey covering 23 countries, study reports and various data published by each country and international organizations from the Internet were collected. Based on the analysis of these data and information, the focus countries for each subsector were selected. Then, interviews using questionnaires and field surveys (November 2 to December 18, 2021, and January 9 to 29, 2022) were conducted in priority countries to investigate and analyze the impact of COVID-19 on each sector in each country, and to formulate a hypothesis for the future of development cooperation.

10.2 Summary of Sector Survey

Table 10-1 Hypotheses and Policy Recommendations of the Environment and Disaster Management Sector on Development Cooperation

No.	Item	Environment and Disaster Management	
1	Issues from before COVID-19	Climate Change	<ul style="list-style-type: none"> Global Warming, Greenhouse Gas Emissions, Biodiversity, Deforestation, Air and Water Pollution
		Urbanization	<ul style="list-style-type: none"> Waste management, marine plastic waste, public health improvement, land use
		Increasing frequency and severity of natural disasters	<ul style="list-style-type: none"> Extreme weather, disaster risk assessment, land use regulation, seismic retrofitting, damage mitigation, recovery and reconstruction
		Economic disparity. Other Social Context	<ul style="list-style-type: none"> Disaster preparedness literacy, evacuation behavior, disaster education, consultation and coordination with institutions
2	Grouping by Issue	Climate Change: Types of sectors affected, Waste Management: Implementers (national and local governments), Disaster Management: Frequency and severity of natural disasters	
3	Vulnerabilities Revealed in COVID-19	Global warming countermeasures	<ul style="list-style-type: none"> Dependence on fossil fuels, cost of installing renewable energy Extensive economic impact on multiple fields (agriculture, fisheries, tourism, disaster prevention) Global warming and extreme weather increase poverty problem
		Biodiversity conservation	<ul style="list-style-type: none"> Water and air quality and ocean pollution are increasing. Chronic budget and staff shortages
		Waste management	<ul style="list-style-type: none"> Unable to keep up with growing waste disposal capacity Inadequate management of hazardous and medical wastes Low awareness of the 3Rs in society as a whole Insufficient laws, insufficient budget, insufficient technology, insufficient information management Maintain profitability of water supply and wastewater projects
		Understanding disaster risk	<ul style="list-style-type: none"> Inadequate collection, analysis, management, and utilization of relevant data Inadequate disaster risk assessment
		Strengthen disaster risk management governance for disaster risk reduction	<ul style="list-style-type: none"> Lack of understanding of disaster management in other sectors Disaster prevention has not been mainstreamed. Frequent personnel changes due to changes in administration make it difficult to maintain continuity.
		Prior investment in disaster management for resilience	<ul style="list-style-type: none"> Lack of prior investment by the public and private sectors through hardware and software measures Uncontrolled land use, no building standards in place Disaster prevention plans and standards are outdated or inadequate.
	Strengthening preparedness for effective disaster response and "better recovery"	<ul style="list-style-type: none"> Need to establish and strengthen mechanisms for international and regional cooperation Emergency in case of disaster 	

No.	Item	Environment and Disaster Management	
			<ul style="list-style-type: none"> ▪ Need to foster and strengthen awareness of crisis management, self-help and mutual-help
4	New issues that emerged during COVID-19	<ul style="list-style-type: none"> ▪ It is thought that the previous issue was exacerbated by COVID-19. ▪ With the promotion of digitization, issues such as the spread of inaccurate information and the widening of information gaps have become apparent. 	
5	Countermeasures (draft)	Global warming countermeasures	<ul style="list-style-type: none"> ▪ Technical and financial assistance to reduce greenhouse gas emissions ▪ Community-focused implementation of climate change "mitigation" and "adaptation" measures (cross-sectoral)
		Biodiversity conservation	<ul style="list-style-type: none"> ▪ Improving science and technology, research and analysis capacity for sustainable development ▪ Technical and financial assistance for projects
		Waste management	<ul style="list-style-type: none"> ▪ Improving management capacity by strengthening administration to realize a recycling-oriented society ▪ Regional cooperation, know-how sharing through South-South cooperation
		Understanding disaster risk	<ul style="list-style-type: none"> ▪ ICT utilization ▪ Centralized management and use of information through the establishment of a disaster prevention information platform
		Strengthen disaster risk management governance for disaster risk reduction	<ul style="list-style-type: none"> ▪ Strengthen governance through the formation of cross-sectoral/multidisciplinary projects ▪ Capacity building of government agencies
6	Direction of development cooperation and Policy recommendations (draft)	Prior investment in disaster management for resilience	<ul style="list-style-type: none"> ▪ Support for the formulation of disaster management plans to strengthen resilience ▪ Technical and financial support
		Strengthen preparedness and "Build Back Better" for effective disaster response	<ul style="list-style-type: none"> ▪ Community disaster management to improve local disaster preparedness ▪ Promotion of regional cooperation ▪ Fostering awareness of crisis management among individuals, companies, and communities
		Environment	<ul style="list-style-type: none"> ▪ Technical and financial cooperation necessary to achieve carbon neutrality ▪ Support for the introduction of renewable energy (geothermal, etc.) ▪ Consolidation and management of basic data to achieve zero emissions ▪ Implementation of cross-sectoral "mitigation" and "adaptation" measures. Disaster prevention and agriculture sectors particularly affected by global warming and climate change, and education and health sectors indirectly affected (Central America), tourism, fisheries and agriculture sectors (Caribbean) ▪ Sustainable development and regional development through ecosystem conservation ▪ Technical assistance for community development (Central America) ▪ Research and measures for the conservation of terrestrial and marine environments, and strengthening of measures against marine plastic litter (Caribbean) ▪ Utilization of Biodiversity in Tourism ▪ Improve legal system for management of nature reserves and strengthen management capacity ▪ Surveys and resource management of ecosystems, vegetation distribution, wildfires, etc. using digital technology such as satellite imagery data ▪ Improve legal system for management of nature reserves and strengthen management capacity
		Implementation of concrete measures to address climate change	
		Sustainable Development through Ecosystem Conservation	<ul style="list-style-type: none"> ▪ Improvement of the legal system for waste management (comprehensive waste management, hazardous waste management, medical waste management) ▪ Creating a framework for realizing a recycling-based economy
		Realization of a recycling-oriented society	

No.	Item	Environment and Disaster Management	
			<ul style="list-style-type: none"> Realization of 3Rs and establishment of sanitary waste flow through capacity building of local government Capital investment, technological innovation (introduction of recycling facilities, autoclaves, waste power generation, etc.) Promotion of private investment
		Disaster Management	ICT utilization <ul style="list-style-type: none"> Hazard assessment through the use of ICT (introduction of satellite imagery technology) Construction of a non-contact monitoring, observation, information provision, and early warning system
			Mainstreaming disaster prevention <ul style="list-style-type: none"> Promote information sharing and collaboration among central and local governments and ministries by using the Disaster management Information Platform. Form cross-sectoral/multidisciplinary projects (agriculture, education, health (Central America), tourism (Caribbean), etc.)
			Strengthening Resilience <ul style="list-style-type: none"> Formulate disaster prevention plans and update urban resilience (road infrastructure development, earthquake resistance, landslide prevention, river improvement, etc.) Infrastructure development that contributes to disaster mitigation (road maintenance, landslide prevention, flood prevention such as river improvement) Conducting disaster prevention education
			Improvement of local disaster prevention capacity <ul style="list-style-type: none"> Raising awareness among individuals, companies, and communities through the dissemination of crisis management plans and BCPs Foster self-help and mutual-help through community disaster prevention support and strengthen local disaster prevention capabilities by promoting regional cooperation in recovery and reconstruction

Source: Study Team

10.3 Sectoral scope of work

Target of the study and the scope of works are summarized in the table below.

Table 10-2 Scope of Work in the Environment and Disaster Management Sector

No.	Item	Subsector	Work scope
1	Sector Targets		<ul style="list-style-type: none"> The Study Team will collect and analyze information in the fields of natural environment/ecosystem, environmental management (waste, air, etc.), and water resources, with the aim of realizing carbon neutrality in the future as well as building a society that is resilient to climate change risks, especially in developing countries, through sustainable development. Through the collection and analysis of information on disasters and disaster risks under COVID-19, the Study Team will make an efficient and effective contribution to reducing the number of people killed and affected by disasters, as well as economic losses, and chart a course for moving these losses to a substantial downward trend.
2	Work scope update		Based on consultations with JICA, select survey target countries or confirm survey priorities, and update and agree on the scope of work.
3			Selection of relevant organizations to be interviewed
4			Conducting an interview survey
5	[Task 2]	Collection and analysis of COVID-19 impacts on the disaster prevention and environmental sectors	<ul style="list-style-type: none"> (Natural Environment) Collect and analyze information on the positive and negative impacts of the COVID-19 disaster on the natural environment and ecosystems. (Social Environment) Collect and analyze information on changes in environmental management (air, water) under the COVID-19 disaster, and organize issues related to environmental management. (Social Environment) Collect and analyze information on changes in water resource management systems, changes in water demand, and access to water in shelters and hospitals in the COVID-19 disaster. (Disaster Management) Collect and analyze information on the actual situation of disaster management policies, budgets, and structural

No.		Subsector	Work scope
			measures in each country in the COVID-19 disaster, organize problems, and list future needs.
6		Organize and analyze policies of each country	<ul style="list-style-type: none"> ▪ (Social Environment) Collect and analyze information on the current status of waste (general waste and medical waste) management in each country, and organize issues related to environmental management. ▪ (Disaster Management) Organize disaster types and disaster risks in each country. ▪ (Disaster Management) By analyzing case studies of disasters under the COVID-19 disaster, the actual situation and issues of non-structural countermeasures will be summarized, and support measures to overcome vulnerabilities will be discussed.
7		Country grouping and selection of priority countries	<ul style="list-style-type: none"> ▪ Select priority countries and priority themes based on the results of basic information collection and analysis.
8		Additional research in priority countries	<ul style="list-style-type: none"> ▪ Analysis of the impact of COVID-19 in priority countries and priority themes ▪ Interviews mainly with priority countries (to obtain complementary information) ▪ General Interview
9		Creating a Country Report	Compile the survey results of [Task 2] into country reports for each country.
11		Identify vulnerabilities in the sector and consider support measures	<ul style="list-style-type: none"> ▪ Definition and analysis of existing issues and vulnerabilities in the disaster prevention and environmental sectors ▪ Consideration of countermeasures and support measures to overcome vulnerabilities
12	[Task 4]	Creating a hypothesis for the nature of development cooperation	<ul style="list-style-type: none"> ▪ Develop hypotheses on possible responses to overcome each vulnerability in line with the Ministry of Foreign Affairs' Country Development Cooperation Policy and Project Deployment Plan and your PDM. ▪ The hypotheses generated will identify priorities for cooperation needs for each country.
13		Create a Sectoral Hypothesis Report.	Create a "Sectoral Hypothesis Report" by compiling the survey results of [Task 4].
14	[Task 5]	Visit international/regional organizations and government agencies to collect additional information related to [Task 2] and [Task 4] and exchange views on how development cooperation should be conducted.	
15	[Task 6/7/8]	Advise on the selection, implementation and conclusion of pilot projects from the perspective of the "environment and disaster management" sector.	
16	[Task 9]	Prepare materials needed for the expert meeting and make a presentation on the research in your sector.	
17	[Task 10]	Develop "policy recommendations" for your sector	
18	[Task 11]	Prepare academic papers, etc. for the sector in which you are responsible.	

Source: Study Team

10.4 Collecting Basic Information on 23 Target Countries

10.4.1 Data Collected and Analyzed

(1) Environment

- 1) National budget for the environmental sub-sector (three years, 2019-2021)
 - 2) List of projects under implementation by JICA and other donors
- Positive and negative impacts of the COVID-19 on the natural and social environment sectors

(2) Disaster Prevention

- 1) National Budget for the Disaster Management Subsector (Three Years, 2019-2021)
- 2) Disaster data for the past 10 years (2010-2020)

- 3) List of projects under implementation by JICA and other donors
 Positive and Negative Impacts of COVID-19 on the Disaster Management Sector

10.4.2 Analysis of Sectoral Indicators

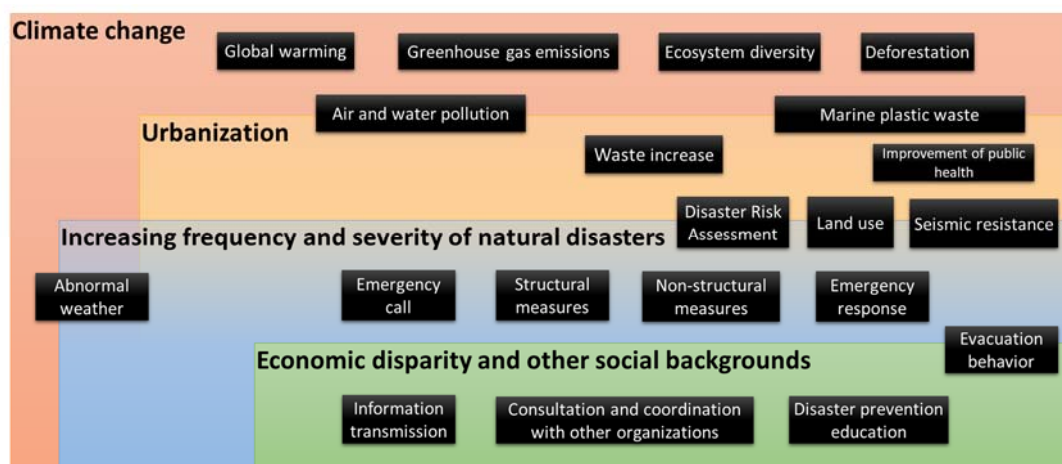
Based on the data collected, the Study Team divided the data into two categories: (1) issues from before COVID-19 and (2) the impact of COVID-19. In addition, the Study Team analyzed and described the impact of COVID-19, not only in terms of amplification and seriousness of previous issues, but also in terms of new issues created by COVID-19.

(1) Issues from before COVID-19

1) Background of Challenges in the Environment and Disaster Management Sectors

The issues that have been raised since before COVID-19 in the environment and disaster management sectors are summarized. First, the relationship between the background events and the issues are organized as shown in Figure 10-1.

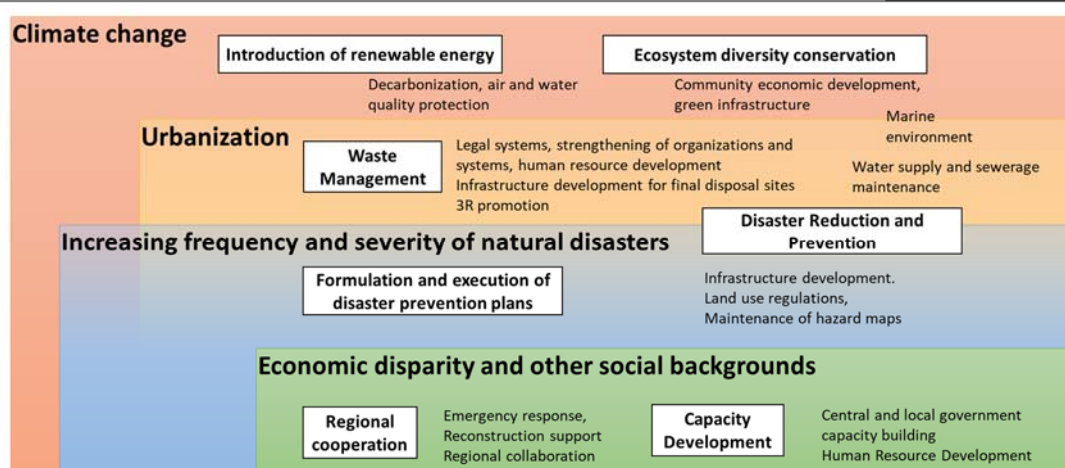
There is the global event of "climate change" and the local event of "urbanization," which directly lead to the challenges of the environmental sector. In addition, both of these events have contributed to the "increasing frequency and intensity of natural disasters," and the "economic disparity and other social backgrounds" have brought to light various issues in the disaster prevention sector. These issues are influenced by multiple backgrounds and exist in relation to each other.



Source: Study Team

Figure 10-1 Challenges and Background of the Environment and Disaster Management Sector before COVID-19

Japan's existing cooperation with the target countries to address these issues in the environmental and disaster management sectors is outlined in Figure 10-2. In the environmental sector, efforts have been made to "introduce renewable energy" and "conserve biodiversity", as well as "waste management", especially in urban areas, and in the disaster prevention sector, "formulation and execution of disaster prevention plans", "various measures for disaster mitigation and prevention", "regional cooperation", and "capacity building".



Source: Study Team

Figure 10-2 Efforts to Address Issues in the Environment and Disaster Management Sectors before COVID-19

2) Environmental Sector Vulnerability Assessment: Budget Trends

The direct impact of COVID-19 on this sector has not been generally noted or discussed, and it was not possible to establish vulnerability indicators in the early stages of this study. On the other hand, one of the previous challenges faced by many countries was the inadequate budget allocation to the environmental sector. There is also information that some countries have taken measures such as budget cuts due to the pandemic, and if such data were available, it could indicate the possibility that policy priorities have been lowered. Therefore, it is decided to assess the size of the sector budget and its transition as sector vulnerability.

The annual environment-related budget (2019-2021) of the target country is described, together with the GDP per capita of each country (Table 10-3). The percentage of each country's environmental budget to its national budget is calculated, although the available data was limited. The results show that the environmental budgets of countries in the Caribbean region, such as the Bahamas, Grenada, and Barbados, tend to be a larger share of the national budget than those in Central America (Table 10-4).

Table 10-3 Environmental Budget Data and GDP per Capita for each Country

Country			GDP per capita in 2019 (USD)	General Budget for Environment (USD)		
			2019	2019	2020	2021
CA	Mexico	MEX	10,268	1,326,022,977	1,493,472,539	1,567,409,617
	Belize	BLZ	4,246	2,502,942	2,498,520	2,244,063
	Guatemala	GTM	3,365	22,132,500	15,267,200	-.
	El Salvador	SLV	3,581	2,082,725	1,490,593	1,563,447
	Honduras	HND	2,244	10,519,058	10,043,739	10,039,322
	Nicaragua	NIC	1,778	9,910,110	7,117,600	6,337,649
	Costa Rica	CRI	10,170.	86,595	127,663	92,876
	Panama	PAN	11,902	61,913,805	43,426,360	42,900,000
car	Bahamas	BHS	28,908	120,352,101	84,200,631	-.
	Cuba	Cub.	6,805	-	-.	-.
	Haiti	HTI	1,245	-.	-.	-.
	Dominican Republic	DOM	8,002	202,145,888	274,940,130	230,228,592
	Jamaica	JAM	4,874	68,222 Total	49,749	54,602
	Antigua and Barbuda	ATG	15,445	1,405,215	1,644,185	1,586,725
	Saint Kitts and Nevis	KNA	17,162	-.	-.	-.
	Dominica	DMA	6,911	2,996,567	3,016,185	3,016,185
	Saint Lucia	LCA	9,350	7,289,636	8,717,644	7,380,723
	Saint Vincent and the Grenadines	VCT	6,863	-.	-.	-.
	Barbados	BRB	16,100	19,883,117	21,429,858	21,948,365
	Grenada	GRD	9,227	8,303,210	4,786,370	4,848,452
	Trinidad and Tobago	TTO	14,921	39,852,104	37,232,072	40,710,488

Country			GDP per capita in 2019 (USD)	General Budget for Environment (USD)		
			2019	2019	2020	2021
SA	Guyana	GUY.	6,122	-.	-.	-.
	Suriname	SUR	8,342	-.	-.	-.

Note: GDP per Capita (constant 2010 US\$), -: No data available, CA: Central America, CAR: Caribbean, SA: South America

Source: World Development Indicators (June 2021)

Table 10-4 Environmental Budget as a Percentage of the National Budget in Each Country

Country			National Budget (USD)*	General Budget for Environment (USD)		
			2019	2019	Ratio	Rank
CA	Mexico	MEX	290,714,585,000	1,326,022,977	0.46%	8
	Belize	BLZ	538,500,400	2,502,942	0.46%	7
	Guatemala	GTM	-.	22,132,500	-.	-.
	El Salvador	SLV	-.	2,082,725	-.	-.
	Honduras	HND	10,990,498,233	10,519,058	0.10%	11
	Nicaragua	NIC	-.	9,910,110	-.	-.
	Costa Rica	CRI	-.	86,595	-.	-.
	Panama	PAN	23,669,270,825	61,913,805	0.26%	10
car	Bahamas	BHS	1,814,028,016	120,352,101	6.63%	1
	Cuba	Cub.	-.	-.	-.	-.
	Haiti	HTI	2,185,700,000	-.	-.	-.
	Dominican Republic	DOM	-.	202,145,888	-.	-.
	Jamaica	JAM	5,301,387,755	68,222 Total	0.001%	13
	Antigua and Barbuda	ATG	384,127,880	1,405,215	0.37%	9
	Saint Kitts and Nevis	KNA	285,966,278	-.	-.	-.
	Dominica	DMA	404,428,226	2,996,567	0.74%	5
	Saint Lucia	LCA	588,887,930	7,289,636	1.24%	4
	Saint Vincent and the Grenadines	VCT	275,119,282	-.	-.	-.
	Barbados	BRB	1,590,406,459	19,883,117	1.25%	3
Grenada	GRD	346,899,476	8,303,210	2.39%	2	
Trinidad and Tobago	TTO	8,337,446,612	39,852,104	0.48%	6	
SA	Guyana	GUY.	1,443,451	-.	-.	-.
	Suriname	SUR	-.	-.	-.	-.

Note: -: No data available, CA: Central America, CAR: Caribbean, SA: South America

Source: *Ministry of Foreign Affairs website

The three-year environmental budget of each country is shown in Table 10-4 Environmental Budget as a Percentage of the National Budget in Each Country. Regarding the order of budget size, Mexico, Dominican Republic, Bahamas, and Panama are the largest.

When looking at the three-year budget trends as changes before and after the COVID-19 pandemic, six countries (Belize, Guatemala, Honduras, Nicaragua, Panama, and the Bahamas) showed a steady decline for two consecutive years, four countries (El Salvador, Jamaica, Grenada, and Trinidad and Tobago) showed a decrease in budget from 2019 to 2020 and three countries (Costa Rica, Antigua and Barbuda, and St. Lucia) showed a decrease from 2020 to 2021.

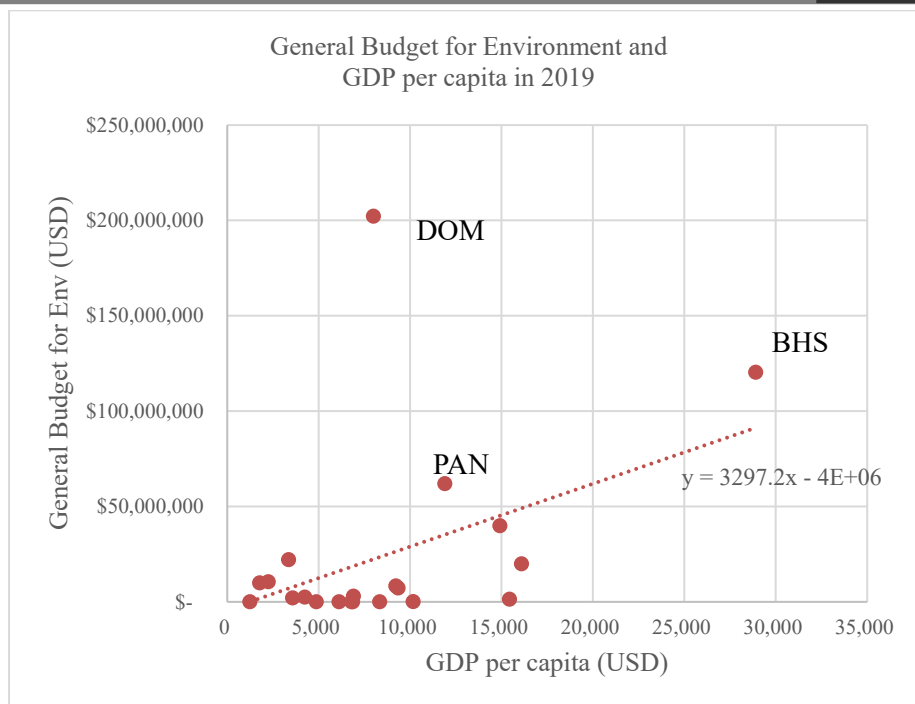
On the other hand, the two countries whose budgets have increased for three consecutive years are Mexico and Barbados.



Note: Data for BHS, HTI, GUY, and SUR are not yet available.
 Source: Government websites of various countries

Figure 10-3 Environmental Budget Trends (2019-2021)

Since the countries of Central America and the Caribbean vary in size, it is not possible to compare the size of their environmental budgets directly by number, the relationship between GDP per capita and budget for each country is compared (Figure 10-4). This graph indicates that the results show a modest correlation between GDP per capita and the amount of the environmental budget. In other words, countries with higher GDP per capita tend to be able to allocate more money to the environment. Of these, the Dominican Republic, the Bahamas, and Panama fall outside the upper end of this trend, and can be said to have relatively large allocations to the environmental sector.



Note: Data for Mexico is outside the scope of the plot due to the large budget amount.
 Source: Budgets are from government websites; GDP data are from World Development Indicators (constant 2010 US\$).

Figure 10-4 Comparison of Environmental Budget and GDP per Capita (2019)

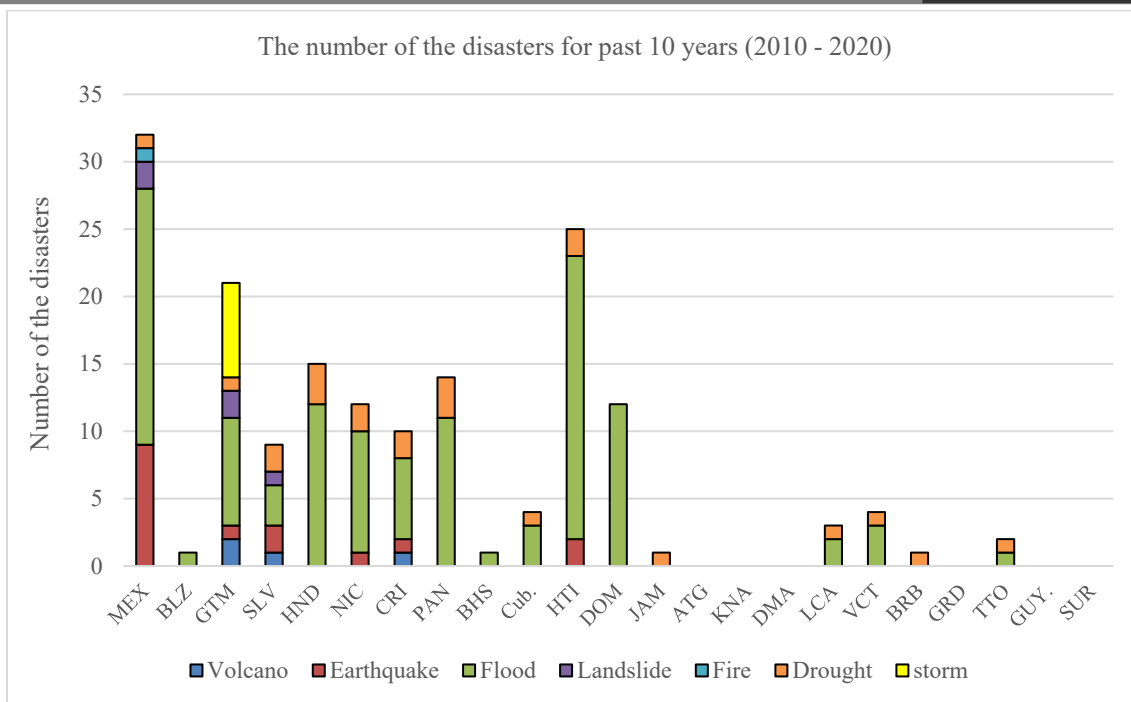
3) Vulnerability Assessment of the Disaster management Sector: Disaster Statistics Data

For the vulnerability assessment of the disaster management sector, the statistical data of natural disasters for the past 10 years (2010-2020) in each country were compared. These disaster statistics were obtained from EM-DAT (Centre for Research on the Epidemiology of Disasters (CRED)). The natural hazards that are organized as statistical data here are volcanic eruptions, earthquakes, floods, landslides, fires, and droughts. Here in EM-DAT, data was not available for Antigua and Barbuda, St. Kitts and Nevis, Dominica, Barbados, Grenada, Guyana, and Suriname. Therefore, although not shown as data in the chart, the evaluation shall be made keeping in mind that these countries also suffer from natural disasters and incur damages just like neighboring countries.

The number of natural disasters in the past 10 years is shown in Figure 10-5. Although there is a wide variety of disaster types that affect Central America and the Caribbean, it can be seen that floods, earthquakes, landslides, and droughts were the most significant in Central America, and floods and droughts were the most significant in the Caribbean.

The total number of people affected by natural disasters in each country over the past 10 years (2010-2020), converted to the number of people per 100,000 population, is shown in Figure 10-6. This shows that Haiti has indeed been affected by more than 75% of its population. More than 10% of the population has been affected in Guatemala, El Salvador, Honduras, Nicaragua in Central America, and St. Vincent and the Grenadines and the Dominican Republic in the Caribbean region.

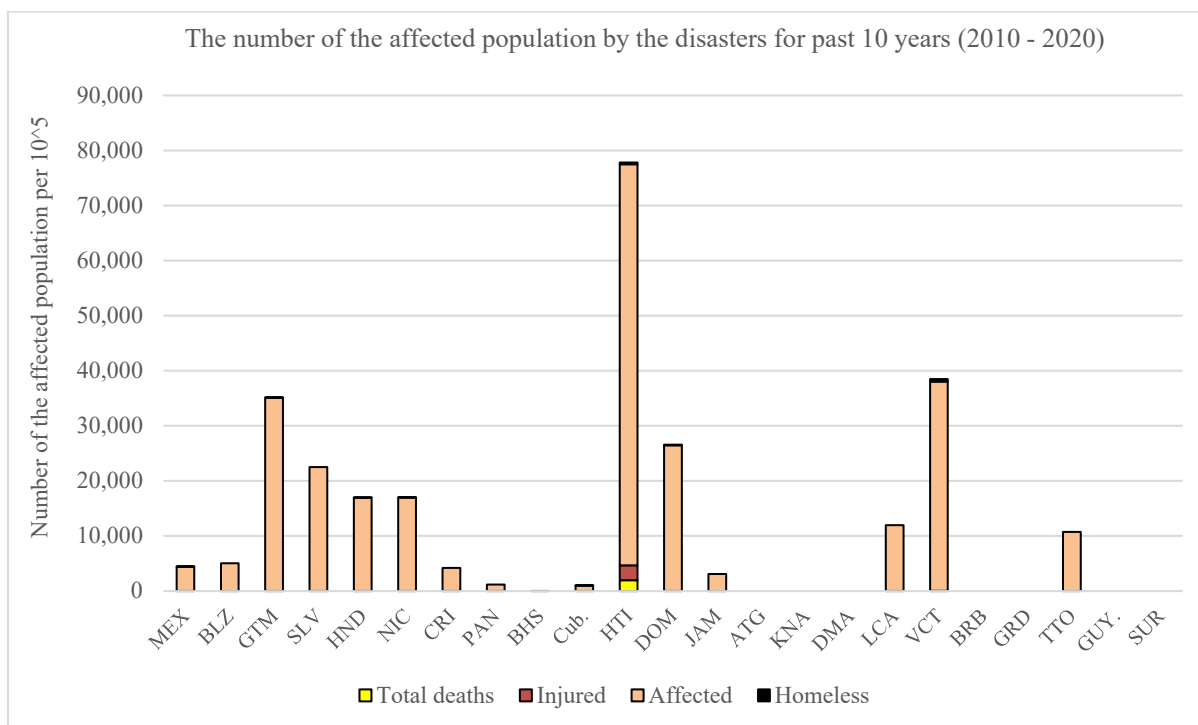
In the disaster management sector, as in the environmental sector, an attempt was made to examine the budget data from pre-COVID-19 to the present (2019-2021). However, since several governmental organizations are responsible for disaster management in many countries, and also most of the disaster management projects in the region are donor-funded, the data were not sufficiently accurate to be comparable and verifiable among the target countries. Then the budget data were not included in this analysis.



Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. as of May 2021

Note: ATG, KNA, DMA, GRB,: No data available

Figure 10-5 Number of Natural Disasters in Each Country (2010-2020)



Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. as of May 2021

Note: ATG, KNA, DMA, GRB,: No data available

Figure 10-6 Number of Affected People per 100,000 Population by Natural Disasters in Each Country (2010-2020)

10.4.3 Trends in Development Partners

(1) Country Assistance Policy for Respective Countries

Table 10-5 shows the countries where the environment and disaster management sectors are listed as priority sectors and development issues in Japan's national development cooperation policy.

The environment sector is a priority area in seven countries in Central America and five in the Caribbean, while the disaster prevention sector is a focus area in six countries in Central America and four countries in the Caribbean.

Table 10-5 Business Development Plan for the Environment and Disaster Management Sector

Region	Country	Environment	Disaster Management	Priority Fields	Development Tasks	Cooperation Program
Central America	Mexico	✓	✓	Social issues associated with economic growth	Mitigating risks that impede sustainable development	Strengthen capacity to combat climate change (promote scientific and technological cooperation)
	Belize	✓	✓	Disaster prevention and environment	Disaster Prevention and Environmental Conservation	Local Community Support Program for Disaster Prevention and Environmental Conservation
	Guatemala	✓	✓	Environment and disaster prevention	Environment and Disaster Prevention	Promote environmental and disaster prevention measures
	El Salvador	✓	✓	Disaster Prevention and Environmental Conservation for Sustainable Development	Addressing climate change and the environment	Environmental Health Improvement Program
	Honduras	✓	✓	Disaster prevention and environment Climate change measures	Natural Disaster Countermeasures Environmental protection and climate change risks	Building a Disaster-Resilient Society Mitigation of climate change risks
	Nicaragua	✓	✓	Environmental Conservation and Disaster Prevention	Environmental Conservation and Disaster Prevention	Environmental Conservation and Disaster Prevention
	Costa Rica	✓		environmental problem (issue)	environmental conservation	Climate change measures Urban environment improvement and natural environment conservation
	Panama	✓		Sustainable economic growth	Economic infrastructure development environmental conservation	Economic infrastructure development environmental conservation
Caribbean	Cuba	✓		environmental conservation	environmental conservation	Environmental Protection Program
	Haiti	✓	✓	Disaster prevention and environmental protection	Improving disaster response capabilities and environmental conservation	Disaster prevention and environmental protection
	Jamaica	✓	✓	Disaster prevention and environment	Disaster prevention and environment	Disaster Prevention and Urban Environment Improvement Support Program

Region	Country	Environment	Disaster Management	Priority Fields	Development Tasks	Cooperation Program
	Dominican Republic	✓	✓	Disaster prevention and environment	Improvement of disaster prevention and environmental issues	Support for disaster prevention and improvement of environmental problems
	Saint Lucia	✓	✓	Disaster prevention and environment	Improvement of disaster prevention and environmental issues	Support for disaster prevention and improvement of environmental problems

Source: Adapted from country reports; ✓ indicates the corresponding sector. Information as of August 2021.

(2) Cooperation Projects by JICA (Environment and Disaster Management)

The status of JICA's cooperation in the environment and disaster management sector in Central America and the Caribbean is shown in the table below. Under the Country Development Policy, the cooperation has been actively conducted in the fields of disaster management and waste management, as well as implementing wide-area projects through SICA and CARICOM. In considering future development cooperation, the use of these assets will make it possible to provide more efficient and effective support.

Table 10-6 JICA's Ongoing Cooperation in the Environment and Disaster Prevention Sector¹⁰

Region	Country	Sector*1	Project name	Form of cooperation	Form status*2
Central America	El Salvador	Disaster management	Capacity building project for seismic evaluation and seismic retrofitting of buildings in the Tokyo metropolitan area	Project-based	being carried out
		Disaster management	Project to support the Office of Climate Change and Risk Management Strategies for Strengthening Public Infrastructure, Phase 2	Project-based	being carried out
		Environment	Oromega and Scotall Lakes Integrated Wetland Management Project	Project-based	being carried out
		Environment	Study on the Development of a Port Plan for the Revitalization of La Union Port [Technical Assistance for a Fee-Based Account	Individual experts	being carried out
		Disaster management	Strengthen capacity to analyze earthquake and tsunami information	Individual experts	being carried out
	Nicaragua	Disaster management	Project to Promote Investment in Advance Disaster Prevention for Building Coastal Disaster-Resilient Communities	Project-based	Before implementation
		Environment	Water Supply Improvement Plan in Managua City	Grant	being carried out
	Honduras	Disaster management	Tokyo Metropolitan Area Slope Disaster Countermeasure Management Project	Project-based	being carried out
		Environment	La Unión Biological Corridor Project	Project-based	being carried out
		Environment	Data collection and confirmation survey for the Tegucigalpa Water Supply Project	Basic information collection and confirmation survey	being carried out
Disaster management		Valle de Sula Urban Area Flood Control Master Plan Project	Development plan survey	Before implementation	
Environment		Project to Establish a Municipal Collaborative Management Model for Integrated Solid Waste Management	Project-based	Before implementation	
Mexico	Disaster management	Disaster Risk Management Governance Capacity Enhancement Project	Project-based	being carried out	

Region	Country	Sector*1	Project name	Form of cooperation	Form status*2
	North America and Latin America (wide area)	Environment	Capacity Building Project on Integrated Management and Conservation of Biodiversity in SICA Region	Project-based	being carried out
Caribbean	Cuba	Environment	Master Plan Development Project for the Development of Renewable Energy	Development plan survey	being carried out
		Environment	Capacity building project for integrated management of water resources in the Artemisa-Matansa region	Project-based	being carried out
	Saint Vincent	Environment	Project for Strengthening Conservation and Management of Coastal Fisheries Resources through Cooperation between Fishermen and Government	Project-based	being carried out
	Jamaica	Environment	Advisor to the Caribbean Region on Marine Plastic Litter	Individual experts	being carried out
	Dominican Republic	Disaster management	Strengthen capacity for seismic diagnosis of buildings	Country-specific training	being carried out
		Environment	National Integrated Waste Management System and Capacity Enhancement Project Phase 2	Project-based	being carried out
	Barbados	Disaster management	Advisor on Integrated Disaster Management for the Caribbean Region	Individual experts	being carried out

Source: Materials provided by JICA

Note: *1: Name of the sectors follows the sectoral classification in this study and may not correspond to the classification of JICA's operational lead and issues. Renewable energy-related support will be described in the infrastructure and energy sector.

*2: Status as of February 2022

(3) Cooperation Projects by Other Donors

The number of ongoing cooperation projects by major donors to Central America and the Caribbean is summarized in Table 10-7. The majority of projects in the environmental sector are climate change related, with others including water resource development, waste management, and renewable energy. Note that climate change-related projects are counted in the "environment" sector, but there are many projects that can be associated with the "disaster management" sector. The largest number of projects in the environmental sector are in Mexico, Guatemala, and Costa Rica in the Central American region; Cuba, Haiti, Trinidad and Tobago in the Caribbean region; and Suriname in South America. In the disaster management sector, the number of disaster recovery projects in Haiti and Cuba is high, and several wide-area projects by SICA and CARICOM are under implementation, although not shown in the table.

Table 10-7 Number of Projects being Implemented by Other Donors

Country	Environment					Disaster Management					
	WB	IDB	UNDP	AFD	Total	WB	IDB	UNDP	USAID, UN	Total	
CA	MEX	5	4	6		15		1	3		4
	BLZ	1	2			3		2	2		4
	GTM	2	6	5		13			1	1	2
	SLV		1			1			2		2
	HND	3	6			9	2	1		1	4
	NIC		4			4	1			1	2
	CRI	2	6	4		12		1		1	2
	PAN	1	5	2		8		1		1	2
car	BHS		3			3			1	1	2
	Cub.			15		15			4		4
	HTI	2		6		8	5	1	4		10
	DOM	3	2	4		4			1	1	2
	JAM	1	3	1		5	1	2	2		5
	ATG	1				1			1		1
	KNA					0					0
	DMA	2		2		3	1		1	1	3
LCA	1				1	1				1	

Country	Environment					Disaster Management					
	WB	IDB	UNDP	AFD	Total	WB	IDB	UNDP	USAID, UN	Total	
	VCT			1		1			1		1
	BRB					0		1	1		2
	GRD			2		2	1				1
	TTO		5	6		11					0
SA	GUY.	1		3		4	1	1			2
	SUR		2	8	1	10			1		1
		25	49	65	1	140	15	12	24	9	60

Source: Each donor website (viewed November 2021)

10.4.4 Selection Criteria for Priority Countries

Based on the data and information collected from 23 countries, the following selection criteria were set for the environment and disaster management sectors, respectively, and the weighted scores were set for each to calculate the total score.

Table 10-8 Selection Criteria and Evaluation of Priority Countries in the Environmental Sector

Country	Vulnerability		Government interest	Cooperation policy of development partners		Commitment to this study	Priority countries
	Year on year budget minus		Budgeted amount	Japan	Others	Pilot Project	Point
	2020	2021	Top 4 countries	Key Issues	Number of project in operation	COVID19 impact study	
CA	Mexico	MEX					5
	Belize	BLZ					6
	Guatemala	GTM					8
	El Salvador	SLV					5
	Honduras	HND					7
	Nicaragua	NIC					6
	Costa Rica	CRI					7
	Panama	PAN					7
CAR	Bahamas	BHS					5
	Cuba	CUB					4
	Haiti	HTI					3
	Dominican Republic	DOM					3
	Jamaica	JAM					5
	Antigua and Barbuda	ATG					2
	Saint Kitts and Nevis	KNA					0
	Dominica	DMA					2
	Saint Lucia	LCA					4
	Saint Vincent and the Grenadines	VCT					-
	Barbados	BRB					0
	Grenada	GRD					2
Trinidad and Tobago	TTO					4	
SA	Guyana	GUY					-
	Suriname	SUR					2

Point	2			Key Issues	More than 10	PP
	1				More than 5	COVID-19
	0					
	-	N/A	N/A	N/A	N/A	
	-	N/A	N/A	N/A	N/A	

Evaluation	Most Prioritized	Prioritized	Others	Not enough data
------------	------------------	-------------	--------	-----------------

Source: Study Team (Conducted in July, updated in November 2021)

Table 10-9 Selection Criteria and Evaluation of Priority Countries in the Disaster Management Sector

Country	Natural Disaster		Cooperation policy of development partners		Commitment to this study	Priority countries
	Num of disasters past 10 years	Number of people affected per 100,000 people	Japan	Others	Pilot Project	
			Key Issues	Number of project in operation	COVID19 impact study	
Mexico	MEX					6
Belize	BLZ					4
Guatemala	GTM					8
El Salvador	SLV					6
Honduras	HND					5
Nicaragua	NIC					6
Costa Rica	CRI					2
Panama	PAN					2
Bahamas	BHS					1
Cuba	CUB					2
Haiti	HTI					8
Dominican Republic	DOM					4
Jamaica	JAM					4
Antigua and Barbuda	ATG	*	*			2
Saint Kitts and Nevis	KNA	*	*			2
Dominica	DMA	*	*			2
Saint Lucia	LCA					3
Saint Vincent and the Grenadines	VCT					2
Barbados	BRB	*	*			2
Grenada	GRD	*	*			2
Trinidad and Tobago	TTO					2
Guyana	GUY	*	*			2
Suriname	SUR	*	*			2

Point	2	more than 20	more than 20	Key Issues	More than 10	PP
	1	more than 5	more than 5		More than 5	COVID-19
	0					
	-			N/A		
	-	*	*	The Caribbean region is assumed to have the same disaster risk as the surrounding countries, even if data is not yet available.		
Evaluation		Most Prioritized	Prioritized	Others	Not enough data	

Source: Study Team (Conducted in July, updated in November 2021)

10.5 Selection of Priority Countries by Sector

Based on the evaluation scores, the following countries were selected as priority countries in the environment and disaster management sectors from Central America and the Caribbean, respectively.

Table 10-10 Selection of Important Countries by Sector

Sector	Environment	Disaster Management
Top Priority Countries	Costa Rica Jamaica	Guatemala El Salvador Nicaragua Haiti
priority country	Guatemala Honduras Panama Dominican Republic	El Salvador Honduras Dominican Republic

Source: Study team (selected in July, updated in November 2021)

10.6 Detailed Survey by Sector

10.6.1 Selection of Countries for the Survey

Four countries in the environmental sector and three countries in the disaster management sector were selected for the detailed study, and field surveys were conducted.

Table 10-11 Countries Covered by Detailed Sectoral Surveys

Sector	Environment		Disaster Prevention	
	Target country	Reason for selection	Target country	Reason for selection
detailed investigation Target country	Costa Rica	The country is actively involved in climate change and environmental conservation efforts, and to investigate the impact of COVID-19.	Guatemala	High incidence of natural disasters. Also, to implement a pilot project.
	Jamaica	Environmental budgets have been reduced or underfunded, and sector vulnerabilities have been assessed.	El Salvador	High incidence of natural disasters. In addition, to conduct a COVID-19 impact study on the projects under implementation.
	Honduras	Mainly to collect information on waste management.	Dominican Republic	It is one of the countries that suffer the most from disasters. To gather information representative of the Caribbean region.
	Panama	The decrease in the environmental budget was assessed as a vulnerability.	-	-

Source: Study Team (selected in July, updated in November 2021)

10.6.2 Results of the Detailed Survey

(1) Results of the Field Survey

The field survey was conducted as shown in Table 10-12. The survey was conducted through 1) interviews, 2) questionnaire-based survey, and 3) online interview survey.

As for the questionnaire survey by sending questionnaires, there were many organizations that did not respond, and we were not able to collect enough information on the target countries and sectors as originally planned. Therefore, even in the countries visited that were not selected for the detailed survey, information on the sector was collected during the field survey.

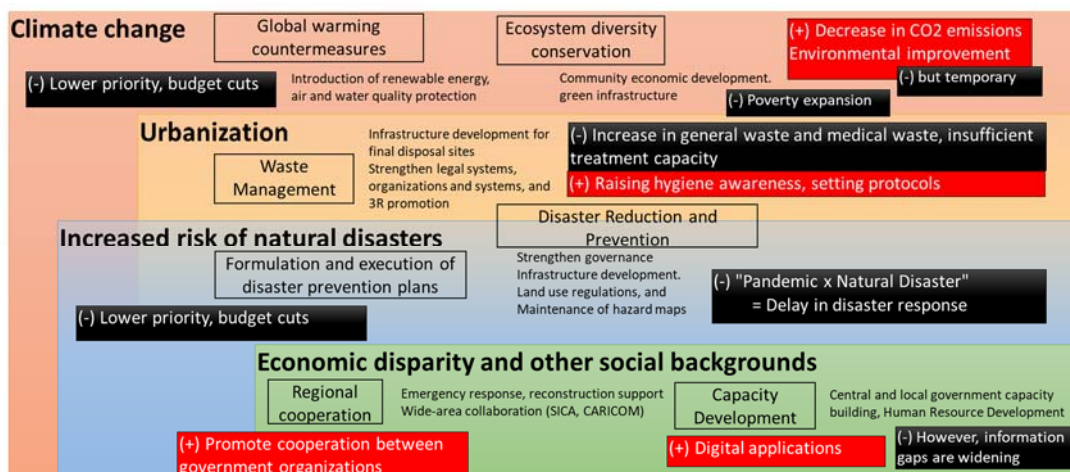
Table 10-12 Detailed Survey Schedule and Sites Visited

Countries covered in detailed survey	Sector	Research Method	Survey Schedule	Destination
Costa Rica	Environment	Questionnaire	2021/11	Union of national local governments
	Disaster management	Questionnaire	2021/11	CNE
Jamaica	Environment/ Disaster management	Interview	2021/11	GTRCMC, Ministry of Tourism
Honduras	Environment	Questionnaire	2021/11	(No answer)
Panama	Environment/ Disaster management	Online interview	2021/6	Ministry of the Environment
Guatemala	Disaster management	Interview	2021/12	INSIVUMEH
	Disaster management	Questionnaire	2021/11	CONRED
El Salvador	Disaster management	Interview	2021/11	DACGER
	Environment (waste)	Interview Questionnaire	2021/11	MIDES UAIP
Dominican Republic	Disaster management	Interview	2021/6	Defensa Civil
Saint Lucia	Environment /Disaster management	Interview	2021/12	IICA NEMO
Other	Environment/ Disaster management	Interview / Online	2021/11, 12	SICA, CDEMA

Source: Study Team

(2) COVID-19 Impact Assessment for Each Sector

The impact of the COVID-19 pandemic on each sector is shown in Figure 10-7. Black labels indicate negative impacts, while red labels indicate positive impacts.



Source: Study Team

Figure 10-7 COVID-19 Impact on the Environment and Disaster Management Sector

1) Impact on Public Budget and Activities

In both the environment and disaster management sectors, budget cuts and, in some cases, personnel reductions were made during the pandemic, making it impossible to carry out adequate activities. Those sectors are highly public and there are many investment activities that should be tackled steadily over the long term. Therefore, it seems that this is due to the situation in each country, where administrative priorities have to be lowered in the face of highly urgent events.

For example, the disaster risk management budget managed by the CNE in Costa Rica was executed through the National Emergency Fund (FNE) at an annual amount of Colon 120 billion (approximately ¥21.5 billion). Of this amount, 112 billion colones were allocated to pandemic recovery projects, while 8,764 million colones were allocated to the normal operations of the CNE (about 1.5 billion yen). There was also a decrease in the budget of about 30% during the pandemic, which has affected the roadmap for 2025.

2) Impact on Global Warming Countermeasures and Ecosystem Conservation

As for the impact on climate change measures, due to the lockdown and other behavioral regulations under the COVID-19 pandemic, emissions of greenhouse gases such as carbon dioxide (CO2) and anthropogenic aerosols (fine particles suspended in the atmosphere) in 2020 were the largest year-on-year decrease since the Industrial Revolution. However, the impact of this decrease in emissions on the progress of global warming has been shown to be limited (JAMSTEC press release, May 7, 2021). In addition, land, air, and maritime transportation activities are gradually returning to pre-COVID-19 levels, and CO2 emissions in 2022 are expected to be higher than before COVID-19 pandemic, indicating that the positive impact of the COVID-19 on the natural environment will be limited and temporary.

On the other hand, the COVID-19 pandemic has drastically reduced the number of tourists visiting national parks in the Central American region, causing a shortage of funds and personnel for ecosystem conservation, making it difficult to continue appropriate conservation activities and impoverishing local communities that rely on tourism as a source of income (SICA).

In addition, many countries in the Central American region are implementing initiatives to achieve sustainable communities through climate change adaptation projects, but the increase in poverty caused by the recent COVID-19 pandemic has stalled or reversed project activities, and the poor who have left urban areas for rural areas have caused the destruction of nature (MiAmbiente, Panama).

In Guatemala, most of the population lives in rural areas, and these areas have problems of poverty and inequality. Since the impacts of climate change on agriculture will appear as small-scale events in a dispersed manner, there will be little interest from domestic and international media. However, as defined by the term of “widespread risk”, the effects of disasters such as climate change and

pandemics are continually reducing the resilience and vulnerability of rural areas, posing a major issues (Guatemala, CONRED).

3) Impact on Waste Management

With regard to waste management, a negative impact was seen in that some municipalities were unable to keep up with the treatment capacity due to the increase in general and medical waste. On the other hand, positive effects on public health and working environment improvement were also pointed out, such as the establishment of protocols for handling hazardous waste due to the increased awareness of infection prevention.

According to the UNGL in Costa Rica, the following impacts have been observed in the country's waste management operations.¹

- Due to regulations by the Ministry of Health, most waste collection centers were closed for several months in 2020, during which time no waste could be exported. In 2021, biosafety protocols were implemented and municipal collection centers were reopened.
- During the pandemic, general waste increased due to telework and other factors.
- The health, safety, and environment of workers involved in waste management needed to be considered. The challenges faced with regard to safety measures for workers who are mainly engaged in cleaning up collection areas and public roads. This was addressed through the provision of uniforms and tools provided by the municipality, as well as additional safety equipment to prevent infections.
- As for fee collection, the budget for waste management is based on quarterly fee collection fro-esidents (per household), commerce, businesses, etc. For 2020, the payment was waived due to the economic crisis caused by the pandemic. Although the exemption period has now passed, some businesses and residents do not have the ability to pay, resulting in a higher percentage of delayed payments from the municipality to waste businesses.

4) Impact on Water Supply Business

From the perspective of infectious disease prevention and control, the need for access to safe water and improved sanitation through sewerage systems has been reaffirmed (SDG Goal 6: Ensure availability and sustainable management of water and sanitation for all by 2030).

On the other hand, as a negative impact of the COVID-19 on the water and sewage business, it has been pointed out both domestically and internationally that the decrease in revenue due to the decrease in the volume of water used for business purposes has decreased. In Japan, for example, in Kyoto City, the amount of water used in FY2020 decreased by approximately 2% for water and 3% for sewage compared to the first half of the previous fiscal year. In particular, the amount of water used for business use decreased by approximately 19% for water and 18% for sewage compared to the first half of the previous fiscal year, and the decrease in revenue is affecting the general account.²³

The same phenomenon may be occurring in Central American and Caribbean countries, therefore, water and sewage data have been collected in Panama City. Table 10-13 and Figure 10-8 show the amount used for water supply in Panama City from 2019 to 2021. Total water use was 3% higher in 2019 than in the previous year before the COVID-19 pandemic, while there was no change in total water use in both 2020 and 2021 compared to the previous year. In the commercial and industrial sectors, the amount of water used in 2021 has decreased significantly from the previous year, which is considered to be a result of the restriction of economic activities.

¹ UNGL: Union nacional de Gobiernos Locales (<https://ungl.or.cr/>)

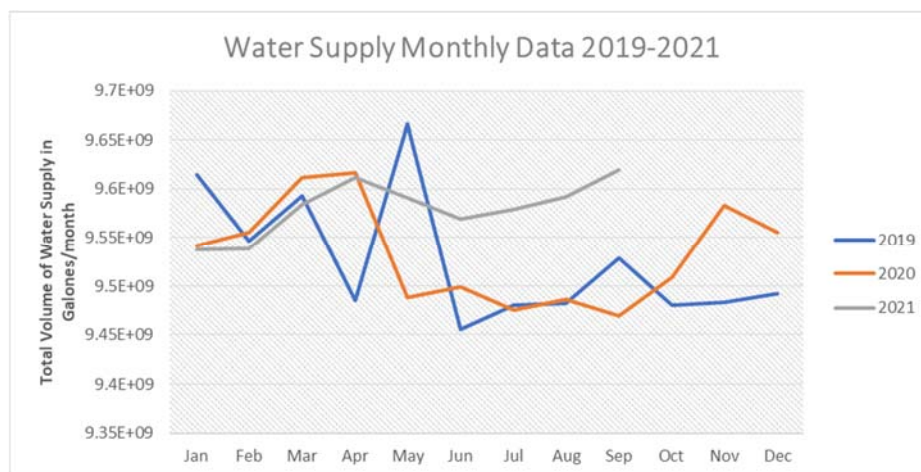
² IFC : "The Impact of COVID-19 on the Water and Sanitation Sector"

³Kyoto City Waterworks Bureau (<https://www.city.kyoto.lg.jp/suido/cmsfiles/contents/0000273/273901/R2-2houkoku5.pdf>)

Table 10-13 Change in Water Consumption in Panama City and Year-on-year Change

Sector	Water consumption (year on year)					
	2019		2020		2021	
Total	9,614,541	103%.	9,541,916	99%.	9,537,677	100%.
Residential	7,291,163	105%.	7,166,501	98%.	7,361,376	103%.
Commercial	1,449,513	99%.	1,407,454	97%.	1,249,189	89%.
Industrial	155,298	110%.	159,588	103%.	117,572	74%.
Government	808,572	102%.	808,373	100%.	818,540	101%.

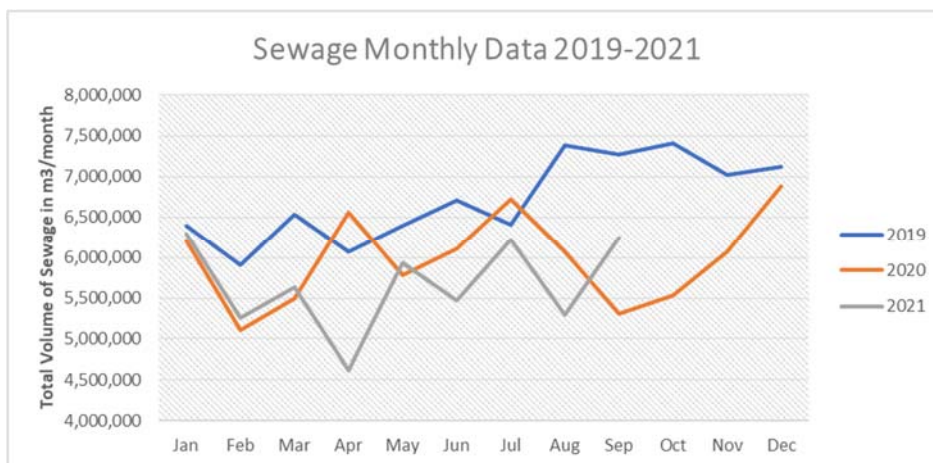
Source: IDAAN (Institute de Acueductos y Alcantarillados Nacionales), Panama



Source: IDAAN (Institute de Acueductos y Alcantarillados Nacionales), Panama

Figure 10-8 Water Consumption in Panama City (2019-2021)

The amount of water used by the sewerage system is shown in Figure 10-9 Panama City Sewerage Water Consumption (2018-2021). There is a downward trend in 2019, 2020, and 2021, with the total water volume in 2020 decreasing by 11% from 2019, which is considered to have had an impact on user fee revenue. There are concerns that the decline in income is casting a shadow on workers for their business and invest in facilities for a better environment.



Source: Programa Saneamiento de Panama, Ministerio de Salud

Figure 10-9 Panama City Sewerage Water Consumption (2018-2021)

5) Impact on Disaster Management Administration

In the disaster management sector, the COVID-19 disaster had a negative impact on the government's ability to respond adequately to natural disasters such as hurricanes. On the other hand, positive impacts were in terms of the advancement of horizontal collaboration practices among government organizations, and the promotion of digital utilization, which enabled information sharing to be more efficient than before.

Table 10-14 Examples of Disaster Response under COVID-19 Pandemic Conditions

Country	Incidents	Response status/Issues
El Salvador	-May-June 2020 Tropical Storm (Amanda and Cristobal) -October-November 2020 Hurricanes (Eta and Iota)	During the COVID-19 pandemic, employees of the Ministry of Public Works had been sent to work on COVID-19 control projects in other ministries, such as hospital construction and water supply work. Vehicles were also used for COVID-19 response, and both staff and vehicles were wiped out when the disaster occurred. Bidding for road construction was also suspended. The landslide areas that were damaged by the hurricane were not restored for some time.
Guatemala	-October-November 2020 Hurricanes (Eta and Iota)	The largest damage was \$317 million in housing destruction, followed by \$157 million in agriculture. Approximately \$8.5 million was invested in emergency response. 61 dead and 99 missing inside Guatemala. In the Central American region, 311,317 people had to be evacuated and 1.7 million residents were affected. The challenges of disaster response under the COVID-19 disaster were social distancing, biosecurity measures, and face-to-face activities and operations under limited numbers. It became clear that more financial, physical, and human resources need to be prepared to comply with the biosafety protocols required for a pandemic.

Source: Interviews with DACGER and CONRED (conducted November-December 2021)

(3) New Issues that have Emerged

Many of the challenges in this sector, as noted above, are traditional vulnerabilities that have been made manifest by the COVID-19 pandemic.

On the other hand, as a flip side of the positive impact of accelerated digitization, it has been pointed out that the correction of information gaps will be a challenge in the future, and this is a newly emerging issue.

10.7 Development of Hypothesis on the State of Sectoral Development Cooperation in With/Post COVID-19 Society

10.7.1 Grouping of Countries Surveyed by Sector

Based on the organization of issues and the hypothesis of vulnerability in this sector, each sector was grouped as follows.

Table 10-15 Grouping of Countries Surveyed by Sector

Sector		Central America		Caribbean	
		Group	attribute	Group	attribute
Environment	Climate Change	All of Central America	Climate change + Biodiversity conservation + Poverty problem	All over the Caribbean	Climate change + Marine environment conservation
	Waste Management	All of Central America	Urbanization problem Facing Common Challenges	Big Caribbean countries (Barbados, Jamaica) Island country	National and local government functions respectively Smaller country size, national = local administration
Disaster Management		Guatemala Nicaragua El Salvador Honduras	Disaster-prone country. Disaster prevention top priority	All over the Caribbean	A disaster-prone country. Extensive social and economic impact
		Other Central America	Disaster prevention needs are at a normal level.		

Source: Study Team

10.7.2 Vulnerability Analysis of the Environment and Disaster Management Sector

The main issues and vulnerabilities of the environment and disaster management sectors in Central America and the Caribbean are summarized in Table 10-16.

Table 10-16 Vulnerability Analysis of the Environment and Disaster Management Sector

Sector		Issues to be addressed	Vulnerability
Environment	Climate Change	1. Global warming countermeasures	<ul style="list-style-type: none"> ▪ High dependence on fossil fuels ▪ High cost of installing renewable energy ▪ Extensive economic impact on multiple fields (agriculture, fisheries, tourism, disaster prevention) ▪ Global warming and extreme weather events are expanding poverty.
	Biodiversity	2. Biodiversity conservation	<ul style="list-style-type: none"> ▪ Water and air quality and ocean pollution are increasing. ▪ Chronic budget and staff shortages
	Waste Management	3. Waste management	<ul style="list-style-type: none"> ▪ Unable to keep up with growing waste disposal capacity ▪ Inadequate management of hazardous and medical wastes ▪ Low awareness of the 3Rs in society as a whole ▪ Insufficient laws, insufficient budget, insufficient technology, insufficient information management ▪ Maintain profitability of water supply and wastewater projects
Disaster Management (Priority actions in the Sendai Framework for Disaster management)		1. Understanding disaster risk	<ul style="list-style-type: none"> ▪ Inadequate collection, analysis, management, and utilization of relevant data ▪ Inadequate disaster risk assessment ▪ Need for non-contact (remote) survey measures ▪ Widening of the information gap
		2. Strengthen disaster risk governance to manage disaster risks.	<ul style="list-style-type: none"> ▪ Lack of understanding of disaster management in other sectors ▪ Disaster prevention has not been mainstreamed. ▪ Frequent personnel changes due to changes in administration make it difficult to maintain continuity.
		3. Investing in disaster risk reduction for resilience	<ul style="list-style-type: none"> ▪ Lack of prior investment by the public and private sectors through hardware and software measures ▪ Uncontrolled land use, no building standards in place ▪ Disaster prevention plans and standards are outdated or inadequate.
		4. Enhancing disaster preparedness for effective response and to "Build Back Better"	<ul style="list-style-type: none"> ▪ Need to establish and strengthen mechanisms for international and regional cooperation ▪ Emergency in case of disaster ▪ Need to foster and strengthen awareness of crisis management, self-help and mutual-help

Source: Study Team

10.7.3 Hypothesis on the With/Post COVID-19 Society Development Cooperation in Central America and the Caribbean

Based on the above analysis of the vulnerability of each sector, hypotheses regarding the development cooperation in the environment and disaster management sectors of With/Post COVID-19 societies in Central America and the Caribbean were developed as shown in Table 10-17.

In the area of climate change, there are common issues such as the high dependence on fossil fuels and the high cost of introducing renewable energy in each country, and the shift to renewable energy sources as a countermeasure to global warming has not progressed as expected. On the other hand, Central America and the Caribbean are strongly affected by climate change, and the economic impact on many fields (agriculture, fisheries, tourism, disaster management) is enormous, and the social impact, such as increased poverty, is remarkable. To overcome this, it is necessary to "implement concrete measures to combat climate change," and the hypothesis of development cooperation is to provide Japanese technology and financial assistance to reduce greenhouse gas emissions, as well as to implement community-focused, cross-sectoral climate change "mitigation" and "adaptation" measures.

With regard to the water resources, one of the COVID-19 impacts on the water and sewerage sector was to consider the impact of reduced income from changes in usage. However, in this study, it was not possible to collect sufficient information on the status of access to safe and secure water, especially in remote areas. In the event of a pandemic or natural disaster, securing water resources is of paramount importance, and further surveys should be conducted to evaluate cooperation needs.

In the field of biodiversity, the current situation is that environmental and marine pollution control measures and biodiversity conservation projects are not being carried out sufficiently due to chronic budget shortages and personnel shortages. In terms of development cooperation, it is necessary to provide technical assistance continuously to environmental authorities and financial cooperation for projects under the theme of "sustainable development".

In the field of waste management, the COVID-19 pandemic has brought to light issues related to the management and treatment of hazardous and medical wastes, in addition to the existing problem of not being able to keep up with the increase in waste treatment capacity due to urbanization. In addition, as pointed out in the "Data Collection Survey on Waste Management Sector in Central America and Caribbean Region (JICA, 2012)", each country has an issue that the legal system for realizing the 3Rs (Reduce, Reuse, Recycle) has not been developed yet and the awareness of society as a whole is low. In order to realize a recycling-oriented society, technical support for the formulation of waste management policies and plans at the national level, the improvement of waste management capacity of local governments, and the horizontal deployment of the results of technical cooperation projects to solve problems in the entire region are expected.

The disaster management area is organized based on the Sendai Framework for Disaster management's four priority actions: 1. Understanding disaster risk, 2. Strengthening disaster risk governance to manage disaster risks, 3. Investing in disaster risk reduction for resilience, and 4. Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation and reconstruction. In the previous section, vulnerabilities were identified and sorted out, and the following directions for development cooperation to overcome each vulnerability were set out: "ICT utilization" for centralized management and use of information through the establishment of a disaster information platform; "mainstreaming of disaster management" to strengthen governance and meet regional characteristics through the formation of cross-sectoral/multidisciplinary projects; "strengthening resilience" by supporting the formulation of disaster management plans; and "enhancing regional disaster management capacity" by fostering risk management awareness among individuals, businesses and communities.

Table 10-17 Hypotheses on the Nature of Development Cooperation in the Environment and Disaster Management Sectors

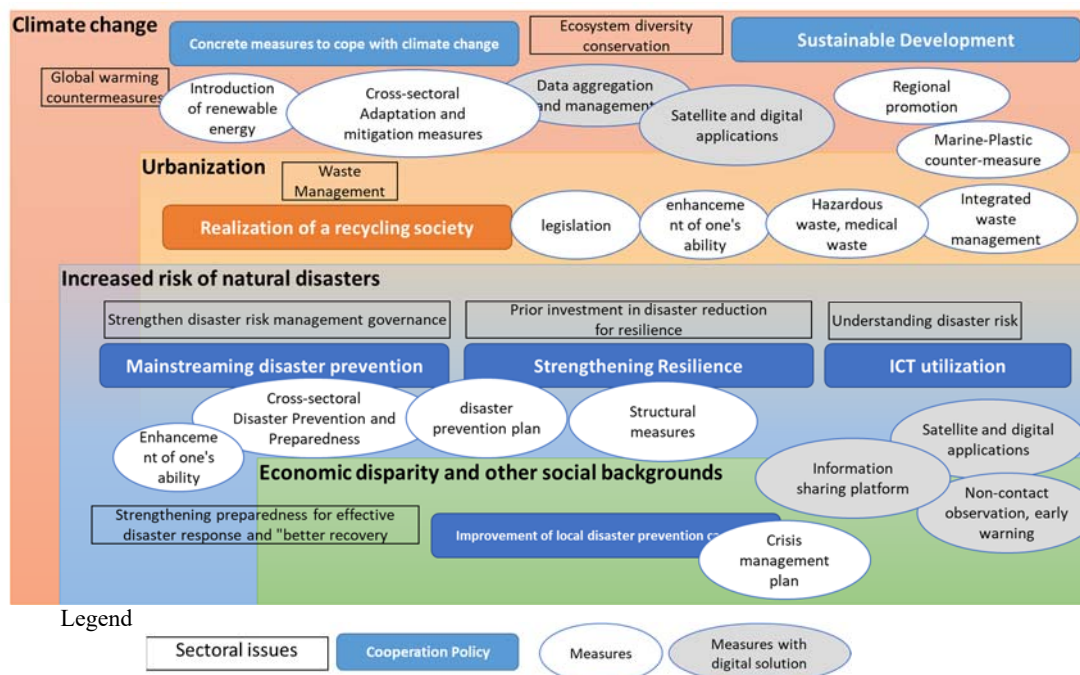
Sector		Issues to be addressed	Hypothesis of development cooperation
Environment	Climate Change	1. Global warming countermeasures	<ul style="list-style-type: none"> ▪ Implementation of concrete measures to address climate change ▪ Technical and financial assistance to reduce greenhouse gas emissions ▪ Community-focused implementation of climate change "mitigation" and "adaptation" measures (cross-sectoral)
	Biodiversity	2. Biodiversity conservation	<ul style="list-style-type: none"> ▪ Sustainable Development ▪ Science and technology, research and analysis skills improvement ▪ Technical and financial assistance for projects
	Waste Management	3. Waste management	<ul style="list-style-type: none"> ▪ Realization of a recycling-oriented society ▪ Improving management capacity by strengthening administration ▪ Regional cooperation, know-how sharing through South-South cooperation
Disaster Management (Priority actions in the Sendai Framework for Disaster management)		1. Understanding disaster risk	<ul style="list-style-type: none"> ▪ ICT utilization ▪ Centralized management and use of information through the establishment of a disaster management information platform
		2. Strengthen disaster risk governance to manage disaster risks.	<ul style="list-style-type: none"> ▪ Mainstreaming disaster management ▪ Strengthen governance through the formation of cross-sectoral/multidisciplinary projects ▪ Capacity building of government agencies
		3. Investing in disaster risk reduction for resilience	<ul style="list-style-type: none"> ▪ Strengthening Resilience ▪ Support for developing disaster management plans ▪ Technical and financial support

Sector	Issues to be addressed	Hypothesis of development cooperation
	4. Enhancing disaster preparedness for effective response and to "Build Back Better"	<ul style="list-style-type: none"> Improvement of local disaster management capacity Community disaster prevention Promotion of regional cooperation Fostering awareness of crisis management among individuals, companies, and communities

Source: Study Team

10.7.4 Consideration of Possible Actions and Measures to Overcome Vulnerabilities.

Based on the hypotheses for development cooperation outlined above, possible responses and support measures that could be taken to overcome the vulnerabilities of the sector in With/Post COVID-19 societies are examined. Figure 10-10 shows the conceptual diagram.



Source: Study Team

Figure 10-10 Consideration of Support Measures that could Contribute to Overcoming Vulnerabilities (Conceptual Diagram)

10.7.5 Verification of Hypothesis through Pilot Projects

In relation to the environment and disaster management sector, the following three pilot projects were implemented to verify the hypothesis of development cooperation for overcoming vulnerabilities.

(1) Pilot Project for Technical Cooperation to Expand EWBS Reception Environment (Nicaragua)

Sector	Disaster management
Issues to be addressed	1. Understanding disaster risk
Hypothesis of development cooperation	(4) ICT utilization: Centralized management and utilization of information through the establishment of a disaster prevention information platform
Background and purpose of the project	Since uncertain information on disaster management is being transmitted through media such as the Internet under the COVID-19 disaster, this project was conducted to improve the environment for the enhancement of effective contents through the EWBS by related organizations.
Details of the demonstration	Central America and the Caribbean, including the project countries, are regions that face natural disasters such as earthquakes and tsunamis, and Japan has been providing disaster prevention cooperation for many years. This pilot project uses Emergency Warning Broadcasting Service (EWBS) based on the Japanese terrestrial digital broadcasting system to promote capacity building in terms of reception and operation, and to encourage self-sustaining operation of EWBS through collaboration with a separate Ministry of Internal Affairs and Communications (MIC) project.
Result	The use of EWBS, a stable media, has enabled the government to communicate accurate lifeline information.

	In addition, the content transmitted by EWBS was evaluated as being applicable not only to earthquakes and tsunamis, but also to other types of disasters and daily lifeline information such as corona countermeasures, and is expected to be expanded to other countries.
--	---

10.7.6 Introduction of SaaS-based Land Displacement Monitoring Service (Guatemala)

Sector	Disaster management
Issues to be addressed	1. Understanding disaster risk 3. Prior investment in disaster prevention for resilience
Hypothesis of development cooperation	(4) ICT utilization: Centralized management and utilization of information through the establishment of a disaster prevention information platform (6) Strengthening resilience: Supporting the formulation of disaster management plans
Background and purpose of the project	Under the With/Post COVID-19 disaster, the budget allocation for disaster prevention projects will not be sufficient and existing survey work will be difficult.
Details of the demonstration	A wide-area satellite-based Land Displacement Monitoring (LDM) system using a SaaS system will be introduced to the National Earthquake, Volcanic, Meteorological and Hydrological Agency of Guatemala for the metropolitan area, including Guatemala City, which is at risk of potential ground motion disasters. By acquiring knowledge on how to evaluate ground deformation risk by using satellite data and learning how to operate satellite monitoring systems, there is a contribution to improving the efficiency of surveying operations and early detection of potential ground deformation risk during normal monitoring and disasters.
Result	While it is difficult to increase investment in disaster prevention by complying with COVID-19, the ability to efficiently identify hazardous areas due to ground deformation such as landslides and land subsidence was in line with local needs. In the future, it is expected that the satellite application service will be expanded to the Central American region, taking into account country-specific issues such as floods, forest fires, and volcanic activity in addition to ground deformation.

10.7.7 Strengthening Disaster Resilience in the Tourism Sector (Jamaica)

Sector	Disaster management
Issues to be addressed	3. Prior investment in disaster prevention for resilience 4. Strengthen preparedness for effective disaster response and "Build Back Better"
Hypothesis of development cooperation	(6) Strengthening resilience: Supporting the formulation of disaster management plans (7) Improving community disaster preparedness: Fostering awareness of crisis management among individuals, businesses, and communities
Background and purpose of the project	In Jamaica and other Caribbean countries that are highly dependent on the tourism industry, a sudden decrease in the number of tourists due to a crisis or disaster will have a fatal impact on the overall economy of the country. Therefore, in order to minimize the damage, it is important to identify the crisis factors that may have a great impact on tourists and industries, to implement disaster mitigation measures based on these factors, and to plan and conduct drills on how to respond to a crisis. The purpose of this project is to strengthen the tourism sector by supporting the formulation of tourism crisis management plans.
Details of the demonstration	The Ministry of Land, Infrastructure, Transport and Tourism (MLIT) and the United Nations World Tourism Organization (UNWTO) in Japan have developed the "Guide for the Promotion of Tourism Crisis Management by Local Governments and Tourism-related Businesses" as a teaching material under the concept of "Build back better. This project aims to strengthen the resilience of local governments, DMOs, tourism associations, and tourism-related businesses in the event of a crisis by using the guide above, organizing a planning support webinar and workshop in collaboration with the Global Tourism Resilience and Crisis Management Centre (GTRCMC) in Jamaica. In this way, the resilience of municipalities, DMOs, tourism associations, and tourism-related businesses was strengthened.
Result	The Minister of Tourism of Jamaica was impressed by the recovery from the Great East Japan Earthquake and has been requesting Japan's cooperation in tourism-resilience for some time. The GTRCMC, the C/P of this project, has been disseminating this initiative and its contents through its own webpage and social media, and is making efforts to widely disseminate it to the government, DMOs, and the general public. It is highly expected that the results of this project will have a spillover effect in Jamaica and lead to the expansion of the project to other countries.

10.8 Analysis and Recommendations Contributing to Sectoral Cooperation Policies

10.8.1 Analysis on Cooperation Policy

We examined each development theme in the environment and disaster prevention sectors and the appropriateness of hypotheses and support measures related to the nature of development cooperation.

(1) Global Warming Prevention: Implementing Specific Measures to Address Climate Change

- The implementation of concrete measures to combat climate change is set out in SDGs Goal 13. Under the theme of taking urgent action to mitigate climate change and its impacts, five targets are set, one of which is to "promote mechanisms to improve the capacity for effective planning and management of climate change-related issues in least developed countries and small island developing States, including through a focus on women, youth, rural and socially disadvantaged communities".
- In Central America and the Caribbean as a whole, there is a wide disparity in regional and individual circumstances, including income inequality, geographical conditions, multilingualism and security. In this context, vulnerable groups such as the poor, the marginalised, indigenous peoples, refugees and migrants have been the most affected by environmental impacts of climate change and current COVID-19.
- From these perspectives, there is a need to implement "climate change countermeasures focused on community development" and "disaster prevention measures aimed at promoting industry".

(2) Biodiversity Conservation: Sustainable Development

- The necessity of sustainable development through biodiversity conservation is the same as the perspective in (1).
- From a technical point of view, methods for monitoring and predicting biodiversity on a broad scale using satellite remote sensing have already been established at both research and practical levels, and can be used in the project.⁴
- A study on marine plastic pollution in Central America and the Caribbean has already been conducted (JICA, 2020). In addition, the "Advisory Service on Marine Plastic Waste Countermeasures in Caribbean Region" has been underway since December 2021. In addition to examining the possibility of introducing Japanese technology for plastic waste treatment, measures to prevent wastes through proper waste management are being promoted.

(3) Waste Management: Achieving a Recycling-Oriented Society

- JICA launched the JICA Clean Cities Initiative (JCCI) to further contribute to the realization of "clean cities" in urban areas of developing countries by raising the priority of policies and infrastructure development in the field of environmental management in developing regions. At the kick-off international seminar held from January 19 to 20, 2022, various stakeholders including governments of developing countries, development cooperation agencies, and Japanese local governments and ministries participated. The discussion focused on the creation of a recycling-oriented society, low-carbon society, and sustainable development. In addition, there were opportunities of pitch events, online exhibitions, etc. to introduce Japan's excellent products and technologies related to environmental management and climate change, and Japanese companies. Those technologies are expected to expand their business overseas in such areas as sewage treatment facilities and sewage pipes, toilets, septic tanks, air and water quality monitoring equipment and systems, medical waste incineration equipment, solar panels, reuse and recycling of waste plastic products, and bioplastics. It is expected that Japanese companies and technologies in environmental management technologies and products such as solar panels,

⁴Inoue: Global Ecosystem Issues and Remote Sensing, Journal of The Remote Sensing Society of Japan Vol. 31 No. 2 (2021)

waste plastics, reuse and recycling of products, and bioplastics will make inroads into overseas markets.

- "Waste to Energy" is a solution that is gaining attention and progress in the Central American region. Issues to be addressed include the burden of government fees and ensuring business viability. In addition, although the emission of greenhouse gases due to combustion is seen as a problem in some aspects, it has been evaluated from the perspective of breaking away from power generation methods that depend on fossil fuels, promoting resource recycling, and energy utilization. It is expected to be introduced to the region in the future as technology becomes more advanced, facilities are improved, and costs are lowered. It is necessary to implement both institutional formation and technology dissemination for waste power generation. (During this study, MIDES, a waste contractor in San Salvador, and IICA in St. Lucia expressed interest in introducing waste-to-energy and Japanese technology.)
- The introduction of autoclaves for the disposal of medical waste is being considered and promoted by local governments and waste disposal companies. MIDES in San Salvador has already introduced the system and is training neighboring countries on technologies for transportation, treatment, and disposal, including medical waste. In the Dominican Republic and Honduras, some municipalities are unable to install autoclaves due to lack of funds, and there is a need for financial assistance.
- With regard to marine waste, the "Data Collection Survey on Marine Plastic Wastes in North America and Latin America (Regional) and the Caribbean Region (JICA, 2020)" was conducted. The current status of waste management in Caribbean countries and international trends related to marine plastic wastes were summarized, and countries with high priority for cooperation were proposed. After that, the "Advisory Service on Marine Plastic Wastes in the Caribbean Region (JICA, 2021-)" was formed to improve the waste management capacity in Jamaica, Antigua and Barbuda, Grenada, St. Lucia, and Guyana. It is expected that comprehensive waste management in the Caribbean region will be established through the transfer knowledge and advancement of Japanese technology in each country.

(4) Disaster Risk Reduction Priority Action 1 (Understanding Disaster Risks): ICT Utilization

- The digitization of disaster management, that is, the construction and utilization of disaster management information platforms, is a global trend in the field of disaster management. The figure below shows an image of the Shared Information Platform for Disaster (SIP4D) being constructed in Japan.
- The purpose of building the platform is to realize "information sharing between multiple organizations," and the system is designed to enable all related organizations to respond appropriately to disasters based on unified information. This system realizes the aggregation of meteorological and other information during normal times and under disaster event, monitoring and observation during disasters, and the aggregation and dissemination of damage information (early warning, evacuation center guidance, support for material and medical activities, and support for infrastructure recovery planning).



Source: NIED (National Research Institute for Earth Science and Disaster Resilience, Japan)

Figure 10-11 Conceptual Diagram of the Shared Information Platform for Disaster

- As for the "centralization of disaster management information" for Central America and the Caribbean, there is a need to establish it at the national level first, and it is necessary to establish a disaster management network and system to promote information sharing between the central and local governments and to promote cooperation with related organizations (Defensa Civil of the Dominican Republic, El Salvador (There are needs from Defensa Civil of Dominican Republic, DACGER, etc.).
 - In order to move from "reactive disaster management" to "proactive disaster management" in the future, it is necessary to establish technologies that can take measures based on constant observation and prediction of the disaster response process. The Central American and Caribbean regions are characterized by the fact that a single extreme weather event, such as a hurricane, can cross national borders and cause disasters in multiple countries. In order for communities to acquire the ability to prevent and respond to disasters, disaster hazard management through wide-area cooperation is required.
 - The coordination capacity of CEPREDENAC (Central America region) and CDEMA (Caribbean region), which can serve as regional disaster management centers, is not sufficient at present based on their performance, but they are expected to fulfill the above-mentioned functions in the future, and their organizations and resources should be developed with this in manner.
- (5) **Disaster Risk Reduction Priority Action 2 (Strengthen disaster risk governance to manage disaster risks.): Mainstreaming Disaster Risk Reduction**
- As mentioned above, there are several sectors that are affected by natural disasters including extreme weather events caused by global warming. For this reason, it is necessary to incorporate elements of disaster management from the planning stage, especially in areas where damage to the social economy is strong. Mainstreaming disaster management means that governments should make disaster management a policy priority, introduce disaster management into all development policies and plans, and increase investment in disaster management.

- In international cooperation, it is always necessary to have an evaluation and planning from the perspective of "Disaster management" . Especially in development projects, evaluation from the perspective of "Disaster management" is required firmly in the context of environmental and social considerations.
- With regard to the technical cooperation in Central American region, JICA has been working with (CEPREDENAC (Centro de Coordinación para la Prevención de los Desastres en América Central y República Dominicana), which was established as a specialized agency for disaster management under SICA, to improve the organizational structure and develop human resources for disaster management administrations in Central American countries through the implementation of the projects of BOSAI-1 and 2 (2005-2020). For this region, continued cooperation is required based on the results and challenges of the cooperation projects provided so far.

(6) Disaster Risk Reduction Priority Action 3 (Investing in disaster risk reduction for resilience): Strengthening Resilience

- As it is seen in the recent COVID-19 pandemic, even developed countries do not have sufficient technology to control the occurrence of disasters and prevent damage. When considering disaster prevention and mitigation, it is necessary to strengthen the ability to overcome disasters and enhance disaster resilience, in addition to traditional preventive capabilities (Hayashi, 2016).⁵
- In order to strengthen resilience, both structural and non-structural measures need to be implemented in a complementary and continuous manner. However, since the necessary disaster prevention and mitigation measures will differ even within the same country, as well as within Central America and the Caribbean, it is necessary to develop a roadmap for disaster prevention in light of the goals of "prevention of disasters," "prevention of the spread of damage," and "rapid recovery and reconstruction", and to work on the measures with the highest priority.
- In the GENSAI-1 and 2 in El Salvador, the technical capacity of the implementing agency (DACGER) was improved with the top objective of reducing the vulnerability of road infrastructure to disasters. The technical capacity of the implementing agencies (DACGER) has been improved, and they are now able to formulate project plans and budget drafts based on the optimal risk reduction targets (disaster probability years) in consideration of cost-effectiveness, and to implement the projects with certainty. The future direction of the project is not only to reduce the risk of road disasters, but also to plan and implement multi-purpose projects that contribute to the SDGs, such as road environment improvement, road traffic safety, marine and land conservation, etc. It is expected to promote the mainstreaming of disaster management through the formation of projects across multiple sectors.
- In the Caribbean region, the "Data Collection Survey on Disaster Risk Reduction in CARICOM Countries" (JICA, 2015) was conducted to assess the current situation in Antigua and Barbuda, Guyana, Grenada, Jamaica, Suriname, St. Kitts and Nevis, and St. Vincent and the Grenadines. Response measures and a long list are proposed for each country. Strengthening resilience to disasters is required by providing technical and financial support for high-priority structural measures from these lists. In addition, the wide-area capacity building project in collaboration with CDEMA will be effective in addressing the problems of insufficient personnel and budget that many CARICOM countries are facing.

(7) Disaster Risk Reduction Priority Action 4 (Enhancing disaster preparedness for effective response and to "Build Back Better"): Improve Local Disaster Preparedness

- In Japan as well, the lessons learned from the Great Hanshin Earthquake pointed out the need for disaster management measures based on wide-area cooperation, and the movement toward wide-area exchange outside of local governments has since spread. In the aftermath of the Great East

⁵Haruo HAYASHI: Science and Technology for Disaster Resilience, Annual of Disas.Prev. Res. Inst, Kyoto Uni., No.59 A. 2016

Japan Earthquake, it has been recognized that cooperation among local governments functioned effectively.

- The Eastern Caribbean Island countries have established a system of cooperation among OECS countries in the event of a disaster, and also provided disaster relief supplies during the volcanic eruption in St. Vincent Island in April 2021 (St. Lucia NEMA). Thus, building a relationship of mutual assistance among neighboring countries for recovery in the event of a disaster is effective from the perspective of strengthening resilience.
- In order to minimize crises and damage caused by disasters, it is important to prepare for self-help and mutual aid, which in turn will lead to the improvement of disaster preparedness and resilience of communities and nations. As in the case of the pilot project in Jamaica to support the development of a tourism crisis management plan, individuals, companies, and entire communities can reduce the damage by preparing for a crisis through planning and training, and by responding in accordance with the preparations when a crisis actually occurs.

(8) Establishment of Bases and Regional (Wide-Area) Cooperation

- In development cooperation in Central America and the Caribbean, it is desirable to go beyond bilateral assistance and select the most appropriate form of assistance from among multiple forms of assistance as shown in Table 10-18.
- In terms of disaster management, the future needs of SICA and CARICOM member countries are to establish bases and to centralize disaster management information. With regard to waste management, it would be effective to implement technical cooperation (triangular cooperation and South-South cooperation) in which the technological know-how of El Salvador and other advanced countries is deployed to neighboring countries.
- In order to implement cooperation in the region in the future, it would be effective to select and develop counterpart organizations and strengthen cooperation through the implementation of pilot projects.
- As a counterpart organization for the introduction of science, technology, and ICT technologies, the professional capacity of the technicians of INSIVUMEH in Guatemala, which recently conducted a pilot project, was sufficiently high. As for the GTRCMC, which implemented a pilot project on tourism resilience in Jamaica, the Minister of Tourism has a great influence on the international community, and the organization could be a base for development in the region.

Table 10-18 Regionalization and Wide-Area Cooperation (draft)

Organization		Cooperation theme	Base countries (proposed)	Target area
Regional organization	SICA	Sharing know-how on waste management	El Salvador	Central America
	SICA-CEPRENAC	Disaster management information platform construction	Guatemala	Central America
	CARICOM-CDEMA	Disaster management information platform construction	Barbados	Caribbean
Counterpart Organization	IINSIVUMEH	Introduction of ICT technology and technology transfer	Guatemala	Central America
	GTRCMC, Ministry of Tourism	Strengthening Tourism-resilience	Jamaica	Caribbean

Source: Study Team

10.8.2 Recommendations on Cooperation Policy

Based on the information collected and analyzed in this survey, the following recommendations that contribute to the cooperation policy in the environment and disaster management sectors are summarized below and in Table 10-19 and Table 10-20.

(1) Environment Sector

1) Global Warming Countermeasures

- Support for the introduction of renewable energies is one of the technical and financial assistance for the implementation of concrete measures to reduce greenhouse gas emissions. In Central America and the Caribbean, there are many countries with geothermal potential, and Japan has been supporting their research and development by utilizing Japanese technology and experience. The international community needs to contribute to the region through technical and financial cooperation and human resource development to achieve carbon neutrality. It is also necessary to support the region through digital technologies, such as the collection and management of basic data on the status of countries' efforts to achieve zero emissions.
- The Central American and Caribbean regions are highly vulnerable to climate change and the social and economic impacts are enormous, requiring the implementation of cross-sectoral "mitigation" and "adaptation" measures. In particular, there is a need to implement effective measures in partnership with the disaster management and agriculture sectors (Central America), tourism, fisheries and agriculture (Caribbean), which are directly affected by global warming and climate change, and the education and health sectors, which are indirectly affected.

2) Biodiversity Conservation

- The whole of Central America and the Caribbean region needs to continue to improve its legislation and strengthen its management capacity for protected areas.
- In the Caribbean, in particular, where marine plastic pollution is becoming increasingly serious, continued support is required for research and action on integrated environmental conservation across terrestrial and marine areas.
- It is essential to consider and promote business models that find a balance between local economic development and sustainable development through biodiversity conservation. In the Caribbean region, it would be effective to formulate projects that aim to achieve both sustainable development and conservation by promoting community industry through the use of the Caribbean's unique ecosystems and natural environment for tourism.
- From a technical point of view, the project is expected to use digital technologies such as satellite images to examine ecosystems, vegetation distribution, wildfires and resource management.

3) Waste Management

- There is a need to develop legislation for hazardous and medical waste management throughout the Central American and Caribbean region. Technical assistance in the implementation of integrated waste management is required to support the development of mechanisms for the realization of a circular economy in the region. At the same time, it is necessary to strengthen the capacity of public administration in order to achieve the 3Rs and to establish a hygienic waste flow.
- In the Caribbean island countries, it is necessary to establish a mechanism and implementation system for integrated waste management that integrates land and sea. Some countries also need support for specific initiatives to address individual issues related to collection, transport and disposal (e.g. waste separation, open dumping, river netting).
- For Central American countries and large Caribbean countries, there is a need for support for capital investment and technological innovation, such as the introduction of recycling facilities, autoclaves and waste power generation.

(2) Disaster Management Sector

1) Understanding Disaster Risks

- Technical support is required for ICT-based hazard assessment (introduction of satellite image-based technology), non-contact monitoring, observation and information provision, and the establishment of early warning systems.

- It is necessary to establish a system, including a legal system, for the development of disaster prevention network lines, etc., for the future realization of "centralized disaster prevention information" at the national and regional levels. Technical cooperation with CEPREDENAC (Central America) and CDEMA (Caribbean), which can serve as regional disaster management centers, is required.

2) Strengthening Disaster Risk Governance to Manage Disaster Risks

- In order to mainstream disaster management, countries need to: 1. make it a policy priority; 2. include it in all development policies and programmes; and 3. increase investment in it. To this end, cooperation is required in the development of legislation, strengthening capacities of institutions and human resource.
- The formation of cross-sectoral/combined projects is expected to promote social resilience in agriculture, education and health in Central America, and in tourism and agriculture in the Caribbean.

3) Investing in Disaster Risk Reduction for Resilience

- Technical and financial support for pre-investment to strengthen resilience is required throughout Central America and the Caribbean. Structural measures include urban resilience and infrastructure development that contributes to disaster mitigation (road maintenance, seismic resistant, landslide protection, river rehabilitation and other flood prevention measures).
- In terms of non-structural measures, continued support for the development or updating of national and regional disaster management plans, and disaster education to raise awareness of disaster management among the population should be continued.
- In addition, to address the shortage of personnel and budgetary resources in many CARICOM countries, the Regional Capacity Building Project in collaboration with CDEMA could be effective.

4) Enhancing Disaster Preparedness for Effective Response and to "Build Back Better"

- It is important not to miss the opportunity to Build Back Better by implementing projects that aim to improve the disaster preparedness of local communities by drawing on the lessons of the disaster. The promotion of local industries and regional cooperation as opportunities for recovery and reconstruction will lead to a better recovery.
- The disaster resilience of local industries should be strengthened by raising the awareness of individuals, businesses and communities, fostering self-help and mutual aid through community disaster prevention support, strengthening local disaster preparedness, and promoting crisis management plans and BCPs.

Table 10-19 Draft Direction of Development Cooperation and Policy Recommendations for Environment Sector

Issues to be addressed	Cooperation Policy	Cooperation Measures (draft)	Region
1. Global warming countermeasures	[Cooperation Policy] Concrete measures to cope with climate change The direction of development cooperation - Technical and financial assistance to reduce greenhouse gas emissions - Community-focused implementation of climate change "mitigation" and "adaptation" measures (cross-sectoral)	- Introduction of renewable energy (geothermal, etc.) - Technical and financial cooperation necessary to achieve carbon neutrality (*See "Infrastructure and Energy" sector for details) - Consolidation and management of basic data to achieve zero emissions	Common
		- Implementation of cross-sectoral "mitigation" and "adaptation" measures. The disaster prevention and agriculture sectors are particularly affected by global warming and climate change, and indirectly affected education and health sectors.	Central America

Issues to be addressed	Cooperation Policy	Cooperation Measures (draft)	Region
		- Implementation of cross-sectoral "mitigation" and "adaptation" measures. Tourism, fisheries, and agriculture sectors that are particularly affected by global warming and climate change	All over the Caribbean
2. Biodiversity Conservation	[Cooperation Policy] Sustainable Development through Biodiversity Conservation The direction of development cooperation - Science and technology, research and analysis skills improvement - Technical and financial assistance for projects	- Sustainable development and regional development through ecosystem conservation - Technical assistance for community development	Central America
		- Surveys and measures for environmental conservation in terrestrial and marine areas - Strengthen efforts to combat marine plastics - Utilization of Biodiversity in Tourism	All over the Caribbean
		- Legislative framework for nature reserve management - Strengthen management capabilities	Common
		- Surveys and resource management of ecosystems, vegetation distribution, wildfires, etc. using digital technology such as satellite imagery data	Common
3. Waste Management	[Cooperation Policy] Realization of a recycling-oriented society The direction of development cooperation - Improving management capacity by strengthening administration - Sharing of know-how through regional collaboration and technical cooperation	- Improvement of the legal system for waste management (comprehensive waste management, hazardous waste management, medical waste management) - Creating a framework for realizing a recycling-based economy	Common
		- Capacity building of local government (realization of 3Rs, establishment of sanitary waste flow)	Central America Caribbean bigger countries
		- Capital investment, technological innovation (introduction of recycling facilities, autoclaves, waste power generation, etc.) - Promotion of private investment	Central America Caribbean big countries
		- Capacity building of local government (3R, establishment of sanitary waste flow)	Central America Caribbean big countries
		- Integrated waste management on land and sea - Support for specific efforts to address individual issues related to collection, transportation, and disposal (e.g., waste separation, open dumping, installation of river nets, etc.)	Caribbean Island Countries

Source: Study Team

Table 10-20 Draft Direction of Development Cooperation and Policy Recommendations for Disaster Management Sector

Issues to be addressed	Cooperation Policy	Cooperation Measures (draft)	Region
1. Understanding disaster risk	[Cooperation Policy] ICT utilization The direction of development cooperation - Centralizing information through the establishment of a disaster prevention information platform	- Hazard assessment through the use of ICT (introduction of satellite imagery technology) - Construction of a non-contact monitoring, observation, information provision, and early warning system	Common

Issues to be addressed	Cooperation Policy	Cooperation Measures (draft)	Region
2. Strengthen disaster risk governance to manage disaster risks.	[Cooperation Policy] Mainstreaming disaster prevention The direction of development cooperation - Strengthen governance through the formation of cross-sectoral/multidisciplinary projects	- Promote collaboration among central and local governments and ministries by utilizing the above-mentioned disaster prevention information platform.	Central American disaster-prone countries and Caribbean
		- Form cross-sectoral/multidisciplinary projects (agriculture, education, health, etc.)	Central American disaster-prone countries
		- Formation of cross-sectoral/multidisciplinary projects (tourism, agriculture, etc.)	All over the Caribbean
3. Investing in disaster risk reduction for resilience	[Cooperation Policy] Strengthening Resilience The direction of development cooperation - Support for developing disaster prevention plans - Technical and financial support	- Formulate and update disaster prevention plans	Common
		- Urban resilience (road infrastructure development, seismic resistance, landslide prevention, river improvement, etc.)	Central America Caribbean big countries
		- Infrastructure development that contributes to disaster mitigation (road maintenance, landslide prevention, flood prevention such as river improvement)	Caribbean Island Countries
		- Conducting disaster prevention education	Common
4. Enhancing disaster preparedness for effective response and to "Build Back Better"	[Cooperation Policy] Improvement of local disaster prevention capacity The direction of development cooperation - Community disaster prevention - Promotion of regional cooperation - Raising awareness among individuals, companies, and communities	- Raising awareness among individuals, companies, and communities through the dissemination of crisis management plans and BCPs	Common
		- Promotion of regional cooperation for recovery and reconstruction	Common
		- Fostering self-help and mutual aid through community disaster prevention support, and strengthening local disaster prevention capacity	Common

Source: Study Team

11. Governance and Citizen Security Sector

11.1 General

The characteristics and challenges of the governance and citizen security sector in Central America and the Caribbean were identified in the reports of Economic Commission for Latin America and the Caribbean (ECLAC), United Nations Development Programme (UNDP), and Inter-American Development Bank (IDB), as well as through a comparative analysis of the governance and citizen security indicators (level of democracy, government effectiveness, extent of rule of law, homicide rate, among others) collected from 23 countries before and after the Coronavirus Disease 2019 (COVID-19) pandemic. Interviews with the Japan International Cooperation Agency (JICA) officials were conducted on issues in the areas of governance and citizen security and the direction of future cooperation in the four countries where detailed surveys were conducted (Guatemala, Honduras, Nicaragua and Jamaica). Among the measures against the spread of the COVID-19 infection, the measures related to governance and citizen security were summarized based on the information published by ECLAC and the information of each government.

Based on the above, the issues and trends in governance and citizen security in the 23 target countries were identified, criteria for selecting priority countries were established, and priority countries and priority issues that JICA should address in the governance and citizen security sectors in the future were identified. Then, a hypothesis was developed on how JICA should cooperate in the governance and citizen security sector in the Central American and Caribbean regions. The above progress and results are summarized in this report. Additionally, due to the difficulties to conduct interviews with governmental agencies in Honduras, in the context of the presidential election held in November 2021, most of the survey results were summarized based on information available on the Internet. A field survey was conducted in Guatemala and Jamaica from November 29th to December 10th.

Based on the above survey results, issues (vulnerabilities) in terms of governance and citizen security have been analyzed in the Central American and Caribbean regions, and countermeasures and support measures were proposed. Finally, cooperation strategy and recommendations were summarized for this sector.

11.2 Summary of Sector Survey

Table 11-1 Hypothesis Concerning the Modality of Development Cooperation and Recommendation of Policy (Proposal) (Governance and Citizen Security)

No.	Item	Governance and Citizen Security	
1	Preexisting issues (before COVID-19)	Democracy level	<ul style="list-style-type: none"> ▪ Opaque election process/elections with no guarantee of competition ▪ Freedom of speech and media is not guarantee
		Administrative functions	<ul style="list-style-type: none"> ▪ Poor quality of government services ▪ Insufficient capacity of civil servants ▪ Opaque policy-making process ▪ Insufficient information disclosure ▪ Low level of decentralization in Central America and the Caribbean
		E-government development	<ul style="list-style-type: none"> ▪ Developing e-government agenda, but few countries are implementing it ▪ Delay in infrastructure development ▪ Lack of human resources ▪ Although electronic national IDs have been issued, a high percentage of citizens have not been given national IDs themselves
		Rule of Law	<ul style="list-style-type: none"> ▪ 'Non-punishment' for crime ▪ Insufficient capacity of legal professionals ▪ Insufficient number of legal professionals

No.	Item	Governance and Citizen Security	
		Corruption	<ul style="list-style-type: none"> ▪ Corruption occurs in a wide range of settings, from high-ranking government officials to civil servants in administrative offices and police officers, making it difficult to control. ▪ Although each country has established a corruption reporting office, the number of cases that are reported, prosecuted, and punished is small
		Citizen Security	<p><u>Central America</u></p> <ul style="list-style-type: none"> ▪ The homicide rate is declining in all countries except Mexico, but the homicide rate remains very high compared to the global average ▪ Poor citizen security due to murder, organized crime, gang warfare, etc. ▪ Gender based violence (GBV), such as domestic violence, rape, and other sexual crimes, is a long-standing problem <p><u>Caribbean</u></p> <ul style="list-style-type: none"> ▪ While Jamaica has a consistently high murder rate, Cuba has the lowest murder rate in the Caribbean and the least amount of other common crimes ▪ Poor citizen security due to drug trafficking, firearms trafficking, organized crime, and gangs, as most of the Caribbean countries are a transit area for drug trafficking (except Cuba and Suriname) ▪ As in Central America, domestic violence and GBV are longstanding issues
2	Grouping per issue	Quality of democracy (holding competitive elections, guaranteeing freedom of speech and press), effectiveness of government, e-government development, curbing corruption, developing regulations and institutions that promote the private sector, establishing the rule of law, citizen security (violent crime, general crime, GBV, drug trafficking)	
3	Vulnerabilities revealed with COVID-19	Democracy level	<ul style="list-style-type: none"> ▪ Measures taken by the government to prevent the spread of COVID-19, such as the declaration of a state of emergency and border closures and border control measures, which affect human, civil and political rights ▪ Postponement of elections
		Administrative functions	<ul style="list-style-type: none"> ▪ The provision of various government services has been suspended or delayed ▪ E-government development has not been sufficiently carried out
		Rule of law	<ul style="list-style-type: none"> ▪ Suspension or delay of judicial services
		Corruption	<ul style="list-style-type: none"> ▪ Fraud in public procurement of COVID-19 related goods occurred (skipping the existing checking process due to emergency, etc.)
		Citizen security	<ul style="list-style-type: none"> ▪ Temporary improvement during periods of lockdown and other restrictions on movement, but tending to return to normal thereafter ▪ Deterioration in GBV
4	New issues revealed with COVID-19	COVID-19 has made the original vulnerabilities and challenges (inadequate e-government development, poor administrative and judicial services, GBV) even more urgent.	
5	Assistance policy (proposal)	Democracy level	<ul style="list-style-type: none"> ▪ Supporting the development of free journalism ▪ Strengthening the capacity of election management institutions
		Administrative functions	<p><u>Government effectiveness</u></p> <ul style="list-style-type: none"> ▪ Supporting the development of free journalism ▪ Strengthening the capacity of election management institutions <p><u>E-government development</u></p> <ul style="list-style-type: none"> ▪ Widespread use of digitalized national IDs ▪ Digitalization of administrative procedures ▪ Capacity building of civil servants associated with digitalization <p><u>Empowerment of local government</u></p> <ul style="list-style-type: none"> ▪ Capacity building of local government ▪ Capacity building of planification skills ▪ Wide-area cooperation in Central America and the Caribbean with Nicaragua, Dominican Republic, and Honduras as base countries (as a specific example, the FOCAL process in Honduras could be disseminated and expanded in Central America) <p><u>Control of corruption</u></p> <ul style="list-style-type: none"> ▪ Digitalization of administrative procedures ▪ Raising awareness of corruption among public officials ▪ Enhance accountability through disclosure of information on budget execution and government procurement processes to the public

No.	Item	Governance and Citizen Security	
6	Development cooperation strategy and policy recommendation (proposal)	Rule of Law	<p><u>Enhancing the rule of law</u></p> <ul style="list-style-type: none"> • Improvement of dispute resolution systems, including court procedures and mediation systems; development of laws and procedures that form the basis of economic activities; and training of legal professionals • Digitalization of judicial procedures
		Citizen security	<p><u>Improvement of citizen security</u></p> <ul style="list-style-type: none"> ▪ Measures focusing on areas with poor citizen security ▪ Generation-focused crime prevention education and planning ▪ Study of crime prevention measures using ICT ▪ Accumulate and analyze information on crime, and formulate crime prevention measures and plans based on the information ▪ Establishment of police systems, including community police, and support for capacity building of police organizations and personnel ▪ Strengthening the capacity of community police based on the dissemination of "community police" in Jamaica and expand towards English-speaking countries in the Caribbean, through triangular cooperation with Sao Paulo police and, in the future, with Guatemala and Honduras, where the project is still ongoing. <p><u>Measures against GBV</u></p> <ul style="list-style-type: none"> ▪ Strengthening the justice system ▪ Formulate and implement efficient policies and plans based on data collection and analysis of criminal damage ▪ Raise awareness of GBV prevention ▪ Increase the number of crimes reported, investigated and prosecuted against "non-punishment" of GBV ▪ Psycho-economic and social support for victims ▪ Establish and operate platforms to provide information to those in need of assistance (good practices: CuentaNos, Ciudad Mujer Honduras) ▪ Collaboration with maternal and child health and education sectors
		E-government development	<p><u>Grand design for digitization of the entire country</u></p> <ul style="list-style-type: none"> ▪ Design a platform where all public services can be integrated around an electronic national ID. ▪ Reliable and secure storage of data ▪ A system to enable mutual use by local governments and different competent ministries and agencies through centralized data management ▪ A system that allows online administrative procedures and public services to be provided using national IDs ▪ Effective use of data to promote public participation and public-private collaboration, improve efficiency of administrative services, and enhance transparency and trust <p><u>Cooperation implementation based on the above</u></p> <ul style="list-style-type: none"> ▪ For countries that do not have a national ID in the first place, or are using a non-electronic national ID, develop an electronic national ID and provide it to all citizens. ▪ For countries that already have electronic national IDs, develop a system for granting electronic national IDs to all citizens, improve the current system, and then increase the number of administrative services that can be provided online using national IDs
		Enhancing the rule of law	<p><u>Eradicate the deep-rooted culture of impunity</u></p> <ul style="list-style-type: none"> ▪ Strengthening and improving the judicial system, capacity building of the legal profession and increasing the number of legal professionals per capita ▪ Reform the current system to increase the number of crimes reported, investigated, and prosecuted ▪ Building a system to protect the safety of reporters and witnesses (protection from reprisals) ▪ Support victims at the grassroots level

Source: Study Team

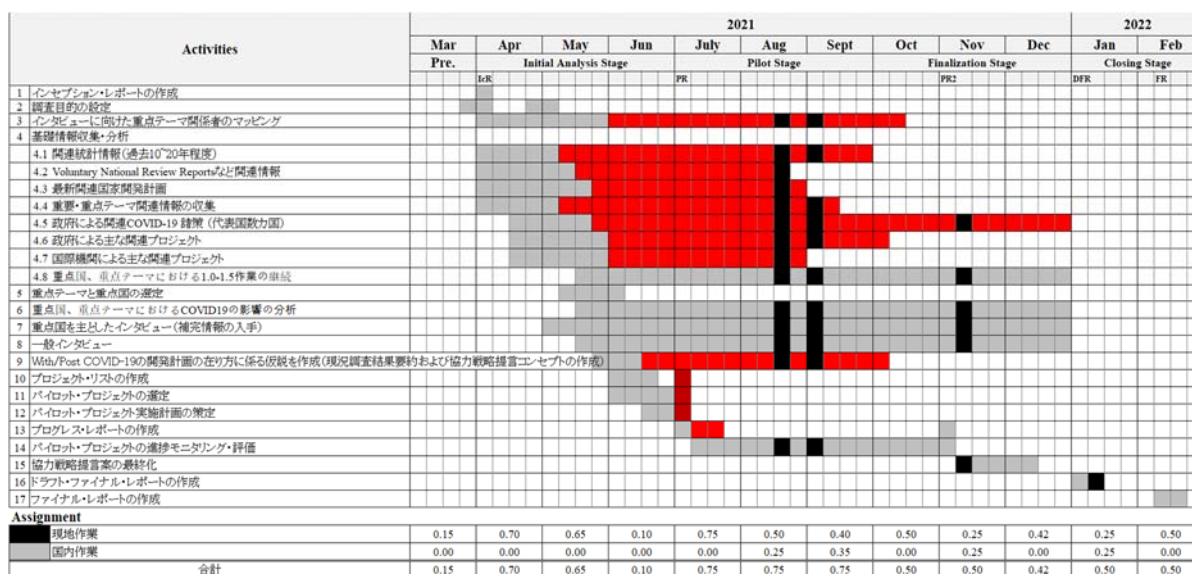
11.3 Sectoral Scope of Work

Table 11-2 shows the work scope of this sector.

Table 11-2 Work Scope (Governance and Citizen Security)

No.	Item	Sub-sector	Work Scope	
1	Sectoral Goal		Identify key countries and challenges related to governance and citizen security, taking into account the impact of COVID-19. Rank Central American and Caribbean countries based on international comparative data on democracy, legal systems, reliability, security, and corruption, then identify priority countries and issues. Propose capacity strengthening of administrative systems to address priority countries and issues and propose cooperation strategies through an institutional development-oriented approach. Note: Screening for focus country selection is performed using quantitative data available on the web.	
2	Work Scope Update		Based on discussions with JICA, select countries to be surveyed or confirmed the priority of surveys, and update and agree the scope of work.	
3	[Task 2]		Selection of interviewee organizations	
4			Conduct interview surveys	
5		Collection and analysis of basic information (23 countries where possible)	Relevant statistics Reports of regional and international organizations Data that can be compared internationally with selected relevant international indicators Collection of important thematic information	
6		Grouping of countries and selecting priority countries	Select priority countries and priority themes from the results of the collected and analyzed basic information	
7		Continued collection and analysis of basic information on priority countries and themes	Relevant statistics Latest relevant national development plans Collection of information related to important themes Relevant COVID-19 measures by the government (several representative countries) Major relevant government projects Major relevant projects by international organizations	
8		Additional surveys in priority countries	Analysis of the impact of COVID-19 on priority countries and themes Interviews with selected countries (obtaining supplementary information) General interview	
9		Preparation of country reports	Summarize the survey contents of [Task 2] as country reports for each country	
10			Identify sector vulnerabilities and study support measures	Definition and analysis of existing issues and vulnerabilities in governance and citizen security Study of measures and support measures to overcome vulnerabilities
11		[Task 4]	Formulate hypotheses on development cooperation	In line with the Ministry of Foreign Affairs Country Development Cooperation Policy and Business Development Plan, and JICA's PDM, develop a hypothesis on the countermeasures that can be taken to overcome each vulnerability. Confirm the developed hypotheses' priority order of cooperation needs by country.
12			Preparation of sectoral hypothesis report	Prepare a sectoral hypothesis report by summarizing the findings of Task 4
13	[Task 5]		Visit international/regional organizations and national government agencies to exchange views on the collection of additional information related to Task 2 and Task 4 and development cooperation	
14	[Task 6/7/8]		Advise on the selection, implementation and completion of pilot projects from the perspective of the governance and citizen security sector	
15	[Task 9]		Prepare the necessary materials for the expert meeting and present the research of the sector in charge	
16	[Task 10]		Prepare policy recommendations for the sector in charge	
17	[Task 11]		Prepare academic papers per sector in charge	

Source: Study Team



Source: Study Team

Figure 11-1 Work Schedule (Governance and Citizen Security)

11.4 Collecting Basic Information on 23 Target Countries

11.4.1 Data Collected and Analyzed

For data collected, see “Volume 2: Country Reports per Sector” and “Volume 3: List of Materials Collected per Sector”.

11.4.2 Analysis of Indicators

First, general information on governance in each country, including political system, electoral system, legislative system, timing of the most recent/next legislative elections, judicial system, appointment, and term of office of judges, were summarized based on each government's website and CIA World Factbook. Then, the COVID-19 measures related to governance and citizen security were summarized based on the ECLAC "COVID-19 Observatory" and available information released by the governments (as of the end of September 2021). For countries where interviews were conducted, the content of the interviews was also included.

The information on governance is based on the themes used by international organizations, JICA, and the Japanese government in their governance support policies, and on indicators that cover as many of the 23 countries as possible. The information for the analysis of the COVID-19 impact was collected mainly from the information and data published by international organizations and non-governmental organization (NGOs). The main indicators collected are listed below. When not available, other indicators and information were used as references.

Table 11-3 Major Indicators for Governance and Citizen Security Analysis

Item	Indicators (Source)	Remarks
Level of Democracy	“Worldwide Governance Indicator” (WB)	An analysis of the quality of governance around the world from six perspectives (voice and accountability, political stability and absence of violence/terrorism, government effectiveness, control of corruption, regulatory quality, and rule of law), the World Bank publishes every year.
	Voice and Accountability (WB)	Perceptions of the extent to which a country's citizens can participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. One of the indicators included in the “Worldwide Governance Indicator”.
	Global Freedom Status (Freedom House)	The scores are based on each country's degree of freedom in terms of civil liberties and political rights.

	Political Stability and Absence of Violence/Terrorism (WB)	Perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism. One of the indicators included in the “Worldwide Governance Indicator”.
Administrative Functions	Government Effectiveness (WB)	Perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. One of the indicators included in the “Worldwide Governance Indicator”.
	Control of Corruption (WB)	Perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. One of the indicators included in the “Worldwide Governance Indicator”.
	Corruption Perceptions Index (Transparency International)	-
	E-Government Development Index (UNDESA)	-
Rule of Law	Regulatory Quality (WB)	Perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. One of the indicators included in the “Worldwide Governance Indicator”.
	Rule of Law (WB)	Perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. One of the indicators included in the “Worldwide Governance Indicator”.
Citizen Security	Homicide Rate (UNODC)	Number of homicides per 100,000 persons.

Source: Study Team

(1) Governance

1) Background of Declining Trust in Democracy

Many countries in Central America and the Caribbean face challenges such as poverty, social and economic disparities, human rights violations, inefficient administration, corruption, insecurity (high murder rates, organized crime, gangs, drug trafficking), and impunity for crimes.

The political structure in Central America and the Caribbean is largely democratic, with free and regular elections, except for Cuba with its one-party system, Haiti that has long suffered from political unrest, and Nicaragua since 2006¹.

However, in recent decades, the level of democracy in the countries of the region, including South America, has declined due to the lack of confidence in democracy and the institutions (Latinobarómetro 2018). For example, support for democracy was 48% and confidence in government was 32% in 2018, both the lowest since 1995. Confidences in elections and election courts were 45.5% and 28%, respectively, the lowest in 20 years (IDEA International 2021).

Central America and the Caribbean have a particularly high percentage of respondents who have no confidence in political parties (over 50%, except Costa Rica). This shows that political parties do not represent the people, and do not articulate the opinions and interests of the people. Figure 11-2 shows the degree of confidence in the armed forces, police, church, parliaments, justice, and political parties in Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, and the Dominican Republic. Even in Costa Rica, where democracy has been stable for a long time, distrust towards political parties is high.

¹ <https://freedomhouse.org/country/nicaragua/freedom-world/2021>



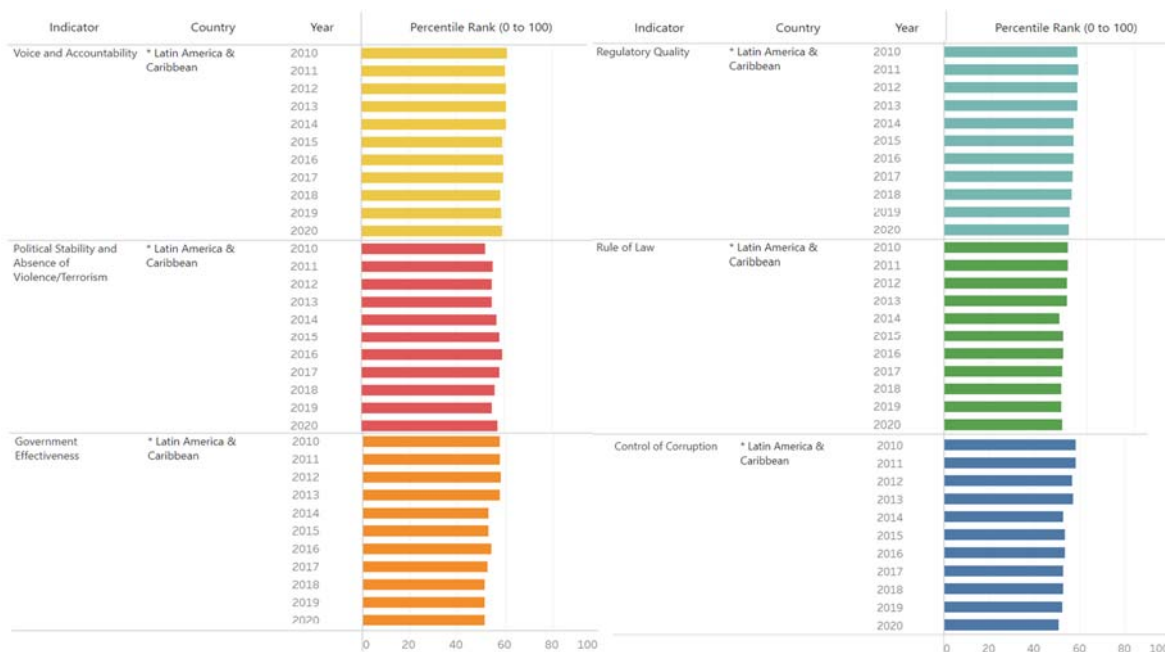
Note: Costa Rica and Panama do not have armed forces, so confidence in the military is not included.
 Source: The Study Team based on Latinobarometro 2018; <https://www.latinobarometro.org/latCodebooks.jsp>

Figure 11-2 Confidence in Public Institutions (2018)

2) Governance Performance

Figure 11-3 shows the trends in the average values of the “Worldwide Governance Indicators” over the past ten years in Latin America and the Caribbean (refer to the content of each indicator in Table 11-3).

In the past ten years, five out of six indicators have declined according to Figure 11-3. The “perceptions” of “voice and accountability” deteriorated from 61.24 (2010) to 59.26 (2020), “government effectiveness” from 57.61 (2010) to 51.24 (2020), “regulatory quality” from 56.27 (2010) to 52.49 (2020), “rule of law” from 52.10 (2010) to 49.74 (2020), and “control of corruption” from 58.54 (2010) to 50.99 (2020).



Source: Worldwide Governance Indicators, The World Bank;
<https://info.worldbank.org/governance/wgi/Home/Reports>

Figure 11-3 “Worldwide Governance Indicators” of Latin America and the Caribbean (2010 to 2020)

Table 11-4 shows the "Worldwide Governance Indicators" of each country in 2020. The five indicators are "voice and accountability", "political stability and the absence of violence and terrorism", "government effectiveness", "corruption management", "regulatory quality", and "the rule of law". The figures range from -2.5 to +2.5. A comparison with an average of 0 indicates the level of each index in each country.

Central American countries, excluding Costa Rica, have more governance challenges than the Caribbean. Among the Caribbean countries, Haiti generally suffers from poor governance.

Table 11-4 “Worldwide Governance Indicators” (2020) of the 23 Target Countries

Country	Voice and Accountability	Political Stability and Absence of Violence/Terrorism	Government Effectiveness	Control of Corruption	Regulatory Quality	Rule of Law
Central America						
BLZ	0.53	0.51	-0.55	-0.19	-0.54	-0.16
CRI	1.14	0.76	0.36	0.78	0.45	0.57
SLV	0.04	-0.02	-0.36	-0.19	-0.02	-0.16
GTM	-0.39	0.43	-0.69	-1.10	-0.17	-1.05
HND	-0.60	0.54	-0.60	-0.46	-0.50	-0.66
MEX	-0.04	0.85	-0.16	-0.45	0.03	-0.67
NIC	-1.10	0.65	-0.71	-1.15	-0.66	-1.22
PAN	0.57	0.23	0.07	-0.11	0.32	-0.21
Caribbean						
ATG	0.74	0.93	-0.15	0.28	0.51	0.45
BHS	0.92	0.85	0.45	1.14	0.01	0.05
BRB	1.13	1.13	0.49	1.23	0.48	0.34
CUB	-1.42	0.60	-0.17	-0.13	-1.50	-0.28
DMA	0.88	1.35	-0.18	0.56	0.20	0.74
GRN	0.69	1.03	-0.07	0.36	-0.17	0.29
GUY	0.22	0.15	-0.44	-0.15	-0.55	-0.43
HTI	-0.84	1.04	-2.03	-1.12	-1.21	-1.04
JAM	0.63	0.27	0.41	-0.01	0.09	-0.24
DOM	0.21	0.17	-0.33	-0.18	-0.01	-0.26
KNA	0.82	0.93	0.70	0.38	0.53	0.53
LCA	0.88	0.87	0.15	0.51	0.29	0.62
VNT	0.91	1.03	0.15	0.81	0.26	0.57
SUR	0.42	0.42	-0.54	-0.13	-0.17	-0.11
TTO	0.64	0.18	0.18	-0.11	-0.14	-0.13

Source: The Study Team based on “Worldwide Governance Indicators 2020”
<https://info.worldbank.org/governance/wgi/Home/Reports>

a) Democracy Level

In understanding the level of democracy, it is very important to consider the extent to which citizens can participate in the political decision-making process, which relates to the extent to which their political rights and civil liberties are guaranteed in each country.

According to the “Freedom in the World 2020”², the annual report of Freedom House, five of the 20 countries with available information in Central America and the Caribbean (Grenada, Guatemala, Haiti, Mexico, and the Dominican Republic) are classified as a "partially free country", two countries (Cuba and Nicaragua) are classified as "non-free countries", and the remaining 17 countries are classified as "free countries". According to this index, Barbados is the country with the highest degree of freedom in Central and South America (95/100, Japan is 96/100), and Costa Rica is the country with the highest degree of freedom in Central America (91/100).

² Freedom in the World assesses the real-world rights and freedoms of individuals, rather than governments or government performance per se. Political rights and civil liberties can be affected by both state and nonstate actors, including insurgents and other armed groups. Freedom House does not believe that legal guarantees of rights are sufficient for on-the-ground fulfillment of those rights. While both laws and actual practices are factored into scoring decisions, greater emphasis is placed on implementation.

Table 11-5 Freedom House "Global Freedom Score" in 2020

Country	Global Freedom Status/100	Political Rights/40	Civil Liberties/60	Country	Global Freedom Status/100	Political Rights/40	Civil Liberties/60
Central America				Caribbean			
BLZ	87	34	53	ATG	85	33	52
CRI	91	38	53	BHS	91	38	53
SLV	63	30	33	BRB	95	38	57
GTM	52	21	31	CUB	13	1	12
HND	44	19	25	DMA	93	37	56
MEX	61	27	34	GRN	89	37	52
NIC	30	10	20	GUY	73	30	43
PAN	83	35	48	HTI	37	15	22
				JAM	80	34	46
				DOM	67	26	41
				KNA	N/A	N/A	N/A
				LCA	N/A	N/A	N/A
				VNT	N/A	N/A	N/A
				SUR	79	34	45
				TTO	82	33	49

* Political rights include electoral processes, political pluralism and participation, government functions, and civil liberties.

** Civil rights include freedom of expression, thought and conscience, freedom of association, the rule of law, private autonomy, and the rights of individuals.

Note: The color green represents "free", yellow represents "partially free", and orange represents "not free".

Source: The Study Team based on Global Freedom Status <https://freedomhouse.org/countries/freedom-world/scores>

b) Corruption

Corruption, as noted earlier, is one of the most deeply rooted problems in the region. Table 11-6 shows the Transparency International's annual Corruption Perception Index (CPI) (Excluding Belize, Antigua and Barbuda, and Saint Kitts and Nevis). The higher the index, the less the corruption is perceived.

Table 11-6 Corruption Perception Index (CPI) in 2020

Central America	Rank (/180)	Points (/100)	Caribbean	Rank (/180)	Points (/100)
BLZ	N/A	N/A	ATG	N/A	N/A
CRI	42	57	BHS	30	63
SLV	104	36	BRB	29	64
GTM	149	25	CUB	63	47
HND	157	24	DMA	48	55
MEX	124	31	GRN	52	53
NIC	159	22	GUY	83	41
PAN	111	35	HTI	170	18
			JAM	69	44
			DOM	137	28
			KNA	N/A	N/A
			LCA	45	56
			VNT	40	59
			SUR	94	38
			TTO	86	40

Source: The Study Team based on Transparency International's Corruption Perception Index (CPI) <https://www.transparency.org/en/cpi/2020/index/nzl>

According to Latinobarometro, among Central American countries and the Dominican Republic, Mexico has the highest percentage of respondents who say that corruption is the most important problem facing the state, at 14%, followed by the Dominican Republic at 12% and Guatemala at 10%, while the countries with the lowest percentage are El Salvador at 3% and Nicaragua at 2% (Latinobarometro 2018). The percentage of public and other institutions that are believed to be involved in corruption is shown in Table 11-7. Honduras, Costa Rica, and Guatemala have the highest number of citizens who believe that the president and his entourage are involved. El Salvador has a high percentage of judges and magistrates believed to be involved. In Mexico, the police and the president and his entourage are believed to be involved, and in Panama, a high percentage of parliamentarians are believed to be involved.

Table 11-7 Actors Believed to be Involved in Corruption (2020)

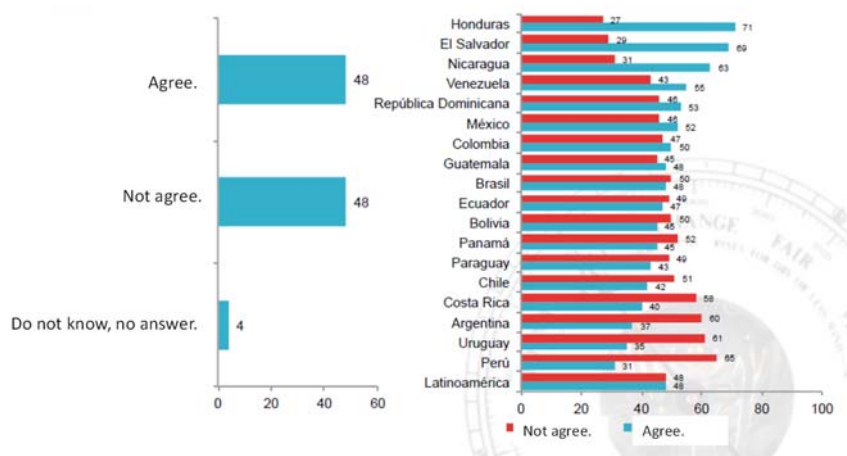
	CRI	SLV	GTM	HND	MEX	NIC	PAN
President and his/her officials	68	19	64	79	51	58	45
Parliamentarians	65	33	51	30	40	24	67
Police	42	30	45	57	54	46	32
Judges and magistrates	43	52	34	38	35	32	30
Local government councillors	36	26	45	34	40	24	21
Public employees	30	30	29	32	42	27	27
Businessmen	29	30	31	34	22	24	24
Officials of the national tax office	31	19	24	19	24	22	22
Religious leaders	28	14	18	19	20	17	16
Family members	16	12	17	20	10	13	14

Note: Multiple responses

Source: Latinobarometro Informe 2021, <https://www.latinobarometro.org/latContents.jsp>

The next interesting question is the reaction of people to corruption. In response to the question, “When you learn about corruption, do you remain silent and take no action? 53% of respondents in the Dominican Republic and 52% in Mexico said they agree, which is more than those who disagree

(Latinobarometro 2018). This result can be interpreted as an indication that people believe that there is no point in reporting corruption because it is commonplace in some countries for corruption to go unpunished, because many cases go unprosecuted even if they are reported and for potential fear of reprisals.



Source: Latinobarometro Informe 2018, <https://www.latinobarometro.org/latContents.jsp>

Figure 11-4 Reaction to Corruption (Keeping Silent, Not Keeping Silent)

Many governments recognize corruption as a major development issue and include it in national development plans and medium- and long-term plans, as shown in Table 11-8.

Table 11-8 Corruption Control in National Development Plans

Country	National Development Plan Document Name	Content Related to Corruption
Belize	Horizon 2030 – National Development Framework of Belize	First axis: Eradicating corruption and strengthening accountability of local governments
El Salvador	Plan Quinquenal de Desarrollo 2014 – 2019 “El Salvador Productivo, Educado y Seguro”	Goal 11 11.5 Increase transparency, combat corruption, and the right to access public information
Guatemala	Política General de Gobierno 2020 –2024	Fourth axis: Responsible, transparent, and efficient government
Honduras	Visión de País 2010 – 2038 y Plan de Nación 2010 – 2022 de Honduras	Goal 4.5: The World Bank’s “Worldwide Governance Indicators” set the “Control of Corruption” index at 90-100.
Mexico	Plan Nacional de Desarrollo de México 2019 – 2024	Eradication of corruption
Panamá	Plan Estratégico de Gobierno 2019 -2024 de Panamá	Transparency and Budget Accountability Strengthening the capacity of public officials in relation to the strict implementation of the “Ley de Transparencia” in the administration, access to information, and use of the budget. Approval of “Código de Responsabilidad, Transparencia y Anti-Corrupción de los Servidores Públicos” (Responsibility, Transparency and Anti-Corruption in Public Services Act). Conduct a campaign against corruption in all public institutions to promote a culture of transparency in public service.

Source: The Study Team referring to the development plans of each country

c) E-Government Development

Even before the pandemic, the governments of Latin American countries have been working on the digitization of the administration, and the need for it has become more urgent due to the pandemic. For example, to prevent the spread of COVID-19, not only ordinary citizens but also civil officials

needed to work from home, and it was necessary to improve the administrative procedures so that citizens could carry them out online. Although 73% of Latin American countries have a digital agenda, only 30% of them have actually implemented it³. For instance, for Guatemala, according to the Commission for Open and Electronic Government of the Presidency (CPGAE), one of the impacts of COVID-19 was the increased need to develop a digital platform to continue providing government services. While some government agencies already had digital platforms before COVID-19, the government did not anticipate a situation like COVID-19 and is facing the need to accelerate digitization.⁴

Table 11-9 shows the national strategies for e-Government development among the 23 target countries. Key efforts include government digitization to improve the efficiency of government service delivery and to combat corruption and ensure transparency in budget execution.

Table 11-9 National Strategies for E-Government Development

Country	Year	Strategy Name	Government Agency in Charge of Development of E-Government
Belize	2015	National e-Government Policy 2015-2018, National e-Government Strategy and Work Plan 2015-2018	Central Information Technology Office – Ministry of Finance https://cito.gov.bz/e-government/
Costa Rica	2018	Estrategia de Transformación Digital hacia la Costa Rica del Bicentenario 4.0 2018-2022	Ministerio de Ciencia, Innovación, Tecnología y Telecomunicaciones https://www.micit.go.cr/gobierno-digital/gobernanza-digital
	2021	Código Nacional De Tecnologías Digitales	Ministerio de Ciencia, Innovación, Tecnología y Telecomunicaciones Comisión de Alto Nivel de Gobierno Digital Dirección de Gobernanza Digital
El Salvador	2018	Estrategia de Gobierno Digital	Secretaría de Innovación de la Presidencia https://www.gobiernoelectronico.gob.sv/
	2020	Agenda Digital El Salvador 2020 - 2030	Secretaría de innovación https://www.innovacion.gob.sv/
Guatemala	2018	4to Plan de Acción Nacional de Gobierno Abierto 2018-2020	Comisión Presidencial de Gobierno Abierto y Electrónico https://transparencia.gob.gt/ Gobierno Abierto Guatemala (Transparencia, Rendición de Cuentas y Participación Ciudadana) https://gobiernoabierto.transparencia.gob.gt/
	2016	Agenda Nación Digital 2016 - 2032	Implemented by ministries on a cross-cutting basis
Honduras	2020	Reglamento Sobre Gobierno Electrónico	Secretaría de Transparencia Ministerio de Gobierno Digital https://gobiernodigital.gob.hn/ Secretaría de Estado Despacho de Transparencia
	2015	Plan Maestro del Gobierno Digital para la República de Honduras	Secretaría de Coordinación General de Gobierno (SCGG) Agencia Nacional de Promoción Industrial TI (NIPA)
Mexico	2021	Estrategia Digital Nacional 2021-2024.	Coordinación de Estrategia Digital Nacional Presidencia de la República https://www.gob.mx/cedn
Panama	2021	Agenda Digital 2021 "El Gobierno en tus Manos"	Autoridad Nacional para la Innovación Gubernamental https://aig.gob.pa/home Datos abiertos de Panamá https://www.datosabiertos.gob.pa/
Barbados	2017	Barbados e-Government Programme Status Update	Ministry of The Civil Service, Bridgetown

³ “Can Latin America Find a Faster Path to Digital Government?”, Latin America Advisor, thedialogue.org/analysis/can-latin-america-find-a-faster-path-to-digital-government/

⁴ Comisión Presidencial de gobierno abierto y electrónico - CPGAE (interview on November 3, 2021)

Country	Year	Strategy Name	Government Agency in Charge of Development of E-Government
Guyana	2018	Digital Governance Roadmap for Guyana	National Data Management Authority https://ndma.gov.gy/
Dominican Rep.	2021	Plan de acción 2021-2024 de la Agenda Digital 2030	Oficina Gubernamental de Tecnologías de la Información y Comunicación
	2021	Agenda Digital 2030	Presidencia de la República Dominicana
Jamaica	2019	e-Gov Jamaica Ltd. Strategy (Annual Report 2019)	Ministry of Science, Energy and Technology e-Gov Jamaica Ltd. (State company) https://www.egovja.com/
Suriname	2012	Estrategia Digital 2021-2016	E-Government Commission
Trinidad and Tobago	2019	The National Information and Communication Technology Company Limited's (branded iGovTT) – Annual Report (2019-2020)	Ministry of Public Administration and Digital Transformation (MDPDT) https://www.mpa.gov.tt/TRANSFORMATION%20INITIATIVES National Information and Communication Technology Company Limited's (branded iGovTT) https://www.igovtt.tt/

Source: The Study Team referring to the website of each government

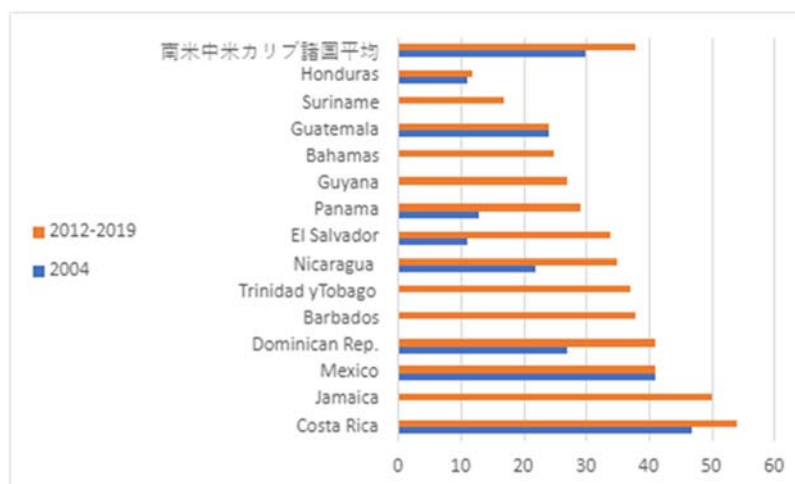
Next, Table 11-10 shows the e-Government development index for the 23 target countries in 2020. Costa Rica is the most developed country in Central America and the Caribbean, followed by Mexico, Barbados, and the Bahamas. The higher the index, the more advanced the development of e-Government.

Table 11-10 E-Government Development Index in 2020

Central america	Overall score	Rank (/193)	Caribbean	Overall score	Rank (/193)
BLZ	0.4548	136	ATG	0.6055	98
CRI	0.7576	56	BHS	0.7017	73
SLV	0.5697	107	BRB	0.7279	62
GTM	0.5155	121	CUB	0.4439	140
HND	0.4486	138	DMA	0.6013	99
MEX	0.7291	61	GRN	0.5812	102
NIC	0.5139	123	GUY	0.4909	129
PAN	0.6715	84	HTI	0.2723	180
			JAM	0.5392	114
			DOM	0.6782	82
			KNA	0.6352	95
			LCA	0.5444	112
			VNT	0.5605	109
			SUR	0.5154	122
			TTO	0.6785	81

Source: The Study Team based on <https://publicadministration.un.org/egovkb/Data-Center>

Next, the degree of development of e-Government in the 2000s was examined. Figure 11-5 is an index released by the IDB that shows the status of e-Government development in Central America and the Caribbean. The average for Latin America increased from 30 in 2004 to 38 between 2012 and 2019. The greatest progress was made in Panama (13-29), El Salvador (11-34), and Nicaragua (22-35). According to the IDB's analysis, Costa Rica is the most digitalized country, followed by Jamaica, Mexico, and the Dominican Republic.



Note: * There are no data for 2004 for Suriname, the Bahamas, Guyana, Trinidad and Tobago, Barbados, and Jamaica.

Source: “Transformación Digital y Empleo Público: El Futuro del Trabajo del Gobierno”

Figure 11-5 E-Government Development Index of the Central American and Caribbean Countries

According to the IDB, a particular need for e-Government development in Central America and the Caribbean is the development of human resources, both to recruit and hire new talent and to strengthen the capacity of civil officials. For example, regarding the lack of necessary human resources, there is a shortage of human resources such as cyber security experts, data analysis experts, data protection experts, and ICT public procurement experts in Central America and Caribbean countries, and many officials have responsibility for e-Government-related tasks as side jobs (IDB 2021)⁵. Regarding the capacity building of civil officials, the conventional method (non-continuous one-off partial training, among others) is insufficient, and there is room for improvement in both qualitative and quantitative aspects. It is necessary to work on continuous capacity building.

One of the major themes in government digitization is the spread of digital national IDs⁶. The following table shows the status of national ID issuance in Central American and Caribbean countries. National IDs have been issued in all countries except Belize and Antigua and Barbuda (as of 2018). Nonetheless, Belize and Antigua and Barbuda issue the Social Security Card⁷ ⁸. Digital IDs are issued in all Central American countries and in all Caribbean countries except the Bahamas and Barbados (as of 2018).

⁵ <https://publications.iadb.org/publications/spanish/document/Transformacion-digital-y-empleo-publico-El-futuro-del-trabajo-del-gobierno.pdf>

⁶ <https://id4d.worldbank.org/>

⁷ <https://www.socialsecurity.org.bz/>

⁸ <https://ab.gov.ag/index.php>

Table 11-11 Central American and Caribbean Countries with IDs in 2018

Country	National ID	Digitized ID system	Fingerprint and/or iris biometrics collected	Primary NID entity
Central America				
BLZ	0	-	-	-
CRI	1	1	1	Registro Civil - Supreme Electoral Court
SLV	1	1	1	Registro Nacional de las Personas Naturales (RNPN), Tribunal Supremo Electoral
GTM	1	1	1	Registro Nacional de las Personas (RENAP) / National Population Registry
HND	1	1	1	Registro Nacional de las Personas (RNP)
MEX	1	1	0	National Registry of Population and Personal Identification, Registry Secretariat of the Interior
NIC	1	1	0	Consejo Supremo Electoral (CSE)
PAN	1	1	1	National Identity Document Office, Electoral Tribunal
Caribbean				
ATG	0	-	-	-
BHS	1	0	0	Minister of Justice
BRB	1	0	0	Barbados Electoral and Boundaries Commission
CUB	1	1	1	Dirección de Identificación, Inmigración y Extranjería
DMA	1	1	1	Electoral Office
DOM	1	1	1	Junta Central Electoral de República Dominicana (JCE)
GRD	1	1	1	Ministry of Communications, Works, Physical Development, Public Utilities and ICT
GUY	1	-	-	Guyana Elections Commission (GECOM)
HTI	1	1	0	ONI / National Identification Office, Ministry of Justice
JAM	1	1	1	Jamaican National Identification and Registration Authority, Office of the Prime Minister
KNA	1	1	0	Electoral Office
LCA	1	1	0	Electoral Department
VCT	1	1	0	High Court Office
SUR	1	1	0	Central Bureau of Civil Affairs (CBB)
TTO	1	1	0	Elections and Boundaries Commission (EBC)

Source: <https://id4d.worldbank.org/>

However, even though national IDs have been issued, they are not widely used by all citizens. The number and percentage of citizens aged 15 and older who do not hold a national ID is shown in Table 11-12. Among Central American countries, Honduras, Guatemala, El Salvador, Mexico, and Nicaragua have more than 10% of their citizens without a national ID. Looking at Latin American countries as a whole, compared with the percentage of South American countries that do not have national IDs (8.38% in Colombia, the highest, and less than 1% to 2% in other countries), Central American countries have by far the highest rates, indicating that the penetration rate of national IDs is low in the Latin American region. In the Caribbean, the information available is limited to three countries, but among them, it is noticeable the diffusion of national ID is lagging in Haiti.

Table 11-12 Population and Percentage of Population Without a National ID (2017)

Country	1,000 Persons	% Among Population
Central America		
CRI	95	2.43
SLV	536	11.46
GTM	2,067	12.28
HND	1,054	16.22
MEX	10,421	10.81
NIC	459	10.24
PAN	239	7.87
Caribbean		
HTI	2,056	27.46
DOM	959	12.40
TTO	55	5.06

Source: ID4D, The World Bank <https://id4d.worldbank.org/global-dataset/visualization>

In the Central America and Caribbean regions, the World Bank is implementing the Mexico National Digital Identity System to Facilitate Inclusion Project in Mexico, which is an example of an attempt to digitize government administration around an electronic national identity⁹. The Mexican government has committed in its National Development Plan 2019-2024 to develop a universal and reliable digital identity system to enhance people's access to health, education, social security, and financial services. The project will have three components: 1) improving the quality and dissemination of national registration services; 2) designing and implementing basic systems and verification services; and 3) strengthening the organization and project management of RENAPO (Dirección General del Registro Nacional de Población e Identidad).

Looking at Latin American countries, Chile¹⁰ and Uruguay¹¹ are working to improve the provision of administrative services based on electronic national IDs.

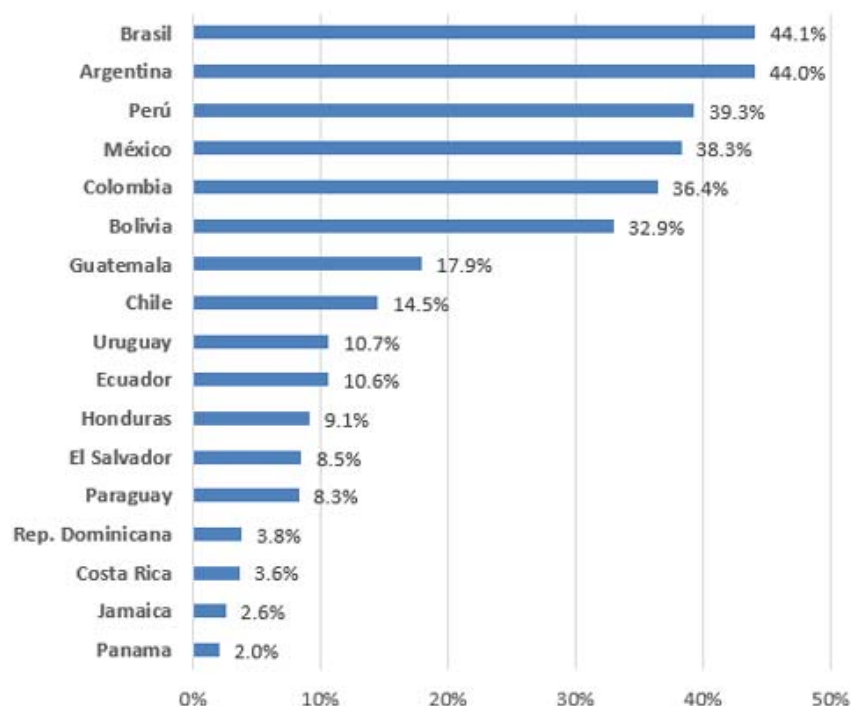
d) Subnational Government

In Latin America and the Caribbean, decentralization has been underway since the 1980s, with the amount of public spending by local governments doubling between 1985 and 2015 (25% of public spending by local governments). However, the degree of decentralization varies widely from country to country. Figure 11-6 shows the percentage of budget execution by local governments to the national budget in Latin American countries. In Mexico, 38.3% of public spending was by local governments, while in Costa Rica, Panama, and the Dominican Republic it was less than 5% (2015). It also shows that countries in Central America and the Caribbean are less decentralized among the overall Latin American countries.

⁹ <https://documents1.worldbank.org/curated/en/657131611543704157/pdf/Mexico-National-Digital-Identity-System-to-Facilitate-Inclusion-Project.pdf>

¹⁰ OECD. Digital Government in Chile- Digital Identity. <https://www.oecd-ilibrary.org/sites/0e312f24-en/index.html?itemId=/content/component/0e312f24-en>
ClaveÚnica. <https://claveunica.gob.cl/>

¹¹ Agencia de Gobierno Electrónico y Sociedad de la información y del Conocimiento. <https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/firma-digital/es-cedula-identidad-digital>



Source: IDB <https://www.iadb.org/es/acerca-del-bid/documentos-de-marco-sectorial>

Figure 11-6 Share of Budget Execution by Local Administrations in the National Budget (2015)

Some of the challenges faced by local governments are that they rely on the central government for their budgets, which reduces their incentives for accountability and budget efficiency. In addition, the quality of public services provided by local governments is often globally low. In addition, local governments face challenges in streamlining their operations with new technologies such as ICT, in generating new sources of funding for climate change, including natural disasters, which have become more frequent in recent years, and in using their budgets better to promote social development and make the country more equitable. Other barriers include patronage and bureaucracy, and inadequate coordination mechanisms between the central and local government in public policy. They also face challenges in terms of civic participation in politics (including low female participation), low trust in local government, immigration issues, and lack of policies and budgets for local government security (ICAP 2021) ¹².

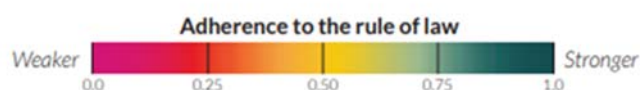
e) Rule of Law

Looking at the extent to which Central America and the Caribbean have established the rule of law, Costa Rica ranks second among all Latin American countries. Other Caribbean countries, including Barbados, Saint Vincent and the Grenadines, Saint Kitts and Nevis, Antigua and Barbuda, and Saint Lucia, are following the ranks. A comparison of Central America and the Caribbean shows that, except for Costa Rica, the current condition of rule of law is not sufficient in Central America.

¹² ICAP. “Cuadernos centroamericanos del ICAP ¿Hacia un nuevo futuro de los gobiernos municipales en Centroamerica, Panamá y República Dominicana?” Abril 2021. <https://icap.ac.cr/wp-content/uploads/2021/05/Cuaderno-Centroamericano-32-Rev-final-06052021.pdf>

Table 11-13 Rule of Law Index in 2020

Latin America & Caribbean						
Country/Jurisdiction	Regional Rank	Overall Score*	Global Rank	Change in Overall Score*	Change in Global Rank†	
Uruguay	1/30	0.71	22	0.00	1 ▲	
Costa Rica	2/30	0.68	25	0.00	1 ▼	
Chile	3/30	0.67	26	-0.01	1 ▼	
Barbados	4/30	0.65	29	0.00	0	
St. Vincent and the Grenadines	5/30	0.64	31	0.02	4 ▲	
St. Kitts and Nevis	6/30	0.63	33	-0.01	3 ▼	
Antigua and Barbuda	7/30	0.63	34	0.00	1 ▼	
St. Lucia	8/30	0.62	36	0.00	2 ▲	
The Bahamas	9/30	0.61	41	-0.01	2 ▼	
Grenada	10/30	0.59	44	-0.01	1 ▼	
Dominica	11/30	0.58	46	0.00	1 ▼	
Argentina	12/30	0.58	48	0.00	2 ▼	
Jamaica	13/30	0.57	49	0.00	1 ▲	
Trinidad and Tobago	14/30	0.54	55	0.00	1 ▲	
Panama	15/30	0.52	63	0.00	2 ▲	
Brazil	16/30	0.52	67	-0.02	7 ▼	
Guyana	17/30	0.50	73	0.00	3 ▲	
Suriname	18/30	0.50	76	-0.01	5 ▼	
Colombia	19/30	0.50	77	0.00	5 ▲	
Peru	20/30	0.50	80	-0.01	7 ▼	
El Salvador	21/30	0.49	84	0.02	2 ▲	
Ecuador	22/30	0.49	86	0.01	3 ▲	
Belize	23/30	0.48	89	0.00	1 ▼	
Dominican Republic	24/30	0.48	90	0.01	7 ▲	
Guatemala	25/30	0.45	101	-0.01	3 ▼	
Mexico	26/30	0.44	104	-0.01	3 ▼	
Honduras	27/30	0.40	116	0.00	1 ▲	
Nicaragua	28/30	0.39	118	-0.01	2 ▼	
Bolivia	29/30	0.38	121	0.00	0	
Venezuela, RB	30/30	0.27	128	-0.01	0	



Source: World Justice Project Rule of Law Index 2020 World Justice Project
https://worldjusticeproject.org/sites/default/files/documents/WJP-ROLI-2020-Online_0.pdf

One issue that demonstrates the inadequacy of establishing the "rule of law" is the "impunity" of crime. In solving the problems of poverty, corruption, insecurity, and weak government in Latin American countries, the "impunity" or "illegality" of crime cannot be ignored. The term "impunity" or "illegality" refers to situations where criminal acts are not always reported to the authorities, investigated, prosecuted, or punished.

According to the "impunity" index¹³, none of the countries in the Americas (including the United States and Canada) have a "low" impunity index. In 2020, Honduras had the highest non-penalty index in Latin America and the second highest in the world (Thailand was first). In addition, Antigua and Barbuda, the Bahamas, Belize, Cuba, Dominica, Haiti, Jamaica, Saint Lucia, Saint Kitts and Nevis, Saint Vincent and the Grenadines, and Suriname are classified as "statistical impunity" states because their governments failed to provide sufficient information on citizen security and justice.

Table 11-14 Rule of Law Index in 2020

Low	Medium	High
None	Canada (45.66) Panama (42.54) Barbados (40.48) USA (40.21) Costa Rica (39.51)	Honduras (59.69) Guyana (52.07) Mexico (49.67) Guatemala (49.66)

Source: Índices Global de Impunidad 2020. UDLAP. <https://www.udlap.mx/cesij/files/indices-globales/0-IGI-2020-UDLAP.pdf>

One of the governments' efforts to address the high-level impunity is Guatemala's Comisión Internacional Contra la Impunidad en Guatemala (CICIG). The CICIG is a government-independent

¹³An index published annually since 2015 by the Universidad de las Americas de Puebla (UDLAP) in Mexico, showing the status of "non-punishment" in each country. The "non-punishment" index is calculated by analyzing information provided by governments based on structural, functional, and human rights dimensions.

organization established by the United Nations in 2006 to investigate human rights violations in Guatemala and to strengthen the judicial system¹⁴. It was a mechanism to promote special investigations into large-scale corruption and human rights violations during civil wars, while transferring technology to Guatemalan judicial investigation agencies. One important outcome was the investigation and imprisonment of government officials in cases of corruption. However, despite opposition from the UN, the CICIG was terminated by then-President Morales in September 2019¹⁵. Subsequently, Guatemala established the Presidential Commission against Corruption (Comisión Presidencial contra la Corrupción: CPCC) as an institution that reports directly to the presidency.

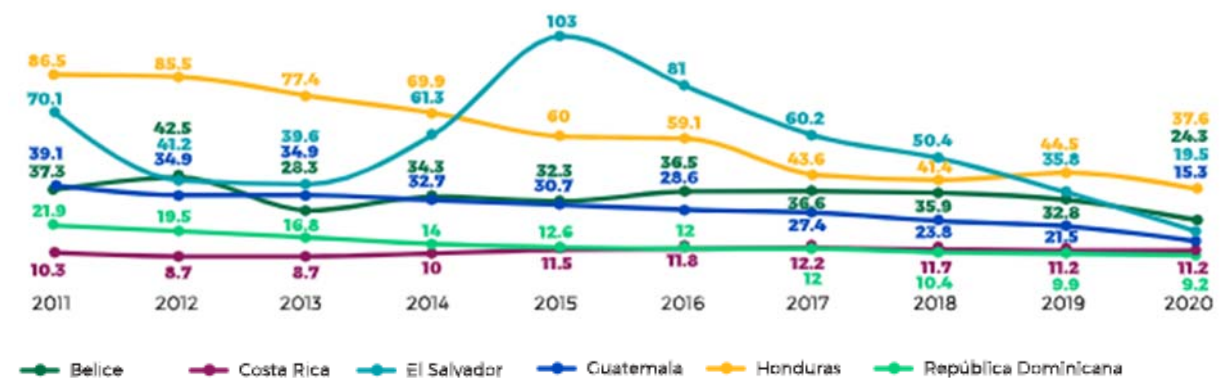
(2) Citizen Security

1) Homicide

Latin America and the Caribbean have been affected by violent crime to an extent unparalleled in the world. Over the years, the world's highest rates of violent crime, including murder and gender-based violence, have raised public perception of insecurity to a level comparable to that of countries experiencing armed conflict, and citizens' confidence in security agencies is low (UNDP 2020).

There are various types of crimes that affect citizen security, including homicide, violent crime, sexual crimes, human trafficking, and violence against women. Despite the fact that the countries in this study represent just under 3% of the world's population (WB 2018), 12% of all homicides worldwide occur in the region (UNODC 2018).

Homicide rates in Central America dropped from 15.4 in 2007 to 28.9 in 2011, then to 21.9 in 2014. However, the latest data for 2018 shows an increase to 28.1. Mexico is responsible for raising the homicide rate in Central America from 16.6 in 2014 to 28.1 in 2018 (Figure 11-8). On the other hand, the homicide rates have declined in recent years in Belize, El Salvador, Guatemala, Honduras, and the Dominican Republic. In 2020, all but Costa Rica and Mexico had the lowest homicide rates in the last ten years. Costa Rica's homicide rate is above the world average (5.8 in 2018) but has remained at low level for the past few years.

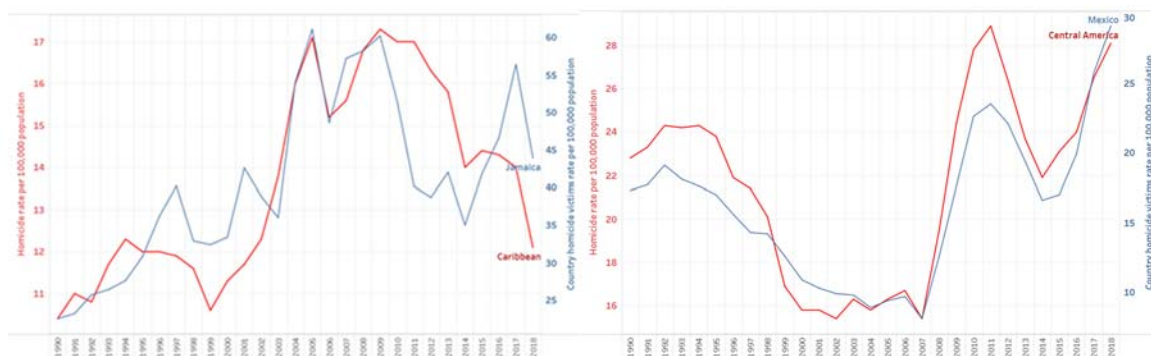


Source: The Study Team based on Infosegura "Análisis Multidimensional de la Seguridad Ciudadana Durante 2020 Centroamérica y República Dominicana" <https://infosegura.org/2021/06/10/centroamerica-y-republica-dominicana-seguridad-ciudadana-durante-2020/>

Figure 11-7 Homicide Rates per 100,000 Population in Belize, Costa Rica, Dominican Republic, El Salvador, Guatemala, and Honduras

¹⁴ <https://www.wola.org/es/analisis/los-hechos-el-legado-de-la-cicig-en-la-lucha-contra-la-corrupcion-en-guatemala/>
¹⁵ <https://apnews.com/article/f1854ad43baa4905b28c1deabafd860d>

Among the Caribbean, Jamaica has consistently high homicide rates, with the lowest rates achieved in ten years at 35.9 in 2014, then increasing to 56.4 in 2017, and 43.9 in 2018 (Figure 11-8). The decline in the murder rate between 2009 and 2014 can be attributed to police operations that dismantled criminal organizations and arrested their leaders. However, criminal organizations have since regrouped, dispersed, and spread around the countryside, and resumed their crimes. As a result, since 2017, many citizens have become victims of killings by organized crime¹⁶. Cuba has the lowest homicide rate in the Caribbean as well as the lowest rate for other crimes.



Source: DATAUNODC <https://dataunodc.un.org/content/data/homicide/homicide-rate>

Figure 11-8 Jamaica Homicide Rate (left), Mexico Homicide Rate (right) 1990 – 2018

Each country contains the initiatives on citizen security in national development plan and other official documents (Table 11-15).

Table 11-15 Initiative of Citizen Security in National Development Plans

Country	National Development Plan Document Name	Content that Corresponds to Citizen Security
Costa Rica	Plan Nacional de Desarrollo y de Inversión Pública del Bicentenario 2019 -2022 de Costa Rica	3.8 Improvement of national citizen security through the dismantling of criminal organizations 3.9 Reduce violence
El Salvador	Plan Quinquenal de Desarrollo 2014-2019 "El Salvador Productivo, Educado y Seguro"	Goal 3: Improve Citizen Security 3.1 Strengthening measures in areas where social violence and crime are concentrated 3.2 Strengthening and deploying of community police 3.4 Eliminating violence in prisons ("Yo Cambio Strategy") 3.5 Strengthening the capacity of citizen security and justice institutions and promoting inter-agency and regional coordination Goal 10: Strengthening El Salvador as a Contributor to World Peace and Development 10.3 Strengthening the defense system
Guatemala	K'atun Nuestra Guatemala 2032	Reduce homicide rate to 10/100,000 by 2032. One of the activities to achieve this is to establish a government agency responsible for security. One of the activities to achieve this goal is to focus on "crime prevention" by government agencies responsible for citizen security.
	"National Policies for Violence and Crime Prevention, Citizen Security, and Peaceful Coexistence 2014-2034."	Promote socially comprehensive citizen security improvement with a major shift in emphasis to crime prevention.
Honduras	Visión de País 2010 – 2038 y Plan de Nación 2010 – 2022 de Honduras	Goal 2: Development of Safe, Non-violent Democracies Goal 2.2: Lower the crime rate below the global average
Jamaica	Vision 2030 Jamaica. National Development Plan (NDP)	Goal 5: Safety and Security 5.1 Strengthen the capacity of communities to participate in creating a safe and secure society 5.2 Reform and modernize law enforcement systems 5.3 Improve security of borders and territorial waters 5.4 Improve crime prevention capacity of law enforcement agencies 5.5 Recidivism prevention efforts

¹⁶ <https://insightcrime.org/news/analysis/why-jamaica-homicide-rate-up-20-percent/>

Country	National Development Plan Document Name	Content that Corresponds to Citizen Security
Mexico	Plan Nacional de Desarrollo de México 2019 -2024	Restoration of the rule of law v: Reorganizing the war on drugs vi: Peacebuilding vii: Rehabilitation and dignity of prisons viii: Convergence of national security, citizen security and peace ix: Reconsidering national security, changing the direction of the armed forces
Nicaragua	Ejes del Programa Nacional de Desarrollo Humano 2018 -2021 de Nicaragua	Promotion of public order Prevention and treatment of violence and crime Strategy in fighting drug trafficking and organized crime Active participation in international mechanisms for drug trafficking and organized crime
Panama	Plan Estratégico de Gobierno 2019 -2024 de Panamá	Citizen security Formulation of national security and defense policies Promote crime policy to law (Decreto Ejecutivo N ° 260 de Junio de 2006). Strengthening the use of science and technology in the field of security (Comprehensive data banks, installation of cameras in public transportation, among others) Restoring security in challenging areas through prevention and repressive actions, through "law and order planning" to fight and defeat drug trafficking and violence Use technology to strengthen intelligence and judicial investigation processes and build immigration policies that guarantee immigration The creation of Security Council to protect democracy and protect the country from external threats

Source: The Study Team referring to the development plans of each country

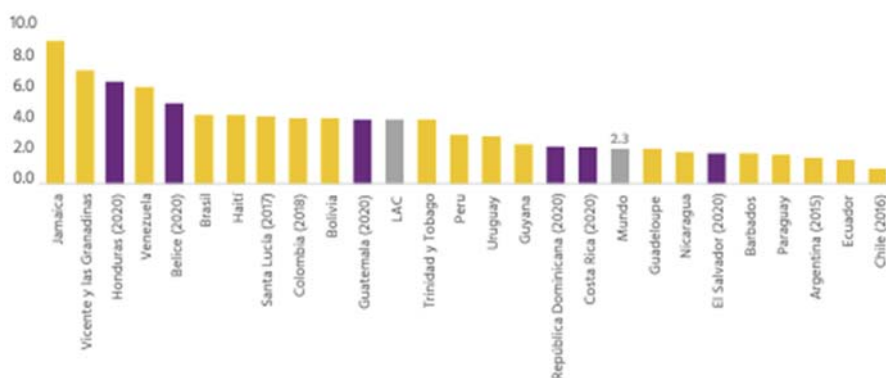
In addition, as an initiative in the Caribbean region, CARICOM's "Implementing Agency for Crime and Security (IMPACS)" (established in 2006) is cooperating among CARICOM member countries to carry out activities related to crime and security in the region. Currently, underway projects are "Firearm Safety and Security", "Asset Recovery (to improve criminal charge prosecution, forfeiture, and foreclosure, and to dismantle criminal networks in CARIFORUM countries)", "Cyber Security", "Human Tracking", "Border Security", and "Capacity Enhancement of Law Enforcement Agencies (using an online training tool called CBSI-Connect, human resource development is possible even with COVID-19.)"¹⁷.

2) Gender-based Violence (GBV)

Another issue that Latin American societies face in citizen security is the gender-based violence (GBV), including violent crimes against women such as domestic violence and "femicide" (murder of a woman for the reason of being a woman). Gender-based violence (GBV) includes violent crimes against women such as domestic violence and gender-based violence such as "femicide". GBV is often not reported, and even when it is reported, it is often not punished, and the available data is very limited, which is another issue to overcome.

Figure 11-9 shows the femicide rates in Latin American countries (2020). The fact that many countries have rates higher than the global average of 2.3/100,000 indicates that femicide is a major issue in Central America and the Caribbean.

¹⁷ CARICOM IMPACS <https://caricomimpacs.org/>



Source: Infosegura. Violencia contra las mujeres a lo largo del ciclo de vida, 2020. https://infosegura.org/wp-content/uploads/2021/06/vcm_regional-2020_bilingual.pdf

Figure 11-9 Femicide Rates in the Latin American Countries (2020)

In 2019, Honduras had the highest rate of femicide (the number of women killed per 100,000 people) among Latin American countries; femicide is characterized by young women and girls being the most frequent victims. In El Salvador, an average of 11 women were murdered each month in 2020, half of them under the age of 31. In Guatemala, teenage girls are at risk of "disappearing" (going missing), with eight girls per 10,000 (aged 15-17) going missing each year.

Table 11-16 shows the situation regarding the incidence of GBV and the rule of law against it in the Northern Triangle¹⁸ of Central America. The rate of "impunity" for crimes in these three countries is very high, with 95% of crimes against women and girls unpunished¹⁹. There are also many cases of failure to report GBV to the authorities or others, due to fear of reprisals, normalization of GBV, and distrust of the authorities. As described below, domestic violence in the Northern Triangle has increased due to lockdowns and movement restrictions imposed by COVID-19 prevention measures. In El Salvador, domestic femicide has also increased.

Table 11-16 Status of GBV in the Countries of the Northern Triangle of Central America

Country	Situation	Legal System and Current Status
El Salvador ²⁰	<ul style="list-style-type: none"> Sex crimes occur at a rate of 1 case/4 hours (2020). About 48.5% of victims are girls under the age of 14. Around 34% of women reported being violated within the past 12 months (2017). The femicide rate in 2016 was 16.8 victims/year, yet the homicide rate in the same year was 5 victims/year. 	<ul style="list-style-type: none"> Rape, domestic violence, and sexual harassment are prohibited and punishable by law. The only law in the world against femicide-suicide (the crime of causing a woman or girl to commit suicide because of abuse) exists. However, since the law came into effect in 2012, only 60 cases have been investigated and only one of them has been prosecuted.
Honduras ²¹	<ul style="list-style-type: none"> Second highest rate of femicide among Latin American countries. About 1/3 of femicide occurs at home. More than 7 sex crimes/day, 54% of victims are girls under 15 years old, 76% are women/girls under 20 years old (2020)²² 	<ul style="list-style-type: none"> Discrimination and crimes against women are prohibited by the Constitution. Laws and regulations that guarantee women's rights and correct gender inequality have been enacted in recent years. However, GBV is rarely reported or prosecuted (distrust of state institutions), and the judicial system to punish it has not been developed and implemented. About 95% of femicide cases go unpunished.²³

¹⁸ El Salvador, Guatemala and Honduras

¹⁹ <https://www.thedialogue.org/blogs/2019/09/the-toxic-intersection-of-violence-against-women-in-the-northern-triangle-and-the-trump-administrations-anti-immigration-policies/>

²⁰ <https://www.laprensagrafica.com/elsalvador/La-principal-causa-para-no-denunciar-la-violencia-contra-la-mujer-es-la-dificultad-para-acceder-a-los-servicios-publicos-Vanda-Pignato-20180503-0032.html>

²¹ <https://www.ohchr.org/SP/NewsEvents/Pages/DisplayNews.aspx?NewsID=23873&LangID=S>

²² https://www.wilsoncenter.org/sites/default/files/media/uploads/documents/No_Justice.pdf

²³ <https://www.ohchr.org/SP/NewsEvents/Pages/DisplayNews.aspx?NewsID=23873&LangID=S>

Country	Situation	Legal System and Current Status
Guatemala	<ul style="list-style-type: none"> ▪ In 2020, 8/1000 women/girls are victims of violence. ▪ Every month, more than 30 women/girls became victims of homicide, the lowest rate in the last decade. 	<ul style="list-style-type: none"> ▪ There is a law that defines GBV as a crime. However, not working in actual world. ▪ Around 83% of GBV is estimated to go unpunished (2018)²⁴

Source: Based on https://www.wilsoncenter.org/sites/default/files/media/uploads/documents/No_Justice.pdf

11.4.3 Evaluation of Various Government Policies

Table 11-17 shows the measures taken by the governments of each country to prevent and manage the spread of COVID-19.

Some of the measures implemented have raised concerns that certain fundamental rights, such as the right to freedom of movement, the right to protest, the right to assembly and the right to privacy, may be restricted. Concerns have also been expressed about the possibility of the military playing an active role in the political arena and a return to military rule in some countries. There is also concern over the enactment of legislation that would exempt military and police forces operating during a declared state of emergency to prevent the spread of COVID-19 from criminal liability if they use weapons in self-defense.

In terms of government measures, countries have implemented programs to support businesses, increased spending on health care, reduced or postponed payment of some taxes, lowered interest rates, and provided household assistance such as cash and food payments.

Table 11-17 Government Measures for COVID-19 (Governance and Citizen Security)

		Declaration of "State of Emergency"	International movement restrictions	Restriction or closure of public places and mass gatherings	Election suspension or cancellation	Fiscal policy	Monetary politics	Policy for the private sector	Restriction of economic activity	Economic stimulus	Labor policy	Social Protection Policy	Gender Policy
Central america	BLZ		X	X		X	X	X	X	X	X	X	X
	CRI	X	X	X		X	X	X	X	X	X	X	X
	SLV	X	X	X		X		X	X	X	X	X	X
	GTM	X	X	X		X	X	X	X	X	X	X	X
	HND	X	X	X		X	X	X	X	X	X	X	X
	MEX	X	X	X	X	X	X	X	X	X	X	X	X
	NIC		X			X	X	X					X
PAN	X	X	X		X	X	X	X	X	X	X	X	
Caribbean	ATG		X	X				X	X	X		X	X
	BHS					X	X	X			X		
	BRB	X	X	X		X	X	X	X	X	X	X	X
	CUB		X	X				X	X	X	X	X	X
	DMA		X	X		X		X	X		X		X
	GRN		X	X		X	X	X	X		X	X	
	GUY		X	X		X		X	X		X		X
	HTI	X	X	X	X	X	X		X		X	X	X
	JAM	X	X	X	X	X	X	X	X	X	X	X	X
	DOM	X	X	X	X	X	X	X	X	X	X	X	X
	KNA		X	X		X						X	X
	LCA		X	X		X			X		X	X	
	VNT		X	X		X		X		X	X	X	
	SUR		X	X		X	X		X	X		X	X
TTO	X	X	X		X	X	X	X	X	X	X	X	

Source: The Study Team based on ECLAC COVID-19 Observatory <https://www.cepal.org/en/topics/COVID-19> and "IDEA International Global Status of Democracy Index" <https://www.idea.int/gso-d-indices/#/indices/world-map>

²⁴ https://www.wilsoncenter.org/sites/default/files/media/uploads/documents/No_Justice.pdf

11.4.4 Developmental Partner Trends

(1) The World Bank

In the area of governance, the World Bank is supporting institutional reforms to ease country resource constraints for large-scale public services delivery. The World Bank also highlights, in the context of the COVID-19 pandemic, 1) services that are accessible to emergency and incorporate risk management; 2) effective procurement processes, policies, and systems; 3) national assistance in procuring life-saving goods and services in emergency; and 4) GovTech to improve services for citizens and businesses.

Public sector governance and anticorruption are identified as one of the top priorities, and the World Bank Group's governance global practices focus on developing "A competent, efficient, open, comprehensive and accountable institution" that are seen as critical to promoting sustainable growth after COVID-19. To this end, the World Bank Group's core operations are: (1) public financial management (PFM); (2) domestic resource mobilization and tax administration; (3) state-owned enterprises (SOEs) and corporate governance; (4) public institutions; (5) decentralization and quasi-state governance; and (6) fiduciary guarantees for the World Bank lending operations. In addition, cross-cutting items are 1) GovTech, 2) anticorruption, openness, and transparency, 3) procurement for development, and 4) political and economic analysis.

Table 11-18 shows the number of projects currently being implemented by the World Bank in governance and citizen security in Central America and the Caribbean (as of October 13, 2021). There are 17 projects in Central America, and 31 in the Caribbean. Haiti, Jamaica, Mexico, Nicaragua, and Grenada followed in the order of number of projects.

Table 11-18 The World Bank Ongoing Governance Projects in Central America and the Caribbean (As of October 13, 2021)

Central america	BLZ	0	Caribbean	ATG	0
	CRI	2		BHS	1
	SLV	1		BRB	1
	GTM	2		CUB	0
	HND	2		DMA	2
	MEX	4		GRN	4
	NIC	4		GUY	2
PAN	2	HTI		10	
total	17	JAM		5	
		DOM		1	
		KNA		0	
		LCA		2	
		VNT		3	
		SUR		0	
		TTO		0	
		total		31	

Source: The Study Team based on <https://maps.worldbank.org/p2e/mcmap/map.html?org=ibrd&level=region&code=LCR&title=Latin%20America%20And%20Caribbean>

Table 11-19 shows the trends in the World Bank Group's support for COVID-19 and governance and citizen security. The World Bank provided "COVID-19 Response and Recovery" to Haiti, Jamaica, and Grenada in 2021.

Table 11-19 Trends in the World Bank Group's Assistance for Governance and Citizen Security in Central America and the Caribbean

Country	Trends of the World Bank Group
El Salvador	<ul style="list-style-type: none"> ▪ In the wake of the COVID-19 pandemic, the World Bank prioritized two areas of support: productive inclusion and human resource development and strengthening sustainability and resilience²⁵. ▪ In the past, the "Local Government Enhancement Project" (completed in 2016) was implemented to improve the administration, finance, technical processes, systems, and capabilities of local governments to provide basic services that they prioritize over the medium to long term.²⁶
Guatemala	<ul style="list-style-type: none"> ▪ USD 500 million in loans to promote policies to mitigate the social and economic impacts of the COVID-19 pandemic, increase public sector transparency, and increase domestic resource mobilization.²⁷ ▪ "Towards Better Expenditure: A Review of Public Expenditure in Guatemala" points out the need to increase resources for citizen security, prevention programmes, police, rehabilitation systems, prisons, and the capacity building of the public prosecutor's office.²⁸
Honduras	<ul style="list-style-type: none"> ▪ The World Bank provided technical assistance and grants for initiatives such as the Open Government Partnership (OGP), Extractive Industries Transparency Initiative (EITI), and Construction and Public Infrastructure Transparency Initiative (CoST) to strengthen transparency and good governance and improve multi-sector interactions in key development areas.²⁹
Nicaragua	<ul style="list-style-type: none"> ▪ The Second Land Management Project (PROPDEP II) helped 15 provinces of the country develop better property rights regulations, with more than half of the beneficiaries being women (about 403,000 people). ▪ The Public Financial Management Modernization Project (IDA) has helped to improve the fiscal management capacity of central government agencies by 100% through adopting a multi-year and results-based budgeting approach.³⁰
Jamaica	<ul style="list-style-type: none"> ▪ The World Bank Group Country Partnership Strategy 2014-2019 is aligned with the Jamaican government's Vision 2030, which includes public sector modernization to enhance government capacity and effectiveness. ▪ Since 2015, the Strategic Public Sector Transformation Project has strengthened public administration and improved public investment governance.
Haiti	<ul style="list-style-type: none"> ▪ The World Bank supports broadband access to four ministries, including the Ministry of the Interior and Community Territories (MICT), which is responsible for civil protection, immigration, and immigration oversight.³¹

Source: The Study Team

(2) Inter-American Development Bank (IDB)

IDB Institutional Strategy 2019 sets the strategic direction for the IDB Group and includes "institutional capacity and the rule of law" as a priority cross-cutting issue for the bank. IDB loans are made under policies and frameworks such as 1) citizen security and justice; 2) decentralization and local government; and 3) transparency and integrity. In the area of citizen security and justice, it focuses on 1) social prevention, 2) police, 3) rehabilitation, reemployment, and criminal justice, 4) governance, and 5) professional development.

The IDB is also working to promote dialogue among policy makers in Latin America and the Caribbean. The dialogue covers common security issues, particularly those that affect the citizen security in all countries, such as violence and transnational crime, and issues that are prioritized in each region, such as: 1) crime costs and security policies financing; 2) collaborating in the development and dissemination of applicable knowledge; and 3) institutional reforms to provide democratic and integrated solutions to rising crime rates³².

²⁵ <https://www.worldbank.org/en/country/elsalvador/overview#2>

²⁶ <https://projects.worldbank.org/en/projects-operations/project-detail/P118026?lang=en>

²⁷ <https://www.worldbank.org/en/country/guatemala/overview#2>

²⁸ <https://www.worldbank.org/en/country/guatemala/overview#3>

²⁹ <https://www.worldbank.org/en/country/honduras/overview#3>

³⁰ <https://www.worldbank.org/en/country/nicaragua/overview#3>

³¹ <https://www.worldbank.org/en/country/haiti/overview#3>

³² <https://www.iadb.org/en/research-and-data/regional-policy-dialogue/citizen-security>

In addition, the IDB's "Visión 2025 Reinvertir en Las Américas: Una Década de Oportunidades" listed 1) revitalization of the production sector, 2) promotion of social progress, and 3) strengthening of good governance and institutions.

Table 11-20 shows the IDB's projects in Central America and the Caribbean in governance and citizen security, as of October 13, 2021. There are 10 projects in Central America and 13 in the Caribbean.

Table 11-20 Number of Ongoing IDB Governance Projects in Central America and the Caribbean (As of October 13, 2021)

Central america	BLZ	2	Caribbean	ATG	0
	CRI	2		BHS	2
	SLV	1		BRB	1
	GTM	1		CUB	0
	HND	2		DMA	0
	MEX	0		GRN	0
	NIC	0		GUY	1
	PAN	2		HTI	2
total	10	JAM		2	
		DOM		2	
		KNA		0	
		LCA		0	
		VNT		0	
		SUR	1		
		TTO	2		
		total	13		

Source: The Study Team based on IDB <https://www.iadb.org/es/proyectos>

Table 11-21 shows the trends in the IDB Group's support for COVID-19 and governance.

Table 11-21 Trends in Governance and Citizen Security Assistance by the IDB in Central America and the Caribbean

Country	Trends of the IDB
El Salvador	<ul style="list-style-type: none"> ▪ IDB Group Strategy for El Salvador 2021-2024 demonstrates the support for mitigating the effects of COVID-19. ▪ Priority areas are 1) financial sustainability and efficiency; 2) reduction of social vulnerability; and 3) activation and restructuring of productivity. Gender, diversity, climate change and natural disasters are highlighted as cross-cutting areas.
Guatemala ³³	<ul style="list-style-type: none"> ▪ IDB Group Strategy 2017-2020 prioritizes issues related to administration and transparency. The loan portfolio includes one project for national reform and modernization. During the past ten years, IDB has provided 1) assistance in strengthening and modernizing the Public Prosecutor's Office; 2) assistance in the formulation and implementation of Country Strategy 2016-2020 (completed); 3) knowledge transfer on legal information systems between Guatemala and Mexico (completed); 4) economic empowerment promotion of women affected by violence (completed); 5) knowledge transfer on crime prevention between Guatemala and Colombia (completed); 6) electronic notification of the Constitutional Court (completed); 7) assistance in police reform (completed), and numerous governance and citizen security related assistance.^{34 35 36 37 38 39 40} ▪ "Strengthening and Modernization of the Ministry of Public Service Program (Programa de Fortalecimiento y Modernización del Ministerio Público^{27F}) (2016–ongoing)⁴¹: Aims to reduce impunity in Guatemala. 1) Streamline the process of filing complaints, 2) improve the quality of the response to complaints, and 3) reduce the time required for internal procedures to respond to citizens.

³³<https://www.iadb.org/en/countries/guatemala/overview>

³⁴ <https://www.iadb.org/en/project/GU-L1095>

³⁵ <https://www.iadb.org/en/project/GU-T1256>

³⁶ <https://www.iadb.org/en/project/GU-T1239>

³⁷ <https://www.iadb.org/en/project/GU-T1232>

³⁸ <https://www.iadb.org/en/project/GU-T1188>

³⁹ <https://www.iadb.org/en/project/GU-T1190>

⁴⁰ <https://www.iadb.org/en/project/GU-T1180>

⁴¹ <https://www.iadb.org/es/project/GU-L1095>

Country	Trends of the IDB
Honduras	<ul style="list-style-type: none"> ▪ While the IDB has focused on strengthening its fiscal institutions and improving public spending, it has also implemented several projects related to citizen security, women's rights, and institutional capacity building through national digital transformation⁴². ▪ IDB Country Strategy for Honduras 2019-2022 identified the strengthening of fiscal institutions, efficiency of public expenditure, accumulation of human resources, and expansion of productive opportunities as priorities.
Nicaragua	<ul style="list-style-type: none"> ▪ IDB Country Strategy for Nicaragua supports institutional capacity building efforts.⁴³ ▪ Governance projects implemented over the past seven years include: 1) strengthening legislative power; 2) strengthening the Board of Audit's internal control system; and 3) enhancing the efficiency and transparency of public procurement.⁴⁴
Jamaica	<ul style="list-style-type: none"> ▪ IDB Country Strategy for 2016-2021 in Jamaica emphasizes: 1) improving public sector management and 2) protecting human capital and strengthening development. ▪ Major projects over the past seven years have been mainly for national reform and modernization, including 1) the creation of a digital government agenda, 2) the exchange of knowledge on security issues, 3) the strengthening of citizen security, and 4) the improvement of public services⁴⁵.
Haiti	<ul style="list-style-type: none"> ▪ One of the priorities of the IDB Group's Country Strategy 2017-2021 is to strengthen the provision of critical public services to enhance human development⁴⁶. ▪ Governance and citizen security projects implemented over the past seven years include: 1) modernizing the civil service management and public payroll systems and 2) strengthening public management to improve service delivery⁴⁷.

Source: Study Team

(3) Development Partners' Efforts in citizen security

In Latin America and the Caribbean, multilateral development partners committed to cooperation in citizen security are the IDB, the World Bank, the European Union (EU), and other international organizations⁴⁸. On the bilateral side, United States Agency for International Development (USAID), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and Spanish Agency for International Development Cooperation (*Agencia Española de Cooperación Internacional para el Desarrollo*: AECID) stand out for their cooperation.

Among them, the IDB has been actively cooperating in the field of citizen security since 1998, working in the areas of 1) institutional strengthening, 2) social prevention, 3) situational prevention, 4) prevention policy, 5) criminal justice, and 6) rehabilitation⁴⁹.

According to a report analyzing Good Practice from the IDB's projects on citizen security in Central America and the Caribbean (Jamaica, Honduras, Nicaragua, and Panama), the IDB has found that 1) knowledge-based on country level, beneficiaries and their needs, policies and legal systems, 2) core intervention elements, and 3) motivating and involving communities such as NGOs based on reality and following them close to the beneficiaries; 4) appropriate and effective communication with communities; and 5) proper supervision and accountability of project implementation are required for successful project implementation.

Over the past two decades, UNDP has implemented projects in 19 countries in Latin America and the Caribbean using an integrated and multidisciplinary approach. Areas of focus include: 1) promoting security and justice sector modernization; 2) strengthening criminal justice; 3) reducing impunity; 4) institutional development and training for public actors in citizen security; 5) public

⁴²<https://www.iadb.org/en/projects-search?country=HO§or=&status=&query=>

⁴³<https://www.iadb.org/en/countries/nicaragua/overview>

⁴⁴<https://www.iadb.org/en/projects-search?country=NI§or=&status=&query=>

⁴⁵<https://www.iadb.org/en/projects-search?country=JA§or=&status=&query=>

⁴⁶<https://www.iadb.org/en/countries/haiti/overview>

⁴⁷<https://www.iadb.org/en/projects-search?country=HA§or=&status=&query=>

⁴⁸<https://igarape.org.br/>

⁴⁹ <https://publications.iadb.org/publications/english/document/The-Implementation-Challenge-Lessons-From-Five-Citizen-Security-Projects.pdf>

participation in violence reduction; and 6) collaboration with NGOs, academic centers, and the private sector at the local, regional and national levels.

USAID has been focusing on crime and criminal violence programs in Central America and has been working with them to 1) establish city-level crime prevention committees, 2) provide life skills to young people at risk, 3) improve basic infrastructure such as street lighting to ensure the citizen security, 4) promote community police, and 5) provide services at domestic violence support centers.

11.4.5 Country Development Cooperation Policy

According to the latest version of the Ministry of Foreign Affairs of Japan's Country Development Cooperation Policy (formerly known as the Country Assistance Policy), four of the 23 countries (El Salvador, Nicaragua, Dominican Republic, and Honduras) have designated governance and citizen security as important areas (medium-term goals), as shown below. Although Guatemala has not set governance and citizen security as a key area, it has been cooperating in the area of citizen security on a case-by-case basis.

(1) El Salvador

(3) Promotion of Inclusive Development

In El Salvador, development is underway to benefit all. In promoting the equalization of educational opportunities, improvement of the basic education level and improvement of human resource development and quality in the health field have become problems. Our country will continue to support human resource development in the health sector, while disseminating basic education and improving educational standards. In addition, *in the three Central American countries of El Salvador, Guatemala, and Honduras, crimes committed by heinous youth crime groups (maras) have become more serious. In these countries, ensuring the citizen security has become one of the top priorities of the government, and as a hindrance to development, our country will support the spread and promotion of the regional police system from the perspective of ensuring the citizen security.*

Source: Ministry of Foreign Affairs – Salvador Country Policy on Development Cooperation (February 2017)

(2) Nicaragua

(1) Building the Foundation for Promoting Economic Development

Social infrastructure as the basis of economic development, such as road infrastructure, will be improved to raise the economic foundation of the country.

Japan continuously *supports the improvement of system and ability of administration and community* which are leaders of regional development and contributes to the foundation of stable economic and industrial development in the future by the approach from both urban areas and rural areas.

Source: Ministry of Foreign Affairs – Nicaraguan Development Cooperation Policy (September 2017)

(3) Dominican Republic

(2) Rectification of Disparities

To address the persistent disparities in the country, Japan supports efforts in such areas as rural development, education, medical care, healthcare, and livelihood improvement. Japan also supports capacity building of administrative agencies to improve the financial base necessary for implementing social development policies. In addition, Japan supports the establishment of systems to ensure that public opinions are appropriately reflected in administrative policies and implemented.

Source: Ministry of Foreign Affairs – Dominican Republic Country Development Cooperation Policy, September 2018

(4) Honduras

(1) Local development

In view of the large economic and social disparities in the country and the seriousness of poverty in rural areas compared with urban areas, support will be provided, especially for the development of local industries and the human resource development necessary for such development, in order to revitalize local economies and alleviate the serious poverty problem.

Source: Ministry of Foreign Affairs of Japan, Policy on Development Cooperation with the Republic of Honduras by Country (April 2012)

(5) Guatemala

(4) Governance and Citizen security Improvement Program (Priority program)

Strengthening administrative capacity: To address the issue of effective service delivery by local governments, which are also the implementers of social development projects, we will work to strengthen local administrative capacity. Through training in Japan, we will encourage the acquisition of Japan's rural development experience and methods, and incorporate the results of livelihood improvement, nutrition improvement, and education projects into administrative plans, with the aim of maintaining and establishing sustainable effects. We will also consider collaborating with NGOs, civil society organizations, and other donors in order to continue the activities being undertaken by local governments across administrations.

In fiscal 2020, Phase 2 will begin, and we will continue to work on improving citizen security from the perspective of the safety of each and every citizen. In FY2020, Phase 2 will begin, and we will continue to work on cooperation to improve citizen security from the perspective of each citizen security. We will also address the gender perspective by encouraging more female police officers to participate. We will also continue to work together to develop policies for a permanent community police approach with a budget.

Source: JICA Country analysis paper of the Republic of Guatemala (April 2021)

In addition, the following is a list of assistance that Japan has provided to the above-mentioned countries in the area of governance and citizen security over the past 10 years.

Table 11-22 Major assistance programs over the past 10 years (Governance and Citizen Security)

Country	Priority Areas	Major assistance programs over the past 10 years
El Salvador	Support the spread and promotion of community police systems	<ul style="list-style-type: none"> ▪ Technical cooperation: Advisor to the President's Office on Development Planning (2017.2 - 2019.2) ▪ Technical cooperation: Project on Strengthening the Implementation of the New Police Model Based on Community Police (2015.2-2020.2)
Nicaragua	Social development in poor communities and regions: Improving the quality of primary and secondary education, including facilities	<ul style="list-style-type: none"> ▪ Technical cooperation: Local Government Administration Capacity Enhancement Project (2014.10-2015.1) ▪ Technical cooperation: Local Government Administration Capacity Enhancement Project Phase 2 (2017.9-2018.1) ▪ Individual projects (experts): Development and Assistance Planning Advisor (2012.6-2013.6)
Dominican Republic	Strengthen the capacity of administrative agencies and create systems and structures to ensure that the voices of the people are appropriately reflected in administrative policies and implemented	<ul style="list-style-type: none"> ▪ Technical cooperation: Capacity Building Project for Local Government Planning (2011.12-2015.12) ▪ Ongoing Project: Project for Capacity Building of Local Government Planning in Northern Cibao ▪ Ongoing Project: Project for Strengthening and Modernizing the National Tax Administration
Honduras	Local Development	<ul style="list-style-type: none"> ▪ Technical cooperation: Advisor on Strengthening Local Governance Capacity (2017.6 - 2019.5) ▪ Technical cooperation: Local Government Capacity Strengthening for Local Development Project (2011.10 - 2016.11) ▪ Technical cooperation: Support for Community Police Activities (2013.4-2016.3) ▪ Ongoing Project: Improvement of local government project implementation and monitoring system and capacity for SDGs and Honduras National Agenda 2030 ▪ Ongoing Project: Support for the promotion of community police activities through the participation of local residents
Guatemala	Strengthen local administrative capacity and improve citizen security (triangular cooperation projects, also addressing gender perspectives)	<ul style="list-style-type: none"> ▪ Technical cooperation: Police Human Resource Development Project through the Promotion of Community Police (2016.6-2019.5) ▪ Technical cooperation: Local Government Capacity Building Project (2013.3-2016.9) ▪ Technical cooperation: Project on promoting community participation to improve the quality of education (2006.6-2008.5) ▪ Volunteer (elementary school education, mathematics education) ▪ Ongoing Project: Community Police Project ▪ Ongoing Project: Strengthening Administrative Capacity

Source: Prepared by Study Team based on JICA project list

11.5 Selection of Priority Countries by Sector

11.5.1 Criteria for Selecting Priority Countries

Comparative analysis and evaluation of governance and citizen security for 23 target countries were carried out for the selection of priority countries, and a grouping was realized. Based on data from 23 countries, which are generally comparable and highly reliable internationally, indicators on (1) Level of democracy, (2) Administrative functions, (3) Rule of law, and (4) Citizen security were selected with reference to the pillar of JICA's support in the field of governance. (3) "Rule of law" includes the strengthening of police organizations, as well as matters related to citizen security. In addition, since the intention of the Government of Japan and the implementation and operation system of the project are

also important factors, (5) "Country Cooperation Policy of the Government of Japan" and "JICA's Assistance Performance in the Governance and Citizen Security Sectors in the Past 10 Years" as the strategy and implementation system of the Government of Japan were also evaluated.

Table 11-23 Criteria for Selecting Priority Countries (Governance and Citizen Security)

No.	Index	Subindex
1	Level of democracy	Degree of public participation in politics and accountability
2	Administrative functions	Perceptions of corruption control Perceptions of government effectiveness Perceptions of e-Government development
3	Rule of law	Perceptions of regulatory quality Perceptions of the rule of law
4	Citizen security	Homicide rate (number of murders per 100,000 persons) Perceptions of political stability and absence of violence and terrorism
5	Japanese government's strategy and project implementation structure	Key areas in the GoJ/Ministry of Foreign Affairs Country Cooperation Policy (Governance and Citizen Security Sectors) Number of JICA projects in the past ten years (governance and citizen security sector)

Source: Study Team

11.5.2 Selection of Priority Countries

The 23 target countries were evaluated based on the indicators shown in Table 11-24. Using the median, minimum, and maximum values of each indicator, the countries were categorized into five groups. The top countries in Group I were positioned as most important country and those in Group II as important country. The results of evaluation and grouping are shown in Table 11-25 and Table 11-26.

Table 11-24 Results and Summaries of Assessments and Grouping of 23 Countries (Governance and Citizen Security)

Country	Quality of Democracy	Administrative Function	Rule of Law	Citizen Security	Japanese Government's Strategy and Project Implementation Structure	Total Score	Ranking	By Severity Group
Antigua and Barbuda	2	3	1	1	1	8	21	V
Bahamas	1	1	3	3	1	9	18	IV
Barbados	1	1	1	1	1	5	23	V
Belize	3	4	5	5	1	18	6	II
Costa Rica	1	1	1	2	4	9	18	IV
Cuba	5	3	5	1	4	18	6	II
Dominica	1	3	2	3	1	10	15	IV
Dominican Republic	3	3	4	3	5	18	6	II
El Salvador	3	4	4	5	5	21	4	I
Grenada	2	3	3	1	1	10	15	IV
Guatemala	3	4	5	5	4	21	4	I
Guyana	3	4	3	4	4	18	6	II
Haiti	4	5	5	4	4	22	1	I
Honduras	4	4	5	5	4	22	1	I
Jamaica	2	3	3	4	1	13	13	II
Mexico	3	3	4	4	4	18	6	II
Nicaragua	4	4	5	4	5	22	1	I
Panama	3	3	2	3	1	12	14	III
Saint Kitts and Nevis	2	2	1	3	1	9	18	IV
Saint Lucia	1	3	1	2	1	8	21	V
Saint Vincent and the Grenadines	1	3	2	3	1	10	15	IV
Suriname	3	4	3	3	1	14	11	III
Trinidad and Tobago	2	3	4	4	1	14	11	III

Note: The higher the total score, the higher the importance (need for cooperation).

Source: The Study Team

Table 11-25 Results of Evaluation and Grouping of 23 Countries (Governance and Citizen Security)

Evaluacion Indicador	Data	Unit	Data Source & Year	Country																						
				Antigua & Barbuda	Bahamas	Barbados	Belize	Costa Rica	Cuba	Dominica	Dominican Republic	El Salvador	Grenada	Guatemala	Guyana	Haiti	Honduras	Jamaica	Mexico	Nicaragua	Panama	Saint Kitts & Nevis	Saint Lucia	Saint Vincent & The Grenadines	Suriname	Trinidad & Tobago
Democracy Level	Voice and Accountability	Estimate Point (approx.-2.5 to 2.5)	The Worldwide Governance Indicators (WGI). The WGI are produced by Daniel Kaufmann (Natural Resource Governance Institute and Brookings Institution) and Aart Kraay (World Bank Development Research Group).	0.760444	0.934264	1.131867	0.531714	1.125299	-1.424033	0.896702	0.201905	0.138374	0.707514	-0.313454	0.280046	-0.726322	-0.55186	0.640913	0.018328	-1.07709	0.621713	0.844555	0.928155	0.927591	0.389783	0.624919
	Score		(Year)	2	1	1	3	1	5	1	3	3	2	3	3	4	4	2	3	4	3	2	1	1	3	2
	Total Score			2	1	1	3	1	5	1	3	3	2	3	3	4	4	2	3	4	3	2	1	1	3	2
Civil Security	Victims of Intentional Homicide	Nos. / 100,000 population	Homicide rate	11.1	32	9.8	37.8	11.3	5	26.6	10	52	10.8	22.5	14.2	6.7	38.9	43.9	29.1	7.2	9.4	36.1	21.4	36.5	5.4	30.6
	Score		Source: United Nations Crime Trend Survey (UNODC)	OAS	CTS	CTS	CTS	NSO	MoH	CTS	CTS	NP	CTS	NP	CTS	DPKO	CTS	NSO	NSO	NP	CTS	OAS	NSO	CTS	CTS	CTS
	Score			2	4	2	5	2	1	4	2	5	2	4	3	2	5	5	3	2	2	4	3	4	2	4
	Political Stability and Absence of Violence/Terrorism	Estimate Points (approx.-2.5 to 2.5)	The Worldwide Governance Indicators (WGI). The WGI are produced by Daniel Kaufmann (Natural Resource Governance Institute and Brookings Institution) and Aart Kraay (World Bank Development Research Group).	0.959709	0.82948	0.941734	0.1000	0.460217	0.613414	1.073779	0.0189059	-0.127452	0.959709	-0.546191	-0.23708	-0.777888	-0.530697	0.414316	-0.714571	-1.034828	0.306805	0.7	0.926194	0.959709	0.113403	0.05524
	Score		Year	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Total Score			3	5	3	8	4	3	5	5	8	3	8	6	6	9	7	7	7	5	5	4	5	5	7	
Administrative Effectiveness	Control of Corruption	Estimate Point (approx.-2.5 to 2.5)	The Worldwide Governance Indicators (WGI). The WGI are produced by Daniel Kaufmann (Natural Resource Governance Institute and Brookings Institution) and Aart Kraay (World Bank Development Research Group).	0.277898	1.184628	1.261709	-0.1960	0.722371	0.043241	0.526295	-0.763217	-0.552565	0.339768	-0.89842	-0.0919	-1.339183	-0.808453	-0.056556	-0.82108	-1.121844	-0.579924	0.385066	0.524743	0.781557	-0.393237	-0.191356
	Score		Year	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
	Score			3	1	1	3	1	2	2	4	3	2	4	3	5	4	2	4	4	3	2	2	1	3	3
	Government Effectiveness	Estimate Point (approx.-2.5 to 2.5)	The Worldwide Governance Indicators (WGI). The WGI are produced by Daniel Kaufmann (Natural Resource Governance Institute and Brookings Institution) and Aart Kraay (World Bank Development Research Group).	-0.00387	0.486096	0.631425	-0.6767	0.423159	-0.172544	-0.261265	-0.357478	-0.46544	-0.135929	-0.676841	-0.386061	-2.015388	-0.611763	0.495821	-0.157008	-0.770874	0.06554	0.542593	0.22585	0.22585	-0.590061	0.100152
	Score		Year	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
E-Government Development Index	Estimate Point	Year	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	
Total Score			2	1	1	3	1	3	2	1	3	2	3	3	5	3	3	1	3	1	2	3	3	3	1	
Rule of Law	Regulatory Quality	Estimate Point (approx.-2.5 to 2.5)	The Worldwide Governance Indicators (WGI). The WGI are produced by Daniel Kaufmann (Natural Resource Governance Institute and Brookings Institution) and Aart Kraay (World Bank Development Research Group).	0.485375	-0.048304	0.412301	-0.5443	0.498035	-1.486731	0.101901	-0.0535924	0.021639	-0.313191	-0.224993	-0.620616	-1.260672	-0.492732	0.167549	0.10368	-0.689058	0.361897	0.502085	0.234965	0.212233	-0.679551	-0.150986
	Score		Year	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
	Score			1	3	1	3	1	5	2	3	2	3	3	3	4	3	2	2	3	1	1	1	2	3	3
	Rule of Law	Estimate Point (approx.-2.5 to 2.5)	The Worldwide Governance Indicators (WGI). The WGI are produced by Daniel Kaufmann (Natural Resource Governance Institute and Brookings Institution) and Aart Kraay (World Bank Development Research Group).	0.405205	0.076532	0.357029	-0.7755	0.544092	-0.322489	0.686338	-0.3476975	-0.76246	0.175863	-1.052289	-0.431348	-0.971101	-1.00908	-0.312574	-0.658104	-1.17569	-0.119035	0.479795	0.56913	0.446356	-0.059651	-0.120266
	Score		Year	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Total Score			2	5	2	7	2	8	3	6	6	5	7	5	8	7	4	6	8	3	2	1	2	3	6	
Japanese Gov. & JICA Intention	JICA Project in last 10 year	Nos.	JICA HP *1	0	0	0	0	0-0-0-1-0	0-0-0-1-0	0	0-0-2-1-0	0-0-2-2-0	0	0-0-2-1-0	0-0-0-1-0	0-0-1-3-1	0-0-7-2-0	0	0-0-0-1-0	0-0-3-2-0	0	0	0	0	0	0
	Score			1	1	1	1	4	4	1	4	4	1	4	4	5	9	1	4	5	1	1	1	1	1	0
	Challenges in Current Cooperation Policy	Nos. of Challenge	Min. Foreign Affairs HP	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	Score			1	1	1	1	1	1	1	5	5	1	1	1	1	1	1	1	5	1	1	1	1	1	1
Total Score			2	2	2	2	5	5	2	9	9	2	5	5	6	6	2	4	5	10	2	2	2	2	2	
				1	1	1	1	4	4	1	5	5	1	4	4	4	4	1	4	5	1	1	1	1	1	

*1 : Loan Project - Grant Project - Dev.Study and Technical Cooperation - Dispatch of Expert - Seminar

Source: Study Team

Table 11-26 Grouping Result (Governance and Citizen Security)

Group		Country
I	Most important country	El Salvador, Guatemala, Haiti, Honduras, Nicaragua
II	Important country	Belize, Cuba, Dominican Republic, Guyana, Mexico
III	-	Jamaica, Panama, Suriname, Trinidad and Tobago
IV	-	Bahamas, Costa Rica, Dominica, Grenada, Saint Kitts and Nevis, Saint Vincent and the Grenadines
V	-	Antigua and Barbuda, Barbados, Saint Lucia

Source: The Study Team

11.6 Detailed Survey by Sector

11.6.1 Selection of Countries to be Surveyed

Out of the five countries categorized as the most important countries for the field survey (detailed survey countries), four countries were selected as countries where field surveys are possible for security reasons: El Salvador, Guatemala, Nicaragua, and Honduras. Later, El Salvador was changed to Jamaica as the current Jamaican government is active in improving citizen security, and for a better balance between Central American and Caribbean regions.

11.6.2 Conducting Detailed Survey

Because of the wide variety of governance and citizen security issues and the presence of multiple ministries and agencies, the first interview survey was conducted with the JICA offices to identify governance and citizen security issues and trends in each country. As part of the detailed investigation, on September 30, 2021, an interview survey was conducted with the JICA Office in Nicaragua. As the political situation in Nicaragua was extremely unstable in the run-up to the presidential election in November 2021, a request was made to refrain from conducting interview surveys with all actors, including government agencies and civil society organizations. For Nicaragua, the Study Team compiled the results of the survey based on web information. Similarly, in Honduras, due to the background of the presidential election held in November 2021, it was difficult to conduct interviews with governmental agencies, among others, so the survey results were compiled based on web information, except for an interview with an NGO.

Subsequently, interviews were conducted with governmental agencies and NGOs of the partner countries from November to December 2021.

11.6.3 Results of Detailed Survey

(1) Guatemala

1) Government Response to COVID-19

Since 2020, the Guatemalan government has implemented several measures, including curfews, border closures, restrictions on international movement, and restrictions on public transportation. However, the situation of COVID-19 in Guatemala has not stabilized as of October 2021.

The government declared a “state of emergency” on March 5, 2020 and has extended it several times. Since the beginning of 2021, the daily number of new infected people had exceeded 5,000, and because the medical system was about to collapse, "disaster state declaration" was issued on September 2, 2021, which includes curfews, sports, education, art, among others all conducted online, and prohibition of meetings such as weddings⁵⁰.

⁵⁰ <https://www.dw.com/es/guatemala-decreta-nuevo-estado-de-calamidad-por-la-pandemia/a-59070489>

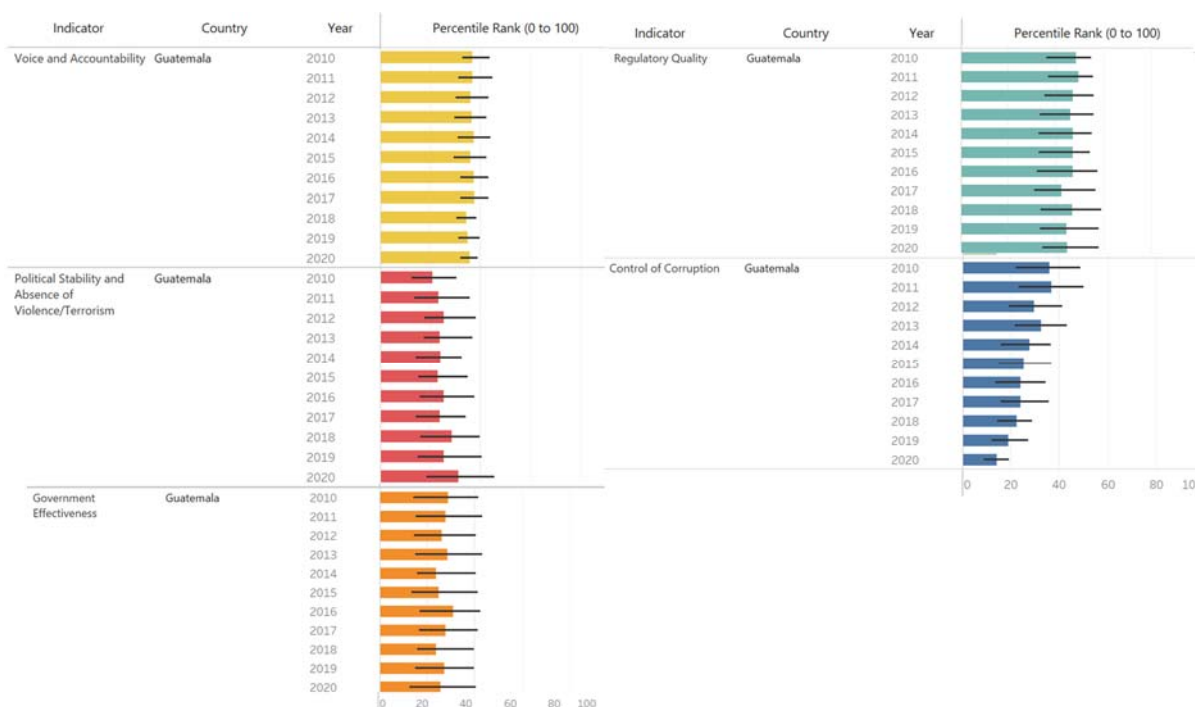
According to the results of a survey conducted by CID Gallup from September to October 2021, the Guatemalan government's response to COVID-19 was rated very low by the public, with 27% saying it was "very good" or "good," which was the lowest among the eight Central American countries surveyed.⁵¹

There were difficulties in accessing official information, inspections by government officials, and arbitrary detention. COVID-19 also opened the door to corruption by easing restrictions on government procurement and restricting access to government information. In April 2020, two senior health ministers were dismissed on corruption charges and were investigated (IDEA International 2021).

2) Governance

Guatemala is plagued by corruption, violence, worsening poverty, growing inequality, weak government institutions, inadequate guarantees of human rights, discrimination of all kinds, including against indigenous peoples and women, and inadequate responses to social demands (Guatemala National Development Plan 2020-2024).

According to the “Worldwide Governance Indicators”, all of Guatemala's governance indicators are lower than the Latin American average. Government effectiveness has remained low and corruption management has continued to deteriorate over the past ten years. Together with Transparency International, Acción Ciudadana de Guatemala, a national NGO dedicated to improving transparency, citizen participation, and fighting corruption, has also noted a worsening of the corruption situation in recent years⁵².



Source: “Worldwide Governance Indicators 2020”, The World Bank
<https://info.worldbank.org/governance/wgi/Home/Reports>

Figure 11-10 Guatemala Worldwide Governance Indicators 2010–2020

⁵¹ The results of Central American countries are: El Salvador 94%, Honduras 47%, Panama 47%, Costa Rica 45%, and Nicaragua 33%. <https://n.com.do/2021/10/28/luis-abinader-segundo-presidente-mejor-calificado-en-manejo-de-la-pandemia-segun-cid-gallup/>

⁵² Acción Ciudadana de Guatemala (interviewed on December 3, 2021)

Recognizing the poor performance of governance as a challenge, the Guatemalan government set out the necessary targets to improve governance in its Long-term National Development Plan (Plan Nacional de Desarrollo K’atun Nuestra Guatemala 2032) and National Policy 2020-2024 (Política General de Gobierno 2020-2024).

Table 11-27 Goal of Improving Governance of the Guatemalan Government

Plan Nacional de Desarrollo K’atun Nuestra Guatemala 2032	National Policy 2020-2024
Fifth axis: Focus on democratic governance rights and create the political, legal, technical, administrative and financial capacity of public institutions to enable states to implement sustainable development. 5.1 Strengthening national capacity to address development challenges 5.2 Governance through democracy 5.3 Establishing citizen security and justice considering equity, Maya, Sinkha, Garifuna, social, gender and age	Fourth axis: Aim for responsible, transparent, and efficient government.

a) Democracy Level

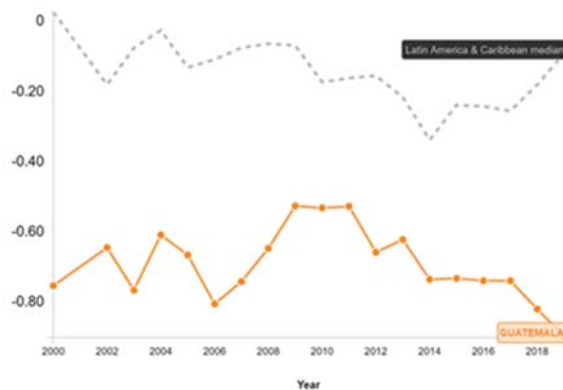
Guatemala has been a democratic country since 1986. However, more than half of the population lives below the poverty line, less than 20% of adults are illiterate, and the socio-economic gap between the people is very large (GINI Coefficient 48.3, 2014, The World Bank). This shows that democratic governments are not functioning properly. Organized crime, drug trafficking, and corruption have adversely affected the functioning of government, despite regular and free elections. IDEA International considers democracy at a weak level since 2018. According to the 2021 Global Freedom Status Report from Freedom House, the overall score was 52/100 (Breakdown: 21/40 for political rights, 31/60 for civil liberties), which puts the country in the “partially free” category.

Taking elections, a pillar of democracy, as an example, election observer mission from the Organization of American States (OAS) pointed out during the presidential runoff election in August 2019 that there were violations such as unrest, burning of ballots, threats from voters, and violence. During the campaign, one presidential candidate was arrested for drug trafficking, and another was disqualified for corruption. This example shows that although there are regular competitive elections, there are challenges in the process and environment.

Political stability is also very low compared with other Latin American and Caribbean countries but has been improving gradually except in 2009.

b) Administrative Functions

Corruption is one of the main reasons why poverty, socio-economic disparity, and violence in Guatemala cannot be solved (National Policy 2020-2024). According to the World Bank's “Worldwide Governance Indicators”, the level of corruption control in Guatemala is much lower than that in Latin America and the Caribbean (excluding 2013) and has deteriorated markedly since 2011. (Figure 11-11)

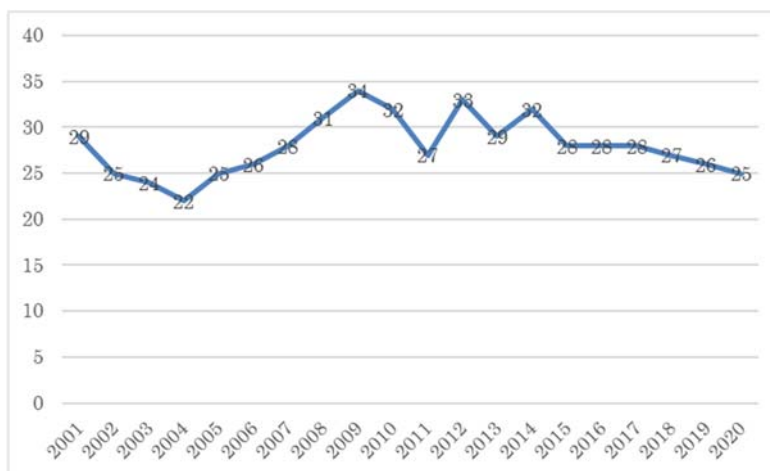


Source: GOVDATA 360, The World Bank <https://govdata360.worldbank.org/>

Figure 11-11 Perceptions of Worldwide Governance Indicator "Control of Corruption"

The Transparency International Corruption Perception Index (CPI) has ranged from 22 to 34 over the last 20 years and has deteriorated since 2018. Figure 11-12 shows the CPI of Guatemala from 2001 to 2020. The index has been maintained for three years since 2015, has deteriorated since 2018, and the index for the latest 2020 is 25/100, ranking 149th out of 180 countries. Corruption includes bribery, abuse of government functions, breach of trust, fraud, and misappropriation.

As a response to corruption, the Guatemalan government is committed to greater transparency by ensuring unfettered access to information and accountability to the public over the budget.⁵³



Source: The Study Team based on the Corruption Perception Index (Transparency International)

Figure 11-12 Guatemalan Corruption Perception Index (2010-2020)

In March 2020, the Guatemalan government launched the "Presidential Committee on Combating Corruption (*Comisión Presidencial contra la Corrupción: CPCC*)" to combat corruption and prevent it. Government agencies (over 65) are using mechanisms to help ensure that corruption does not recur and to restore confidence in government agencies. Specifically, these include the implementation of corruption management policies, the training of public officials, the establishment of various technical committees, and the digital platform⁵⁴ to gather information and take preventive measures, among others.

Because people are wary of corruption, CPCC is making efforts to prepare reports that are understandable and visible to the public to be accountable for their budget.

⁵³ Presidential Committee on Combating Corruption Comisión Presidency Contra la Corrupción – CPCC (interviewed on October 28, 2021)

⁵⁴ <https://cpcc.gob.gt/formulario-alertas-de-corrupcion/>

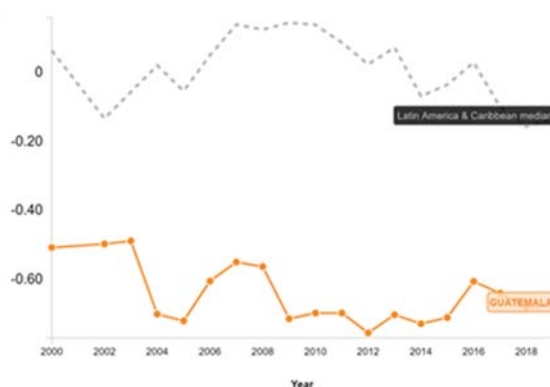
The challenges facing the CPCC include a shortage of human resources (40 staff members cannot follow 290,000 officials), inefficiency in clerical work, and lack of funding. In response to these challenges, support to the CPCC is currently being implemented or will be implemented by Germany, the US Embassy, the Organization of American States (OAS), and USAID, as shown in the following table. When visiting the CPCC during the third field survey, the Director of the Administrative Procedures Analysis Department told that although there is a system to receive international cooperation, the cooperation policy is based on human resource development and awareness raising, and not on support that would directly involve sharing actual corruption cases with donors.

Table 11-28 Projects with Governments and Aid Agencies under Implementation by the CPCC

Support Organization	Project Content
German Embassy in Guatemala, GIZ	Just waiting for the Ministry of Labor and Social Security (Ministerio de Trabajo y Protección Social) to draw up and publish an ethical code.
Organization of American States (OAS)	Technical assistance to Guatemala in implementing the recommendations of the "Follow-up Mechanism on the Implementation of the OAS Convention against Corruption (MESICIC)".
USAID ⁵⁵	Decided to implement projects on justice and transparency. Assistance to the justice sector to investigate, prosecute, and adjudicate corruption cases and to dismantle criminal networks. Recently, it developed a new research model for investigating potential fraud and embezzlement on COVID-19.

Source: The Study Team based on interviews with the CPCC

Another major governance challenge in Guatemala is government inefficiency (National Policy 2020-2024). According to the World Bank's "Worldwide Governance Indicator", this index has been well below the average for Latin American and Caribbean countries for the past 20 years.

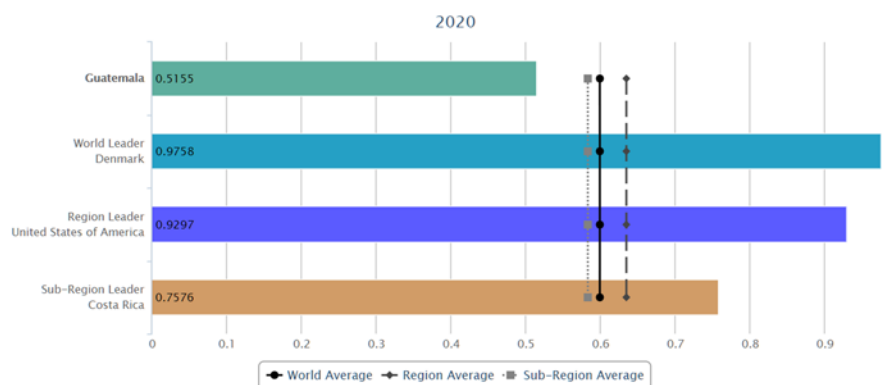


Source: GOVDATA 360, The World Bank <https://govdata360.worldbank.org/>

Figure 11-13 Perceptions of "Government Effectiveness" (2000-2019)

According to the United Nations' Electronic Government Development Index, the development of e-Government in Guatemala is below average at the global, regional, and subregional levels.

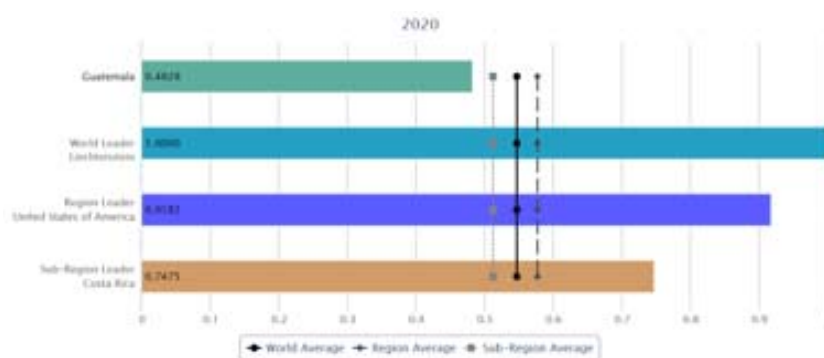
⁵⁵ "Security, justice, and governance factsheet", USAID <https://www.usaid.gov/sites/default/files/documents/security-justice-governance-factsheet-Guatemala-en.pdf>



Source: E-Government Development Index, UNeGovKB, <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/69-Guatemala>

Figure 11-14 Guatemala "E-Government Development Indicators" 2020

Looking at the sub-indicators, the status of telecommunication network development, which is one of the foundations of e-government development, is lower than the regional and global averages. For example, according to the "COVID-19 Impact Study on JICA's Ongoing Projects," which was conducted separately in this study, the sub-police station in the Guatemalan province, which is the project site of the Guatemalan "Community Police Project (2012-2025)," did not have Internet access and was unable to participate in online training, which is frequently used in the COVID-19 disaster and it is clear that the Internet environment needs to be improved.



Source: Telecommunication Infrastructure Index, UNeGovKB, <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/69-Guatemala>

Figure 11-15 Guatemala "Communication Network Development Indicators"

In terms of local government, politics is concentrated in the cities near Guatemala City, and there is a need to strengthen the capacity of local government for effective development. In the COVID-19 disaster, local governments had to implement contingency plans and spent their budgets on purchasing food and medical supplies and were unable to implement their budgets for infrastructure development and other social development⁵⁶.

In addition, most local governments in Guatemala have not digitized information. For example, many citizens do not have their births registered and the local government lacks available data, and as a result, it is not able to carry out proactive activities for informal citizens. There is a need for better management, systematization, and access to information⁵⁷.

⁵⁶ "Asociación Nacional de Municipalidades de la República de Guatemala – ANAM" (interviewed on December 2, 2021)

⁵⁷ "Asociación Nacional de Municipalidades de la República de Guatemala – ANAM" (interviewed on December 2, 2021)

In addition, there are still areas in Guatemala where criminal organizations are implementing social projects such as hospitals and road maintenance because the government does not provide the necessary schools and hospitals. The government's budget execution is mainly focused on the Guatemalan provinces, which has led to mistrust of the central government among the local population⁵⁸.

c) Rule of Law

With respect to GBV, and as discussed earlier in the corruption section, and as shown in the WGI, the level of "rule of law" in Guatemala is extremely poor compared with the average for the Latin American and Caribbean regions.



Source: GOVDATA 360, The World Bank <https://govdata360.worldbank.org/>

Figure 11-16 Rule of Law Indicators (2020 – 2019) in Guatemala

According to the Prosecution Authority (Ministerio Público), COVID-19 has had a profound impact on the "rule of law" in Guatemala, where impunity has long been an issue. For example, as COVID-19 infection spread, the courts had to temporarily close the audiences. Also, in the process of investigating crimes, almost all procedures in Guatemala are being conducted with paper documents, which resulted in some cases taking up to a year just to submit evidence. These experiences have called for the digitization of procedures in the judicial process. In addition, the Guatemalan judiciary system currently has very low credibility among the population, and to solve this problem, there is a need to train legal professionals and modernize the law⁵⁹.

3) Citizen Security

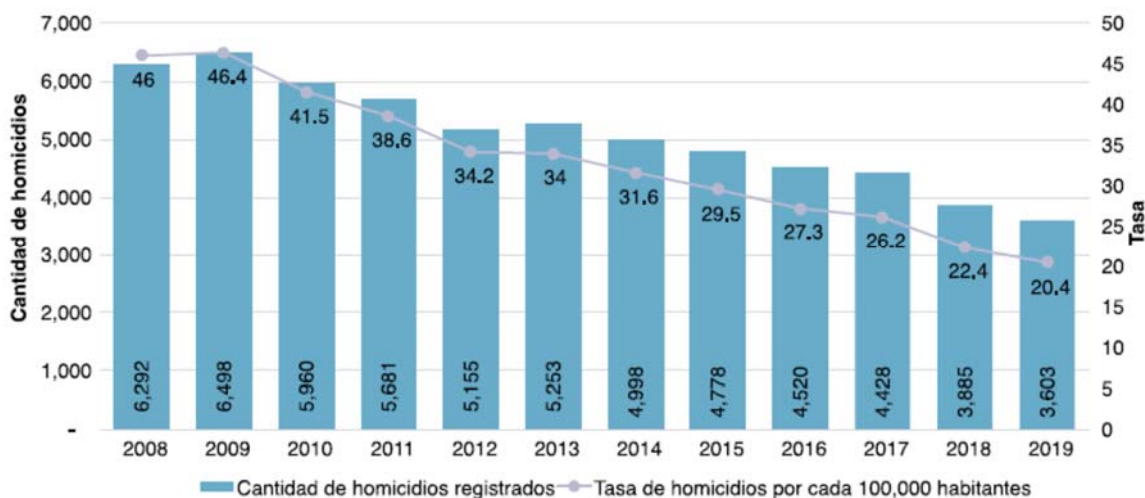
Guatemala faces major citizen security issues, including extortion, theft, murder, disappearance, and violence against women. Based on the recognition that citizen security is essential for national development and democracy, one of the five pillars of the long-term national development plan "K'atun Nuestra Guatemala 2032", "National Human Rights Protection and the State as a Development Leader", clearly states that the number of homicide per 100,000 people should be reduced to ten by 2032, and that, as one of the activities to achieve this, the government agencies responsible for citizen security should emphasize efforts for "crime prevention".

Although the crime rate in Guatemala has declined by 14.1% over the past ten years, citizen security remains a significant challenge (Infosegura 2021). For example, although the homicide rate

⁵⁸ Advisor to the vice minister of "Viceministerio prevención de la violencia y de delitos" - Ministerio de Gobernación (interviewed on December 3, 2021)

⁵⁹ "Oficina del Ministerio Público - Fiscalía especial contra la impunidad" (interviewed on December 1, 2021)

decreased from 46.4 per 100,000 in 2009 to 20.4 per 100,000 in 2018, it is still high compared with the global average (5.8 per 100,000).



Source: National Policy 2020-2024

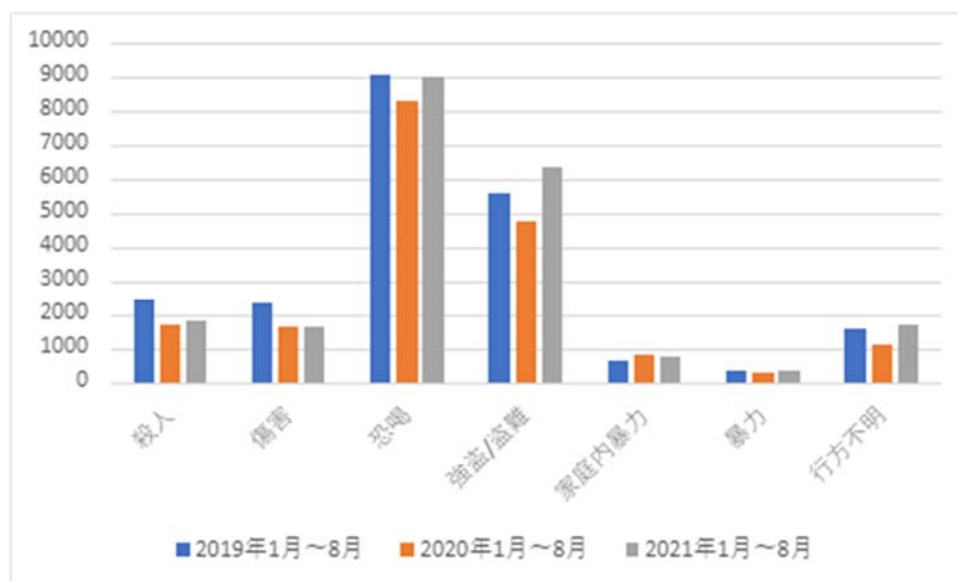
Figure 11-17 Homicide Rate and Number of Homicides: 2008 to 2019

Regarding crime occurring under COVID-19, the number of crimes committed in 2020, excluding domestic violence (an increase of 29.2% from 2019), decreased from 2019. For example, homicide cases decreased by 28%, injury cases by 22.7%, kidnapping by 22.4%, and theft by 19.9%, with the corresponding decline evident during the movement restrictions due to COVID-19 (Infosegura 2021).

Among domestic violence, which increased sharply in 2020, 68.4% of those who called the national police were women. Among women who have been victims of domestic violence, 68.4% have been subject to violence from their housemates and 19.2% have been subject to violence from their parents.⁶⁰ In Guatemala, where domestic violence had been an issue since before COVID-19, as in other Latin American countries, domestic violence seems to have been exacerbated by the COVID-19 crisis.

The crime rate in the first half of 2021, when restrictions on movement, such as curfews, were eased compared with 2020, is confirmed. Homicides increased by 14% (1,807) in 2021 compared with the same period in 2020 (1,671), but less than the same period in 2019 (2,476), before the pandemic. This is due to the fact that abstinence from alcohol and restrictions on movement were partially enforced. By gender, the number of male homicides increased by 12%, while that of female homicides increased by 25%. Most homicide victims were between the ages of 18 and 29, an increase of 27% from the previous year between January and June 2021.

⁶⁰ Guatemala: Situación de seguridad ciudadana 2020, Infosegura, <https://infosegura.org/2021/06/09/guatemala-situacion-de-seguridad-ciudadana-en-2020/>



From the left: Killing/ Injury/Threat, Robber/Violence within family/ Violence/ Missing
 Source: Infosegura, https://infosegura.org/wp-content/uploads/2021/10/ppt_guatemala_dataccion_7cot21.pdf

Figure 11-18 Comparison of the Number of Crimes Committed (2019, 2020, 2021)

(2) Honduras

1) Government's Response to COVID-19

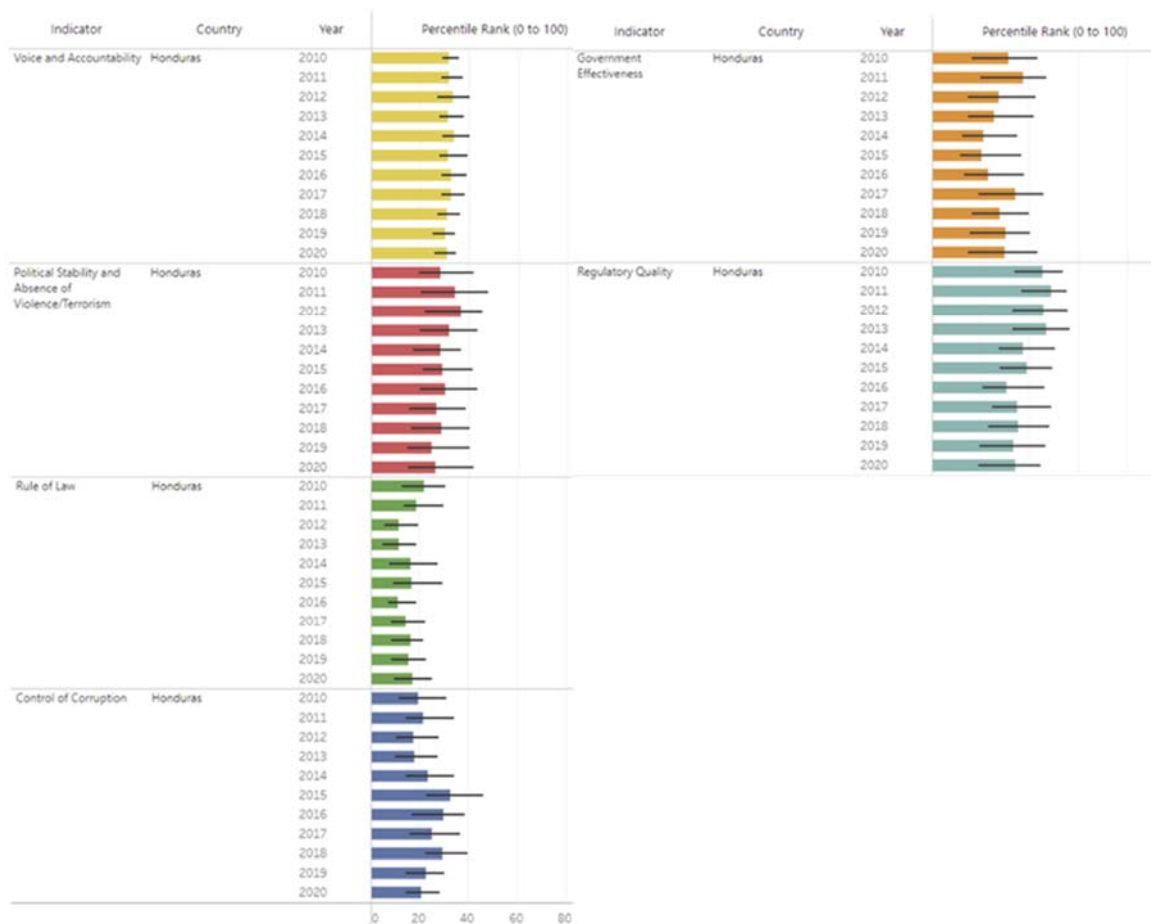
The first case of COVID-19 infection in Honduras was confirmed in March 2020. Since then, the government has implemented a series of severe measures to prevent the spread of COVID-19.⁶¹ First, a national health emergency was declared.⁶² The declaration resulted in the launch of the National Risk Management System (SINAGER) through the permanent Emergency Response Committee (COPECO), which, in addition to curfews, restricted freedom of movement, assembly, and movement across borders.

In relation to the government's response to COVID-19, the National Anticorruption Commission (CNA) alleged fraud in the procurement process of ventilators and medical supplies and mismanagement of mobile hospitals.⁶³ Also, according to a series of investigative reports on COVID-19-related goods urgently procured by the Honduran Strategic Investment Organization (INVEST-H), a government agency, the occurrence of misconduct (loss of goods) at the time of purchase, acts of conflict of interest, higher prices than usual due to purchase price manipulation, among others were revealed, which led to the resignation of the head of INVEST-H.⁶⁴

2) Governance

The population of Honduras was 9.2 million, of which 55.7% lived below the poverty line (ECLAC, 2018).⁶⁵ Income distribution is highly unequal, informal employment is very common and affects the most vulnerable. Fragile institutions (since the 2009 coup d'état, participatory democracy has

⁶¹ <https://covid19honduras.org/Comunicados?page=63>
<https://presidencia.gob.hn/index.php/sala-de-prensa/7016-decreto-ejecutivo-numero-pcm-021-2020>
<https://graphics.reuters.com/world-coronavirus-tracker-and-maps/es/countries-and-territories/honduras/>
⁶² <http://www.consejosecretariosdeestado.gob.hn/content/declaraci%C3%B3n-de-estado-de-emergencia-sanitaria>
⁶³ <https://www.cna.hn/la-corrupcion-en-tiempos-de-covid-19/>
⁶⁴ <https://worldjusticeproject.org/world-justice-challenge-2021/constructing-transparency-promoting-justice-honduras-through-good>
⁶⁵ https://estadisticas.cepal.org/cepalstat/Perfil_Nacional_Social.html?pais=HND&idioma=spanish



Source: The World Bank “Worldwide Governance Indicators 2020”
<https://info.worldbank.org/governance/wgi/Home/Reports>

Figure 11-19 Honduras: Worldwide Governance Indicators 2010-2020

a) Democracy level

The impact of poor governance in Honduras is reflected in the population's confidence in public institutions and democracy. More than 60% of the population said they had "little or no confidence" in the military, judiciary, police, parliament, and political parties (Latinobarómetro 2018).

A closer look at the level of confidence in political parties, which are supposed to articulate the interests of the people, reveals a downward trend since the 2000s, particularly after 2015. More than half of the people responded that they "have little confidence" or "do not have confidence" (Latinobarómetro 2021).

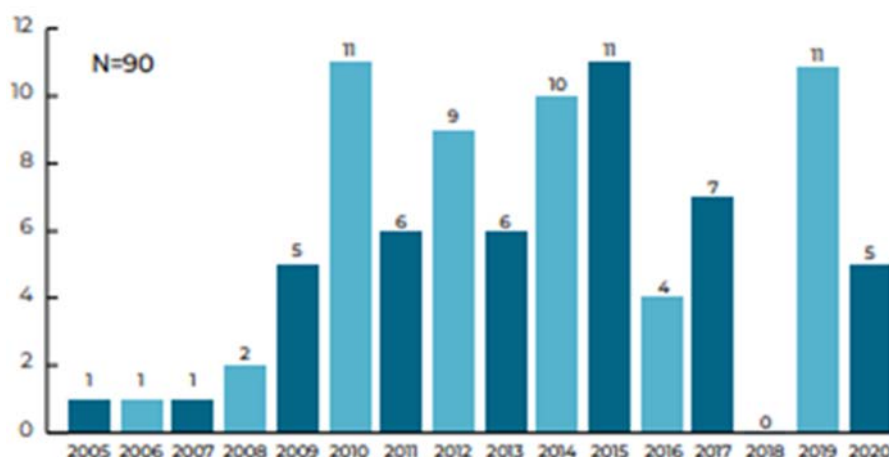
The population's distrust of politicians exists as a historical fact, and the trend of increasing lack of confidence continues. Furthermore, such distrust is not only directed towards politicians, but also all forms of authorities, including the police, parliament, and judiciary system.

One of the events that further exacerbated this trend was the 2017 presidential election, which raised several serious doubts about the security of the voting data processing system and drew strong criticism from both opposition parties and international organizations. Corruption, impunity for crime, and rampant violence have provoked public outrage.⁷⁴ Corruption in the purchase of medical supplies

⁷⁴ <https://nuso.org/articulo/indignacion-y-crisis-politica-en-honduras/>
<https://nacla.org/news/2021/02/08/honduras-policia-desconfianza>

and equipment during the pandemic, as well as the United States case of drug trafficking involving Honduran politicians, have led to a further amplification of existing distrust⁷⁵.

According to Freedom House, Honduras's Global Freedom Score stands at 44/100 (19/40 for political rights, 25/60 for civil liberties), and was classified as "a partially free country" in 2020 (Freedom House 2021). For example, the freedom of the press stipulated in the Constitution is not guaranteed. Media and journalists dealing with sensitive topics that the government does not want to be exposed to are at risk of attacks, threats, killings, interference with broadcasting, and harassment.⁷⁶ According to the data released by the Centre for Monitoring Violence at the National Autonomous University of Honduras, 90 journalists have been killed in the last 15 years from 2005.



Source: Observatorio nacional de violencia de la Universidad Nacional Autónoma de Honduras (UNAH)
<https://iudpas.unah.edu.hn>

Figure 11-20 Killings of Journalists during 2005-2020

According to an interview with Asociación para una Sociedad más Justa (ASJ), a local NGO that specializes in corruption and citizen security issues,⁷⁷ Honduran civil society faces further difficulties, as it is fragmented, constrained, with very fragile social basis, and the power is concentrated in a small number of high-profile individuals.

The activities of political parties are generally free, but since the early 1980s, the power has been concentrated mainly in the Liberal Party and the National Party, and in 2013 the "Partido Anticorrupción (PAC)" took part in the election for the first time and won a considerable number of votes to defeat the control of the Liberal Party and the National Party.⁷⁸ Opposition parties are competitive, with opposition candidates garnering significant votes in both legislative and presidential elections in 2017. However, due to several serious irregularities in the operation of the Supreme Election Court (TSE) during the presidential election, election observers from the EU and the OAS questioned the validity of the ballot counting, while the opposition claimed that the Supreme Election Court, an organization leaning toward the National Party, denied that the opposition candidate had won the presidential election.⁷⁹

⁷⁵ https://www.swissinfo.ch/spa/honduras-gobierno_la-desconfianza-de-los-hondure%C3%B1os-en-sus-autoridades-sigue-en-aumento/46528876

⁷⁶ <https://presencia.unah.edu.hn/noticias/onv-unah-demanda-justicia-por-crimenes-contra-profesionales-de-la-comunicacion/>

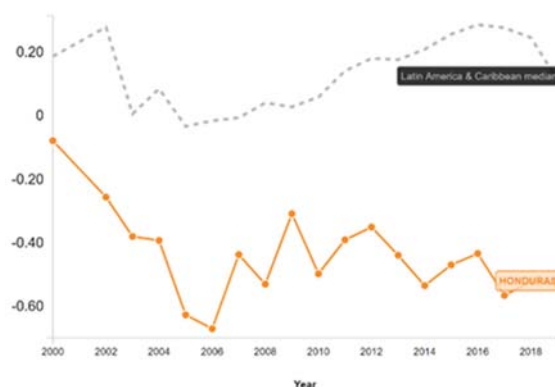
⁷⁷ "Asociación para una Sociedad más Justa de Honduras" (interviewed on October 12, 2021)

⁷⁸ <https://www.dw.com/es/honduras-el-fin-del-bipartidismo/a-17237477>

⁷⁹ <https://nuso.org/articulo/indignacion-y-crisis-politica-en-honduras/#footnote-1>

<http://oacnudh.hn/wp-content/uploads/2018/05/EleccionesHonduras2017-InformeViolacionesDerechosHumanos.pdf>

As a result, the political stability of Honduras has been very irregular in recent years (Figure 11-21). Xiomara Castro, a member of the leftist opposition coalition, won the presidential election held on November 28, 2021, as Hernandez's term expired. Castro, who has been inaugurated as Honduras' first female president on January 27, 2022, is also the wife of former President Zelaya, who was ousted in a 2009 coup. During the campaign, Castro called for "improved security," the "establishment of e-government," and the "eradication of corruption"⁸⁰.



Source: GOVDATA 360, Banco Mundial
https://govdata360.worldbank.org/indicators/hb0673e03?country=GTM&indicator=376&viz=line_chart&years=2000,2019

Figure 11-21 Indicators of "Political Stability" in Honduras

b) Administrative Functions

Honduras' Corruption Perception Index (CPI) in 2020 was ranked as 157/180 with a score of 24/100 (Transparency International 2020).⁸¹

Honduras has strengthened its anti-corruption mechanisms in recent years, but corruption continues to be rampant. The Mission Against Corruption and Impunity (MACCIH), established in 2016, contributed to the passage of an anti-corruption law aimed at preventing fraudulent campaign contributions and assisted in the work of the Special Prosecution Unit (UFECIC), which investigates corruption and impunity in the Attorney General's Office. According to MACCIH's April 2019 report, 120 people have been indicted for corruption, 70 of whom are government officials.

In January 2020, the Organization of American States (OAS) discussed with the Honduran government the renewal of the MACCIH for a period to continue its work, and although it had the support of most of the population (75%), no agreement was reached⁸². 2019 was a year in which several corruption cases involving high-ranking officials, including former President Porfirio Lobo and his family, went to trial in the country and abroad. In addition, former President Hernandez, whose term has expired on January 27, 2022, was allegedly directly involved in corruption.

The government's operations are generally opaque, making it difficult for the press and other groups to obtain information from the government, and a Secrecy Law passed in 2014 that allows authorities to withhold information on national security and defense for up to 25 years⁸³. The law protects information related to the budget of the military and police, which is funded by security taxes,

⁸⁰ <https://www.libre.hn/plan-de-gobierno-de-xiomara-2022-2026>

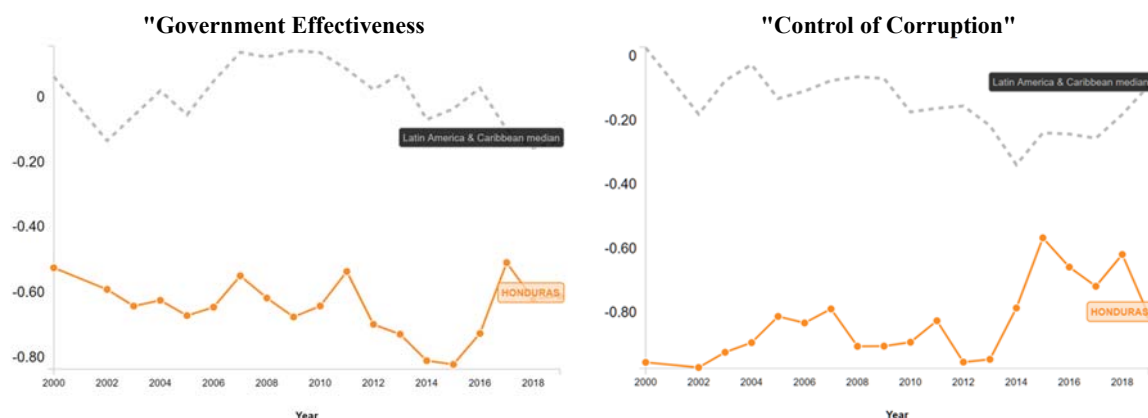
⁸¹ <https://www.transparency.org/en/countries/honduras>

⁸² IV Encuesta de Percepción Ciudadana sobre Inseguridad y Victimización en Honduras. IUDPAS-UNAH, 2019

<https://iudpas.unah.edu.hn/estudios-e-investigaciones-nacionales/>

⁸³ <https://cnnespanol.cnn.com/2014/01/17/descontento-en-honduras-por-la-aprobacion-de-la-ley-de-secretos-oficiales/>

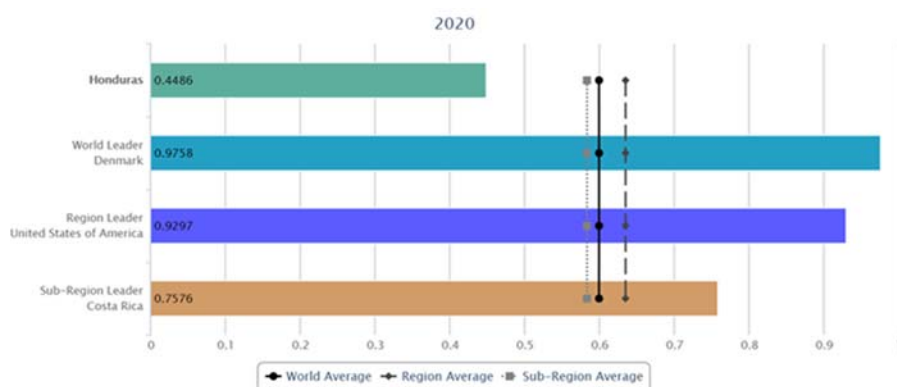
as well as information about the Supreme Court and the Bureau of Diplomacy and International Cooperation.⁸⁴



Source: GOVDATA 360, Banco Mundial <https://govdata360.worldbank.org/>

Figure 11-22 Indicators Related to "Administrative Functions" in Honduras: 2000-2019

Honduras is medium level in the e-Government Development Index (EGDI) according to the UN e-Government Survey 2020⁸⁵. Figure 11-23 shows the e-Government Development Index of Honduras. In 2020, the telecommunications infrastructure index was 0.3244 against the regional average of 0.5763, and the human capital index was 0.5568 against the regional average of 0.7453. Communications infrastructure and human capital need to be developed.



Source: E-Government Development Index, UNeGovKB, <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/74-Honduras>

Figure 11-23 E-Government Development Index of Honduras in 2020

c) Rule of Law

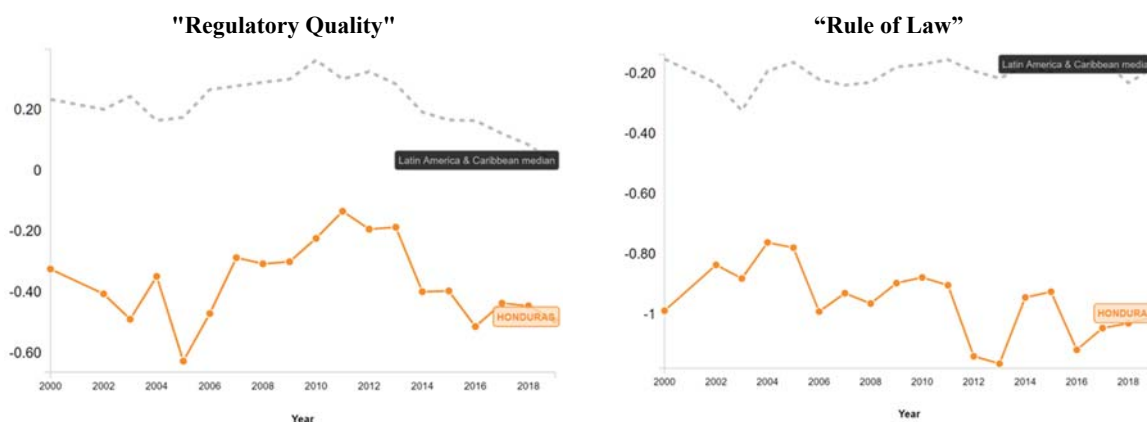
Elites in the political and business sectors are exerting excessive influence on judicial power, including the Supreme Court. Judicial appointments are less transparent, and the Inter-American Court of Human Rights (IACHR) reports that the Supreme Court overcontrols appointments.⁸⁶ Judges have been dismissed for political reasons, including the murder of several legal professionals in recent years. Prosecutors in charge of corruption cases and corruption whistleblowers are often threatened with violence (Freedom House, 2020).

⁸⁴ https://www.oas.org/en/spa/dsds/maccih/new/docs/20170705_maccih_5.pdf

⁸⁵ [https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20\(Spanish%20Edition\).pdf](https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20(Spanish%20Edition).pdf)

⁸⁶ <https://www.oas.org/es/cidh/informes/pdfs/Honduras2019.pdf>

The judicial process has also been limited by a decline in the functioning of the entire judiciary and by corrupt police forces, many of whom are involved in criminal activities such as drug trafficking and extortion. As governments increasingly rely on the military to control crime and violence, arbitrary arrests and detentions and prolonged preventive detention are common.



Source: GOVDATA 360, Banco Mundial <https://govdata360.worldbank.org/>

Figure 11-24 Rule of Law 2000-2019 in Honduras

3) Citizen Security

The Inter-American Commission on Human Rights (IACHR) Report⁸⁷ indicates that in the last ten years, Honduras was one of the most violent countries in the world, with 86.5 homicides per 100,000 people in 2011. The report points out that the source of violence is the penetration of drug traffickers and criminal organizations into various state agencies. However, the homicide rate in Honduras continued to decline from 59.1/100,000 in 2016, and by the end of 2018, it was 40.86/100,000. The government has formulated the Interinstitutional Strategic Security Plan 2018-2022 with the goal of reducing the homicide rate by eight percentage points each year to 11/100,000 by 2021.

The government has reinforced the military security police (PMOP) and other security forces in response to widespread and recurrent violence, often using excessive force (IACHR 2019).



Source: DATAUNODC, Homicide Rate <https://dataunodc.un.org/content/data/homicide/homicide-rate>

Figure 11-25 Homicide Rate in Honduras

⁸⁷ <https://www.oas.org/es/cidh/informes/pdfs/Honduras2019.pdf>

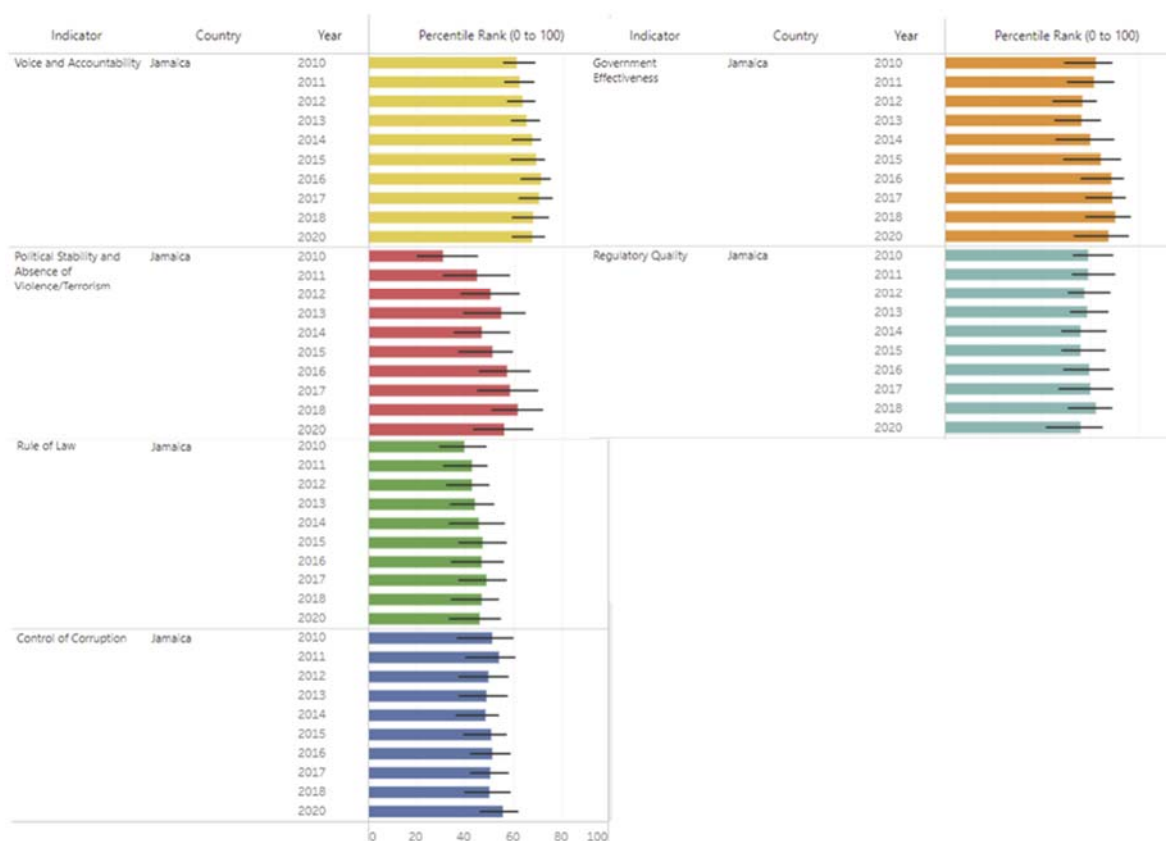
(3) Jamaica

1) Government's Response to COVID-19

Jamaica was less affected by the pandemic throughout 2020 compared with many other parts of the region. However, the number of infected people began to increase gradually from the end of August, and by the end of the year, there were about 13,000 infected people and more than 300 people had died.⁸⁸ In March 2020, the Prime Minister declared a state of emergency and implemented social isolation measures, curfews, a range of restrictions on freedom of movement, and border closures.⁸⁹ ⁹⁰ The measures are generally considered appropriate and legal.⁹¹ (IDEA International 2020).

2) Governance

Figure 11-26 shows the “Worldwide Governance Index” for Jamaica from 2010 to 2020. All indicators perform better than the Latin American region’s average, but are below 50% for the rule of law and control of corruption.



Source: The World Bank Global Governance Index 2020
<https://info.worldbank.org/governance/wgi/Home/Reports>

Figure 11-26 Jamaica “Worldwide Governance Indicators” 2020

a) Democracy level

Jamaica's political system has been stable in recent years, characterized by democratic and competitive elections, and orderly transitions in power (Figure 11-27). Corruption remains a serious problem, however, with long-standing relationships between government officials and organized

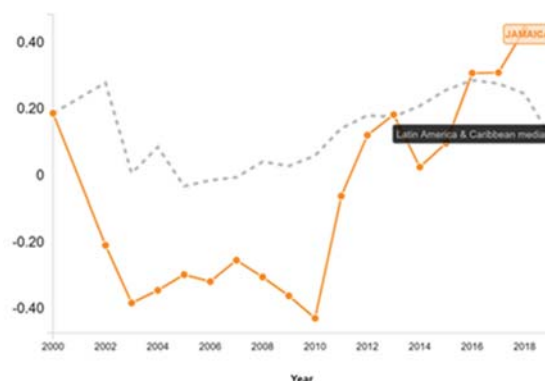
⁸⁸ <https://freedomhouse.org/country/jamaica/freedom-world/2021>

⁸⁹ <https://jis.gov.jm/jamaica-declared-a-disaster-area-as-covid-19-cases-increase-and-two-communities-quarantined/>

⁹⁰ <https://graphics.reuters.com/world-coronavirus-tracker-and-maps/ja/countries-and-territories/jamaica/>

⁹¹ <https://www.idea.int/gsod-indices/countries-regions-profile?rsc=%5B51%5D&covid19=1>

criminals (Freedom House 2021). Jamaica's level of civil liberties has consistently exceeded the Latin American and Caribbean average. There was no change in the election schedule due to COVID-19.



Source: GOVDATA 360, The World Bank <https://govdata360.worldbank.org/>

Figure 11-27 Political Stability in Jamaica 2000-2019

b) Administrative Functions

Government policy decisions are made by elected prime ministers and representatives of legislative bodies, but powerful criminal groups are also involved in political corruption and may have an impact on democratic policy decisions. There is a long-standing connection between government officials and organized criminals. Government agencies continue to investigate corruption cases and are often found guilty, but media and NGOs have criticized the authorities for being reluctant to prosecute them. Also, whistleblowers within the government are not adequately protected (Freedom House 2020).

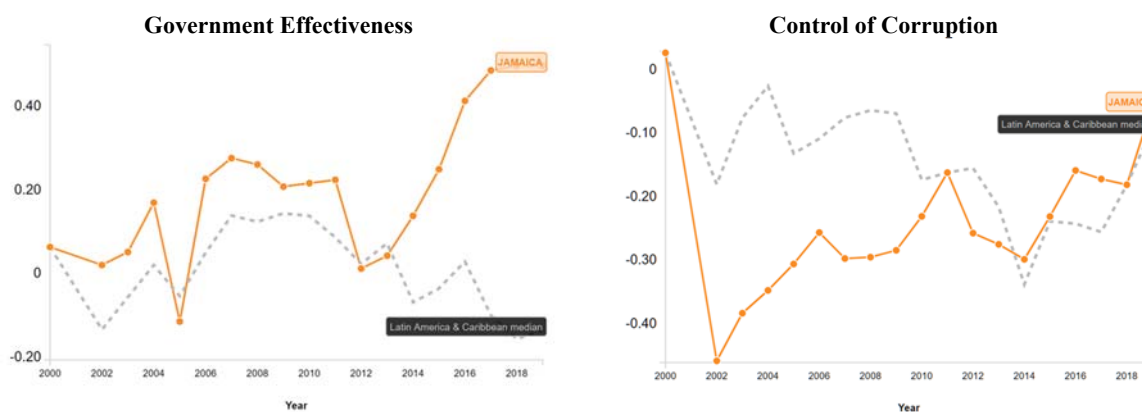
Jamaica's 2020 Corruption Perception Index is 69/180, with a score of 44/100 (Transparency International 2020). In recent years, new efforts have been made to eradicate corruption, such as the enactment of the Integrity Committee Act of 2017, which obliges lawmakers and public servants to disclose their income, liabilities, and assets. The law simplifies the Anticorruption Law and empowers only the Integrity Committee to oversee compliance⁹². Launched in 2018, the Commission sent six investigative reports to Congress in May 2019 in its first year of operation and announced that it had monitored 500 government projects, none of them were prosecuted.

A law passed in 2018 mandated the establishment of an independent Major Organized Crime & Anti-Corruption Agency (MOCA)⁹³. At the end of 2018, MOCA arrested five members of the JCF, three of whom were charged with extortion and corruption offences⁹⁴.

⁹² https://integrity.gov.jm/integrity_commission_act

⁹³ <https://www.moca.gov.jm/>

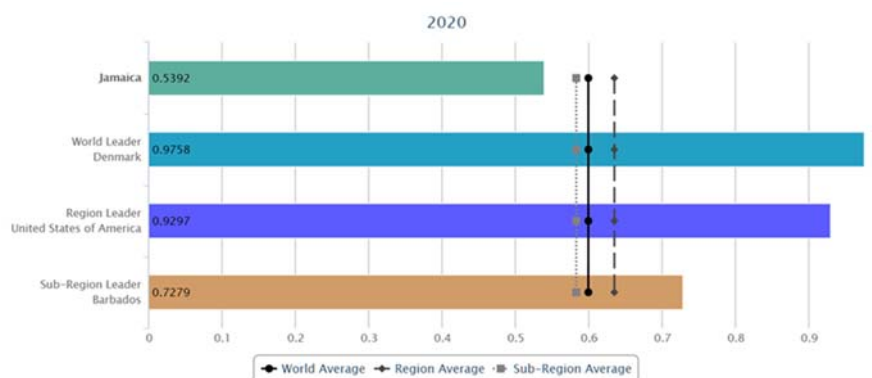
⁹⁴ <https://web4.jamaica-gleaner.com/article/news/20180914/five-cops-arrested-extortion-and-corruption>



Source: GOVDATA 360, The World Bank <https://govdata360.worldbank.org/>

Figure 11-28 "Administrative Functions" in Jamaica, 2000 to 2019

The degree of "government effectiveness" has improved dramatically since 2012. For example, the Jamaican government has made digitization of administrative procedures one of its main national strategies. As of February 2020, however, only 8% of administrative procedures in Jamaica have been completed online. Therefore, the Ministry of Science, Energy and Technology has established eight strategies⁹⁵ and has been working to bring Jamaica's e-Government levels up to global standards.⁹⁶



Source: eGovernment Development Index UNeGovKB

<https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/84-Jamaica>

Figure 11-29 Jamaica's E-Government Development Index 2020

c) Rule of Law

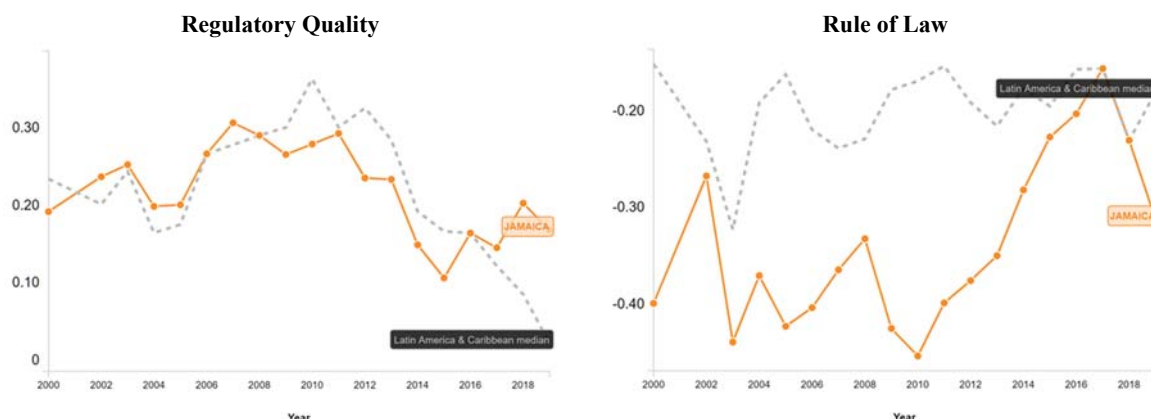
The independence of the judiciary system in Jamaica is guaranteed by the Constitution, and generally considered to remain independent, although corruption remains a concern in some lower courts.⁹⁷ In addition, the enormous amount of cumulative court papers and the lack of judicial personnel at all levels make the judicial system vulnerable. As a result, trials are often delayed for many years and even rejected due to problems with the court system. To reduce the delay, the government passed a plea bargaining and negotiation law under the Criminal Court Act in 2017, paving the way for non-judicial settlement.

⁹⁵ Government-wide broadband infrastructure, data collection and information sharing policies, public key infrastructure, digital national identification systems, data protection laws, electronic commerce, the digitization of 32 million government records across governments.

⁹⁶ "Williams reports progress on digital Jamaica initiative". The Gleaner Jan 24 2020. <https://jamaica-gleaner.com/article/business/20200124/williams-reports-progress-digital-jamaica-initiative>

⁹⁷ <https://freedomhouse.org/country/jamaica/freedom-world/2021>

Figure 11-30 shows a demonstration of the rule of law and shows that Jamaica improved its performance considerably between 2010 and 2016.



Source: GOVDATA 360, The World Bank <https://govdata360.worldbank.org/>

Figure 11-30 Rule of Law in Jamaica 2000-2019

3) Citizen Security

The homicide rate in Jamaica is the highest in the Caribbean. The homicide rate was 56.4 per 100,000 in 2017, far higher than the Caribbean average of 14. In 2020, it recorded the worst homicide rate in Latin America and the Caribbean. Violence continued to surge in 2021, with an average of more than 100 murder cases per month.⁹⁸ In addition, almost half of the murder cases recorded up to early March occurred in broad daylight.⁹⁹

Poverty, drug trafficking, gangs, arms smuggling from Haiti, and the structural vulnerability of the police are the main causes of citizen security problems in this country¹⁰⁰. According to an interview with Professor Anthony Clayton of West Indies University¹⁰¹, the causes of security problems in Jamaica have deep-rooted cultural and socioeconomic factors (high levels of violent crime, low levels of education, among others), weaknesses in the justice system, corruption, and the connection between organized crime and the justice system. Lack of public trust in the justice system has led to "community reprisals," further compounding the problem. Furthermore, there is strong resistance in Jamaica to restrict access to firearms. Past interventions in the citizen security sector were not successful, not because of lack of resource, but due to inefficiency.

On the other hand, the Jamaica Police Force is facing several challenges such as the murder of perpetrators committed by police officers that remains a serious problem¹⁰². Violence by gangsters and their patrols has also a frequent occurrence. This is because Jamaica is a transit point for drug trafficking, and many of the violent incidents that occur appear to be conflicts between drug trafficking organizations. Although successive governments have made various efforts to address this problem, deep-rooted crimes and violence persist. The State of Public Emergency (SOE), which gives security forces greater

⁹⁸ <https://es.insightcrime.org/noticias/jamaica-reformas-detener-violencia-mejorar-lucha-crimen/>
<https://jcf.gov.jm/stats/>

⁹⁹ <https://jamaica-gleaner.com/article/news/20210309/daytime-murders-latest-police-stats-show-over-120-homicides-committed-during>

¹⁰⁰ <https://insightcrime.org/news/analysis/jamaica-haiti-drugs-guns/>

¹⁰¹ Prof. Anthony Clayton, Jamaica specialist of citizen security (interviewed on December 10, 2021)

¹⁰² <https://www.indecom.gov.jm/reports>

powers when issued, is often applied when there is a sharp increase in localized violent crime, but is frequently criticized as unconstitutional¹⁰³.

As the number of victims of violence is increasing, the government has made this issue a priority and has taken the following measures:

- “National Consensus on Crime” was formulated in mid-2020.¹⁰⁴ The plan calls for priority implementation of effective social and regional programmes, reform of the Jamaican police force, and integration of the military into targeted crime eradication activities in areas where homicides and other heinous crimes are prevalent.
- The government revised the Firearms Act established in 1967, which had been outdated.¹⁰⁵ According to the Ministry of Security, illegal firearms are used in about 80% of homicides in the country.¹⁰⁶
- Amendment of the Anti-Gang Legislation¹⁰⁷, strengthening the autonomy of the MOCA, and constitution of a FBI-style unit focused on advanced organized crime cases.¹⁰⁸
- In early February 2021, a USD 1 million plan called Secure Jamaica was launched¹⁰⁹ to complement the activity of the "National Consensus on Crime" which has already been promoted.

It should be emphasized that the government hopes that international cooperation organizations will play a major role in maintaining security in the following areas and has a strong intention to reach out to them.

Table 11-29 Consultation with International Cooperation Agency on Possible Cooperation Schemes (April 2021)

Type of Assistance	Contents
Technical assistance	<ul style="list-style-type: none"> • Mechanisms for Coordination among Key Stakeholders • Resource Mapping (Community Level) • Central Hub for Data Management • Monitoring and Evaluation
Program assistance	<ul style="list-style-type: none"> • Crime and Prevention Reduction • Social Equity and Social Inclusion • Promoting Reintegration • Victim Support and Empowerment

Source: The Study Team based on “Strengthening and Reshaping Social Investment for Community Renewal - A Conversation with IDPs - The Honorable Dr. Horace Chang, CD, MP., Deputy Prime Minister & Minister of National Security (April 2021)

(4) Nicaragua

1) Government's Response to COVID-19

The government has taken measures to restrict or prohibit the entry of foreign tourists, and to close and control national borders (CEPAL COVID-19 Observatory).

¹⁰³ <https://freedomhouse.org/country/jamaica/freedom-world/2021>

¹⁰⁴ <https://www.psoj.org/wp-content/uploads/2020/08/Jamaicas-National-Consensus-on-Crime-The-Agreement-Final-1.pdf>

¹⁰⁵ <https://moj.gov.jm/sites/default/files/laws/Firearms%20Act.pdf>

¹⁰⁶ <https://jamaica.loopnews.com/content/chang-promises-modern-firearms-act-tackle-gun-crimes>

¹⁰⁷ <https://jis.gov.jm/anti-gang-legislation-approved-senate/>

¹⁰⁸ <https://jamaica.loopnews.com/content/moca-gets-independent-agency-status-april-1-chang>

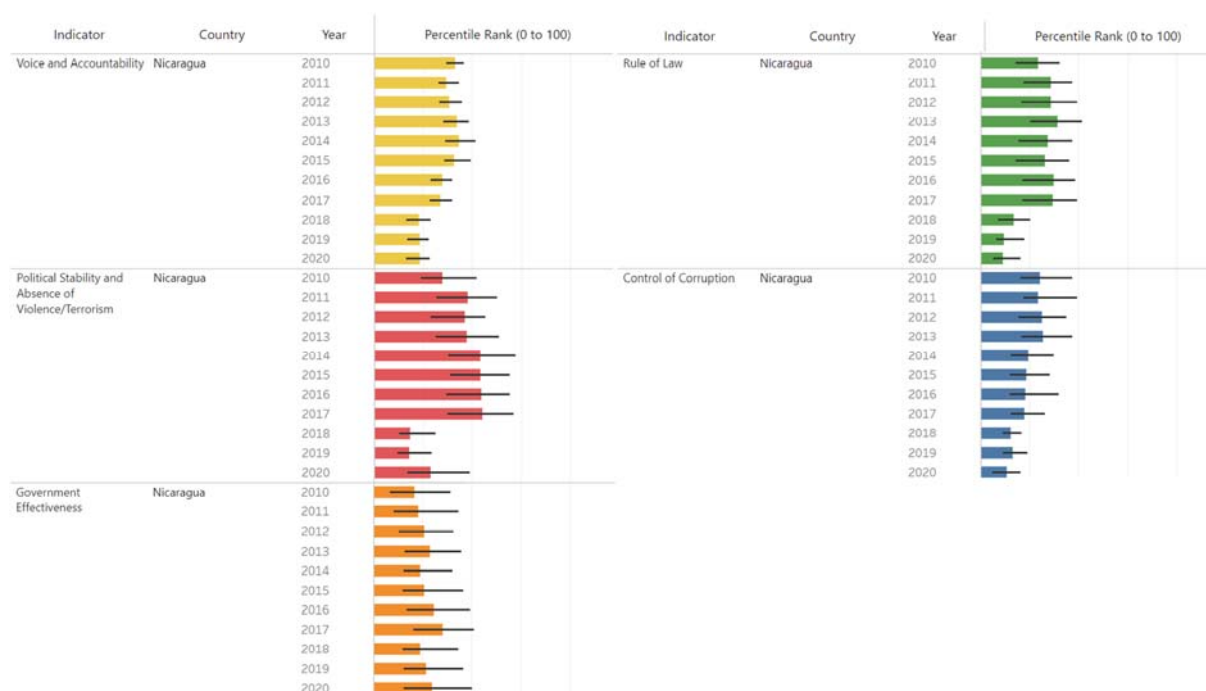
¹⁰⁹ <https://www.mns.gov.jm/sites/default/files/Press/Press%20Release%20Securing%20Our%20Citizens%2002.2021.pdf>

2) Governance

Nicaragua is one of the poorest countries in Latin America and the Caribbean in terms of average per capita income and ranks fourth in poverty rate (The World Bank, 2020).

Nicaragua has been a hybrid regime since 2016 (IDEA International 2020). The socio-political crises affecting Nicaragua since April 2018 have resulted to widespread poverty, unemployment, and inequality, furthermore, it exacerbates due to the hurricane damage of November 2020 and the negative effects of the pandemic.

Figure 11-31 shows the governance indicators for Nicaragua from 2010 to 2020. Overall, the system is vulnerable and political stability declined significantly in 2018.



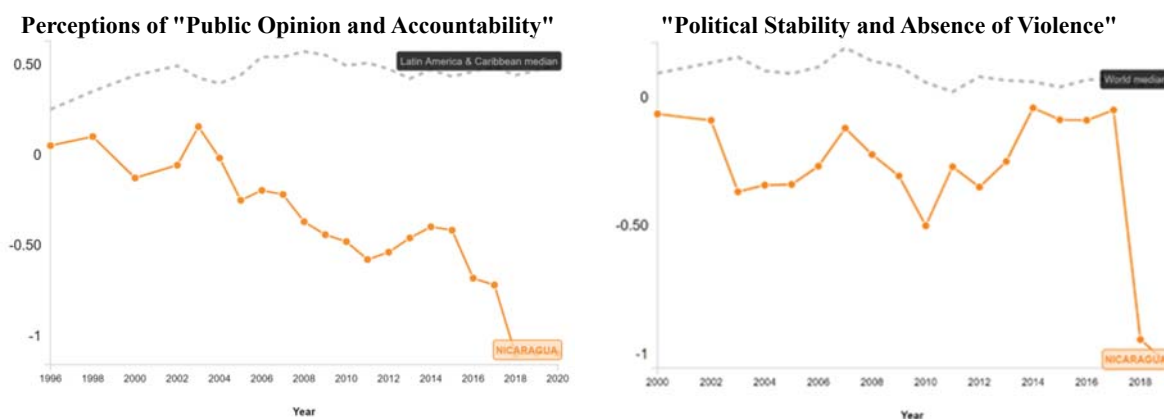
Source: Banco Mundial "Worldwide Governance Indicators 2020"
<https://info.worldbank.org/governance/wgi/Home/Reports>

Figure 11-31 Nicaragua "Worldwide Governance Indicators" 2010-2020

a) Democracy level

The impact of Nicaragua's poor governance is reflected in the low public confidence in public institutions and democracy. Looking at the degree of trust in public institutions and democracy, more than 50% of the people responded that they had "little or no confidence" in the military, the judiciary, the police, the legislature, the Diet, and political parties (Latinobarómetro 2018). When it comes to political parties that serve the interests of the people and that should normally be trusted by them, confidence in political parties is always very low in Nicaragua, as in other Latin American countries, with more than 70% of the population having either "no confidence" or " little confidence" since 2005 (Latinobarómetro 2021).

Figure 11-32 shows the indicators of Nicaragua's "voice and accountability" and "political stability". They have deteriorated since 2015 and declined significantly in 2018 when the socio-political crisis occurred.

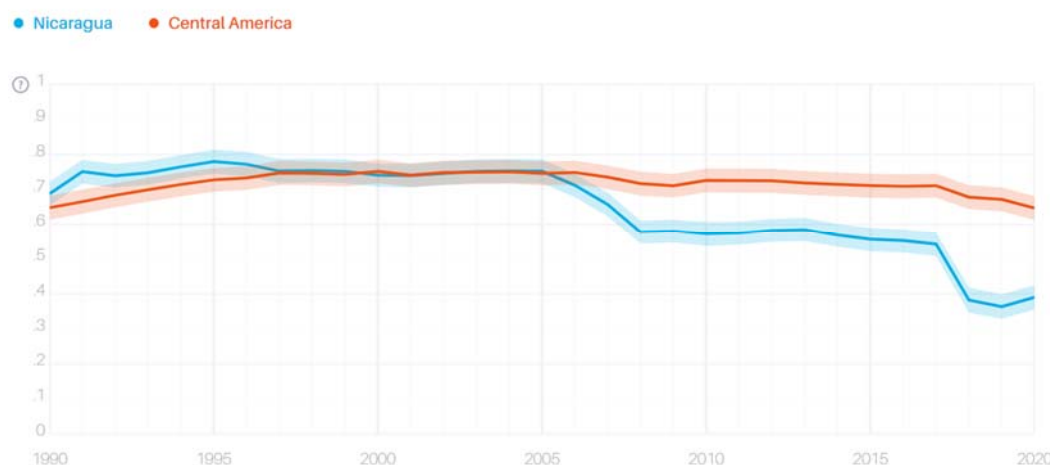


Source: GOVDATA 360, Banco Mundial <https://govdata360.worldbank.org/>

Figure 11-32 Indicators Related to Nicaragua's "Level of Democracy"

Regarding the situation in which important political rights and civil liberties are guaranteed in a democracy, according to Freedom House (2021), Nicaragua's Global Freedom Status is rated very low with 30/100, political rights with 10/40, and civil liberties with 20/60.

Figure 11-33 shows that the level of civil liberties has deteriorated significantly since 2018.



Source: IDEA International, https://www.idea.int/gsod-indices/#!/indices/compare-countries-regions?rsc=%5B93,977,992,999%5D&attr=%5B%22A_01%22%5D

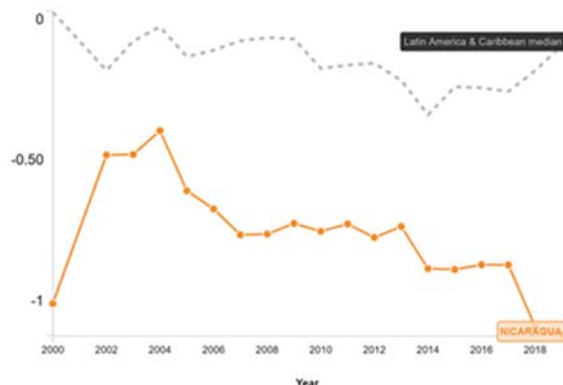
Figure 11-33 Nicaraguan Civil Liberties 1990-2020

Originally, the number of immigrants to other countries (mainly the United States) in Nicaragua was very low compared with Mexico, Guatemala, and El Salvador (about 2,000 people/year on average until 2019). According to a survey on the willingness of Nicaraguans to immigrate to other countries, 19% of Nicaraguans expressed their intention to immigrate in 2019, while the percentage rose sharply to 35% in 2020 and 2021. Furthermore, due to political and economic reasons, approximately 60,000 Nicaraguans expect to migrate to the United States and approximately 40,000 to Costa Rica in 2021, accounting for approximately 2% of the Nicaraguan population.¹¹⁰

¹¹⁰ Interview with Manuel Orozco, Senior Fellow at Inter-American Dialogue, expert on immigration issues, remittances, and development programs, and Director of the Center for Migration and Economic Stabilization at Creative Associates International. The Dialogue. <https://www.thedialogue.org/analysis/orozco-oea-puede-suspender-a-nicaragua-antes-del-7-de-noviembre/>

b) Administrative Functions

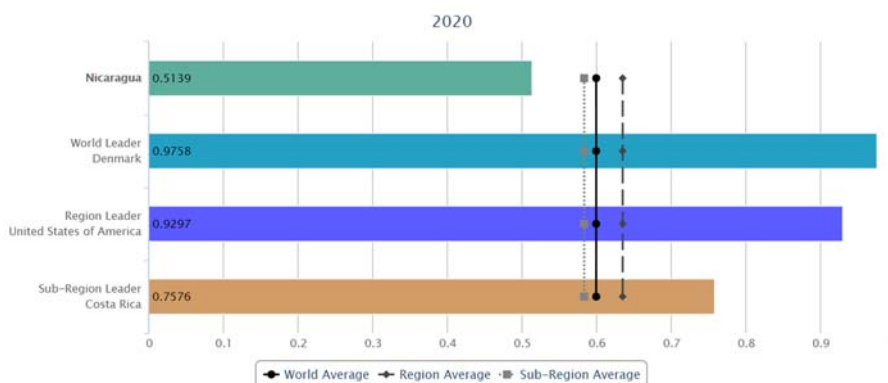
Historically, Nicaragua has suffered from widespread corruption. In 2020, the Corruption Perception Index (CPI) is in the 159/180 position with a score of 22/100 (Transparency International 2020). The Worldwide Governance Indicator's government effectiveness and corruption control show that administrative functions have always been very weak.



Source: GOVDATA 360, The World Bank <https://govdata360.worldbank.org/>

Figure 11-34 Nicaragua Control of Corruption Indicators 2000-2019

Figure 11-35 shows the e-Government development index of Nicaragua. The communication infrastructure index is 0.3812, while the regional average is 0.5763. The human capital index is 0.6133, while the regional average is 0.7453.

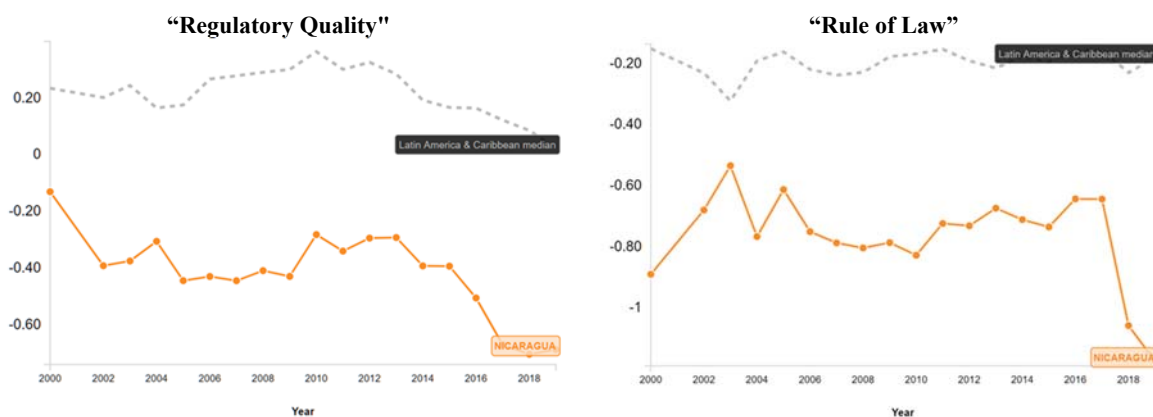


Source: e-Government Development Index, UNeGovKB, <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/123-Nicaragua>

Figure 11-35 Nicaraguan E-Government Development Index 2020

c) Rule of Law

Figure 11-36 shows the trends in the indicators related to the rule of law in Nicaragua. The establishment of the rule of law was not sufficient from the beginning but was further aggravated by the socio-political crisis of 2018.



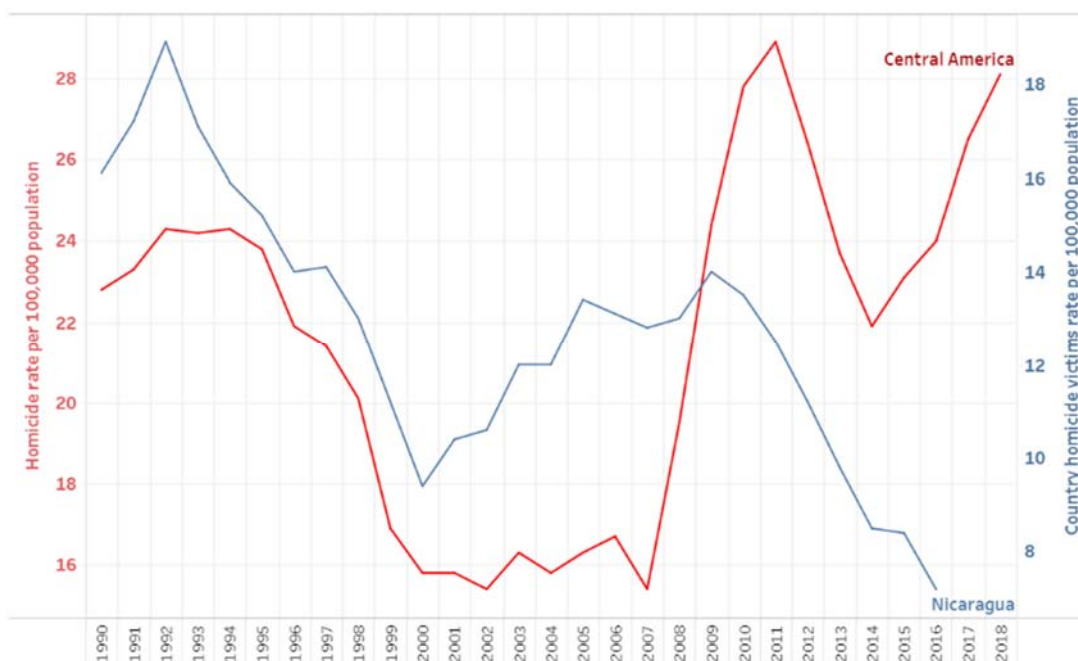
Source: GOVDATA 360, Banco Mundial <https://govdata360.worldbank.org/>

Figure 11-36 Nicaragua Rule of Law Indicators 2000-2019

To give an example of the poor performance of Nicaragua's rule of law, in 2020, of a total of 393 complaints of misconduct by public authorities addressed by CENIDH, the National Police was the most frequently sued entity, with 277 complaints, or 70% of the total (CENIDH 2021)¹¹¹.

3) Citizen Security

Citizen security in Nicaragua is in better situation than most of Central America and the Caribbean countries. The homicide rate decreased from 14 per 100,000 people in 2009 to 7.2 per 100,000 people in 2016 (UNODC 2021). However, guns have been on the market since 2018, and as a result, there are concerns about the deterioration of citizen security.¹¹²



Source: UNODC, <https://dataunodc.un.org/content/data/homicide/homicide-rate>

Figure 11-37 Nicaraguan Homicide Rate 1990-2016

¹¹¹ “Informe_2020_No_Nos_Callarán”. <https://www.cenidh.org/recursos/105/>

¹¹² JICA Nicaragua Office (interviewed on September 30, 2021)

11.7 Development of Hypothesis on the State of Sectoral Development Cooperation in With/Post COVID-19 Society

11.7.1 Grouping of Surveyed Countries per Sector

The results of the grouping of the 23 countries surveyed based on the themes of identified vulnerabilities (challenges) in the areas of governance and citizen security are as follows:

Table 11-30 Results of Grouping in Governance and Citizen Security

Issue		Central America	Caribbean	Group
Democracy level (competitive elections, guarantee of freedom of speech and press)		Guatemala, Honduras, Nicaragua	Cuba, Haiti	1
行政機能	Government effectiveness	Central America (excluding Costa Rica)	Cuba, Dominica, Granada, Guyana, Haiti, Dominican Rep., Surinam	2
	e-government development	Belize, El Salvador, Guatemala, Honduras, Nicaragua	Cuba, Granada, Guyana, Haiti, Jamaica, St. Lucia, St. Vincent, Surinam	3
	Control of corruption	Central America (excluding Costa Rica)	Cuba, Guyana, Haiti, Jamaica, Dominican Rep., Surinam, Trinidad and Tobago	4
法の支配	Regulations and institutions that enhance private sector activities	Central America (excluding Panama and Costa Rica)	Cuba, Guyana, Haiti, Surinam, Trinidad and Tobago	5
	Rule of Law	Central America (excluding Costa Rica)	Cuba, Guyana, Haiti, Dominican Rep., Surinam, Trinidad and Tobago	6
Citizen Security (Violent crime, general crime, GBV, drug trafficking)		Central America	Caribbean countries except Antigua and Barbuda, Cuba, and Suriname	7

Source: Study Team

11.7.2 Analysis of Vulnerability in Target Countries and Priority Sectors

(1) Central American Countries

Central American countries were identified as having weaknesses in governance-related areas: **democracy level, administrative functions, rule of law, and citizen security**. In addition, Guatemala, Honduras, Nicaragua, and Mexico have not been politically stable in recent years.

As for the **democracy level**, in Guatemala, Honduras, and Nicaragua, the electoral process is opaque, so it is difficult to say that the interests of the people are reflected in policies.

The weaknesses of the "**administrative functions**" include low quality of administrative services, lack of capacity of civil servants, opaque policy-making process, and insufficient information disclosure. Regarding "**e-Government development**", all countries except Nicaragua have formulated strategies to promote e-Government development with the aim of improving administrative services and increasing the accountability of the government, as well as to combat corruption. However, the status of implementation of their agendas is unclear. According to the United Nations' e-Government Development Indicators, El Salvador, Guatemala, Honduras, Nicaragua, and Belize have not reached the regional and global averages and are particularly behind in terms of infrastructure development. Regarding the dissemination of national IDs, which is the key to promoting government digitization, there are widespread digitalized national IDs in the region. At the same time, however, a high percentage of citizens do not have a national ID. Further research is needed to determine the functions of digital national IDs and the extent of their development in each country.

In the area of "**rule of law**", while national development policies prioritize revitalizing the private sector and increasing productivity, weaknesses in "regulatory quality," which is the government's ability to regulate the private sector and promote its activities, can hinder countries from achieving their goals. In addition, the "rule of law" is not well established, as evidenced by the large number of

"impunity" situations where crimes go unpunished, hindering countries' development projects, among others (UDLAP 2020).

In the area of "**citizen security**", governments have been making efforts since the late 2010s, and the homicide rate has dropped significantly in all countries except Mexico. However, homicide, organized crime, and gang warfare continue to make the country vulnerable to insecurity. In addition, GBV, such as domestic violence, rape, and other sexual offenses, is a longstanding problem in the region, and furthermore, the majority of these crimes go unpunished.

A cross-sectoral vulnerability is "**corruption**". Although each country's development plan, except Nicaragua, calls for the need to eradicate corruption, it is difficult to curb corruption because it occurs on a wide range of occasions, from government officials and politicians to civil servants working in administrative offices. In addition, although each country has established a corruption reporting office, the number of cases of corruption that are actually reported, prosecuted, and punished is low (i.e., unpunished).

(2) Caribbean Countries

The Caribbean countries are divided into two groups: those with high governance indicators and those with low indicators. Among them, Antigua and Barbuda, Bahamas, Barbados, Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, Saint Vincent, and the Grenadines have generally good governance indicators, but vulnerabilities are found in "government effectiveness," "rule of law," and "citizen security". Haiti, on the other hand, is weak in all indicators of governance.

In terms of "**democracy level**", vulnerabilities were identified in Cuba and Haiti in terms of holding democratic elections and guaranteeing political and civil rights.

In terms of "**administrative functions**", vulnerabilities were found in "government effectiveness" and "e-Government development. Barbados, Guyana, Jamaica, Dominican Republic, Suriname, and Trinidad and Tobago have already developed national strategies for e-Government development. National IDs have been issued in all countries except Antigua and Barbuda. For example, in Haiti, 27% of the population has not been given a national ID.

Regarding the **rule of law**, vulnerabilities were identified in the quality of regulation, which facilitates private sector activities, and in the rule of law.

Citizen security is one of the vulnerabilities that Caribbean countries also face. As the Caribbean is a transit point for the smuggling of South American drugs to the United States and Europe, the relationship between drug trafficking, firearms trafficking, organized crime, and gangs worsens the security situation. GBV is also a major challenge, as it is in the Central American countries.

(3) Vulnerabilities Revealed by COVID-19

1) Governance

Restrictions on movement of people, prohibition of large gatherings, and lockdowns were among the measures taken to prevent the spread of COVID-19, which affected areas related to governance.

As for "**democracy level**", human, civil, and political rights were affected in some countries. At least 19 of the 23 countries in Central America and the Caribbean (82%) declared a state of

emergency¹¹³. In terms of restrictions on civil liberties, 17 of 23 countries (73%) have closed borders or imposed border control measures, and at least eight countries (Barbados, Cuba, Dominican Republic, Guatemala, Haiti, Honduras, Panama, Trinidad and Tobago) have imposed curfews. Public places were closed, entry was restricted, and large gatherings were restricted in 18 countries. Measures that limit civil liberties, such as restrictions on movement, have made the situation of vulnerable populations even more vulnerable (IDEA International 2020)¹¹⁴.

In Haiti, Jamaica, Dominican Republic, and Mexico, elections were postponed avoiding the movement and gathering of people associated with electoral activities such as campaigning and voting. For example, in the Dominican Republic, general elections were scheduled for May 2020, but were postponed due to health concerns caused by COVID-19 infection, and were held in July 2020, with a high abstention rate of 50.9%.

As for "**administrative functions**", the provision of various administrative services was suspended or delayed, and in some cases, necessary services were not available. In some Latin American countries, the digitization of administrative services had been underway before the pandemic, but COVID-19 made it even clearer that it was not sufficient.

In addition, to protect the democratic system, public expenditures must be strictly monitored to ensure maximum transparency. However, measures taken in emergencies may weaken control and integrity mechanisms and foster opacity and corruption. Dangers to the good functioning of democracy include overpriced purchases, unregulated contracts, non-disclosure of information to citizens and other government agencies, patronage in return for aid, and irregularities in the provision of social assistance to economically vulnerable citizens (IDEA International 2021)¹¹⁵.

The same is true for the "**rule of law**". Most countries have had to suspend some judicial services, but various efforts have been made to ensure that judicial functions are not suspended in each country. In Guatemala and the Dominican Republic, the courts continued to function almost normally, but in Panama, the courts ceased to function except for some functions. In Trinidad and Tobago, the operation of the justice system continued by introducing virtual courts, and in Belize, public hearings were conducted using video telephony (UNDP 2021)¹¹⁶.

2) Citizen Security

The number of homicide victims in Central America, excluding Mexico, and in the Dominican Republic showed a significant decrease in March 2020, mainly due to COVID-19 infection prevention measures (curfews, lockdowns, bans on gatherings, among others), especially the rate of decrease from March to July. Note that the number of cases did not exceed that of the same month of the previous year until the end of 2020 (Infosegura 2021). Belize - 24%, El Salvador - 45%, Guatemala - 28%, Honduras - 14%, Dominican Republic - 6%, and Costa Rica +1% (see Figure 11-38). On the other hand, Belize,

¹¹³ The term "emergency declaration" as used here means a legal declaration that authorizes the exercise of exceptional powers of the executive branch to manage the COVID-19 pandemic at the national level, and includes emergencies, public health emergencies, and disaster emergencies.

¹¹⁴ "La gobernabilidad democrática como respuesta efectiva y perdurable a los desafíos de América Latina". IDEA International. 2021. <https://www.idea.int/sites/default/files/publications/la-gobernabilidad-democratica-como-respuesta-efectiva.pdf>

¹¹⁵ <https://www.idea.int/sites/default/files/publications/la-gobernabilidad-democratica-como-respuesta-efectiva.pdf>

¹¹⁶ UDP "Innovación, resiliencia y transformaciones urgentes hacia una justicia inclusiva en América Latina y el Caribe". 2021. https://www.latinamerica.undp.org/content/rblac/es/home/library/democratic_governance/innovacion--resiliencia-y-transformaciones-urgentes-hacia-una-ju.html

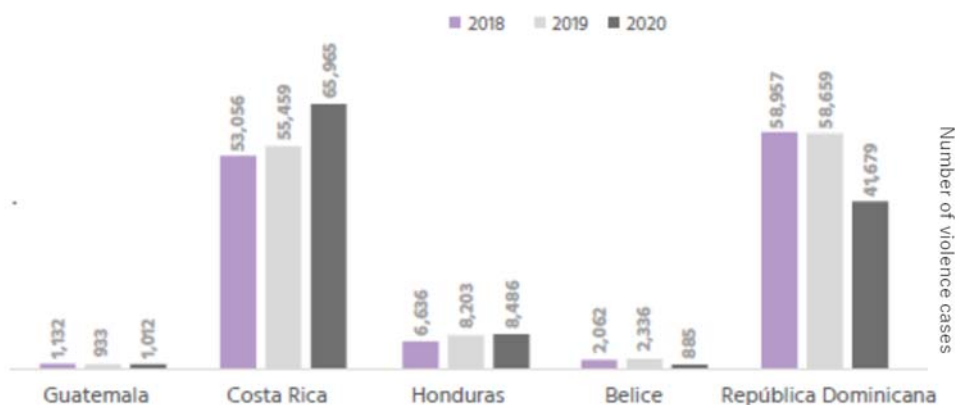
El Salvador, Costa Rica, Guatemala, Honduras, and the Dominican Republic experienced a 6% increase in homicide cases in the first quarter of 2021 compared with the same period last year.



Source: Infosegura "Análisis multidimensional de la seguridad ciudadana durante 2020 Centroamérica y República Dominicana" <https://infosegura.org/2021/06/10/centroamerica-y-republica-dominicana-seguridad-ciudadana-durante-2020/>

Figure 11-38 Number of Homicides in Belize, El Salvador, Costa Rica, Guatemala, Honduras, and the Dominican Republic (Comparison of 2019 and 2020)

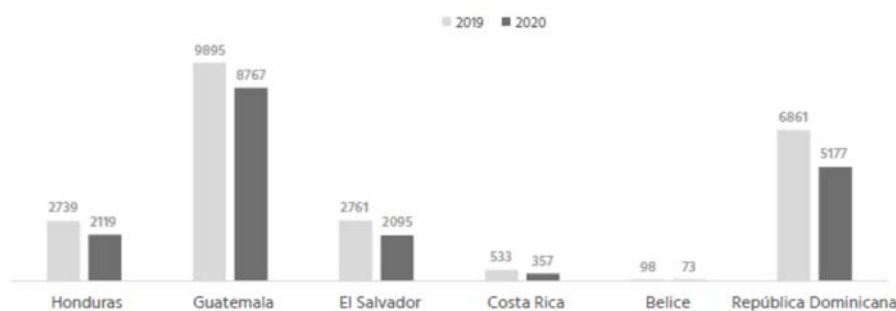
The number of GBV cases reported varies depending on the nature of the crime and the country in the COVID-19 disaster. For example, the number of reported cases of domestic violence in the Dominican Republic and Belize decreased significantly in 2020 compared with the previous year. This does not necessarily mean that the incidence of crime itself has decreased, but that some cases may not have been reported due to restrictions on movement such as lockdowns (Infosegura 2021). In Guatemala, Honduras, and Costa Rica, on the other hand, there was an increase of reported domestic violence (see Figure 11-39).



Source: Infosegura. Violencia contra las mujeres a lo largo del ciclo de vida, 2020. https://infosegura.org/wp-content/uploads/2021/06/vcm_regional-2020_bilingual.pdf

Figure 11-39 Number of Reported Cases of Intra-family/In-home Violence (2018-2020)

On the other hand, the total number of reported sex crimes decreased by about 24% in El Salvador, Guatemala, Honduras, Dominican Republic, Costa Rica, and Belize. However, as with the decrease in the number of reported cases of domestic violence, this is not due to a decrease in the number of sex crimes themselves, but rather to the fact that many cases could not be reported to the authorities due to lockdowns and other restrictions on movement (Infosegura 2021).



Source: Infosegura. Violencia contra las mujeres a lo largo del ciclo de vida, 2020. https://infosegura.org/wp-content/uploads/2021/06/vcm_regional-2020_bilingual.pdf

Figure 11-40 Number of Reported Sex Crimes (2019-2020)

11.7.3 Possible Countermeasures and Support Measures to Overcome Vulnerabilities

In response to the weaknesses in the governance and citizen security sector that have emerged in the COVID-19 disaster, the hypotheses for development cooperation in the governance and citizen security sector of With/Post COVID-19 societies in the Central American and Caribbean regions, respectively, were developed as shown in Table 11-31. The issues that should be of medium-term importance in this sector are (1) improving the quality of democracy, (2) improving government effectiveness, (3) promoting e-government development, (4) curbing corruption, (5) establishing the "rule of law," (6) improving citizen security, and (7) addressing GBV.

Table 11-31 Hypothesis on the Nature of Development Cooperation in the Governance and Citizen Security Sector of With/Post COVID-19 Societies in the Region

	Existing issues and vulnerabilities revealed by COVID-19	Measures to overcome the issue (proposal)	Cooperation strategy (proposal)
Democracy level	<ul style="list-style-type: none"> Partial restriction of civil and political rights 	<p>Improving the level of democracy</p>	<p>Central America - Haiti</p> <ul style="list-style-type: none"> Supporting the development of free journalism Strengthening the capacity of election management institutions
Administrative functions	<ul style="list-style-type: none"> Delay in digitization → stagnation and suspension of government services Suspension of checks on public spending → opportunity for corruption 	<p>Improving Government Effectiveness</p> <ul style="list-style-type: none"> Strengthening the legislative and administrative oversight functions of Congress Strengthening the capacity of public officials <p>Promoting e-government development</p> <ul style="list-style-type: none"> Dissemination of national IDs Digitization of administrative procedures <p>Control of corruption</p> <ul style="list-style-type: none"> Digitization of administrative procedures Raising awareness of corruption among public officials Disclosure of information on budget execution and government procurement processes to the public 	<p>Central America and Caribbean</p> <ul style="list-style-type: none"> Deployment of FOCAL Strengthening local governments Digitization of administrative procedures based on the dissemination of national IDs
Rule of law	<ul style="list-style-type: none"> Impunity Delay in digitization → delay and suspension of judicial services 	<p>Establishment of rule of law</p> <ul style="list-style-type: none"> Improvement of dispute resolution systems, including court procedures and mediation systems; development of laws and procedures that form the basis of economic activities; and training of legal professionals. Digitization of judicial services 	<p>Central America and Caribbean</p> <ul style="list-style-type: none"> Strengthening the Judicial System Digitization of judicial services

	Existing issues and vulnerabilities revealed by COVID-19	Measures to overcome the issue (proposal)	Cooperation strategy (proposal)
Citizen Security	<ul style="list-style-type: none"> High murder rate Increase in GBV 	<p>Improvement of citizen security</p> <ul style="list-style-type: none"> Accumulate and analyze information on crime, and formulate crime prevention measures and plans based on this information Study of crime prevention measures using ICT Measures focusing on areas with poor security Generation-focused crime prevention education and planning Provide life skills to the young generation at risk. Improve basic infrastructure, such as street lighting, to ensure the safety of citizens. <p>Measures against GBV</p> <ul style="list-style-type: none"> Strengthening the justice system Increase the number of crimes reported, investigated and prosecuted against "non-punishment" of GBV Formulate and implement efficient policies and plans based on data collection and analysis of criminal damage Raise awareness of GBV prevention Psycho-economic and social support for victims Setting up and running a platform for providing information to those in need of assistance (Good practice: CuéntaNos 117 , Ciudad Mujer Honduras118) 	<p>Central America and Caribbean</p> <ul style="list-style-type: none"> Dissemination of community police projects Support for capacity building of police organizations and personnel <p>Central America and Caribbean</p> <ul style="list-style-type: none"> Strengthening the judicial system GBV prevention Strengthen support for victims of GBV Cooperation with maternal and child health and education sectors

Source: Study Team

In order to promote cooperation through intra-regional collaboration in the medium term, existing cooperation projects could be developed as a base. Table 11-32 shows the matching between the themes of cooperation and the countries (see Table 11-22) where the projects are being implemented that could serve as bases.

Table 11-32 Matching of Cooperation Themes with Existing Project Countries that could Serve as Bases (Proposal)

Item	Sub-item	Base country/Regional organization	Target
Government effectiveness	Local self-government capacity strengthening	Nicaragua, Dominican Republic, Honduras	Central America and Caribbean
	Project to strengthen and modernize the National Tax Agency	Dominican Republic	Central America and Caribbean
	Administrative Capacity Strengthening	Guatemala	Central America
Citizen Security	Community Police Project	Guatemala, Honduras	Central America and Caribbean
	Gender	SICA	Central America

Source: Study team

¹¹⁷ Operated by NGOs serving El Salvador, Guatemala, and Honduras <https://www.cuentanos.org/selectors>

¹¹⁸ Operated by Instituto Nacional de la Mujer (INAM) <https://www.ciudadmujer.gob.hn/servicios/>

Wide-area cooperation will be implemented using the above base countries or regional organizations such as SICA as a platform. The following are specific examples where wide-area cooperation may be appropriate.

Dissemination and expansion of local government strengthening

JICA provided technical assistance to Honduras in the "Strengthening Local Government Capacity for Local Development Project (FOCAL, FOCAL II, and FOCAL III)" to enable the cities to plan and implement a series of development processes (FOCAL process), including surveying the current situation of the city, formulating a development plan, and implementing the project, with the participation of local residents. The results of this project were highly evaluated by the Honduran government. In 2022, FOCAL IV, a project to improve the capacity of local governments to implement and monitor local government projects that contribute to the SDGs and the Honduran National Agenda 2030, will be launched to further evolve this practice and share the experience with other countries in the region. In this regard, the FOCAL process could be disseminated and expanded in Central America and the Caribbean, where many countries have low capacity for local administration.

Enhance and promote community police

The project aims to spread community police to English-speaking countries in the Caribbean by introducing in Jamaica and Haiti the capacity building of community police based on the dissemination of community police, which has already been continuously implemented in Honduras and Guatemala in Central America. To this end, a triangular cooperation could be possible with the Brazilian government, Sao Paulo police and, in the future, cooperation by the community police of Guatemala and Honduras, where the project is still ongoing.

11.8 Analysis and Recommendations Contributing to Sectoral Cooperation Policy

11.8.1 Summary of the Analysis Contributing to Cooperation Policies

Based on the information collected and analyzed so far, in the governance and citizen security sector, weaknesses have been identified in the areas of democratic quality, administrative functions, rule of law, and citizen security in general, although there are some differences between Central American and Caribbean countries. In the case of the COVID-19 disaster, delays in the development of e-government became apparent. In terms of rule of law, poor quality of judicial services and the lack of a well-established judicial system itself are some of the factors that have led to the situation of "non-punishment" of corruption and other crimes. In the COVID-19 disaster, the lack of electronic justice services became apparent, and insecurity is one of the challenges facing the Central American and Caribbean region together, especially the high murder rate by gangs and organized crime, drug trafficking, and gender-based violence. In Central America and the Caribbean, the number of victims of GBV, a crime that is not easily visible, has increased.

In the Central American and Caribbean region, the focus is on human resource development and capacity building in the areas of local government capacity building, e-government development, improvement of administrative and judicial services, popularization of community police involving local residents, and anti-corruption. JICA and other donors have been providing support in this direction. JICA and other donors have been providing assistance in this direction. In the governance and citizen security sector, which faces deep-rooted and complex issues, further coordination and cooperation among donors is required to maximize the effectiveness of the many assistance measures that exist.

11.8.2 Recommendations for Cooperation Policies

(1) Need for a Grand Design for Digitization of the Entire Country

As part of the COVID-19 disaster, ministries and agencies are promoting digitization in their areas of jurisdiction, and while aid agencies need to cooperate with individual projects and agencies, they also need to consider cooperation at the country-wide level. In other words, a grand design for the digitization of the entire country is needed. Based on this, a platform that can integrate all services with the key to digitalized national ID will be considered. The initial design is crucial to create a system that allows local governments and different competent ministries to cross-reference and update necessary data through centralized data management.

Once administrative procedures and public services can be provided online with the use of national IDs, data will be accumulated, and its effective use will help (1) solve various problems and revitalize the economy through the promotion of public participation and public-private collaboration, and (2) improve the sophistication and efficiency of public administration (through data-based Evidence Based Policy Making (EBPM)). It is also expected to (1) solve various problems and revitalize the economy by promoting public participation and collaboration between the public and private sectors, (2) improve the sophistication and efficiency of public administration (promoting data-based EBPM), and (3) increase transparency and trust (from the "Basic Guidelines for Open Data").

In this regard, there is a need for cooperation in the development of electronic and other national IDs and the institutions and policies to implement and operate them, as well as the establishment of administrative systems, including local governments. In the larger field of government e-development, from the perspective of governance, it is important to start by ensuring that systems such as birth registration are operated, and that national IDs are granted to all citizens.

For countries where national IDs do not exist in the first place, or where non-electronic national IDs are in operation, electronic national IDs should be developed and granted to all citizens. For this purpose, it will be necessary to study laws and systems, adoption technologies, administrative systems and personnel, facilities, and human resource development. It is also necessary to create a system and improve the current system so that all citizens, including those who do not have a national ID due to not having registered their birth, among others, will be given a national ID without omission. For countries where electronic national IDs have already been granted, a mechanism for granting electronic national IDs to all citizens and improvement of the current system will be required, followed by an increase in the number of administrative services that can be provided online using national IDs.

Another axis in this long process is the recruitment and human resource development of personnel who will oversee maintenance, data security and operation of the digital national IDs, as well as the continuous human resource development of civil servants who will use them to provide administrative and other services as they become electronic.

(2) Cooperation with a Focus on Establishing the Rule of Law

For crimes that often go "unpunished," such as corruption and GBV, cooperation can be considered to reduce the incentives for corruption, GBV, and other crimes by eradicating the cases that go "unpunished," thereby leading to prevention. Cooperation in establishing the "rule of law" will require cooperation from various levels. A wide range of technical cooperation is required, from the

grassroots level, such as victim support, to human resource development, such as legal education, and to the legal system level, such as judicial government reform.

Specifically, the current system will be improved in order to increase the number of crimes reported, investigated and prosecuted. Mechanisms to protect the safety of reporters and witnesses (protection from reprisals) need to be established and their implementation ensured. The judicial system must also be strengthened and improved to enhance the capacity of the legal profession and increase the number of legal professionals per capita.

12. Digital Innovation Sector

12.1 GENERAL

This section summarizes the status of digital technology utilization and digital innovation efforts implemented by each country with the aim of strengthening the economic and social resilience of developing countries through digital utilization. It should be noted that digital technology utilization and innovation are implemented by each sector individually, and digital technology and innovation themselves are not implemented in isolation. Therefore, in the digital innovation sector, in addition to organizing the efforts of each country based on existing data and other sources, necessary surveys and support for the implementation of pilot projects will be provided to countries that are implementing pilot projects by other sectors.

12.2 SUMMARY OF SECTOR SURVEY

Table 12-1 Hypotheses and Policy Recommendations of the Digital Innovation Sector on the Nature of Development Cooperation

No.	Item	Digital Innovation
1	Issues from before COVID-19	<ul style="list-style-type: none"> ▪ Development of legal systems in countries that have not yet formulated plans for digitization ▪ Little accumulation of digital technology at the initiative of the country. ▪ Building a value chain for digital services ▪ Digital divide between urban and rural areas, etc. ▪ Improving off-literacy on the user side
2	Grouping by Issue	<ul style="list-style-type: none"> ▪ Grouping according to the degree of progress in digitization (classified as advanced, intermediate, or developing based on online service indicators and the status of telecommunications infrastructure development)
3	Vulnerabilities Revealed in COVID-19	<ul style="list-style-type: none"> ▪ Digital divide, literacy challenges emerge in education, healthcare and nutrition sectors ▪ Vulnerability of communication infrastructure
4	New issues that emerged during COVID-19	<ul style="list-style-type: none"> ▪ Develop a digital plan for advancing digital government ▪ Establishing an ecosystem for digitization and DX in the public and private sectors ▪ Developing IT human resources, bridging the digital divide
5	Countermeasures (draft)	Society and Economy <ul style="list-style-type: none"> ▪ Development of services such as payment systems and electronic remittance using digital technology ▪ Technology transfer of various systems for service user protection, etc.
		Health Care and Nutrition <ul style="list-style-type: none"> ▪ Networking of medical institutions and introduction of telemedicine services ▪ Tools to connect with central specialists, networks, and literacy education for health care providers ▪ Planning and institutional design for digitization of the health care sector ▪ Build an ecosystem for security human resource development and startup support.
		Education <ul style="list-style-type: none"> ▪ Network infrastructure development for educational institutions ▪ Creation of digital teaching materials, support for acquisition of technologies for dissemination, dissemination measures through public-private partnerships, etc.
		Agriculture and Rural Areas <ul style="list-style-type: none"> ▪ Planning of short-, medium- and long-term measures based on Japanese examples, and trials of demonstration tests of various technologies for digitization ▪ Promotion of infrastructure development such as IoT for large irrigation facilities and weather monitoring systems through open innovation methods, and gradual introduction of tools for field management and sales.
		Private <ul style="list-style-type: none"> ▪ Support for the introduction of management support systems tailored to the legal systems of each country and the development of digital human resources to support management ▪ Introduction to the structure of university-based innovation centers and development of specialized institutions ▪ Human resource development for the coordinator role and support for establishing the organization

No.	Item	Digital Innovation	
		Environment and disaster prevention	<ul style="list-style-type: none"> ▪ Building a disaster prevention information platform to share various risk information in an integrated manner, and strengthening disaster prevention and mitigation governance ▪ A monitoring observation and information provision system that contributes to the early evacuation of residents will be established as soon as possible. ▪ Information sharing and introduction of technologies that contribute to the proper management of waste and rare earths, including recycling and traceability
		Governance public order	<ul style="list-style-type: none"> ▪ Human resource development for the implementation and operation of a platform (public cloud) to support the digitization of public administration ▪ Grand design for improving data security, data utilization services, and integrated handling of national IDs ▪ Application of various advanced technologies such as image analysis and AI analysis to secure replacement
		Infrastructure Energy	<ul style="list-style-type: none"> ▪ Traffic volume monitoring using AI image recognition methods from images, introduction of a dynamic traffic signal control system based on traffic volume, and countermeasures against traffic congestion and accidents through inter-vehicle communication that manages vehicles and roadsides as a whole. ▪ Maintenance of public transportation vehicles (diagnosis of deterioration, failure, and monitoring) to reduce maintenance costs ▪ Introduction of systems and human resource development to support energy storage devices that match demand to the amount of electricity, energy efficiency, mechanisms to capture fluctuations, rate fluctuations, etc.
		Sightseeing	<ul style="list-style-type: none"> ▪ Support for the formulation of crisis management responses (BCP formulation, implementation of drills, etc.) ▪ Development of digital infrastructure such as digital accounts and human resource development
		Government-private partnership	<ul style="list-style-type: none"> ▪ Introduction of a public-private partnership system for efficient management of government ▪ Implement urban operating systems and other systems that enable data acquisition and analysis (smart cities).
6	Direction and Recommendations for Development Cooperation (Draft)	Policy formulation	<ul style="list-style-type: none"> ▪ It is necessary to establish an administrative body that can formulate national strategies for digital government, and to build a digital grand design that suits the situation of each country. ▪ The grand design should be a compilation of individual measures according to the situation of each country, but it should also include priorities and monitoring mechanisms to enhance effectiveness. ▪ To support these efforts, we will strengthen the overall security and IT human resource development in government agencies, and for the time being, we will work with foreign companies with advanced technologies to develop private sector operators.
		Introduction of training and education programs for IT personnel	<ul style="list-style-type: none"> ▪ Digital technology will bring about major changes in the way nations and organizations utilize human resources, as well as in the way individuals learn. In light of these changes, it is necessary to formulate digital human resource policies that are appropriate for the new era. ▪ Digital human resource policies include the development of general ICT human resource training programs (servicer training, service development and operation human resources (private sector)), as well as an evaluation system to assess the competency of ICT human resources and standardize their skills, and the establishment of ICT human resource development institutions (from strategy to implementation) in the public and private sectors.
		Infrastructure improvement	<ul style="list-style-type: none"> ▪ As an issue for the entire Central American and Caribbean region, the development of a broadband infrastructure that enables high-capacity communications nationwide is required. In the Caribbean, it is also necessary to ensure the redundancy of submarine cables in consideration of disasters. A national broadband and mobile network development plan should be formulated in order to efficiently carry out such development. ▪ In particular, in the COVID-19 disaster, it is desirable that the public and private sectors work together to develop measures to encourage the development of lines to government agencies, community centers, schools, etc., since addressing needs in the education and health care sectors is an urgent issue.

No.	Item	Digital Innovation	
			<ul style="list-style-type: none"> In cooperation with foreign companies, we will promote the establishment of data centers in the region, and in the future, we aim to operate data centers in our own countries that meet the utilization policies and security policies of each country.
		X-TEC	<ul style="list-style-type: none"> To foster a future digital value chain, we will promote the construction of digital services and the use of information services led by the government, and accumulate good examples and challenges. For example, various measures that lead to the creation of new services, such as start-up support business contests, matching events, and online platforms for the development of advanced information human resources, will be effective. A platform for intra-regional digital service sharing will be established to share and mutually utilize such examples within the region.

Source: Study Team

12.3 SECTORAL SCOPE OF WORK

Table 12-2 Scope of Work for the Digital Innovation Sector

No.		Subsector	Work scope
1	Sectoral Targets	With the aim of strengthening the economic and social resilience of developing countries through the use of digital technology, we will collect information on the effective implementation of pilot projects in each sector, and conduct technological demonstrations through pilot projects to identify appropriate digital technology innovations for each sector with potential (agriculture and rural development, health, disaster prevention, education). Digital technology innovation will be organized by potential sectors (agriculture and rural development, health, disaster prevention, education).	
2	Work scope update	Based on consultations with JICA, select survey target countries or confirm survey priorities, and update and agree on the scope of work	
3	[Task2]	Selection of relevant organizations to be interviewed	
4		Conducting an interview survey	
5		Collection and analysis of basic information (23Country)	<ul style="list-style-type: none"> Collection and analysis of information on various measures and research results by international organizations Gathering and analyzing information on various policies and survey results of target countries
6		Creating a Country Report	Compile the survey results of [Task2] into country reports for each country.
7	[Task4]	Identify vulnerabilities in the sector and consider support measures	<ul style="list-style-type: none"> Definition and analysis of existing issues and vulnerabilities in the field of digital innovation Consideration of countermeasures and support measures to overcome vulnerabilities
8		Creating a hypothesis for the nature of development cooperation	<ul style="list-style-type: none"> Develop hypotheses on possible responses to overcome each vulnerability in line with the Ministry of Foreign Affairs' Country Development Cooperation Policy and Project Deployment Plan and your PDM. The hypotheses generated will identify priorities for cooperation needs for each country.
9		Create a Sectoral Hypothesis Report.	Create sectoral hypotheses by compiling the survey results of [Task].4
10	[Task5]	Visit international/regional organizations and government agencies to collect additional information related to [Task2] and [Task4] and exchange views on how development cooperation should be conducted.	
11	[Task6/7/8]	Advise on the selection, implementation, and closure of pilot projects from the perspective of the "digital innovation" sector.	
12	[Task9]	Prepare materials needed for the expert meeting and make a presentation on the research in your sector.	
13	[Task10]	Develop "policy recommendations" for your sector	
14	[Task11]	Prepare academic papers, etc. for the sector in which you are responsible.	

Source: Study Team

12.4 COLLECTING BASIC INFORMATION ON 23 TARGET COUNTRIES

Information gathering and confirmation surveys were conducted on ICT environment development and digital technology initiatives in Latin America and the Caribbean.

12.4.1 Collected Data

(1) Materials Collection

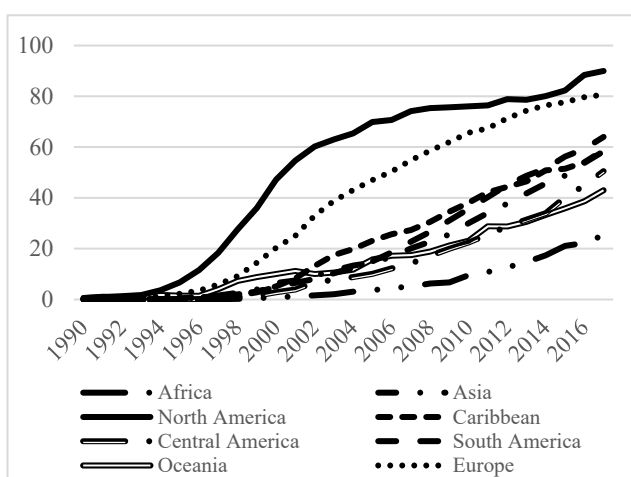
The Study Team collected a variety of data on the policies that governments are implementing to achieve digitization. Specifically, the Study Team surveyed the basic concepts of the policies being promoted by each country, the goals based on those concepts, and the priority issues being addressed to achieve those goals. In particular, the Study Team summarized new initiatives and policies related to digital innovation that governments have developed since the Coronavirus Disease 2019 (COVID-19) in order to respond to the changes in the Corona vortex. The results of the compilation of the policies of each country in Central America and the Caribbean are shown in Appendix 2.

12.5 DETAILED SURVEY BY SECTOR

12.5.1 Current Status of Digitization in Central America and the Caribbean

(1) Internet Penetration

Telecommunications services in Central America and the Caribbean have generally been monopolized by state-owned companies or certain private companies. However, the governments of Central America and the Caribbean have adopted policies of structural reform and market liberalization, privatizing the state-owned companies that had previously monopolized the market and selling their businesses to private companies. According to The World Bank statistics, the Internet usage rate in Central America and the Caribbean was 50% and 59%, respectively, in 2017. The world average is 48%, and 81% for Organization for Economic Co-operation and Development (OECD). Therefore, it is higher than the world average but lower than OECD average.



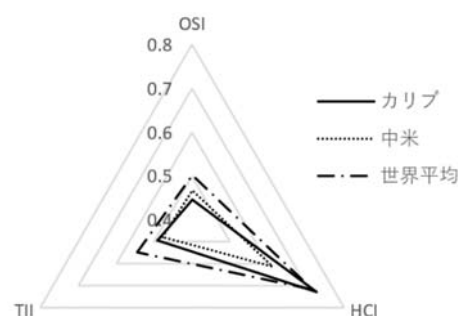
Source: Study Team

Figure 12-1 Internet Usage Rate

Rural connectivity in Latin America and the Caribbean (2021), published by the Inter-American Development Bank, conducted a survey analysis focusing on the differences in Internet penetration rates between rural and urban areas. Although the survey did not cover all of the 23 countries in Central America and the Caribbean, but only 14 countries, it was concluded that in 7 out of the 14 countries, between 70% to 90% of the residents in rural areas do not have access to the Internet, which suggests that there is a disparity in Internet use between urban and rural areas.

(2) E-Government Ranking

The current state of digitization in Central America and the Caribbean is illustrated in the E-Government Survey 2020, published by the United Nations Department of Economic and Social Affairs (UNDESA). The E-Government Ranking is a global report started in 2003 that assesses the status of e-government initiatives in the 193 United Nations (UN) member countries. The ranking is based on a relative evaluation of various e-government initiatives in each country using multiple indicators.



Source: Study Team

Figure 12-2 E-Government Ranking Index

According to the e-government rankings, the Central American region and the Caribbean region both ranked around the 100th.

There are three major indicators that contribute to the e-Government ranking. All indicators are distributed in the range of 0~1, and the higher the progress of the initiative, the higher the value.

- 1) Telecommunication Infrastructure Index (TII): An index of the status of information technology (IT) infrastructure for the government to provide online services and for citizens to enjoy them.
- 2) Human Capital Index (HCI): An indicator of whether citizens are sufficiently educated to use IT tools and enjoy services.
- 3) Online Service Index (OSI): An index that indicates whether sufficient online services are provided by the government for citizens to make use of IT tools.

An overview of each indicator is provided below.

1) Telecommunication Infrastructure Index (TII)

TII refers to the data from the International Telecommunication Union (ITU) on the number of Internet users.

It is measured by the number of cell phone subscriptions, mobile broadband subscriptions, and fixed broadband subscriptions. The Central American and Caribbean countries have been on an upward trend from 2003, with continued progress in the development of their information and telecommunications infrastructure.

2) Human Capital Status Human Capital Index (HCI)

The HCI refers to a data from the United Nations Educational, Scientific and Cultural Organization (UNESCO) and is calculated using the following four indicators: adult literacy rate, total enrollment rate, number of years of schooling a child can expect to receive in the future, and average number of years of education in adulthood (over the 25 years old). The HCI had been on a downward trend coinciding with the economic downturn after the Lehman Shock in 2009, but has been recovering in recent years. Although there are no useful indicators of the impact of COVID-19, it is expected that the HCI will be affected by the stagnant economic conditions in Central America and the Caribbean.

3) Online Service Index (OSI):

The OSI is an indicator calculated from the results of a survey on online services conducted by the United Nations Department of Economic and Social Affairs. In the case of OSI, Central American countries showed a higher index than the Caribbean countries, and the index has been on an upward trend, although it has fluctuated slightly since 2003. This indicates that the introduction of online services is progressing in all regions.

12.5.2 Countries' Approaches to Digital Innovation

(1) Initiatives throughout Central America and the Caribbean

In Central America and the Caribbean, the United Nations Economic Commission for Latin America and the Caribbean (CEPAL) developed the Digital Agenda for Latin America and the Caribbean (eLAC2022) (hereinafter referred to as DA) in 2005 to promote digital innovation in the region. The DA formulates goals categorized into four areas, and 39 actions, by which countries use as a guide to develop their national development goals and individual plans.

Table 12-3 Examples of Action Areas and Goals

No.	Behavioral Areas	Goal (Example)
1	Digital Infrastructure	Network maintenance
2	Digital Transformation and Digital Economy	Building a digital ecosystem
3	Digital Government	Open data
4	Inclusion and Digital Skills and Other Competencies	Digital skills development
5	Emerging Technologies for Sustainable Development	Technology development and new services
6	Trust and Digital Security	Cyber security measures
7	Regional Digital Market	E-commerce in rural areas
8	Digital Regional Cooperation	Building a cooperative system for intra-regional cooperation
9	Combatting the Pandemic and Facilitating Economic Recovery and Reactivation	Information management, sharing, and delivery system development

Source: Digital Agenda for Latin America and the Caribbean (eLAC2022)

(2) Efforts to Develop Plans and Reflect Them in Policies in Each Country

Thirteen countries have developed individual plans for digital innovation as Table 2 shows the breakdown. For the status of digitalization plans, eight out of the sixteen countries (50%) in Central America and five out of the seven countries (71%) in the Caribbean region have developed digitalization-specific plans to promote digital innovation.

Table 12-4 Countries with Individual Plans for Digitization

Region	National Development Goals	National Digital Strategy
Central America (16 countries)	16 countries (100%)	8 countries (50%)
Caribbean (7 countries)	7 countries (100%)	5 countries (71%)

Source: From the survey results of the Research Team.

(3) Efforts in Each Country

The report summarizes the efforts of each country in terms of basic indicators and statistics, telecommunication networks, national strategies for digital transformation, and distinctive efforts.

For basic indicators and statistics, the Study Team has compiled quantitative information on digital in each country.

- E-Government ranking
- Mobile connection index
- Network infrastructure index
- Percentage of Internet users
- Cell phone connection rate
- Fixed broadband rate
- Increase in the number of Internet users

For the telecommunication network, qualitative information on the status of IT infrastructure development and the mobile market in each country were compiled. For national strategies for digital transformation, the digital development goals of each country's government are summarized. For distinctive initiatives, the Study Team compiled information on each country's unique digital transformation measures.

9.3.7 DX / Innovation

Basic indicators and statistics	E-Government Ranking 1): 107 th Mobile connection index 2): 55.4 Network Infrastructure Index: 51.1 Internet user rate 50.5 Mobile connection rate 145.6 Fixed broadband rate 7.7 Rate of increase in the number of Internet users 14.7 (2021/2020)	Radar chart of e-government ranking
Communication network		
El Salvador's landline penetration rate 3) has gradually declined from its 2009 high of 17.9% to 13.8% (2019), slightly below the average of 14.8% (2019) in Latin America and the Caribbean. The spread of mobile phones instead of fixed-line phones 4) has increased sharply from 19.3% to 161.1% (2019) since 2003, and mobile phones currently account for 94% of telephone lines. El Salvador was one of the countries with the least spread of LTE services in the region due to inadequate supply in the proper spectrum, but after the multispectral auction 5) held at the end of 2019, MNOs (Mobile Network Operators) are expanding the content of services provided and improving their quality. The telecommunications law is the most liberalized in Latin America, allowing competition in most areas and foreign investment, but there are no regulations to promote the wholesale provision of broadband, and Claro is a fact in the DSL market. Maintaining the above monopoly. Corporate integration is expected to continue to flourish, including the acquisition of Caribena Cable by Telemóvil (brand name: Tigo) in 2019. (América Móvil's plan to acquire Telefónica could not clear the regulations and was withdrawn in 2020.)		
National Strategy for Digital Transformation		
The Digital Agenda 2020-2030 6) (DA) works with eight development areas of the United Nations (UN) Sustainable Development Goals (SDGs) and National Strategic Project 7) and constitutes a nation through the application of innovation and ICT. It is a 10-year plan aimed at building mutual cooperation among all government agencies, private business organizations, and citizens. It is developed under the following four main items. 1) Digital identity. 2) Digital governance. 3) Modernization of the state government. 4) Innovation, education and competitiveness enhancement. In particular, as digital identity, personal data management, secure information inquiry, system development for realizing digital services used for integrated ID of various identification IDs are included, and services utilizing personal data and integrated identification IDs include. E-wallet, academic background inquiry, electronic chart The realization of the introduction of is included in the plan.		
Characteristic efforts		
The government has approved measures such as suspending payments for telecommunications services for three months to mitigate the economic impact of the pandemic 8). In the medical sector, as a measure against COVID-19, in August 2020, we started a telemedicine service for pregnant and postpartum women, children under 5 years old, and people in need of mental health care 8), 9). Web tools or patients and doctors are encouraged to use the same SNS tools for medical examinations. In the education sector, the Ministry of Education has started a training and capacity building process to train as many as 100 professional engineers for virtual education 8). SIGES (Education Management Information System) 10) has begun to use computer systems for education management, making it possible to centralize all information, and the services provided are digital platforms such as WhatsApp and mobile devices for teachers. It is provided through an application for Live Training (SIGESLive), which provides services via YouTube Live. Furthermore, by using a QR code that can be verified by SIGES, the educational background certificate is an innovative initiative that allows students to obtain a highly credible certificate by scanning with a mobile device 11).		
Source		
22. E-Gov-Index: a composite indicator that consists of three indexes (Online Service Index, Telecommunication Infrastructure Index and Human Capital Index), which are equally weighted. It ranges from 0 to 1, with 1 being the most developed. 23. Mobile Connectivity Index: an input index developed by GSMA to measure the performance against the five key enablers of mobile internet adoption – infrastructure, affordability, consumer readiness and content. (https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/06/Mobile-Connectivity-Launch-Report.pdf) 24. Fixed telephone subscriptions (per 100 people) – El Salvador https://data.worldbank.org/indicator/TT.MT.MA.N.P2?locations=SV 25. Mobile cellular subscriptions (per 100 people) – El Salvador https://data.worldbank.org/indicator/TT.CE.SV.SV.P2?locations=SV 26. El Salvador will follow AWS spectrum auction with 1900MHz band sale https://www.comunicacion.com/articulos/2019/11/20/el-salvador-se-afilia-a-aws-spectrum-auction-with-1900mhz-band-sale/ 27. Digital Agenda 2020-2030 https://www.innovacion.gub.es/documentos/Agenda2020Digital.pdf 28. Estrategia País EL SALVADOR 2020-2024 https://www.pnud.org/es/espanol/documentos/2020/09/Tercera-Plan-E-S-2020-2024.pdf 29. LAS OPORTUNIDADES DE LA DIGITALIZACIÓN EN AMÉRICA LATINA FRENTE AL COVID-19 https://positorio.com.ar/hubfs/tema/2020/11/24/4-Opportunities-for-Digital-in-COVID-19-es.pdf 40. El Salvador inicia servicios de telemedicina para embarazadas, recién nacidos y otros grupos prioritarios https://www.unhcr.org/es/espanol/salvador-inicia-servicios-de-telemedicina-para-embarazadas-recien-nacidos-y-otros-grupos-prioritarios 41. Sistema de Información para la Gestión Educativa Salvadoreña https://siges.es/Inicio 42. MEMORIA DE LABORES 2019-2020 https://portal.ilem.mec.gov.sv/tema/Informe-de-labores-2020		

Source: Study Team

Figure 12-3 Example of a Country Report

12.6 INTERVIEW SURVEY

To investigate the impact of Digital and innovation on COVID-19 in Panama, El Salvador, and the Dominican Republic, which were visited during this field survey, the Study Team requested face-to-face interviews with the organizations in charge of Digital and innovation.

Panama sent a request for hearing to the Secretaría Nacional de Ciencia, Tecnología e Innovación, while El Salvador sent a request for hearing to the Secretaría de Innovación de la Presidencia, and Dominican Republic sent a request for hearing to Ministerio de la Presidencia. However, Panama did not respond to the request, but El Salvador and the Dominican Republic responded with the date and time of the hearing, and the Study Team conducted a face-to-face hearing with them.

The following is a summary of hearings for El Salvador.

Table 12-5 Hearing Summary (El Salvador)

Title	Secretaria de Innovacion		
Date	2021 June 22 nd	Time	14:10 – 15:30
Venue	Meeting Room of Secretaria de Innovacion		
Participants	No.	Name	Position / Organization
Secretaria de Innovacion	1	Fabrizio Mena	Deputy Secretary of Innovation
	2	Claudia de Larin	General Director of Technological Training
	3	Andres Ortiz	General Director of Innovation
Inquiry Commission	1	Ichizuru Ishimoto	General Manager
	2	Hideki Katayama	Pilot Project Management
	3	Kazushi Endo	Digital Innovation



Photo source: The Study Team

In addition to understanding the positive and negative impacts on digital innovation efforts in El Salvador, the interviews also provided information on the current status and progress of the existing national plan, Agenda Digital 2020-2030, and the status of the development of information and communication infrastructure to support digital innovation. The following are the results of the interviews as shown below.

Table 12-6 Hearing Results

No.	Item Reported, Discussion, and Agreement	Answer/ Action
I.	Explanation of the Project Framework and Survey Details (Ishimoto)	
II.	Questions Regarding the Impact of COVID-19 on DIGITAL and Innovation Field	
	1. Impact to Digital Innovation 2. About Agenda Digital 2020-2030 3. About Infrastructure of ICT 4. Others	
III.	Questions and Answers	
i)	What is the effect of COVID-19?	
a)	Positive impact includes education. It has helped close the digital gap and promote connectivity. There are 250 schools	

No.	Item Reported, Discussion, and Agreement	Answer/ Action
	<p>that have been connected. There has also been an impact in promoting access to Fintech and government services. On the other hand, smart city initiatives have stagnated.</p> <p>b) In terms of education, institution also maintains a strong relationship with the Ministry of Education; therefore, interest in pilot projects is expressed.</p> <p>c) In 2020-2021, 75-80% of government employees, or 1.21 million people, were trained using Google Classroom. Scholarships and diplomas have also been issued. School-to-school connectivity has also been strengthened. The Ministry of Health has also strengthened the connectivity between hospitals and monitoring of patients.</p> <p>d) In the wake of COVID-19, students who could not return to school to attend classes were provided with PCs to enable them to study at home.</p> <p>e) (As a negative impact, the smart city initiative was suspended, but was resumed last month. Since face-to-face communication was not possible between citizens until last month, a single window (one-stop service) was set up to handle payments and various services.</p> <p>f) One of the pillars of the plan is the one single certification program, and the ID project resumed two months ago, and to make up for the delay, continuous work has been done.</p> <p>g) Also, cyber security measures were suspended in the March 2020, but have been resumed in January 2021.</p> <p>ii) Evaluation system for Agenda Digital 2020-30</p> <p>a) Business follow-up system for the 18 projects is in place, and monitoring is to be conducted twice a year. In evaluating the project, the Study Team is using a matrix to measure the progress.</p> <p>iii) About the national interoperability platform</p> <p>a) E-Law is an e-government initiative aims to connect 15 government agencies based on the Estonian model. Currently, this program is lagging behind due to lack of sufficient stable and capable infrastructure.</p> <p>b) There is a plan to develop a national connectivity network as a communication line, connecting all government agencies, schools, hospitals, police, etc., with a 750 km fiber optic cable. This organization will be in charge of the project itself. The construction and operation of the network will be carried out by a joint venture (50:50) between the government and the private sector.</p> <p>iv) Others</p> <p>a) Microsoft, Google, and Oracle are providing a variety of support based on the agreements with the governments. The agreements cover multiple sectors and include everything from service provision to equipment procurement and technical support. Nokia is also designing networks for public spaces.</p> <p>b) Donors include support from Inter-American Development Bank (IDB), Korea International Cooperation Agency (KOICA), the European Union (EU), among others, and the Study Team is working directly with the EU through the Spanish government. Receiving support from KOICA and IDB for development of communication environment.</p> <p>c) Through these supports, the Study Team's aim to 1) build a digital society, 2) improve the capabilities of users, and 3) improve the capabilities of related organizations.</p> <p>d) Among the sectors particularly affected by COVID-19 are commercial activities, including imports and exports, which affect the entire country.</p> <p>e) Since last year, Bitcoin has been discussed among governments, including the Central Bank, regarding a national electronic currency (initially it was not bitcoin). As a result, the Study Team has decided to use Bitcoin, which is believed will contribute to digital inclusion and improve citizens' understanding of electronic currencies.</p> <p>f) (It is said that 70% of the population do not have a bank account.) The Study Team believes that the key is digital inclusion, which gives confidence and promotes knowledge to people who are uncomfortable with having a bank account, have high interest rates, and do not have cash.</p> <p>g) Since most international remittances do not go through bank accounts and are done informally, it may be difficult to convert them to electronic form through electronic currency. Electronic currency would require more transparency in economic activities (Ishimoto).</p> <p>h) There are transactions that take place through regular banks, through services such as Western Union and Moneygram, and small loans that are specific to Latin America. The government's idea is to use technology to charge for these transactions in a fair and appropriate manner.</p> <p>i) The aim is to provide a guarantee for the unbanked and to make digital invoicing accessible to all. The government has a role to play in providing the tools for small transactions to be done electronically.</p> <p>3. Conclusion:</p> <p>j) The Study Team will continue to exchange opinions as necessary, and the data and documents needed will be provided at a later date.</p>	

(Over)

Source: Study Team

The following is a summary of hearings in the Dominican Republic.

Table 12-7 Hearing Summary (Dominican Republic)

Title	Digital Agenda 2030		
Date	2021 September 23 rd (Thursday)	Time	10:00 – 11:00
Venue	C. Moisés García 9 - C. Moisés García 9, Santo Domingo		
Participants	No.	Name	Position / Organization
FUNGLODE	1	Reyson Lizardo Galvá	Director of Coordination and Monitoring of the 2030 Digital Agenda
Inquiry Commission	1	Kazushi Endo	
	2	Kaori Ikagata	
	3	Yosuke Ohta	



Photo source: Study Team

The hearing was held to ascertain the current status and progress of the Dominican Republic's existing national plan, the Digital Agenda initiative. The results of the hearings are presented below.

Table 12-8 Hearing Results

No.	Item Reported, Discussion, and Agreement	Answer/ Action
IV.	Introduction of Digital Agenda 2030 by MINPRE	
	<ul style="list-style-type: none"> • The Digital Agenda, which is divided into 11 sectors such as security, health, and education, was developed to enrich the lives of individual citizens and further develop society through digital technologies. • In order to formulate the plan, hearings on the needs for digitalization in each area were held from February this year, and the first general meeting was held in March. • A total of 1,015 stakeholders and over 200 organizations were involved in Digital Agenda 2030 • As for the current status of digitalization in government agencies, there are more than 500 systems in use across government agencies, and 229 new systems are currently under development. • In rural areas, there are still areas where 4G connections are not fully available. • In order to promote digital technology to citizens, there are digital centers where citizens can interact with each other and also learn digital skills. • In order to accelerate the pace of development of the Digital Agenda, there is a solidarity fund established by several organizations, including IT companies such as Google and Microsoft, which is providing financial support to the Dominican government. • For public transportation, there are several iOS / Android compatible apps (Closed-circuit television (CCTV) image display, traffic sign app) being built by INTRANT. App development is a high priority in the measures implemented by Ministerio de la Presidencia: Página de inicio (MINPRE). • The transit search application provides information such as route guidance, transportation costs, and timetables. • INDOTEL is working on 5G lines, but the frequency allocation needs to be adjusted and it is taking time to spread. • Eleven indicators have been set up in advance for each of the sectors in order to monitor the status of their efforts. The first assessment of the Digital Agenda will be conducted in December 2021 	
	V. Question and Answer Session	
	<ul style="list-style-type: none"> • MINPRE's role is to develop the agenda and coordinate with the respective sectors, and it does not have a detailed understanding of the initiatives of individual sectors. 	

No.	Item Reported, Discussion, and Agreement	Answer/ Action
	<ul style="list-style-type: none"> • The data and other information necessary for the operation of the transit application developed by INTRANT is provided by Oficina Gubernamental de Tecnologías de la Información y Comunicación (OGTIC). • The development of the government's digital strategy has been supported by Estonia, the United States, South Korea, China, Japan, Colombia, Chile, Israel, and other countries. • The IDB is also involved in the development of the digital strategy, particularly supporting the areas of network connectivity and cyber security. • The applications to be developed in each sector will be maintained by each agency. In the future, it will be a function of the government platform. For this reason, security policies and connection specifications will be defined in advance by MINPRE. • Since the implementation of the developments described in the Digital Agenda will require a large amount of money, the government is considering grant aid and borrowing funds from other countries as well as its own budget. So far, the European Union is the main contributor. 	

Source: Study Team

12.7 DIGITAL UTILIZATION AND NEEDS

Based on the results of the survey in each sector, the actual status of the use of digital technology, innovative approaches, and needs are summarized below.

12.7.1 Social and Economic Policy

One of the socio-economic problems in Central America and the Caribbean is the lack of employment opportunities and the resulting migration abroad, especially to the United States, and the resulting disparity between the rich and the poor within the country. The lack of domestic employment opportunities is pushing people to migrate to the United States. For example, in El Salvador, migrant workers sent nearly USD 6 billion, or 20% of the gross domestic product (GDP), to their families and relatives in 2019. According to the United States think tank, Inter American Dialogue, 84% of remitters from abroad used agents in 2016, but by 2020, remittances using agents had dropped to 67%. According to media reports, the background to this is that remittances using the Internet are rapidly increasing, and especially after the outbreak of COVID-19, there is a clear shift to bank accounts, mobile apps, and website-based remittances. In this way, Central and South America are in an environment suitable for the development of emerging banks utilizing FinTech, and in recent years, they have been quick to adopt digital banking technology and have established themselves as a base for emerging banks. The number and amount of funds raised by startups in this field are increasing every year.

In July 2021, the Government of El Salvador announced that it would be the first country in the world to use Bitcoin as its legal tender. According to various media reports, one of the purposes of adopting Bitcoin is to reduce the burden on senders and recipients of overseas remittances, which account for more than 20% of GDP, by lowering remittance fees through the use of Bitcoin. At the same time, the increase in overseas remittances will help to leverage El Salvador's economy.

The country is also considering the possibility of having family members living abroad send Bitcoin money to El Salvador without going through a bank for those who do not have bank accounts in the country, and having the recipients use the money directly in El Salvador. Currently, only 30% of the country's population over the age of 15 has a bank account, and the financial system is only functioning in part of the economy. The country's goal is not to make Bitcoin a legal tender, but to promote financial inclusion by making it more convenient to send money from abroad and to allow people without bank accounts in the country to use financial services.

12.7.2 Health Care and Nutrition

In the COVID-19 disaster, the Central American and Caribbean countries declared a state of emergency and restricted activities to prevent the spread of infection. With the support of the Pan American Health Organization (PAHO), regional integration of surveillance for respiratory infections, including influenza, has been promoted, and national reference laboratories have been established as national influenza centers and network. PAHO is supporting the development of national reference laboratories as national influenza centers, their networking, and integration into the Global Influenza Surveillance and Response System (GRSRS). Telemedicine is also making progress, and according to

an article¹ in Market Data Forecast, the Latin America telemedicine market is estimated to grow rapidly from USD 1.57 billion in 2020 to USD 3.48 billion by 2025, a growth rate of 17.2% annually. In addition to addressing situations where contact and outreach are limited, these services are expected to contribute to reducing disparities in access to quality services across physical distance. While many of these services are provided by the private sector in urban areas, and there are concerns that those who have difficulty accessing Internet facilities and equipment may be left behind, the spread of innovative technologies such as telemedicine in the midst of COVID-19 disaster has shown new possibilities for achieving UHC. While the spread of innovative technologies such as telemedicine in the COVID-19 disaster will show new possibilities for achieving universal health care (UHC), it will be necessary to devise ways to ensure that those who have difficulty accessing the Internet infrastructure are not left behind.

12.7.3 Education

While the COVID-19 disaster has forced the closure of schools, most of the countries surveyed have introduced and implemented distance education via the Internet, including the use of their own online platforms and software such as Google Classroom, Moodle, and Zoom to deliver classes and provide digital learning materials. Most countries have introduced and implemented distance education via the Internet. On the other hand, according to a questionnaire survey conducted by the UNESCO Regional Education Office for Latin America, El Salvador, Honduras, Panama, and the Dominican Republic cited the lack of teacher training as an issue in implementing distance education. In these countries, schools were closed due to COVID-19 without a system in place, so there is insufficient preparation for the transition to distance education and support for teachers and parents of students regarding distance education. There is also a lack of support for schools and teachers in terms of technical training on how to deliver classes via distance education and how to use the Internet and ICT devices, staffing for implementing distance education, and infrastructure development in schools.

During school closures, in order to continue learning opportunities, countries use various methods to implement distance education, such as interactive distance learning through virtual platforms using the Internet, distribution of educational digital content through the Ministry of Education website and distribution of educational programs through TV and radio. However, many countries have taken measures to provide distance education services. However, in order to receive these educational services, households must not only have an Internet connection, but also an electricity line, ICT equipment or at least a smartphone that children can use. However, in the Central American and Caribbean regions, there are many children who do not have such a family environment. In general, the following challenges have emerged in Central America and the Caribbean.

- Lack of know-how and digitalized teaching materials for distance education
- Lack of preparation of teachers and schools for distance education
- Lack of support for parents of students
- Delays in the implementation of learning achievement assessment and monitoring evaluation
- Loss of learning opportunities for students with disabilities
- Reduction of public education budget

According to the interview with the officer in charge of the Ministry of Education of Panama conducted for this study, the officer recognized that it is difficult to acquire knowledge and skills about ICT and online platforms in a short period of time in the country where many teachers are over 60 years old. Many of them use the social networking site WhatsApp to continue their learning, he said. In the education sector, there is a need to develop and strengthen the school infrastructure (Internet access network) in addition to the traditional technical support to improve academic performance.

¹ <https://www.globenewswire.com/en/news-release/2020/08/18/2079966/0/en/MDLink-Announces-Plans-to-Expand-Into-Central-America.html>

12.7.4 Agriculture and Rural Development

The productivity of the agricultural sector in Central America and the Caribbean is inefficient due to a number of challenges, including low technology, lack of production organization and coordination among actors in the food chain, and as a result, farm incomes tend to be low. Furthermore, there is a lack of services to support the sector, such as agricultural finance and insurance, which has led many young people to migrate to urban areas or abroad instead of engaging in agriculture. Therefore, despite the widely recognized need to modernize the sector, including the adoption of digital technology, in order to improve productivity in the sector through, for example, weather risk monitoring, input management in cultivation, and linkages between producers and consumers, the above situation and the generally conservative nature of agriculture and rural communities have not allowed for this progress. The situation described above and the generally conservative nature of agriculture and rural areas are some of the factors that have hindered this progress. Thus, accelerated digitization needs to be accompanied by improvements in the basic structure, including the development of a framework to support the introduction of new technologies.

In particular, in Central America and the Caribbean, a number of problems can be cited, many of which existed before COVID-19, from cultivation to distribution, processing, marketing, and consumption; a direct impact of COVID-19 is the stagnation of farm incomes (including off-farm incomes) due to sluggish economic activity. Most of the small-scale farmers have no schooling, are old, and the agricultural technology extension services provided by the government are very weak. Under these circumstances, it is possible to improve the efficiency of farming and improve profits by strengthening human resources to introduce digital technology that can simplify various tasks, and by developing information and communication infrastructure and ICT. For example, Panama has built a database of small-scale farmers, and this data could be used as a catalyst for the development of various technologies related to farming and distribution. It is important to position these efforts as a way to position rural youth as suppliers and supporters of private digital business services.

12.7.5 Private

Based on the information gathered and interviews with stakeholders, Comisión Económica para América Latina y el Caribe (CEPAL) prepared *"Análisis de las políticas de apoyo a las pymes para enfrentar la pandemia"*. The study, *"Análisis de las políticas de apoyo a las pymes para enfrentar la pandemia de COVID-19 en América Latina"* (Analysis of SME Support Policies for the COVID-19 Pandemic in Latin America), was prepared based on the information provided and interviews with stakeholders. In this study, COVID-19 measures to support small and medium-sized enterprises (SMEs) can be divided into four categories: (1) short-term liquidity, (2) employment protection, (3) production support, and (4) improved access to credit. As a result of these analyses, the following issues have been pointed out: insufficient government funding for the demand, difficulty in scoping the recipients of support, administrative costs of support, and support that reaches the necessary targets. In addition, support for the introduction of digital technology, promotion of formalization of enterprises, and biosecurity were cited as important areas for economic resumption. In Panama, Fundación Ciudad del Saber (hereinafter referred to as "Fundacion"), a private-sector-led non-profit organization, is supporting various activities in a special economic zone for companies that provide innovation. Under the umbrella of Fundacion is the Innovation Center, where entrepreneurs can receive a variety of services for their companies, such as start-up support programs, office space, and business mentoring (Figure 12-4). In response to the COVID-19 disaster, a face-recognition time and attendance management software company and a retail shelf optimization service company have successfully commercialized their services with Fundacion's support.



Source: Study Team

Figure 12-4 Office of the Ciudad del Saber (Panama)

Mexico is also working to strengthen innovation as the next step in its evolving automotive industry, and has begun to build a digital ecosystem and mentor development efforts.

12.7.6 Environment and Disaster Prevention

In the disaster management sector, there were negative impacts, such as the inability to adequately respond to natural disasters such as hurricanes, when government functions were degraded by the COVID-19 disaster. On the other hand, the positive impact was that the practices of horizontal cooperation among government organizations have advanced, and the use of digital technology has been promoted, allowing information sharing to be more efficient than before. On the other hand, the expansion of disaster risks and the increase in damage caused by urbanization have led to the need to strengthen disaster prevention and mitigation governance. It is necessary to establish a platform for centralized management of disaster prevention information, a pre-warning system that will contribute to early countermeasures, and disaster prevention network lines that will ensure coordination among related organizations, and provision of information to residents in the event of a disaster. In the environmental sector, the introduction of renewable energy, biodiversity conservation, and waste management, especially in urban areas, have been cited as important issues, but there has been insufficient consolidation and management of basic data for countermeasures.

12.7.7 Governance and Public Safety

Even before the pandemic, the governments of Latin American countries had been working on the digitization of public administration, and the pandemic increased the urgency of this need. For example, in order to prevent the spread of COVID-19, there was a need for civil servants as well as the general public to perform official duties from home, and there was a need to develop administrative procedures so that citizens could carry them out online. However, while 73% of Latin American countries have a Digital Agenda, efforts have not progressed sufficiently due to budget shortfalls and the interruption of projects by COVID-19. According to the IDB, the Central American and Caribbean countries lack human resources such as cybersecurity experts, data analysis experts, data protection experts, and ICT public procurement experts. In the face of widespread and increasingly sophisticated crime, it is important to train cybersecurity professionals.

In Central America and the Caribbean, with the exception of Belize and Antigua and Barbuda, national IDs have been issued in all countries, and the infrastructure for their use is in place.

12.7.8 Infrastructure and Energy

In the infrastructure sector, the Study Team is sorting out mainly the aviation sector. There was a major drop in air travel in March and April of 2020, and although there has been a gradual recovery since then, it has yet to return to previous levels. In particular, passenger traffic was down 80% in February and March 2021, and 60% in August, and September 2021, compared with the same months of 2019, which is not significantly different from the global trend. On the other hand, the decline in

cargo in February, and March 2021 was larger than in other regions, indicating a delayed recovery, but as of August and September 2021, it is on a recovery track similar to that of Europe and the Middle East. As for other transportation in general, it is clear that the transportation subsector has seen a significant decline in its transportation volume due to the impact of COVID-19, which has led to a change in user behavior, with a decrease in commuting demand due to remote work and an increase in freight transportation due to online shopping and delivery. The COVID-19 has revealed that users are changing their behavior, with a decrease in commuting demand due to remote work and an increase in freight transportation due to online shopping and delivery.

In the energy sector, COVID-19 had no impact on the disruption of fossil fuel supply, although there were some primary logistical disruption. The figure below shows the distribution of the share of renewable energy in electricity generation. Many countries in the Central American region have abundant and well-developed hydroelectric and geothermal resources, including Costa Rica (99%), El Salvador (71%), Guatemala (59%), Nicaragua (57%), and Honduras (53%). In many of these countries, the direction toward carbon neutrality and the technologies that are being considered for introduction are being organized.

12.7.9 Tourism

In the tourism sector, it is pointed out that Small Island Developing States (SIDS), including Caribbean countries, are particularly affected by COVID-19 (77% decrease in international tourist arrivals in 2020 compared with the previous year). The following four causes have been cited.

- a) High dependence of the economy on tourism.
- b) Vulnerability of the domestic market, which is expected to recover more quickly than the inbound market
- c) Dependence on a small number of markets with primarily long-haul flights
- d) Severe impact of the pandemic and strict movement restriction measures in major source countries

In particular, the tourism sector is dominated by small, medium and micro enterprises, and the impact of slow digitalization, such as slow response to digital payments and online booking, is apparent. While 82% of large enterprises have their own websites, the figures are 31% only for small enterprises and 65% for medium enterprises. In other words, although companies are connected to the Internet, they are basically using only rudimentary tools such as social media and messaging platforms. After the COVID-19 pandemic, consumers began to prefer contactless payment methods, which further disadvantaged small- and medium-sized businesses that could not handle digital payments.

Lack of digitization has been identified as a vulnerability of the tourism sector in the literature and interviews. The causes can be divided into two major categories: hardware (infrastructure) and software (ICT literacy). Regarding the former, as already mentioned, there is a large disparity between urban and rural areas in terms of Internet connectivity (including stable electricity supply), which requires the development of communication infrastructure as well as the optimization of the cost and improvement of the quality of communication services. On the software side, measures for SMEs related to the use of digital tools such as digital payment and digital marketing are considered necessary. The direction of these measures is described below.

- Infrastructure development
- Development of a legal system for digital payments
- Incentivizing Fintech companies
- Strengthening the capacity of micro-, small- and medium-sized enterprises (MSMEs) for digital payments and digital marketing
- Subsidies to promote digitization and tax incentives to encourage investment in digitization

12.7.10 Government-Private Partnership

The Strategy 2025 for Overseas Development of Japan's Infrastructure Systems mentions efforts in a wide range of infrastructure fields with focus on "smart cities". There are numerous

initiatives, but based on the world ranking published by Instituto de Estudios Superiores de la Empresa (IESE), countries and cities that are making advanced efforts in smart cities in the region have been selected. Five cities from Central America and the Caribbean were selected, in order of global ranking, namely: Panama (Panama), San Jose (Costa Rica), Mexico City (Mexico), Santo Domingo (Dominican Republic), and Guatemala City (Guatemala). These cities are considered to have a greater affinity for the adoption of smart technologies than other cities in the region.

In the COVID-19 disaster, there is a renewed focus on the technological advantages of the digital innovation sector. There is a trend to support the introduction of technologies that enable remote and non-contact. In the field of digital technology, the introduction of technology as "as a service" with a subscription model that enables real-time monitoring and improvement is emerging as a new business model, rather than the traditional infrastructure system of one-time purchase.

12.8 UTILIZING DIGITAL TECHNOLOGIES

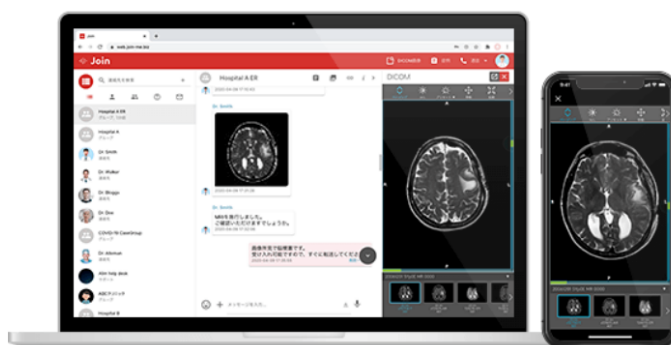
The digital technologies used in the various pilot projects that were adopted in this study are organized in the following sections.

12.8.1 Demonstration of Mobile-based Telemedicine for Stroke (Dominican Republic)

In the Dominican Republic, the lack of medical resources in rural areas is a serious issue, while urban areas have advanced medical systems. The aim of this project is to solve the shortage of medical resources in rural areas by creating an environment where medical professionals in rural and urban areas can communicate with each other through the application.

In order to solve the shortage and uneven distribution of medical resources in the Dominican Republic, the Study Team has demonstrated the effectiveness of a remote diagnostic medical network based on Join (), a communication application between medical professionals developed by ALM, as a solution to improve the quality of medical care for non-communicable diseases (NCDs). (Figure 1-5)

Join () is the first medical device program in Japan to be approved and covered by the Pharmaceutical Affairs Law, and has also been approved by the United States (FDA) and Europe (CE). It is equipped with functions for sending and receiving chats and images, and has the feature of sharing medical data such as computed tomography (CT) and magnetic resonance imaging (MRI) images and blood test data stored in a medical image management system (PACS) in a secure environment. The company will proceed with demonstration activities in order to obtain approval from the Ministry of Health to expand the system to the United States and other Central American and Caribbean countries in the future.



Source: ALM Co.

Figure 12-5 Join (Communication Application)

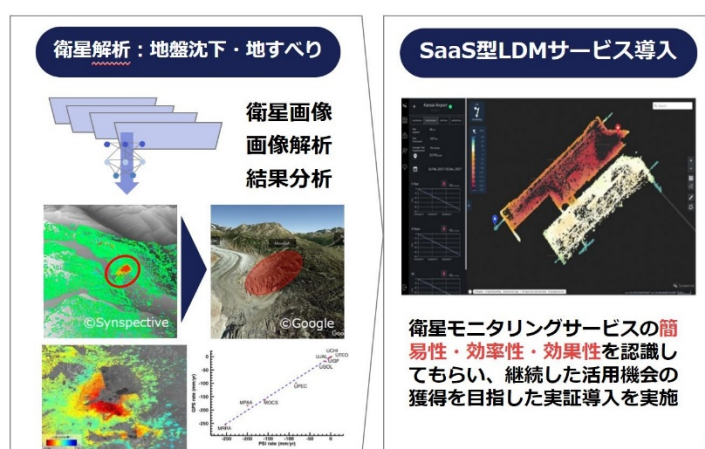
12.8.2 Demonstration for Expansion of EWBS Reception Environment (Nicaragua)

In Central America and the Caribbean, natural disasters such as earthquakes, tsunamis, and hurricanes occur frequently, and the construction of an ICT system that can quickly and accurately transmit disaster information to citizens has become an issue. For this reason, in cooperation with Tanabiki Corporation, the Overseas Telecommunications and Broadcasting Consulting Cooperation, TELCOR (Nicaragua's Information and Communications Regulatory Organization), among others, the EWBS system, which is a part of the Japanese terrestrial digital broadcasting system (ISDB-T) developed by Japan and capable of transmitting disaster information on an emergency basis, was used to transmit disaster information to the general public. In order to transmit disaster information to the general public, the Study Team conducted a demonstration of displaying disaster information on general-purpose devices such as television sets (TVs), personal computers (PCs), smart phones, and speakers

through the existing ICT infrastructure (broadcasting, wi-fi, in-home listening, etc.), and promoted its utilization in the field.

12.8.3 Introduction of SaaS-based Ground Motion Monitoring Service (Guatemala)

The Study Team will introduce a wide-area satellite-based ground deformation monitoring system (hereinafter referred to as "LDM") using the SaaS system provided by Synspective, Inc. to the National Agency for Earthquakes, Volcanology, Meteorology and Hydrology of Guatemala City and other metropolitan areas that are at risk of potential ground deformation disasters. The LDM is a SaaS-type service that allows users to use continuously analyzed satellite data, rather than having to acquire and analyze satellite data themselves (see Figure 1-6). The LDM is a SaaS-type service that enables users to use continuously analyzed satellite data, rather than having to acquire and analyze the data themselves. By acquiring knowledge on how to evaluate ground deformation risks through the use of satellite data and learning how to operate the satellite monitoring system, the LDM is expected to contribute to improving the efficiency of surveying operations and early detection of potential ground deformation risks during normal monitoring and disasters.



Source: Synspective Inc.

Figure 12-6 Service Image of the Ground Deformation Monitoring System

12.8.4 Strengthening Tourism Resilience (Jamaica)

In Jamaica, which is highly dependent on the tourism industry, a sudden decrease in the number of tourists due to a crisis or disaster can have a fatal impact on the overall economy of the country. Since employees may lose their jobs if industrial activities are stagnant for a long period of time, it is important for tourism-related businesses to be prepared to quickly rebuild their businesses in the event of a crisis.

Based on the concept of "Build back better", the Tourism Agency of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) and the United Nations World Tourism Organization (UNWTO) Office in Japan have prepared a "Guide for the Promotion of Tourism Risk Management by Local Governments and Tourism-related Businesses", as well as "Teaching Materials" and "Guide for Instructors" to disseminate the guide. In addition, the Study Team has prepared "educational materials" and "instructors' manuals" to disseminate these materials. In order to support the formulation of crisis management plans for tourism-related businesses in Jamaica by using these educational materials, a webinar and a workshop to support the formulation of plans were held in collaboration with the Global Tourism Resilience and Crisis Management Centre in Jamaica. By using these materials, it is expected that the resilience of local governments, DMOs²², tourism associations, and tourism-related businesses will be strengthened during crisis response.

²² Destination Management/Marketing Organization: Tourism Regional Development Corporation

12.8.5 Japan-Panama Industrial Promotion through Open Innovation (Panama)

In recent years, the unemployment rate, underemployment rate, and informal worker rate have all been on the rise in Panama. On the other hand, Panama's economy has been growing steadily, and there is a discrepancy between economic growth and the actual employment situation.

Comparing Panama's economic structure within the region, the Study Team finds that agriculture and manufacturing account for a very small percentage, while transportation and communication, construction, and finance and real estate account for a large percentage. In the case of construction, the influence of projects such as the Third Bridge and the Metro Phase 2 of the Panama Canal is believed to be the main factor. While for the transportation and communication, the influence of the existence of industries around the Panama Canal, and in the case of finance and real estate, the influence of investment in the center of Panama City and residential development in the suburbs of the metropolitan area are the main factors. While this economic structure exists, it has been pointed out that economic growth in recent years has depended on sectors that do not require a labor force. While sectors related to the Panama Canal, which are carried by foreign capital and do not generate many local jobs, are growing, sectors that require more employment, such as agriculture and manufacturing, are growing at a slower pace.

In light of this situation, it is important for Panama to mitigate the impact of COVID-19 on employment and develop industries that are resilient to future crises such as pandemics. On the other hand, considering the high wages in Panama compared with the neighboring countries, it is difficult to grow many labor-intensive industries such as agriculture and manufacturing. In addition, in Panama, where the economy is developing around the Panama Canal, industrial development that is appropriate to the economic level is required, rather than traditional industrial development.

In addition, as a result of interviews conducted with economic development officials at the Ministry of Commerce and Industry of Panama (MICI) and EMMA officials, innovation was cited as an area of emphasis for economic development. In fact, the Panamanian government is making efforts to develop industries by utilizing foreign capital. One such initiative is the Ciudad del Saber, a special zone for research and development (R&D) and innovation. Ciudad del Saber, which utilizes 140 hectares of land returned by the United States, is managed by Fundación Ciudad del Saber, a non-profit organization. The organization also runs an innovation center, which supports entrepreneurship through entrepreneurship programs, office space rental, and mentoring services.

Based on the economic and employment situation in Panama and the efforts of Ciudad del Saber, the COVID-19 Research Team hypothesized that the Japan International Cooperation Agency (JICA) could promote industrial development and job creation in Panama by supporting open innovation with foreign capital. The purpose of this pilot project is to test and demonstrate part of this hypothesis.

12.9 DEVELOPMENT OF HYPOTHESES ON THE STATE OF SECTORAL DEVELOPMENT COOPERATION IN WITH/POST COVID-19 SOCIETY

12.9.1 Current Status and Issues in Central America and the Caribbean

In Central America and the Caribbean, the progress of various measures for DX and innovation varies greatly from country to country. In examining the ideal way of development cooperation in Japan in the future, the current situation and issues in the Caribbean region of Central America were generalized and organized based on the surveys of each country. In organizing, 1) improvement of policy formulation ability, 2) development of human resources, 3) infrastructure development and are shown as basic policies in "Efforts to address issues facing the world: Information and communication technology" shown by JICA. 4) Refer to "X-TECH" (ICT utilization).

(1) Policy Formulation

As of 2020, of all 193 UN member states, the average ranking in Central America is 101st, and the average ranking in the Caribbean is 107th. Many countries have formulated plans to promote administrative digitization, including DA (Digital Agenda), and are promoting digitization and monitoring of each sector in the plans.

[Distinctive measures]

- We are trying to foster the private sector in the telecommunications industry through deregulation.
- Promoting the spread of Internet lines through the entry of the private sector
- We have various regulations required for digitization such as interoperability, cyber security, privacy and data protection, consumer protection, etc.
- Promote information aggregation on online platforms for administrative services
- We are promoting the conversion of various information including individuals into IDs.
- Temporarily suspend payment of telecommunications services for COVID-19.

[Assignment]

As mentioned above, in Central America and the Caribbean, comprehensive plans for digitalization are being formulated in each country, and improvements in administrative services and efforts for various legal systems are also progressing. .. On the other hand, since there are countries that have not yet prepared plans, support for planning for these countries is considered to be effective. Furthermore, in order to promote the digitization of the nation and government, it is considered necessary to support the development of the legal system necessary for digitization, and to monitor and support each of the efforts listed in the plan.

(2) Human Resource Development

Regarding the improvement of digital ability, DA has shown the action field of Inclusion & Digital Skills & other Competencies, and labor measures for formulating and utilizing curriculum for each skill of digital technology, promoting digital inclusion, ensuring accessibility, and promoting telework. Is being reviewed.

[Distinctive measures]

- Establish a university on computer science to develop human resources
- Develop human resources who can adapt to the challenges of the knowledge society and compete on a global level
- Create an administrative model with public participation. (Inclusion)
- Build innovation centers and other facilities to foster the private sector.

[Assignment]

The importance of human resource development has been pointed out by the Digital Agenda and the results of surveys in various countries. In Central America and the Caribbean, there has been less accumulation of digital technologies led by their own countries than in other developed countries. Therefore, the development of human resources in the government and private sector is considered to be an urgent issue in the construction of the value chain for digital business, including infrastructure, services, and the creation of legal systems.

(3) Infrastructure Improvement

The situation regarding infrastructure development in the Caribbean region of Central America is as follows. With the entry of the private sector, the development of the mobile phone network has progressed and the mobile connection rate is high, but the Internet usage rate is 50% in Central American countries and 59% in the Caribbean countries, which is higher than the average of 81% in OECD countries. It is below. Furthermore, in rural areas, the penetration rate of the Internet is about 10% to 30%, and the gap with urban areas is widening. The following is a characteristic approach after organizing the current state of infrastructure.

[Current status of infrastructure]

- The spread of the Internet has progressed due to the entry of the private sector
- Internet usage rate (number of Internet users to the total population) is 60%, which is

lower than that of OECD countries.

- The maintenance status is different between urban areas and rural areas (digital divide).
- LTE service maintenance is delayed
- The deployment of 5G network infrastructure has been delayed, making it difficult to start a wide range of services early (in many cases, frequency band allocation has not been completed).
- Maintenance under the guidance of the East Caribbean Telecommunications Bureau (ECTEL)
- Introducing dedicated network services to build one or more government wide area networks (GWANs) that allow government agencies across the country to interconnect.
- There are few countries where data centers are located.

[Distinctive measures]

- There is concern that the digital divide between regions will become more serious in Internet access (9.9% in rural areas / 28.4% in cities) and the ownership rate of communication terminals such as personal computers (15.2% in rural areas / 35.2% in cities). Dominican Republic)
- Payment exemption for telecommunications services (El Salvador, Dominican Republic)
- Additional free talk time and usage capacity (GB) to users and free use of emergency phone numbers.

[Assignment]

Infrastructure development rates differ greatly between urban and rural areas. Infrastructure development needs to be steadily implemented, but rapid maintenance is difficult because physical line maintenance is especially important for wired. In order to increase the number of Internet users and quickly spread digital services, for the time being, we will proceed with the development of the usage environment for mobile terminals (hardware such as terminals, software such as usage fee assistance) at an early stage, as a medium- to long-term issue. , I think it is necessary to proceed with the development of a wired system capable of large-capacity communication.

(4) X-TECH" (ICT utilization)

The following is a summary of the characteristics ICT utilization identified in each sector survey.

[Society and Economy (Digital Payment)]

- Mexico, Colombia, Paraguay and Peru establish the Better than Cash Alliance through multilateral cooperation. This partnership will accelerate the transition from cash to digital payments to reduce poverty and promote inclusive growth
- As a measure against corona, financial companies provide zero-rate data access for mobile banking applications used by customers (Jamaica).

[Health Care and Nutrition]

- Launched telemedicine services for pregnant and postpartum women, children under the age of 5, and those in need of mental health care. Web tools or the same SNS tools for patients and doctors are used for medical examinations (El Salvador)
- As an e-health strategy, we will work to build an advanced broadband network that connects computer devices of all institutions in order to enhance the interoperability of each institution that constitutes the National Health Service (SNS). Covid-19 Launched telemedicine project for critically ill patients (Dominican Republic)
- COVID-19 Contact Notification Service allows you to be notified live when a person with

a positive diagnosis approaches, and if the person has a positive reaction, notify all contacts who were nearby in the last 10 days. Supports prior infection risk aversion and voluntary quarantine measures

[Education]

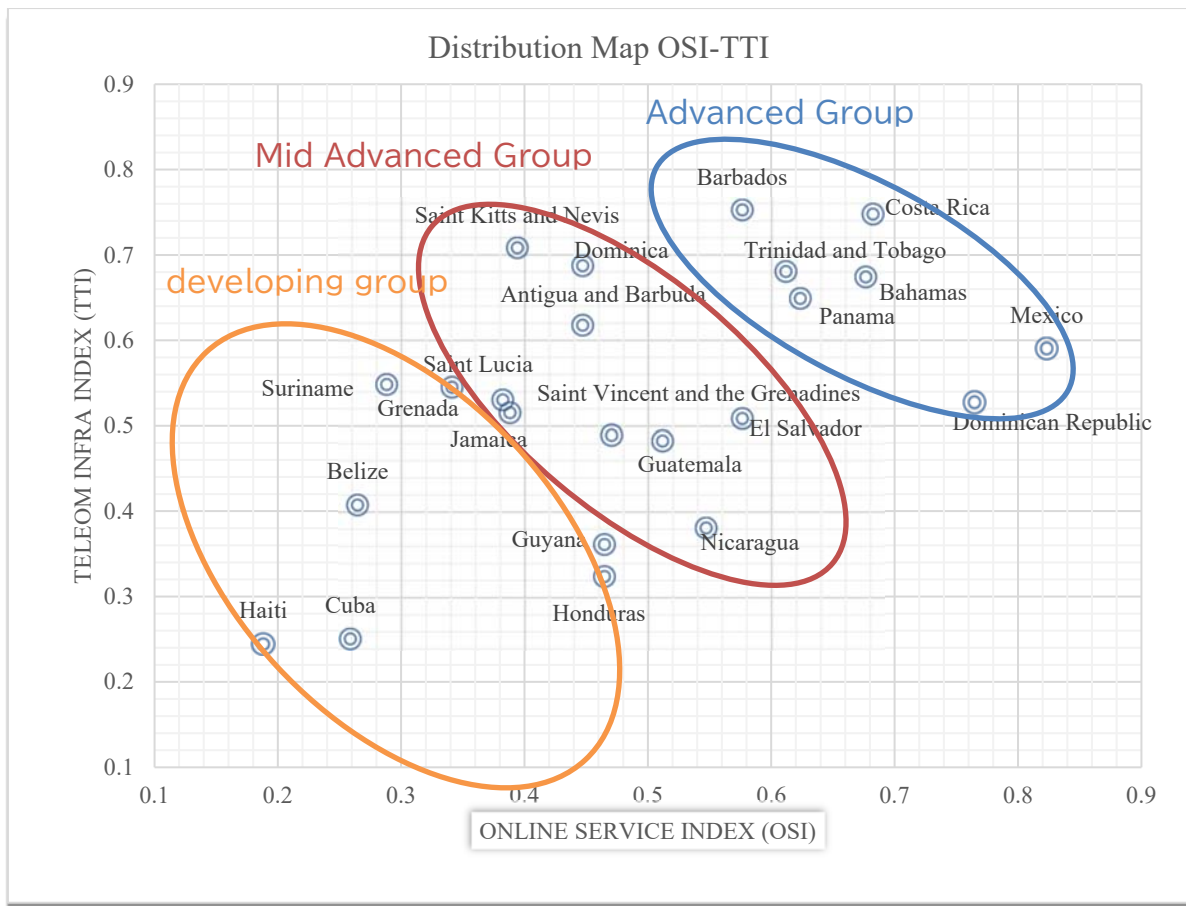
- The Ministry of Education has started a training and capacity building process to train 100 professional engineers for virtual education (El Salvador).
- SIGES (Education Management Information System) has begun to use computer systems for education management, and all information is centralized (El Salvador).
- Materials for school education are available through the e-learning platform (Ministry of Education website) (Panama)
- Implemented a homeschooling program and started a lockdown school curriculum (Mexico)
- In addition to promoting distance learning through the use of educational TV “Teleclasses” and communication platforms such as WhatsApp and Messenger, we are also developing a comprehensive strategic plan that packages priority curriculums in the most vulnerable and poorest regions. (Nicaragua)

[Governance and Public Safety]

- One of the effects of DCOVID-19 is the development of a digital platform to continue providing administrative services (Guatemala).
- In the Caribbean region of Central America, national IDs are issued in all countries except Belize and Antigua and Barbuda.

12.9.2 An Analysis of Vulnerabilities in the Use of ICT Technology in Central America and the Caribbean

In order to analyze the vulnerability of the Central American and Caribbean regions, the 23 target countries of this project were categorized into three major groups within the region: "advanced," "medium advanced," and "developing," and the use of ICT technology was analyzed. In order to classify the countries, the Study Team created a distribution chart based on the values of the Online Service Index (OSI), which is an indicator of the progress of e-Government, and the Telecommunications Infrastructure Index (TII), which is an indicator of the development of the telecommunications infrastructure that is the basis for ICT utilization. The results of the grouping are shown below.



Source: UNDESA E-Government Survey 2020, United Nations Department of Economic and Social Affairs, with additions

Figure 12-7 Distribution and Grouping of Online Service Indicators and Information and Communication Development Indicators by Country

For the analysis of each country, the Study Team applied the PEST (political, economic, socio-cultural and technological) analysis method, a business framework that is widely used for the analysis of macro-environmental factors. There are many business frameworks used to analyze environmental factors, but PEST analysis is superior in comprehensively organizing the political, economic, socio-cultural, and technological aspects, and in understanding the positioning, potential, and direction of the target country. It is an effective method for examining policies.

(1) Analysis of Advanced Groups

The results of PEST analysis are presented for the characteristic approaches of a group of countries that are among the most advanced in the region, such as Costa Rica, Panama, and Mexico.

Politics	Economy
<ul style="list-style-type: none"> ▪ A plan for digitization has been formulated. ▪ We are planning to transform into a digital economy in anticipation of the post-pandemic. ▪ Prohibition of additional charges for delays in payment of telecommunications charges in COVID-19, etc. 	<ul style="list-style-type: none"> ▪ Communication liberalization is progressing and competition is in progress in almost all countries. ▪ Promote the DX project with the support of international organizations such as the World Bank.
Social	Technology
<ul style="list-style-type: none"> ▪ Digitization programs for micro-enterprise and small businesses have been prepared and training is being conducted. ▪ The number of active Internet users is increasing. ▪ There is a forum for exchanging opinions and an e-Learning platform for the utilization of digital tools. ▪ Working to eliminate the digital divide. 	<ul style="list-style-type: none"> ▪ The development and popularization of mobile phone networks has been almost completed, and efforts are being made to increase communication capacity and develop fixed broadband. (5G, etc.) ▪ The government's online platform is being developed with CoVID-19 as an opportunity, and specific service development is expected. ▪ Moving to cloud services ▪ Promoting high performance computing ▪ Data center in place

(2) Mid Group Analysis

The results of PEST analysis will be presented on the characteristic efforts of a group of moderately developed countries in the Central American and Caribbean regions, including El Salvador and Nicaragua.

Politics	Economy
<ul style="list-style-type: none"> ▪ Some countries have developed plans specifically for digitization, while others have positioned digitization as part of their national plans. ▪ Establishing a broadband development plan ▪ COVID-19 has suspended payment for telecommunication services. 	<ul style="list-style-type: none"> ▪ The liberalization of telecommunications is progressing, but there are countries where telecommunications companies are oligopolistic. ▪ Consider the introduction of a digital currency.
Social	Technology
<ul style="list-style-type: none"> ▪ The digital divide has become a social problem. ▪ Digitalization of public education is being studied and constructed to comply with COVID-19. 	<ul style="list-style-type: none"> ▪ LTE service is being introduced. ▪ The optical fiber network connecting the various ministries is being developed. There are plans to improve the communication infrastructure, such as providing wi-fi at community centers. ▪ Educational programs and telemedicine services using SNS are being promoted. ▪ A platform for overseas immigrant remittances is being used. ▪ Lack of technologies such as enterprise architecture, interoperable frames, and identity authentication.

(3) Analysis of Developmental Groups

The results of the PEST analysis will be presented on the characteristic efforts of a group of countries in the Central American and Caribbean regions, such as Belize and Suriname, that have been relatively slow to promote digitalization.

Politics	Economy
<ul style="list-style-type: none"> ▪ Some countries have plans specializing in digitization, while others have positioned digitization as part of their national plans. ▪ A national broadband plan is being formulated. ▪ We have a regulated sandbox, etc. 	<ul style="list-style-type: none"> ▪ There are private mobile operators, but there are differences in services. There are also some oligopolistic countries. ▪ Working on the digital economy with loans from aid agencies such as the World Bank ▪ Investment in the telecommunications sector is small, and its spread is delayed.
Social	Technology
<ul style="list-style-type: none"> ▪ Many low-income countries ▪ The digital divide is large, and access to rural areas has become an issue. ▪ Citizens do not have access to their bank accounts. ▪ With COVID-19, we built a home-based learning program and made the use of the Internet for educational purposes free of charge. ▪ COVID-19 has disrupted the food supply route. ▪ There are many issues regarding the introduction of ICT due to the instability of telecommunications services, vulnerabilities due to low investment in infrastructure, and the lack of public-private partnerships. 	<ul style="list-style-type: none"> ▪ We have introduced a monitoring system for national growth. ▪ Broadband penetration rate is low, and access to broadband is a priority. ▪ Some countries are working on electronic payments. ▪ We operate information systems related to insurance medical care and information systems such as disaster monitoring. ▪ Some countries have weak fixed / mobile lines and rely on satellites / wireless. ▪ We are developing a national network ▪ We have facilities for monitoring resource production with foreign capital.

(4) Summary of Vulnerability Analysis Results

The following table summarizes the characteristics of the digital innovation sector in the developed, middle, and developing groups.

<p>[Advanced Group]</p> <ul style="list-style-type: none"> Digital plan in place, post-pandemic Promote many DX projects The number of active users is increasing. Cloud computing is progressing.
<p>[The Nakashin Group]</p> <ul style="list-style-type: none"> Digital plan is almost in place Oligopoly of telecommunication lines in some parts of the country, LTE not yet introduced The digital divide is getting worse. Lack of technology to support enterprise architecture, interoperability, etc.
<p>[Developing Group]</p> <ul style="list-style-type: none"> Only about half of the respondents have developed digital plans. Low broadband penetration (weak lines) The digital divide is getting worse. Public-private partnerships are not fully functioning due to delays in the development of the digital industry.

Furthermore, by analyzing the results of the arrangement by PEST in detail, 1) improvement of policy formulation ability, 2) human resource development, and 3) infrastructure, which are shown in the basic policy of "Efforts to tackle issues facing the world: Information and communication technology". Maintenance and 4) "X-TECH" (ICT utilization) are summarized separately.

Throughout each item, COVID-19 has little direct impact on the DX / innovation sector. Although there are reports that COVID-19 has delayed the development of physical infrastructure such as network development plans, it is difficult to judge whether the reason has had a direct impact without investigating individual projects. On the other hand, the contents of DA, etc. considering the influence of COVID-19 and the recombination of action items can be seen in the education sector and medical sector.

1) Ability to Make Policy Decisions

In the advanced group, a DA specializing in digital administration is created separately from the national overall plan. In many middle-ranking groups and development groups, digitization is positioned as part of the national overall plan, and the planning status of each country is not side by side. In addition, some of the advanced groups are taking measures from the present time with an eye on the post-pandemic, which is thought to contribute to an early economic recovery. Innovation utilizing digital technology has a large impact on the socio-economics of the nation, so in countries where DA has not yet been formulated, digital administration will be promoted to improve administrative efficiency and the effects of digitization will be realized at an early stage. Therefore, it is necessary to formulate a DA and prepare for after-sales COVID.

It was found that all groups regard broadbandization as an important measure and have formulated national plans.

Focusing on COVID-19, it is often seen that all groups are implementing measures to suspend payment of telecommunications services for people affected by COVID-19.

2) Infrastructure Improvement

In the advanced group, it is assumed that the liberalization of the telecommunications business is progressing, the principle of competition between companies is working, and various private services are born. On the other hand, the market formation is immature in some of the middle-class and development groups, and the oligopoly of leading companies continues. In addition, the middle-class and development groups are promoting the construction of a digital economy and infrastructure development with loans from the World Bank, etc., and the construction of a digital ecosystem in the future is awaited.

3) Human Resource Development

In the advanced group, the progress of digital services is progressing, and it is considered that the social acceptance of digital technology is already progressing, such as operational support and advanced utilization. Therefore, it can be considered that there are a certain number of IT human resources who support services. On the other hand, the digital divide between rural and urban areas is becoming a serious situation for middle-aged and junior groups, and it is thought that IT human resources are unevenly distributed to spread the merits of digital technology to society without omission.

4) X-TECH

In the advanced group, the development and dissemination of mobile phone networks are almost complete, and we are working on increasing the communication capacity and developing fixed broadband in the future. In addition, it is considered possible to use online platforms that are already in service. In addition, the use of the cloud for platforms is progressing, and the location of data centers is also being addressed. On the other hand, in the middle-class and development groups, those who use partial services are often used as one-off problem-solving systems, and the services are provided by using SNS instead of independent development. There are many cases. It is necessary to build a digital ecosystem that supports digital services and develop human resources.

12.9.3 Hypothesis on the Nature of With/Post COVID-19 Society Development Cooperation in Central America and the Caribbean

In 2020, JICA, together with Nippon Keidanren, created a menu book "Society 5.0 for SDGs Digital Co-creation for International Expansion" that combines ODA implemented by JICA and digital solutions owned by Japanese companies. , Japan will utilize various schemes of international

cooperation to make various efforts to create a digital society trusted by the international community. The following three points are presented as the basic policy.

- (1) Embody the purpose of "Principles for Digital Development"
- (2) Contribute to solving various issues faced by developing countries
- (3) Utilize the wisdom of private companies with excellent digital engineer know-how

In addition, in the above co-creation, in response to the worldwide spread of the new coronavirus that occurred in 2020, (1) immediate crisis response such as sharing best practices for preventing the spread of infection, and (2) the end of the pandemic. Later, priority support for those involved in developing countries that are truly in need, (3) Toward a future in developing countries to build more resilient economic infrastructure and social systems against risks such as the spread of this infection. Actions using digital technologies and methods that can be implemented in the three phases of investment have been proposed.

1. Immediate crisis response	2. Measures after the end of the pandemic	3. Investing in the future
<ul style="list-style-type: none"> • Example: Cloud-based medical system / app • Example: Education, dissemination, and enlightenment through video media 	<ul style="list-style-type: none"> • Example: Infant (1-5 years old) Health service using fingerprint authentication technology • Example: ID management system that utilizes backboard information to prevent unauthorized receipt 	<ul style="list-style-type: none"> • Example: Prevention of lifestyle-related diseases using health diagnosis data in rural areas • Example: ICT construction that contributes to the efficiency and refinement of construction sites

Source: Digital Co-Creation for International Deployment of Society 5.0 for SDGs

Figure 12-8 Direction of Actions for Co-creation

Based on these directions, it is thought that the buildback better from COVID-19 can be achieved more concretely and efficiently by establishing a cooperation policy for DX / innovation. , We examined cooperation menus in each sector.

12.9.4 Analysis and Recommendations to Contribute to Sectoral Cooperation Policies

(1) Sectoral Analysis

Since the content and progress of efforts for the development and utilization of digital technology differ greatly depending on the social and cultural backgrounds of each country, it is difficult to put them together as digital innovation and make it a regional cooperation policy. As sociologist Everett Rogers advocated in the 1962 book Diffusion of Innovation, the Innovators Group, Early Adopters Group, are generally involved in the process of spreading ideas. It spreads on a grassroots basis, and its effects give birth to followers. Considering such a dissemination process, in disseminating digital innovation, it is necessary to combine the latent needs of each sector with the technological seeds of developed countries such as Japan, and disseminate the effect widely as an initiative menu. think.

For this reason, the menu on digital innovation listed in the surveys of each sector covered by this survey and the menu book "Society 5.0 for SDGs for international expansion" formulated by JICA and Nippon Keidanren are mentioned above. After combining the contents shown in "Digital Co-creation" (hereinafter referred to as "Digital Co-creation") and the contents shown in the sector survey, analysis was conducted for each sector. In compiling the analysis results, each menu is positioned in the three phases shown in the direction of actions for co-creation. In addition, the number attached to the end of each menu is shown as a basic policy in "Efforts to address the issues facing the world: Information and communication technology" shown by JICA, (1) improvement of policy formulation ability, (2) human resource development, and (3). It corresponds to the items of infrastructure development and (4) "X-TECH" (ICT utilization).

Table 12-9 Menu of Cooperation by Sector and Analysis and Recommendations

Sector	Immediate Crisis Response (Underway)	Pandemic (in) the Immediate Aftermath of a Disaster	Investing in the Future
Society and Economy	Mobile payment and smart phone electronic money transfer introduction (4)	Introduction of digital banking (4) Infrastructure development for remote work (3)	Fintech/digital financial services utilization and implementation (4) Building distribution, storage, and sales services (blockchain technology (3)) (1) Introduction and technology transfer of systems such as Japan's credit guarantee associations and credit risk information database Improving livelihoods through blockchain-based investment systems (4) Public works job creation program using digital money, etc. (1)
Analysis Proposal	For the time being, it is desirable to develop services such as payment systems and electronic remittances using digital technology, and then transfer the technology of various systems such as service user protection once the social acceptance increases and the infrastructure environment is in place. While Japan, Europe, and the United States have taken a cautious stance on Central Bank Digital Currency (CBDC), China, South Korea, and other countries are actively working on it, and while Japan may be ahead of the curve in future cooperation, it may be possible for Japan to take the lead in planning international regulations and take the lead in designing and introducing the system.		
Requirement	[Policy] Comprehensive institutional design for security, personal ID, and other digital measures Human resources] Legal system for digitization, servicer training, development and operation human resources (private sector) Infrastructure] Secure network, maintenance of high-capacity lines, data centers, etc. [X-TEC] DB for Fintech, Blockchain, and Credit Risk Information		
Health Care / Nutrition	Networking of national reference laboratories and incorporation into the Global Influenza Surveillance and Response System (GRSRS) (1) Telemedicine and counseling services (4) Video medical treatment (4) Development of a medical communication network for universal health coverage (UHC) in developing countries (4)	Expanding access to services and reducing disparities Promotion of digital health (4)	Strengthening of service provision system (4) Digital assessment and solution matching in the healthcare sector (4) Improvement of the ratio of developmental disabilities and mortality rate of infants and young children through the computerization of the MCH Handbook (4) Promotion of health services and administrative services for young children (1-5 years old)
Analysis Proposal	For the time being, the networking of medical institutions and the introduction of telemedicine services are required to ensure a smooth response to COVID-19. In particular, tools to connect with central specialists, networks, and literacy education for health care providers are essential to ensure the health care system in remote areas. In the future, after planning for the digitization of the healthcare sector, an ecosystem will be established to provide institutional design based on digital technology, security personnel to handle personal information, and various solutions to support digitization.		
Requirement	[Policy] Telemedicine, measures to utilize personal IDs and support for the construction of wide-area medical institution networks Human resources] ICT education for medical professionals, servicer training, service development and operation human resources (private sector) [Infrastructure] Development of lines in rural areas that will contribute to bridging the digital divide (the last mile) [X-TEC] Telemedicine and Counseling System, Infectious Disease Surveillance Response System		
Education	Capacity building of teachers (2) Development of digital teaching materials and supplementary teaching materials (2)	Internet access and ICT equipment (3)	Education, dissemination, and enlightenment through visual media (2)

Sector	Immediate Crisis Response (Underway)	Pandemic (in) the Immediate Aftermath of a Disaster	Investing in the Future
Analysis Proposal	In many countries, curricula and contents are already being created according to national conditions, such as the use of social networking services, and tablet education is being promoted. Since many students do not have broadband access at home, the development of network infrastructure in educational institutions is expected to lead to the advancement of distance education. On the other hand, the digital literacy of teachers varies widely, and teachers need to be trained in the creation and use of digital teaching materials. Support for the creation and dissemination of digital learning materials, including support for the acquisition of technology and dissemination measures through public-private partnerships, is required.		
Requirement	[Policy] Digitalization of textbooks, development of digital learning environment such as reduction of communication burden, and improvement of digital literacy for teachers [Human resources] ICT education personnel for teachers, servicer training, service development and operation personnel (private sector) [Infrastructure] Development of lines in rural areas that will contribute to bridging the digital divide (the last mile) [X-TEC] Digital and supplementary teaching materials		
Agriculture / Rural Development	Use of rural youth as suppliers and supporters of private DIGITAL business services (4)	○ Introduction of examples of hometown tax payment and crowdfunding in Japan, and seminars on the development of prefectural antenna stores and Ryukyuan restaurants (4) Expansion of weather forecasting systems, strengthening of agricultural finance and agricultural insurance systems to support farmers in emergency situations (4)	Blue economy, including conservation of marine ecosystems, sustainable use of marine resources, and development of alternative livelihoods (4) Sharing of case studies and provision of information on the use of information technology (drones, computerized soil management, etc.) (4) Development of a farmer database, monitoring system for extreme weather information (4) Monitoring of growth and pest outbreaks using satellite images and drones (4) Development of technology to improve the efficiency of water use in fertilization and irrigation using 0-smart technology (4) Environmental education for farmers and rural residents and establishment of eco-farm system (4) Sustainable food production eco-cycle through digital agriculture platform (3) Establishment of a breeding platform (utilization of crop genetic resources) (3) Solutions for "visualization" of agricultural field conditions and "automated farming using artificial intelligence (AI)" (4) Support for agricultural development in developing countries through the use of E-Vouchers and other electronic money coupons (4) Survey on the applicability of satellite data for the advancement of the agricultural industry (4) Farmers' e-Learning through video digital content (2) Capacity building through the use of digital agriculture platforms (3) Development of digital agricultural cooperatives in developing countries (3) Aquaculture systems that contribute to improved productivity of marine products (4)

Sector	Immediate Crisis Response (Underway)	Pandemic (in) the Immediate Aftermath of a Disaster	Investing in the Future
Analysis Proposal	<p>To rebuild the food supply chain, which was severely damaged by COVID-19, various short-, medium-, and long-term measures will be formulated based on Japan's case studies, and demonstration experiments of various technologies for the digitalization of agriculture will be conducted, and those that are highly effective will be commercialized to spread the technologies.</p> <p>With the spread of smartphones and other devices, an environment for the creation of various services for farmers is being created, but Internet of Things(IoT) devices to be installed in the field are still expensive, making it difficult for farmers to purchase and use them themselves. In order to promote the use of ICT in agriculture, it would be effective to start with the development of infrastructure, such as IoT for large-scale irrigation facilities and weather monitoring systems, which are to be developed by the government, to improve the profitability of agriculture, and then gradually introduce tools for field management and sales. Since the environment of agriculture differs greatly from country to country and region to region, it is desirable to use the open innovation method to develop technologies that are rooted in the local community.</p>		
Requirement	<p>[Policy] Smart agriculture promotion, food chain, climate change monitoring rig, sector education [Human resources] Legal system for digitalization, business and service supplier development, development and operation human resources (private sector) [Infrastructure] Meteorological observation network, maintenance of lines in rural areas to help bridge the digital divide, etc. (last mile) [X-TEC] Smart agriculture (water management, soil, fertilizer, etc.), monitoring, educational contents for farmers</p>		
Private		Establishment of online shopping platform (3)	<p>Establishment of a platform to consolidate online teaching materials and courses for capacity building (3)</p> <p>Introduction of agile management to promote the digital transformation of organizations (4)</p> <p>Building human resources capabilities to drive digital transformation through the Build-Operate-Transfer (BOT) model (2)</p> <p>AI of thinking of skilled workers in manufacturing and support for practical application (4)</p>
Analysis Proposal	<p>As for the use of digital technology in the private sector, it is necessary to support the introduction of management support systems tailored to the legal systems of each country and to develop digital human resources to support management. In Central American and Caribbean countries, start-up support by the United States capital is being provided, and there are few measures that are possible through government-led development cooperation. In recent years, many start-ups and unicorn companies have been born from the efforts of industry, government, and academia, and it has become important to link technology with industry-government-academia collaboration (innovation promotion) and academia with business. In the future, the mechanism of university-originated innovation centers and support the development of specialized institutions will be introduced. It would be effective to develop human resources for coordinators and to support the establishment of such organizations.</p>		
Requirement	<p>[Policy] Promotion of measures to promote digitalization of management, start-up support measures, etc. [Human resources] Digital technology strategy planning personnel, coordinators, servicer training, service development and operation personnel (private sector) [Infrastructure] Development of lines in rural areas that will contribute to bridging the digital divide (the last mile) [X-TEC] Online platform for start-up support business contests, matching events, and advanced information human resource development</p>		

Sector	Immediate Crisis Response (Underway)	Pandemic (in) the Immediate Aftermath of a Disaster	Investing in the Future
Environment and Disaster Prevention	1) Improving the efficiency of information sharing in government organizations through the use of DIGITAL	Strengthening disaster prevention and mitigation governance to address the growing disaster risks associated with urbanization (4)	Construction of a disaster prevention information platform (pre-warning, inter-governmental cooperation) (3). A blockchain platform for traceability of scarce resources and products, and a mechanism to return profits to stakeholders (3) Solutions to ensure proper operation of extinguishing microorganism treatment equipment (food residue and food waste treatment equipment) using microorganisms (4) Emergency Warning Broadcasting System (EWBS) using digital broadcasting technology (4) Introduction of a sediment disaster detection system using image analysis technology (4) Construction of river information system (4) Next-generation weather forecasting service using nano-satellites (4)
Analysis Proposal	With regard to the environment and disaster prevention, a disaster prevention status platform (such as Japan's SIP4D) will be established to share various risk information in an integrated manner, and disaster prevention and mitigation governance will be strengthened. Regarding the environment, share information and introduce technologies that contribute to the proper management of wastes and rare earths, such as recycling and traceability.		
Requirement	[Policy] Planning of overall plans and various related measures that contribute not only to disaster prevention but also to disaster mitigation, and promotion of waste monitoring measures [Human resources] Hierarchical human resource development, such as leading the immediate response system at the time of disaster, community leaders in the region and human resources capable of collecting and analyzing information that contributes to the early understanding of the situation. Servicer training, service development and operation personnel (government side). [Infrastructure] Construction of an administrative network for disaster prevention to connect related organizations and maintenance of the last mile. [X-TEC] Disaster prevention administrative platform, upgrading of monitoring and observation systems (meteorology, etc.), waste monitoring system, optimization of collection routes		
Governance and Public Safety	Digitalization of administrative procedures in a pandemic (1)	CCTV cameras installed in public transportation facilities (1)	Development of digital human resources (finding and hiring human resources, strengthening civil service capacity) (2) Integrated data bank in the field of public security (1) Cyber Attack Defense Exercise (1) Digital assessment for public institutions (1) Construction of a common government platform for developing countries (using public cloud) (3). Strengthening the security of public facilities (airports, railroads, etc.) using AI technology Development of a human resource information management system between Japan and developing countries and a national ID system for developing countries using blockchain technology (1) Strengthening of security through behavior detection using video analysis. Understanding human flow and public safety using information from mobile devices (1) Biometrics-based person verification system (1) A biometric-based identity management system to prevent fraudulent receipt of national ID cards and social security benefits.

Sector	Immediate Crisis Response (Underway)	Pandemic (in) the Immediate Aftermath of a Disaster	Investing in the Future
Analysis Proposal	<p>Even before the pandemic, the governments of Latin American countries had been working on the digitization of public administration, and the pandemic increased the urgency of this need. For example, in order to prevent the spread of COVID-19 infection, it was necessary for civil servants as well as the general public to perform their official duties from home, and it was also necessary to develop administrative procedures so that citizens could perform them online. However, there has not been much progress in digitization, and the challenge is to develop human resources for the introduction and operation of platforms (public clouds) that support the digitization of public administration in order to promote digital governance. On the other hand, the introduction of a national ID system is progressing, and the creation of laws, technologies, and systems for the operation of IDs is also underway. Since it will be possible to consolidate and accumulate various types of data linked to national IDs, it is expected that advanced use of these big data will become possible by improving data security and working on data utilization services. It is also essential to have a grand design that deals with these issues as a whole.</p> <p>With regard to public safety, there are few reports of crimes, and the accumulation of data on crimes has not progressed. While supporting the installation of cameras is the first step, it is desirable to accumulate data and analyze the occurrence of crimes in order to prevent crimes and create a safe and secure community where crimes are less likely to occur. In order to accumulate and utilize such data, it is effective to apply various advanced technologies such as image analysis and AI analysis.</p>		
Requirement	<p>[Policy] Comprehensive institutional design of digital policies for security, personal ID, personal information protection, etc. [Human resources] Legal system for digitization, security, servicer training, development and operation human resources (private sector) [Infrastructure] Secure network, maintenance of high-capacity lines, data centers, etc. [X-TEC] Public Cloud, Digital Assessment, and Biometric Systems</p>		
Infrastructure Energy			<p>A system for preventing accidents and traffic congestion using AI image analysis technology (4) Maturity assessment of digital transformation for infrastructure providers (telecommunications, electricity, gas, water, transportation, etc.) Hybrid energy storage system for mobile communication business, off-grid areas and mini-grids (3) Behavioralization of air traffic control (4) Construction of a safe and secure road traffic system using road-to-vehicle communication (4) Traffic control system based on Connected, Autonomous, Shared/Service, Electric (CASE) (traffic condition prediction based on vehicle probe information and infrastructure sensor information) (4)</p>
Analysis	<p>As traffic congestion has become a social problem in both countries, it is desirable to introduce traffic volume monitoring and traffic volume based dynamic signal control systems using AI image recognition methods from camera and drive recorder images, and to work on measures to prevent traffic congestion and accidents through road-vehicle communication that manages vehicles and roadsides in an integrated manner. It is also desirable to implement measures to prevent traffic congestion and accidents by introducing a dynamic traffic signal control system based on traffic volume and inter-vehicle communication to manage vehicles and roadsides together. In addition, there is a high need for public transportation systems to reduce maintenance costs through vehicle maintenance (deterioration diagnosis, fault diagnosis, and monitoring). Renewable energy sources are increasing in Central America and the Caribbean. There is a need for energy storage devices that can match demand with the amount of electricity generated by renewable energy sources, as well as systems that support energy efficiency, mechanisms to capture fluctuations, rate fluctuations, etc.</p> <p>In the future, it will be necessary to develop technologies for predicting the amount of electricity generated by solar and wind power, as well as geothermal power generation technology and the training of engineers, in which Japan has an advantage.</p>		

Sector	Immediate Crisis Response (Underway)	Pandemic (in) the Immediate Aftermath of a Disaster	Investing in the Future
Requirement	[Policy] Planning of ITS and other comprehensive transportation policies (measures to combat traffic congestion), various measures to utilize renewable energy Human resources: Development of ITS-related human resources to contribute to the improvement of comprehensive transportation policies, personnel to plan digital technology strategies such as decarbonization, servicer development, service development and operation personnel (private sector) [Infrastructure] IoT of various devices, renewable energy related devices (power dispatch, power storage, etc.) [X-TEC] Signal control system, location system, maintenance system, demand matching, renewable energy fluctuation support system, and power generation forecasting system		
Sightseeing	Support for use of private platform such as social media Crisis management response (3)	Development of digital infrastructure (3) Support for digital payment and online payment (4) Remote worker support (4) Incentives for digital investment (4)	Sharing of good examples of ICT use (4) Development of digital human resources (women) (4) 0MaaS support (4) Tourism promotion policy of digitalization promotion (1)
Analysis Proposal	According to the United Nations Development Programme (UNDP) report, universal services such as digital payments (PayPal) have been identified as one of the reasons for the lack of adoption due to the small market size and high degree of informality. Incentives are becoming increasingly necessary for foreign private companies to expand into the region. With regard to tourism, crisis management measures (formulation of Business Continuity Plan (BCP), implementation of training, etc.) will be promoted in each country in order to build a tourism industry that is resilient to pandemics, etc. In addition, the development of digital infrastructure, such as digital accounts, will be promoted so that small businesses, which make up the majority of the tourism industry, can improve their productivity through digital technology. Promote the sharing of case studies and the development of human resources to support the horizontal deployment of various good practices in the region.		
Requirement	[Policy] Planning of measures to contribute to resilient tourism, planning of revitalization measures with an eye to After COVID-19, sharing of good practices, and planning of incentive measures for private sector participation due to the small size of the market [Human resources] ICT education personnel for tourism, servicer training, service development and operation personnel (private sector) [Infrastructure] Development of lines in rural areas, etc. that will contribute to bridging the digital divide (the last mile) [X-TEC] Smart City (MaaS), human flow monitoring, online closing		
Government-Private Partnership	z Efforts to develop IT infrastructure for the construction of smart cities (4)	z Introduction of technology as "as a service" through a subscription model that enables real-time monitoring and improvement (4)	Smart city support (4) as a Service technology implementation (4) Utilization of big data and collaboration with start-up companies (4) Improvement of resident services and industrial development through the establishment of a single smart city platform (urban OS) at the national and regional levels (4) Basic survey on smart building planning (4)
Analysis Proposal	In the Central American and Caribbean regions, there are few private digital startups and the comprehensive management of government infrastructure has not yet been outsourced. It is thought that the introduction of a public-private partnership system will be necessary to ensure efficient management. For smart cities, introduce urban operating systems that enable data acquisition and analysis. In addition, support will be provided for the introduction of various resident services that utilize these platforms, according to the needs of each city.		
Requirement	[Policy] Comprehensive institutional design of digital measures for smart cities [Human resources] Hybrid human resources between urban operations and digital, servicer training, service development and operation human resources (private sector) [Infrastructure] Secure network, maintenance of high-capacity lines, data centers, etc. [X-TEC] Urban OS, Big Data, as a Service		

Source: Study Team

(2) Direction and recommendations for development cooperation (draft)

Based on the above analysis results, the direction of development cooperation and recommendations (draft) are shown below. In addition, since each sector is also enthusiastic about digital innovation according to each issue, in this sector, policy formulation, introduction of IT human resources development / education program, infrastructure development, X- It is summarized as a proposal (draft) from a bird's-eye view as digital innovation by TEC.

Direction and recommendations for development cooperation (draft)

Policy formulation	<p>It is necessary to establish an administrative body that enables the formulation of national strategies for digital government and to build a digital grand design that suits the situation of each country. The grand design shall be a compilation of individual measures according to the situation of each country, but it is desirable to have priorities and monitoring mechanisms to enhance effectiveness. In order to support such efforts, we will comprehensively strengthen security and IT human resource development in government agencies, and for the time being, we will work to develop private businesses in collaboration with foreign-affiliated companies with advanced technology.</p>
Introducing IT human resources development and education programs	<p>Digital technology will bring about major changes in the way human resources are used in nations and organizations, and in the way individuals learn. Based on these changes, it is necessary to formulate a digital human resources policy suitable for the new era. In addition to the development of general ICT-based human resources education programs (servicer training, service development / operation human resources (private sector)), the digital human resources policy includes an evaluation system for evaluating the abilities of ICT human resources and standardizing skills, and the public and private sectors. The establishment of an ICT human resources development institution (from strategy to implementation) that has become a reality can be mentioned. Specifically, entrepreneur support activities for creating business innovation in developing countries of JICA Project NINJA is working on entrepreneurship enlightenment, promotion of company registration (business contest and incubation program), grasp of top companies. We believe that it is effective to develop measures such as training (acceleration program) and collaboration with overseas companies / investors including Japanese companies in Central American and Caribbean countries, and in particular, to utilize them as a driving force for innovation.</p>
Infrastructure development	<p>As an issue for the entire Caribbean region of Central America, it is necessary to develop a broadband infrastructure that enables large-capacity communications nationwide. In Caribbean countries, it is also necessary to secure redundancy of submarine cables in consideration of disasters. In order to carry out such maintenance efficiently, a national broadband and mobile network development plan will be formulated. Especially in the case of COVID-19, since responding to needs in the education and health care sectors is an urgent issue, the public and private sectors will work together to implement measures to encourage line development to government agencies, community centers, schools, etc. It is desirable to maintain it. In collaboration with foreign-affiliated companies, we will promote the location of data centers in the region, and in the future we aim to operate data centers in our own countries that meet the utilization policies and security policies of each country.</p>
X-TEC (ICT utilization)	<p>In order to foster a digital value chain in the future, we will promote the construction of digital services and the use of information services led by the government, and accumulate good practices and issues. For example, various measures that lead to the creation of new services such as startup support business contests, matching events, and online platforms for developing advanced information human resources are effective. We will build a platform for sharing digital services within the region to share such cases within the region and utilize them mutually.</p>

Source: Study Team

13. Infrastructure and Energy Sector

13.1 General

The scope of work for the infrastructure and energy sector is set as shown in Table 13-1, and the survey work is underway.

In Chapter 5, the analysis based on ECLAC's economic statistics shows that the infrastructure and energy sectors were among the sectors that were most affected by COVID-19. This can be attributed to the large impact immediately after the pandemic.

First, the rapid stagnation of economic activities immediately after the pandemic due to policy or psychological reasons against the unknown virus directly impacted the demand for transportation and energy. Second, the construction industry, which requires a lot of labor, was stagnant due to restrictions on movement, etc., and third, the decline in oil and other fuel prices immediately after the pandemic had a negative impact on economic indicators in the energy sector.

In comparison to the situation immediately after the pandemic, although it varies from country to country, in some countries the priority for resumption of economic activities started several months later. The infrastructure and energy sectors are also generally recovering due to the easing of restrictions on movement and psychological improvements in behavioral control against the virus. In addition, although there are still restrictions on the movement of people in some regions, cargo transportation is brisk worldwide, which confirms the trend of recovery in economic activity, infrastructure (transportation) and energy sectors.

Since the infrastructure and energy supply systems were not damaged by the Coronavirus Disease 2019 (COVID-19) and services were not disrupted, it was decided to proceed with the study with vulnerabilities and issues in mind, including those that existed before COVID-19 and those that should be resolved in the future in the medium and long term, without necessarily focusing on changes before and after COVID-19.

Table 13-1 Scope of the Infrastructure and Energy Sector

	Infrastructure	Energy
Included Sub-sector	Transport	Primary energy and electricity
Focused Survey Target	Passenger and cargo transport Urban transport	Energy self-sufficiency Energy sources Status of renewable energy introduction Carbon neutrality
Assumed Vulnerabilities and Challenges	Fossil fuel dependence, traffic congestion, electrification of vehicles	Fossil fuel dependence, impact of climate change on power generation

Source: Study Team

13.2 Summary of Sector Survey

Table 13-2 Sectoral Hypotheses and Draft Policy Recommendations for the Development Cooperation (Infrastructure and Energy)

No.	Items	Infrastructure and Energy
1	Issues from Before COVID-19	<ul style="list-style-type: none"> ▪ In general, heavy reliance on transportation modes (automobiles) with high dependence on fossil fuels ▪ In general, congestion in urban areas is significant. ▪ In general, the routes of public transportation (mainly buses) are not optimized and difficult to understand. ▪ In general, there is a tendency for people to be less willing to use public transportation after COVID-19 because of the risk of infection.

No.	Items	Infrastructure and Energy	
			<ul style="list-style-type: none"> ▪ In the Central American region, many countries use a lot of electricity derived from renewable energy sources, but many countries depend on imported fossil fuels for energy other than the electricity subsector, and the overall energy self-sufficiency rate is not high. ▪ In the Caribbean region, many countries have low energy self-sufficiency rates due to high dependence on primary energy imports (the same applies to electricity). ▪ Electricity cannot be exchanged between countries without international interconnection lines, making it impossible to make efficient use of surplus electricity, especially in the case of large-scale introduction of variable renewable energy (VRE). ▪ In the Caribbean, in particular, due to the cost of available resources and equipment, as well as the limited land area available, the large-scale introduction of renewable energy is not as advanced as the average level in Central America and the world. ▪ Vulnerability to natural disasters is a challenge. It is important to note that the impact of this vulnerability is not limited to the infrastructure and energy sectors, but also affects the speed of recovery of society as a whole from natural disasters.
2	Grouping by Issue		<ul style="list-style-type: none"> ▪ Infrastructure (Transportation Subsector) issues by transportation mode ▪ Aviation ▪ Sea transportation ▪ Track-based public transport ▪ Road-based public transport ▪ Motor transport in general ▪ Energy self-sufficiency in energy and adoption of renewable energy ▪ Caribbean region (excluding Trinidad and Tobago, Guyana, Suriname) ▪ Central America region (excluding Mexico) ▪ Trinidad and Tobago ▪ Mexico ▪ Guyana, Suriname
3	Vulnerabilities Revealed in COVID-19	in	<ul style="list-style-type: none"> ▪ Impacts on public common institutions (capacity restrictions, avoidance of use by being considered as infected routes, and business impacts especially on private operators) ▪ Impact on the supply chain of imported fossil fuels, which was not confirmed in Central America and the Caribbean but has become apparent globally ▪ Impacts on the supply chain of materials and equipment necessary for project implementation
4	New Revealed in COVID-19	Issues in	<ul style="list-style-type: none"> ▪ Sustainability of public transportation ▪ Maintaining the supply chain
5	Proposed Measures to Overcome Direction of Development Cooperation	to Infrastructure	<ul style="list-style-type: none"> ▪ Making public transportation more resilient in terms of management ▪ Diversification of the supply chain
		of Energy	<ul style="list-style-type: none"> ▪ Diversification of energy sources (use of local resources, especially renewable energy) ▪ Promotion of energy conservation
6	Policy Recommendations (draft) Issues from Before COVID-19 Grouping by Issue	Infrastructure	<ul style="list-style-type: none"> ▪ Dissemination of EVs, human resource development for maintenance technology, and dissemination of EV forward power facilities (standardization of which Japan is leading) ▪ Strengthen, improve, and optimize the overall urban transportation infrastructure ▪ Promotion of shift to and use of public transportation, cooperation to help alleviate concerns about the risk of COVID-19 infection
		Energy	<ul style="list-style-type: none"> ▪ Cooperation in all measures necessary to achieve carbon neutrality, including introduction of renewable energy, utilization of energy derived from renewable energy (utilization of stored energy through hydrogen, etc.), and promotion of energy conservation ▪ In oil- and gas-producing countries as well, carbon neutrality is a global demand, and the Study Team will cooperate in carbon neutrality initiatives and energy conservation promotion. ▪ Possibility of cooperation in the areas of international interconnection lines, energy storage (e.g., hydrogen), and carbon capture and storage (CCS) technology, which are necessary to expand the introduction of renewable energy in each country. ▪ Possibility of mid- to long-term cooperation with Japan based on common issues, such as the disadvantageous conditions for the large-scale introduction of renewable energy in the Caribbean region, specifically the restrictions on land area and available area, and the relatively high cost of introduction.

No.	Items	Infrastructure and Energy	
		General	<ul style="list-style-type: none"> Cooperation in technology and know-how based on Japan's countermeasures and responses to earthquakes and typhoons, in order to overcome vulnerability to natural disasters and ensure resilience.
7	Vulnerabilities Revealed in COVID-19	Infrastructure	Road and bridge infrastructure <ul style="list-style-type: none"> Road and bridge infrastructure is the key to economic recovery and growth. It is also important in ensuring the resilience of society as a whole in terms of climate change. Therefore, there is a strong need for continued cooperation.
			Japan's experience and high quality infrastructure <ul style="list-style-type: none"> The accumulation of experience gained from the challenges that Japan has solved or is facing ahead of the rest of the world is Japan's strength, and it is necessary to formulate projects from this perspective. (High quality infrastructure, disaster prevention, toughening, and resilience assurance)
			Carbon Neutral <ul style="list-style-type: none"> This is a particularly urgent issue, and the perspective of decarbonization and carbon neutrality is necessary in all projects, including urban development, roads, transportation, and electrification of transportation.
		Energy	Central American Region <ul style="list-style-type: none"> In addition to technical cooperation, financial cooperation will become even more important. (Technical cooperation mainly focusing on human resource development, and financial cooperation to accelerate the expansion of technologies that are already in widespread use.)
			Caribbean Region <ul style="list-style-type: none"> There are opportunities for cooperation based on the geographical constraints and vulnerabilities of the country. (Continue to promote energy conservation, increase the introduction of renewable energy, and provide general technical and financial cooperation in the area of energy integration (hydrogen supply chain, etc.))

Source: Study Team

13.3 Sectoral Scope of Work

The sectoral scope of work for the infrastructure and energy sector is shown in Table 13-2.

Table 13-2 Sectoral Scope of Work (Infrastructure and Energy)

No.		Sub-sector	Scope of Work
1	Sectoral objectives		To collect, analyze, and make recommendations on how to tackle the challenges in the fields of urban development, transport, and energy that have emerged under COVID-19 or that will need to change as a result of COVID-19. <ul style="list-style-type: none"> To show what kind of initiatives can be taken to achieve "autonomous urban and regional management". To show how the development of transport facilities and the sustainable provision of services can be realized and developed in accordance with the objective "to promote economic and social development by ensuring the smooth and safe movement of people and goods, thereby improving people's living standards". From the perspective of both primary energy and electricity supply, based on the goal "to build a society in which all people in developing countries have sustainable and affordable access to low-carbon, adequate and secure electricity", the Study Team proposes challenges that existed before COVID-19, challenges that have emerged as a result of COVID-19, and solutions for the future.
2	Work scope update		Based on discussions with JICA, selected countries to be surveyed or confirmed survey priorities and update/agree on the scope of work.
3			Selection of relevant organizations to be interviewed.
4			Conducting the interview survey.
5	[Task No. 2]	Collection and analysis of basic information (23 countries)	<ul style="list-style-type: none"> National policies, policies and plans related to COVID-19 measures COVID-19 support plans and implementation status by major donors Identification of the impact of COVID-19 on the infrastructure and energy sectors Identification of end-user impacts Other statistical and indicator data

No.		Sub-sector	Scope of Work
6		Infrastructure survey (transport and communication)	<ul style="list-style-type: none"> ▪ Although the scope of "infrastructure" is assumed to be the transport sector, it is to be confirmed whether it includes telecommunications (mobile internet) (e.g., "the trend towards remote/online" causes areas with weak telecommunication infrastructure may be left behind) ▪ After defining the scope of the "infrastructure", the following issues should be identified: previous vulnerabilities of the infrastructure, changes in service provision before and after the impact of COVID-19, impact on the user side, and impact on the management of the service provider.
7		Energy survey (primary energy and electricity)	<ul style="list-style-type: none"> ▪ Identify the existing vulnerabilities, changes in service provision before and after the impact of COVID-19, the impact on the user side, and whether there is any impact on the management of the service provider entity and organize the issues. ▪ Check whether there are any disruptions to electricity supply (including maintenance specifications), particularly in remote areas where the grid supply is unstable or where there is an independent power supply or grid, and check whether there are any areas without electricity supply.
8		Country grouping and selection of priority countries	<ul style="list-style-type: none"> ▪ Selection of priority countries and themes from the results of the collection and analysis of basic information
9		Additional research in priority countries	<ul style="list-style-type: none"> ▪ Analysis of the impact of COVID-19 in priority countries and priority themes ▪ Interviews mainly in priority countries (to obtain complementary information) ▪ General interviews
10		Preparation of country reports	Compiling the research in Task No. 2 into country reports for each country.
11		Identification of sectoral vulnerabilities and support measures	<ul style="list-style-type: none"> ▪ Definition and analysis of existing challenges and vulnerabilities in the infrastructure and energy sectors ▪ Consideration of measures and support measures to overcome vulnerabilities
12	[Task No. 4]	Preparation of hypotheses on the nature of development cooperation	<ul style="list-style-type: none"> ▪ Develop hypotheses of possible responses to overcome each vulnerability in line with the country development cooperation policy and business development plan of the Ministry of Foreign Affairs and the PDM of JICA. ▪ The hypotheses are prioritized by country in terms of cooperation needs.
13		Preparation of sectoral hypothesis reports	Compiling the findings of [Task 4] to produce a sectoral hypothesis report
14	[Task No. 5]	Visiting international/regional organizations and national governmental bodies to gather additional information related to [Task 2] and [Task 4] and to exchange views on the nature of development cooperation.	
15	[Task No. 6/7/8]	Advising on the selection, implementation, and conclusion of pilot projects from the perspective of the infrastructure and energy sectors	
16	[Task No. 9]	Preparation of materials for the experts' meeting and make a presentation	
17	[Task No. 10]	Development of "policy recommendations" in the sector	
18	[Task No. 11]	Preparation of academic papers in the sector	

Source: Study Team

13.4 Collecting Basic Information on 23 Target Countries

13.4.1 Collection and Analysis of Basic Information

Policies and plans relevant to the infrastructure and energy sectors in the target countries were obtained. However, the majority of these are before COVID-19. No new support from major donors has been identified specifically for the infrastructure and energy sector and the impact of COVID-19.

(1) Infrastructure Sector (Transport Sector)

There is a very limited amount of indicator data that can be compared before and after COVID-19 and that can be compared across the target countries in the same year.

Although not a complete coverage of the target countries, some indicators and data related to the transport sub-sector, specifically the number of tourists, urban traffic, road traffic fatalities, public transport users, human flows, and import/export volumes, before and after COVID-19 are presented below. The baseline year and period vary depending on the indicator.

Table 13-3 Data on Pre- and Post-COVID-19 Indicators Related to the Transportation Sub-sector

	Tourism Reduction	Traffic Reduction (Urban Areas)	Road Traffic Death	Public Transport	Road Land Transportation	Human Mobility	Goods Exportation	Goods Importation	Air Cargo Capacity
Antigua and Barbuda	-58%			-81%			-10%	-25%	-70%
Bahamas	-76%			-89%			-10%	-25%	90%
Barbados	-67%	-70%	27%	-84%			-10%	-25%	25%
Belize	-71%			-83%		-30%	-10%	-25%	-15%
Costa Rica	-68%	-53%	-33%	-67%	-25%	-31%	2%	-9%	45%
Cuba	-75%		-22%				-30%	-41%	15%
Dominica	-76%						-10%	-25%	-75%
Dominican Republic	-63%	-39%	-18%	-82%	-48%	-33%	-9%	-22%	-6%
El Salvador	-71%	-62%	-25%	-75%	-21%	-46%	-24%	-18%	47%
Grenada	-73%						-10%	-25%	-7%
Guatemala	-74%	-54%	-13%	-75%	-26%	-34%	3%	-8%	48%
Guyana	-73%		-17%			-20%	-10%	-25%	30%
Haiti				-53%			-10%	-25%	-29%
Honduras	-63%	-77%	-28%	-71%	15%	-40%	2%	-15%	-2%
Jamaica	-67%	-66%	-6%	-56%		-34%	-10%	-25%	-45%
Mexico	-46%	-9%	-7%	-58%	-45%	-22%	-21%	-19%	29%
Nicaragua	-57%	-59%	-2%	-39%	-2%	-23%	14%	-28%	-5%
Panama	-74%	-63%	-41%	-79%	-29%	-47%	-12%	-26%	52%
Saint Kitts and Nevis	-75%						-10%	-25%	-62%
Saint Lucia	-69%						-10%	-25%	37%
Saint Vincent and The Grenadines	-69%						-10%	-25%	49%
Suriname			-13%				-10%	-25%	-23%
Trinidad and Tobago	-54%	-54%	-21%	-77%		-32%	-10%	-25%	-11%

Source: Covid-19 and tourism - an update, UNCTAD
 Coronavirus Traffic Congestion Impact in Latin America with Waze Data, IADB
 Coronavirus Impact Dashboard, IADB
 Los efectos del Covid 19 sobre el comercio internacional y la logística, CEPAL
 COVID-19: Impact on air cargo capacity, Accenture

Note: Traffic Reduction (Urban Areas) *Baseline: March 8 to 14 2020.*
 Public Transport *Baseline: January 3rd to February 6th 2020.*
 Goods Exportation *As Caribbean Community (CARICOM)*
 Goods Importation *As Caribbean Community (CARICOM)*

The International Air Transport Association (IATA), an association of airlines, publishes monthly statistics on passenger and cargo traffic, which can be compared before and after COVID-19. However, the figures are not by country, but by region (at the level of "North America" and "South America").

The International Civil Aviation Organization (ICAO), one of the specialized agencies of the United Nations (UN), publishes data on the number of departures per day at each airport in the world.

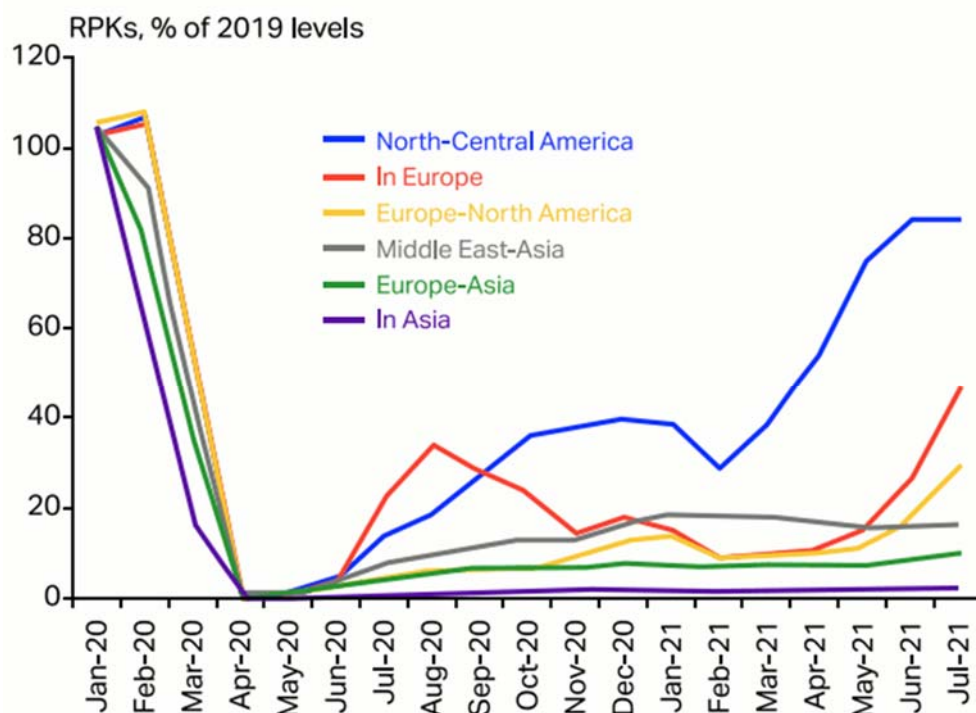
The following table shows the changes in the number of air passengers in each country for the years 2019 and 2020.

Table 13-4 Changes in the Number of Air Passengers

	Domestic and International Flights			International Flights			Domestic Flights		
	2019	2020	% Difference	2019	2020	% Difference	2019	2020	% Difference
Antigua and Barbuda	834,358	410,858	-50.76%	828,816	409,185	-50.63%	5,542	1,673	-69.81%
Bahamas	3,997,934	1,936,841	-51.55%	3,205,666	1,323,720	-58.71%	792,268	613,121	-22.61%
Barbados	1,641,284	700,898	-57.30%	1,639,689	700,142	-57.30%	1,595	756	-52.60%
Belize	588,284	205,880	-65.00%	588,178	193,116	-67.17%	106	12,764	11941.51%
Costa Rica	4,464,040	1,830,393	-59.00%	4,333,228	1,648,239	-61.96%	130,812	182,154	39.25%
Cuba	5,934,183	1,787,775	-69.87%	5,788,227	1,768,006	-69.46%	145,956	19,769	-86.46%
Dominica	98,358	71,671	-27.13%	98,324	71,110	-27.68%	34	561	1550.00%
Dominican Republic	9,032,600	4,285,523	-52.55%	8,933,900	4,182,965	-53.18%	98,700	102,558	3.91%
El Salvador	3,515,447	1,184,699	-66.30%	3,496,333	1,178,557	-66.29%	19,114	6,142	-67.87%
Grenada	347,113	128,926	-62.86%	346,791	128,844	-62.85%	322	82	-74.53%
Guatemala	2,489,662	1,031,142	-58.58%	2,355,419	896,604	-61.93%	134,243	134,538	0.22%
Guyana	521,513	210,866	-59.57%	521,429	209,489	-59.82%	84	1,377	1539.29%
Haiti	817,514	500,196	-38.81%	816,700	475,743	-41.75%	814	24,453	2904.05%
Honduras	1,683,123	615,332	-63.44%	1,439,581	534,441	-62.88%	243,542	80,891	-66.79%
Jamaica	3,923,655	1,907,151	-51.39%	3,901,724	1,883,208	-51.73%	21,931	23,943	9.17%
Mexico	98,250,794	59,804,704	-39.13%	31,818,946	16,989,944	-46.60%	66,431,848	42,814,760	-35.55%
Nicaragua	718,580	269,684	-62.47%	718,531	267,792	-62.73%	49	1,892	3761.22%
Panama	11,179,523	3,544,277	-68.30%	10,907,549	3,388,059	-68.94%	271,974	156,218	-42.56%
Saint Kitts and Nevis	348,663	165,748	-52.46%	310,818	139,781	-55.03%	37,845	25,967	-31.39%
Saint Lucia	857,837	395,509	-53.89%	857,099	394,831	-53.93%	738	678	-8.13%
Saint Vincent and The Grenadines	274,498	191,456	-30.25%	239,965	133,435	-44.39%	34,533	58,021	68.02%
Suriname	365,438	163,504	-55.26%	365,438	160,885	-55.97%	0	2,619	
Trinidad and Tobago	2,839,675	964,167	-66.05%	1,713,162	447,628	-73.87%	1,126,513	516,539	-54.15%
Total	154,724,076	82,307,200	-46.80%	85,225,513	37,525,724	-55.97%	69,498,563	44,781,476	-35.56%

Source: Prepared by JICA Study Team based on the data available at ICAO

For 2021, the above country-by-country data is not available, but as the revenue passenger kilometer (RPK) graph below shows, a strong recovery can be seen from the beginning of 2021, especially on routes connecting North America to Central America, indicating that the recovery trend from the second half of 2020 is continuing.



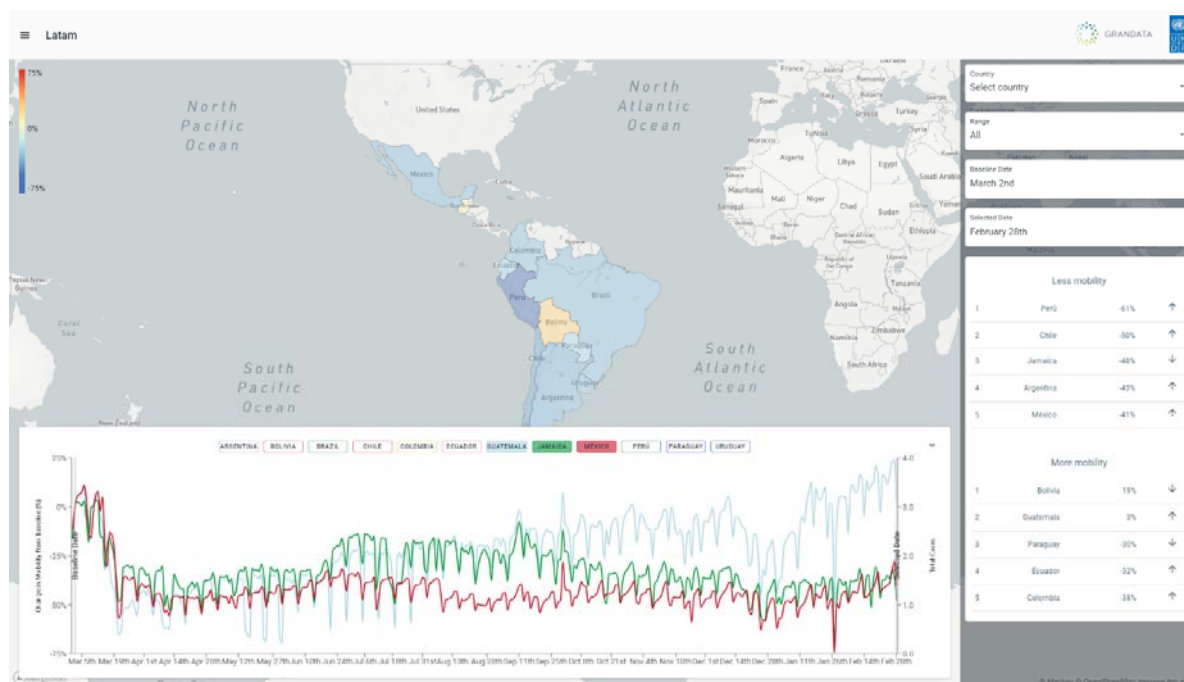
Source: IATA Economics, using data from IATA Monthly Statistics

Source: “Annual Review 2021”, IATA

Figure 13-1 Recovery Trend of Air Passenger Transport in 2021 (RPK by Market)

As for inland transportation, especially in countries without well-developed orbital transportation systems, shared buses and cars are the main means of passenger transportation, but since there are many small- and medium-sized businesses, it is difficult to grasp the trends of their transportation volume. The same is true for cargo transportation.

Although it is not the data on the actual transportation itself, the United Nations Development Programme (UNDP)/Grandata has published data on changes in human flows based on cell phone location data for Guatemala, Jamaica, and Mexico, which are among the countries covered in this study, and this data is considered useful for understanding trends.



Source: UNDP/Grandata (<https://covid.grandata.com/distancing/>)

Figure 13-2 Movement Data Based on the Mobile Users (UNDP/Grandata)

Table 13-5 Data by Google and Apple on Changes in Movement by Mobile User Location Data

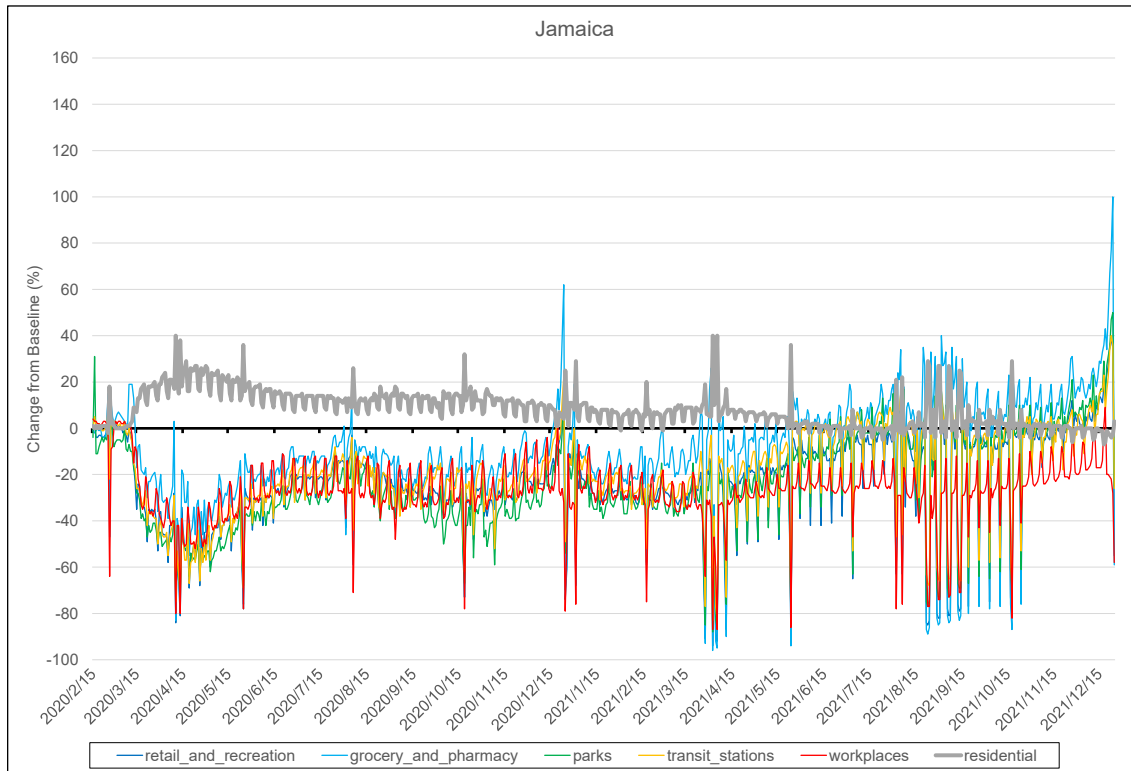
	Google	Apple
Name of Service	COVID-19 Community Mobility Reports	Mobility Trends Reports
URL	https://www.google.com/covid19/mobility/	https://covid19.apple.com/mobility
Target Country	131 16 countries among the target countries of this study; Cuba, Dominica, Guyana, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and Grenadines, Suriname are not included.	60 Only Mexico among the target countries of this study
Published Data as Report on the Website	Latest six weeks	After January 13, 2020
Downloadable Data	After February 15, 2020	N/A

Source: Study Team

As an example, below are graphs of human flow data based on Google's Community Mobility Report for Jamaica, El Salvador, and Nicaragua, and Apple's Mobility Trends Report for Mexico.

Jamaica is characterized by the re-emergence of COVID-19 infection after August 2021. The green line in the graph shows the change in time spent at home. In Jamaica, there was an increase of up to 40% after the COVID-19 pandemic, followed by a gradual decrease in the time spent at home, but the time spent at home increased again following the lockdown measures in response to the spread of

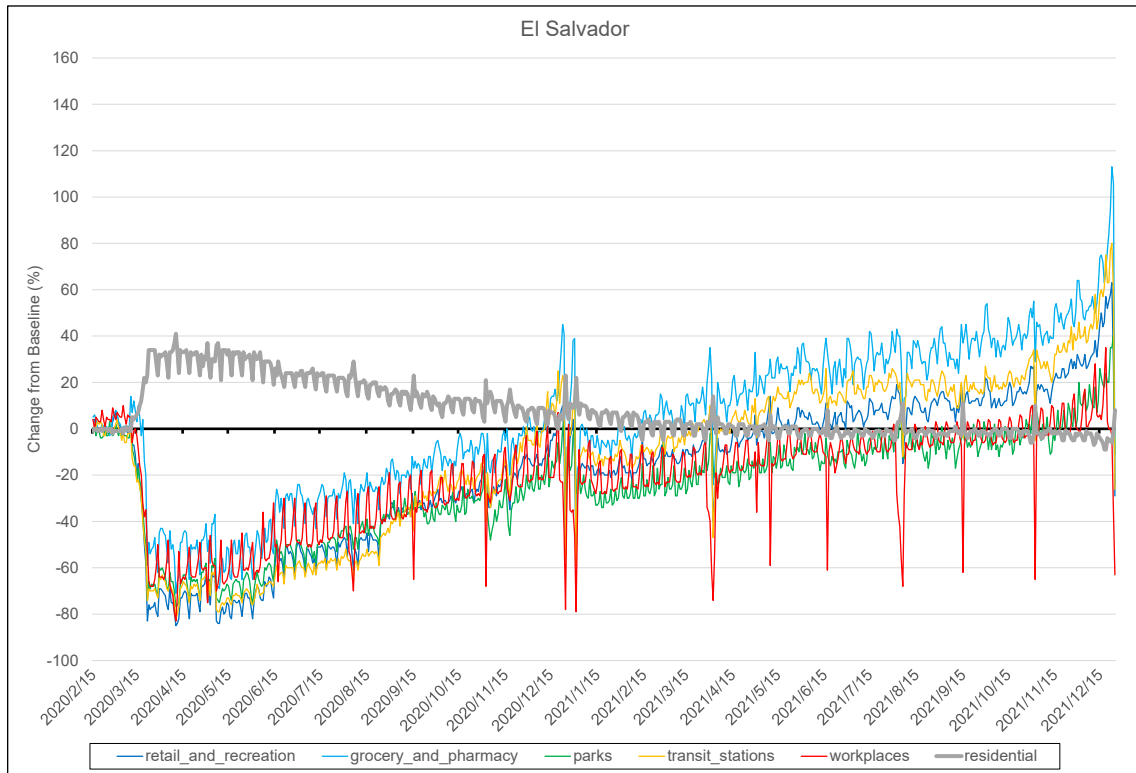
infection after August 2021. In contrast to this trend, the time spent outside the home decreased after the COVID-19 pandemic, then gradually increased, and then decreased after August 2021. The graph shows an increase in weekday outings and a decrease in weekend outings.



Source: Study Team based on COVID-19 Community Mobility Reports by Google

Figure 13-3 Movement Data (Jamaica) (COVID-19 Community Mobility Reports by Google)

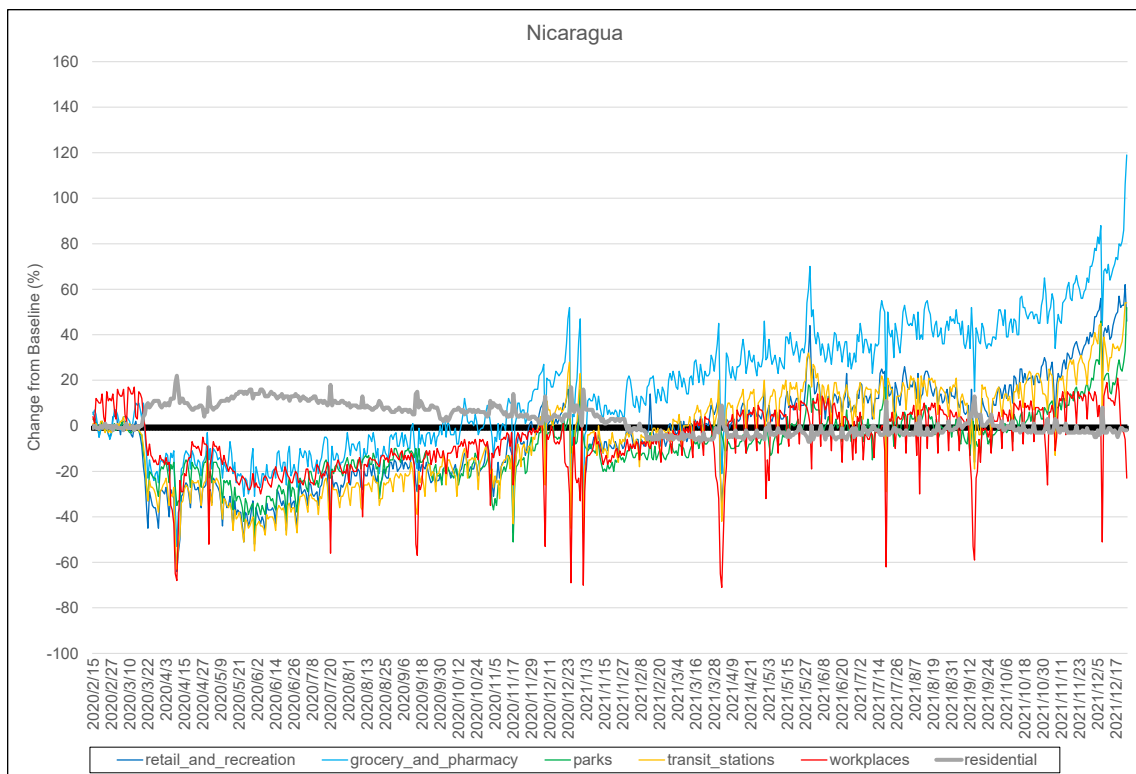
El Salvador was one of the countries that took severe lockdown measures, characterized by a large drop in non-green (home time) between March and July 2020, followed by a strong recovery trend.



Source: Study Team based on COVID-19 Community Mobility Reports by Google

Figure 13-4 Movement Data (El Salvador) (COVID-19 Community Mobility Reports by Google)

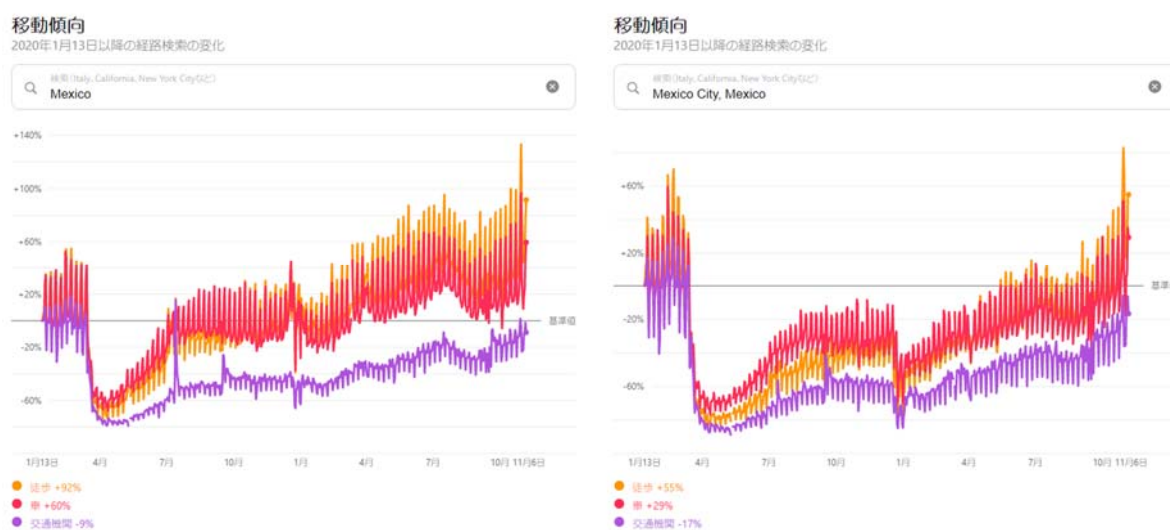
Nicaragua is a country where strict lockdown measures were not taken. Compared with Jamaica and El Salvador, a smaller negative (relative to baseline data) trend can be observed.



Source: Study Team based on COVID-19 Community Mobility Reports by Google

Figure 13-5 Movement Data (Nicaragua) (COVID-19 Community Mobility Reports by Google)

The graphs for all of Mexico and Mexico City are shown below. Although the trends are similar, it can be confirmed that the decrease in the use of public transportation in Mexico City is greater than that in all of Mexico, suggesting that the use of public transportation may have decreased significantly in Mexico City, where public transportation is more developed.



Note: Walking in Orange, Vehicle in Red, and Transportation in Purple

Source: Apple Mobility Trends Reports by Apple

Figure 13-6 Movement Data (Entire Mexico and Mexico City) (Mobility Trends Reports by Apple)

(2) Energy Survey (Primary Energy and Electricity)

The World Bank (WB) and the International Energy Agency (IEA) have developed statistics and indicator data for each country. However, the latest statistics and indicator data are not always available for all 23 countries, and there are some countries and years for which data are somewhat outdated or not available.

In addition, the International Renewable Energy Agency (IRENA) and the National Renewable Energy Laboratory (NREL), a subordinate organization of the United States Department of Energy (DOE), have compiled data on energy and electricity (including renewable energy) indicators by country.

The following table shows indicator data on the energy sector for all 23 countries, using both IEA and IRENA data sources as they together cover 23 countries. Total primary energy supply per capita (TES/pop) and primary energy supply per unit of gross domestic product (GDP) (TES/GDP) are indicators of how much energy is available to people and how much progress has been made in energy conservation.

Table 13-6 Data on Pre- and Post-COVID-19 Indicators Related to the Energy Sector

	Total Energy Supply(TES) (EJ)	TES/pop (GJ/capita)	TES/GDP (MJ/2015 USD)	Overall Energy Self-sufficiency (%)	Source / Note	Total Electricity Generation (TWh)	Source / Note	Share of Renewable in Electricity Production (%)	Share of Fossil Fuels in Electricity Production (%)	Source / Note
Antigua and Barbuda	0.007	N/A	3.6	1%	*3, 2018	0.226	*3, 2019	6%	94%	*3, 2019
Bahamas	0.025	N/A	2.4	1%	*3, 2016	0.189	*3, 2017	0%	100%	*3, 2017
Barbados	0.017	N/A	5.8	17%	*3, 2018	1.165	*3, 2019	4%	96%	*3, 2019
Belize	0.015	N/A	5.9	50%	*3, 2018	0.411	*3, 2019	60%	40%	*3, 2019
Costa Rica	0.22	44	3.6	50%	*2	11.0	*1	99%	1%	*2
Cuba	0.40	35	4.3	50%	*2	20.7	*2	4%	96%	*2
Dominica	0.002	N/A	2.9	6%	*3, 2018	0.094	*3, 2019	22%	78%	*4, 2019
Dominican Republic	0.41	38	4.6	11%	*2	19.9	*2	10%	90%	*2
El Salvador	0.19	30	7.4	43%	*2	6.1	*2	71%	29%	*2
Grenada	0.004	N/A	2.9	8%	*3, 2016	0.224	*3, 2017	2%	98%	*3, 2017
Guatemala	0.61	37	8.6	66%	*2	12.6	*1	59%	41%	*2
Guyana	0.038	N/A	5.2	13%	*3, 2018	1.137	*3, 2019	8%	92%	*3, 2019
Haiti	0.19	17	21.1	78%	*2	1.1	*2	19%	81%	*2
Honduras	0.24	25	9.9	48%	*2	10.5	*2	53%	47%	*2
Jamaica	0.13	44	8.6	7%	*2	4.4	*2	11%	89%	*2
Mexico	7.34	58	6.4	86%	*1	343.5	*1	19%	76%	*1
Nicaragua	0.17	26	13.0	57%	*2	4.6	*2	71%	43%	*2
Panama	0.21	48	3.2	17%	*2	11.7	*2	53%	47%	**
Saint Kitts and Nevis	0.004	N/A	2.6	1%	*3, 2018	0.239	*3, 2019	4%	96%	*3, 2019
Saint Lucia	0.008	N/A	2.9	8%	*3, 2018	0.408	*3, 2019	1%	99%	*3, 2019
Saint Vincent and The Grenadines	0.004	N/A	2.7	4%	*3, 2018	0.152	*3, 2019	18%	82%	*3, 2019
Suriname	0.041	N/A	4.1	97%	*3, 2018	1.884	*3, 2019	52%	48%	*3, 2019
Trinidad and Tobago	0.72	514	31.3	201%	*2	9.2	*2	N/A	100%	*2
Japan	1.87	133	3.8	11%	*1	1000.0	*1, *A	19%	73%	*1

Source

*1 2020, IEA Atlas of Energy

*2 2019, IEA Atlas of Energy

*3 Energy Profile (IRENA)

*A "1.0 thousand" on the dataset

Source: Study Team based on data published by IEA and IRENA

Next, the Study Team shows the overall power generation capacity of each country and the amount of power generated by renewable energy.

In Central America, the adoption of renewable energies is progressing, with renewable energies accounting for more than half of the power generation capacity except in Mexico. Although the proportion of energy sources varies from country to country, hydropower is widespread in each country, with solar power in El Salvador, Honduras, and Mexico; wind power in Costa Rica, Honduras, Mexico, Nicaragua, and Panama; biomass power in Belize, El Salvador, Guatemala, and it can be confirmed that geothermal power has been introduced to some extent in Costa Rica, El Salvador, Mexico, and Nicaragua.

Hydroelectric power generation is a power generation method that has been established for a long time, and it is thought that its development was first advanced in the mountainous regions of Central America where rainfall is abundant. This is thought to be the result of the subsequent development of power sources tailored to the renewable energy potential of each country. The reason why the percentage of solar power generation is lower than in Japan is thought to be that the potential of other renewable energies is higher, and because solar power generation only occurs during the daytime when there is solar radiation, development has been relatively low in priority.

In the Caribbean region, power generation capacity from renewable energy sources is limited compared with the Central American region. In a country with few mountainous areas and scarce water resources, it is difficult to develop hydroelectric power generation, and although biomass power generation (bagasse, the dregs of sugarcane) is being developed, the increasing demand for electricity and shrinking sugarcane production are forcing the country to rely on thermal and diesel power generation using fossil fuels. However, increasing demand for electricity and shrinking sugar cane

production are forcing the country to rely on fossil fuel thermal and diesel power generation. While development is currently underway in areas with wind power potential, such as the Dominican Republic and Jamaica, the rate of development is slower in countries with limited land area and potential sites.

In general, the small size of the power system in the Caribbean region handicaps the development of geothermal power, where large-scale development is cost effective, and large-scale development of solar power, which has low energy density and requires a lot of land. In addition, solar power generation has issues such as grid stabilization measures for mass deployment and difficulty in dealing with nighttime demand. In recent years, the price of battery energy storage systems (BESS) has fallen, and the storage of surplus electricity using hydrogen and other media has become more feasible, so there is a strong possibility that the introduction of renewable energies will be accelerated by combining them with new technologies, even in countries where the mass introduction of renewable energies has not progressed. There is a high possibility that the combination of new technologies will accelerate the introduction of renewable energy in countries where it has not been introduced in large quantities.

Table 13-7 Indicator Data on Power Generation Capacity from Renewable Energy Sources

	Installed Capacity (MW)	Hydro/Marine (MW)	Solar (MW)	Wind (MW)	Bioenergy (MW)	Geothermal (MW)	Total of Renewable (MW)	Non Renewable (MW)	Source / Note
Antigua and Barbuda	99		12	4			16	83	*1, 2020
Bahamas	747		2				2	745	*1, 2018
Barbados	317		50				50	267	*1, 2020
Belize	194	55	7		42		103	91	*1, 2020
Costa Rica	3,599	2,332	57	394	80	262	3,124	474	*1, 2020
Cuba	6,806	72	163	12	951		1,198	5,610	*1, 2020
Dominica	29	7					7	22	*1, 2020
Dominican Republic	5,375	625	267	370	47		1,310	4,065	*1, 2020
El Salvador	2,262	573	428		300	204	1,506	757	*1, 2020
Grenada	58		3				3	54	*1, 2020
Guatemala	4,119	1,577	101	107	1,036	49	2,870	1,249	*1, 2020
Guyana	359	2	8		42		53	306	*1, 2020
Haiti	471	78	3				81	390	*1, 2020
Honduras	2,853	838	516	241	221	39	1,855	998	*1, 2020
Jamaica	1,340	30	93	99	32		254	1,086	*1, 2020
Mexico	87,969	12,671	5,644	8,128	1,010	906	28,358	59,611	*1, 2020
Nicaragua	1,620	157	16	186	218	153	731	888	*1, 2020
Panama	4,115	1,796	198	270	33		2,296	1,819	*1, 2020
Saint Kitts and Nevis	71		2	2			4	67	*1, 2020
Saint Lucia	92		4				4	88	*1, 2020
Saint Vincent and The Grenadines	54	6	2				8	46	*1, 2020
Suriname	536	180	9		2		191	345	*1, 2020
Trinidad and Tobago	2,158		3				3	2,155	*1, 2020
Japan	351,804	28,147	68,665	4,371	1,826	481	103,490	248,314	*1, 2020

Source *1 Energy Profile (IRENA)

Source: Study Team based on the data published by IRENA

For some countries, comparisons before and after COVID-19 are available through government statistics. In addition, some specialized media have already published papers and articles on comparisons of countries of a certain size for which statistics and indicator data are already generally available, and these can be used as reference.

No cases of electricity supply disruptions due to COVID-19 have been confirmed. However, there have been cases where the arrival of materials and equipment needed for repairs was delayed due to disruptions in the logistics network under the impact of COVID-19, which affected maintenance plans.

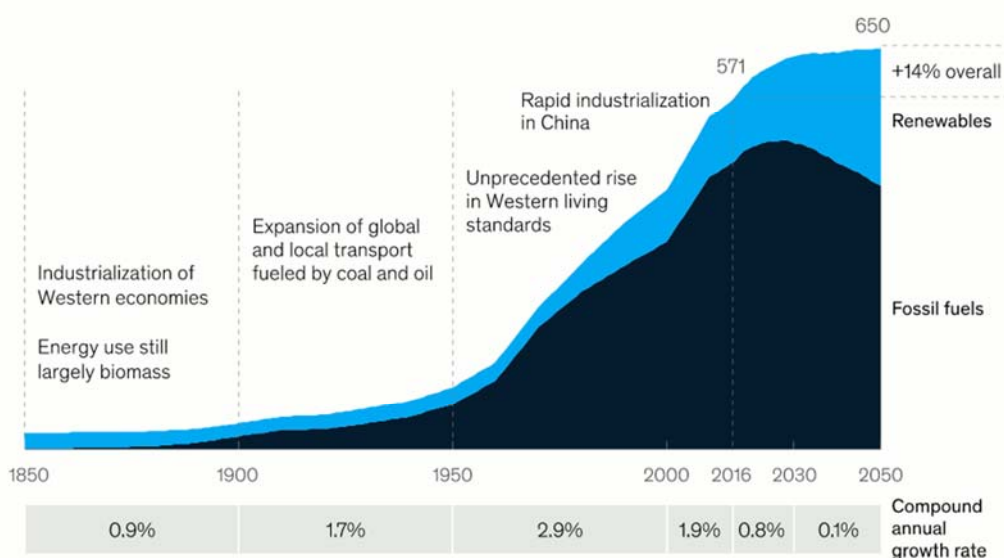
It should be noted that for some electric power companies, which are highly dependent on fossil fuels and whose electricity prices are kept low from the perspective of social welfare, a decrease in demand for electricity due to economic stagnation has been a positive factor in their operations.

In general, the correlation between the GDP and energy and electricity consumption is extremely high. As the economy recovers, demand is expected to increase.

As an example, the figure below shows the relationship between economic growth and increased demand for primary energy. It can be confirmed that when the economic growth rate is high, the demand for primary energy also tends to increase significantly.

After a century of rapid growth, energy demand is likely to plateau around 2030, primarily driven by the penetration of renewable energy sources into the energy mix.

Global primary energy demand, millions of terajoules



Source: McKinsey Energy Insights' Global Perspective, January 2019

McKinsey & Company

Source: McKinsey Quarterly "The decoupling of GDP and energy growth: A CEO guide" (April 24, 2019) (<https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/the-decoupling-of-gdp-and-energy-growth-a-ceo-guide>)

Figure 13-7 Growth of Economy and With Increasing Demand of Primary Energy

13.4.2 Analysis of Sector-wise Indicator

(1) Analysis on Aviation Sector in Infrastructure Sub-sector

Among the infrastructure sectors, the sub-sector for which quantitative indicators were available before and after COVID-19 was the aviation sector.

Below is a graph of the number of daily departures and the number of weekly COVID-19 reports for North and Central America and the Caribbean, as published by the International Civil Aviation Organization (ICAO) on its website. Although the following graphs include the United States and Canada, graphs can also be generated for each country and airport.

There was a major drop in March/April 2020, and although there has been a gradual recovery since then, it has yet to return to previous levels.

The overall number of flights in North and Central America and the Caribbean dropped from about 5,000 per day to about 700 per day, and the number has recovered to about 3,054 per day as of July 12, 2021, 3,257 per day as of November 1, 2021 and 4,187 per day as of the end of year 2021, which is a busy season of this sector. It should be noted that the extent of this recovery varies greatly among the countries covered, and that the causes of these differences depend on a variety of conditions, including the policies, industrial structure, and medical systems of each country.

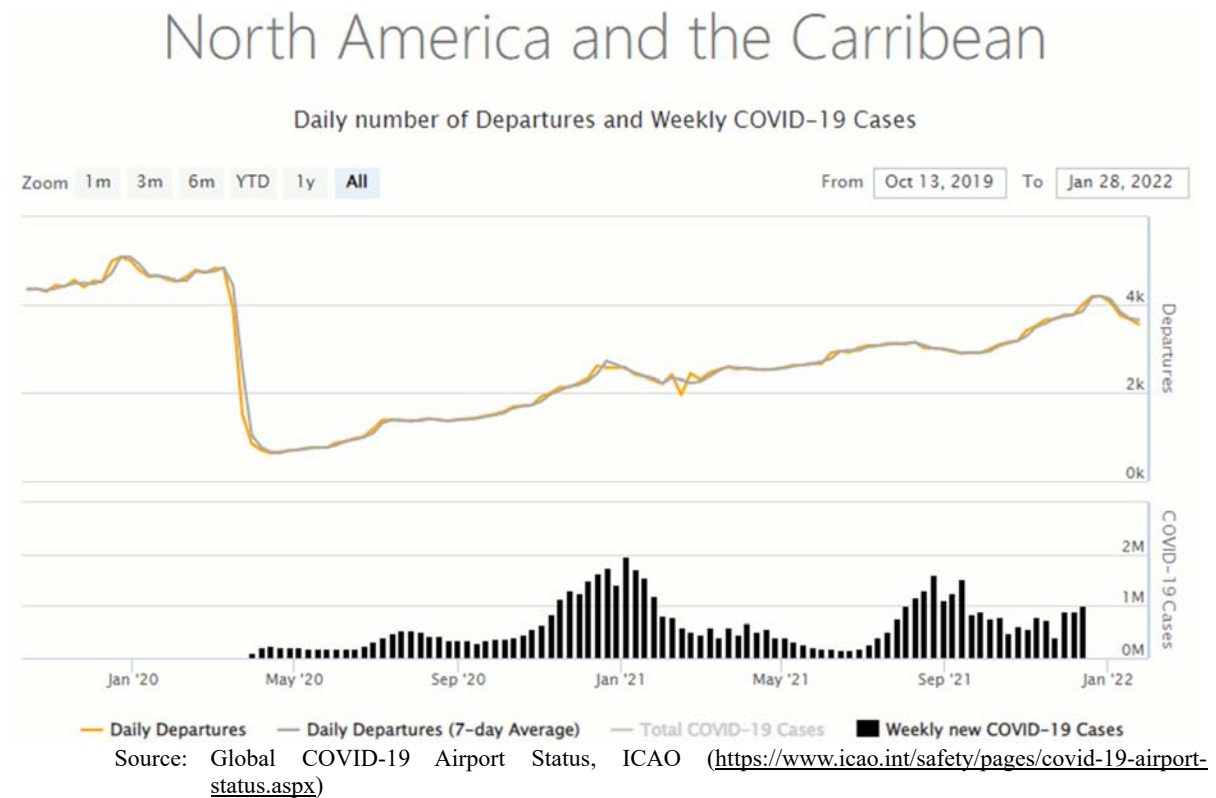


Figure 13-8 Daily Number of Departing Flights and Weekly COVID-19 Cases

Table 13-8 Daily Number of Departing Flights (Only Selected Countries)

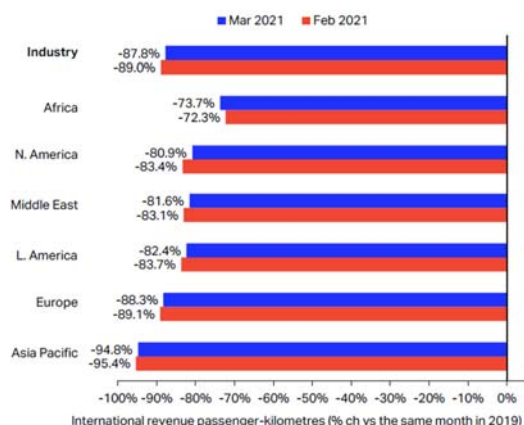
	Country	Before COVID-19 (Dec 2019 to Feb 2020) 7-days Average	After COVID-19 Pandemic (March 2020 to April 2020) 7-days Average	July 2021 7-days Average
Countries that Recover Quickly	United States of America	2,300 to 2,600 flights/day	400 to 500 flights/day	1,754 flights/day
	Belize	15 to 20 flights/day	1 to 2 flights/day	10 flights/day
	Costa Rica	70 flights/day	10 flights/day	46 flights/day
	Dominican Republic	150 to 170 flights/day	10 flights/day	137 flights/day
	El Salvador	60 to 70 flights/day	5 flights/day	52 flights/day
	Guatemala	50 flights/day	5 flights/day	37 flights/day
	Haiti	12 to 15 flights/day	2 flights/day	10 flights/day
	Honduras	30 to 35 flights/day	6 to 7 flights/day	32 flights/day
	Jamaica	70 to 90 flights/day	2 to 3 flights/day	47 flights/day
	Mexico	700 flights/day	80 flights/day	544 flights/day
	Panama	190 flights/day	6 to 7 flights/day	118 flights/day
Countries with Slow Recoveries	Canada	750 to 800 flights/day	70 to 80 flights/day	170 flights/day
	Cuba	80 to 90 flights/day	1 to 2 flights/day	8 flights/day
	Nicaragua	20 flights/day	3 flights/day	10 flights/day
	Saint Lucia	20 flights/day	1 flight/day	10 flights/day
Worldwide	Worldwide	29,000 to 32,000 flights/day	2,000 to 2,500 flights/day	13,930 flights/day

Source: Study Team based on Global COVID-19 Airport Status, ICAO
 (<https://www.icao.int/safety/pages/covid-19-airport-status.aspx>)

Next, for comparison with the rest of the world, IATA's monthly market analysis of passenger and cargo traffic is shown below.

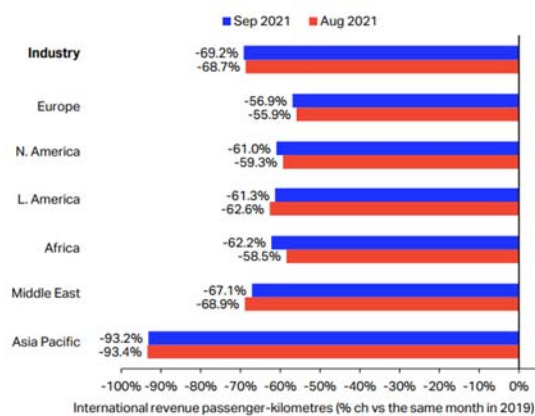
In South America (Central America and the Caribbean are included in South America in this statistic), passenger traffic in February and March 2021 was down by 80% compared with the same month in 2019 and the one in August while September 2021 was down by 60%, which is not significantly different from the global trend. Although the drop in cargo is larger than in other regions in February and March 2021, indicating that the recovery is lagging, the recovery is similar to that of Europe and the Middle East as of August and September 2021.

Chart 6 – International RPK growth versus the same month in 2019 (airline region of registration basis)



Sources: IATA Economics, IATA Monthly Statistics

Chart 3 – International RPK growth versus the same month in 2019 (airline region of registration basis)

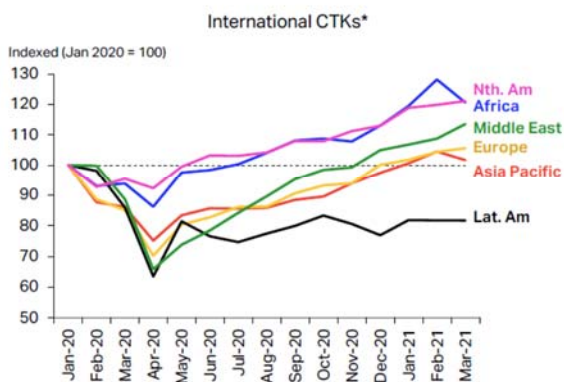


Sources: IATA Economics, IATA Monthly Statistics

Source: Air Passenger Market Analysis March 2021 and Air Passenger Market Analysis September 2021, IATA

Figure 13-9 International Revenue Passenger-Kilometers (RPK) (2021 vs 2019)

Chart 6: Int'l CTKs (airline region of registration basis)



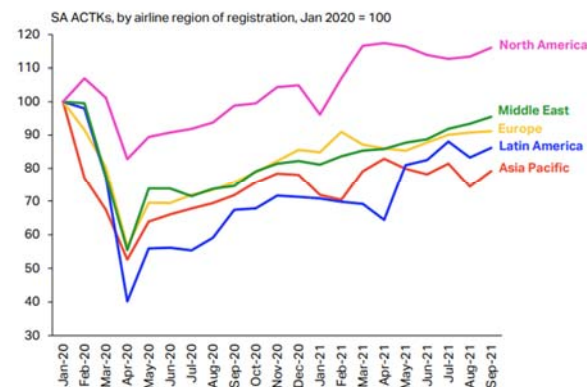
Source: IATA Monthly Statistics

* data is seasonally adjusted

Source: Air Cargo Market Analysis March 2021 and Air Cargo Market Analysis September 2021, IATA

Figure 13-10 International Cargo Tonne Kilometer (vs January 2020)

Chart 4: SA ACTKs by region of airline origin



Sources: IATA Monthly Statistics

In the aviation sector, the general view is that the recovery of business travel demand will not return to the pre- COVID-19 level due to the generalization of online meetings, and even if it does, it will take time. In addition, the need to reduce greenhouse gas emissions from business activities is expected to become stronger in the future, which may put downward pressure on the recovery trend in business travel demand.

On the other hand, leisure travel demand is widely expected to grow rapidly due to the so-called "Corona fatigue". The recovery of the tourism sector is one of the major keys to the recovery of the air transport sector.

(2) Other Transportation in General (Transportation Sector Within Infrastructure)

It is clear that the impact of COVID-19 has caused a significant decrease in the transportation sub-sector in terms of its transportation volume. In general, when economic activity recovers, transportation volume will increase.

As mentioned above for air transport, for maritime transport, the volume of cargo loaded and unloaded in Latin American and the Caribbean sub-regions is expected to decrease by 3.4% in 2020 compared with 2019. The volume of cargo loaded and unloaded in Latin America and the Caribbean ("Latin American and the Caribbean sub-regions") is expected to decline by 3.4% in 2020 compared with 2019, according to UNCTAD's "Review of Maritime Transport 2021".

According to CEPAL's "Facilitation of Transport and Trade in Latin America and the Caribbean (Number 2, 2021)", data based on containerized trade volume showed that in May 2020, Latin America as a whole was down by 16.8% from the same month last year.

According to the “Impact of COVID-19 on Port Operations in Central America and the Dominican Republic” (May 2020) by the Central American Commission for Maritime Transportation (COCATRAM), an agency of SICA, of the 28 ports surveyed, one port was closed for a period of time, seven ports reported limited hours of operation, while the remaining ports reported no impact on hours of operation. However, in the 19 ports, dockers were not affected. However, in the said 19 ports, dockers reported working on unusual hours. Even under the circumstances where the restrictions on the operation of the ports themselves were insignificant, there were restrictions on the number of people who could come to work and on the method of commuting, which may have been the cause.

Although no specific data was available for international inland transport, the International Road Transport Union (IRU) website indicates that border closures and mandatory COVID-19 inspections for drivers implemented by Costa Rica in April and May 2020 will have a negative impact on inland transport. According to the IRU website, there have been cases where 1,200 trucks have been held up on the Panama and Nicaragua sides of the border due to Costa Rica's border closure and mandatory COVID-19 inspections for drivers in April and May 2020. Although disruptions in air and marine import/export cargoes, combined with reduced customs clearance processing capacity at the border, caused the impact, there are currently no confirmed incidents of large numbers of trucks being held up at the border.

Although not all of the effects are due to COVID-19, disruptions in global logistics are also being seen, with operational constraints at ports due to COVID-19 causing disruptions in shipping, which in turn is affecting various supply chains. In the medium to long term, the disruptions are expected to dissipate as the economy recovers and time passes, but it is important to keep in mind the effects of COVID-19.

However, it is necessary to consider that there will be a change in behavior as a result of the COVID-19 disaster. Specifically, the following changes in behavior are expected. With these points in mind, the Study Team will proceed with the analysis of vulnerability and make recommendations for development cooperation.

Table 13-9 Expected Behavioral Change (Infrastructure Sector)

Change in Behavior	Change Caused	Impacts	Measures to Mitigate Adverse Effects
Increase in remote work	Decreasing demand for commuting / Increase in demand for Internet access	Negative impact on the management of public transportation / Insufficient capacity of communication network	Increase the attractiveness and promotion of public transportation / Improve the communication environment
Business travel to online meetings and beyond	Decrease in the number of business travelers (who generally spend more per customer)	Negative impact on the management of airlines, etc.	Attracting tourism demand
Avoidance of contact	Transition from public transportation to private cars	Negative impact on management of public transportation / Increase in traffic congestion / Increase in greenhouse gas emissions / Increase in household penetration of passenger cars	Increase the attractiveness and promotion of public transportation / Strengthen environmental regulations for automobiles / Urban planning considerations such as securing parking spaces
Increased use of online shopping and delivery	Increase in freight transportation	Positive impact on the management of freight transporters	Traffic safety measures

Source: Study Team

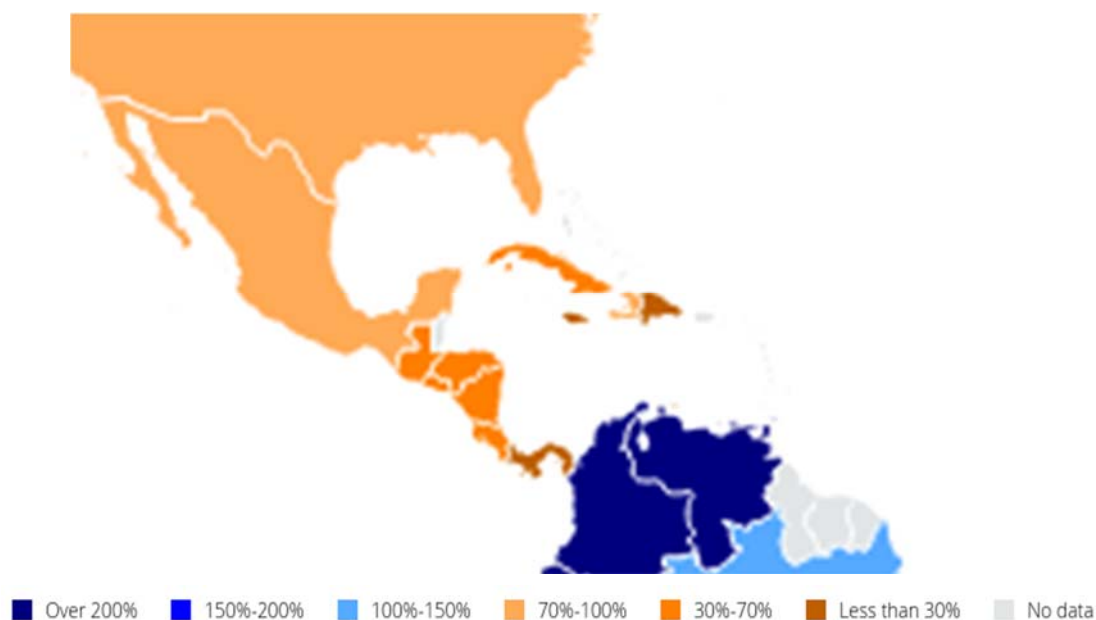
(3) Analysis of Energy Sources for Energy (Including Electricity)

The primary energy sources and energy self-sufficiency of each country in Central America and the Caribbean vary widely. While some countries have their own resources (fossil fuels and renewable energies) and are making progress in their development, others are dependent on imported fossil fuels.

During COVID-19, there was no disruption in the supply of fossil fuels, although there was a primary disruption in logistics. However, excessive dependence on imported fossil fuels is undesirable in terms of stable energy supply and the impact of fuel price fluctuations on the economy. Based on the three indicators, i.e., energy self-sufficiency, share of renewable energy in electricity generation, and the share of fossil fuels in electricity generation, it is possible to assume vulnerabilities, such that it is possible to group countries with common vulnerabilities.

1) Energy Self-sufficiency Ratio

The distribution of energy self-sufficiency is shown in Figure 13-11. Most of the 23 countries covered in this study, shown in orange or brown, are less than 100% energy self-sufficient. The exception is Trinidad and Tobago (201%), which is an oil-producing country and also produces natural gas.



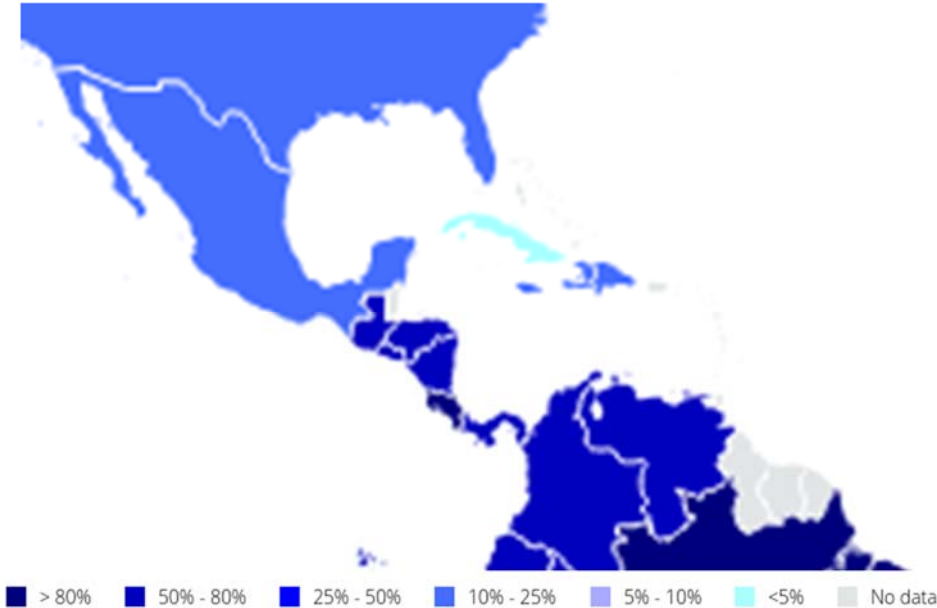
Source: IEA Atlas of Energy

Figure 13-11 Energy Self-sufficiency Ratio (2019)

2) Renewable Energy as a Percentage of Total Power Generation

The distribution of the share of renewable energy in electricity generation is shown in the figure below. Costa Rica (99%) and other countries in the region have a high share of renewable energy in their electricity generation, especially those with abundant hydro and geothermal resources.

Many Caribbean countries are dependent on fossil fuels and have low percentages or no data.



Source: IEA Atlas of Energy

Figure 13-12 Renewable Energy as a Percentage of Total Power Generation (2019)

3) Ratio of Fossil Fuels to Electricity Generated

The distribution of the share of fossil fuels in electricity generation is shown in the figure below. It is high in the oil-producing countries of Trinidad and Tobago (100%) and Mexico (79%), as well as in the Caribbean countries, which rely on imported fossil fuels.



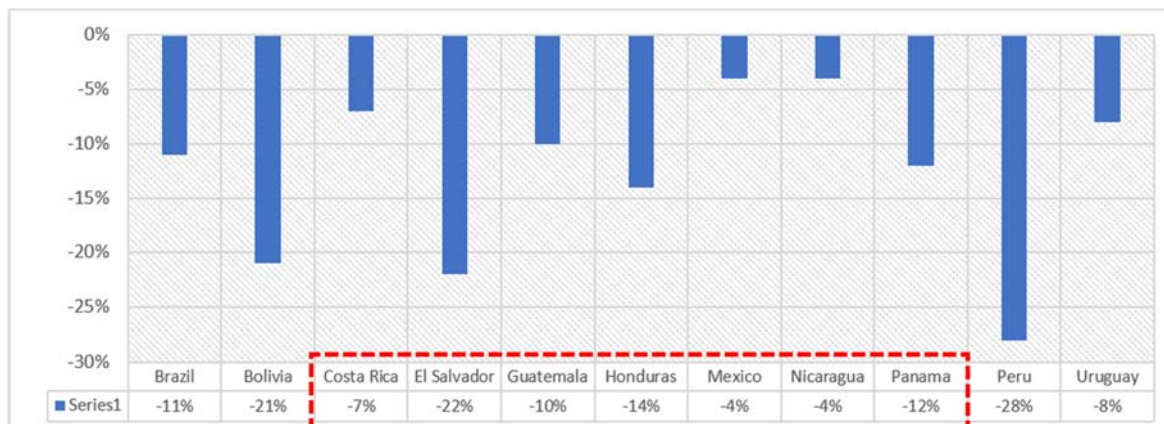
Source: IEA Atlas of Energy

Figure 13-13 Ratio of Fossil Fuels to Electricity Generated (2019)

(4) Changes in Power Consumption Patterns

A comparison of electricity demand before and after the impact of COVID-19, which includes six of the countries in this study, has been made by the Inter-American Development Bank (IDB) and is presented below, comparing electricity demand in the period March 30 to April 5, 2020 with the same week in the previous year. The decline in demand is occurring in all countries, but the extent of the

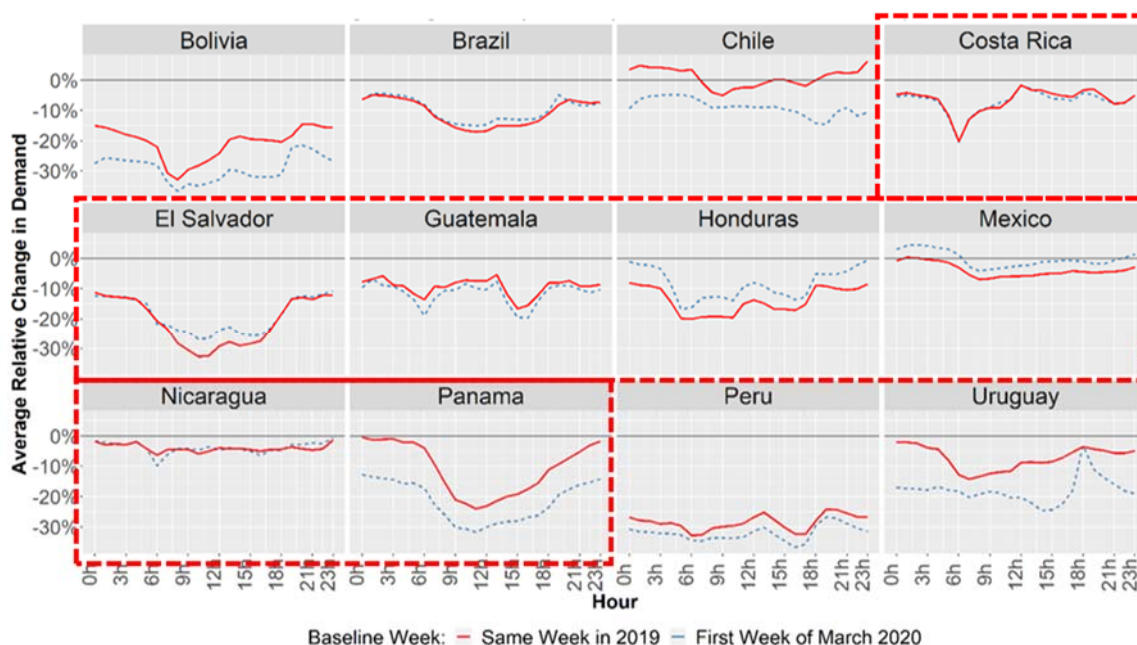
decline varies from country to country. Differences are likely to be due to restrictions on movement and activity in each country, as well as differences in industrial structure (the proportion of electricity demand).



Source: Monitoring the impact of the COVID-19 crisis on electricity: lower demand with different profiles, IDB (April 28, 2020) (<https://blogs.IDB.org/energia/en/monitoring-the-impact-of-the-covid-19-crisis-on-electricity-lower-demand-with-different-profiles/>)

Figure 13-14 Comparison of Electricity Demand between March 30 and April 5, 2020 with the Same Week Last Year

A comparison of electricity demand by time zone for the period March 30 to April 5, 2020 with the same week of the previous year and the first week of March 2020 is shown below. From which period the drop in demand was the largest, it is possible to make an analogy as to which consumers were affected. For example, if the drop in daytime demand is large, it is likely attributed to decreased in large-scale industrial demand and office air conditioning demand, which operate only during the daytime.



Source: Monitoring the impact of the COVID-19 crisis on electricity: lower demand with different profiles, IDB (April 28, 2020) (<https://blogs.iadb.org/energia/en/monitoring-the-impact-of-the-covid-19-crisis-on-electricity-lower-demand-with-different-profiles/>)

Figure 13-15 Comparison of Electricity Demand by Time Zone with the Same Week of the Previous Year and the First Week of March 2020

13.4.3 Evaluation of Various Policies Taken by the Government for COVID-19

In response to COVID-19, various policies are being implemented by the governments.

In the transportation sub-sector of the infrastructure sector, public transport systems have been restricted in terms of capacity, number of services, mandatory wearing of personal protective equipment (PPE), and restrictions on the flow of vehicles into urban areas. However, most of these measures were implemented as protocols at the request of the health authorities in each country in order to reduce the flow of people and prevent the spread of infection, and cannot be described as infrastructure sector policies.

It is true that in some countries for example in Costa Rica and Panama, the number of public transportation services was limited, but the flow of people did not decrease and congestion increased. Similar problems have occurred in Japan, but it is difficult to evaluate the pros and cons of these protocols from the perspective of the infrastructure sector.

In the electricity sub-sector of the energy sector, measures such as the deferment of payment of electricity bills were implemented. This is a measure that is also taken in Japan in times of disaster.

13.4.4 Trends in Development Partners

In the infrastructure and energy sectors, JICA, the World Bank, UNDP, IDB, and the German International Cooperation Agency (GIZ) are the main development partners. In the energy sector, various projects have been implemented, such as infrastructure development and improvement in the transportation sub-sector, and power infrastructure development, energy conservation, and introduction of renewable energy.

The World Bank's projects are as follows.

Table 13-10 Projects by the World Bank in Transport and Energy Sectors

Country	Project Status	Project Name	Board Approval Date	Project Closing Date	Current Project Cost	Grant Amount
Belize	Active	Energy Resilience for Climate Adaptation (GEF/SCCF)	2016-09-12	2022-05-31	11,975,000	8,000,000
Jamaica	Closed	Second Competitiveness and Fiscal Management Programmatic DPF	2017-06-08	2018-06-30	70,000,000	
Costa Rica	Active	Costa Rica Second Fiscal and Decarbonization Management DPL	2021-06-29	2022-06-30		
Haiti	Active	Additional Financing Haiti Renewable Energy for All	2020-09-30		6,900,000	
Haiti	Active	Haiti: Renewable Energy for All	2017-10-25	2024-12-31	19,620,000	19,620,000
Haiti	Active	Haiti Modern Energy Services For All	2017-10-25	2028-04-30	15,650,000	15,650,000
Panama	Closed	Panama Pandemic Response and Growth Recovery Development Policy Operation	2020-12-08	2021-12-31		
Saint Lucia	Active	Renewable Energy Sector Development Project	2021-07-28	2025-12-31		
Mexico	Active	Water Security and Resilience for the Valley of Mexico (PROSEGHIR)	2020-02-27	2025-12-31		
Mexico	Active	Additional Financing for Energy Efficiency in Public Facilities Project (PRESEMEH)	2018-03-30		55,790,000	
Mexico	Active	Additional Finance for Energy Efficiency in Public Facilities Project (PRESEMEH)	2018-03-30	2023-04-30	6,850,000	5,790,000

Source: Study Team based on the data published at the website of the World Bank

The cumulative number of projects undertaken by the Inter-American Development Bank (IDB) is as follows. In recent years, the transport subsector has seen a large number of projects in institutional support, general planning, urban transport, logistics, and rehabilitation, while the energy sector has seen a large number of projects in institutional support, rural electrification, energy conservation, renewable energy, and carbon neutral initiatives. A total of 180 projects are currently under implementation in the following 16 countries.

Table 13-11 Numbers of Projects by Inter-American Development Bank in Transport and Energy Sectors

Country	Transport		Energy		Total
	2016-	Cumulative	2016-	Cumulative	
Bahamas	3	14	8	20	34
Barbados		17	8	21	38
Belize	2	17	1	2	19
Costa Rica	9	36	5	45	81
Dominican Republic	12	40	13	49	89
El Salvador	9	35	2	31	66
Guatemala	6	26	5	33	59
Guyana	2	31	10	40	71
Haiti	5	59	7	47	106
Honduras	6	55	17	67	122
Jamaica	1	25	8	24	49
Mexico	5	23	8	43	66
Nicaragua	4	31	10	56	87
Panama	8	52	6	36	88
Suriname	3	12	6	18	30
Trinidad and Tobago	3	11	3	6	17
Total	78	484	117	538	1,022

Note: “2016-“ means the number of project approved in/after year 2016 and those includes the project under preparation.

Source: Study Team based on the Data published at the website of the IDB

In addition, projects in the infrastructure and energy sectors by the Caribbean Development Bank (CDB) (including projects in countries other than those covered by this study) are listed below.

Table 13-12 Projects by Caribbean Development Bank in Transport and Energy Sectors

PROJECT TITLE	COUNTRY	SECTORS & THEMES	PROJECT TOTAL		APPROVED
Street and Flood Light Retrofitting Project	Saint Kitts and Nevis	Energy generation, distribution and efficiency	USD	5,792,000	Dec, 2016
Power Project - Electricity System Upgrade and Expansion	Suriname	Energy generation, distribution and efficiency	USD	65,000,000	Dec, 2017
Street Light Retrofitting Project	Antigua and Barbuda	Energy generation, distribution and efficiency	USD	5,981,000	Jul, 2016
Seventh Power Project	Anguilla	Energy generation, distribution and efficiency	USD	6,230,000	Jul, 2017
Energy Sector Policy-Based Loan	Suriname	Energy generation, distribution and efficiency	USD	50,000,000	May, 2016
Energy Sector Policy-Based Loan	Suriname	Energy generation, distribution and efficiency	USD	50,000,000	May, 2016
Energy Efficiency Measures and Solar Photovoltaic Plant	Saint Vincent and the Grenadines	Energy generation, distribution and efficiency	USD	4,196,000	May, 2017
Rehabilitation and Reconstruction Loan - Hurricane Maria	Dominica	Reconstruction Relief and Rehabilitation, Energy generation, distribution and efficiency	USD	15,804,000	Mar, 2018
Emergency Support Loan - Liat (1974) Limited	Antigua and Barbuda	Transportation, Air Transport	USD	2,440,000	Dec, 2017
Road Infrastructure Rehabilitation	Antigua and Barbuda	Transportation, Road Transport	GBP	13,900,000	Dec, 2016
Coastal Highway Upgrading - Feasibility Study and Preparation of Detailed Designs	Belize	Transportation, Road Transport	GBP	1,000,000	Dec, 2016
Millennium Highway and West Coast Road Upgrading Project	Saint Lucia	Transportation, Road Transport	GBP	979,605	Dec, 2017
Road and Bridge Rehabilitation Loubiere to Bagatelle Road and Road Network and Road Safety Assessment - Post Tropical Storm Erika	Dominica	Transportation, Road Transport	GBP	794,446	May, 2016
Montserrat Port Development Project	Montserrat	Transportation, Water Transport	GBP	14,400,000	Dec, 2017
Port Modernisation Project - Kingstown, St. Vincent and The Grenadines	Saint Vincent and the Grenadines	Transportation, Water Transport	GBP	2,424,000	Oct, 2017

Source: Study Team based on the Data published at the website of the CDB (Capital projects approved during the period 2013-2022)

13.4.5 Development Policy by Country

In Japan's Country Development Policy (the Ministry of Foreign Affairs' Country Development Cooperation Policy), with regard to the infrastructure and energy sectors, all countries except Mexico

mention infrastructure (disaster prevention and overcoming vulnerabilities) and energy (renewable energy and energy conservation). In Mexico, triangular cooperation in the region is a priority area.

Based on these policies, the Japan International Cooperation Agency (JICA) has been cooperating in the infrastructure and energy sectors as shown in below. The main areas of cooperation in the infrastructure sector in Central America include the Panama Metro Line 3, bypass construction and road disaster prevention in El Salvador, and bridge construction in Honduras and Nicaragua. In the energy sector, the Study Team is working on geothermal energy in Costa Rica and El Salvador, and on renewable energy and energy conservation in the Caribbean region.

Table 13-13 Projects by JICA in Transport and Energy Sectors

Country	Type	Project Title	Year/Duration
Yen Loan/Grant Aid/Technical Cooperation Project			
Belize	Grant Aid	The Project for Introduction of Clean Energy by Solar Electricity Generation System	G/A 2009
Costa Rica	Yen Loan	Pirris Hydroelectric Power Development Project	L/A 2001
	Yen Loan	Las Pailas 2 Geothermal Project (Guanacaste Geothermal Development Sector Loan)	L/A 2014
	Yen Loan	Borinquen 1 Geothermal Project (Guanacaste Geothermal Development Sector Loan)	L/A 2017
Cuba	Technical Cooperation	Project for Formulation of National Transport Master Plan	2018-2020
	Technical Cooperation	Project on Electricity Sector Master Plan Study for Development of Renewable Energy	2020-2022
	Grant Aid	The Project for the Improvement of Power Supply in the Isle of Youth	G/A 2019
El Salvador	Yen Loan	San Miguel Bypass Construction Project	L/A 2014
	Technical Cooperation	The Project for Thermoluminescence Techniques in Geothermal Exploration and Integrated Evaluation System of Geothermal Reservoir	2018-2023
	Technical Cooperation	The Project for Capacity Development of the Department of Climate Change Adaptation and Strategic Risk Management for Strengthening of Public Infrastructure, Phase 2	2016-2021
Guatemala	Yen Loan	ZONAPAZ Road Improvement Project (2)	L/A 2012
	Yen Loan	Other two (02) road projects after 1999	
	Grant Aid	Project for Promotion of Production Activities by Clean. Energy in Northern Villages	G/A 2010
Guyana	Grant Aid	Project for the Introduction of Renewable Energy and the Improvement of Power System	G/A 2018
Haiti	Grant Aid	The Project for Improvement of Urban Roads and Drainage for Reconstruction of Leogane City	G/A 2010
	Grant Aid	Project for Reconstruction of the Bridges of the Croix-des-Missions and the Route Neuve	G/A 2015
Honduras	Yen Loan	Canaveral and Rio Lindo Hydropower Strengthening Project	L/A 2015
	Grant Aid	Micro-Hydroelectric Power Generation Project in Metropolitan area of Tegucigalpa	G/A 2013
	Grant Aid	The Project for Restoration of the Democracia Bridge	G/A 2013
	Grant Aid	The Project for Reconstruction of Bridge on CA1	E/N 2021
	Grant Aid	Other six (06) bridge projects after 1999	
Jamaica	Yen Loan	Energy Management and Efficiency Programme	L/A 2017
Mexico	Technical Cooperation	Project for Automotive Cluster Promotion in Mexico	2018-2023
Nicaragua	Grant Aid	The Project for Capacity Strengthening of Road and Highway Maintenance	G/A 2009
	Technical Cooperation	The Project for the study of National Transport Plan	2012-2014
	Yen Loan	National Sustainable Electrification and Renewable Energy Project	L/A 2013
	Grant Aid	The Project for Construction of Paso Real Bridge	G/A 2014
	Grant Aid	Other six (06) bridge projects after 1997	
	Yen Loan	Rio Blanco-Siuna Bridges and National Road Construction Project	L/A 2017
Panama	Yen Loan	Urban Transportaion Line-3 Development Project (1)	L/A 2016
Suriname	Grant Aid	The Project for Expansion of Transmission and Distribution Grid for the Districts Commewijne and Saramacca	E/N 1999

Regional (Barbados, Jamaica, St. Kitts and Nevis)	Technical Cooperation	Technical Cooperation to Promote Energy Efficiency in Caribbean Countries	2019-2022
Regional (El Salvador, Guatemala, Honduras, Nicaragua, Costa Rica, Panama)	Technical Cooperation	Project to Strengthen Capacities in the Elaboration of Regional Master Plan for Mobility and Logistics for Sustainable Regional Development in the Framework of Central American Economic Integration	2019-2023
Country		Project Title	Note
Data Collection Survey (On-going)			
Honduras		Data Collection Survey for the Tegucigalpa Water Supply Project	
Panama		Data Collection Survey on Public Transit Oriented Development (TOD) for Metropolitan Area Urban Transit Line 3 Project in Panama	
Expert Dispatching / Training Programs (On-going)			
Cuba		Road and Bridge Operation and Maintenance	Training
Costa Rica		Capacity Development for Geothermal Development	Training (Third Country)
El Salvador		Study on the Development of a Port Plan for the Revitalization of the Port of La Unión	Expert Dispatching
Mexico		Project to Strengthen Capacities for Mobility and Logistics for Sustainable Regional Development in the Framework of Central American Economic Integration	Training (Third Country)
Nicaragua		Training Program for Transport Demand Analysis JICA-STRADA	Training

Source: Study Team based on the data published at the website of the JICA

13.4.6 Grouping of Countries Surveyed by Sector

(1) Grouping of Countries (Infrastructure)

As for the transportation sub-sector, grouping is considered possible depending on conditions such as size (population and area), geographical characteristics (continental location or island), and the state of development of airports, railroads, and roads, as well as the share of transportation volume by transportation mode that depends on these factors.

(2) Grouping of Countries (Energy)

Countries can be grouped according to their energy self-sufficiency ratio and power supply composition, and can be broadly classified into the following: a) countries with abundant fossil fuel resources in their own countries, b) countries with large-scale introduction of renewable energy, and c) countries that are heavily dependent on imported fossil fuels. In addition, it is also possible to group countries according to the type of electricity demand, specifically, the scale of consumers and industries that consume a large amount of electricity. The other is tourism (hotels, etc.), which has a large demand for electricity and is directly and significantly affected by COVID-19.

13.5 Selection of Priority Countries by Sector

13.5.1 Selection Criteria for Priority Countries

It is true that the infrastructure and energy sectors have also been affected by COVID-19, but it is a secondary impact due to the stagnation of activities in other sectors. The infrastructure and energy sectors have not been affected by COVID-19, but the supply of these sectors has been reduced in response to the decline in demand.

For example, in countries that rely heavily on tourism, the number of international flights and passengers will decrease significantly, and the occupancy rate of hotel rooms will also decrease, resulting in lower energy demand. However, these flight numbers, passenger numbers, and energy demand are expected to recover on their own once tourism demand recovers.

Similarly, in countries with stricter lockdown policies, demand for transportation travel will be greatly reduced, energy demand (sales of gasoline and via) will be smaller, and the managerial impact on public transportation will be greater. If the lockdown policy is relaxed, it is expected to recover on its own as well.

Therefore, it is not reasonable to consider a country as a priority country simply because of a large temporary decay in demand.

If there is a case where the direct impact of COVID-19 has caused problems in the supply capacity of both infrastructure and energy, it should be selected as a priority country, but no such case has been confirmed. In addition, due to lockdown policies, other restrictions on movement, and increased economic activity, some countries have been able to confirm their energy demand before COVID-19, especially in the energy sector.

13.5.2 Selection of Priority Countries

Based on the above, it was decided not to select priority countries or priority sectors in the infrastructure and energy sectors in terms of the impact of COVID-19.

13.6 Detailed Survey by Sector

13.6.1 Selection of Countries for the Survey

Although the Study Team did not select priority countries by sector, selection of countries for the survey was carried out in a well-balanced manner, taking into consideration the "grouping of countries for the survey by sector" and travel restrictions due to the impact of COVID-19.

Specifically, in the transportation sub-sector, the mainstream of passenger and freight transportation is generally by car in each country, and only in some countries are urban transportation modes such as railways introduced in urban areas. Therefore, the Study Team decided to include at least one country each where "urban transportation modes such as railways are introduced in urban areas" and another where "urban transportation modes such as railways are not introduced".

In the energy sector, with a few exceptions, there is a mixture of countries with low self-sufficiency in primary energy but with a high level of renewable energy in electricity, and countries that continue to be highly dependent on fossil fuels.

As a result of the above discussion, the following countries were selected for the detailed survey:

Table 13-14 Countries Surveyed in the Detailed Survey

Country	Transport Sub-sector	Energy Sector
Costa Rica	There are urban railways.	Much renewable energy is introduced in electricity sector.
El Salvador	There is BRT system (suspended).	Much renewable energy is introduced in electricity sector.
Barbados	Heavy reliance on automobiles There are efforts to introduce EVs.	Highly dependent on fossil fuels
Saint Lucia	Heavy reliance on automobiles	Highly dependent on fossil fuels There is potential for geothermal.

Source: Study Team

13.6.2 Conducting Detailed Surveys

(1) Costa Rica

The field survey in Costa Rica was conducted from September 20 to September 28, 2021.

Since the target is the energy sector and the transportation sub-sector, and subsequently, it is also related to the long-term issue of carbon neutrality, the survey was conducted by the Secretariat of

Energy Subsector Planning, Ministry of Environment and Energy (*Secretaría de Planificación del Subsector Energía, Ministro de Ambiente y Energía* : MINAE-SEPSE), while the Department of Climate Change, Ministry of Environment and Energy (*Dirección de Cambio Climático, Ministro de Ambiente y Energía*: MINAE-DCC), Sectoral Planning Secretariat of the Ministry of Agriculture (*Secretaría Ejecutiva de Planificación Sectorial Agropecuaria, Ministerio de Agricultura y Ganadería*: MAG-SEPSA), Sectoral Planning Secretariat of the Ministry of Agriculture (*Ministerio de Obras Públicas y Transportes*: MOPT), and Costa Rica Petroleum Refining Company (*Refinadora Costarricense de Petróleo*: RECOPE) were selected for visits and interviews.

In addition, the Study Team confirmed the current status of urban transportation (urban railroads and city buses).

(2) El Salvador

The field survey in El Salvador was conducted from September 13 to September 18, 2021.

Since the focus is on the energy sector and the transport sub-sector, and since it is also related to the long-term issue of carbon neutrality, the following organizations were selected: National Energy Commission (*Consejo Nacional de Energía*: CNE), National Energy Commission (*Ministerio de Medio Ambiente y Recursos*: CNE), Ministry of Environment and Natural Resources (*Ministerio de Medio Ambiente y Recursos Naturales*: MARN), and Vice Ministry of Transportation, Ministry of Public Works (*Viceministerio de Transporte, Ministerio de Public Works*: VMT).

In addition, the Study Team confirmed the current status of urban transportation (bus rapid system (BRT), which is suspended, and city buses).

(3) Barbados

The field survey in Barbados was conducted from January 18 to January 26, 2022.

It targeted the energy sector and the transport sub-sector and included the Ministry of Transport, Works and Water Resources (MTWWR), Ministry of Energy, Small Business and Entrepreneurship (MESBE), Ministry of Environment and National Beautification (MENB), Barbados Power and Light Co. (BL&P), Caribbean Center for Renewable Energy and Energy Efficiency (CCREEE), and private companies selling EVs were selected for visits and interviews.

In addition, the current status of urban transportation was confirmed in the city center and bus terminal, and by actually riding the bus.

(4) Saint Lucia

The field survey in Saint Lucia was conducted from January 26 to February 1, 2022.

It targeted the energy sector and the transport sub-sector, and was conducted by the Transport Division of the Ministry of Infrastructure, Ports, Energy and Labour, the Energy, Science & Technology Unit, the Sustainable Development & Environment Division, Ministry of Education, Innovation, Gender Relations and Sustainable Development, and Saint Lucia Electricity Services Limited (LUCELEC), and private companies selling EVs were selected for visits and interviews.

In addition, the current status of urban transportation was confirmed in the city center and bus terminal.

13.6.3 Analysis of Detailed Survey Results

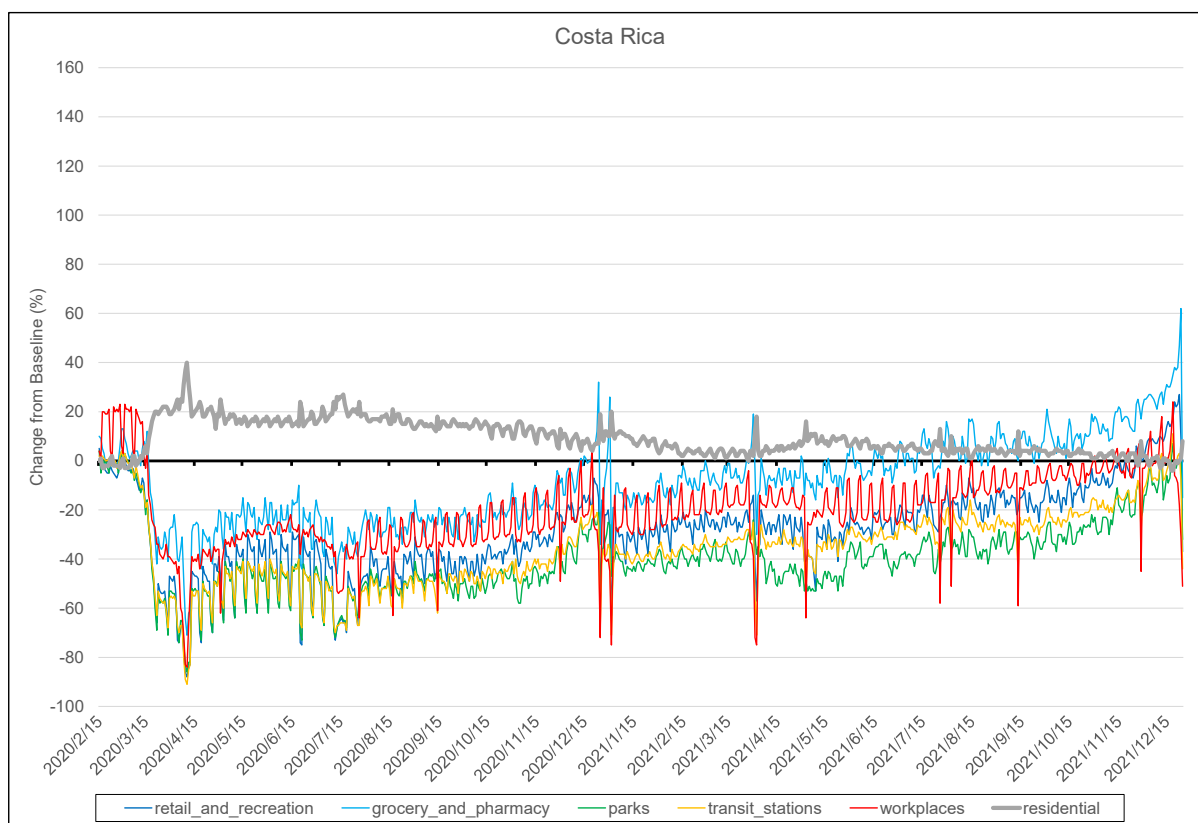
(1) Costa Rica

1) Impact of COVID-19

According to the hearing from MOPT, Costa Rica, the traffic in the San Jose metropolitan area decreased by 66% in April 2020 (based on traffic monitoring on highways) and tourist destination

crowds decreased by 80% in April 2020, with both compared with the same month/period of the previous year. The number of tourists from outside the country was zero from April to September 2020, and in October it was about 50% of the same month last year. As for freight transportation, it decreased by 3.65% in the first half of 2020 and by 8.25% in the second quarter, and has been on a recovery trend since then. The number of public bus users (monthly) was 45 million in February 2020, but decreased to 32 million in March and 15 million in April. In January 2021, the number was down at 44% from the same month of the previous year, and now, the number is down by about 30%. As of now, the government has instructed to reduce the number of buses. Also, some of the bus operators have gone bankrupt.

In 2020, the time spent at home will increase due to the various measures taken by the government, and the time spent outside the home will decrease. In the second half of 2020, there will be an increase in time spent outside the home and a decrease in time spent at home, confirming a trend toward recovery in economic activity.

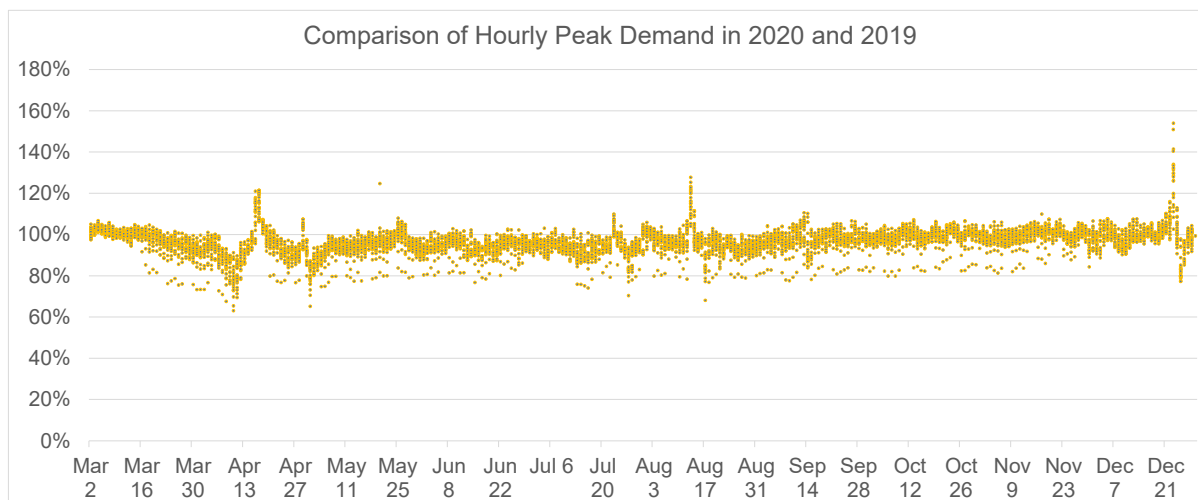


Source: Study Team based on COVID-19 Community Mobility Reports by Google

Figure 13-16 Movement Data (Costa Rica) (COVID-19 Community Mobility Reports by Google)

The impact of COVID-19 on electricity demand is shown below. Based on the hourly maximum demand data published by the National Center for Energy Control (CENCE), the following graph was created for the purpose of comparing the hourly maximum demand in 2020 and 2019. Since the demand characteristics differ depending on the day of the week, it is appropriate to compare them on the same day of the week. For this reason, the comparison is made with the "most recent day of the same week" in the same period of the previous year, and not with the "same day". For example, Monday, March 2, 2020 is compared with the demand for the same time period on Monday, March 4, 2019. From mid-March to mid-April 2020, there was a large drop compared with the same period of the previous year, followed by a gradual recovery, and from September 2020 onward, the number of time periods generally exceeded that of the previous year. It can be confirmed that the number of time periods has been increasing.

As is the case in many countries, there is no or a small drop in demand at night because there is a certain level of demand in residential buildings, regardless of whether it is before or after COVID-19. The drop in demand occurs during the daytime, when economic activity has a greater impact.



Source: Study Team based on the data published by National Center for Energy Control (CENCE)

Figure 13-17 Comparison of Hourly Electricity Demand for Ten Months after March 2, 2020 (Same Day in 2020 and 2019)

2) Policy Approaches to Carbon Neutrality

In Costa Rica, almost 100% of electricity comes from renewable energy sources, but most of the energy other than electricity is derived from fossil fuels.

In order to achieve carbon neutrality by 2050, the National Decarbonization Plan has been formulated. The plan is divided into three phases: from 2018 to 2022, administrative aspects such as organization and financial resources will be examined; from 2023 to 2030, the plan will be refined by identifying missing elements and making necessary revisions; and from 2030 to 2050, the plan will be implemented.

In the transportation sub-sector, the promotion of urban railroads and the shift to electric vehicles are examples of decarbonization efforts, and in the energy sector, the use of hydrogen glue is currently being considered as an initiative, which is in line with the timeline of the plan.

3) Urban Transport

There is a plan to develop an urban rail system for the San Jose metropolitan area by improving and strengthening the existing rail infrastructure. Most of the existing railroads are single track sections and are not electrified. In addition, the current transportation capacity is extremely limited. In each direction, two- to four-car diesel trains are in operation during limited hours in the morning and evening. The aim of the project is to strengthen the transportation capacity by converting the line into a double-track line and electrifying it, and to break away from the dependence on automobiles (private cars, buses, etc.).

In general, land expropriation is essential for large-scale infrastructure development, and is often one of the difficulties in implementing a project. In this urban rail project, the necessary land will be secured by converting existing railroad land and road land to railroad land, which is considered to be a realistic option to achieve the project within a limited timeline. On the other hand, it is true that there are some who are opposed to the project because it is a huge project in a stagnant economy due to COVID-19 and the current route does not necessarily pass through the high-demand areas in San Jose.

Although the bus service is currently undergoing further reduction due to the impact of COVID-19, as far as the Study Team was able to confirm on site (by actually riding on the bus), it seems to be accepted along the existing routes as a punctual and inexpensive means of transportation, as it is used

to the extent that passengers are informed to board the next train due to the limited capacity (which is thought to be due to the impact of COVID-19).

There are plans to improve the connection of the existing bus routes and to convert the buses to EVs, but there are no plans for new transportation modes other than urban rail. The existing bus route network is not yet optimized, and it is necessary to organize and optimize it in order to both promote the use of public transportation and reduce greenhouse gas emissions.

4) Moving Toward Carbon Neutrality in the Transportation Sector

Although biofuels and hydrogen are also targets for consideration and research, in light of Costa Rica's abundant renewable energy resources, the country's direction is to shift to EVs powered by electricity derived from renewable energy sources. The MOPT has indicated that the direction is the same for large vehicles such as buses and trucks.

The electrification of transportation, including electric vehicles, was legally positioned by Law No. 9518 *Incentivos Y Promocion Para El Transporte Electrico* (Incentives and Promotion for Electric Transport) enacted in December 2017. The law provides for tax exemptions and other measures. The introduction of EVs is progressing slowly in passenger cars, and the government has started a pilot program to lease EVs to bus operators to promote the spread of EVs in bus routes. However, the spread of recharging stations has not progressed much, which is an issue.

As for biofuels, research is being conducted in cooperation with RECOPE, MAG, and MINAE-SEPSE. At that time, the study was focused on ethanol and biodiesel, but now, compared to that time, the direction of decarbonization through electrification has become stronger, and it is recognized that the plan needs to be reworked. In addition, although not a revision of the national plan, SEPSE, MAG, and RECOPE prepared a strategy on biofuels in 2015. The content is not technical, but focuses on how to strengthen the legal and institutional aspects.

Based on the policy that palm plantation development should be done while maintaining the forest area, fields that have already been developed but are not being utilized are to be turned into palm plantations. The pace of development is affected by fluctuations in the international price of palm oil and the area is not necessarily expanding steadily every year. On the other hand, efforts to increase the yield per unit area are being made continuously. The country has not yet reached the point of mass production of biofuels or exporting them overseas, and is cautious about rapidly expanding palm oil production.

Other than automobiles, there are no concrete efforts to make fuels for ships and aircraft carbon neutral at this time. This is due to the fact that biofuel initiatives are as described above, ships are marginal, and carbon neutrality initiatives for automobiles are considered to be the highest priority.

5) Piloting Towards Carbon Neutrality

Although the scope of RECOPE's business is legally limited to petroleum and its products, the company is actively engaged in pilot projects in the biofuel and hydrogen fields. As mentioned above, RECOPE is involved in biofuel research and owns Toyota's MIRAI fuel cell vehicle and hydrogen generation and filling facilities. In addition, it has built a model service station that can provide services such as hydrogen and EV charging.

It can be said that this is RECOPE's own direction for survival in the post-fossil fuel era. The same direction is being taken by Japanese oil companies and other companies in the energy industry. However, RECOPE's efforts are only at the pilot level due to legal restrictions that limit the scope of its business to petroleum and its products. A bill to ease the legal restrictions has been introduced to the Diet, but has not yet been discussed. This is reportedly because the public is wary of RECOPE, which has a monopoly on the distribution of oil and petroleum products, expanding the scope of its business further, and the parliamentarians are in line with this public sentiment.

On the other hand, it is also true that RECOPE's monopoly position allows it to engage in such pilot projects because of its scale and financial strength. It is hoped that politics will guide the will of the people in the right direction.

Other pilot projects toward carbon neutrality include the conversion of route buses to EVs as mentioned in 2). In addition, an alliance has been launched in May 2019 to clarify the position of hydrogen and promote policies and dissemination support schemes. Members include the IDB, the Costa Rica-United States Cooperation Foundation (CRUSA), the electric utility ICE, and other private companies.

6) Electricity

Almost 100% of Costa Rica's electricity comes from renewable sources, with over 70% coming from hydropower. In addition to hydropower, wind (15%), geothermal (12%), biomass (bagasse) (2%), and solar (1%) are the other sources. By combining the operation of storage and inflow dams, the system is able to cope with temporal and seasonal variations, and MINAE-SEPSE believes that these hydropower plants with sufficient capacity will be able to cope with the power and frequency fluctuations caused by variable renewable energy (VRE) sources such as wind and solar. Costa Rica is a country that consumes a lot of electricity.

In Costa Rica, there are few industries that consume large amounts of electricity, and the service sector is the main one. The population is not growing significantly. Therefore, the electricity demand assumption is based on a 1% annual increase in demand, plus an increase in electricity demand due to the electrification of transportation. At present, there is no shortage of electricity, but the company plans to respond to future increases in demand by increasing wind, geothermal, and solar power generation.

As for the impact of climate change on hydroelectric power generation, such as the decrease in precipitation, the Study Team is aware that such problems are global issues, but in Costa Rica, although there are local increases and decreases in power generation, the country as a whole is currently well balanced.

While these technical assumptions can be said to be reasonable, if the pace of electrification is faster than expected in the future, securing power sources within the limited land area and securing hydropower output in the event of unpredictable climate change may become a challenge.

Since solar power has not been introduced yet, there is a large room for development of solar power. Promoting the introduction of photovoltaic power generation in a form that allows surplus power to be supplied to the grid side, while assuming self-consumption using the roofs of buildings, will be effective in terms of utilizing the capacity of the existing power system. In addition, as the Study Team is currently seeing, the utilization of hydrogen is an area where Japan has the potential to cooperate, as its importance will increase with the large-scale introduction of variable renewable energies such as wind and solar power.

(2) El Salvador

1) Impact of COVID-19

According to the hearing from the VMT of El Salvador, the sales of motorcycles increased by about 10% per year, but in 2020, an increase of 17% was observed, and a transition from public transportation to the use of cars and motorcycles, is expected. In addition, after the lockdown was lifted, the number of passengers using local buses has decreased by 30% compared with the pre-COVID-19. Although educational institutions have resumed some face-to-face classes, they are still conducting about 40% of their classes remotely, which has led to a significant decrease in student use resulting in a smaller demand for bus routes.

Electricity demand has decreased by 20% from 534-550 GWh/month from April to June 2019 to 442-445 GWh/month in the same month of the following year (immediately after the COVID-19 pandemic), according to the data provided in the interviews and provision in the CNE. However, from

April to June 2021, the demand exceeded the demand in the same months of the previous two years, and in terms of electricity demand, the impact of COVID-19 can be said to be no longer at the same level.

2) Policy Approaches to Carbon Neutrality

The National Plan for Climate Change is the key document in terms of climate change measures. As a specific goal, the National Energy Policy 2020-2050 states that carbon neutrality will be achieved by 2050. It is also preparing a Decarbonized Strategy.

MARN is working with CNE on the energy sector, with VMT on the transport sub-sector, and with other relevant organizations to develop and implement the strategy.

The National Energy Policy 2020-2050 calls for "modern supply and consumption", "universal and equitable energy access", "innovative energy policies access", "innovative and attractive for investment", "safe, reliable, and quality supply", and "carbon neutral". The technologies that should be applied to achieve carbon neutrality are listed as promotion of energy conservation (air conditioning and lighting demand), promotion of natural gas (which has less impact on the environment than oil), electrification of automobiles, and introduction of carbon capture and storage (CCS) technology. The CNE stated that it was aware of the demonstration of carbon storage technology in Japan and expressed its interest.

3) Urban Transport

Traffic in the country is heavily dependent on automobiles, and this is also the case in the capital city of San Salvador.

In order to reduce traffic congestion and environmental impact, a BRT with a route length of 7 km started operation in 2014 with the cooperation of IDB. In 2017, the Supreme Court ruled that it was unconstitutional for private operators to have exclusive use of the lanes, and opened the rest of the route to general traffic, except before and after the stops. As a result, it became more difficult to ensure on-time performance and the number of passengers decreased, which was followed by the COVID-19 lockdown and the subsequent protocol to limit the number of passengers (only the seating capacity is allowed). Private operators have indicated their intention to withdraw.

VMT believes that the BRT is an effective means of improving urban transportation that can be implemented in a short period of time, and is considering the resumption of BRT operation under the direct management of the government and through the re-dedication of lanes as one proposal. The Study Team is also considering the extension of the BRT by 5 km in the east-west direction and the construction of a new line in the north-south direction. The Study Team also believes that updating the location information management system for buses and BRT is necessary to improve urban transportation.

As a countermeasure and response to the decrease in the number of bus routes due to the expected shift from public transportation to the use of automobiles and motorcycles, the infrastructure sector is considering cooperation that will contribute to the promotion of the use of bus routes, specifically 1) optimization of the route network of bus routes and improvement of the efficiency of their operation, and 2) measures to prevent them from becoming infected routes because of the post-COVID-19 period. From the standpoint of COVID-19, it would be effective to 1) optimize the route network of bus routes and improve the efficiency of their operation, and 2) develop Japanese knowledge on measures to prevent bus routes from becoming infection routes (based on the fact that crowded public transportation in Japan is not considered to be a major infection route).

4) Movement Towards Carbon Neutrality in Transport Sub-sector

An E-mobility project is being implemented by the UN-Climate Green Fund, with the aim of promoting EVs in 14 Latin American countries, including public transportation. Tax incentives have been provided for EVs (four-wheeled vehicles, motorcycles, and buses) since March 2021, but at this point, charging facilities have not been introduced, and EVs are not yet widespread. However, electrification has been positioned as one of the technologies to be applied to achieve carbon neutrality

in 2050 in the National Energy Policy 2020-2050, and it is expected that efforts will be accelerated in the future.

5) Electricity

The current power source composition is 27% hydropower, 22% geothermal, 10% biomass (bagasse), 9% solar, and 19% imported power, with the majority of the power coming from renewable energy sources. Imported electricity is also mostly derived from renewable energy sources. Fossil fuel (oil) accounted for 12%, down from the previous year.

The National Energy Policy 2020-2050 also assumes an increase in demand due to electrification of the transportation sector, and the power supply composition and capacity by 2050 is assumed to be double that of 2020. Solar power, wind power, geothermal power, and natural gas (including CCS) are assumed to be additional power sources to be introduced in the future. The country also aims to become an electricity exporter in the long term.

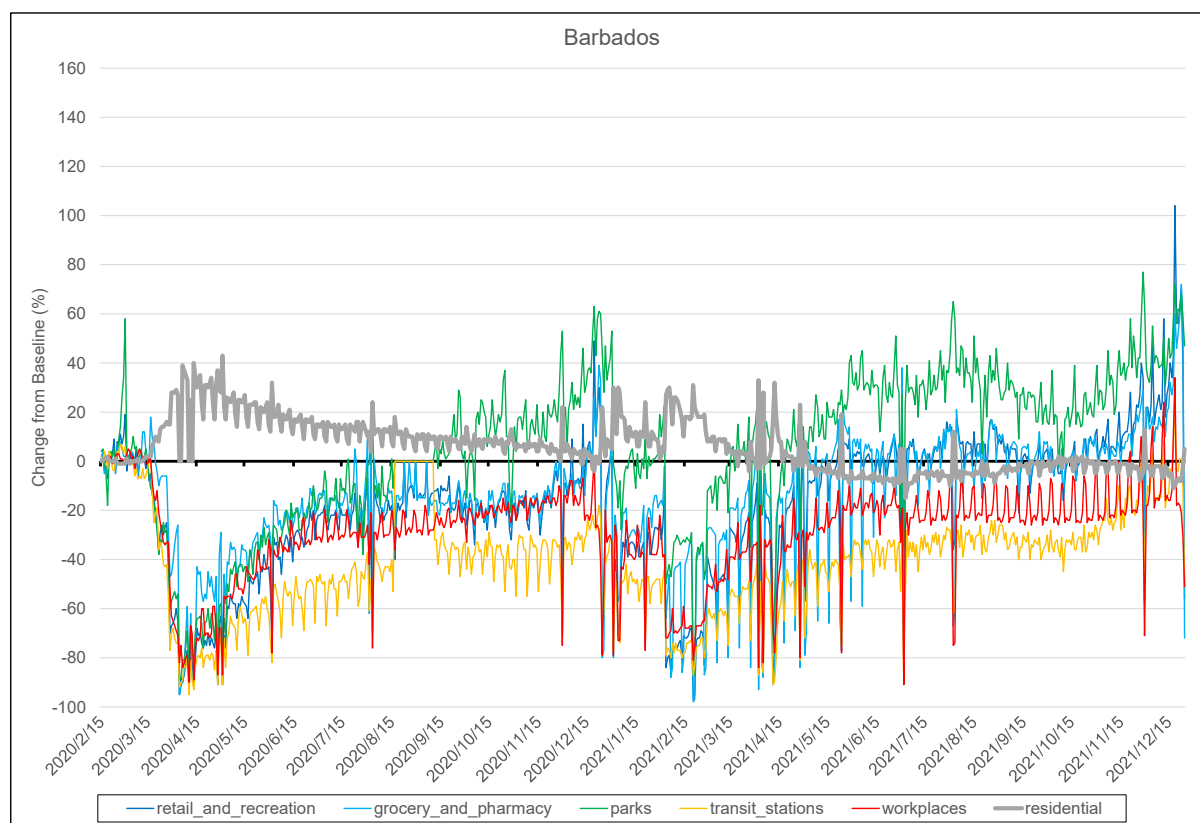
This situation is expected to increase the need for cooperation in the area of hydrogen-related technology, which is expected to be combined with CCS and variable renewable energy (VRE), which is expected to increase in the future, as well as financial cooperation in the area of power infrastructure development, including power supply development and power grid development, which is not limited to these areas.

(3) Barbados

1) Impact of COVID-19

According to interviews with BL&P, the electricity company of Barbados, and the company's Annual Report, tourism, which is the main industry of the country, was severely depressed and economic activities in general stagnated. Electricity demand was also significantly affected. Specifically, electricity sales were down 9%, and BL&P revenues were down 18% in 2020 compared with 2019.

The following is the human flow data based on the COVID-19 Community Mobility Reports by Google, which shows a trend of increased economic activity after 2021.



Source: Study Team based on COVID-19 Community Mobility Reports by Google

Figure 13-18 Movement Data (Barbados) (COVID-19 Community Mobility Reports by Google)

According to interviews with the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE), an agency of CARICOM, there have also been delays in the implementation schedule of the project due to logistical disruptions. The installation of a solar power generation system at the CARICOM headquarters, funded by a grant from Japan, was one of the projects affected by the disruption.

2) Carbon Neutral Initiatives

The Barbados National Energy Policy (BNEP) 2019 - 2030 sets a goal of achieving carbon neutrality by 2030. In the area of electricity, the introduction of solar and wind power generation, as well as biomass waste (bagasse) power generation is being studied, and a 5MW Battery Energy Storage System (BESS) study was just completed in December 2021.

The northern half of the country has a relatively low population density and is covered with unused former sugar cane fields, so from a land use perspective, there are few barriers to the further introduction of solar power. A draft report was prepared for the Integrated Resource & Resiliency Plan for Barbados in June 2021. According to this report, depending on the scenario, "BESS," "solar PV (ground-mounted and roof-mounted)," "solar thermal," and "wind" are the pillars of future development, and the combined capacity of these three is expected to exceed 800 MW by 2030. In the transportation sector, the government (Government of Japan) is planning to build a new power generation system.

In the transportation sector, the government (Transport Board) has been working on the introduction of EVs and reducing the excise tax on EVs, but it can be said that the diffusion of EVs is still in its infancy, with only about 700 EVs compared with the 100,000 registered vehicles.

3) Barriers to the Spread of EVs

Compared with EVs, used internal combustion engine vehicles are still actively imported due to their low prices, although taxes are relatively high. According to the Japanese government's e-Stat, 2,031 vehicles (including 268 hybrid vehicles and 15 EVs) will be exported from Japan to Barbados in 2020 and 1,867 vehicles (including 402 hybrid vehicles and 42 EVs) in 2021.

In addition, although imported vehicles are used for a considerable period of time, such as until they break down, the accumulation of EV maintenance technology in Barbados is limited compared with that of internal combustion engine vehicles, and there are issues regarding the availability of procurement for battery replacement and, even if it were possible, the price is a big factor.

Given these circumstances, it can be said that unless specific measures and policies are taken, it is highly likely that the trend toward internal combustion engine vehicles will continue in Barbados unless EVs become common in the used car market in Japan, which is the source of supply.

There is a need to develop human resources in Barbados for EV maintenance techniques and a supply chain for replacement parts necessary for EV maintenance. In addition, support for the establishment of a recycling system that includes vehicles other than EVs is considered necessary. Japan is a major source of used vehicles for Barbados, and the Study Team believes that there is justification for providing cooperation to address these needs.

As of January 2022, the selling price of gasoline in Barbados is BBD 3.99/liter (equivalent to USD 2.00), and gasoline tax is one of the important sources of revenue for the government. While this will not be a major problem when the spread of EVs is limited, in the medium to long term, the balance between the spread of EVs, the decline in gasoline sales, and the securing of tax revenue needs to be examined and adjusted from a systemic perspective.

4) Public Transportation

There are two types of public transportation: buses operated by the government (Transport Board) and private companies, and minibuses operated by private companies. As of January 2022, the fare for buses is BBD3.50 (USD1.75) per ride, and the capacity of the bus is limited to the seat capacity to comply with COVID-19. All of them run on a fixed route, and although route numbers and stops can be found on the Internet, there is no comprehensive route map, so the hurdle to use them is somewhat high for all.

The government has 49 EV buses manufactured by China's BYD, which will be in operation from 2020; according to BYD, this is the first EV bus to be introduced in the Caribbean region. On the other hand, many of the remaining buses (government and private) are of low age, and some of them seem to be poorly maintained.

Although there are many hurdles to overcome in converting vehicles owned by the private sector to EVs, the conversion of buses to EVs as a form of public transportation is highly effective in demonstrating and educating the public about EVs. China is ahead of other countries in the field of EVs for buses, and there are some examples of Japanese bus operators introducing BYD buses in China, so it can be said that this is not an area where Japanese manufacturers can immediately demonstrate their strengths.

5) Electricity

Currently, solar power is the only renewable energy source being used. Of the 317 MW of installed capacity (MW), 50 MW (16%) is solar and the rest is thermal power dependent on imported fuel (2018). On an energy basis (MWh), solar accounts for about 4%.

The introduction of solar power of several hundred kW to several MW, wind power of 10 MW, and building-mounted (mainly for self-consumption) solar power are each being considered and promoted.

BESS is being considered for energy storage, such as solar power, solar thermal power, and wind power for renewable energies, but the government is also watching future technological trends in energy storage using hydrogen, biomass (bagasse), and ocean energy (ocean thermal energy, wave power, etc.).

(4) Saint Lucia

1) Impact of COVID-19

Like Barbados, the country is heavily dependent on tourism, and due to the decline in tourism, the amount of electricity sold in 2020 was 20% lower than the previous year. Immediately after, the maximum demand for electricity dropped from 59 MW to 35 MW.

Three months after the pandemic, the direction of recovery began. In 2021, with the recovery of economic activity in the country, electricity demand is returning to pre-pandemic levels, but as of January 2022, it has not fully recovered. Electricity demand in households is strong due to increased time spent at home.

In addition, logistical disruptions have affected the implementation of various projects and the import and sale of automobiles. Projects experienced delays, resulting in lower productivity. It also had a negative impact on automobile sales volume.

In other public transportation, the capacity of buses (minibuses) was restricted, for example, from 15 passengers to 10 passengers. There is no restriction on the number of vehicles in operation.

According to other information obtained through interviews, the shift to telecommuting has led to a reduction in office space (increase in vacant space) and the closing of stores.

2) Initiatives for Carbon Neutrality

The emission reduction targets listed in the Nationally Determined Contributions (NDC) submitted to the United Nations Framework Convention on Climate Change (UNFCCC) are the latest national targets at present. This is the most current national target. Specifically, the target is to reduce emissions by 16% by 2025 and 23% by 2030. There is also a goal to have 50% of electricity from renewable energy sources by 2030.

In order to achieve this goal, "Saint Lucia's Climate Change Research Strategy 2020-2030" has been formulated, and the plan is to achieve this goal by introducing renewable energy and promoting the spread of EVs. Saint Lucia's Climate Change Research Strategy 2020-2030" has been formulated to achieve this goal. The renewable energy sources to be targeted are solar and wind, but at present they only account for 4% of the power generation capacity.

The E-mobility National Strategy is being prepared for decarbonization. There are no policies or human resource development plans yet.

During the interviews at the Ministry of Infrastructure, Ports, Energy and Labour (MIPEL), the Saint Lucia side expressed the need for technical assistance in these areas, including policy planning, human resource development, assessment, legal system development, dissemination promotion, and experts in E-mobility, especially in energy management (energy use efficiency) for public buildings.

3) Challenges to EV Diffusion

Currently, new car dealers in Saint Lucia are still assessing the demand for EVs and no new EVs have been sold yet. The government owns three EVs and there are about 40 imported EVs in Saint Lucia.

MIPEL recognizes that the dissemination of maintenance technology (including safety) and financing is necessary for the spread of EVs, and is considering the conversion of the government's official vehicles to EVs first. The Study Team has also started a survey on charging facilities. In addition, the Study Team has received a lot of support from Germany in this field, and would like to conduct demonstrations to the general public in order to educate them on EVs.

According to the Japanese government's e-Stat, 1,012 vehicles (including 41 hybrids and 1 EV) will be exported from Japan to Saint Lucia in 2020 and 1,251 vehicles (including 144 hybrids and 1 EV) in 2021.

As in Barbados, once a vehicle is imported, it is used for a considerable length of time, including until it breaks down. While providing support for realistic environmental initiatives based on this reality, such as promoting awareness of eco-driving and encouraging replacement of vehicles based on fuel efficiency and environmental impact, it is also necessary to accumulate EV maintenance technologies, support the establishment of a supply chain for replacement parts, and establish a recycling system that includes vehicles other than EVs. It is also necessary to support the establishment of a recycling system that includes vehicles other than EVs.

In addition, as a unique situation in Saint Lucia, there are many cases where people do not have a parking space at home, but park their own cars on the street. In such cases, it is not possible to recharge the batteries at home, and for this reason, the LUCELEC commented that the spread of quick recharging facilities at commercial facilities is necessary in order to popularize EVs.

4) Public Transportation

The public transportation is the "bus" which is a shared cab for 10 to 15 passengers. Although the routes are fixed, there is no timetable, and the buses depart when they are full (or close to it).

Many of the "buses" are used vehicles imported from Japan. There is a need for a system to check whether the vehicles are properly maintained and whether environmental considerations are taken into account.

Buses are frequently used on the main routes, and while larger vehicles may be an option in terms of energy consumption, considering the mountainous and curvy nature of the roads, uniformly increasing the size of vehicles would be difficult. In addition, if the frequency of service is reduced by increasing the size of vehicles, convenience will be impaired.

It may be a good idea to introduce medium-sized and large EV buses on routes where sufficient frequency of service is ensured and there are no problems with the road conditions.

5) Road Infrastructure

The distance from the capital city of Castries to the Heunora International Airport, where medium- and long-haul flights such as those to the United States are operated, is about 30 km in a straight line, but the distance traveled by road is about 55 km.

Although some of the roads along the coastline are straight with relatively small elevation differences, most of the roads have to take a route from the village into the mountains, avoiding some valleys, making a series of curves, and then descending back to the village, due to geographical reasons.

In addition to promoting hardware resilience, if there is a limit to the cost and effectiveness of hardware measures, it is considered necessary to take a soft approach (including the use of IoT technology for disaster prediction and speedy recovery, and road information provision services).

6) Issues in Renewable Energy Development

With regard to solar power generation, there are plans for a 10 MW solar farm (with plans for a 7 MW BESS as well), and plans to use the roof of the parking lot at the Heunora International Airport. However, due to the geographical conditions of the country, such as its small size and mountainous terrain, the area of land suitable for solar and wind power generation is limited, and it is a challenge to compete with other uses such as agriculture. In addition, many of these projects are located on privately owned land, and it takes time to secure such land.

The Energy Building Standard, which was enacted in 2018, now recommends the installation of PV for all buildings.

Comparing the same power generation capacity, solar power requires 20 times more area than geothermal power. However, there are some residents who are opposed to geothermal potential sites, and the government is still making adjustments.

At present, 4% of the installed capacity is solar power. This is not the stage of mass introduction of variable renewable energy (VRE). Therefore, for the time being, it is possible to promote the introduction of solar power without large-scale grid stabilization measures (although certain technical considerations are necessary). Accelerating the introduction of building-mounted photovoltaic power generation systems for self-consumption by providing financial support (low-interest loans, etc.) to those who wish to install such systems would be a reasonable measure to accelerate the introduction of renewable energy.

7) Geothermal Power Generation

MIPEL has identified three sites as potential sites based on the results of surface exploration and is in the process of confirming the potential through exploratory drilling and other activities financed by the World Bank (USD 21 million) over the next four years. (This financing also includes non-geothermal components such as capacity building for energy efficiency.) The results of this exploratory drilling and other activities to confirm the potential will be reflected in subsequent power development plans. The goal is to develop 30 MW of geothermal power, but if the potential is not high enough, it will be necessary to secure that amount through ground-mounted solar power generation.

The three potential sites are all outside of protected areas, and the area required for geothermal power generation is generally smaller than that for solar and wind power generation, so the difficulty in securing land is relatively small.

MIPEL expressed the need for Japan's assistance in technology transfer to young people regarding geothermal power generation technology in general, as well as the dispatch of advisors on direct use of geothermal energy (other than power generation), i.e., the benefits to the local community.

8) Offshore Wind Power

The possibility of offshore wind power was presented by LUCELEC. The idea is to avoid the land pledges mentioned above, and to solve output fluctuations by combining it with hydrogen energy storage. LUCELEC explained that a cruise ship operator has already expressed interest in this project from the perspective of emissions trading.

Although offshore wind power is still at the stage of full-fledged efforts in Japan, hydrogen is a technology in which Japan has a certain position in the world, and therefore, depending on future price trends and the needs of the other party, it is an area in which there is potential for cooperation.

13.7 Development of Hypothesis on the State of Sectoral Development Cooperation in With/Post COVID-19 Society

13.7.1 Grouping of Countries for Sectoral Survey

(1) Grouping of Countries in the Infrastructure Sector

In the transport sub-sector, the challenges in this sector are the heavy dependence on fossil fuels, congestion in the cities, the need to promote the use of public transport to improve these, and the dampening of the willingness to use public transport due to COVID-19.

These challenges are common to many countries. Therefore, rather than grouping countries, it would be more appropriate to organize the issues, create a hypothesis on how development cooperation should be applied to the issues, and then indicate the countries to which the hypothesis should be applied.

(2) Grouping of Countries in the Energy Sector

In the energy sector, first of all, from the perspective of energy security, it is necessary to group countries according to their energy self-sufficiency ratio. Next, it is necessary to group countries by their dependence on fossil fuels from the perspective of carbon neutrality.

Similarly, in the electricity sub-sector, it is first important to consider whether to use imported or self-sufficient energy, and whether to use fossil fuels or renewable energy. In addition, from the perspective of assuming fluctuations in power generation due to long-term climate change and maintaining the stability of the power system at the time of mass introduction, it is appropriate to group the renewable energies according to what type of energy they are more dependent on.

Specifically, Mexico and Trinidad and Tobago are oil- and gas-producing countries, while Suriname is an oil-producing country, and should be recognized as a separate group from the other countries.

In addition, six countries in the Central American region (Panama, Costa Rica, Nicaragua, El Salvador, Honduras, and Guatemala) have realized *the Sistema de Interconexion Electrica para America Central (SIEPAC)*, which is an international electricity interconnection. These six countries are included in the list. Whether or not a country is included in these six countries may be one of the factors for grouping in the analysis of long-term vulnerability, in terms of power convergence due to a decline in power generation caused by long-term climate change and the large-scale introduction of renewable energy. However, at this point in time, it is not possible to say that not being included in the six countries is a significant vulnerability in terms of electricity supply and demand adjustment, so it will not be considered in the grouping.

Based on the above, the following groupings are considered realistic for the energy sector. However, it should be noted that Guyana continues to face challenges common to the rest of the Caribbean region, as full-scale crude oil drilling is still in its infancy in 2019.

- Caribbean region (excluding Trinidad and Tobago, Suriname and Guyana)
- Central American region (excluding Mexico)
- Trinidad and Tobago
- Mexico
- Suriname and Guyana

13.7.2 Analysis of Vulnerabilities in Countries and Priority Sectors to be Studied

In the infrastructure and energy sector, no priority countries or sectors were selected, and the policy is not to limit the vulnerabilities to those revealed by COVID-19.

The vulnerabilities of the transport sub-sector can be summarized as follows:

- In general, there is a heavy reliance on transportation modes (automobiles) that are highly dependent on fossil fuels.
- In general, congestion in urban areas is significant.
- In general, the routes of public transportation (mainly buses) are not optimized and difficult to understand.
- In general, there is a tendency to reduce the willingness to use public transportation after COVID-19, considering it as an infection risk.

The vulnerability of the energy sector can be summarized as follows:

- In the Central American region, many countries use a lot of electricity derived from renewable energy sources, but many countries depend on imported fossil fuels for energy other than the electricity sub-sector, and the overall energy self-sufficiency rate is not

high.

- In the Caribbean region, many countries have low energy self-sufficiency rates due to high dependence on primary energy imports (the same applies to electricity).
- Electricity cannot be exchanged between countries without international interconnection lines, making it impossible to make efficient use of surplus electricity, especially in the case of large-scale introduction of VRE.
- Particularly in the Caribbean region, due to the cost of available resources and equipment, as well as the limited land area available, the large-scale introduction of renewable energy is not as advanced as the average level in Central America and the world.

In addition, vulnerability to natural disasters is an issue for infrastructure and energy in general. It is important to note that the impact of this vulnerability is not limited to the infrastructure and energy sectors, but also affects the speed of recovery of society as a whole from natural disasters.

13.7.3 Hypothesis on the Nature of Development Cooperation for With/Post COVID-19 Societies in Central America and the Caribbean

Based on the vulnerability analysis described in the previous Section 13.6.2, the hypotheses regarding the nature of development cooperation for With/Post COVID-19 societies are as follows:

The hypotheses regarding the nature of development cooperation in the transportation sub-sector can be summarized as follows:

- The electrification and carbon neutralization of transportation are necessary.
- It is necessary to strengthen, improve, and optimize the entire urban transportation infrastructure.
- A shift to public transportation is necessary to break away from excessive dependence on private cars and to achieve carbon neutrality through reduced energy consumption.
- It is necessary to promote the use of public transportation, and the promotion measures should include the elimination of concerns about the risk of COVID-19 infection.

The hypotheses regarding the nature of development cooperation in the energy sector can be summarized as follows:

- In the Central American region, many countries need to reduce their dependence on imports and become carbon neutral in terms of energy consumption in sectors other than the electricity sub-sector (specifically, industry and transportation).
- In the Caribbean region, many countries need to take measures to reduce their dependence on imports and to become carbon neutral.
- In oil- and gas-producing countries (Mexico, Suriname, and Trinidad and Tobago), the dependence on energy imports is low, but measures to achieve carbon neutrality are necessary.
- As a large amount of VRE is introduced, energy flexibility through international interconnection lines and energy storage (e.g., hydrogen) will become more important.
- In the Caribbean region, in particular, there are disadvantages to the large-scale introduction of renewable energy due to the cost of available resources and equipment, and the limited land area available. There is a need to overcome these disadvantages, or to find alternative solutions.

In general, it is also necessary to overcome vulnerability to natural disasters and ensure resilience.

13.7.4 Consideration of Response and Support Measures that Could be Taken to Overcome Vulnerabilities

Based on the hypotheses on the nature of development cooperation described in the previous Section 13.7.3, the proposed measures and support measures to overcome the vulnerabilities are as follows:

In the transportation sub-sector, the following are proposed:

- There is a need to improve vulnerable transportation infrastructure. Strengthen and improve roads and bridges, especially those on major arterial routes that are vulnerable to disasters, and those in rural areas that are vulnerable or have not been restored since the past civil war. Economic development, including improved transportation of agricultural products through improved logistics, reduction of energy consumption for transportation through improved roads, and ensuring resilience (improvement of the resilience of society as a whole) against disasters caused by climate change that are expected in the future are necessary. There is potential for technical cooperation to increase the depth of human resources needed to achieve these goals, and for financial cooperation to directly support the procurement of necessary materials and equipment and the improvement of infrastructure.
- Technical support for strengthening, improving, and optimizing the overall infrastructure of urban transportation. As there are areas where other donors are ahead of Japan, it would be effective to provide support for optimizing the overall planning and configuration while taking advantage of these areas.
- In terms of shifting to public transportation and promoting the use of public transportation, the experience and knowledge of Japan's large urban areas are effective, and technical cooperation based on this experience is effective. Specifically, the goal is to realize reliable, inexpensive, and on-time public transportation. Since public transportation is not considered to be a major source of infection in Japan, it would be extremely meaningful to provide information on the reasons why public transportation is not considered to be a major source of infection in Japan, as well as knowledge of the measures taken by public transportation in Japan, which would contribute to alleviating concerns about the risk of COVID-19 infection.
- Although Japan does not have an overwhelming advantage in EVs, if Japanese companies are willing to enter the EV market, encouraging them to do so could result in supportive measures against vulnerabilities. Support for the spread of recharging facilities is another support measure.

In the energy sector, the following is the summary:

- In many countries in the Central American region, energy consumption outside of the electricity sub-sector will be addressed, and in many countries in the Caribbean region, energy consumption as a whole will be addressed through the introduction of renewable energy, the use of energy derived from renewable energy sources (e.g., the use of stored energy such as hydrogen), and the promotion of energy conservation. Since many countries have already decided on the direction of carbon neutrality and organized the technologies to be introduced, it will be important to share Japan's advanced technologies and knowledge, and to provide financial support for all measures necessary to achieve carbon neutrality, and not limited to these.
- While there are no major problems in terms of energy security in oil- and gas-producing countries at present, carbon neutrality is a global demand. There is a possibility of financial support necessary to promote carbon neutral initiatives and energy conservation. In connection with Guyana's transition to an oil-producing country, there is a possibility

that oil products will be supplied to the CARICOM region at low prices. Since this may have an impact on the energy policies of various countries, it is necessary to keep a close eye on development.

- In the future, the introduction of renewable energies is expected to increase in many countries, including in response to the increase in demand due to the electrification of the transportation sub-sector, but energy integration through international interconnection lines and energy storage (such as hydrogen) will become more important. There is a possibility of technical and financial cooperation for the necessary financial support and for technologies in which Japan has an advantage.
- Carbon capture and storage (CCS) technology is one of the technologies to be considered for the realization of carbon neutrality. In Japan, a large-scale demonstration test is being conducted in Tomakomai City, Hokkaido, where carbon dioxide injection will be completed in 2019 and monitoring is currently underway.
- There are many similarities between Japan and the Caribbean region in terms of the conditions that are disadvantageous for the large-scale introduction of renewable energy, specifically, the restrictions on land area and available area, and the relatively high cost of introduction. There is a potential for technical and financial cooperation in this field, as well as sharing of knowledge gained through the process of mass introduction of renewable energy, not in the short term but in the medium term.

While overlapping with the above, with regard to overcoming vulnerability to natural disasters and ensuring resilience, there is a possibility of technical and financial cooperation targeting technology and know-how based on Japan's countermeasures and responses to earthquakes and typhoons. Specifically, these include the creation of various standards, their institutional operation, and actual design, construction, and operation based on the standards. There are possibilities for cooperation at the governmental level and at the level of builders and infrastructure operators (transportation and energy), and many of these areas are consistent with "High-Quality Infrastructure exports".

13.8 Analysis and Recommendations Contributing to Sectoral Cooperation Policy

13.8.1 Analysis to Contribute to Sectoral Cooperation Policy

On May 18, 2021, the IEA published "Net Zero by 2050 - A Roadmap for the Global Energy Sector". This is a roadmap to achieve the goal of carbon neutrality. In addition, more and more countries are establishing national policies and plans for decarbonization and carbon neutrality initiatives with target years.

For the transportation sub-sector of the infrastructure sector, candidates for applicable technologies include reducing fossil fuel consumption by shifting to electrification, utilizing biofuels that are carbon neutral instead of fossil fuels, and utilizing other energy storage media such as hydrogen. It is also necessary to strengthen, improve, and optimize the infrastructure of the entire urban transportation system, shift to public transportation, and eliminate concerns about the risk of COVID-19 infection in public transportation.

With regard to the energy sector, it is necessary to reduce dependence on fossil fuels, utilize power generation that contributes to carbon neutrality such as renewable energy, further expand the use of renewable energy by utilizing energy storage technologies such as hydrogen, expand carbon dioxide storage by conserving and expanding forests, and utilize CCS technology. The use of CCS technology (in combination with thermal power generation) is a candidate technology for application. Also included in this category is the realization of thorough energy conservation.

The technologies that the countries will actually consider applying in the process of achieving decarbonization and carbon neutrality will be selected from among the technologies described above according to the circumstances of each country.

Although many countries in the Central American region have made progress in the use of renewable energy, the full-scale electrification of transportation and the transition away from fossil fuels are still in their infancy. The extent to which renewable energy is being utilized is limited to the power sector. In the Caribbean region, overall primary energy, including for electricity, is heavily dependent on fossil fuels. This is a situation that needs to be addressed in terms of both energy security and decarbonization/carbon neutrality.

There is a tendency to prefer using private cars rather than public transportation due to the perceived risk of COVID-19 infection. This trend has a negative impact on the direction of decarbonization and carbon neutrality in the transportation sector.

It is necessary to formulate sectoral cooperation policies with these factors in mind.

13.8.2 Recommendations to Contribute to Sectoral Cooperation Policy

Based on the analysis described in the previous Section 13.7.1, the following recommendations are made:

(1) High Needs for Continued Cooperation for Road and Bridge Infrastructure as the Key to Economic Recovery and Growth, and Ensuring the Resilience of Society against Climate Change

In Central America and the Caribbean, the development of orbital transportation is limited, and a high percentage of the region's population depends on road transportation. On the other hand, even the main roads are still highly vulnerable to disasters, and their maintenance in rural areas is inadequate, making them a bottleneck for economic development and a vulnerable backbone infrastructure for recovery from increasingly severe disasters.

It is necessary to develop and improve road and bridge infrastructure not only for economic development, but also for disaster prevention and speedy disaster recovery. In terms of overcoming vulnerability to natural disasters and ensuring resilience, technologies and know-how based on Japan's countermeasures and responses to earthquakes and typhoons are likely to be useful in resolving issues in Central America and the Caribbean. Specifically, there is a possibility of cooperation at the governmental, construction, and infrastructure (transportation and energy) levels.

(2) The Accumulation of Experience Gained from Challenges that Japan has Actually Solved or is Facing Ahead of the Rest of the World in the Transportation Sub-sector is "Japan's Strength," and this "Japan's Strength" is Likely to be Useful in Solving Regional Issues

Safe, inexpensive, and punctual urban transportation systems in Japan's major metropolitan areas are Japan's strengths, and the knowledge gained in the process of establishing these systems and from their operation are also Japan's strengths. These strengths will also be effective in improving the transportation systems of metropolitan areas in Central America and the Caribbean. Efforts to optimize the transportation system by combining transportation modes that have already been realized by other donors with improvements to existing transportation modes is a potential project for the transportation sub-sector.

In addition, the optimization of the bus route network (consolidation of bus routes and optimization of timetables), which is being undertaken in some local cities in Japan, will provide useful insights for improving the situation in metropolitan areas in Central American countries where private bus companies are in disarray and the route network is not organized.

These efforts are also necessary for decarbonization and carbon neutrality in terms of efficient operation of transportation, reduction of traffic congestion, and promotion of the use of public transportation.

In both Costa Rica and El Salvador, where the field survey was conducted, there was a lack of EV charging facilities during the hearings. There are several membership programs for EV recharging, with the involvement of automakers and others. The membership fee is based on a monthly membership

fee, a pay-as-you-go system, or a combination of the two, and there is a system in place that allows members to charge their vehicles at EV recharging facilities across the country that are affiliated with the system. If the number of available recharging facilities is not increased, the spread of EVs will not progress. This kind of knowledge will also become important in Central America and the Caribbean in the future.

(3) Decarbonization and Carbon Neutrality in the Transportation Sub-sector is a Particularly Urgent Issue, and a Decarbonization and Carbon Neutrality Perspective is Necessary in Any Project

Transportation, which is highly dependent on fossil fuels, accounts for 32% of the world's final energy consumption. Heat accounts for 47%, and electricity, which is considered to be a relatively advanced use of renewable energy and other energy sources that are consistent with decarbonization and carbon neutrality, accounts for only 21% (As of 2018, Tracking SDG 7: The Energy Progress Report 2021).

The average age of vehicles in Japan is 13.87 years for passenger cars (excluding mini vehicles), 15.73 years for freight vehicles, and 18.38 years for passenger cars (as of March 31, 2021, Japan Automobile Inspection and Registration Association). If 2050 is to be the target year for decarbonization and carbon neutrality, there is not much time left to change the purchasing behavior based on the timeline of the last few years.

Decarbonization and carbon neutrality initiatives are crucial to the formation of new projects in the transportation sub-sector. Consistency with the direction of decarbonization and carbon neutrality and the application of technologies that contribute to the direction of decarbonization and carbon neutrality that can be practically applied at that time should always be considered.

In the case of rapid progress in decarbonization and carbon neutrality, specifically in the transportation sub-sector, the mass introduction of EVs is expected, but it is also important to secure human resources capable of maintaining them and to establish a supply chain for spare parts. It is necessary for international and regional organizations, national governments, and the related private sector to cooperate and share the responsibility for solving these issues. Specifically, it is necessary to sort out the needs, share the roles, and accelerate the efforts after selecting countries that have the environment in place to establish a successful model.

(4) Cooperation in the Energy Sector in Central America is Both Financial and Technical Cooperation

Due to the abundant potential of hydropower and geothermal power generation, the introduction of renewable energy is progressing in the Central American region, and decarbonization and carbon neutrality efforts in the electric power sub-sector are more advanced than in Japan. Therefore, of the decarbonization and carbon neutrality efforts in the energy sector as a whole, the electrification of the transportation sector, especially of small passenger cars, with decarbonized and carbon-neutral electricity is likely to accelerate rapidly as charging facilities become more widespread and vehicle prices become lower. Based on the changes that are likely to occur in the relatively near future, concrete steps are being taken toward the realization of a carbon-free and carbon-neutral society in 2050.

Among the measures to achieve decarbonization and carbon neutrality, timely and appropriately scaled financial cooperation is more important than technical cooperation for the additional introduction of wind, geothermal, and solar power generation, the enhancement of electric power infrastructure such as the development of necessary electric power grids, and the promotion of energy conservation, in light of the current level of technological maturity, status of efforts, and diffusion.

On the other hand, with regard to the development of energy storage and transportation supply chains using hydrogen and carbon dioxide storage (CCS), Japan is still in the process of lowering the price to a commercial level and further demonstrating the technology.

(5) There are Opportunities for Cooperation in the Energy Sector in the Caribbean Region, Given its Geographical Constraints and Vulnerabilities

The Caribbean region is heavily dependent on fossil fuels for its overall primary energy, and many countries depend on imports for their fossil fuels. This poses a problem for energy security and a burden on national economies.

Since many countries have small land areas and small areas of available land, geographical constraints on the large-scale deployment of variable renewable energy (VRE) such as wind and solar power, which are generally considered to have low energy densities, must also be considered. The potential for hydropower and geothermal power generation is highly dependent on the geographic conditions of the country.

In addition, since many of the countries are small islands, the introduction of power generation systems that require large-scale power plants is not realistic due to the small size of their power grids, and the cost of equipment and transportation is relatively high for the introduction of renewable energies as mentioned above.

In the Caribbean region as well, there are some plans and policies toward decarbonization and carbon neutrality, but the numerical targets are ambitious and some of them are difficult to achieve unless the technical, financial and institutional aspects are well coordinated.

In addition to the possibility of financial cooperation mentioned in the previous section on Central America, there is also the possibility of introducing actual facilities in the form of demonstration projects, including technical cooperation. The Study Team considers there is a high potential in the fields of geothermal power generation, wind power generation that can cope with hurricanes, and energy conservation. It would also be meaningful for Japan to be involved in the mid- to long-term construction and operation of a wide-area supply chain for hydrogen and other energy storage media, in which even small island nations can feasibly participate. It is important that not only technical and financial issues are addressed, but also the institutional aspects should be well coordinated, and it is necessary to create a mechanism to comprehensively address these issues under strong leadership.

14. Tourism Sector

14.1 General

It is said that tourism is the sector most affected by the Coronavirus Disease 2019 (COVID-19). According to the report¹ jointly presented by the World Tourism Organization (UNWTO) and United Nations Conference on Trade and Development (UNCTAD) on June 30, 2021, the global economy could lose over USD 4 trillion due to the COVID-19 impact on tourism. Literature research was mainly conducted on the internet to examine the effects on the 23 Central American and the Caribbean countries covered by this study. In addition, the in-depth survey using questionnaires and offline and online interviews were conducted.

14.2 Summary of Sector Survey

Table 14-1 Draft Sectoral Hypotheses and Policy Recommendations on the State of Development Cooperation (Draft) (Tourism)

No.	Item	Tourism				
1	Issues since before COVID-19	<ul style="list-style-type: none"> ▪ Difficulties in addressing financial services for MSMEs ▪ Low penetration rate of debit cards and credit cards ▪ Insufficiency of Tourism Law ▪ High cost of intra-regional travel ▪ Low safety of overland travel within the region ▪ Delays in the development of legal systems for payments outside the banking system ▪ The market size that makes it difficult for Fin Tech companies to enter ▪ Disparities in connectivity between urban and rural areas ▪ High level of informality in the tourism sector ▪ The concentration of marketing resources on specific markets ▪ Dependence on cruise tourism ▪ Dependence on "Sun, Sand & Sea" tourism by foreign-affiliated all-inclusive resorts ▪ Mono-product image of "Sun, Sand & Sea" ▪ Lack of coordination among countries in tourism policy ▪ Inadequate risk management for damage to the tourism industry caused by natural disasters, such as hurricanes (Inadequate crisis management specific to the tourism industry, crisis management only on a business-by-business basis, and inadequate continuous updating of BCPs) ▪ Damage to tourism caused by sargassum 				
2	Grouping by issue	<ul style="list-style-type: none"> ▪ Geographical conditions (borders shared over land or islands) ▪ Degree of need for collaboration ▪ Degree of dependence on cruises and foreign inclusive resorts 				
3	Vulnerabilities revealed by COVID-19	<ul style="list-style-type: none"> ▪ Cash strapped micro-, small-, and medium-sized enterprises (MSMEs) ▪ Discrepancies among countries in the region in terms of entry restrictions and quarantine measures ▪ Delayed adoption of digital payments and online booking ▪ Exclusion of MSMEs from the tourism value chain ▪ Worsening of the poverty level of those not covered by the Social Security System ▪ Inadequate statistics to serve the development of strategies to meet emerging needs 				
4	New issues that emerged by COVID-19	<ul style="list-style-type: none"> ▪ Pressure on the business of legal operators due to the increase of illegal ones ▪ Need to address new needs (intra-regional tourism, diaspora markets, experiential tourism, responsible tourism, long-stay remote workers, etc.) ▪ Need to address the health-related tourism crisis 				
5	Possible measures to overcome vulnerabilities	<table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 30%;">MSMEs promotion</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ▪ Improvement of access to financial services, including the development of financial products tailored to the needs of MSMEs in the tourism sector ▪ Strengthening a fair market competition environment ▪ Capacity development to respond to new needs and markets of With/Post COVID-19 </td> </tr> <tr> <td style="vertical-align: top;">Promotion of digitalization</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ▪ Establishing a legal system for digital payments ▪ Providing incentives to Fin Tech companies ▪ Capacity development of MSMEs in digital payments and digital marketing ▪ Subsidies to promote digitization and tax incentives to encourage investment in digitization ▪ Integration of digitalization promotion into tourism promotion policies </td> </tr> </table>	MSMEs promotion	<ul style="list-style-type: none"> ▪ Improvement of access to financial services, including the development of financial products tailored to the needs of MSMEs in the tourism sector ▪ Strengthening a fair market competition environment ▪ Capacity development to respond to new needs and markets of With/Post COVID-19 	Promotion of digitalization	<ul style="list-style-type: none"> ▪ Establishing a legal system for digital payments ▪ Providing incentives to Fin Tech companies ▪ Capacity development of MSMEs in digital payments and digital marketing ▪ Subsidies to promote digitization and tax incentives to encourage investment in digitization ▪ Integration of digitalization promotion into tourism promotion policies
MSMEs promotion	<ul style="list-style-type: none"> ▪ Improvement of access to financial services, including the development of financial products tailored to the needs of MSMEs in the tourism sector ▪ Strengthening a fair market competition environment ▪ Capacity development to respond to new needs and markets of With/Post COVID-19 					
Promotion of digitalization	<ul style="list-style-type: none"> ▪ Establishing a legal system for digital payments ▪ Providing incentives to Fin Tech companies ▪ Capacity development of MSMEs in digital payments and digital marketing ▪ Subsidies to promote digitization and tax incentives to encourage investment in digitization ▪ Integration of digitalization promotion into tourism promotion policies 					

¹ "COVID-19 and Tourism: An Update," Geneva, United Nations Conference on Trade and Development (UNCTAD), 2021

No.	Item	Tourism	
6	Direction of development cooperation and draft recommendation	Tourism crisis management	<ul style="list-style-type: none"> ▪ Dissemination of the concept of tourism crisis management and capacity building before and after the crisis ▪ Removal and effective utilization of sargassum
		Promotion of regional collaboration (Central America)	<ul style="list-style-type: none"> ▪ Creation of unified rules for frontline measures in the event of an infectious disease outbreak ▪ Appropriate fares through liberalization of air transportation ▪ Improvement of the safety of cross-border land transportation ▪ Development of statistics that contribute to region-wide marketing
		Minimization of tourism leakage (the Caribbean)	<ul style="list-style-type: none"> ▪ Development of legal systems and infrastructure to support new markets ▪ Development of services for new markets ▪ Promotion of community-based tourism (CBT) ▪ Promotion of local producers' participation in the tourism value chain by adding value to local products
		Cross-sectoral initiatives	<ul style="list-style-type: none"> ▪ Cross-cutting initiatives with digital transformation, disaster prevention, and fisheries sector ▪ Pursue synergies with promotion of MSMEs, strengthening of local government capacity, and environmental protection
6	Direction of development cooperation and draft recommendation	Promotion of MSMEs	<ul style="list-style-type: none"> ▪ Short-term relief measures (e.g., benefits, loans) ▪ Long term support (e.g., strengthening resilience) ▪ Business environment improvement
		Tourism crisis management	<ul style="list-style-type: none"> ▪ Destination-wide tourism crisis management through public-private partnership
		Problem solving in the tourism sector using OVOP	<ul style="list-style-type: none"> ▪ Possibility of contributing to the reduction of tourism leakage by promoting local production for local consumption and breaking away from the monolithic image of "Sun, Sand & Sea". ▪ However, it is essential to build consensus among stakeholders on what OVOP is for and what they want to achieve through OVOP
6	Direction of development cooperation and draft recommendation	Long-term and comprehensive perspective for digital transformation	<ul style="list-style-type: none"> ▪ What emerged from the field interviews and in the context of the "impact of COVID-19" is mainly short-term and business unit-based initiatives. ▪ Initiatives such as smart destination development require a long-term and comprehensive perspective.

Source: Study Team

14.3 Sectoral Scope of Work

Table 14-2 Tourism Sector Work Scope

No.		Sub-sector	Work Scope	
1	Sector Targets		To collect and analyze information on the conditions of tourism sectors in countries affected by COVID-19, and to support the promotion of tourism in Central America and the Caribbean by providing assistance that meets the needs of public and private sectors responsible for the sector.	
2	Work Scope Update		Based on consultations with Japan International Cooperation Agency (JICA), select the countries to be surveyed or confirm the priorities of the surveys, and update and agree on the scope of the surveys.	
3	[Task 2]		Selection of interview-related institutions	
4			Conducting interview surveys	
5		Collection and analysis of basic information (23 countries)		<ul style="list-style-type: none"> • Comparison of tourism statistics before and after COVID-19 (e.g., total contribution of travel and tourism to gross domestic product (GDP) and total contribution of travel and tourism to employment) • Portion of the budget for the tourism-related ministry in the national budget • Tourism-related COVID-19 measures in each country • Reference to tourism as a prioritized sector in each country's national economic and social development plan • Benefits and harms of measures and good practices • Current status and challenges of tourism crisis management in each country
				<ul style="list-style-type: none"> • Target markets in each country (compared before and after COVID-19) • Lineup of tourism products in each country (comparing around COVID-19)
				<ul style="list-style-type: none"> • Utilization of ICTs in the tourism sector in each country (compared before and after COVID-19)
6			Grouping countries and	<ul style="list-style-type: none"> • Select priority countries and priority themes based on the results of the

No.		Sub-sector	Work Scope
		selecting priority countries	collection and analysis of basic information.
7		Collection and analysis of basic information (priority countries)	<ul style="list-style-type: none"> • Tourism-related COVID-19 measures in each country • Benefits and harms of measures and good practices • Current status and challenges of tourism crisis management in each country • Target markets in each country (compared before and after COVID-19) • Lineup of tourism products in each country (comparing around COVID-19) • Utilization of ICTs in the tourism sector in each country (compared before and after COVID-19)
8		Additional surveys in priority countries	<ul style="list-style-type: none"> • Analyzing the impacts of COVID-19 on priority countries and priority themes • Interview mainly with priority countries (obtaining supplementary information) General interview
9		Preparation of Country Reports	[Task 2] Compile the contents of the survey as country-specific reports for each country.
	[Task 3]	To investigate the impact of COVID-19 on JICA business website	Fixed-point observations (April, June, September, and December 2021) will be conducted for ongoing projects that are highly related to this survey designated by JICA.
10		Identifying sector vulnerabilities and considering support measures	<ul style="list-style-type: none"> • Definition and analysis of existing issues and vulnerabilities in the tourism sector • Consider countermeasures and support measures to overcome vulnerabilities
11	[Task 4]	Preparation of hypotheses on the modalities of development cooperation	<ul style="list-style-type: none"> • Develop hypotheses on measures that can be taken to overcome each vulnerability in line with MOFA's Country Development Cooperation Policy and Business Development Plan and the organization's PDM The hypothesis created confirms priorities for cooperation needs on a country-by-country basis
12		Preparation of "Sector-Specific What-If Reports"	[Task 4] Prepare the Sector-Specific Hypothesis Report by compiling the results of the survey.
13	[Task 5]	Visit international/regional organizations and governmental agencies and exchange views on how to collect additional information and cooperate in development related to [Task 2] [Task 4]	
14	[Task 6/7/8]	Advise on the selection, implementation, and termination of pilot projects from the perspective of the "tourism" sector.	
15	[Task 9]	Prepare necessary materials for expert meetings and present a survey of the sector in charge	
16	[Task 10]	Develop policy recommendations for the responsible sector	
17	[Task 11]	Prepare the relevant sectors for the preparation of scientific papers	

Source: Study Team

14.4 Collecting Basic Information on 23 Target Countries

14.4.1 Collected and Analyzed Data

The following data of 2019 and 2020 is collected from WTTC's Economic Impact Reports 2021, where data of all the 23 countries is available to overview and compare the vulnerability of tourism and COVID-19 impact on tourism and economy.

- Total contribution of travel and tourism to gross domestic product (GDP);
- Total contribution of travel and tourism to employment; and
- Portion of international spending in total tourism spending.

Moreover, although the following data was collected to grasp the importance of tourism for the targeted countries, some data were not available.

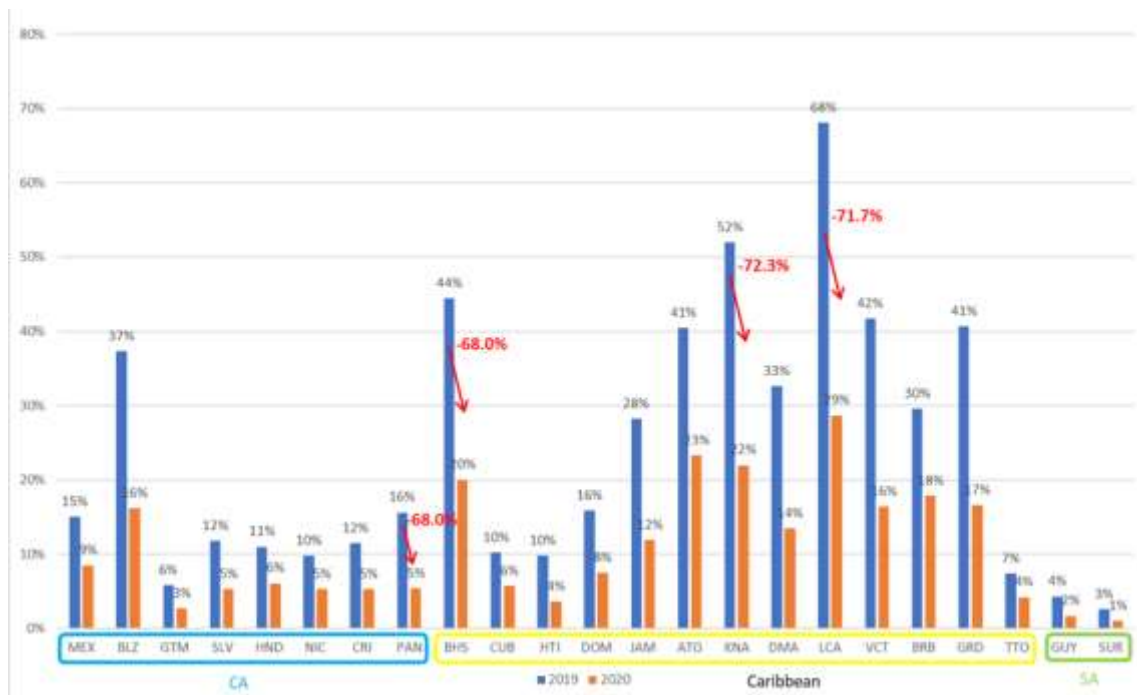
- Portion of the budget for the tourism-related ministry in the national budget (2019, available for 16 countries out of 23);
- Reference to tourism as a prioritized sector in each country's national economic and social development plan (available for 22 countries out of 23); and

- Presence of a valid national tourism policy/strategy/plan.

(1) Vulnerability of Tourism

1) Total Contribution of Travel and Tourism to GDP

As indicated in Figure 14-1, the countries that were heavily dependent on tourism before COVID-19 are Saint Lucia (68.1%), Saint Kitts and Nevis (52.0%), and the Bahamas (44.4%). This tendency is especially true in the Caribbean region. The countries that suffered a considerable drop in the total contribution to GDP were Saint Kitts and Nevis (-72.3%), Saint Lucia (-71.7%), and Panama and the Bahamas (-68.0%).

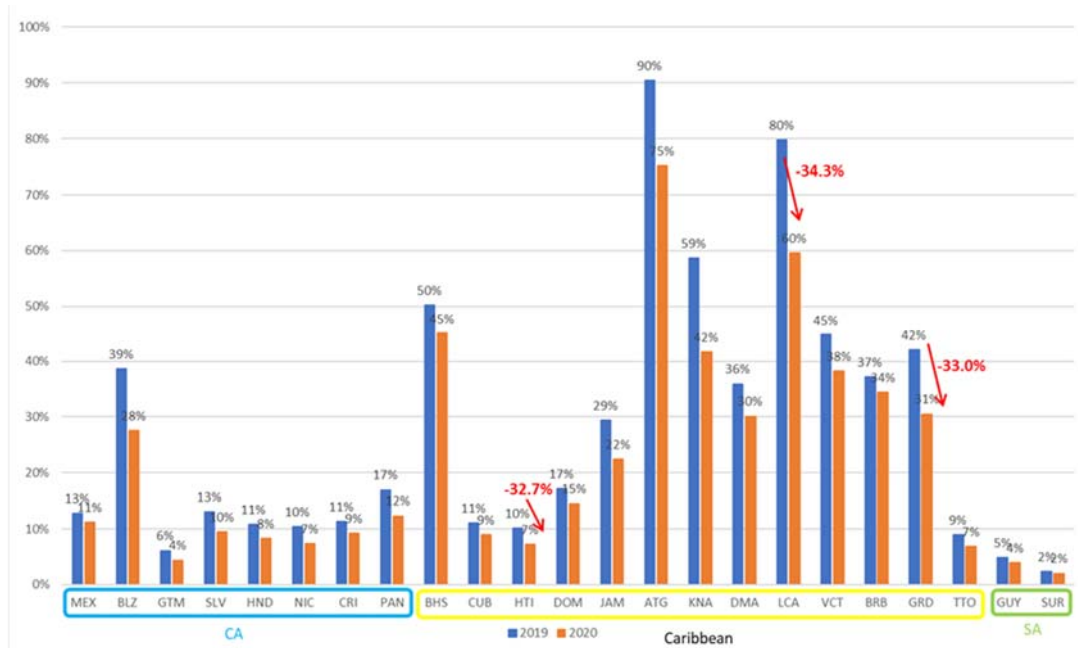


Source: Prepared by the Study Team based on WTTC's Data

Figure 14-1 Change in Total Contribution of Travel and Tourism to GDP

2) Total Contribution of Travel and Tourism to Employment

The change in the total contribution of travel and tourism to employment is indicated in Figure 14-2. The top three countries that were heavily dependent on tourism in terms of employment before COVID-19 are Antigua and Barbuda (58.6%), Saint Lucia (79.7%), and Saint Kitts and Nevis (58.6%). As is the case with GDP, the Caribbean countries reveal the tendency. The countries that demonstrated a drastic decline from 2019 to 2020 were Saint Lucia (-34.3%), Grenada (-33.0%), and Haiti (-32.7%). Regardless of the low ratio of tourism sector employment (10.1% in 2019), Haiti had a sharp drop, showing the Haitian tourism sector's high vulnerability to employment.

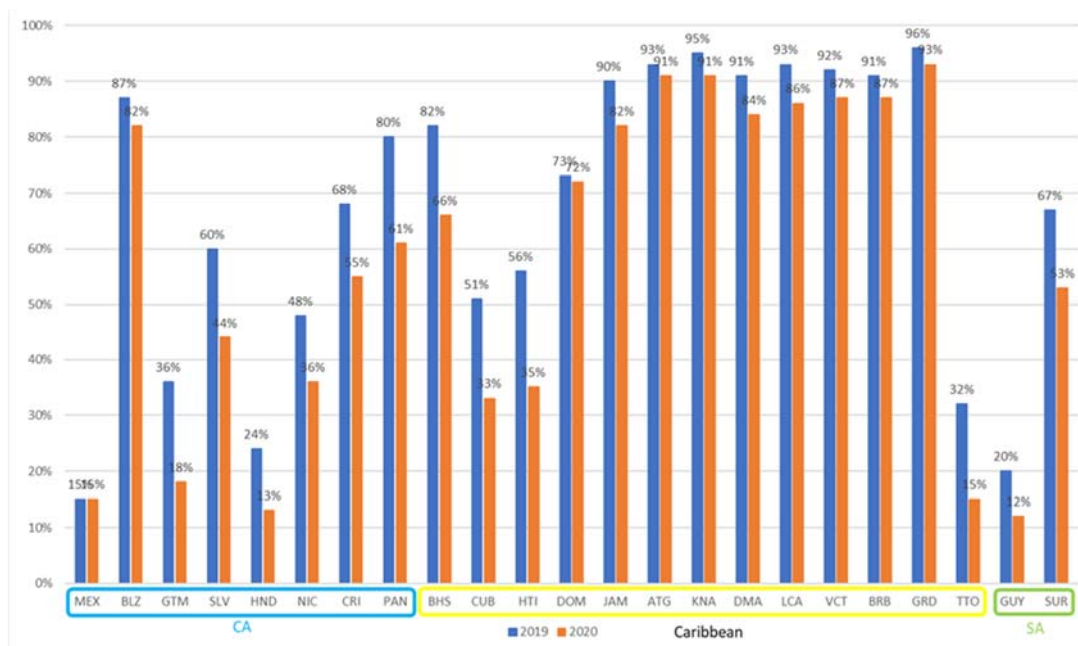


Source: Prepared by the Study Team based on WTTC's Data

Figure 14-2 Change in a Total Contribution of Travel and Tourism to Employment

3) Portion of International Spending in Total Tourism Spending

International tourism spending is spending within the country by international tourists, and its high percentage indicates the country's firm reliance on the inbound market. Due to the pandemic, the measures, such as border closure and entry ban, must have hit hard the countries with high dependency on inbound tourism. As demonstrated in Figure 14-3, the Caribbean countries show the tendency again. Grenada (96%), Saint Kitts and Nevis (95%), and Antigua and Barbuda and Saint Lucia (93%) are more than 90% figures. While the percentage of all the target countries except Mexico declined in 2020, the portion of Grenada (93%), Antigua and Barbuda, and Saint Kitts and Nevis (91%) are still more than 90%.



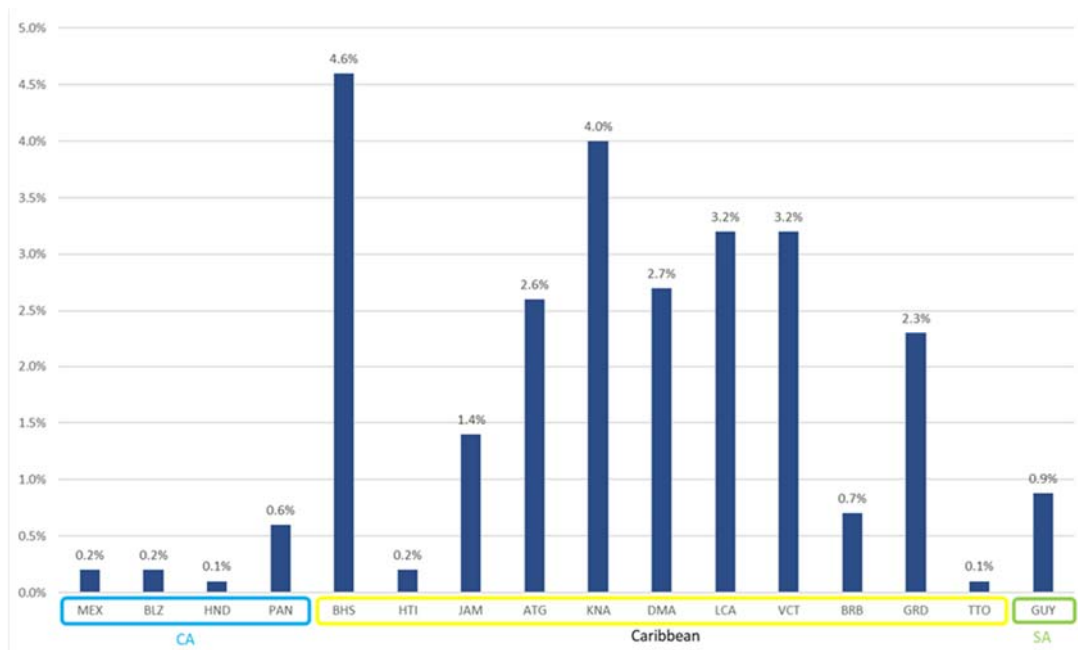
Source: Prepared by the Study Team based on WTTC's Data

Figure 14-3 Change in Portion of International Spending in Total Tourism Spending

(2) Importance of Tourism

1) Budget for Tourism-related Ministries in the National Budget

Based on the national budget and budget for tourism-related ministries² in the 23 countries, the allocation to the ministries was confirmed (see Figure 14-4). Neither national nor ministerial budget of Nicaragua, Cuba, and Suriname was found on the internet. The ministerial budget was available for Guatemala, El Salvador, Costa Rica, and the Dominican Republic, but their national budget was not. Then, a comparison of budget estimates of 2019 between the remaining 16 countries was made. The country with the highest portion is the Bahamas (Ministry of Tourism and Aviation, 4.6%), followed by Saint Kitts and Nevis (Ministry of Tourism, 4.0%), Saint Lucia (Ministry of Tourism, Information and Broadcasting, Culture and Creative Industries, 3.2%), and Saint Vincent and Grenadines (Ministry of Tourism, Sports and Culture, 3.2%). Generally, the Caribbean countries have a high portion.



Source: Prepared by the Study Team based on WTTC's Data

Figure 14-4 Portion of the Budget for the Tourism-related Ministries in the National Budget

2) Tourism as a Prioritized Sector in Each Country's National Economic and Social Development Plan

If a country mentions tourism as a prioritized sector in its national economic and social development plan, it illustrates that tourism is essential for the country. Thus, valid national economic and social plans³ were collected by web research to see if tourism is referred to as a prioritized sector. Then, the documents of the 22 countries, except for Saint Kitts and Nevis, without a valid plan were examined, and that of 19 countries, except for Mexico, Panama, and Trinidad and Tobago, mentioned tourism. For example, the "Medium-Term Development Strategy 2016 to 2020" of Antigua and Barbuda lists "Strong tourism industry as an economic anchor" as the second and "Transform Barbuda into a green, low density, high-end tourism destination" as the third of its seven flagship priorities.

3) Presence of Valid National Tourism Policy/Strategy/Plan

If a country has a valid policy/strategy/plan dedicated to tourism, it can be assumed that the government attaches weight to tourism. Therefore, internet research was conducted to identify such policy/strategy/plan of the 23 countries. As a result, that of 14 countries, except Nicaragua, Haiti, Cuba,

² Organizations that have "tourism" in its name. For example, Ministry of Tourism (the Dominican Republic, El Salvador, Haiti, Jamaica, Saint Kitts and Nevis, and Trinidad and Tobago), Instituto Costarricense de Turismo (Costa Rica), Secretaría de Turismo (Mexico).

³ Although its name differs by country, documents that are classified as "National Development Plan" on the ECLAC website (<https://observatorioplanificacion.cepal.org/en/plans/type/36>). For instance, "National Sustainable Development Plan 2020-2035 Grenada" (Grenada), "Plan Nacional de Desarrollo de México 2019-2024" (Mexico), "Plan Estratégico de Gobierno 2018-2022" (Honduras).

Antigua and Barbuda, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and Grenadines, Grenada, and Suriname, were identified. Out of the 18 countries, those with the name "plan"⁴ are the majority (10 countries), followed by "strategy"⁵ (two countries), "policy"⁶, and "program"⁷ (one each).

The World Economic Forum's Travel & Tourism Competitiveness Index (TTCI) includes the Prioritization of Travel & Tourism as a pillar to confirm that governments are focusing on tourism in addition to their national strategies. The pillar is a comprehensive assessment consisting of six indicators⁸, but only 11 of the 23 target countries of this study (Costa Rica, Dominican Republic, Guatemala, Honduras, Haiti, Jamaica, Mexico, Nicaragua, Panama, El Salvador, and Trinidad and Tobago) are covered by the TTCI. The rankings of the 11 countries in the relevant categories in the latest 2019 edition are shown in Table 14-3. Jamaica, in particular, ranks second in the world after Malta, with high ratings in "government prioritization of travel and tourism industry" (second), "travel and tourism government expenditures" (third), and "effectiveness of marketing and branding to attract tourists" (sixth). On the other hand, the most notable improvement since the last survey in 2017 was with Trinidad and Tobago.

Table 14-3 Rank of 11 Countries on Prioritization of Travel and Tourism (out of 140 countries, 2019)

Country	Overall	Government Prioritization of Travel and Tourism Industry	Travel and Tourism Government Expenditure	Effectiveness of Marketing and Branding to Attract Tourists	Comprehensiveness of annual travel and tourism data	Timeliness of Providing Monthly/Quarterly Travel and Tourism Data	Country Brand Strategy Rating
Jamaica	2	2	3	6	46	82	70
Dominican Republic	7	16	2	14	30	8	93
Costa Rica	16	17	27	4	74	54	84
Mexico	29	37	39	24	45	8	106
Honduras	37	50	48	50	69	1	29
Panama	54	64	37	72	65	32	67
Nicaragua	58	48	103	62	21	68	18
Guatemala	82	107	38	107	76	54	68
El Salvador	97	106	90	115	41	93	33
Trinidad and Tobago	107	119	105	131	79	82	17
Haiti	120	126	82	129	129	103	104

Source: World Economic Forum. (2019). The Travel & Tourism Competitiveness Report 2019.

14.4.2 Analysis of Sector-specific Indicator

The tourism sector used the following two indicators as reference: 1) dependency on tourism before COVID-19 (i.e., for the last five years from 2015 to 2019) and 2) change in dependency from 2019 to 2020. Countries with a high dependency on tourism should have been significantly affected by the pandemic.

(1) Dependency on Tourism Before COVID-19

The Inter-American Development Bank (IDB) releases the Tourism Dependency Index (TDI) and updated its data to the latest version in May 2021⁹. The newest TDI "is calculated using five-year averages from 2015 to 2019 for the total contribution of tourism to total export receipts, GDP, and employment for each country." Table 14-4 shows the TDI scores of the 35 countries in the Latin American and Caribbean region. Regarding the target countries, a score of 22 except for Cuba is

⁴ For instance, "Plan Nacional de Desarrollo Turístico de Costa Rica 2017-2021" (Costa Rica), "Barbados Tourism Master Plan" (Barbados).

⁵ "Estrategia Nacional de Desarrollo Sostenible del Sector Turismo en Honduras" (Honduras), "A National Tourism Development Strategy" (The Bahamas)

⁶ "Revised National Tourism Policy 2020-2030" (Trinidad and Tobago)

⁷ "Programa Sectorial de Turismo 2020-2024" (Mexico)

⁸ Government prioritization of travel and tourism industry, Travel & Tourism government expenditure, Effectiveness of marketing and branding to attract tourists, Comprehensiveness of annual Travel & Tourism data, Timeliness of providing monthly/quarterly Travel & Tourism data, Country brand strategy rating

⁹ O. Gómez García (coord.), "Imagining Post-COVID Tourism Recovery", Caribbean Quarterly Bulletin: Volume 10: Issue 1, Washington, D.C., Inter-American Development Bank (IDB), 2021

available. According to the latest TDI, nine out of the top 15 countries are in Central America and the Caribbean. Among the target countries, eight are included, namely Grenada (4th), Antigua and Barbuda (5th), the Bahamas (6th), Saint Lucia (7th), Dominica (9th), Barbados (11th), Jamaica (13th), and Belize (15th). In other words, it is supposed that tourism in these countries was hit hard by the pandemic.

Table 14-4 TDI for the Latin American and Caribbean Countries

Table 4. Indicators of Tourism Dependence for Latin American and Caribbean Countries

	Tourism Dependency Index, 2019	Average Contribution to Exports, 2015–2019 (percent of exports)	Average Contribution to GDP, 2015–2019 (percent of total GDP)	Average Contribution to Employment, 2015–2019 (percent share of total employment)
Aruba	79.8	88.0	70.9	80.6
Grenada	58.5	87.8	42.8	44.8
Antigua and Barbuda	55.1	42.4	39.4	83.5
The Bahamas	54.5	73.8	40.6	49.0
St. Lucia	53.4	50.7	37.7	71.8
Dominica	42.0	51.0	36.5	38.5
Barbados	41.4	65.3	28.5	30.6
Jamaica	38.7	57.3	28.6	30.2
Belize	37.9	43.7	33.9	36.0
St. Vincent and the Grenadines	35.9	39.8	26.3	41.5
St. Kitts and Nevis	35.9	27.9	25.8	54.0
Cayman Islands	27.0	25.0	24.4	31.5
Dominican Republic	24.1	38.8	16.3	17.2
Panama	18.5	24.5	15.0	16.0
Uruguay	16.7	18.8	15.7	15.5
Haiti	16.4	31.1	9.1	9.2
Costa Rica	13.8	18.9	11.4	11.1
El Salvador	13.3	18.7	10.3	10.9
Mexico	11.0	5.0	15.1	12.9
Nicaragua	11.0	11.8	10.5	10.8
Honduras	10.7	7.4	12.2	12.7
Chile	8.9	4.9	10.1	11.7
Peru	8.8	9.4	9.4	7.7
Guatemala	8.2	11.2	6.4	6.8
Trinidad and Tobago	7.7	5.6	7.7	9.9
Argentina	7.6	6.5	8.9	7.4
Colombia	7.4	12.5	4.6	5.0
Bolivia	7.2	9.3	6.0	6.3
Venezuela	7.1	3.4	8.8	9.2
Ecuador	6.6	10.0	4.9	5.0
Brazil	6.1	2.5	7.8	8.0
Guyana	5.1	4.4	5.3	5.6
Paraguay	3.8	2.8	4.1	4.4
Suriname	3.5	3.7	3.2	3.4

Source: Mooney and Zegarra (2020), updated with latest available data.

Note: The Tourism Dependency Index (TDI) is calculated using five-year averages from 2015 to 2019 for the total contribution of tourism to total export receipts, GDP, and employment for each country. The range is from zero to 100, with 100 representing total dependence. The table presents the TDI scores for 35 countries in Latin America and the Caribbean for which data were available. The color scale represents the relative contribution of the variable when compared to other countries (red = highest / blue = lowest).

Source: Inter-American Development Bank. (2021, May). Caribbean Quarterly Bulletin: Volume 10: Issue 1.

(2) Change in Dependency on Tourism from 2019 to 2020

The WTTC's data mentioned in 14.4.1(1) is shown in Table 14-5. While all the target countries' indices dropped, the gradation of red color indicates the magnitude of the decline. In short, the darker the red color gets, the stronger the impact of COVID-19 was in the country. According to the dataset, the country hardest hit was Saint Lucia in terms of the total contribution of travel and tourism to GDP and total contribution of travel and tourism to employment. In Central America, although the country most dependent on tourism is Belize, as mentioned above, the reduction of the total contribution to employment is relatively small (-18.3%). Looking at the Caribbean region, the drop in Saint Kitts and Nevis's total contribution to GDP (-72.3%) and Haiti's total contribution to employment (-32.7%) are comparatively high despite their lower dependency on tourism. The significant impact on employment in Haiti can be attributed partly to the high level of informality in employment. According to the International Labour Organization (ILO) statistics, the percentage of informal employment in Haiti is 91.5% (2012).

Table 14-5 Change in Dependency on Tourism from 2019 to 2020

	CA								Caribbean											SA			
	MEX	BLZ	GTM	SLV	HND	NIC	CRI	PAN	BHS	CUB	HTI	DOM	JAM	ATG	KNA	DMA	LCA	VCT	BRB	GRD	TTO	GUY	SUR
Change in total contribution of travel and tourism to GDP (2019 to 2020)	-48.1%	-63.6%	-54.7%	-58.3%	-48.3%	-48.3%	-56.2%	-68.0%	-68.0%	-48.1%	-66.9%	-57.2%	-60.3%	-53.0%	-72.3%	-64.6%	-71.7%	-67.0%	-53.5%	-65.5%	-47.8%	-44.6%	-65.0%
Change in total contribution of travel and tourism to employment (2019 to 2020)	-17.1%	-18.3%	-25.7%	-29.0%	-24.8%	-26.8%	-27.5%	-31.6%	-30.2%	-19.6%	-32.7%	-22.0%	-25.9%	-25.1%	-29.5%	-29.4%	-34.3%	-27.8%	-26.1%	-33.0%	-25.2%	-18.4%	-26.9%

Source: Prepared by the Study Team based on WTTC's Data

14.4.3 Evaluation of Policy Measures Against COVID-19 Taken by the Governments

On the UNWTO's Tourism Data Dashboard, one can view the compilation of country policy responses to mitigate the COVID-19 crisis in the travel and tourism sector and accelerate recovery¹⁰. This dashboard groups policy measures into nine categories: 1. Fiscal policy, 2. Monetary policy, 3. Jobs and skills, 4. Market intelligence, 5. Public-private partnerships, 6. Restarting tourism, 7. Health and safety protocols, 8. Domestic tourism, and 9. Others. The number of policy measures that each country implements to support tourism is shown by category in Table 14-6 based on the dashboard's information. The three types of policy response with the highest portion are monetary policy (e.g., loan program, payment deferrals), fiscal policy (e.g., tax reductions, tax deferrals), other (e.g., payment deferrals of utilities, rent reduction), in that order.

Table 14-6 Number of Policy Responses to Support Tourism by Category

		1. Fiscal Policy	2. Monetary Policy	3. Jobs and Skills	4. Market Intelligence	5. Public-Private Partnerships	6. Re-starting Tourism	7. Health and Safety Protocols	8. Domestic Tourism	9. Other
CA	MEX	1	1	0	0	0	2	1	3	5
	BLZ	0	1	0	0	0	1	1	1	0
	GTM	3	6	1	0	1	4	0	1	0
	SLV	6	4	2	0	0	2	1	0	3
	HND	4	5	0	0	1	0	1	0	0
	NIC	0	2	0	0	0	1	1	0	0
	CRI	7	7	4	0	0	1	1	5	1
	PAN	2	2	0	0	0	1	1	0	0
Caribbean	BHS	3	5	5	1	1	1	1	1	4
	CUB	1	0	0	0	0	1	0	2	0
	HTI	2	0	1	0	0	0	0	0	5
	DOM	0	5	0	0	0	1	1	0	0
	JAM	0	1	1	0	0	1	1	0	0
	ATG	0	0	0	0	0	0	0	0	0
	KNA	0	0	0	0	0	0	0	0	0
	DMA	0	0	0	0	0	0	0	0	0
	LCA	0	0	0	0	0	0	0	0	0
	VCT	0	0	0	0	0	0	0	0	0
	BRB	0	0	0	0	0	1	1	1	1
GRD	0	0	0	0	0	0	0	0	0	
TTO	0	0	0	1	0	1	1	0	3	
SA	GUY	0	0	0	0	0	0	0	0	0
	SUR	0	0	0	0	0	0	0	0	0
	Total	29	39	14	2	3	18	12	14	22

Source: Prepared by the Study Team based on the information of UNWTO Tourism Data Dashboard

¹⁰ <https://www.unwto.org/covid-19-measures-to-support-travel-tourism>

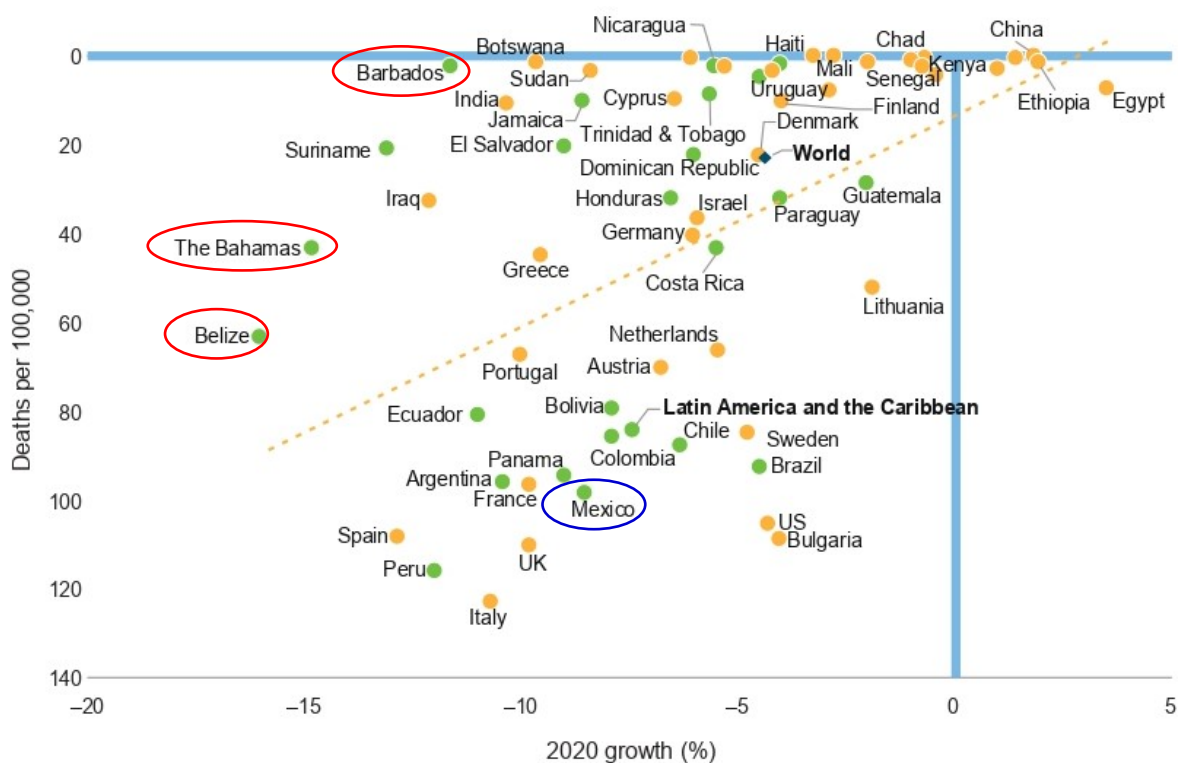
14.4.4 Findings from the Development Partners' Survey

The Economic Commission for Latin America and the Caribbean (ECLAC) analyzed the impact of COVID-19 on the Latin American and Caribbean tourism sector and suggested options for a sustainable and resilient recovery in the report released in December 2020¹¹. According to the report, tourism makes up half of the service exports of Latin America and the Caribbean, and its contribution to GDP and employment is immense. Consequently, as stated by the organization's impact scenario, due to the sector's plunge, the Caribbean and Latin America GDP might drop eight percentage points and one percentage point, respectively. In addition, employment could decline seven percentage points and one percentage point, respectively. Besides, ECLAC offers recommendations to mitigate the negative impact of the pandemic. In the short run, market diversification, including promoting domestic tourism, is suggested. In the long run, the organization proposed improvement of environmental and social sustainability of tourism. For example, since the tourism sector can directly or indirectly contribute to the Sustainable Development Goals (SDGs), such as Goal 8 (decent work and economic growth), 13 (climate action), 14 (Life below water), and 15 (Life on land), and less than ten years remain to achieve the goals of the Agenda 2030, the organization recommends that the tourism sector take necessary measures to make the industry "green" on the occasion of the coronavirus catastrophe.

The IDB report¹² states a positive correlation between the COVID-19 death rates and the 2020 growth rate, as demonstrated in Figure 14-5. Also, it points out that many Latin American and Caribbean countries are concentrated on the lower left quadrant (i.e., low growth and high death rate). The report states that the primary causes are informality levels, the health care system's capacity, the effect of non-medical measures, and the capacity for telework. However, tourism-dependent countries, including the Bahamas, Barbados, and Belize, are generally located above the trend line, which indicates the range of drop of the growth rate in 2020 was significant, considering their low death rate. On the other hand, Mexico's growth rate decline was relatively low despite its high death rate.

¹¹ N. Mulder (coord.), "The Impact of the COVID-19 Pandemic on the Tourism Sector in Latin America and the Caribbean, and Options for a Sustainable and Resilient Recovery", International Trade Series, No. 157 (LC/TS.2020/147), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), 2020

¹² E. Cavallo and A. Powell (coord.), "Opportunities for Stronger and Sustainable Postpandemic Growth", 2021 Latin America and Caribbean Macroeconomic Report, Washington, D.C., Inter-American Development Bank (IDB), 2021



Source: IMF (2020d, 2021b) and Center for Systems Science and Engineering (CSSE) at Johns Hopkins University.

Source: IDB (2021). Opportunities for Stronger and Sustainable Postpandemic Growth

Figure 14-5 COVID-19 Death Rates and Economic Growth in 2020 by Country

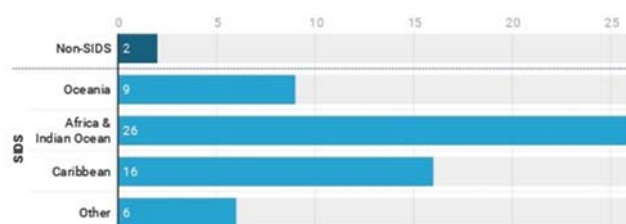
UNWTO calls 2020 "the worst year on record for tourism" in the Committee for the Coordination of Statistical Activities (CCSA) report¹³. The reason is that international tourist arrivals fell from 1,500 million in 2019 to 380 million in 2020, a 74% decline, and in the Americas, it dropped from 219 million in 2019 to 6.9 million, a 69% decline. In addition, the organization anticipates that it would take two and a half to four years to return to the 2019 level. Also, the estimated loss of USD 1.3 trillion in global inbound tourism expenditure concerning 2019, more than 11 times the loss experience with the 2009 Lehman Shock. In particular, the report points out that Small Island Developing States (SIDS), including Caribbean countries, are struck by COVID-19 (the international tourist arrivals were down 77% from the prior year) and lists the following four causes:

- a) Economy's high dependency on tourism (See Figure 14-6. While the proportion of inbound tourism expenditure to GDP is 2% in non-SIDS, that of the Caribbean is 16%).
- b) Vulnerability of domestic market, which is expected to recover earlier than the inbound market (See Table 14-7. The portion of domestic overnight guests in hotels and similar establishments in Cuba is 0.19%).
- c) Dependency on undiversified source markets requiring a long-haul flight (See Figure 14-7. In the Caribbean region, the United States market accounts for 45% of the international tourist arrivals, and the European market accounts for 16%, respectively).
- d) Serious impact of the pandemic and strict travel curbs in the principal source market countries

Among the SDGs global indicators, only two of them directly mention tourism, namely 8.9.1 "Tourism direct GDP as a Proportion of Total GDP and in Growth Rate" and 12.b.1 "Implementation of Standard Accounting Tools to Monitor the Economic and Environmental Aspects of Tourism Sustainability." Still, they are not enough to adequately assess the progress of SDGs in SIDS. In the light of the vital role that tourism plays in SIDS, the report points out the necessity of additional indicators that reflect social and economic aspects of tourism.

¹³ "How COVID-19 is changing the world: a statistical perspective Volume III", New York, Committee for the Coordination of Statistical Activities (CCSA), 2021

Figure 2. Inbound Tourism expenditure as a proportion of GDP: SIDS by region vs Non-SIDS



Source: Calculations based on UNWTO data. Weighted averages by region. SIDS under "Other" category includes: Bahrain, Guyana, Singapore, Suriname

Source: "How COVID-19 is changing the world: a statistical perspective Volume III", New York, Committee for the Coordination of Statistical Activities (CCSA), 2021

Figure 14-6 Inbound Tourism Expenditure as a Proportion of GDP

Table 14-7 Percentage of Domestic Overnight Stays in Hotels and Similar Establishments in SIDS

Table 1. Percentage of domestic overnight stays in hotels and similar establishments in SIDS where data is available, 2019

Country	Percent Domestic
Cabo Verde	0.04
Cuba	0.19
Fiji	0.19
Seychelles	0.01
Timor-Leste*	0.13

*Data for 2018

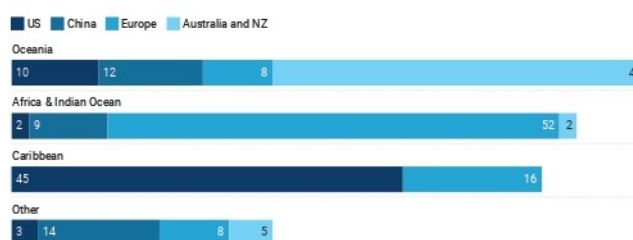
Source: UNWTO database

Data available only for 5 SIDS

Source: UNWTO (January 2021)

Source: "How COVID-19 is changing the world: a statistical perspective Volume III", New York, Committee for the Coordination of Statistical Activities (CCSA), 2021

Figure 3. Proportions of international arrivals in SIDS by main source markets, by region



Source: Calculations based on UNWTO data. Weighted averages by region. SIDS under "Other" category includes: Bahrain, Guyana, Singapore, Suriname

Source: "How COVID-19 is Changing the World: A Statistical Perspective Volume III", New York, Committee for the Coordination of Statistical Activities (CCSA), 2021

Figure 14-7 Proportions of International Arrivals in SIDS by Main Source Markets

As discussed above, various development partners have analyzed the losses that COVID-19 has caused in the tourism sector. As a result of these losses, the GDP of all countries except Guyana, which started oil production in December 2019, has decreased in 2020 compared with the previous year, as described in the chapter on the socioeconomic sector. In this context, governments are taking a variety of measures. In the tourism sector, Mexico, for example, is securing tourism income by continuing to accept foreign tourists without setting entry restrictions even amid the pandemic, and Barbados is trying to capture the new tourism market of remote workers that emerged after COVID-19. The countries are also attracting investment and loans to the private sector, including tourism, from international financial institutions such as the Inter-American Development Corporation (IDB Invest)¹⁴.

¹⁴ The most recent IDB Invest investment is a USD 120 million loans to Grupo Piñero, a major hotel operator with 27 hotels in the Caribbean and Mexico. Banco Popular Dominicano (a private bank in the Dominican Republic) has provided a loan of USD 80 million, making the total package USD 200 million. (IDB Invest and Banco Popular Dominicano Support Sustainable Tourism in the Caribbean,

14.4.5 Country Assistance Policy

Among the country assistance policy and rolling plan of the target countries prepared by Japan's Ministry of Foreign Affairs, those of the Dominican Republic and Saint Lucia have specific statements about tourism.

(1) Dominican Republic

1) Sustainable Economic Development

To achieve sustainable economic development, it is essential to strengthen the competitiveness of domestic industries. The Japanese government will cooperate with initiatives aimed at training human capital, with an emphasis on increasing the productivity of SMEs. In the tourism sector, Japan will support the promotion of a tourism industry that includes the communities where the resorts are located and allows the use of local resources, to promote the economy of the communities.

Source: Development Cooperation Policy of the Government of Japan towards the Dominican Republic, Ministry of Foreign Affairs of Japan, September 2018

The policy of the Dominican Republic argues that the country attracted 7.3 million foreign tourists in 2017, and tourism is an essential source of income for the country. However, consumption by foreign visitors is limited within hotel resorts and does not necessarily translate into economic benefits for the communities. Moreover, the assistance policy mentions the economic revitalization of communities, including those located around resorts, by supporting the promotion of the tourism industry as one of the priority areas. The technical assistance project currently implemented in line with the policy is "Project for Enhancing the Mechanism for Sustainable Community-based Tourism Development in the North Region."

(2) Saint Lucia

[Background and current situation]

The main industries of Saint Lucia are agriculture, which centers on banana exports, and tourism. Diversification of industries is important for Saint Lucia because of the decline in banana production caused by the United Kingdom's discontinuation of low import duties, recent natural disasters such as hurricanes, and fluctuating prices in international markets. The Government of Saint Lucia is therefore promoting the development of fisheries in collaboration with the tourism sector. The fisheries industry also plays an important role in supplying animal protein and providing employment opportunities for Saint Lucians.

Source: Development Cooperation Policy of the Government of Japan towards Saint Lucia, Ministry of Foreign Affairs of Japan, April 2014

As to the other Caribbean Community (CARICOM) member states, the assistance policy of Saint Lucia points out the necessity of industrial diversification because its economy is based on industries which are susceptible to external factors, such as tourism. Also, its rolling plan states that the Government of Saint Lucia is promoting the development of fisheries in collaboration with the tourism sector. Considering the situation stated above, the Japanese government plans to provide the support that will lead to community development while utilizing facilities and equipment provided by Japan's previous fisheries grant.

(3) El Salvador

Eastern Region Development Program

In the eastern part of the country, which was severely affected by the civil war, the projects aim to develop a complex regional development through infrastructure development, human resource development that contributes to the development of the region and improving the production of economic activities such as agriculture, fishery, and tourism.

Source: Development Cooperation Policy of the Government of Japan towards El Salvador, Ministry of Foreign Affairs of Japan, February 2017

together with Grupo Piñero. (2022, January 17). IDB Invest. Retrieved January 23, 2022, from <https://idbinvest.org/en/news-media/idb-invest-and-banco-popular-dominicano-support-sustainable-tourism-caribbean-together>

Although the assistance policies for El Salvador do not have direct mention of tourism, their rolling plans have a tourism-related description. For example, in El Salvador, through the "Eastern Region Development Program," Japan works toward compositive regional development through the enhancement of productivity of economic activities, including tourism.

(4) Guatemala

Project for the Development of Human Resources and Support of Self-Organization in the Tikal National Park Tourist Corridor

Source: Development Cooperation Policy of the Government of Japan towards Guatemala, Ministry of Foreign Affairs of Japan, September 2017

In Guatemala, as part of the "Community Revitalization Program," a JICA Partnership Program, "Project for the Development of Human Resources and Support of Self-organization in the Tikal National Park Tourist Corridor," is currently conducted. The program aims to provide "assistance to improve agricultural productivity and promote MSMEs to revitalize economic activities in rural areas."

14.5 Selection of Priority Countries by Sector

14.5.1 Selection Criteria of Priority Countries

The selection criteria are the following four items:

- 1) Policy of the Japanese government
 - Number of JICA projects in the last ten years
 - Reference to tourism in the Country Assistance Policy
 - JICA overseas offices' interest in pilot projects
- 2) Vulnerability of tourism
 - Total contribution of travel and tourism to GDP (2019)
 - Total contribution of travel and tourism to employment (2019)
 - Portion of international spending in total tourism spending (2019)
- 3) Importance of tourism
 - Portion of the budget for the tourism-related ministry in the national budget (2019)
 - Reference to tourism as a prioritized sector in each country's national economic and social development plan
 - Presence of valid national tourism policy/strategy/plan
- 4) Impact of COVID-19
 - Change in the total contribution of travel and tourism to GDP (2019 to 2020)
 - Change in the total contribution of travel and tourism to employment (2019 to 2020)

14.5.2 Selection of Priority Countries

Table 14-8 demonstrates the tabulation of the selection criteria mentioned above.

Table 14-8 Selection Criteria of Priority Countries

	Policy of Japanese government			Vulnerability of tourism			Importance of tourism			Impact of COVID-19	
	Number of JICA projects in the last 10 years	Reference to tourism in the Country Assistance Policy	Interest in pilot projects	Total contribution of travel and tourism to GDP	Total contribution of travel and tourism to employment	Portion of international spending in total tourism spending	Portion of the budget for the tourism-related ministry in the national budget	Reference to tourism as a prioritized sector in each country's national economic and social development plan	Presence of valid national tourism policy/strategy/plan	Change in total contribution of travel and tourism to GDP (2019 to 2020)	Change in total contribution of travel and tourism to employment (2019 to 2020)
CA	MEX			15.5%	13.3%	15%	0.2%	N	Y	-48.1%	-17.1%
	BLZ			37.2%	39.3%	87%	0.2%	Y	Y	-63.6%	-18.3%
	GTM	2	"activation of economic activities in rural areas"	6.2%	6.5%	36%		Y	Y	-54.7%	-25.7%
	SLV	1	"composive rural development through human resource development and productivity improvement of economic activities"	11.0%	11.6%	60%		Y	Y	-58.3%	-29.0%
	HND			11.7%	12.2%	24%	0.1%	Y	Y	-48.3%	-24.8%
	NIC			10.1%	10.4%	48%		Y	N	-48.3%	-26.8%
	CRI			12.0%	11.7%	68%		Y	Y	-56.2%	-27.5%
	PAN			13.6%	14.7%	80%	0.6%	N	Y	-68.0%	-31.6%
	BHS			43.3%	52.7%	82%	4.6%	Y	Y	-68.0%	-30.2%
	CUB			10.3%	11.1%	51%		Y	N	-48.1%	-19.6%
Caribbean	HTI			8.4%	8.6%	56%	0.2%	Y	N	-66.9%	-32.7%
	DOM	2	"enhancement of competitiveness of the tourism sector"	16.3%	17.3%	73%		Y	Y	-57.2%	-22.0%
	JAM		Y	31.1%	32.8%	90%	1.4%	Y	Y	-60.3%	-25.9%
	ATG			42.7%	90.7%	93%	2.6%	Y	N	-53.0%	-25.1%
	KNA			28.2%	59.1%	95%	4.0%		N	-72.3%	-29.5%
	DMA			36.9%	38.7%	91%	2.7%	Y	Y	-64.6%	-29.4%
	LCA		"development of fisheries in collaboration with the tourism sector"	40.7%	78.1%	93%	3.2%	Y	N	-71.7%	-34.3%
	VCT			28.6%	45.2%	92%	3.2%	Y	N	-67.0%	-27.8%
	BRB			30.9%	33.4%	91%	0.7%	Y	Y	-53.5%	-26.1%
	GRD			40.5%	42.9%	96%	2.3%	Y	N	-65.5%	-33.0%
SA	TTO			7.8%	8.5%	32%	0.1%	N	Y	-47.8%	-25.2%
	GUY			4.4%	4.7%	20%	0.9%	Y	Y	-44.6%	-18.4%
	SUR			2.6%	2.8%	67%		Y	N	-65.0%	-26.9%

Source: Study Team

As a result of consideration, the three countries, namely, El Salvador, the Dominican Republic, and Jamaica, were selected as priority countries (see Table 14-9).

Table 14-9 Priority Countries and Rationale for the Selection

	Country	Rationale for the Selection
1	El Salvador	<ul style="list-style-type: none"> The country had a technical assistance project in tourism and a dispatched expert of One Village One Product (OVOP) in the past. The government gives importance to tourism. The vulnerability of tourism is relatively high, and the impact of COVID-19 is also comparatively strong. The Central America Tourism Agency (CATA), SICA, is located in the country, making efficient information collection possible regarding regional-scale activities in Central America and the Dominican Republic.
2	Dominican Republic	<ul style="list-style-type: none"> The country had multiple technical assistance projects in tourism and has an ongoing one. The government gives importance to tourism. The vulnerability of tourism is relatively high. The questionnaire survey on the ongoing JICA tourism project for COVID-19 impacts is conducted in the country, and synergy is expected between the survey and the study of the tourism sector.
3	Jamaica	<ul style="list-style-type: none"> The JICA Jamaica Office expresses interest in a pilot project to support tourism resilience enhancement, consistent with JICA's tourism development assistance policy. The government gives importance to tourism. The vulnerability of tourism is relatively high. An expansion to the CARICOM member states can be expected.

Source: Study Team

14.6 Detailed Survey by Sector

14.6.1 Selection of Countries for the Survey

In addition to El Salvador, Dominican Republic, and Jamaica, selected as priority countries, Consejo Centroamericano de Turismo (CCT), a regional tourism organization under SICA, was also included in the survey. Furthermore, the CCT is the highest authority on tourism in the Central American region for tourism development and integration in SICA countries. Specifically, the Secretaría de Integración Turística Centroamericana (SITCA), the permanent secretariat of the CCT, and the Central America Tourism Agency (CATA), which is in charge of marketing and promotion, were examined. CATA promotes the seven Central American countries and the Dominican Republic as a single "Central American" destination, mainly in the European market¹⁵. Also, information from the Caribbean Tourism Organization (CTO) under CARICOM, a regional tourism development organization with 24 member countries, is being collected. In addition to the priority countries, the current status and issues of policies and promotion in the wider Central American and Caribbean region and the possibility of development cooperation at the regional level will also be investigated.

14.6.2 Implementation of the Detailed Survey

The challenges facing the Central American and the Caribbean region and the vulnerabilities that may have emerged during COVID-19 are divided into four themes. A questionnaire was prepared for each of them.

- Measures against COVID-19 to support the tourism sector
- Tourism crisis management
- Marketing
- ICT utilization

In addition, a questionnaire was prepared for each Ministry of Tourism to ask about their budget. The questionnaire's content was adjusted for each country's public and private sectors and regional organizations to collect multifaceted information. The items covered in each questionnaire are summarized in Table 14-10.

Table 14-10 Contents of Questionnaires for the Detailed Survey

Theme	Ministry of Tourism	Industry Associations	Regional Organizations
Policy measures	<ul style="list-style-type: none"> ▪ Measures against COVID-19 taken by the government and their assessment ▪ Measures considered necessary in the future 	<ul style="list-style-type: none"> ▪ Measures against COVID-19 taken by the government and their assessment ▪ Measures considered necessary in the future 	<ul style="list-style-type: none"> ▪ Measures against COVID-19 taken by the organization and their assessment ▪ Good examples of measures taken by member countries ▪ Measures considered necessary in the future
Budget	<ul style="list-style-type: none"> ▪ Impact of COVID-19 on the Ministry's budget ▪ Projected increase/decrease in the budget amount in the future 	/	/

¹⁵ Consejo Centroamericano de Turismo (CCT). (2015). Reglamento Interno.

Theme	Ministry of Tourism	Industry Associations	Regional Organizations
Tourism crisis management	<ul style="list-style-type: none"> Crises that have occurred within the past five years (natural disasters, human-caused disasters/crises, health-related crises) Crises that are likely to occur in the future and the degree of impact if they occur Existence of a tourism crisis management plan or organization at the national, local, or community level and the need to develop or improve 	<ul style="list-style-type: none"> Crises that have occurred within the past five years (natural disasters, human-caused disasters/crises, health-related crises) Existence or non-existence of a tourism crisis management plan or organization in the organization Good examples of tourism crisis management by the members of the organization Whether or not the organization plans to develop a tourism crisis management plan or organization in the future 	<ul style="list-style-type: none"> Crises that have occurred within the past five years (natural disasters, human-caused disasters/crises, health-related crises) Exemplary tourism crisis management initiatives for other countries Assistance for tourism crisis management that the organization could provide to its member states
Marketing	<ul style="list-style-type: none"> Changes in the target market before and after COVID-19 Changes in tourism product lineups before and after COVID-19 	<ul style="list-style-type: none"> Changes in the target market before and after COVID-19 Changes in tourism product lineups before and after COVID-19 Changes in promotion methods before and after COVID-19 	<ul style="list-style-type: none"> Marketing support provided to member states before COVID-19 Marketing support provided to member states after COVID-19 and any external support required
ICT utilization	<ul style="list-style-type: none"> Changes in the use of ICT in the tourism sector before and after COVID-19 	<ul style="list-style-type: none"> Good examples of ICT use by members of the organization Changes in the use of ICT in the organization before and after COVID-19 	<ul style="list-style-type: none"> Good examples of ICT use by member states ICT support for member states that will be in demand in the future

Source: Study Team

The questionnaires were sent to the organizations shown in Table 14-11.

Table 14-11 List of Recipients of the Questionnaires

Country	Ministry of Tourism	Industry Associations	Regional Organizations
El Salvador	Corporación Salvadoreña de Turismo	<ul style="list-style-type: none"> Asociación Salvadoreña de Operadores de Turismo (ASOTUR) Cámara Salvadoreña de Turismo (CASATUR) Tour Bus El Salvador 	<ul style="list-style-type: none"> Central America Tourism Agency (CATA) Secretaría de Integración Turística Centroamericana (SITCA) Centro de Coordinación para la Prevención de los Desastres en América Central y República Dominicana (CEPREDENAC) Caribbean Tourism Organization (CTO)
Dominican Republic	Dirección de Planificación y Desarrollo, Ministerio de Turismo	Asociación de Tour Operadores Receptivos de la República Dominicana (OPETUR)	
Jamaica	Ministry of Tourism	Jamaica Hotel & Tourist Association (JHTA)	

Source: Study Team

Online or offline interviews were conducted with the organizations listed in Table 14-12.

Table 14-12 Interviewees

Country	Organization	Date
El Salvador	<ul style="list-style-type: none"> Ministerio de Turismo Corporación Salvadoreña de Turismo 	November 29, 2021
	Tour Bus El Salvador	November 30, 2021
	Asociación Salvadoreña de Operadores de Turismo (ASOTUR)	December 1, 2021
	Cámara Salvadoreña de Turismo (CASATUR)	December 1, 2021
	Project for Enhancing the Mechanism for Sustainable Community-based Tourism Development in the North Region	November 24, 2021
Dominican Republic	Ministerio de Turismo	November 25, 2021
	Asociación de Tour Operadores Receptivos de la República Dominicana (OPETUR)	November 29, 2021 (online)
Jamaica	Global Tourism Resilience and Management Center (GTRCMC)	November 16, 2021
	Ministry of Tourism	November 19, 2021

Country	Organization	Date
Saint Lucia	Ministry of Commerce, Industry, Enterprise Development and Consumer Affairs	December 7, 2021
	Ministry of Agriculture, Fisheries, Food Security and Rural Development	December 7, 2021
	Ministry of Tourism, Investment, Creative Industries, Culture and Information	December 6, 2021
Regional Organizations	Secretaría de Integración Turística Centroamericana (SITCA)	<ul style="list-style-type: none"> • November 2, 2021 (online) • December 2, 2021
	Central America Tourism Agency (CATA)	<ul style="list-style-type: none"> • November 5, 2021 (online) • November 30, 2021
	Caribbean Tourism Organization (CTO)	November 19, 2021 (online)
	SICA (JICA Expert)	November 29, 2021
	Instituto Interamericano de Cooperación para la Agricultura (IICA)	December 8, 2021
	Caribbean Disaster Emergency Management Agency (CDEMA) (JICA Expert)	December 9, 2021 (online)

Source: Study Team

14.7 Development of Hypothesis on the State of Sectoral Development Cooperation in With/Post COVID-19 Society

14.7.1 Vulnerability Analysis in the Countries Studied

Based on the results of the in-depth study and literature review described in 14.6, this section summarizes the challenges that existed before COVID-19 in the tourism sector and the vulnerabilities that emerged during COVID-19, separately for Central America and the Caribbean.

(1) Central America

Based on the information obtained from the survey so far, the vulnerabilities of the tourism sector in Central America are summarized in Table 14-13.

Table 14-13 Vulnerabilities of the Tourism Sector in Central America

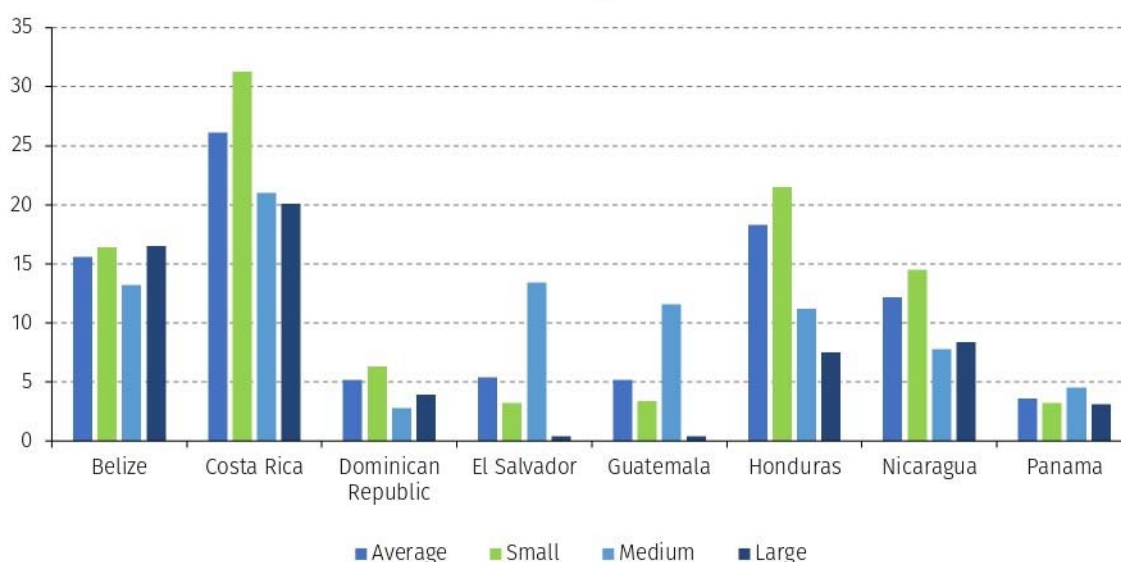
Area	Issues Since Before COVID-19	Vulnerabilities Revealed by COVID-19
Law and regulations	Difficulties in accessing financial services for MSMEs	Cash strapped MSMEs
	Low penetration rate of debit cards and credit cards	Delays in responding to digital and online payments
	Insufficiency of Tourism Law	Pressure on the business of legal operators due to the increase of illegal ones
	High cost of intra-regional air travel	Negative impact on intra-regional tourism promotion
	Low safety of overland travel within the region	
Infrastructure	Disparities in connectivity between urban and rural areas	(Lagging digitalization in the tourism sector, where many businesses operate in rural areas)
Human resources	Lack of digitalization in MSMEs	Delayed adoption of digital payments and online booking => Exclusion from the tourism value chain
	High level of informality in the tourism sector	Worsening of the poverty level of those not covered by the Social Security System
Marketing and promotion	The concentration of marketing resources on specific markets (particularly long-haul markets)	Slow response to new demands (e.g., intra-regional tourism, North American diaspora)
	Inadequate regional tourism statistics	Difficulty in developing strategies to meet new needs
Tourism crisis management	Lack of coordination among countries in tourism policy	Disruptions in immigration restrictions and quarantine measures →Negative impact on inbound and intra-regional tourism promotion
	Inadequate risk management for damage to the tourism industry caused by natural disasters, such as hurricanes (Inadequate crisis management specific to the tourism industry, crisis management only on a business-by-business basis, and inadequate continuous updating of BCPs)	Delayed or inadequate response to the tourism crisis caused by the pandemic
	Damage to tourism caused by sargassum (not directly related to COVID-19, but has been an issue in recent years)	

Source: Prepared by the Study Team based on the questionnaires collected from and interviews with SITCA and CATA

1) Laws and Regulations

One of the main obstacles MSMEs in Central America faces is access to financial services. According to an ECLAC report, access to finance is the main obstacle for 27% of Latin American and Caribbean firms, which is particularly severe for MSMEs (see Figure 14-8). In general, the tourism sector has a high percentage of MSMEs, and this is also the case in Central America, where, for example, 97.5% of the accommodation and catering industry in Belize has fewer than 50 employees¹⁶. The particular problem is that commercial banks' requirements placed on MSMEs are too high. For example, the amount of guarantee required for a loan to an MSME is equal to the requested loan amount, making it almost impossible for an MSME to obtain a loan¹⁷. It has led to an increase in the number of tourism MSMEs that are cash-strapped due to the slowdown in tourism after the COVID-19 epidemic. In addition, MSMEs are less likely to have bank accounts and credit cards and thus lag their larger counterparts in digital and online payments¹⁸.

Figure I.10
Countries of the SICA region: access to financing as the main obstacle according to the size of the enterprise^a
 (Percentages)



Source: World Bank: Belize, Costa Rica and Panama (2010); El Salvador, Honduras, Nicaragua and the Dominican Republic (2016); Guatemala (2017).

^a Small enterprise, 5 to 19 employees; medium enterprise, 20 to 99 employees; and large enterprise, more than 100 employees.

Source: L. Peralta, *Tourism in Central America and the Dominican Republic in the Face of Digital Technologies: Challenges and Opportunities for MSMEs* (LC/MEX/TS.2021/10), Mexico City, Economic Commission for Latin America and the Caribbean (ECLAC), 2021.

Figure 14-8 Access to Financing as the Main Obstacle According to the Size of the Enterprise

In addition, due to the fact that the existing Tourism Law is mainly aimed at attracting investment and does not provide for penalties against illegal businesses, and due to the increase in the use of social networking services as a result of the COVID-19, many unlicensed businesses have emerged to provide inexpensive services without fulfilling their tax obligations. This has put pressure on the economic activities of businesses that are registered with the authorities and are operating legally¹⁹.

¹⁶ L. Peralta, *Tourism in Central America and the Dominican Republic in the Face of Digital Technologies: Challenges and Opportunities for MSMEs* (LC/MEX/TS.2021/10), Mexico City, Economic Commission for Latin America and the Caribbean (ECLAC), 2021.

¹⁷ Interview with SITCA on November 2, 2021

¹⁸ L. Peralta, *Tourism in Central America and the Dominican Republic in the Face of Digital Technologies: Challenges and Opportunities for MSMEs* (LC/MEX/TS.2021/10), Mexico City, Economic Commission for Latin America and the Caribbean (ECLAC), 2021.

¹⁹ Interview with Tour Bul El Salvador on December 1, 2021

2) Infrastructure

According to a survey conducted by the Inter-American Institute for Cooperation on Agriculture (IICA), IDB, and Microsoft in Latin America, 71% of the urban population has access to connectivity services, compared with 37% in rural areas, a difference of 34 percentage points. More than 70% of the rural population in Belize, El Salvador, Guatemala, Honduras, and Nicaragua do not have access to connectivity services of a certain quality²⁰. Because many tourism businesses operate in locations far from urban areas, it was assumed that this disparity between urban and rural areas was exacerbated by COVID-19, but the field survey conducted in November and December 2021 did not reveal any particular problem in this regard.

3) Human Resources

Even before COVID-19, the smaller businesses lagged in digitalization. According to an ECLAC report²¹, an average of 43% of enterprises with SICA member states have a website, and 80% use email to communicate with customers. However, these figures vary widely depending on the size of the company. For email use, 98% of large companies, 93% of medium companies, and 73% of small companies use email, which is not significant. On the other hand, when it comes to the use of websites, 82% of large companies have their websites, while only 31% of small companies and 65% of medium companies do. In other words, companies are connected to the internet but are limited to using rudimentary tools such as social media and messaging platforms. It is because they have limited digital skills, lack knowledge on new technologies, and cannot use various digital services. In addition, most tourism businesses are small businesses, with a small number of staff members sharing multiple tasks, which leaves little time for innovation. Before COVID-19, tourism businesses that could not handle online reservations and payments were at a disadvantage. Still, after the COVID-19 epidemic, contactless payment methods are preferred by customers, and MSMEs that cannot handle digital payments are at an even more significant disadvantage.

Furthermore, one of the traditional structural weaknesses of the Central American economies is the high informality of employment. While just under 60% of Latin America as a whole is engaged in informal jobs, the percentage in Honduras, Nicaragua, and El Salvador exceeds that figure²² (see Figure 14-9). The tourism sector is highly informal due to its seasonal variability and lax regulations²³. In addition, according to the ILO's Technical Note²⁴, informal employment in tourism was higher than the informality in all other employment sectors as of 2019. For example, 63.3% of workers in hotels and restaurants were informal, compared with 51.8% informality in overall employment in Latin America and the Caribbean. The note states that the decline in the informality of workers in the tourism sector in the region after COVID-19 was not due to the creation of formal jobs or the formalization of existing jobs, but due to a significant reduction in informal occupations.

²⁰ IICA/IDB/Microsoft (Inter-American Institute for Cooperation on Agriculture/Inter-American Development Bank/Microsoft) (2020), Rural Connectivity in Latin America and the Caribbean, a Bridge for Sustainable Development in a Time of Pandemic.

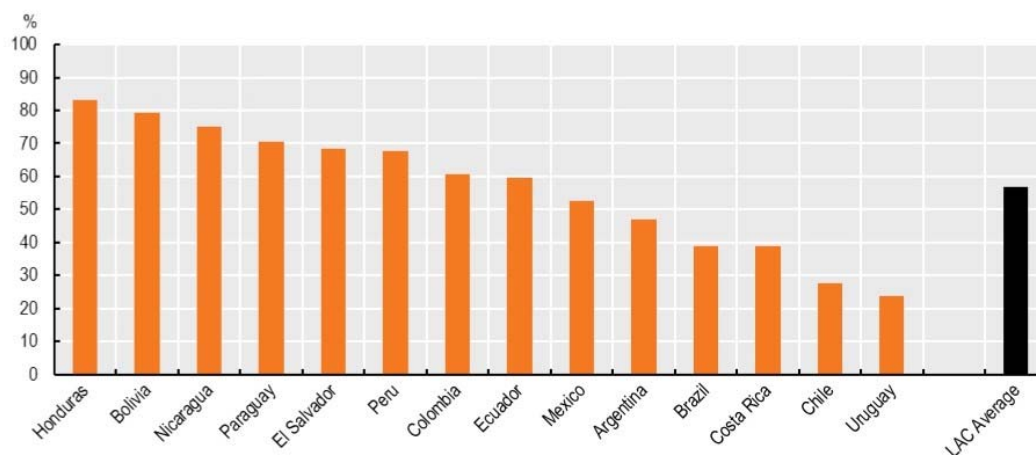
²¹ L. Peralta, Tourism in Central America and the Dominican Republic in the Face of Digital Technologies: Challenges and Opportunities for MSMEs (LC/MEX/TS.2021/10), Mexico City, Economic Commission for Latin America and the Caribbean (ECLAC), 2021.

²² OECD (2020), COVID-19 in Latin America and the Caribbean: Regional Socio-economic Implications and Policy Priorities

²³ Goretti, M., Leigh, L. Y., Babii, A., Cevik, S., Kaendera, S., Muir, D. V., Nadeem, S., & Salinas, G. (2021). Tourism in the Post-Pandemic World, Departmental Papers, 2021(002), A001. Retrieved Oct 31, 2021, from <https://www.elibrary.imf.org/view/journals/087/2021/002/article-A001-en.xml>

²⁴ Quicaña, E. (2021, June). Towards a Sustainable Recovery of Employment in the Tourism Sector in Latin America and the Caribbean. International Labour Organization.

Figure 2. Percentage of informal employment in selected Latin American countries, 2018 or latest available year



Note: Regional average is an unweighted average. Informality refers to i) contributing family workers; ii) employees not covered by social security contributions of the employer and/or not entitled to paid sick leave and/or paid annual leave; iii) own-account workers and employers where their economic units are not legally recognised and/or are non-compliant with fiscal and social security obligations. Due to the systematic approach to produce international comparable data and given that the use of household surveys differs from labour force surveys, informality estimates may differ from the estimates presented in other sources including national statistics. These figures are subject to updates.

Source: OECD Development Centre calculations based on household surveys, 2018 or latest available year. Informality definition is based on ILO and data construction is based on the systematic approach proposed in "The Key Indicators of Informality based on Individuals and their Households" (KIIbIH) database (OECD/ILO, 2019^[14])(OECD/ILO, 2019). Due to the release of public microdata for updated household surveys and increasing efforts to raise international comparability, figures are subject to updates.

Source: OECD (2020), COVID-19 in Latin America and the Caribbean: Regional Socio-economic Implications and Policy Priorities

Figure 14-9 Informality of Employment

4) Marketing and Promotion

CATA, responsible for the marketing and promotion of SICA member states, has encouraged tourism from six European countries (France, Germany, Italy, the Netherlands, Spain, and the United Kingdom) to Central America. While the strategy of concentrating limited marketing resources on priority markets makes sense, it has backfired under COVID-19. Since inbound tourism from Europe is in a condition without a good prospect, CATA has decided to promote intra-regional tourism²⁵ for the first time. Still, it is a process of trial and error due to the lack of know-how and statistical data that can contribute to strategic planning. Furthermore, in 2020, after the COVID-19 pandemic, member states reduced their contributions to less than half of the usual amount, so there is also lack of funds for activities²⁶.

On the other hand, according to the WTTC report²⁷, the trend in tourism after the COVID-19 pandemic will be a growing interest in authentic and immersive experiences, with growing demand for community-based tourism²⁸ (CBT) and cycling, for example. Furthermore, in a June 2020 survey, 76% of tourism professionals expected customers to become more interested in sustainability after the COVID-19 crisis, compared with 69% of professionals across all industries²⁹. Another survey found that 82% of travelers want to travel more responsibly, and half of them want to choose hotels, cruise lines,

²⁵ Although there is no clear definition of intra-regional tourism, this chapter refers to tourism activities conducted by residents of Central American countries within the territory of Central America.

²⁶ Interview with CATA on November 5, 2021

²⁷ World Travel & Tourism Council: To Recovery & Beyond: The Future of Travel & Tourism in the Wake of COVID-19 - September 2020

²⁸ There are various definitions, but generally speaking, it is "a way of promoting tourism based on the community, with the community taking the initiative and promoting tourism autonomously." (Yamamura, T., Kobayashi, H., Ogawa, H., & Ishimori, S. (2010). Case Studies of Community-Based Tourism: Towards a Sustainable Happy Relationship between Tourism and Community: Vol. CATS Library Vol. 3. Center for Advanced Tourism Studies, Hokkaido University and Japan Travel Bureau Foundation.)

²⁹ Voice of the Industry: Travel After Coronavirus. (2020, August). Euromonitor. Retrieved October 31, 2021, from <https://www.euromonitor.com/voice-of-the-industry-travel-after-coronavirus/report>

and travel agencies with solid sustainability policies³⁰. Interviews with CATA also revealed that, although there is no statistical data, an increasing number of diasporas³¹, especially in El Salvador, Guatemala, and Honduras, living in North America visit there with their families and stay long in hotels costing USD 200-300 per night. It was informed by a tour operator in El Salvador that an increasing number of El Salvadorans who have lived in the United States for many years are renting buses to travel within El Salvador with their families and relatives who live in El Salvador. Such diasporas have a dangerous image of their homeland that remains unchanged from the days of the civil war, and are willing to pay a price for safety and comfort if they can receive value for their money³². If tourism businesses cannot respond to these new trends after COVID-19, the recovery of the tourism sector would be delayed.

5) Tourism Crisis Management

The COVID-19 pandemic forced countries to restrict movement and seal their borders, but they could not coordinate and establish uniform entry restrictions and quarantine measures among neighboring countries³³. Since the Central American countries border each other, inbound and intra-regional tourists from the region are likely to have chosen different destinations, fearing that they would get stuck along the way. Lack of intergovernmental coordination in the face of a tourism crisis such as COVID-19 could harm tourism's early resumption and recovery. To promote "Central America" as a destination, it is necessary for governments to mutually agree on protocols to reassure both inbound and intra-regional tourists and increase their willingness to travel to Central America even in the event of a crisis.

Although not directly related to the COVID-19, a large amount of sargassum, a planktonic seaweed, has been propagating from the Caribbean to the Gulf of Mexico and has an enormous negative impact on tourism and fisheries. Details will be discussed in the Caribbean section, but some damage has also been reported in Central America along the Caribbean coast. However, in the hearing with SITCA, it was stated that there was insufficient information to formulate countermeasures because this event has not occurred on the Pacific side.

(2) The Caribbean

Based on the information obtained from the survey so far, the vulnerabilities of the Caribbean tourism sector are summarized in Table 14-14.

Table 14-14 Vulnerabilities of the Tourism Sector in the Caribbean

Area	Issues Since Before COVID-19	Vulnerabilities Revealed by COVID-19
Laws and regulations	Difficulties in accessing financial services for MSMEs	Cash strapped MSMEs • Delays in responding to digital and online payments by not having a bank account or credit card
	Low penetration rate of debit cards and credit cards	Delays in responding to digital and online payments
	Delays in the development of legal systems for payments outside the banking system	
	The market size that makes it difficult for Fin Tech companies to enter	
	Insufficiency of Tourism Law	Pressure on the business of legal operators due to the increase of illegal ones
Human resources	Lack of digitalization in MSMEs	Delayed adoption of digital payments and online booking => Exclusion from the tourism value chain
	High level of informality in the tourism sector	Worsening of the poverty level of those not covered by the Social Security System
	The gender gap in the digitalization	Lagging digitalization in the tourism sector, which has a high proportion of female business owners and employees

³⁰ Responsible travel is a priority Virtuoso poll finds. (2021, April 15). Travel Weekly. Retrieved October 31, 2021, from <https://www.travelweekly.com/Travel-News/Travel-Agent-Issues/Responsible-travel-is-a-priority-Virtuoso-poll-finds>

³¹ A loose imagined community of people who are widely dispersed but recognize their identity in the homeland of their ancestors (Satoshi Yamaguchi (2017), "Scottish Diaspora and Roots Tourism", Jinbun Ronkyu, Vol. 67, No. 1, pp. 19-42)

³² Interview with Tour Bul El Salvador on December 1, 2021

³³ Questionnaires collected from CATA

Area	Issues Since Before COVID-19	Vulnerabilities Revealed by COVID-19
Marketing and promotion	<ul style="list-style-type: none"> • Dependence on cruise tourism • Dependence on "Sun, Sand & Sea" tourism by foreign-affiliated all-inclusive resorts =>	Delay in addressing new needs (e.g., long-term remote workers, experiential tourism, responsible tourism)
	<ul style="list-style-type: none"> • Limited effect on the local economy due to the tourism leakage • Exclusion of local MSMEs from the tourism value chain Mono-product image of "Sun, Sand & Sea"	
Tourism crisis management	Inadequate risk management for damage to the tourism industry caused by natural disasters, such as hurricanes (Inadequate crisis management specific to the tourism industry, crisis management only on a business-by-business basis, and inadequate continuous updating of BCPs)	Delayed or inadequate response to the tourism crisis caused by infectious disease
	Damage to tourism caused by sargassum (not directly related to COVID-19, but has been an issue since 2011)	

Source: Prepared by the Study Team based on the questionnaires collected from OPETUR and interviews

Although many of these vulnerabilities are common to Central America, the following section discusses vulnerabilities specific to the Caribbean region.

1) Laws and Regulations

In addition to the lack of legislation regulating digital payments outside the banking system, the volume of financial transactions in the Caribbean is not large enough for international Fin Tech companies to recoup their investments. For these reasons, MSMEs operating in the Caribbean cannot use payment providers such as Paypal³⁴, common in other regions. Therefore, Caribbean MSMEs have been slow to adopt online and digital payments, and COVID-19 highlights this vulnerability. In fact, as of 2021, less than one-third of MSMEs in the Caribbean sell online. It is a significant problem, especially in the tourism sector, given that the vast majority of international travelers book and pay online³⁵.

2) Human Resources

The gender gap in the impact of COVID-19 cannot be ignored in the Caribbean, where 50%-70% of the workforce in the tourism sector is female³⁶. According to the report of a survey conducted by the IDB in April 2020 in six countries: Bahamas, Barbados, Jamaica, Trinidad and Tobago, Suriname, and Guyana³⁷, the incidence of unemployment varied by gender. Women were more likely to be unemployed than men, with 44.3% of women unemployed against 36.5% of men. In addition, about 40% of single men in all countries surveyed lost their jobs in April 2020, compared with 47% of single women. The report notes that unemployment is higher in countries more dependent on tourism. The gender gap is statistically and economically significant and is likely to exacerbate existing inequalities in the labor market. In addition, UNDP's Future Tourism project in the Eastern Caribbean³⁸ found differences between men and women in the technology readiness of the 908 companies that applied for its support between April and June 2021 (see Table 14-15).

³⁴ A payment processing service that can be used for online shopping. PayPal acts as an intermediary between consumers and businesses, allowing consumers to make payments without providing personal information to e-commerce companies.

³⁵ UNDP Barbados and the Eastern Caribbean. (2021, September). Rethinking Tourism & MSMEs in Times of COVID-19.

³⁶ UNDP Barbados and the Eastern Caribbean. (2021, September). Rethinking Tourism & MSMEs in Times of COVID-19.

³⁷ Giles Álvarez, L., & Khadan, J. (2020, December). Mind the Gender Gap: A Picture of the Socioeconomic Trends Surrounding COVID-19 in the Caribbean with a Gender Lens. Inter-American Development Bank.

³⁸ A project by the UNDP Barbados and Eastern Caribbean Office targeting ten countries in the Eastern Caribbean region (Anguilla, Antigua and Barbuda, Barbados, British Virgin Islands, Dominica, Grenada, Montserrat, Saint Kitts and Nevis, Saint Lucia and Saint Vincent and the Grenadines) to provide technical cooperation and grants to MSMEs in the tourism sector. The duration of the project is 18 months, from January 2021 to June 2022, with a budget of USD 1.5 million.

Table 14-15 Status of the Digital Readiness of Tourism MSMEs in Eastern Caribbean

	Women-owned	Mixed ownership	Men-owned	Total	
Online presence (use any digital media to promote businesses, e.g., Facebook)	77%	91%	87%	760	84%
Online reservations/orders	54%	65%	61%	537	59%
Online payment	29%	34%	36%	291	32%
Ownership-Gender distribution	45%	31%	24%	100%	
Total	413	279	216	908	

Source: UNDP Barbados and the Eastern Caribbean. (2021, September). Rethinking Tourism & MSMEs in Times of COVID-19.

However, during the field survey conducted from November to December 2021, the interviewees were asked about the gender gap in the tourism sector, but no particular concerned comments were heard regarding the issue. Rather, the majority of the respondents said that the gap between MSMEs and large enterprises is more acute.

3) Marketing and Promotion

In the Caribbean, dependence on cruise tourism has also been a significant problem since before COVID-19. According to a study by Duke University, over the decade from 2006 to 2015, overall cruise revenues have mainly remained flat despite increasing arrivals. In Barbados, for example, the number of cruise passengers increased by 33% during the 2006-2015 cruise season, while the average per capita expenditure declined by 30%³⁹. In the Caribbean region, 68% of tourist spending is on imported goods⁴⁰. Another study conducted by Duke University in Saint Lucia⁴¹ revealed that cruise lines capture 70% of tourist spending by selling pre-departure excursions⁴². Thus, tourism leakage, in which a tourist destination loses its tourism revenue to foreign companies, is severe in the Caribbean, and it is also true for all-inclusive⁴³ resorts. While most cruise line employees are foreigners, resorts hire local talent but still rely on imports for most of their consumables. In Jamaica, for example, imports account for 30% of travel and tourism expenditures⁴⁴. Thus, it is difficult for local MSMEs to participate in the tourism value chain in the Caribbean, and their economic impact is limited.

In addition, as mentioned earlier, the trend in Post COVID-19 is toward responsible tourism, where tourists take responsibility for their awareness and actions to create better destinations, and there is a growing demand for more authentic and interactive experiences. However, the reliance on traditional cruise tourism and all-inclusive resorts may slow down the response to new needs. Additionally, a new market that emerged after COVID-19 is the North American remote worker who stays with the family for extended periods. In the United States, between 20% to 38% of the working-age population is employed in jobs that allow them to work from any location, and 26% of United States workers who worked remotely after the COVID-19 epidemic say they want to do so permanently⁴⁵. Barbados was quick to respond to this trend, announcing the creation of the "Barbados Welcome Stamp" visa for remote workers in July 2020. The application fee for this visa is not cheap, at USD 2,000 for individuals and USD 3,000 for families, but it allows foreigners to live and work in Barbados for one year tax-free⁴⁶. Soon, the surrounding Caribbean countries followed, but remote workers were faced with a lack of information and complicated procedures in such situations as opening a local bank account, arranging a rental car, receiving packages from abroad, and finding a school for their children⁴⁷.

³⁹ Daly, J., & Fernandez-Stark, K. (2017, August). Barbados in the Cruise Tourism Global Value Chain. Duke University Global Value Chains Center.

⁴⁰ UNDP Barbados and the Eastern Caribbean. (2021, September). Rethinking Tourism & MSMEs in Times of COVID-19.

⁴¹ Daly, J., & Fernandez-Stark, K. (2018, June). St. Lucia in the Cruise Tourism Global Value Chain. Duke University Global Value Chains Center.

⁴² A land tour, usually available at ports of call, sold by cruise lines or tour operators to cruise passengers.

⁴³ A form of accommodation in which the accommodation, all-you-can-eat, all-you-can-drink, activities, entertainment, etc., are included in the reservation price in advance, with basically no additional costs.

⁴⁴ Bartlett, E. (2017, May 24–25). Tourism Reform in the Caribbean- The Jamaican Experience [Conference presentation]. 7th Annual Meeting of the Board of Governors of the Caribbean Development Bank, Turks and Caicos Islands.

⁴⁵ UNDP Barbados and the Eastern Caribbean. (2021, September). Rethinking Tourism & MSMEs in Times of COVID-19.

⁴⁶ About Visa. (n.d.). 12 Month Welcome Stamp. Retrieved November 4, 2021, from <https://barbadoswelcomestamp.bb/about-visa/>

⁴⁷ UNDP Barbados and the Eastern Caribbean. (2021, September). Rethinking Tourism & MSMEs in Times of COVID-19.

4) Tourism Crisis Management

Tourism is a sector that is strongly affected by climate change, as it often makes use of natural resources and is climate-sensitive. A WTTC report⁴⁸ estimated that the 2017 hurricane season brought 826,100 fewer visitors to the Caribbean than had been forecast before the hurricanes. These visitors would have generated USD 741 million and supported 11,005 jobs had it not been for the damage caused by the hurricanes. And one of the reasons why the tourism sector is so vulnerable to the crisis is that there is not enough capacity, either in the public sector, policymakers, or private sector, to implement the necessary strategies to mitigate the risks⁴⁹. In this context, the Global Tourism Resilience and Crisis Management Centre (GTRCMC), headquartered at the University of the West Indies, was launched in 2018 at the initiative of Jamaica's Minister of Tourism. The vision of the GTRCMC is to provide support to tourism destinations around the world in learning and embedding methods to prepare for, respond to, and recover from crises that affect tourism activities and threaten economies and people's livelihoods⁵⁰. In addition to traditional natural disasters, the COVID-19 has revealed the vulnerability of the tourism sector to health-related crises. According to Saint Lucia's Ministry of Tourism, Information and Broadcasting, the country's hotels are required to have safety and disaster management plans in place, but a health crisis like COVID-19 was not expected⁵¹.

Although not directly related to the COVID-19, one of the crises that caused significant damage to the tourism industry in the Caribbean in recent years is the mass outbreak and drift of sargassum seaweed, thought to be caused by climate change. There are various theories on the mechanism of the outbreak. Although the destination and amount of sargassum drifting vary yearly, it increases every year, and the damage is becoming more serious⁵². In the Dominican Republic, the damage was severe in 2018, 2019, and 2021⁵³. Sargassum decomposes when it washes ashore and causes health problems due to skin contact and gas emissions. Sargassum floating in the sea is usually a habitat for various marine organisms. Still, when it multiplies, it harms the ecology of marine organisms, corals, and other seaweeds. Since they fill the beaches with brown color and spoil the aesthetics (see Figure 14-10) and emit a foul odor, they hurt the image of the "turquoise sea and white sandy beaches" of the Caribbean, which is a big blow to the tourism industry. Due to ocean currents, the amount of drift depends on the location (see Figure 14-11). More sargassum tends to be found on the south and east sides of the island than on the north and west sides. Some people have started using biomass power generation, bio-fertilizer, and cosmetics. However, still many problems are to be solved, such as the need to collect sargassum before it washes ashore, and a fundamental solution has not yet been reached.



Source: <https://www.theatlantic.com/science/archive/2019/07/great-atlantic-sargassum-belt-here-stay/593290/>

Figure 14-10 The Beach Where a Large Quantity of Sargassum Washed Ashore

⁴⁸ World Travel & Tourism Council. (2018). Caribbean Resilience and Recovery: Minimizing the Impact of the 2017 Hurricane Season on the Caribbean's Tourism Sector.

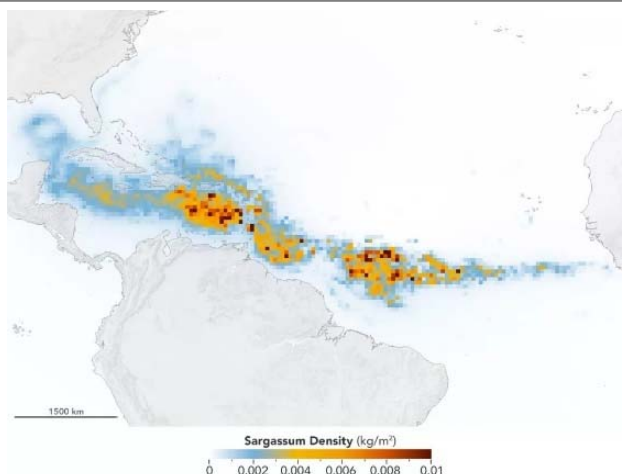
⁴⁹ Clarke, J. (2013, September 5–6). Natural Disaster Management & Resilience from the Perspective of the Tourism Sector [Conference presentation]. XXI Inter-American Congress of Ministers and High-level Authorities of Tourism, San Pedro Sula, Honduras.

⁵⁰ GTRCMC. (2021). Concept Project Proposal to the Japan International Cooperation Agency - JICA.

⁵¹ Interview with the Ministry of Tourism, Information and Broadcasting, Saint Lucia, on December 16, 2021

⁵² JICA, "Issues in developing countries where private-sector products and technologies are expected to be utilized (Issue Sheet No. 02-200-0035)," <https://minkanrenkei.jica.go.jp/area/card/26067/7kUpCj/M?S=ldobta0oal0k> Retrieved on November 4, 2021.

⁵³ Questionnaire collected from OPETUR



Source: <https://www.space.com/satellites-spot-largest-seaweed-bloom-on-earth.html>

Figure 14-11 Distribution of Sargassum (2019)

(3) Similarities and Differences between Central America and the Caribbean

Table 14-16 summarizes the issues that existed before COVID-19 and the vulnerabilities revealed by COVID-19, as described in 14.7.1 (1) and (2), and those common to Central America or the Caribbean and that are unique to each region.

Table 14-16 Similarities and Differences in the Fragility of the Tourism Sector in Central America and the Caribbean

Area	Region	Issues Since Before COVID-19	Vulnerabilities Revealed by COVID-19
Laws and regulations	Common to both regions	Difficulties in accessing financial services for MSMEs	Cash strapped MSMEs
		Low penetration rate of debit cards and credit cards	Delays in responding to digital and online payments
		Insufficiency of Tourism Law	Pressure on the business of legal operators due to the increase of illegal ones
	Central America-specific	High cost of intra-regional air travel	Negative impact on intra-regional tourism
		Low safety of overland travel within the region	
	Caribbean-specific	Delays in the development of legal systems for payments outside the banking system	Delays in responding to digital and online payments
The market size that makes it difficult for Fin Tech companies to enter			
Human resources	Common to both regions	Lack of digitalization in MSMEs	Delayed adoption of digital payments and online booking => Exclusion from the tourism value chain
		High level of informality in the tourism sector	Worsening of the poverty level of those not covered by the Social Security System
Marketing and promotion	Central America-specific	The concentration of marketing resources on specific markets	Slow response to new demands (e.g., intra-regional tourism, North American diaspora)
		Inadequate regional tourism statistics	Difficulty in developing strategies to meet new needs
	Caribbean-specific	<ul style="list-style-type: none"> • Dependence on cruise tourism • Dependence on "Sun, Sand & Sea" tourism by foreign-affiliated all-inclusive resorts =>	Delay in addressing new needs (e.g., long-term remote workers, experiential tourism, responsible tourism)
		<ul style="list-style-type: none"> • Limited effect on the local economy due to the tourism leakage • Exclusion of local MSMEs from the tourism value chain 	
		Mono-product image of "Sun, Sand & Sea"	
Tourism crisis management	Common to both regions	Damage to tourism caused by sargassum (not directly related to COVID-19, but has been an issue in recent years)	

Area	Region	Issues Since Before COVID-19	Vulnerabilities Revealed by COVID-19
		Inadequate risk management for damage to the tourism industry caused by natural disasters, such as hurricanes (Inadequate crisis management specific to the tourism industry, crisis management only on a business-by-business basis, and inadequate continuous updating of BCPs)	Delayed or inadequate response to the tourism crisis caused by infectious disease
	Central America-specific	Lack of coordination among countries in tourism policy	Disruptions in immigration restrictions and quarantine measures →Negative impact on inbound and intra-regional tourism promotion

Source: Study Team

The significant difference between the two regions is their geographical conditions. Since Central American countries are connected by land, tourists from Europe and the United States tend to travel to several countries in one stay, which is also the target of CATA's promotion. As the number of tourists from Europe and the United States has plummeted, CATA is trying to promote tourism within Central America by Central American residents. Still, the lack of uniformity in entry-exit and quarantine protocols among Central American countries and the low safety of overland border crossings are obstacles.

While the need to respond to new markets is common to both regions, the number of remote workers from North America who stay in one destination for long periods is noticeable in the Caribbean. As a result, the development of tourism products and services that meet the needs of remote workers is required, and the key is whether the tourism sector, which has relied on cruise tourism and all-inclusive resorts, can respond.

14.7.2 Hypothesis on the Development Cooperation for With/Post COVID-19 Society in Central America and the Caribbean

In the presentation by the Private Sector Development Group of the JICA's Economic Development Department at the "Seminar on the Implementation Policy of JICA Operations" organized by the Engineering and Consulting Firms Association (ECFA) on June 9, 2021, "Sustainable Tourism Development" was mentioned as one of the JICA's three approaches for private sector development. Furthermore, it was explained that the group would work on tourism development in response to the post COVID-19 new normal. The presentation material of the seminar pointed out the vulnerability of the tourism industry, saying, "When a crisis occurs, the market shrinks rapidly, and it takes long to recover to the number of international tourists," and stated, "it is essential to strengthening the resilience of the tourism industry." The following four points are listed as specific measures to be taken.

- 1) Strengthening risk management
- 2) Conversion from "number of tourists" to "tourist spending"
- 3) Breakaway from dependence on a single market
- 4) Utilization of ICT

Based on these four measures to strengthen the resilience of the tourism industry and the current situation of the tourism sector revealed in the surveys thus far, the future direction of tourism development cooperation is summarized in Table 14-17.

Table 14-17 Hypothesis on the Nature of Tourism Development Cooperation

	Measures to Strengthen Resilience of Tourism Industry (Excerpt from JICA's presentation)	Direction of Tourism Development Cooperation
1	Strengthening risk management Protect tourism from crises, reduce the impact of crises, and prepare for quick recovery in the event of a crisis.	<ul style="list-style-type: none"> ▪ Dissemination of specific methods for tourism risk management related to natural disasters and health ▪ Improving financial inclusion of MSMEs ▪ Countermeasures against sargassum damage
2	Conversion from "number of tourists" to "tourist spending" Promote tourism development that raises tourism spending per capita, not tourism development that aims to increase the number of tourists.	<ul style="list-style-type: none"> ▪ Creating a mechanism for tourism expenditures to stay in the region ▪ Development of statistics that contribute to strategy formulation

	Measures to Strengthen Resilience of Tourism Industry (Excerpt from JICA's presentation)	Direction of Tourism Development Cooperation
3	Breakaway from dependence on a single market Design a business plan that allows for business continuity in the event of a crisis in a market, rather than relying on a single market (e.g., Asia, inbound)	<ul style="list-style-type: none"> ▪ Capacity development of MSMEs to respond to new demands ▪ Development of statistics that contribute to the formulation of marketing strategies
4	Utilization of ICT Ensure safety and security by expanding contactless services using ICT and introduce effective and efficient acquisition of tourism revenue through MaaS.	Support for MSMEs in terms of both hardware (ICT infrastructure) and software (ICT literacy)

Source: Study Team

14.7.3 Discussion about Possible Actions and Support Measures to Overcome Vulnerabilities

(1) Central America

Based on the information available, the vulnerabilities of the tourism sector in Central America revealed by COVID-19 and the corresponding directions for overcoming these vulnerabilities are classified into four categories: "promotion of MSMEs," "promotion of digitalization," "tourism crisis management," and "promotion of intra-regional cooperation". These are summarized in Table 14-18.

Table 14-18 Draft Measures to Overcome the Vulnerabilities of the Tourism Sector in the Central American Region

Vulnerabilities Revealed by COVID-19	Possible Measures to Overcome the Vulnerabilities
<ul style="list-style-type: none"> ▪ Cash strapped MSMEs ▪ Delays in responding to digital and online payments by not having a bank account or credit card ▪ Delay in addressing new needs and markets in With/Post COVID-19 society (e.g., intra-regional tourism, responsible tourism, diaspora market) 	MSMEs promotion <ul style="list-style-type: none"> ▪ Improvement of access to financial services, including the development of financial products tailored to the needs of MSMEs in the tourism sector ▪ Capacity development to respond to new needs and markets of With/Post COVID-19
Delayed adoption of digitalization, including digital payments and digital marketing (particularly female owners and businesses in rural areas)	Promotion of digitalization <ul style="list-style-type: none"> ▪ Development of ICT infrastructure (especially in rural areas) ▪ Capacity development of MSMEs in digital payments and digital marketing ▪ Subsidies to promote digitization and tax incentives to encourage investment in digitization ▪ Integration of digitalization promotion into tourism promotion policies
<ul style="list-style-type: none"> ▪ Delayed or inadequate response to the tourism crisis caused by natural disasters and infectious disease ▪ (Damage caused by sargassum) 	Tourism crisis management <ul style="list-style-type: none"> ▪ Dissemination of the concept of tourism crisis management and capacity building before and after the crisis ▪ (A detailed study on the impact of sargassum on the tourism sector)
<ul style="list-style-type: none"> ▪ Disarray within the region of response to the tourism crisis caused by infectious diseases ▪ Delayed response to the promotion of intra-regional tourism 	Promotion of regional collaboration <ul style="list-style-type: none"> ▪ Creation of unified rules for frontline measures in the event of an infectious disease outbreak ▪ Appropriate fares through liberalization of air transportation ▪ Improvement of the safety of cross-border land transportation ▪ Development of statistics that contribute to region-wide marketing

Source: Study Team

1) MSMEs Promotion

According to the ECLAC report⁵⁴, in terms of the number of enterprises, microenterprises account for 89% of the hotel and restaurant sector in Latin America, while small enterprises account for 10%, medium enterprises for 1%, and large enterprises for less than 1%. MSMEs need a stable access to finance to do business, but there is an information asymmetry between commercial banks and MSMEs due to the lack of credit data. Therefore, it is generally more difficult for MSMEs to raise funds than

⁵⁴ M. Dini y G. Stumpo (coords.), "Mipymes en América Latina: un frágil desempeño y nuevos desafíos para las políticas de fomento", Documentos de Proyectos (LC/TS.2018/75/Rev.1), Santiago, Comisión Económica para América Latina y el Caribe (CEPAL), 2020

large enterprises. In the focus group interviews conducted by ECLAC with tourism MSMEs, there were comments that the high-interest rates and strict guarantee requirements of commercial banks' financial products are out of touch with the reality of MSMEs and that tourism is considered to be a risky business, which limits their financing options⁵⁵. The same point was made in the interview with SITCA. Under these circumstances, SITCA, through Banco Centroamericano de Integración Económica (BCIE), has established the Programa Regional de Competitividad y Sostenibilidad para las Mipymes Turísticas (PROMITUR), which was launched in 2018. However, with an increasing number of MSMEs in the tourism sector being economically distressed by COVID-19, SITCA has recognized the need to develop financial products tailored to the needs of MSMEs in the tourism sector⁵⁶.

In addition, interviews with tourism operators revealed that there are many informal tourism operators who provide services without the necessary licenses and liability insurance. While COVID-19 has increased online transactions and the convenience of both businesses and users, it has also led to an increase in the number of illegal businesses, forcing unfair competition among tourism businesses that follow the laws and regulations and operate within the limits of the law. One of the reasons for this is the inadequacy of the legal system. For example, it has been pointed out that the main purpose of El Salvador's Tourism Law⁵⁷ is to promote investment, and it lacks the perspective of developing a fair market environment⁵⁸.

As already mentioned, the With/Post COVID-19 society is experiencing changing trends in tourism. For example, it is pointed out that there is an increase in domestic travel and travel to neighboring countries, the need for hygiene considerations such as virus countermeasures, the expansion of the diaspora market, an increase in family and small group travel, and an increase in demand for outdoor experiences and stay-type tourism. On the other hand, it is not easy for MSMEs, which are busy surviving the COVID-19 disaster, to gather information on these "new normal" tourism trends and take the necessary measures. In this context, Taiwan's "Proyecto Fortalecimiento de la Integración y Promoción Turística Centroamericana (Fase II)," currently implemented in Central America, held an online training course on digital marketing for MSMEs in the tourism sector in Belize, Guatemala, Honduras, and Nicaragua in April 2021, with the participation of approximately 280 companies⁵⁹. In this training, the participants were instructed on specific methods to increase their digital presence by using TripAdvisor⁶⁰ and Google Business Profile⁶¹.

2) Promotion of Digitalization

Lack of digitalization has been identified as a vulnerability of the tourism sector in both literature and interviews. Although there are some hardware (infrastructure) problems, many of the respondents in the field survey pointed out that the lack of resources and capabilities of MSMEs is more serious.

One possible solution is to strengthen the ability of MSMEs to use digital tools such as digital payments and digital marketing. According to the ECLAC report⁶², digital transformation (DX) maturity can be divided into four levels: "Initial," "Adoption," "Expansion," and "Sustainability." Therefore, when designing capability enhancement measures, it is necessary to consider enhancing the capabilities of digital tools at different levels (see Table 14-19), such as "Basic," "Intermediate," and "Advanced," depending on the level of digitalization of each MSME.

⁵⁵ L. Peralta, *Tourism in Central America and the Dominican Republic in the face of digital technologies: challenges and opportunities for MSMEs* (LC/MEX/TS.2021/10), Mexico City, Economic Commission for Latin America and the Caribbean (ECLAC), 2021.

⁵⁶ Interview with SITCA on November 2, 2021

⁵⁷ Decreto No.899 Ley de Turismo

⁵⁸ Interview with Tour Bus El Salvador on November 30, 2021

⁵⁹ Presentation material of CATA and questionnaires collected from SITCA

⁶⁰ One of the world's most viewed travel review sites.

⁶¹ A tool for displaying and managing business information on Google services such as Google Search and Google Maps.

⁶² L. Peralta, *Tourism in Central America and the Dominican Republic in the Face of Digital Technologies: Challenges and Opportunities for MSMEs* (LC/MEX/TS.2021/10), Mexico City, Economic Commission for Latin America and the Caribbean (ECLAC), 2021.

Table 14-19 Examples of Capacity Building in the Use of Digital Tools by Level

Basic	Intermediate	Advanced
<ul style="list-style-type: none"> ▪ My first website ▪ Traffic acquisition, SEO and advertising on search engines ▪ Web analytics ▪ Marketing through email (basic) ▪ Distribution of multichannel content, starting on the website ▪ Social media, sharing ▪ Content and visitor profiles ▪ Profiles hub 	<ul style="list-style-type: none"> ▪ Adaptive web vs mobile applications ▪ Traffic acquisition, SEO and offers ▪ Conversion analysis ▪ Marketing through segmented mail ▪ Customers distribution (reports) ▪ Standalone e-commerce ▪ Campaign management ▪ Basic automation ▪ Advanced automation 	<ul style="list-style-type: none"> ▪ Predictive analysis ▪ Marketing through automated email ▪ Social media, commitment ▪ Integrated customer relationship management ▪ Integrated e-commerce ▪ Campaigns ▪ Create communities ▪ Integrated communities ▪ Automated decision-making ▪ Predictions ▪ Adaptive impression ▪ Personalization based on rules ▪ Behavior by segmentation ▪ Multi-variable testing

Source: L. Peralta, Tourism in Central America and the Dominican Republic in the face of Digital Technologies: Challenges and Opportunities for MSMEs (LC/MEX/TS.2021/10), Mexico City, Economic Commission for Latin America and the Caribbean (ECLAC), 2021.

In addition, ECLAC's report mentions the need to establish subsidies to promote DX and innovation in enterprises and tax incentives that encourage investment in DX. The report also points out the importance of including innovation and DX promotion among MSMEs in tourism promotion policies and the need for collaboration with related sectors.

3) Tourism Crisis Management

SITCA has a memorándum of understanding (MOU) with SICA's disaster management affiliate, Centro de Coordinación para la Prevención de los Desastres en América Central y República Dominicana (CEPREDENAC). “Taller de Nivelación Básico en Gestión Integral del Riesgo de Desastres (GIRD)” was held in Honduras, Panama, and Guatemala. CEPREDENAC had been working on risk mapping, evacuation planning for hotels, and improving infrastructure, but these activities have stalled due to COVID-19. In addition, CEPREDENAC has a plan to grant a certificate to hotels that meet the "Criterios de Hoteles Resilientes" crisis management standards⁶³. Although various activities are taking place, they are still limited to individual business base, and it is necessary for the entire destinations, including local governments, to take action.

Regarding the damage caused by sargassum, in the interview with SITCA, it was stated that they are aware of the damage on the Caribbean coast. Still, since the problem has not occurred in the Pacific side where SITCA is based, a survey is needed first to take countermeasures. In fact, in the JICA report on the Sargassum damage⁶⁴, it was suggested that the economic loss due to sargassum damage in the tourism sector should be quantified.

4) Promotion of Regional Collaboration

Before COVID-19, CATA promoted the inbound market, but since the COVID-19, CATA has also been promoting intra-regional tourism. However, one of the problems is the lack of unified protocols for entry regulations and quarantine measures in Central American countries. Therefore, related to tourism risk management, it is necessary to take actions in advance to ensure that protocols for entry and departures and hygiene are unified within the region in the event of a crisis such as COVID-19 in the future.

In addition, both SITCA and CATA pointed out the cost of intra-regional air travel and the safety of overland transportation as obstacles to promoting intra-regional tourism. Since the price of intra-regional air travel is almost the same as the price of a ticket to Europe, many people choose to travel to Europe over intra-regional travel. Under these circumstances, in October 2021, Volaris El Salvador, a subsidiary of Volaris, a low-cost carrier (LCC) headquartered in Mexico, started operations as the first LCC in El Salvador. Currently, the airline offers routes to San Pedro Sula in Honduras and Cancun and

⁶³ Interview with SITCA on December 2, 2021

⁶⁴ Japan International Cooperation Agency & Caribbean Regional Fisheries Mechanism. (2019, March). Fact-finding Survey Regarding the Influx and Impacts of Sargassum Seaweed in the Caribbean Region.

Mexico City in Mexico⁶⁵, and the situation is expected to improve in the future. Regarding travel by land, both organizations demonstrated their recognition that it is necessary to improve the road infrastructure and security in the vicinity of the borders.

Furthermore, CATA pointed out that the lack of statistical information for strategic planning has become a bottleneck in promoting intra-regional tourism, which CATA did not promote before COVID-19. Although each country has its tourism statistics, they are only for promoting tourism in their own country, so it is necessary to develop statistics to promote intra-regional tourism.

(2) The Caribbean

Based on the information currently available, the vulnerabilities of the Caribbean tourism sector revealed by COVID-19 and the corresponding directions for overcoming them are categorized into four: "MSMEs promotion," "promotion of digitalization," "tourism crisis management," and "minimization of tourism leakage" and summarized in Table 14-20.

Table 14-20 Draft Measures to Overcome the Vulnerabilities of the Tourism Sector in the Caribbean Region

Vulnerabilities Revealed by COVID-19	Possible Measures to Overcome the Vulnerabilities
<ul style="list-style-type: none"> ▪ Cash strapped MSMEs ▪ Delays in responding to digital and online payments by not having a bank account or credit card ▪ Delay in addressing new needs and markets in With/Post COVID-19 society (e.g., remote workers, responsible tourism, experiential tourism, diaspora market) 	<p>MSMEs Promotion</p> <ul style="list-style-type: none"> ▪ Improvement of access to financial services, including the development of financial products tailored to the needs of MSMEs in the tourism sector ▪ Capacity development to respond to new needs and markets of With/Post COVID-19
<p>Delayed adoption of digitalization, including digital payments and digital marketing (particularly female owners and informal sector)</p>	<p>Promotion of Digitalization</p> <ul style="list-style-type: none"> ▪ Development of ICT infrastructure ▪ Establishing a legal system for digital payments ▪ Providing incentives to Fin Tech companies ▪ Capacity development of MSMEs in digital payments and digital marketing ▪ Subsidies to promote digitization and tax incentives to encourage investment in digitization ▪ Integration of digitalization promotion into tourism promotion policies
<ul style="list-style-type: none"> ▪ Delayed or inadequate response to the tourism crisis caused by natural disasters and infectious disease ▪ (Damage caused by Sargassum) 	<p>Tourism Crisis Management</p> <ul style="list-style-type: none"> ▪ Dissemination of the concept of tourism crisis management and capacity building before and after the crisis ▪ Removal and effective utilization of sargassum
<p>Delay in addressing new needs and markets for With/Post COVID-19 (e.g., remote workers, responsible tourism, experiential tourism, diaspora markets)</p>	<p>Minimization of Tourism Leakage</p> <ul style="list-style-type: none"> ▪ Development of legal systems and infrastructure to support new markets ▪ Development of services for new markets ▪ Promotion of CBT ▪ Promotion of local producers' participation in the tourism value chain by adding value to local products

Source: Study Team

In the following analyses, only the parts that differ from the measures taken in the Central American region will be discussed.

1) Promotion of Digitalization

The measures to promote digitalization are the same as those in Central America. However, problems unique to the Caribbean region include the lack of a legal system for digital payments outside of banking transactions and the small market size of each country, which has prevented international Fin Tech companies from entering the region. Therefore, it is necessary to improve the business environment for companies providing digital payment services by developing a legal system for digital payments and incentivizing Fin Tech companies in and outside the region (e.g., tax incentives, loan programs).

⁶⁵ Sena, G. (2021, October 22). Volaris El Salvador started operations. Aviacionline.com. Retrieved January 30, 2022, from <https://www.aviacionline.com/2021/10/volaris-el-salvador-started-operations/>

2) Tourism Crisis Management

In Central America and the Caribbean, the regional disaster management plans are also supposed to be prepared by the government. Still, the nature of the tourism crisis management plan is different from that of the government's disaster management plan. For example, while the government's disaster management plan targets are the residents and their properties, tourism risk management targets the tourists visiting the area and tourism-related businesses. The significant difference between residents and tourists is that tourists have little knowledge of the area and do not know what kind of disasters or crises the area has experienced in the past, nor how to deal with them when they occur. In addition, tourists need assistance to return home, and tourist destinations have to deal with reputational damage.

The results of the field survey showed that the Dominican Republic does not have a crisis management plan specific to the tourism sector, and that Saint Lucia considers regular updates of business continuity plans (BCPs) and other information to be a challenge. On the other hand, the CTO pointed out that Jamaica, Barbados, and the Bahamas are the three leading countries in tourism emergency management in the Caribbean region. According to the CTO, these countries are characterized by 1) the inclusion of the tourism sector in crisis management and 2) the functioning of organizations such as the tourism emergency management committee as part of the national disaster management headquarters⁶⁶.

While the Caribbean region is making progress in tourism crisis management, at different levels in different countries, there are still issues to be addressed. For example, the development of a tourism crisis management plan that reflects the specific needs of the tourism sector, the establishment of a system to independently and continuously update the plan once it has been developed, and the promotion of a destination-wide approach that involves not only businesses but also local governments.

About the damage caused by sargassum, it is a fact that it has a significant impact on the tourism industry in the Caribbean region, and its removal and effective utilization are necessary. Therefore, the Government of Japan has signed a grant agreement with Antigua and Barbuda and Grenada in November and December 2020 to procure equipment to remove sargassum⁶⁷. In addition, there is potential for a wide range of other uses such as compost and bioenergy⁶⁸.

3) Minimization of Tourism Leakage

One of the tourism sector characteristics in the Caribbean region is the dependence on cruise tourism and foreign-owned all-inclusive resorts. Such characteristics result in a situation where the economic benefits of tourism are not returned to the local population, nor are they felt, i.e., economic benefits drain from the region (leakage). Therefore, it is necessary to respond appropriately to new markets to overcome this situation. Taking the remote worker market as an example, the creation of a long-term visa system for remote workers, as in the case of Barbados mentioned above, and the development of infrastructure such as co-working spaces that can be used for work vacations are examples. Furthermore, the provision of livelihood support services for long-term residents and opportunities to participate in community activities will also improve the convenience of long-term residents and strengthen their emotional ties to the tourist destination. In addition, it is effective to promote CBT, which adds value to tourist experiences through the active involvement of residents and the conservation and utilization of natural and cultural resources, to provide tourists with authentic experiences and allow more entities on the receiving end to benefit economically.

Furthermore, in light of the current situation where many imported products are consumed in tourist destinations in the Caribbean region, it is necessary to add value to local products by giving them uniqueness and stories to appeal to tourists. Such efforts will also appeal to the "nostalgic market" for

⁶⁶ Online interview with CTO on November 19, 2021

⁶⁷ Economic Relations. (n.d.). Embassy of Japan in Trinidad and Tobago. Retrieved November 7, 2021, from https://www.tt.emb-japan.go.jp/itpr_ja/cooperation.html

⁶⁸ Desrochers, A., S-A. Cox, H.A. Oxenford and B. van Tussenbroek. 2020. Sargassum Uses Guide: a Resource for Caribbean Researchers, Entrepreneurs and Policy Makers. Report funded by and prepared for the Climate Change Adaptation in the Eastern Caribbean Fisheries Sector (CC4FISH) Project of the Food and Agriculture Organization (FAO). Centre for Resource Management and Environmental Studies (CERMES), University of the West Indies, Cave Hill Campus. Bridgetown: Barbados. CERMES Technical Report No. 97, 172 pp.

the diaspora. Local MSMEs' participation in the tourism value chain can be promoted through the above actions⁶⁹.

14.8 Analysis and Recommendations Contributing to Sectoral Cooperation Policy

(1) Analysis to Contribute to the Cooperation Policy of the Tourism Sector

1) JICA Cooperation in Progress in Central America and the Caribbean

In defining the cooperation policy for the tourism sector, relevant JICA cooperation currently implemented in Central America and the Caribbean is organized as shown in Table 14-21. The knowledge and know-how of the existing cooperation will be utilized to pursue synergies, which will lead to higher development effectiveness and ensure sustainability.

Table 14-21 JICA Cooperation Related to the Tourism Sector Currently Implemented in Central America and the Caribbean

Country	Name	Department in Charge	Cooperation Scheme
Dominican Republic	Project for Enhancing the Mechanism for Sustainable Community-based Tourism Development in the North Region	Private Sector Development Group	Project
Guatemala	Advisory for One Village One Product Movement	Agriculture and Rural Development Group 1	Individual expert
Nicaragua	Advisory for the Promotion of the Revitalization of Local Economies through Roadside Stations	Agriculture and Rural Development Group 1	Individual expert

Source: Study Team

2) Guideline for Reference

At the G20 Rome Summit held on October 30 and 31, 2021, the leaders endorsed the "G20 Rome Guidelines for the Future of Tourism". They pledged to fulfill its objectives, mainly to revive safe and seamless tourism activities and accelerate the digital transformation of the tourism industry⁷⁰. The guidelines noted that since tourism is an activity that is intrinsically dependent on the movement and exchange of people, the sector was one of the areas most affected by COVID-19 and may be one of the last to recover. On the other hand, it also noted that the stagnation in the tourism sector brought about by COVID-19 provides an opportunity to rethink and reset the direction of tourism and the values that define its success. In addition, the communiqué of the G20 Tourism Ministers Meeting released on October 7, 2020, states that tourism can be an essential driver of inclusive community development that contributes to resilience, inclusiveness, and empowerment while protecting natural and cultural resources⁷¹. The above guidelines propose to address the following seven policy areas based on the three pillars of the People, Planet, and Prosperity agenda of the Italian presidency.

- Safe mobility: Restoring and maintaining confidence in travel
- Crisis management: Minimizing the impact of future crises affecting tourism
- Resilience: Securing a robust and stable tourism sector in uncertain times
- Inclusiveness: Widening community engagement and benefits from tourism
- Green transformation: Managing tourism to sustain global and local environments
- Digital transition: Enabling all tourism stakeholders to benefit fully from digital opportunities
- Investment and infrastructure: Focusing resources on a sustainable future for tourism

As a G20 member country, Japan's cooperation policy should not only be in line with the current situation and needs of the tourism sector in Central America and the Caribbean but should also be in line with the above guidelines.

3) Examples of Similar Projects

Table 14-22 shows similar projects that serve as reference for the proposed measures to overcome the problems described in 14.7.3.

⁶⁹ UNDP Barbados and the Eastern Caribbean. (2021, September). Rethinking Tourism & MSMEs in Times of COVID-19.

⁷⁰ From G20 to COP26: UNWTO Guides Tourism Through Critical Week. (2021, November 1). World Tourism Organization. Retrieved November 8, 2021, from <https://www.unwto.org/news/from-g20-to-cop26-unwto-guides-tourism-through-critical-week>

⁷¹ G20 Tourism Ministers Meeting Diriyah Communiqué. (2020, October).

Table 14-22 Examples of Similar Projects

Possible Measures to Overcome the Vulnerabilities	Similar Projects
MSMEs Promotion <ul style="list-style-type: none"> ▪ Improvement of access to financial services, including the development of financial products tailored to the needs of MSMEs in the tourism sector ▪ Capacity development to respond to new needs and markets of With/Post COVID-19 	<ul style="list-style-type: none"> ▪ Small and Medium-sized Manufacturing Enterprise Finance Promotion Project in the United Republic of Tanzania ▪ Rapid Support for Micro and Small Enterprises Project in the Republic of Turkey ▪ Online seminar by the Taiwanese government on online marketing for small and medium-sized tourism enterprises in four Central American countries ▪ A series of One Village One Product (OVOP)-related projects ▪ Project for Sustainable Tourism based on Public-Private Partnership in the Dominican Republic ▪ Project for Enhancing the Mechanism for Sustainable Community-based Tourism Development in the North Region in the Dominican Republic
Promotion of Digitalization <ul style="list-style-type: none"> ▪ Development of ICT infrastructure ▪ Establishing a legal system for digital payments ▪ Providing incentives to Fin Tech companies ▪ Capacity development of MSMEs in digital payments and digital marketing ▪ Subsidies to promote digitization and tax incentives to encourage investment in digitization ▪ Integration of digitalization promotion into tourism promotion policies 	<ul style="list-style-type: none"> ▪ Online seminar by the Taiwanese government on online marketing for small and medium-sized tourism enterprises in four Central American countries ▪ A series of legal development projects ▪ Beyond Tourism Innovation Challenge funded by IDB and UNWTO
Tourism Crisis Management <ul style="list-style-type: none"> ▪ Dissemination of the concept of tourism crisis management and capacity building before and after the crisis ▪ Removal and effective utilization of sargassum 	<ul style="list-style-type: none"> ▪ Grant Assistance "Economic and Social Development Programme" for the Development of Fisheries and Tourism in Antigua and Barbuda ▪ Grant Assistance "Economic and Social Development Programme" for the Development of Fisheries and Tourism in Grenada ▪ SATREPS "Eco-engineering for Agricultural Revitalization Towards Improvement of Human Nutrition (EARTH): Water Hyacinth to Energy and Agricultural Crops"
Promotion of regional collaboration (Central America) <ul style="list-style-type: none"> ▪ Creation of unified rules for frontline measures in the event of an infectious disease outbreak ▪ Appropriate fares through liberalization of air transportation ▪ Improvement of the safety of cross-border land transportation ▪ Development of statistics that contribute to region-wide marketing 	Regional Tourism Promotion Advisor (Individual Expert)
Minimization of tourism leakage (the Caribbean) <ul style="list-style-type: none"> ▪ Development of legal systems and infrastructure to support new markets ▪ Development of services for new markets ▪ Promotion of CBT ▪ Promotion of local producers' participation in the tourism value chain by adding value to local products 	<ul style="list-style-type: none"> ▪ Regional Tourism Promotion Advisor (Individual Expert) ▪ Project for Sustainable Tourism based on Public-Private Partnership in the Dominican Republic ▪ Project for Enhancing the Mechanism for Sustainable Community-based Tourism Development in the North Region in the Dominican Republic ▪ A series of One Village One Product (OVOP)-related projects

Source: Study Team

a) MSMEs Promotion

Examples of financial support for MSMEs include the "Small and Medium-sized Manufacturing Enterprise Finance Promotion Project in the United Republic of Tanzania⁷²," which targets small and medium-sized manufacturing industries. Furthermore, in the "Rapid Support for Micro and Small Enterprises Project in the Republic of Turkey⁷³," through parallel co-financing with the World Bank, liquidity funds were provided to micro and small enterprises hit by COVID-19 through the

⁷² <https://www.mofa.go.jp/mofaj/gaiko/oda/files/000316277.pdf>

⁷³ Signing of Dollar-Denominated Japanese ODA Loan Agreement with Turkey: Delivering rapid and direct support for micro and small enterprises affected by COVID-19 | Press Releases | News & Features | JICA. (2021, April 21). Japan International Cooperation Agency. Retrieved November 9, 2021, from https://www.jica.go.jp/english/news/press/2021/20210421_41_en.html

country's SME Development Organization. As an example of support for improving the business environment, through the "Project for Enhancement of the Fair Competition Environment in Mongolia," a fair business environment in which consumers are supplied with high quality products and services at reasonable prices is created⁷⁴. On the other hand, as an example of capacity building for MSMEs, as mentioned above, in April 2021, with the support of the Taiwanese government, CATA conducted an online seminar on online marketing for MSMEs in four countries: Belize, Guatemala, Honduras, and Nicaragua.

b) Promotion of Digitalization

Including the aforementioned project to improve the environment for fair competition in Mongolia, JICA has provided legal support in a number of countries, mainly in Asia⁷⁵. Although there are no examples of legal support for the promotion of digitization, it is worth considering the possibility. In addition, the aforementioned online marketing training by the Taiwanese government contributes to the promotion of digitalization in terms of ICT literacy. In addition, the IDB, in collaboration with the UNWTO, launched a grant program called the Beyond Tourism Innovation Challenge in 2020 to identify business models for innovation and revitalization of the tourism sector. Eight projects were selected from Barbados, Belize, Costa Rica, Dominican Republic, Guyana, Haiti, Panama, and Trinidad and Tobago. In the case of the Dominican Republic, a project to build a digital platform for the international deployment of Green Fins (international guidelines for environmentally friendly diving and snorkeling) was selected⁷⁶.

c) Tourism Crisis Management

As mentioned above, the Japanese government has decided to provide equipment for removing Sargassum to Antigua and Barbuda and Grenada through grant aid. Furthermore, regarding the Science and Technology Research Partnership for Sustainable Development (SATREPS), although it does not involve seaweed, the project "Eco-engineering for Agricultural Revitalization Towards Improvement of Human Nutrition (EARTH): Water Hyacinth to Energy and Agricultural Crops," which is conducted by Soka University in collaboration with an Ethiopian university, was adopted in FY2020⁷⁷.

d) Promotion of Regional Collaboration (Central America)

An advisor for regional tourism promotion (individual expert) has been dispatched to the Ministry of Tourism and Sports of Uzbekistan to promote regional cooperation in the tourism sector among the five Central Asian countries⁷⁸. In the past, a regional tourism advisor has also been dispatched to the Western Balkans⁷⁹.

e) Minimization of Tourism Leakage (the Caribbean)

JICA has been implementing two technical cooperation projects in the Dominican Republic for more than ten years, namely the "Project for Sustainable Tourism based on Public-Private Partnership" (2009-2013) and "Strengthening Mechanisms for Sustainable Community-based Tourism Development in the Northern Region" (2016-2021). Another way to reduce tourism leakage is to increase tourists' consumption of local products. The OVOP concept has been widely practiced in Asia, Africa, and Latin America by JICA as a method of industrial promotion. In addition, CBT and OVOP can also be used as a means of promoting MSMEs.

⁷⁴ Signing of the Minutes of the Technical Cooperation Project Discussions for Mongolia: Toward the Creation of a Fair Business Environment | Fiscal Year 2019 | News Releases | News JICA. (2019, November 14). JICA. Retrieved January 30, 2022, from https://www.jica.go.jp/press/2019/20191115_20.html

⁷⁵ Portal Site on JICA Legal Support | Projects - JICA. (n.d.). JICA. Retrieved January 30, 2022, from <https://www.jica.go.jp/activities/issues/governance/portal/index.html>

⁷⁶ BEYOND TOURISM INNOVATION CHALLENGE | Convocatorias. (2020, October 14). Inter-American Development Bank. Retrieved February 12, 2022, from <https://convocatorias.iadb.org/en/beyondtourism>

⁷⁷ Eco-engineering for Agricultural Revitalization Towards Improvement of Human Nutrition (EARTH): Water Hyacinth to Energy and Agricultural Crops. (n.d.). Japan Science and Technology Agency. Retrieved November 9, 2021, from https://www.jst.go.jp/global/english/kadai/r0205_ethiopia.html

⁷⁸ JICA, Economic Development Department, Private Sector Development Group, "Issues Presentation Seminar on Industrial Promotion and Tourism Development, March 18, 2021"

⁷⁹ JICA, "mundi", December 2019, No. 75

4) Consideration of Support Measures

Based on the draft measures to overcome vulnerabilities mentioned above, the potential support measures by JICA are summarized in Table 14-23.

Table 14-23 Draft Support Measures in the Tourism Sector

Possible Measures to Overcome the Vulnerabilities	Draft Support Measures
MSMEs Promotion in the Tourism Sector <ul style="list-style-type: none"> ▪ Improvement of access to financial services, including the development of financial products tailored to the needs of MSMEs in the tourism sector ▪ Capacity development to respond to new needs and markets of With/Post COVID-19 	Provision of concessional medium- and long-term loans to tourism MSMEs through two-step loans and parallel co-financing with other donors Capacity building for tourism MSMEs through technical cooperation, individual experts, and private sector partnership
Promotion of Digitalization <ul style="list-style-type: none"> ▪ Development of ICT infrastructure ▪ Establishing a legal system for digital payments ▪ Providing incentives to Fin Tech companies ▪ Capacity development of MSMEs in digital payments and digital marketing ▪ Subsidies to promote digitalization and tax incentives to encourage investment in digitalization ▪ Integration of digitalization promotion into tourism promotion policies 	Supporting the development of digital financial legal systems and environments through technical cooperation
Tourism Crisis Management <ul style="list-style-type: none"> ▪ Dissemination of the concept of tourism crisis management and capacity building before and after the crisis ▪ Removal and effective utilization of sargassum 	<ul style="list-style-type: none"> ▪ Support for the development and operation of tourism risk management plans for local governments and tourism-related businesses through technical cooperation ▪ Support for removal and effective utilization of sargassum through grant aid, private sector partnership, and SATREPS (research on the impact of sargassum on the tourism sector, when necessary)
Promotion of Regional Collaboration (Central America) <ul style="list-style-type: none"> ▪ Creation of unified rules for frontline measures in the event of an infectious disease outbreak ▪ Appropriate fares through liberalization of air transportation ▪ Improvement of the safety of cross-border land transportation ▪ Development of statistics that contribute to region-wide marketing 	<ul style="list-style-type: none"> ▪ Support for the promotion of intra-regional cooperation by a Regional Tourism Promotion Advisor (individual expert) ▪ Support for the development of regional tourism statistics through technical cooperation and knowledge co-creation program in collaboration with UNWTO
Minimization of Tourism Leakage (the Caribbean) <ul style="list-style-type: none"> ▪ Development of legal systems and infrastructure to support new markets ▪ Development of services for new markets ▪ Promotion of CBT ▪ Promotion of local producers' participation in the tourism value chain by adding value to local products 	<ul style="list-style-type: none"> ▪ Support for the development of services to respond to the new market of With/Post COVID-19 by a Regional Tourism Promotion Advisor (individual expert) ▪ Support for CBT promotion through technical cooperation ▪ Support for local industry promotion through technical cooperation (e.g., OVOP)

Source: Study Team

a) MSMEs Promotion in the Tourism Sector

To improve access to finance for MSMEs in the tourism sector, concessional medium- and long-term loans tailored to the needs of the tourism sector could be provided through official development assistance (ODA) loans. For example, a two-step loan framework could be used, with each country's government as the borrower and the Ministry of Finance as the project implementing agency. The actual implementation of the project will be carried out by a central bank or investment bank entrusted by the Ministry of Finance. Still, the details would be discussed in the preparatory study for cooperation. In addition, financing for MSMEs in collaboration with other donors is also possible. These measures would provide financial support for the recovery period of MSMEs after the end of COVID-19. In addition, the beneficiary companies of the aforementioned "Rapid Support for Micro and Small Enterprises Project in the Republic of Turkey" are scheduled to receive consulting services for medium- and long-term growth from SME consultants who have been trained through past JICA projects. Moreover, information gathering and confirmation surveys are being conducted in Turkey to examine the possibility and direction of further technical cooperation in the field of SME promotion⁸⁰. As stated

⁸⁰ JICA Middle East and Europe Department, Europe Section, "Project Ex-ante Evaluation Table: Republic of Turkey Micro and Small Enterprises Rapid Support Project," https://www2.jica.go.jp/ja/evaluation/pdf/2021_TK-F-P1_1_s.pdf (Retrieved on January 30, 2022)

by the Ambassador of Japan to Turkey, "We are planning to implement technical cooperation as part of the project under the loan, and this kind of fine-tuned support can be said to be a characteristic of Japan."⁸¹

In general, MSMEs lack management resources in terms of "people," "goods," "capital," and "information," making it difficult for them to learn about and respond appropriately to new trends in tourism after COVID-19. In addition, they lag in digitalization compared with large enterprises. Therefore, through schemes such as technical cooperation projects and individual experts, support for tourism marketing and promotion targeting MSMEs and industrial promotion utilizing local characteristics could be considered.

b) Promotion of Digitalization

In the "Project for Enhancing the Mechanism for Sustainable Community-based Tourism Development in the North Region of the Dominican Republic," support for digital marketing was provided to the beneficiary tourism businesses. Specifically, external experts in the field were invited to provide guidance on the effective use of TripAdvisor and Google Map. In addition, projects could be implemented through collaboration between the technologies and ideas of Japanese private companies and JICA⁸². In addition to the development of the communication network itself, the development of various legal systems is also essential for the digitalization of the tourism business. As mentioned above, the legal system for non-bank digital payments is not yet in place in the Caribbean, and this has become an obstacle to digitalization. In addition, the small size of the market has made it difficult for international Fin Tech companies to enter the region, which has also contributed to the delay in digitalization. Therefore, technical cooperation could support the development of legal systems, regulations, and rules necessary to introduce digital technologies and systems. In the "Strategy for Infrastructure Systems Export 2025" announced in December 2020 by the Management Council for Infrastructure Strategy, one of the policy councils established in the Prime Minister's Office, "improvement and maintenance of the business investment environment for the use of digital technologies" is listed as one of the pillars of concrete measures⁸³. JICA's many years of experience in supporting legal development can also be utilized.

c) Tourism Crisis Management

In 2021, Japan Tourism Agency, in collaboration with the UNWTO Regional Support Office for Asia and the Pacific, prepared Guidelines, Textbook, Teaching Materials for Promotion of Tourism Crisis Management in Local Governments and Tourism-related Operators⁸⁴. In the wake of the Great East Japan Earthquake, there has been widespread recognition that ensuring safety and security in the tourism sector is an urgent issue. Still, until now, there have been no crisis management materials specifically for tourism destinations or tourism businesses. In addition, the JICA Economic Development Department prepared a video titled "Tourism Crisis Management -Tourism Development Under the New Normal⁸⁵" in October 2021. It is expected to be used for knowledge co-creation programs in the future. This study is currently implementing a pilot project using these materials to strengthen tourism resilience in Jamaica. Using the lessons learned, the Study Team will propose forming technical cooperation that encourages local governments and tourism-related businesses to formulate a tourism crisis management plan in advance and create a system that enables frontline workers to react proactively.

Regarding the measures to deal with sargassum, the situation in Central America is entirely different between the Pacific and Caribbean sides, and information is limited, so a detailed study on the economic impact on the tourism sector is needed. On the other hand, various organizations take measures

⁸¹ Embassy of Japan in Turkey, "Signing of the Exchange of Notes on the Dollar-denominated Loan Provision to Turkey "Micro and Small Enterprises Expediting Support Plan", Signing of the Contract for the Dollar-denominated Loan Project, and Meeting between Ambassador Suzuki and Minister of Industry and Science Valanc" https://www.tr.emb-japan.go.jp/itpr_ja/11_000001_00319.html (Retrieved on January 30, 2022)

⁸² For example, the "Africa Open Innovation Challenge," implemented in Africa. <https://openinnovation-2020.com/>

⁸³ Management Council for Infrastructure Strategy. (n.d.). Prime Minister's Office of Japan. Retrieved November 9, 2021, from <https://www.kantei.go.jp/jp/singi/keikyou/index.html>

⁸⁴ Guidelines, Textbook, Teaching Materials for Promotion of Tourism Crisis Management in Local Governments and Tourism-related Operators | Topics | News/Press Conferences | Japan Tourism Agency. (2021, August 20). Japan Tourism Agency. Retrieved November 9, 2021, from https://www.mlit.go.jp/kankocho/news02_00001.html

⁸⁵ [JICA-Net Library] Tourism Crisis Management ~Tourism Development Under the New Normal~(Full ver.). (2021, October 12). [Video]. YouTube. <https://www.youtube.com/watch?v=X-Fhr1SRZTE&t=0s>

for its removal and effective utilization in the Caribbean region. As mentioned above, the Japanese government has decided to provide equipment for removing sargassum in Grenada and Antigua and Barbuda through grant aid. Furthermore, JICA's Program for Supporting SDGs Business and Japanese SMEs lists "Appropriate treatment and utilization of sargassum as a sustainable resource" as a "challenge for developing countries where private sector products and technologies are expected to be utilized." The following specific measures are envisioned: "Conversion to energy: using seaweed for bioethanol and other fuels," "Commercialization: developing products using seaweed to create employment and improve livelihoods," and "Conversion to fertilizer: using seaweed for organic fertilizers"⁸⁶. In addition to the products and technologies of private companies, it would also be effective for universities in the Caribbean region and Japanese universities to collaborate in researching ways to utilize sargassum as a SATREPS program.

d) Promotion of Regional Collaboration (Central America)

JICA has been dispatching advisory-type experts to SICA for effective and efficient implementation of regional cooperation to clarify development issues common to the Central American region and create "regional public goods"⁸⁷. Similarly, it is possible to dispatch an advisory expert to promote tourism. The main issues related to intra-regional tourism promotion include the unification of immigration and sanitation protocols, improved intra-regional air and land transportation, and the development of statistics for marketing strategies. JICA could dispatch an advisor (individual expert) to SICA to support the activities of SITCA and CATA to address the issues mentioned above.

Concerning the development of regional tourism statistics, one idea is to work with the UNWTO Committee on Statistics to support the collection and analysis of statistical data that will promote tourism in the region. The Committee is a body that promotes the improvement of the national system of tourism statistics and the development of the Tourism Satellite Account (TSA)⁸⁸. Capacity-building opportunities could be provided to ministries of tourism and SITCAs as part of technical cooperation projects or as knowledge co-creation programs.

e) Minimization of Tourism Leakage (The Caribbean)

A regional tourism promotion advisor could also be dispatched to the Caribbean to support the development of services to respond to the new market after COVID-19. For example, countries are establishing new visas for long-term stays to attract remote workers from North America, which are increasing after COVID-19. However, there is lack of living services such as housing, cars, and education for children. In addition, long-term tourists are interested in direct interaction with the communities where they are staying, genuine experiences that are not for tourists, and contributions to the community⁸⁹. In this situation, the advisors can assist the Ministries of Tourism in each country and the CTO headquartered in Barbados to identify the needs of the new market and encourage the development of services.

The Caribbean region has traditionally relied on cruise tourism, but CBT, which takes advantage of the regional characteristics and utilizes local resources, could effectively reduce tourism leakage. In the aforementioned technical cooperation project in the Dominican Republic, community tourism businesses, who are the beneficiaries of the project, were supported in online sales to domestic tour operators who sell excursions to cruise ship and all-inclusive resort guests. For instance, the project provided guidance on how to make effective online presentations. As a result, some operators have been successful in attracting excursionists⁹⁰. The know-how and lessons learned through the aforementioned technical cooperation projects in the Dominican Republic should be used for horizontal expansion to other Caribbean countries.

To reduce tourism leakage, it is necessary to break away from the current situation where most of the products purchased by tourists are imported. Destinations need to refine local products to appeal

⁸⁶ <https://minkanrenkei.jica.go.jp/area/card/26067/7kUpCj/M?S=ldobta0oal0k>

⁸⁷ Find a job - International Career Information Site. (n.d.). JICA PARTNER. Retrieved November 9, 2021, from <https://partner.jica.go.jp/RecruitDetailSubscription?id=a0L2v00001i49vvEAA>

⁸⁸ A means of measuring the contribution of tourism to a nation's economy, for which UNWTO provides international standards

⁸⁹ UNDP Barbados and the Eastern Caribbean. (2021, September). Rethinking Tourism & MSMEs in Times of COVID-19.

⁹⁰ Interview with the project manager of the "Project for Enhancing the Mechanism for Sustainable Community-based Tourism Development in the North Region of the Dominican Republic" on November 24, 2021

to tourists by giving them a story. One such method is OVOP, which is implemented in Saint Lucia as a pilot project for this study. Based on the pilot project results, the Study Team will explore the possibility of horizontal expansion in the Eastern Caribbean region.

5) Summary of Analysis of the Tourism Sector

From the information collected and analyzed so far, it was found that the damage sustained by MSMEs in both Central America and the Caribbean is particularly severe and requires urgent support. In general, MSMEs are at a disadvantage in procuring and securing management resources due to information asymmetry and economies of scale. If this situation is left unchecked, many MSMEs in the tourism sector will be forced out of business, and even if tourism demand recovers after the COVID-19 disaster, their readiness to receive tourists will be compromised. The support needed by MSMEs can be divided into short-term support (e.g., facilitating access to finance and responding to new needs emerged amid COVID-19 and digitalization) and medium- to long-term support (e.g., improving the business environment).

Since the Central American and Caribbean regions are originally prone to natural disasters, the countries are prepared for disasters to a certain degree. However, existing disaster management plans mainly focus on disaster management for local residents, and not many countries have adequate disaster management plans for tourists. SICA is also working on tourism crisis management, but it is only an "individual" approach, such as granting certification and capacity building for each hotel or other businesses, and not enough "comprehensive" approach for the entire destinations. In addition, crisis management plans and BCPs need to be updated on a continuous basis, not just created once, but more efforts are needed in this area. It also seems that many countries were not ready for health crises such as COVID-19.

Looking at Central America, since each country shares borders with other countries and appeals to the long-distance markets of Europe and North America as a single destination, "Central America," it is important to improve the convenience of tourists' travel and cooperation among countries in tourism in normal times. However, under the COVID-19 pandemic, the entry restrictions and quarantine measures of each country lacked uniformity, and combined with the travel restrictions of the country of origin, this led to a sharp decline in inbound tourists from Europe, which has a large amount of travel spending. Instead, attempts to promote intra-regional tourism by the citizens of Central American countries have struggled due to the high cost of intra-regional air tickets and the lack of statistical data that contributes to the formulation of marketing strategies. Under these circumstances, tourists are concentrating on a few tourist destinations, such as Mexico, where there are no entry restrictions at all.

Even before COVID-19, the Caribbean was faced with the challenge of overcoming tourism leakage due to dependence on cruise tourism and foreign all-inclusive resorts, and breaking away from the monolithic image of "Sun, Sand & Sea." In addition, the damage to the tourism industry caused by the seaweed sargassum has been serious in the Caribbean in recent years. After the COVID-19 pandemic, a new market has emerged, which includes remote workers from North America who stay for long periods of time, and people who want to conduct tourism activities in consideration of the environment and community of the destination, and who want to respect and experience the lifestyle and culture of the destination (a concept known as sustainable tourism or responsible tourism). This is a new market that is emerging, and tourism businesses are under pressure to respond.

(2) Recommendations for the Recovery and Improvement of the Tourism Sector

The efforts needed in the tourism sector for With/Post COVID-19 can be summed up in one word: strengthening resilience. In concrete terms, this means early recovery from the damage caused by the COVID-19 pandemic and minimizing the damage in the event of a similar crisis in the future. With less than ten years to go until the target year for achieving the SDGs, it is becoming increasingly important to position tourism as a means to achieve the SDGs through sustainable tourism and responsible tourism, with or without COVID-19. Furthermore, tourism cannot be the only exception to the trend of digitalization in all aspects of society and life. Even in the absence of the COVID-19, the trend of using digital technology to expand consumption opportunities for tourists and to increase the unit consumption of tourists is irreversible. Based on the above situation and the results of the research conducted so far, the following five recommendations are made for the tourism sector in Central

America and the Caribbean to overcome the crisis and realize further development to mark COVID-19 as an important turning point.

1) Cross-sectoral Initiatives

Both tourism crisis management and digitalization support require cross-sectoral efforts with the disaster prevention sector and digital innovation sector, respectively. For example, the aforementioned video material on tourism crisis management prepared by JICA points out that local governments and tourism promotion organizations do not have enough human resources with knowledge of both tourism and disaster prevention, and that the organization in charge of tourism crisis management is unclear, pointing out that collaboration between the tourism and disaster prevention sectors is essential⁹¹. It is also necessary to pursue synergies between the promotion of MSMEs, capacity building of local governments, and protection of the natural environment, using tourism promotion as a means rather than a goal.

2) Promotion of MSMEs

Although not limited to the tourism sector, it can be said that the damage done to MSMEs by COVID-19 was significant. In conducting the field survey for this study, it was hypothesized that there are three gaps in the financial access and digitalization of tourism businesses: i) gender gap, ii) urban-rural gap, and iii) gap between MSMEs and large enterprises. The interviews revealed that the gap between MSMEs and large companies is the most serious and requires interventions. In such cases, in addition to short-term relief measures such as the provision of benefits and loans, support from a long-term perspective, is also necessary to enhance resilience against similar crises in the future.

While the rise of social networking sites has made it easier for anyone to start a business, the lack of a legal system has resulted in legal businesses that have the necessary business registration and pay taxes being overwhelmed by informal illegal businesses. It is proposed that the tourism-related laws, which have not been amended for several decades since their enactment and which are mainly focused on attracting investment, be reviewed once again and improved with a view to providing incentives for the formalization of informal workers.

3) Tourism Crisis Management

In order to strengthen tourism resilience, tourism crisis management is essential. In addition to efforts by individual businesses, it is necessary to create awareness and practice tourism crisis management throughout the destination through public-private partnerships. In this regard, the final report of the pilot project on strengthening tourism resilience conducted in Jamaica also suggests that the establishment of local tourism crisis management clusters should be promoted.

4) Problem Solving in the Tourism Sector Using OVOP

In El Salvador, Guatemala, and Honduras, JICA has been supporting the OVOP movement for about ten years, and it is recognized locally as a strategy that contributes to regional development through the promotion of economic activities. OVOP has been widely supported by JICA not only in Central America but also in South America, Asia, and Africa, but has not yet been deployed in the Eastern Caribbean. Initially, there were concerns about whether Saint Lucia, a small island nation with a population of about 180,000, would be able to identify products with unique characteristics for each community. However, the three communities selected for the pilot project were able to identify "one product" (cocoa products, sea moss products, straw crafts and unglazed pottery), each of which was introduced at the OVOP Fair (see Figure 14-12 and Figure 14-13). For the local consultants involved in this pilot project and the fair visitors, it was an opportunity to rediscover local products. Thus, if the OVOP approach promotes local production for local consumption and increases the demand for domestically produced products, it could help curb tourism leakage. In addition, further refinement and branding of these products can help Saint Lucia move away from its monolithic image of "Sun, Sand & Sea."

⁹¹ [JICA-Net Library]Tourism Crisis Management ~Tourism Development Under the New Normal~(Full ver.). (2021, October 12). [Video]. YouTube. <https://www.youtube.com/watch?v=X-Fhr1SRZTE&t=0s>



Source: Study Team

Figure 14-12 Pottery Producer's House



Source: Study Team

Figure 14-13 OVOP Fair

However, objectives and methods of OVOP vary from country to country and region to region. The Indonesian government's report⁹² categorizes OVOP in Southeast Asia into four quadrants based on the two axes of "top-down/bottom-up" and "economically motivated/socially motivated" (see Figure 14-14). In the course of implementing the OVOP pilot project in Saint Lucia, the Study Team found that the Ministry of Agriculture is considering the use of OVOP as a means of social development, such as poverty reduction and community revitalization, while the Ministry of Commerce envisions OVOP for economic development purposes, such as export promotion and productivity improvement. As preparations are made for the implementation of the full-scale project, it is necessary to build a consensus among the parties concerned as to what Saint Lucia wants to achieve through OVOP and where it is headed with OVOP.

Motives/Approaches	Top-Down	Bottom-up
Economic Motives	2 Thailand, Malaysia, Indonesia, Philippines	1 Myanmar, Cambodia, Vietnam, Laos
Social Motives	3 Brunei	4 Japan

Source: Ministry of Cooperatives and SME, Republic of Indonesia. (2014, January). Improvement Rural Living Condition Through One Village One Product (OVOP) Movement. Association of Southeast Asian Nations.

Figure 14-14 Example of Segmentation of OVOP

5) Long-term and Comprehensive Perspective for Digital Transformation

What has emerged as the needs for ICT utilization support in the field of tourism sector is mainly limited to short-term and individual business support such as digital payment and digital marketing support. On the other hand, in the interview with SITCA, it is learned that they are trying to promote smart destination⁹³ initiatives. Specifically, with the cooperation of Sociedad Mercantil Estatal para la Gestión de la Innovación y las Tecnologías Turísticas (SEGITTUR), a Spanish government agency, an online seminar was held inviting government agencies and industry associations from member countries to stress the importance of addressing this topic. It is envisioned that one city per member country will be selected in the future, and efforts will be made to make it a smart destination. This has already been implemented in Mexico, Colombia, Argentina, and other countries, and there is a

⁹² Ministry of Cooperatives and SME, Republic of Indonesia. (2014, January). Improvement Rural Living Condition Through One Village One Product (OVOP) Movement. Association of Southeast Asian Nations.

⁹³ It is almost synonymous with "smart city." A destination that aims to improve the quality of life of its residents and tourists by adopting an interactive and participatory management style and using ICT and other technologies to collect, store, exchange, and process data.

Coban, G., & Aydin, S. (2020). A New Concept in Tourism: Smart Tourism Destinations. In E. Çeltek (Ed.), Handbook of Research on Smart Technology Applications in the Tourism Industry (pp. 414–429). IGI Global.

There are various ways to tackle this issue, such as improving the efficiency of travel through on-demand mobility, supporting foreign languages, reducing congestion, and marketing through the use of data.

sense of crisis in Central America that if it does not start working on this now, it will fall behind other tourist destinations. Furthermore, as SITCA pointed out, smart destination is a concept that includes various elements such as coordination at the regional level, coordination at the local government level, public-private partnerships, and infrastructure development, and it requires long-term efforts. However, the need for such an effort is not readily apparent in on-the-ground interviews in the tourism sector or in the context of the impact of COVID-19. With or without COVID-19, the trend toward digitalization is certainly underway, and it is important to understand a long-term and comprehensive perspective is required on how ICT infrastructure and data should be utilized to improve both the tourist experience and the quality of life of residents.

15. Public-Private Partnership Sector

15.1 General

The sectoral targets of the public-private partnership sector are shown in the Table 15-1.

Table 15-1 Survey Objectives of the Public-Private Partnership Sector

Sectoral Goals	With / Post COVID-19 technology through analysis and pilot projects related to the business environment and factors that hinder entry in order to promote the access and development of private companies, mainly Japanese companies, in order to solve social issues in the disaster. Through various verifications for demonstration and entry, the Study Team will derive the direction of various public-private partnership support for revitalizing private sector entry in Central American and the Caribbean regions.
-----------------------	---

Source: Study Team

15.2 Summary of Sector Survey

Table 15-2 shows the summary of the sector study.

Table 15-2 Hypotheses and Policy Recommendations on the State of Development Cooperation (draft) (PPP)

No.	Item	Public-Private-Partnership (PPP)
1	Issues since before COVID-19	<ul style="list-style-type: none"> ▪ Lack of the presence of the Japanese private sector in the region (except for Mexico) ▪ Lack of the utilization of the Public-Private Partnership development cooperation scheme
2	Grouping by issue	<ul style="list-style-type: none"> ▪ Private sector support, business information disclosure, business environment improvement, PPP project formulation
3	Vulnerabilities Revealed by COVID-19	The implementation of Japanese public-private partnership projects in the study area has been poor since before COVID-19, so it is not worthy of vulnerability analysis.
4	New issues that emerged by COVID-19	-
5	Possible measures to overcome vulnerabilities	(1) Information disclosure to Japanese companies <ul style="list-style-type: none"> ▪ Build a framework for information collection and sharing using JICA offices ▪ PR of the business environment in the region ▪ Create matching opportunities for companies in Japan and target countries ▪ PR the use of public-private partnership program
		(2) Improvement of the business environment <ul style="list-style-type: none"> ▪ Improvement of investment environment and legal system for industrial and investment promotion ▪ Technical cooperation on capacity building for industrial and investment promotion
		(3) Expansion of the value chain of the manufacturing industry <ul style="list-style-type: none"> ▪ Technical cooperation for human resource development in industrial sector ▪ Development of gateway infrastructure for supply chain expansion ▪ Support for industrialization ▪ Technical cooperation for improving public safety
		(4) Encouraging large companies to participate in infrastructure development projects <ul style="list-style-type: none"> ▪ Infrastructure development through yen loan and grant schemes ▪ Support for formulating PPP infrastructure projects ▪ Utilization and PR of co-financing options with multi-donors ▪ Support with private sector investment finance
		(5) Supporting the business development of small- and medium-sized companies and start-up companies <ul style="list-style-type: none"> ▪ PR of public-private partnership program ▪ Utilization and PR of co-financing options with multi-donors ▪ Support for introducing digital technology ▪ Support for smart city formation
6	Direction of development cooperation and	In order to create public-private partnership projects with high development impact, the following measures and support measures are proposed. Each measure is presented as an option for support and is not a recommendation to implement all of the support measures for the target group. A specific

No.	Item	Public-Private-Partnership (PPP)
	draft recommendation	support measure or a combination of several support measures should be implemented at an appropriate time based on the requests of Japanese companies and local governments.
	Business Information Dissemination	<ul style="list-style-type: none"> Investment desk functions utilizing JICA overseas offices and branches
	Business Matching Support	<ul style="list-style-type: none"> Establishment of an information sharing platform for sharing information of the business environment and holding regular investment seminars
	Improvement of Business Environment and Strengthening of Administrative Capacity	<ul style="list-style-type: none"> Dispatch of experts to improve the business environment, or provision of technical cooperation projects to local investment-related ministries and agencies as counterparts.
	Human Resource Development in Industrial Sector	<ul style="list-style-type: none"> Support for the development of human resources for the revitalization of local manufacturing industries.
	Gateway Infrastructure Development	<ul style="list-style-type: none"> Infrastructure development to facilitate international logistics, such as ports and highways
	Support for Industrialization	<ul style="list-style-type: none"> Support for the formulation of national and regional strategies for the development of industrial parks and special economic zones through development surveys
	Support for PPP Infrastructure Projects	<ul style="list-style-type: none"> Utilization and PR of public-private partnership schemes
	Use of Private Sector Investment Finance	<ul style="list-style-type: none"> Conducting projects with pilot projects using Japanese technologies, and preparatory survey for private sector investment finance.
	Support with Co-finance Loans	<ul style="list-style-type: none"> Support through co-financing with multi-donor agencies
	PR for the use of Public-Private Partnership Scheme	<ul style="list-style-type: none"> Implementation of development studies, including pilot projects, and support for the horizontal development of companies that are implementing private sector collaborative projects in other regions.
	Support for Digital Technology Utilization and Smart City Formation	<ul style="list-style-type: none"> Support for the formation of smart cities and the application of digital technologies

Source: Study Team

15.3 Sectoral Scope of Work

The tasks and work scopes of the public-private partnership sector are shown in Table 15-3.

Table 15-3 Public-Private Partnership Sector Tasks and Work Scope

Task	Subsector	Work Scope
[Task 2]	Selection of relevant organizations to be interviewed	
	Conducting the interview survey	
	Collection and analysis of basic information (23 countries)	<ul style="list-style-type: none"> Gathering information on the situation of Japanese companies entering the local market and organizing issues Bilateral trade trends with Japan Outline of the implementation of projects based on the PPP Law in each country Momentum for smart city initiatives
	Country grouping and selection of priority countries	<ul style="list-style-type: none"> Select priority countries and priority themes based on the results of basic information collection and analysis
	Collection and analysis of basic information (Priority countries)	<ul style="list-style-type: none"> Gathering information on the situation of Japanese companies entering the local market and organizing issues Outline of the implementation of projects based on the PPP Law in each country
	Additional research in priority countries	<ul style="list-style-type: none"> Analysis of the impact of COVID 19 in priority countries and priority themes Interviews mainly in priority countries (to obtain complementary information) General interview

Task	Subsector	Work Scope
	Creating a country report	Compile the survey content of [Task 2] into a country report for each country.
[Task 3]	Impact study of COVID-19 on JICA project site	Fixed-point observations (April, June, September, and December 2021) will be conducted for projects under implementation that are highly relevant to this study as designated by JICA.
	Identification of sector vulnerabilities and support measures	<ul style="list-style-type: none"> ▪ Definition and analysis of existing issues and vulnerabilities in the field of public-private partnerships ▪ Consideration of response and support measures to overcome vulnerabilities
[Task 4]	Creation of hypotheses concerning the nature of development cooperation	<ul style="list-style-type: none"> ▪ Develop hypotheses on possible responses to overcome each vulnerability in line with the Ministry of Foreign Affairs' Country Development Cooperation Policy and Project Deployment Plan and each country's PDM. ▪ The hypotheses generated will identify priorities for cooperation needs for each country.
	Preparation of sectoral hypothesis reports	Compile the results of the survey in [Task 4] to create a sectoral hypothesis report.
[Task 5]	Visit international/regional organizations and government agencies to collect additional information related to [Task 2] and [Task 4] and exchange views on how development cooperation should be conducted.	
[Task 6/7/8]	Advise on the selection, implementation and conclusion of pilot projects from the perspective of the "public-private partnership" sector	
[Task 9]	Prepare materials required for the expert meeting and make a presentation on the research in each sector	
[Task 10]	Develop "policy recommendations" for the PPP sector	
[Task 11]	Prepare academic papers for the sector in charge	
[Additional Tasks]	Development of preparatory study for the Jamaica SEZ	

Source: Study Team

15.4 Survey Method by Sector

Information on the public-private partnership sector was collected mainly through a web-based literature survey, a literature survey by local surveyors, and an online interview survey. In Jamaica, a priority country, the field survey was conducted from September 21 to October 5 and November 21 to December 3, in addition to the online interview survey.

For the literature survey, the necessary information was obtained from the websites of public and private organizations in Japan, and from various data, research reports and literature materials available on the World Bank's (WB) Private Partnership Infrastructure Advisory Facility (PPPIAF) website.

In addition, many of the pilot projects in this study were implemented using the technologies of Japanese companies. This report summarizes the advantages and challenges of Japanese technologies obtained in these pilot projects, and together with the contents of literature and field surveys, makes recommendations for future development cooperation directions through public-private partnership.

15.5 Collecting of Basic Information on 23 Target Countries

15.5.1 Data Collected and Analyzed

(1) Japanese Government's Policy for Development Cooperation through Public-Private Partnerships

In the scheme of Japan's development cooperation, the knowledge of the private sector has been actively employed. In the Sustainable Development Goals (SDGs), "Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development" targets the promotion of public-private partnerships, and the effective use of funds and knowledge held by the private sector is required in the construction of business schemes for development cooperation.

The main policies of the Japanese government regarding development cooperation through public-private partnerships are shown in Table 15-4 below.

Table 15-4 Major Japanese Government Policies on Development Cooperation through Public-Private Partnerships

Policy Document	Relevant Statements and Goals
Development Cooperation Charter (Cabinet decision on February 10, 2015)	<ul style="list-style-type: none"> ▪ In the international community today, various non-governmental actors play an increasingly important role in the development of developing countries. (Omitted) The government will also enhance mutually beneficial partnerships with various actors so as to serve as a catalyst for mobilizing a wide range of resources, including the private sector. ▪ Development cooperation needs to enhance synergetic effects for development through strengthened collaboration with other funding and activities of the Government of Japan and its affiliated agencies such as Other Official Flows (OOFs) and United Nations Peacekeeping Operations (PKOs) as well as with private funding and activities whose objective is development or which contribute to development (i.e., funding and activities of various entities such as the private sector, local governments and NGOs). ▪ Public-private partnerships and partnerships with local governments: In promoting public-private partnerships, Japan's development cooperation will seek to serve as a catalyst for expanding economic activities, while utilizing excellent technology and expertise, and ample funds of the private sector for addressing the challenges faced by developing countries. In addition, taking full account of the priority policies of development cooperation described earlier, Japan will give consideration to ensuring inclusiveness, sustainability and resilience of growth as well as promoting capacity building so that private investment that is made along with development cooperation will contribute to "quality growth" in developing countries.
Growth Strategy 2018 (Cabinet decision on June 15, 2018)	<ul style="list-style-type: none"> ▪ To achieve the Sustainable Development Goals (SDGs), it is necessary for Japan to contribute to the achievement and utilize it as a business opportunity. ▪ Social implementation of innovative technologies possessed by Japanese companies: Promoted through frameworks such as ODA projects, Japan International Cooperation Agency (JICA) private sector collaboration projects, and overseas investment and financing
Infrastructure system overseas expansion strategy 2025 (December 10, 2020, Keikyo Infrastructure Strategy Conference decision)	<ul style="list-style-type: none"> ▪ Strengthening efforts related to areas and business models that have superiority or future potential in Japan through public-private partnerships ▪ Support through collaboration between private and public funds: Strategic utilization of ODA (<u>Comprehensive utilization of ODA</u>) Japanese technology that comprehensively utilizes ODA schemes (technical cooperation, grant aid, ODA loans, Private Sector Investment Finance). Japan will provide a total solution to solve the true problems of the partner country for introduction. (<u>Utilization of technical cooperation</u>) While devising ways to promote orders from Japanese companies, Japan will form technical cooperation projects related to infrastructure development in collaboration with the private sector and local governments. Support the formulation of development plans in the developing country using technical cooperation, improve the business environment of Japanese companies through dispatching experts and various trainings, and support the overseas expansion of infrastructure. The overseas expansion of Japanese companies through development plan surveys by JICA, acceptance training for local industrial human resources through public-private partnerships, and dispatch of experts will be supported. (<u>Utilization of grant aid</u>) Actively utilize grant aid with a view to acquiring business management rights in PPP and concession projects. After implementing F/S based on the proposals and opinions of private companies, the Japanese side and the partner country agreed on the concept of the entire project from the construction of the main body to maintenance, and the facilities and equipment maintenance of the project were provided with grant aid.

Source: Created by the Study Team based on various documents

(2) Overview of Public-Private Partnership Projects by Japanese Entities

Based on the government policies indicated earlier, there are several frameworks for public-private partnership programs based on the use of ODA. Table 15-5 shows the summary of JICA's support for the development cooperation through public-private partnerships.

Table 15-5 Summary of Public-Private Partnership Programs by JICA

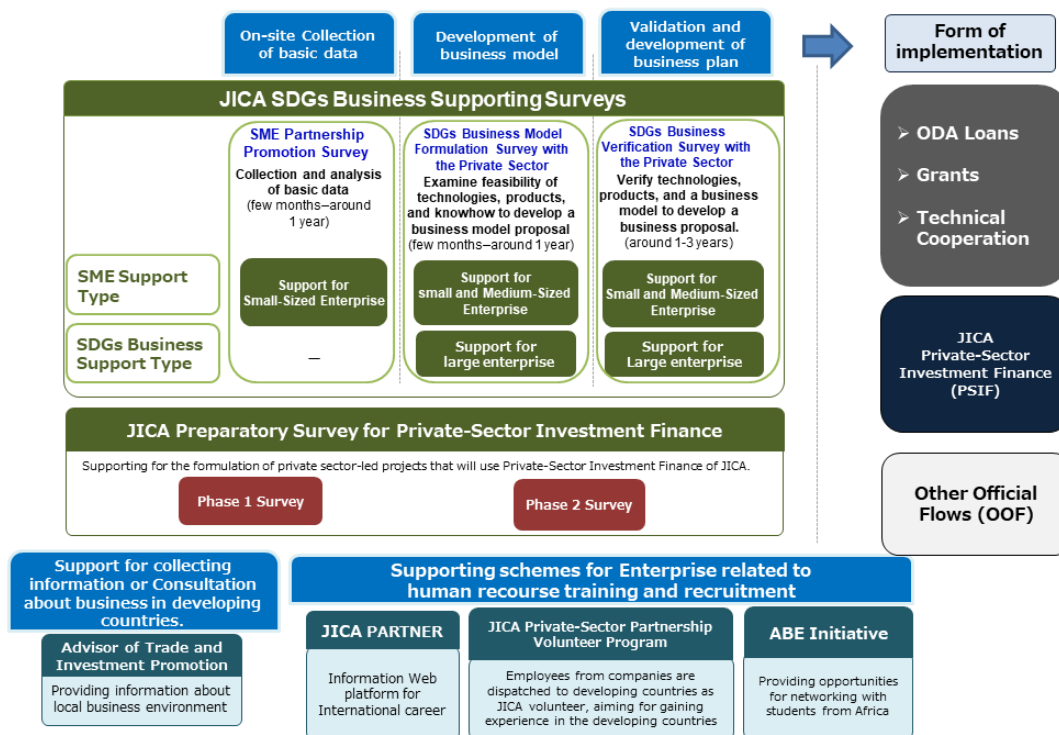
Program	Objective	Outline	Budget and Project Scale
(1) Preparatory Survey for Private Sector Investment Finance (Former Preparatory Survey for Cooperation (PPP Infrastructure Projects))	Based on a proposal from a Japanese company, a business plan for a project utilizing private funds is formulated on the assumption that the project will be implemented using Private Sector Investment Finance.	Projects utilizing private funds that satisfy all four of the following criteria are eligible. (1) Projects that contribute to the economic and social development and reconstruction of developing countries and to their economic stability (2) Projects that are in line with the policies of the Japanese government, JICA (country-specific aid implementation policies) and the development plans of the recipient government (3) Projects that are expected to utilize Private Sector Investment Finance (4) Proposed corporation plans to participate in the project in the form of investment.	Budget Limit Phase 1: 30 million yen per case Phase 2: 120 million yen per case
(2) Private Sector Investment Finance*1	In developing countries, when a project with a high development effect is carried out by a private company, and it is difficult for a general financial institution to cope with the project alone, the project is supported from two aspects of funds, "investment" and "loan".	Projects that meet the following requirements are eligible. (1) Those that are in line with the development policy of the government of the country and have a high development effect (2) The business plan is appropriate, and the achievement of the business is expected. (3) JICA's support is necessary for the project to be implemented (it is recognized that the project cannot be implemented with loans or investments by existing financial institutions, and that the added value of JICA's support, such as the reduction of country risk in the project country and the effect of attracting the private sector, is essential for the project to be implemented) It is judged that the added value of JICA's support is indispensable for the project implementation.)	<u>Loan:</u> Percentage in principle, up to 70% of the total project cost. Can be as high as 80% if it is deemed particularly necessary <u>Investment:</u> In principle, direct investment in local companies. The investment ratio shall be 25% or less and the largest shareholder shall be the issuer. (2) The Company shall not exceed the percentage of capital and shall not take unlimited liability. Types including preferred stock shares are also possible.
(3) SDGs business supporting Surveys (SME Partnership Promotion Survey, SDGs Business Model Formulation Survey with the Private Sector, SDGs Business Verification Survey with Private Sector)	This project aims to achieve a balance between the resolution of development issues in developing countries and the overseas expansion of Japanese small and medium-sized enterprises (SMEs) with excellent products and technologies. To achieve this objective, the project will conduct commissioned research work.	In principle, there are two categories: "SME Support Type" for SMEs, and "SDGs Business Support Type" for large companies, and the following three support menus are provided according to the stage of business. (1) SME Partnership Promotion Survey (2) SDGs Business Model Formulation Survey with the Private Sector (3) SDGs Business Verification Survey with Private Sector	(1) <u>SME Partnership Promotion Survey</u> 8.5 million yen or 9.8 million yen (SME support type only) (2) <u>SDGs Business Model Formulation Survey with the Private Sector</u> 30 million yen or 50 million yen (SME support type), 8.5 million yen (SDGs business support type) (3) <u>SDGs Business Verification Survey with Private Sector</u> 100 million yen, 150 million yen or 200 million yen (SME support type), 50 million yen (SDGs business support type)

Program	Objective	Outline	Budget and Project Scale
(4) Grant aid corresponding to the right to operate a project	In developing countries, public-private partnership infrastructure projects are promoted, and private companies are expected to be responsible for the management of the projects over the medium and long term. The purpose of this project is to promote the acquisition of business and operational rights by Japanese companies and to utilize Japan's superior technology for the development of developing countries.	When it is difficult to finance infrastructure projects implemented by developing countries with commercial funds alone, Japan provides the necessary funds for the facilities, equipment, and other services required for such projects. The funds will be paid through the governments of developing countries to the special purpose companies that will be responsible for the projects.	Fiscal Year 2014 Number of implementing countries: 2 Number of projects implemented: 2 (approx. 3.7 billion yen) FY2015 No results. Fiscal Year 2016 Number of implementing countries: 1 Number of projects implemented: 1 (approx. 3.3 billion yen). Fiscal Year 2017 Number of implementing countries: 1 Number of projects implemented: 1 (approx. 5 billion yen). Fiscal Year 2018 Number of implementing countries: 1 Number of projects implemented: 1 (approx. 4.1 billion yen).
(5) Grant Aid Using SME Products	To provide grants to developing countries that are undertaking economic and social development efforts, including poverty reduction in their own countries, of the funds necessary to procure the products and services necessary to support those efforts.	By providing the products of Japanese SMEs based on the requests and development needs of the governments of developing countries, aim to improve the recognition of the products of such SMEs, create continuous demand, and strongly support the overseas development of Japanese SMEs.	Support for overseas expansion of private companies, including small- and medium-sized enterprises, and local governments Budget for FY2019 Grant: 4.4 billion yen

*1: The project does not target only Japanese private companies for investment and financing.
 Source: Prepared by the Study Team based on JICA HP, 2019 Development Cooperation Reference Materials, Legislation and Research 2019. 2 No. 410

In addition to the programs listed above, JICA is also implementing various private sector cooperation projects. Figure 15-1 shows the list of JICA's private sector cooperation projects.

Supporting menu for public private partnership by Japanese government



Source: Ministry of Foreign Affairs Japan, “ODA Policies: Public-Private Partnership”

Figure 15-1 List of Supporting Menu for Public-Private Partnership by the Japanese Government

(3) TSUBASA

As a new initiative to support the private sector in Latin America, JICA launched the Transformational Start Ups' Business Acceleration for the SDGs Agenda (TSUBASA) in 2021. From November 2021, in cooperation with IDB Lab, JICA called for solutions and ideas that will contribute to the achievement of the SDGs in Latin America and the Caribbean. The eight selected companies were announced in December 2021.

(4) Other Programs by JICA to Collaborate with Japanese Private Sector

JICA has many cases of promoting public-private partnerships in the form of memorandums of understanding (MOUs) with private companies, apart from the framework of private-sector partnership projects. Table 15-6 below shows the initiatives between JICA and private institutions. In addition, MOUs for cooperation have been signed with a total of 51 regional financial institutions. In this study, while referring to the existing systems, the Study Team will seek a flexible way of private sector collaboration that is not bound by that framework.

Table 15-6 Cooperation Agreements between JICA and the Japanese Private Sector

Title	Related Institutions	Outline	URL
Plus "Platform for unified support for startups"	JETRO, AMED, JST, NARO, IPA, NEDO, AIST, SMRJ	The purpose of the agreement is to contribute to the formation of a start-up ecosystem in Japan and to the resolution of economic and social issues, including those overseas, by promoting the creation of new industries through continuous collaboration and support for human resources such as researchers and entrepreneurs who are working to commercialize their technological seeds (*2).	https://www.jetro.go.jp/news/releases/2020/53730e8543dd917c.html
A comprehensive partnership agreement that aims to contribute to solving development issues in developing countries and achieving the SDGs (Sustainable Development Goals)	Rakuten	Based on this agreement, JICA and Rakuten will collaborate and cooperate based on innovation, sustainable lifestyle and partnership, utilizing the knowledge, human resources, IT and other technologies of both parties.	https://www.jica.go.jp/press/2020/20210225_21.html
Introduction of agricultural materials using beer yeast cell walls for safe and secure food supply and sustainable agriculture in developing countries	Asahi Group Holdings	To promote the development of food value chains in developing countries by using beer yeast cell walls, a by-product of the beer manufacturing process, as a liquid compound fertilizer. It is hoped that the widespread use of food-derived environmentally friendly compound liquid fertilizers will help developing countries realize safe and secure food supplies and sustainable agriculture.	https://www.jica.go.jp/press/2019/20190425_41.html
Memorandum of Understanding (MOU) to promote cooperation between the two organizations for the purpose of promoting overseas development of small and medium-sized enterprises (SMEs), appropriate use of foreign human resources, and solving problems in developing countries through these efforts.	Shinkin Central Bank	The conclusion of the MOU will enable the two parties to work together to solve social issues in Japan and abroad, and to support the overseas business of private companies, while taking advantage of the strengths of both parties.	https://www.jica.go.jp/press/2020/20210304_11.html
Conclusion of MOU to promote cooperation between the two organizations for the purpose of promoting overseas development of small and medium-sized enterprises and solving problems in developing countries	Organization for Small & Medium Enterprises and Regional Innovation, JAPAN	By taking full advantage of the strengths of SMEs and JICA, and by strengthening the cooperative relationship between the two organizations from the headquarters to the base level, the resolution of development issues in developing countries, overseas development of SMEs, and regional revitalization in Japan will be promoted.	https://www.jica.go.jp/press/2020/20200619_10.html
Signed MOU to promote cooperation between the two parties with the aim of strengthening support for companies' overseas development.	Tokio Marine & Nichido Fire Insurance Co.	This collaboration is expected to promote economic and social development in developing countries, overseas expansion of Japanese companies, and regional revitalization in Japan by providing more substantial support, such as the provision of safety information accumulated by non-life insurance companies, to private companies that are considering or planning overseas business development in developing countries.	https://www.jica.go.jp/press/2019/20190411_10.html

Title	Related Institutions	Outline	URL
Signed MOU to promote cooperation between the two parties with the aim of strengthening support for companies' overseas development.	Mitsui Sumitomo Insurance Co.	This collaboration is expected to provide more substantial support, such as the provision of safety information accumulated by non-life insurance companies, to private companies that are considering or planning overseas business development in developing countries, and to promote economic and social development in developing countries, overseas development of Japanese companies, and regional revitalization in Japan.	https://www.jica.go.jp/press/2019/20190701_10.html
Business collaboration and agreements for the use of FinTech	Music Securities (MS Company)	The conclusion of this MOU is expected to help promote the discovery of small- and medium-sized enterprises (SMEs) with products and technologies that are useful for the economic and social development of, as well as the promotion of business development in, the Central and South American regions by these SMEs, collaboration and cooperation with companies managed by Japanese and Japanese-Americans in the region, and the dissemination of information to Japanese individual investors.	https://www.jica.go.jp/press/2017/20171222_02.html
Signed a partnership agreement to strengthen cooperation in developing human resources that contribute to local development and the acceptance of foreign human resources	Kumamoto Prefecture (Kyushu)	This cooperation agreement will strengthen the cooperative relationship between JICA and Kumamoto Prefecture in order to develop human resources who have both experiences working in developing countries as JICA Overseas Cooperation Volunteers and experience in higher education and internship for the purpose of regional development in Kumamoto Prefecture.	https://www.jica.go.jp/press/2019/20191010_20.html
Signing of MOU for business cooperation to achieve sustainable development goals (SDGs) through successful business in Africa	JETRO, UNDP	By connecting the support systems and networks of each organization, JICA has established a system that can provide a wide range of support, from finding business opportunities to business expansion, in a seamless manner that more closely meets the needs of Japanese companies, including SMEs. The system will contribute to Africa's economic and social development by supporting the entry into Africa of Japanese companies, which are increasingly looking to overseas markets due to changes in the domestic market environment.	https://www.jica.go.jp/press/2019/ku57pq00002lcaml-att/20190830_0106.pdf
MoU to strengthen support for companies' overseas expansion	JETRO	In order for companies to fully utilize the strengths of JETRO and JICA, it is expected that the two organizations will strengthen their cooperative relationship from the head office to the base level based on this MOU, thereby contributing to the promotion of overseas business development by companies, economic and social development in developing countries, and regional revitalization in Japan.	https://www.jica.go.jp/press/2018/20180724_01.html
MOU on business collaboration and cooperation to further strengthen support for the overseas expansion of small and medium-sized companies	The Hokuriku Bank, Ltd.	Main cooperation contents include (1) sharing of information on economy, infrastructure, and development in developing countries, and information on trends in activities of Japanese companies, (2) joint support for SMEs considering business development in developing countries, and (3) jointly holding of seminars on overseas business development for companies in various countries in the region	https://www.jica.go.jp/hokuriku/topics/2019/20200313.html
Pilot project to establish a sustainable coffee value chain	Good Coffee Farms, Japan Conservation Engineers & Co., Ltd.	Pilot project aims to establish a sustainable coffee value chain model in Guatemala by seeking collaboration with coffee production organizations and other private companies in Guatemala. In addition, the project will contribute to solving various social issues and achieving the SDGs in Guatemala, with the aim of realizing a sustainable world.	https://www.jica.go.jp/regions/america/plaza/nced070000004rvr-att/20201217_01.pdf

Source: Study Team based on JICA HP, and other URLs shown in the table, omitting some duplicated content.

15.5.2 Analysis of Sectoral Indicators

(1) JICA Projects through Public-Private Partnership Programs

Table 15-7 below shows the results of JICA's adoption of each private sector partnership project since FY2012. Some of the business frameworks have been reorganized and are noted in the table. In addition to the number of projects adopted in Central America and the Caribbean, those adopted in all regions and the projects in South America are listed for comparison.

JICA has adopted more than 1,200 private-sector partnership projects since 2012, but the number of projects adopted in Central America and the Caribbean is generally small. Other than the Private Sector Investment Finance, only 26 projects have been adopted in Central America and the Caribbean. Of these, 20 were SME support projects targeting small- and medium-sized enterprises (SMEs), while only one was an SDGs business support project targeting relatively large enterprises. There have been no adoptions yet of preparatory surveys for private sector investment finance for the formation of large-scale infrastructure projects.

Table 15-7 Selected Private Sector Partnership Projects in Central America and the Caribbean (2012-2020, 1st Round)

Program		Worldwide	Latin America	Central America and the Caribbean	Implementing Country
①	Preparatory Survey for Private-Sector Investment Finance	31 items	0 cases	0 cases	-
②	Preparatory Survey for Private-Sector Investment Finance	38 cases	5 cases	3 cases	Central and South America, (2), Mexico
③-1	SME Partnership Promotion Survey (Support for Small-sized Enterprise)	172 cases	12 cases	4 cases	Mexico (2), Honduras, El Salvador
③-2	SDGs Business Model Formulation Survey with the Private Sector (Support for Small- and Medium- sized Enterprises)	501 cases	25 cases	12 cases	Mexico (10), Costa Rica, Nicaragua
③-3	SDGs Business Model Formulation Survey with the Private Sector (Support for Large Enterprise)	29 cases	4 cases	0 cases	-
③-4	SDGs Business Verification Survey with Private Sector (Support for Small- and Medium- sized Enterprises)	272 cases	12 cases	4 cases	Mexico (3), Honduras
③-5	SDGs Business Verification Survey with Private Sector (Support for Large Enterprise)*2	202 cases	9 cases	6 cases	Mexico (6)

*2: Including the former Survey on Problem-Solving Businesses in Developing Countries (SDGs Business), the former Project for Promoting Private Sector Technology Diffusion for Social and Economic Development in Developing Countries, and the former Preparatory Survey on Cooperation (Promoting BOP Business Collaboration)

Source: Study Team based on JICA HP

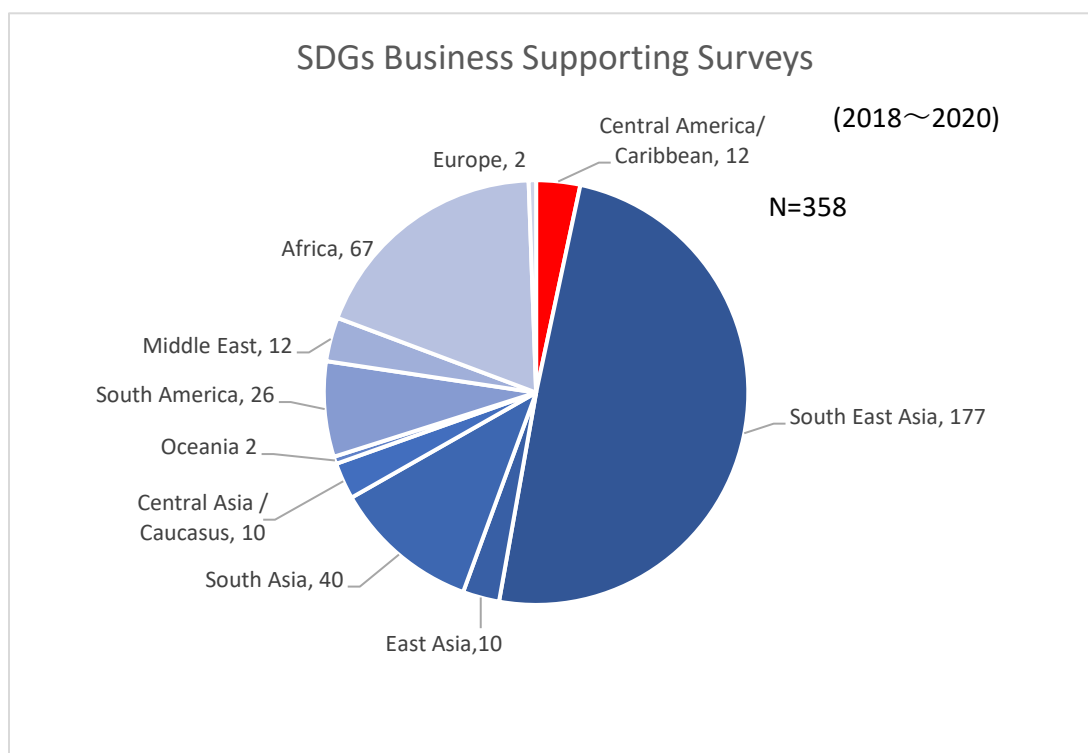
Table 15-8 below shows the recent results of JICA's adoption of each private sector partnership project since the second call for proposals in FY200.

Table 15-8 Selected Private Sector Collaborative Projects in Central America and the Caribbean (since the Second Call for Proposals in FY2020)

Program		Central America and the Caribbean	Implementing Country
③-4	SDGs Business Model Formulation Survey with the Private Sector (Support for Large Enterprise)	1 case	Mexico
③-5	SDGs Business Verification Survey with Private Sector (Support for Small- and Medium- sized Enterprises)	1 case	Guatemala

Source: Study Team based on JICA HP

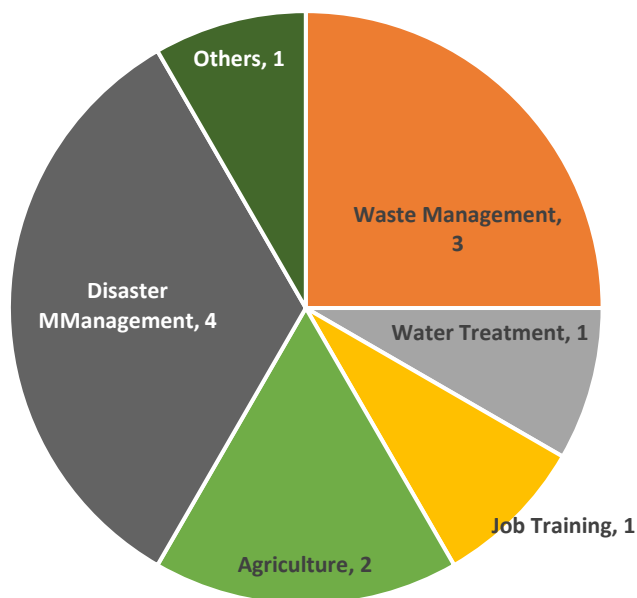
Figure 15-2 shows the results of the SDGs Business Supporting Surveys adopted in the period from FY2018 to FY2020. In terms of the share of projects by region, the Central American and Caribbean regions accounted for 3.3%, which is a small number compared with other regions.



Source: Study Team based on JICA HP

Figure 15-2 Share of SDGs Business Supporting Surveys by Region

By sector, disaster management was the most common, followed by waste management and agriculture as shown in Figure 15-3. The region has similar types of disasters to Japan, such as earthquakes and typhoons (hurricanes).



Source: Study Team based on JICA HP

Figure 15-3 Share of SDGs Business Supporting Surveys in Central America and the Caribbean by Sector

Private sector partnership projects that have been adopted in Central America and the Caribbean in the past are organized by country from Table 15-9. Private sector investment finance projects are shown separately.

Table 15-9 Public-Private Partnership Projects (Mexico: 23 projects)

Year	Program	Field	Project Title	Implementation Company	External Resource (Consulting Company)	Target Country	Contract Period
2012	Needs assessment	Vocational training and industrial development	Survey on the Needs of Japanese SMEs to Introduce Technologies and Products in the Field of Vocational Training and Industrial Development	Nomura Research Institute, Ltd.	-	Vietnam	closed
						India	
						Mexico	
						Philippines	
						Laos	
		Bangladesh					
2014	Feasibility Study (SME Support Type)	Environment and energy	Case Study on Energy Efficiency and Conservation in Heavy and Chemical Industries	ADAPTEX Corporation	Yachiyo Engineering Co.	Mexico	November 2015 - August 2016
2016	Feasibility Study (SME Support Type)	Waste treatment	Feasibility Study on Recycled Aluminum Manufacturing Technology Using Waste Fuels	Hokuriku Techno Co.	Carbon Free Consulting Inc. and Japan International Cooperation System	Mexico	June 2017 - June 2018
2018	Feasibility Study (SME Support Type)	Waste treatment	Case Study on Recycling Technology for Agricultural Films and Plastics	Kuroda Industries, Ltd. and Pantech Corporation Joint Venture	Carbon Free Consulting Co.	Mexico	January 2019 - December 2019
2018	Feasibility Study (SME Support Type)	Waste treatment	Investigation on the Project for Calcination and Volume Reduction of Waste Shells and Recycling of Residues by Introducing a High-performance Small Incinerator	Asada Shokai Co.	Angelosec Corporation, DCT Corporation	Mexico	January 2019 - February 2020
2019	Feasibility Study (SME Support Type)	Water purification and water treatment	Case Study on the Proper Treatment of Sludge in Mexico City and Surrounding States	JV: Kyoei Kogyo and Fukoku Kogyo	[Contract being negotiated]	Mexico	-
2016	Feasibility Study (SME Support Type)	Vocational training and industrial development	Study on Strengthening the Industrial Base by Developing the Packaging Materials Business for Automotive Parts	Kanepackage Corporation	Japan Development Services Inc. and Accenture Co.	Mexico	June 2017 - February 2018
2016	Feasibility Study (SME Support Type)	Agriculture	Case Study on Sustainable Fishery using Shell Nurse	Marine Construction Co.	Value Frontier Corporation, OAFIC Corporation	Mexico	April 2017 - May 2018
2016	Feasibility Study (SME Support Type)	Public health and medicine	Case Study on the Improvement of Neonatal Ventilation Management	Metran Corporation	International Techno Center Corporation, Oriental Consultants Co.	Mexico	April 2017 - April 2018

Year	Program	Field	Project Title	Implementation Company	External Resource (Consulting Company)	Target Country	Contract Period
2020	Feasibility Study (SME Support Type)	Disaster prevention and disaster control	Feasibility Study on the Introduction of Nondestructive Testing Technology for Infrastructure Maintenance in Mexico	Just Corporation	[Contract being negotiated]	Mexico	-.
2020	Dissemination, Demonstration and Business Development Project (SME Support Type)	waste management	Project for Dissemination, Demonstration, and Commercialization of a Model for Calcination and Recycling of Waste Shells that Contributes to the Promotion of Recycling-oriented Agriculture	Asada Shokai Co.	[Contract being negotiated]	Mexico	-.

Source: JICA HP (as of the end of October 2021)

Table 15-10 Public-Private Partnership Projects (Honduras: 2 Projects)

Year	Program	Field	Project Title	Implementation Company	External Resource (Consulting Company)	Target Country	Contract Period
2019	Dissemination, Demonstration and Business Development Project (SME Support Type)	Disaster prevention and disaster control	Project for Promotion, Demonstration and Business Development of Slope Disaster Detection Equipment	Sokuhoku Co.	[Contract being negotiated]	Honduras	-.
2018	Basic Research	Disaster prevention and disaster control	Basic Survey on Slope Disaster Detection Equipment	Sokuhoku Co.	Kokusai Kogyo Co.	Honduras	April 2019 - December 2019

Source: IJICA HP (as of the end of October 2021)

Table 15-11 Public-Private Partnership Projects (El Salvador: 1 Project)

Year	Program	Field	Project Title	Implementation Company	External Resource (Consulting Company)	Target Country	Contract Period
2019	Basic Research	Disaster prevention and disaster control	Basic Study on Application Promotion of High Energy Absorbing Falling Rock Protection Net Method	Civil Anzenshin Co.	Nippon Koei Co.	El Salvador	December 2019 - June 2020

Source: JICA HP (as of the end of October 2021)

Table 15-12 Public-Private Partnership Projects (Costa Rica: 1 Project)

Year	Program	Field	Project Title	Implementation Company	External Resource (Consulting Company)	Target Country	Contract Period
2019	Feasibility Study (SME Support Type)	Waste treatment	Case Study on Construction of Resource Recycling Waste Treatment System by Introducing Crushing and Separation Machine	A-Tech Corporation	[Contract being negotiated]	Costa Rica	-

Source: JICA HP (as of the end of October 2021)

Table 15-13 Public Private Partnership Projects (Nicaragua: 1 Project)

Year	Program	Field	Project Title	Implementation Company	External Resource (Consulting Company)	Target Country	Contract Period
2018	Feasibility Study (SME Support Type)	Agriculture	Case Study for High Value Addition and Value Chain Construction of Cocoa	Bace Corporation	RDI Corporation	Nicaragua	March 2019 - March 2020

Source: JICA HP (as of the end of October 2021)

Table 15-14 Public-Private Partnership Projects (Guatemala: 1 Project)

Year	Program	Field	Project Title	Implementation Company	External Resource (Consulting Company)	Target Country	Contract Period
2020	Case Study (SDGs type)	agriculture	Case Study on Coffee Rust Control Based on Weather Forecast Information	Joint venture between Meteorological Engineering Research Institute, Inc. and Agricultural Support Center Co.	[Contract being negotiated]	Guatemala	-

Source: JICA HP (as of the end of October 2021)

(2) JICA's Track Record in Private Sector Investment Finance

Four private sector investment finance projects that are shown in Table 15-15 have been carried out in the region in the past. Three projects are in the power business, including renewable energy. The Latin American Energy Conservation and Renewable Energy Project is an initiative to support renewable energy projects through investment in funds, and to promote the use of Japan's low-carbon (energy conservation and renewable energy) technologies. The Mexican solar power project was implemented as a co-financing with IFC and others for a local renewable energy company.

One of the latest initiatives was the financing of a microfinance project for women businesses in Mexico in March 2021. This is part of the "G7 2X Challenge: Financing for Women" initiative, in which development finance institutions in G7 countries are promoting private investment by leveraging their own financial contributions.

Table 15-15 Private Sector Investment Finance Projects (Latin America: 3)

Date	Target Country	Title	Scheme
November 2014	Central and South America	Energy Conservation and Renewable Energy Projects in Latin America	Investment
March 2019	Central and South America	Latin American and Caribbean Energy Conservation and Renewable Energy Project II	Investment
March 2020	Mexico	Solar Power Business in Mexico	Loan
March 2021	Mexico	Microfinance for Women Businesses	Loan

Source: Study Team

(3) Total Number of Private Japanese Companies Operating in the Target Countries

This section summarizes the status of Japanese companies' business expansion in Central America and the Caribbean. According to the survey show in Table 15-16 on the number of Japanese companies operating overseas published by the Ministry of Foreign Affairs of Japan, as of October 2019, Japanese companies have established operations in 15 of the 23 countries in the region.

The total number of business locations includes overseas branches of Japanese companies, local corporations wholly owned by Japanese companies and their branches, joint ventures (local corporations in which Japanese companies have a direct or indirect stake of 10% or more) and their branches, and companies established overseas by Japanese nationals (in which Japanese nationals have a stake of 10% or more).

As of 2019, more than 1,000 companies have established operations in Mexico, but only eight other countries have more than ten companies based in Mexico. In the other six countries, the total number of corporate bases is less than ten, indicating that the presence of Japanese companies is low overall. There are eight countries with no Japanese corporate presence (Antigua and Barbuda, St. Kitts and Nevis, Dominica, St. Lucia, St. Vincent and the Grenadines, Grenada, Guyana, and Suriname).

Table 15-16 Number of Japanese Companies Operating Overseas (Survey Results as of October 1, 2019)

Country	No. of Companies	Corporate Type							
		Overseas branches of Japanese companies, etc.	Local corporations or branches wholly owned by Japanese companies		Joint ventures (local corporations in which Japanese companies have a direct or indirect stake of 10% or more) and their branches, etc.		Companies established by Japanese nationals who have moved abroad (Japanese nationals own at least 10% of the company)	Unknown	
			Incorporated	Branch Office	Incorporated	Branch Office			
Central America	Mexico	1,299	43	724	280	109	46	93	4
	Belize	2	0	0	0	1	0	1	0
	Guatemala	23	8	2	6	3	1	3	0
	El Salvador	13	0	3	5	0	2	1	2
	Honduras	13	6	1	2	0	1	3	0
	Nicaragua	6	0	1	3	0	1	1	0
	Costa Rica	32	2	7	8	0	0	15	0
	Panama	45	9	18	7	5	0	4	2
Caribbean	Bahamas	2	0	0	0	0	0	2	0
	Cuba	21	19	0	0	0	0	2	0
	Haiti	6	5	0	0	0	0	1	0
	Dominican Republic	13	3	3	0	2	0	5	0
	Jamaica	16	0	3	0	2	0	11	0
	Antigua Barbuda	0	0	0	0	0	0	0	0
	Saint Christopher and Nevis	0	0	0	0	0	0	0	0
	Dominica	0	0	0	0	0	0	0	0
	St. Lucia	0	0	0	0	0	0	0	0
	Saint Vincent and the Grenadines	0	0	0	0	0	0	0	0
	Barbados	1	0	1	0	0	0	0	0
	Grenada	0	0	0	0	0	0	0	0
	Trinidad and Tobago	7	0	3	0	2	0	2	0
Other	Guyana	0	0	0	0	0	0	0	0
	Suriname	0	0	0	0	0	0	0	0

*Note: Based on the interview survey and not an exhaustive result. 100 or more companies are underlined in bold, 10 or more companies are in bold.

Source: Ministry of Foreign Affairs of Japan, Survey on the Number of Japanese Companies Operating Overseas (2019 Survey Results (as of October 1, 2019))

The number in Mexico is outstanding even on a global scale. There are only 11 countries in the world with more than 1,000 Japanese companies (the others are eight countries in Asia, the United States, and Germany). More than half of the total number of locations in Mexico are related to the manufacturing industry. Wholesale and retail trade are the next most common as shown in Table 15-17.

Geographical and linguistic conditions are generally discussed as challenges to business expansion in Central America and the Caribbean, but there are no major differences in these conditions between Mexico and other Central American and Caribbean countries. However, Mexico's market access to the United States, which is connected to Mexico by land, is attractive, and it has taken time to expand its manufacturing value chain. In addition, Mexico has concluded trade agreements with a number of countries, including the Japan-Mexico FTA concluded in 2012, and is expected to expand further as it has already developed infrastructure networks such as highways, ports, and railroads. Currently, Mexico is the only country in the region that has an overseas office of the Japan Chamber of Commerce. The network and supply chain of more than 1,000 Japanese companies in Mexico will play an important role in the future expansion of Japanese private companies in Central America and the Caribbean.

Table 15-17 Number of Japanese Companies Operating Overseas by Sector

Country	Sector																		
	Agriculture, forestry	Fishery	Mining, quarrying	Construction	Manufacturing	Utility (Power, Water, etc.)	Telecommunications	Logistics	Wholesale/Retail	Finance and insurance	Real Estate	Academic research, technical services	Tourism	Entertainment	Education	Healthcare	Service (unclassified)	Unclassified	Unknown
Mexico	1	1	5	20	691	23	6	93	276	25	5	23	38	3	5	6	65	5	8
Central America																			
Belize	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Guatemala	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
El Salvador	1	0	0	0	7	0	2	0	1	0	0	0	0	0	0	0	0	0	1
Honduras	1	0	0	2	0	0	0	0	5	0	0	4	1	0	0	0	0	0	0
Nicaragua	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Costa Rica	1	0	0	1	2	0	0	0	10	0	0	4	4	0	0	0	1	8	1
Panama	0	0	0	2	12	0	1	2	19	1	0	2	0	0	0	0	0	3	3
Bahamas	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
Cuba	0	0	0	0	0	0	0	0	12	0	0	0	0	5	0	0	0	0	0
Haiti	0	0	0	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Dominican Republic	0	0	0	0	2	0	0	0	6	0	0	0	3	4	0	0	0	0	0
Jamaica	0	0	0	0	0	0	0	0	4	0	0	3	0	0	0	0	0	0	0
Caribbean																			
Antigua and Barbuda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saint Christopher and Nevis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dominica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Lucia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saint Vincent and the Grenadines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barbados	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grenada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trinidad and Tobago	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other																			
Guyana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Suriname	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*Note: Based on the interview survey and not an exhaustive result. 100 or more companies are underlined in bold, 10 or more companies are in bold.

Source: Ministry of Foreign Affairs of Japan Survey on the Number of Japanese Companies Operating Overseas (2019 Survey Results (as of October 1, 2019))

Looking at the trends over the past five years in Table 15-18, the number of companies in Mexico has been increasing at around 100 per year. In most of the other countries, the trend is flat. In El Salvador and Honduras, the number of locators increased by about ten over the past five years, and in Haiti, the number of bases increased by five. On the other hand, in Guyana and Suriname, there were no new locators in 2019.

Table 15-18 The Trend of Japanese Companies Operating Overseas

Country		2015	2016	2017	2018	2019
Central America	Mexico	814	957	1111	1,182	1,299
	Belize	2	2	2	4	2
	Guatemala	18	19	20	22	23
	El Salvador	4	4	5	11	13
	Honduras	2	3	4	6	13
	Nicaragua	4	4	4	6	6
	Costa Rica	33	32	30	32	32
Panama	46	45	47	52	45	
Caribbean	Bahamas	2	2	2	2	2
	Cuba	13	14	19	22	21
	Haiti	3	4	3	1	6
	Dominican Republic	10	11	11	12	13
	Jamaica	18	18	17	17	16
	Antigua Barbuda	0	0	0	0	0
	Saint Christopher and Nevis	0	0	0	0	0
	Dominica	0	0	0	0	0
	St. Lucia	0	0	0	0	0
	Saint Vincent and the Grenadines	0	0	0	0	0
	Barbados	2	2	2	2	1
	Grenada	0	0	0	0	0
Trinidad and Tobago	8	7	7	9	7	
Other	Guyana	1	1	1	1	0
	Suriname	3	3	2	1	0

*Note: Based on the interview survey and not an exhaustive result.

Source: Ministry of Foreign Affairs of Japan Survey on the Number of Japanese Companies Operating Overseas (2019 Survey Results (as of October 1, 2019))

(4) Number of Japanese Residents in Each Country

When discussing the number of companies expanding into Mexico, various factors such as the country's large population and business environment should be considered, but one factor is the overwhelming volume of Japanese residents. The number of Japanese residents in the region are shown in Table 15-19. The start of immigration to Mexico dates back to 1897, and today there are nearly 10,000 long-term residents and nearly 3,000 permanent residents, and the ties with Japan are unmatched by other Central American and Caribbean countries. In addition, there are more than 76,000 people of Japanese descent in the country (according to the Ministry of Foreign Affairs).

**Table 15-19 Number of Japanese Residents in Central America and the Caribbean, 2020
 (as of October 1, 2019)**

Country		Total	Long-Stay	Resident
Central America	Mexico	12,600	9,848	2,752
	Belize	51	44	7
	Guatemala	384	249	135
	El Salvador	137	75	62
	Honduras	174	124	50
	Nicaragua	81	81	0
	Costa Rica	424	307	117
	Panama	367	313	54
Caribbean	Bahamas	26	19	7
	Cuba	95	68	27
	Haiti	44	33	11
	Dominican Republic	778	213	565
	Jamaica	216	188	28
	Antigua Barbuda	5	0	5
	Saint Christopher and Nevis	0	0	0
	Dominica	0	0	0
	St. Lucia	25	23	2
	Saint Vincent and the Grenadines	5	4	1
	Barbados	23	20	3
	Grenada	0	0	0
	Trinidad and Tobago	106	97	9
Other	Guyana	6	1	5
	Suriname	6	6	0

Source: Ministry of Foreign Affairs of Japan 2020 Survey of Japanese Residents Abroad (as of October 1, 2019)

(5) Business Environment in Central America and the Caribbean: Regional Agreements and Trade Agreements

The countries of Central America and the Caribbean have signed a number of regional agreements with countries within and outside the region. Table 15-20 below summarizes the status of participation in each agreement and committee. The agreements in which all 23 countries participate are the Organization of American States (OAS), the Community of Latin American and Caribbean States (CELAC), the Association of Caribbean States (ACS), and the United Nations Economic Commission for Latin America and the Caribbean (ECLAC). Of these, Japan is an observer in the OAS and ACS. In addition, 22 countries, excluding the Bahamas, are members of the WTO (the Bahamas is an observer) and have made high-level commitments (e.g., concessions at low tax rates close to the effective tax rate) to the applicant countries for membership, including market access for goods and services and the development of domestic institutions consistent with the WTO Agreement, in order to liberalize trade.

Mexico is the only country that has concluded a bilateral trade agreement with Japan. The Japan-Mexico Economic Partnership Agreement has been in effect since 2005. In addition, the USMCA (also known as the new NAFTA), which includes Mexico, is a newly issued system that came into effect in July 2020. Reflecting the protectionist political background of the United States, the system is designed to keep the supply chain of automobiles and other products within the Agreement's borders and is expected to have an impact on the future construction of manufacturing supply chains in the region, including Central America and the Caribbean.

Table 15-20 Regional and International Agreements in Central America and the Caribbean

Regional Agreement (Japanese)		Regional Agreement					
		米州機構	ラテンアメリカ・カリブ諸国共同体	カリブ諸国連合	国連ラテンアメリカ・カリブ経済委員会	ラテンアメリカ経済機構	カリブ共同体
Regional Agreement (English)		Organization of American States	Community of Latin American and Caribbean States	Association of Caribbean States	Economic Commission for Latin America and the Caribbean	Latin American and Caribbean Economic System	Caribbean Community
Regional Agreement (Spanish)		La Organización de los Estados Americanos	Comunidad de Estados Latinoamericanos y Caribeños	Asociación de Estados del Caribe	La Comisión Económica para América Latina y el Caribe	Sistema Económico Latinoamericano y del Caribe	La Comunidad del Caribe
Regional Agreement (Abbreviation)		OAS	CELAC	ACS	(英) ECLAC、(西) CEPAL	SELA	CARICOM
Founded Year		1948/4/30	2011/12/1	1994/7/24	1948/2/25	1975/10/17	1973/7/4
Central America	Mexico	●	●	●	●	●	
	Belize	●	●	●	●	●	●
	Guatemala	●	●	●	●	●	
	El Salvador	●	●	●	●	●	
	Honduras	●	●	●	●	●	
	Nicaragua	●	●	●	●	●	
	Costa Rica	●	●	●	●	●	
Caribbean	Panama	●	●	●	●	●	
	Bahamas	●	●	●	●	●	●
	Cuba	●	●	●	●	●	
	Haiti	●	●	●	●	●	●
	Dominican Republic	●	●	●	●	●	
	Jamaica	●	●	●	●	●	●
	Antigua Barbuda	●	●	●	●	●	●
	Saint Christopher and Nevis	●	●	●	●	●	●
	Dominica	●	●	●	●	●	●
	St. Lucia	●	●	●	●	●	●
	Saint Vincent and the Grenadines	●	●	●	●	●	●
	Barbados	●	●	●	●	●	●
	Grenada	●	●	●	●	●	●
Trinidad and Tobago	●	●	●	●	●	●	
Other	Guyana	●	●	●	●	●	
	Suriname	●	●	●	●	●	●
Japan		Observer		Observer	●		
URL		http://www.oas.org/en/about/who_we_are.asp	http://celacinternational.org/	http://www.acs-aec.org/index.php?q=about-the-ac	https://www.cepal.org/en/about-eclac-0	http://www.sela.org/en/member-states/	Member States and Associate Members - CARICOM

Regional Agreement (Japanese)		Regional Agreement						
		中米統合機構	東カリブ諸国機構 (東カリブ・ドル)	ラテンアメリカ統合連合	南米諸国連合	太平洋同盟	米・メキシコ・カナダ協定 (新NAFTA)	南米共同市場 (メルコスール)
Regional Agreement (English)		Central American Integration System	Organisation of Eastern Caribbean States	Latin American Integration Association	Union of South American Nations	Pacific Alliance	Agreement between the United States of America, the United Mexican States, and Canada	Southern Common Market
Regional Agreement (Spanish)		Sistema de la Integración Centroamericana	La Organización de Estados del Caribe Oriental	Asociación Latinoamericana de Integración	Unión de Naciones Suramericanas	Alianza del Pacífico	Tratado entre México, Estados Unidos y Canadá	Mercado Común del Sur
Regional Agreement (Abbreviation)		SICA	OECS	ALADI	UNASUR		USMCA	Mercosur
Founded Year		1991/12/13	1981/6/18 (2010/6/18 Ammended)	1980/8/12	2011/3/11	2011/4/28	2020/7/1	1991/3/26
Central America	Mexico	オブザーバー		●	オブザーバー	●	●	オブザーバー
	Belize	●						
	Guatemala	●		オブザーバー		オブザーバー		
	El Salvador	●		オブザーバー		オブザーバー		
	Honduras	●		オブザーバー		オブザーバー		
	Nicaragua	●		オブザーバー		オブザーバー		
	Costa Rica	●		オブザーバー		オブザーバー		
Caribbean	Panama	●			オブザーバー	オブザーバー		
	Bahamas			●				
	Cuba							
	Haiti					オブザーバー		
	Dominican Republic	●		オブザーバー		オブザーバー		
	Jamaica							
	Antigua Barbuda		●					
	Saint Christopher and Nevis		●					
	Dominica		●					
	St. Lucia		●					
	Saint Vincent and the Grenadines		●					
	Barbados							
	Grenada		●					
Trinidad and Tobago					オブザーバー			
Other	Guyana				●			準加盟国
	Suriname				●			準加盟国
Japan		Observer		Observer		Observer		
URL		https://www.sica.int/pais/observador	https://oece.org/en/who-we-are/member-states	http://www.aladi.org/sitio/aladi/paises-miembros/	https://parlamentomercosur.org/innovaportal/v/4503/1/parlasur/unasur.html	https://alianzapacifico.net/en/what-is-the-pacific-alliance/	https://ustr.gov/trade-agreements/free-trade-agreements/united-states-mexico-canada-agreement	https://www.mercosur.int/en/about-mercosur/mercosur-countries/

Regional Agreement (Japanese)		International Agreement, etc.			Agreement with Japan		WB Doing Business Ranking
		WTO加盟国	TPP	G20	日本・メキシコ経済連携協定	日・中南米連結性強化構想	
Regional Agreement (English)		World Trade Organization	Comprehensive and Progressive Agreement for Trans-Pacific Partnership	Group of Twenty	Japan-Mexico Economic Partnership Agreement		
Regional Agreement (Spanish)		Organización Mundial del Comercio	MIPyMES.MX	El Grupo de los 20			
Regional Agreement (Abbreviation)		WTO	CPTPP		JMEPA		
Founded Year		1995/1/1	2018/12/30	1999/9/26	2005/4/1 (2012 Ammended)		
Central America	Mexico	●	●	●	●		60
	Belize	●					135
	Guatemala	●					96
	El Salvador	●					91
	Honduras	●					130
	Nicaragua	●					142
	Costa Rica	●					74
	Panama	●					86
Caribbean	Bahamas	オブザーバー					119
	Cuba	●					-
	Haiti	●					179
	Dominican Republic	●					115
	Jamaica	●					71
	Antigua Barbuda	●					113
	Saint Christopher and	●					139
	Dominica	●					111
	St. Lucia	●					93
	Saint Vincent and the	●					130
	Barbados	●					128
	Grenada	●					146
Trinidad and Tobago	●					105	
Other	Guyana	●					134
	Suriname	●					162
Japan		●	●	●	●		29
URL		https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm	https://www.mofa.go.jp/mofaj/gaiko/tpa/index.html	https://www.g20.org/about-the-g20.html	https://www.mofa.go.jp/mofaj/gaiko/fta/j_mexico/index.html	https://www.mofa.go.jp/mofaj/la_c/sa/page23_002_983.html	

Source: Study Team based on the website of the Ministry of Foreign Affairs of Japan and the official website of each agreement (listed in the table).

(6) JETRO Office and Report

The Japan External Trade Organization (JETRO) plays an important role in the overseas expansion of Japanese companies and in the promotion of trade and investment. However, overseas offices are limited to countries where there are already many companies operating overseas. There is only one overseas office in Central America and the Caribbean, and that is located in Mexico.

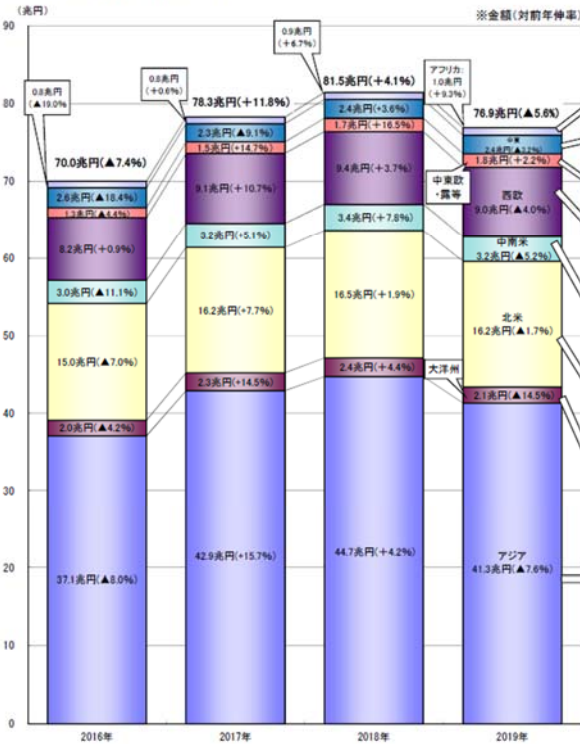
Business trends in the countries that JETRO focuses on are published regularly in business briefs, but only two countries in the region, Mexico and Cuba, are included.

(7) Trade Trends with Japan

In order to show the linkage between Japan and the countries surveyed, the trade trends between the two countries were investigated. In this analysis, "exports" refers to trade in which Japan is the source of exports, and "imports" refers to trade in which Japan is the destination of imports.

Looking at the share of exports by region for the entire world in Figure 15-4, the Central and South American regions as a whole, including South America, has an export share of only about 5% of the entire world, and an import share of only about 2%, and economic collaboration in terms of trade with this region is still a poor state of affairs.

地域別輸出額の推移 (年ベース)



(注) 数値はすべて確定値。

<世界> World

総額	76.9兆円	自動車	11.97兆円	半導体等	4.01兆円	自動車の部分品	3.60兆円
	▲5.6%	▲2.7%	▲3.5%		▲9.8%		

<アフリカ> Africa

南アフリカ共和国	0.3兆円	自動車	0.12兆円	自動車の部分品	0.03兆円	建設用・鉱山用機械	0.01兆円
	▲5.3%	▲7.7%	▲2.3%		▲5.0%		

<中東> Middle East

アラブ首長国連邦	0.8兆円	自動車	0.42兆円	原動機	0.05兆円	自動車の部分品	0.04兆円
	▲10.2%	▲22.0%	▲39.7%		▲8.0%		

<中東欧・ロシア等> Central and East Europe / Russia

ロシア	0.8兆円	自動車	0.34兆円	自動車の部分品	0.09兆円	建設用・鉱山用機械	0.04兆円
	▲2.8%	▲5.7%	▲2.9%		▲10.5%		

<西欧> West Europe

ドイツ	2.2兆円	自動車	0.27兆円	電気計測機器	0.15兆円	半導体等	0.10兆円
	▲4.4%	▲5.2%	▲3.3%		▲16.0%		
英国	1.5兆円	自動車	0.32兆円	原動機	0.11兆円	自動車の部分品	0.05兆円
	▲1.4%	▲25.7%	▲7.8%		▲29.3%		

<中南米> Latin America

メキシコ	1.2兆円	自動車の部分品	0.19兆円	自動車	0.18兆円	鉄鋼	0.15兆円
	▲9.8%	▲10.4%	▲3.5%		▲13.0%		
パナマ	0.7兆円	船舶	0.60兆円	自動車	0.02兆円	建設用・鉱山用機械	0.01兆円
	▲1.7%	▲0.3%	▲6.3%		▲19.4%		

<北米> North America

米国	15.3兆円	自動車	4.29兆円	原動機	0.90兆円	自動車の部分品	0.83兆円
	▲1.4%	▲5.2%	▲1.8%		▲10.2%		
カナダ	1.0兆円	自動車	0.38兆円	自動車の部分品	0.13兆円	電機機器	0.04兆円
	▲6.0%	▲5.4%	▲3.0%		▲224.4%		

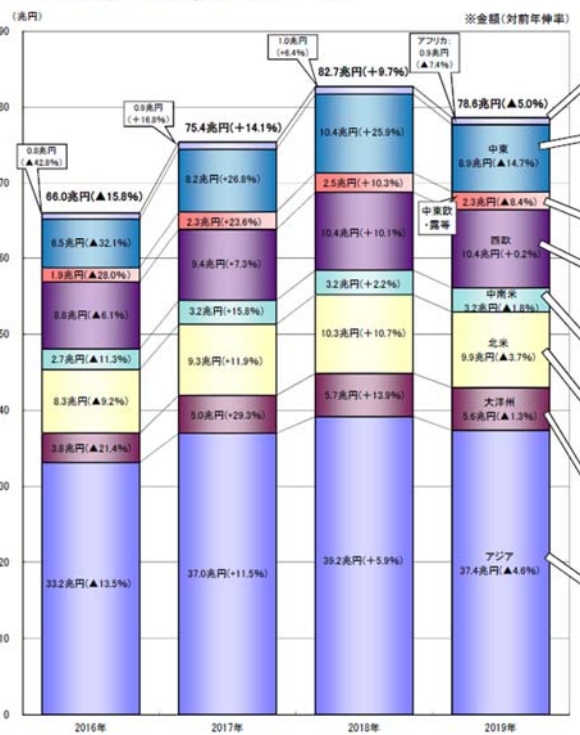
<大洋州> Oceania

オーストラリア	1.6兆円	自動車	0.70兆円	鉱物性燃料	0.33兆円	石油製品	0.33兆円
	▲16.2%	▲17.2%	▲22.7%		▲22.7%		

<アジア> Asia

中国	14.7兆円	半導体等	0.98兆円	半導体等	0.90兆円	プラスチック	0.82兆円
	▲7.6%	▲10.6%	▲16.6%		▲1.6%		
韓国	5.0兆円	鉄鋼	0.42兆円	半導体等	0.32兆円	プラスチック	0.30兆円
	▲12.9%	▲6.7%	▲49.7%		▲3.7%		
台湾	4.7兆円	半導体等	0.71兆円	半導体等	0.58兆円	自動車	0.29兆円
	+0.2%	+0.3%	▲47.7%		▲11.1%		
香港	3.7兆円	半導体等	0.74兆円	電気回路等の機器	0.21兆円	プラスチック	0.11兆円
	▲4.4%	▲11.3%	▲8.8%		▲14.1%		
タイ	3.3兆円	鉄鋼	0.43兆円	自動車の部分品	0.30兆円	半導体等	0.22兆円
	▲7.6%	▲14.4%	▲1.7%		▲8.1%		
シンガポール	2.2兆円	船舶	0.25兆円	半導体等	0.15兆円	自動車	0.09兆円
	▲14.9%	▲49.9%	▲29.1%		▲9.3%		

地域別輸入額の推移 (年ベース)



(注) 数値はすべて確定値。

<世界> World

総額	78.6兆円	原油油	7.97兆円	液化天然ガス	4.35兆円	衣類・付付属品	3.20兆円
	▲5.0%	▲10.5%	▲8.2%		▲3.1%		

<アフリカ> Africa

南アフリカ共和国	0.6兆円	非鉄金属	0.33兆円	自動車	0.05兆円	鉄鉱石	0.04兆円
	▲1.6%	+9.1%	▲21.5%		▲1.1%		

<中東> Middle East

サウジアラビア	3.0兆円	原油油	2.84兆円	石油製品	0.06兆円	有機化合物	0.03兆円
	▲19.2%	▲17.7%	▲30.3%		▲42.7%		
アラブ首長国連邦	2.9兆円	原油油	2.38兆円	石油製品	0.21兆円	液化天然ガス	0.12兆円
	▲6.3%	▲4.4%	▲29.0%		▲58.5%		

<中東欧・ロシア等> Central and East Europe / Russia

ロシア	1.6兆円	原油油	0.44兆円	液化天然ガス	0.34兆円	石炭	0.25兆円
	▲9.4%	+0.6%	▲5.7%		▲5.0%		

<西欧> West Europe

ドイツ	2.7兆円	自動車	0.62兆円	医薬品	0.52兆円	科学光学機器	0.13兆円
	▲5.1%	▲11.7%	+10.3%		▲1.7%		
フランス	1.3兆円	航空機類	0.27兆円	医薬品	0.15兆円	バッグ類	0.07兆円
	+7.6%	+261.0%	▲17.3%		▲8.7%		

<中南米> Latin America

ブラジル	0.9兆円	鉄鉱石	0.33兆円	肉類	0.10兆円	有機化合物	0.04兆円
	+14.6%	+4.6%	+14.3%		+7.5%		

<北米> North America

米国	8.6兆円	原動機	0.58兆円	航空機類	0.50兆円	医薬品	0.48兆円
	▲4.2%	▲18.3%	+4.9%		+4.6%		
カナダ	1.3兆円	石炭	0.19兆円	肉類	0.16兆円	医薬品	0.10兆円
	▲0.7%	+4.1%	+13.1%		+25.3%		

<大洋州> Oceania

オーストラリア	5.0兆円	液化天然ガス	1.76兆円	石炭	1.49兆円	鉄鉱石	0.61兆円
	▲1.9%	+4.7%	▲14.2%		▲19.9%		
ニュージーランド	0.3兆円	果実	0.05兆円	非鉄金属	0.04兆円	木製品等(除家具)	0.03兆円
	▲0.4%	+9.5%	▲20.8%		▲5.4%		

<アジア> Asia

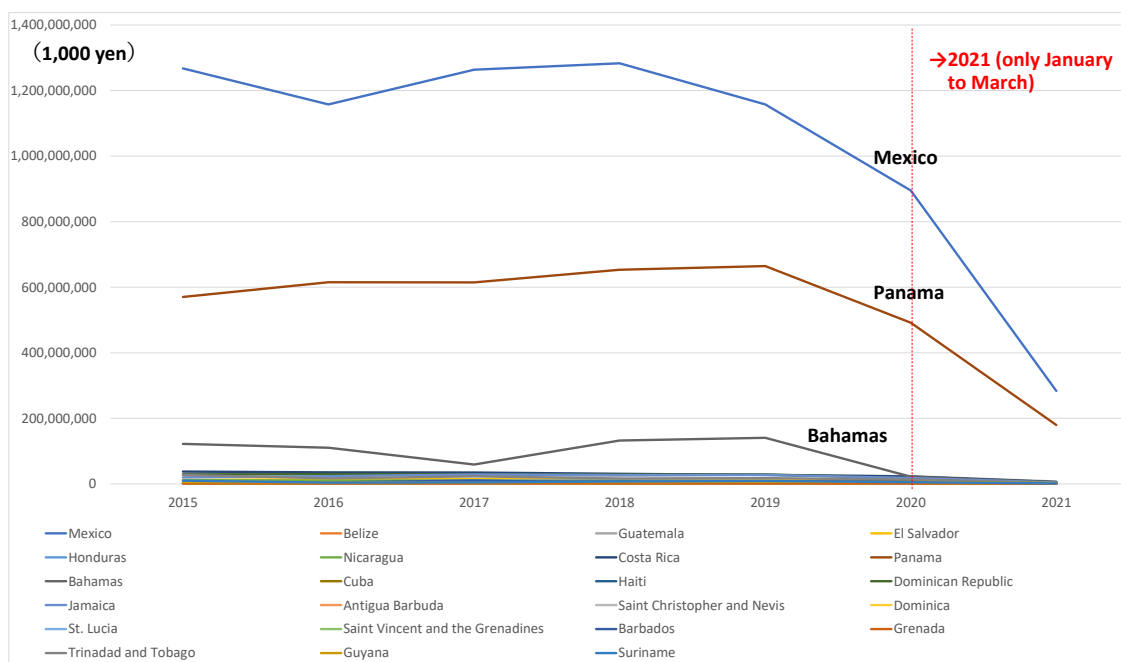
中国	18.5兆円	通信機	2.02兆円	衣類・付付属品	1.79兆円	電算機器(液晶モニター)	1.64兆円
	▲3.9%	▲11.3%	▲7.9%		+9.4%		
韓国	3.2兆円	石油製品	0.42兆円	鉄鋼	0.34兆円	半導体等	0.15兆円
	▲9.1%	▲22.2%	+0.3%		▲37.4%		
台湾	2.9兆円	半導体等	1.11兆円	鉄鋼	0.09兆円	金属製品	0.08兆円
	▲2.3%	▲5.5%	▲5.9%		+1.3%		
タイ	2.8兆円	肉類	0.22兆円	通信機	0.18兆円	電算機器(除モニター)	0.13兆円
	▲0.2%	+0.0%	+6.7%		+18.6%		
ベトナム	2.5兆円	衣類・付付属品	0.48兆円	総線ケーブル	0.24兆円	通信機	0.16兆円
	+5.0%	+5.4%	+1.4%		▲7.5%		

Source: Customs Statistics (https://www.customs.go.jp/toukei/suii/html/time_latest.htm)

Figure 15-4 Annual Trends in Exports and Imports from Japan by Region (2016-2019)
 (Above: Export from Japan, below: Import to Japan)

In the study region, exports to Mexico, Panama, and the Bahamas are prominent compared with the other countries as shown in Figure 15-5. Across the region, annual trends have been flat since before

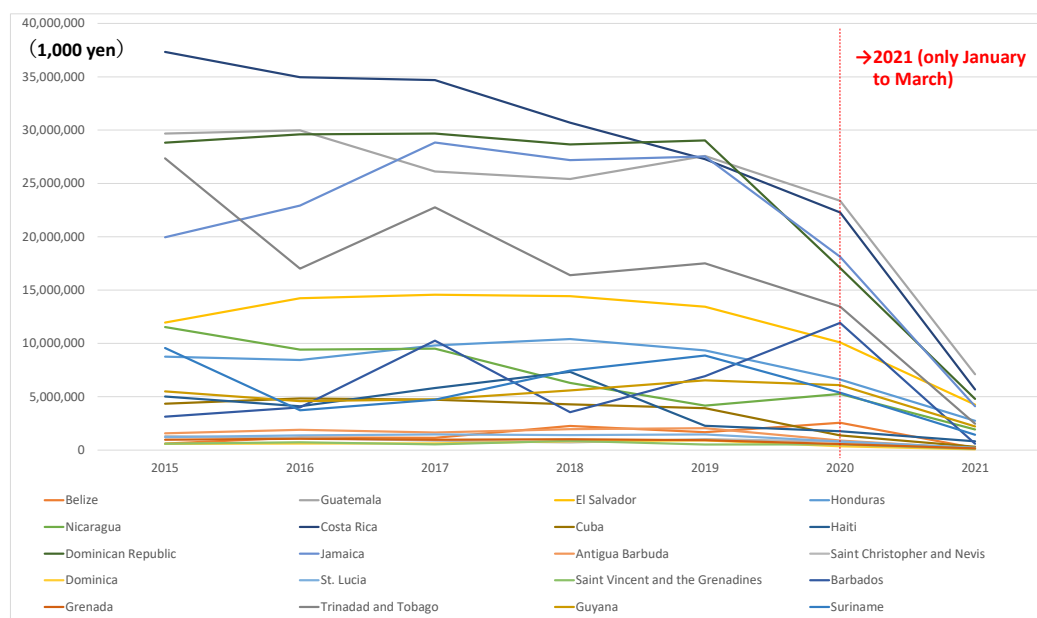
COVID-19, but the COVID-19 pandemic temporarily reduced total exports to almost all countries in 2020.



Source: Ministry of Finance, Trade Statistics
 (<https://www.e-stat.go.jp/stat-search/files?page=1&toukei=00350300&tstat=000001013141>)

**Figure 15-5 Annual Trends in Exports from Japan
 (23 Countries in Central America and the Caribbean, 2015-2021)**

Figure 15-6 shows significant declines seen in the value of annual export to Bahamas (-84%), Cuba (-65%), Dominica (-61%) and Antigua and Barbuda (-57%). On the other hand, only four countries increased: Belize (+52%), Nicaragua (+26%), St. Vincent (+5%) and Barbados (172%).



Source: Trade Statistics, Ministry of Finance

**Figure 15-6 Annual Export Value from Japan
 (20 countries except Mexico, Panama, and Bahamas, 2015-2021)**

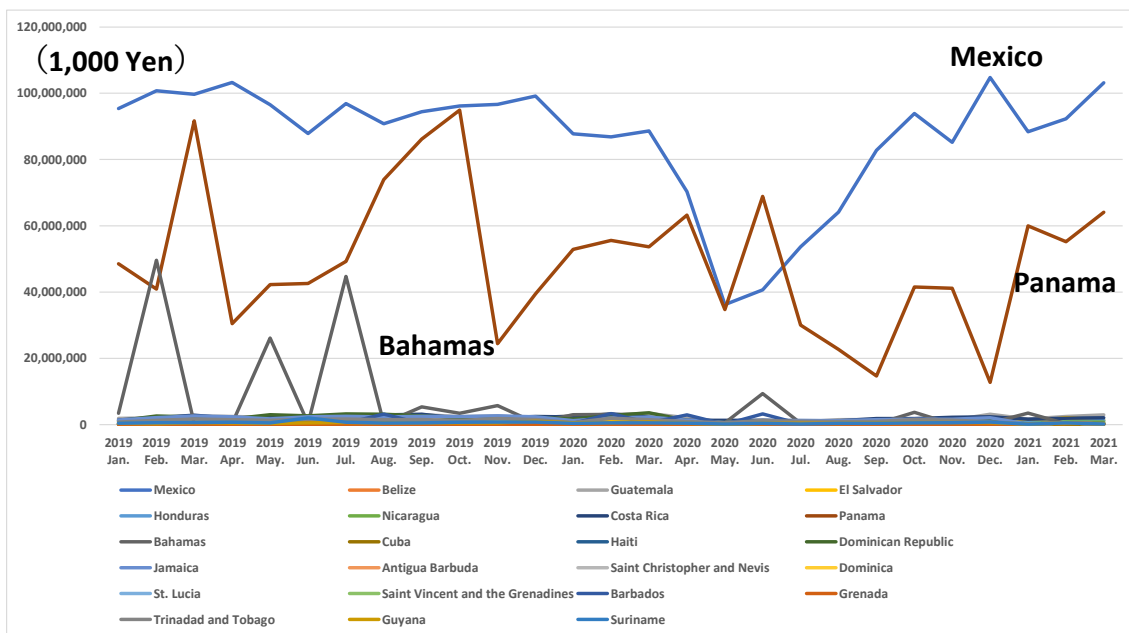
To get a more detailed picture of the impact of COVID-19, the Study Team considers the monthly trends in imports and exports. In order to facilitate the analysis, the 23 countries were classified into three groups according to the following procedure.

Group 1: Monthly maximum value of 40 billion yen or more for the relevant period (three countries) → 23 countries confirmed by graph

Group 2: Monthly maximum value of 1 billion yen or more for the relevant period (ten countries)

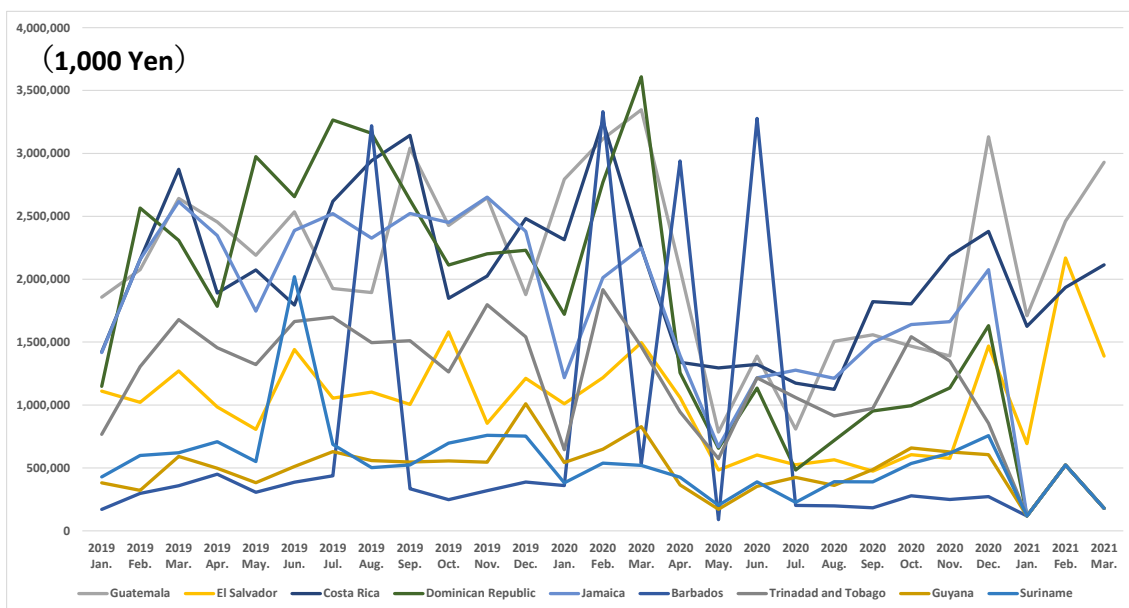
Group 3: Monthly maximum value of less than 1 billion yen for the relevant period (ten countries)

It can be confirmed in Figure 15-7, Figure 15-8, and Figure 15-9 that there was a significant decrease after April-May 2020 due to the impact of COVID-19. However, it likewise recovered to its pre-COVID-19 level by the second half of the same year. The long-term effects of COVID-19 are largely invisible in the bilateral trade with Japan.



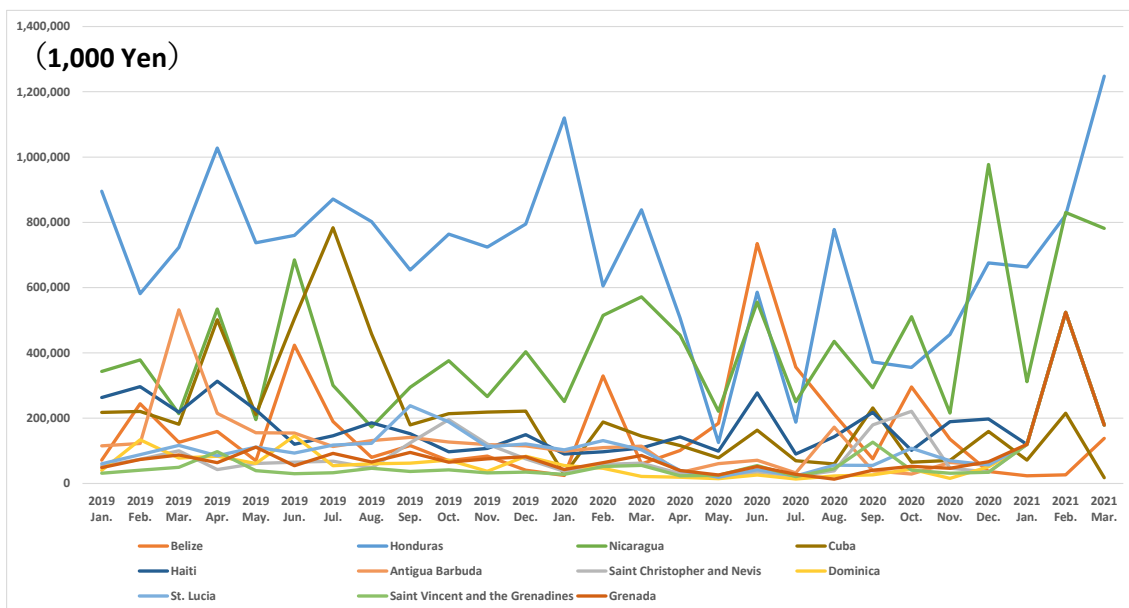
Source: Trade Statistics, Ministry of Finance

**Figure 15-7 Monthly Export Value from Japan
 (all 23 countries including Group 1, Jan. 2019-Mar. 2021)**



Source: Trade Statistics, Ministry of Finance

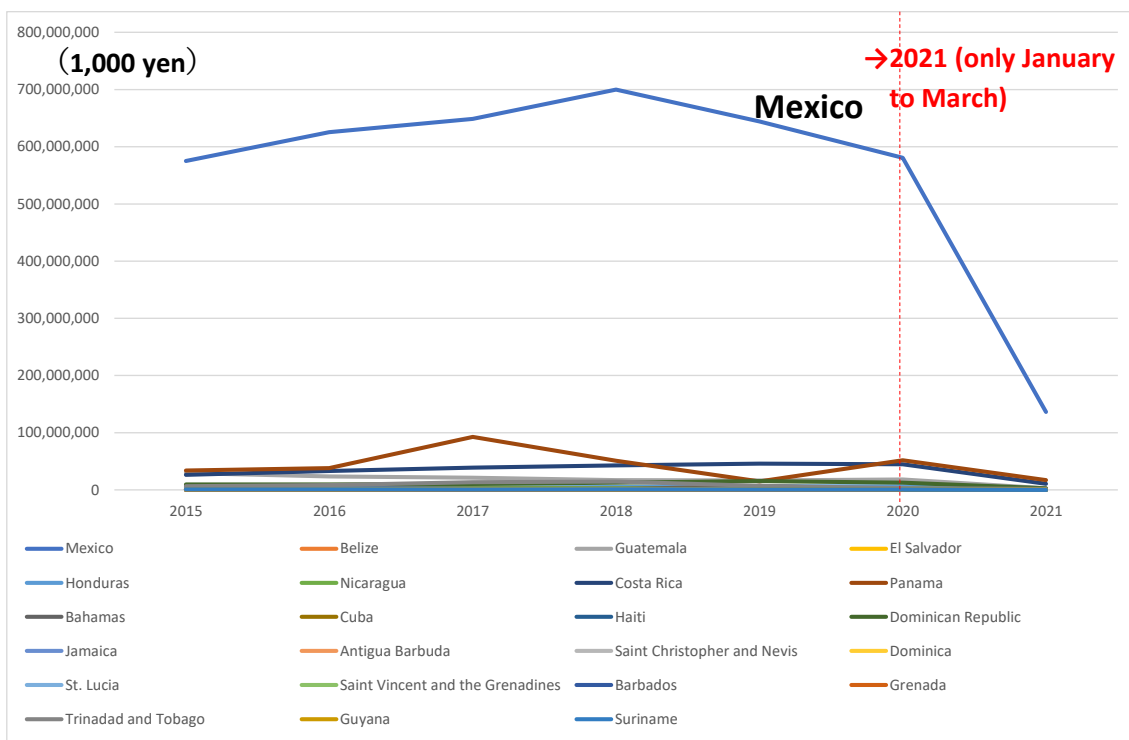
**Figure 15-8 Monthly Value of Exports from Japan
 (Group 2, 10 countries, Jan. 2019-Mar. 2021)**



Source: Trade Statistics, Ministry of Finance

Figure 15-9 Monthly Export Value from Japan (Group 3, 10 countries, January 2019-March 2021)

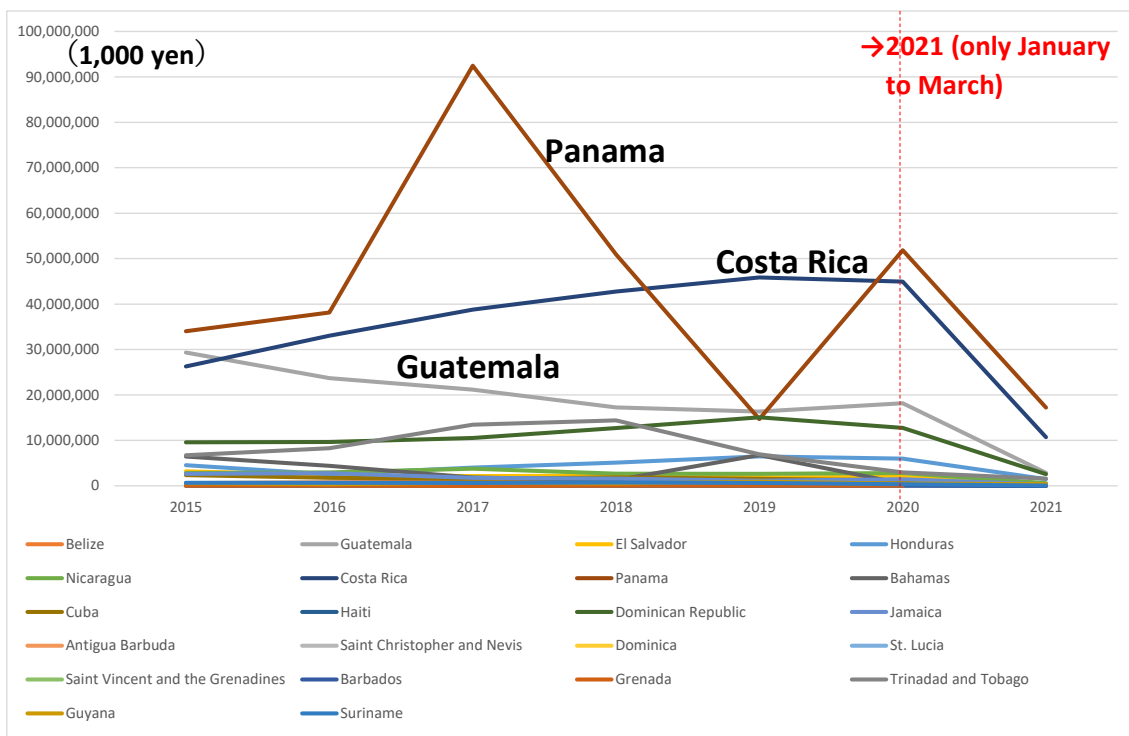
As shown in Figure 15-10, Mexico also stands out in terms of the value of its imports from Japan. The trend up to the year 2020 is flat.



Source: Trade Statistics, Ministry of Finance

Figure 15-10 Annual Trends in Imports from Japan (23 Countries in Central America and the Caribbean, 2015-2021)

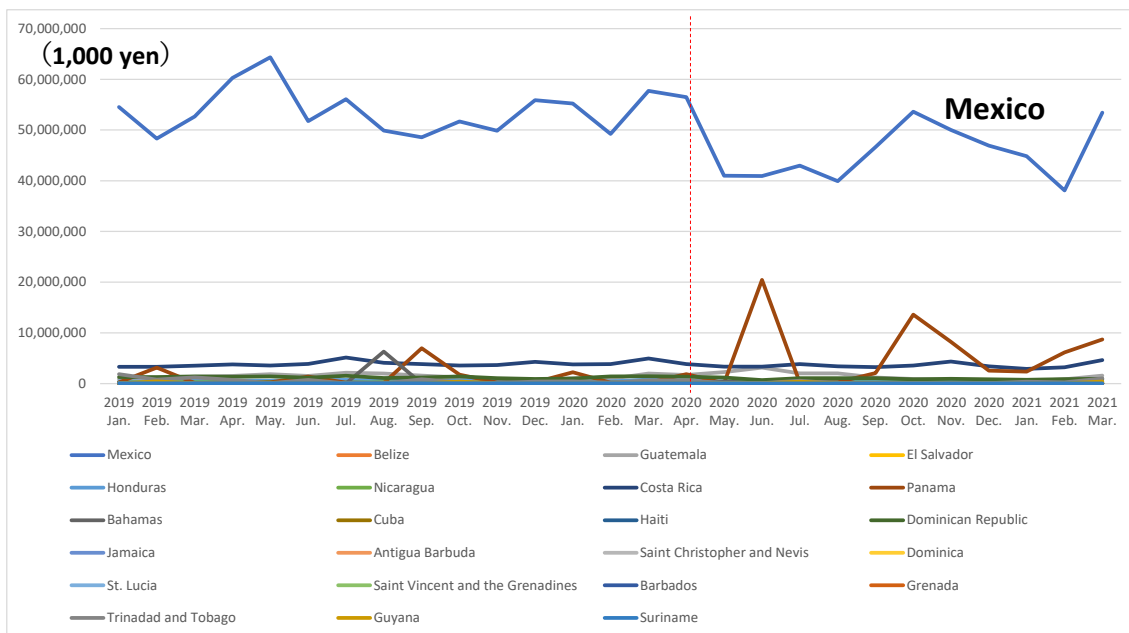
After Mexico, the countries with the highest import value are Panama, Costa Rica, and Guatemala as shown in Figure 15-11. Most of the other countries import less than 10 billion yen per year.



Source: Trade Statistics, Ministry of Finance

**Figure 15-11 Annual Trends in Imports from Japan
 (22 Countries Other Than Mexico, 2015-2021)**

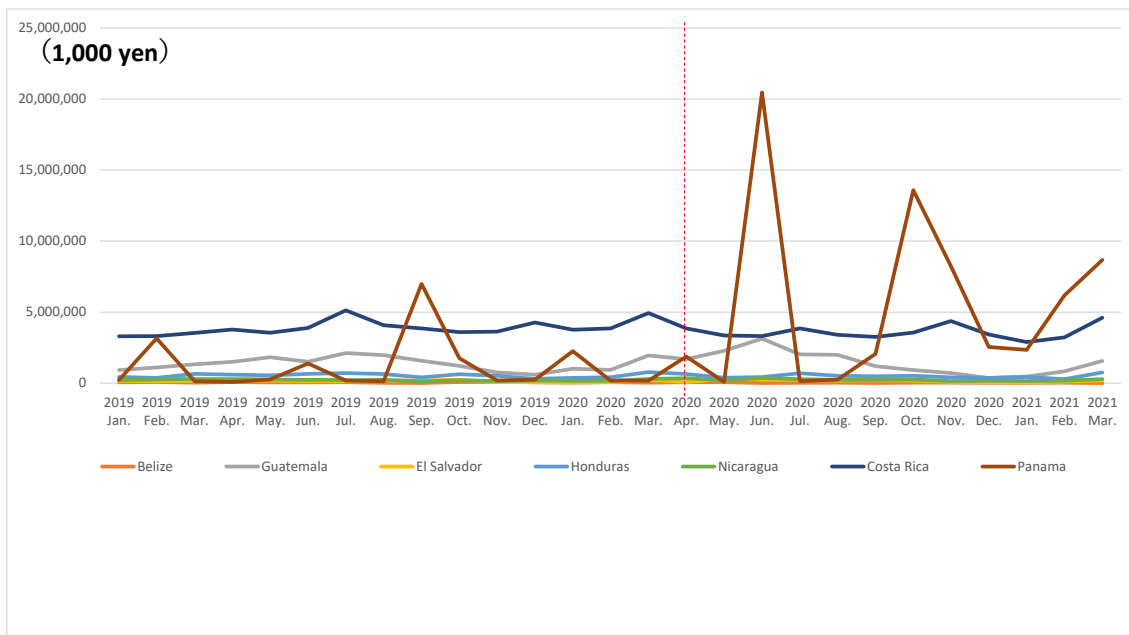
The Study Team examined the impact of COVID-19 based on monthly changes in the value of imports. As shown in Figure 15-12, Mexico observed a temporary decline in trade volumes after April 2020, but recovered in the second half of the year, as did exports. No long-term effects were observed.



Source: Trade Statistics, Ministry of Finance

**Figure 15-12 Monthly Value of Exports to Japan
 (all 23 countries, Jan. 2019-Mar. 2021)**

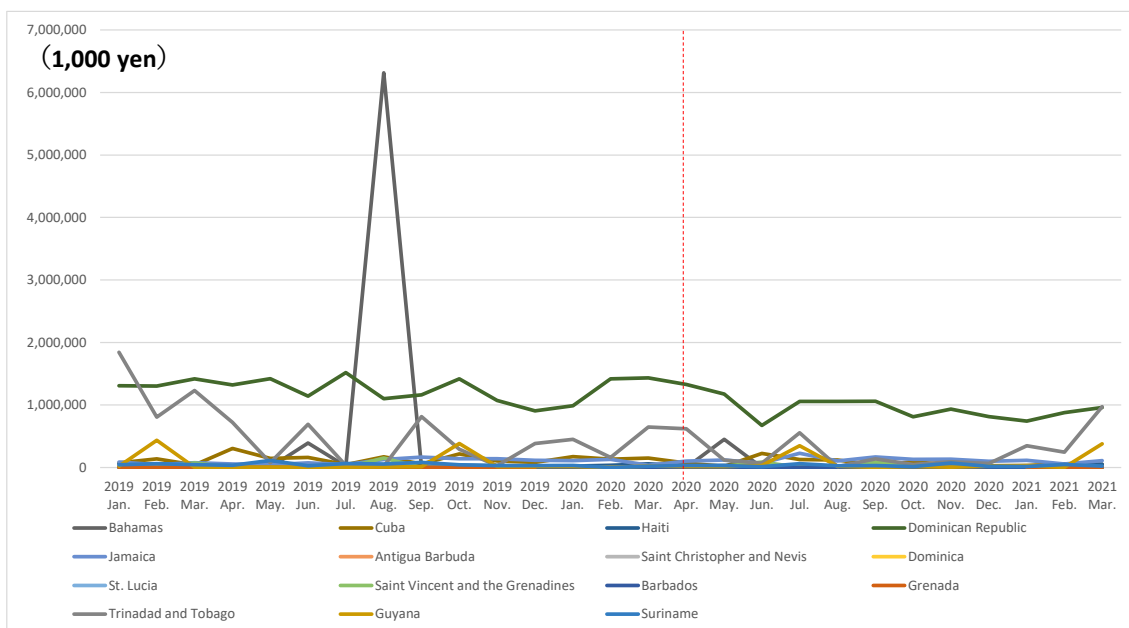
As far as the transition of Central American countries except for Mexico is concerned, Figure 15-13 shows that the trade volume from before COVID-19 was also small, so it did not have a significant impact.



Source: Trade Statistics, Ministry of Finance

**Figure 15-13 Monthly Trends in Exports to Japan
 (Seven Central American Countries Excluding Mexico, January 2019-March 2021)**

Caribbean countries and Guyana and Suriname are shown in Figure 15-14. There was no significant impact here either, as the amount of trade from before COVID-19 was also small.



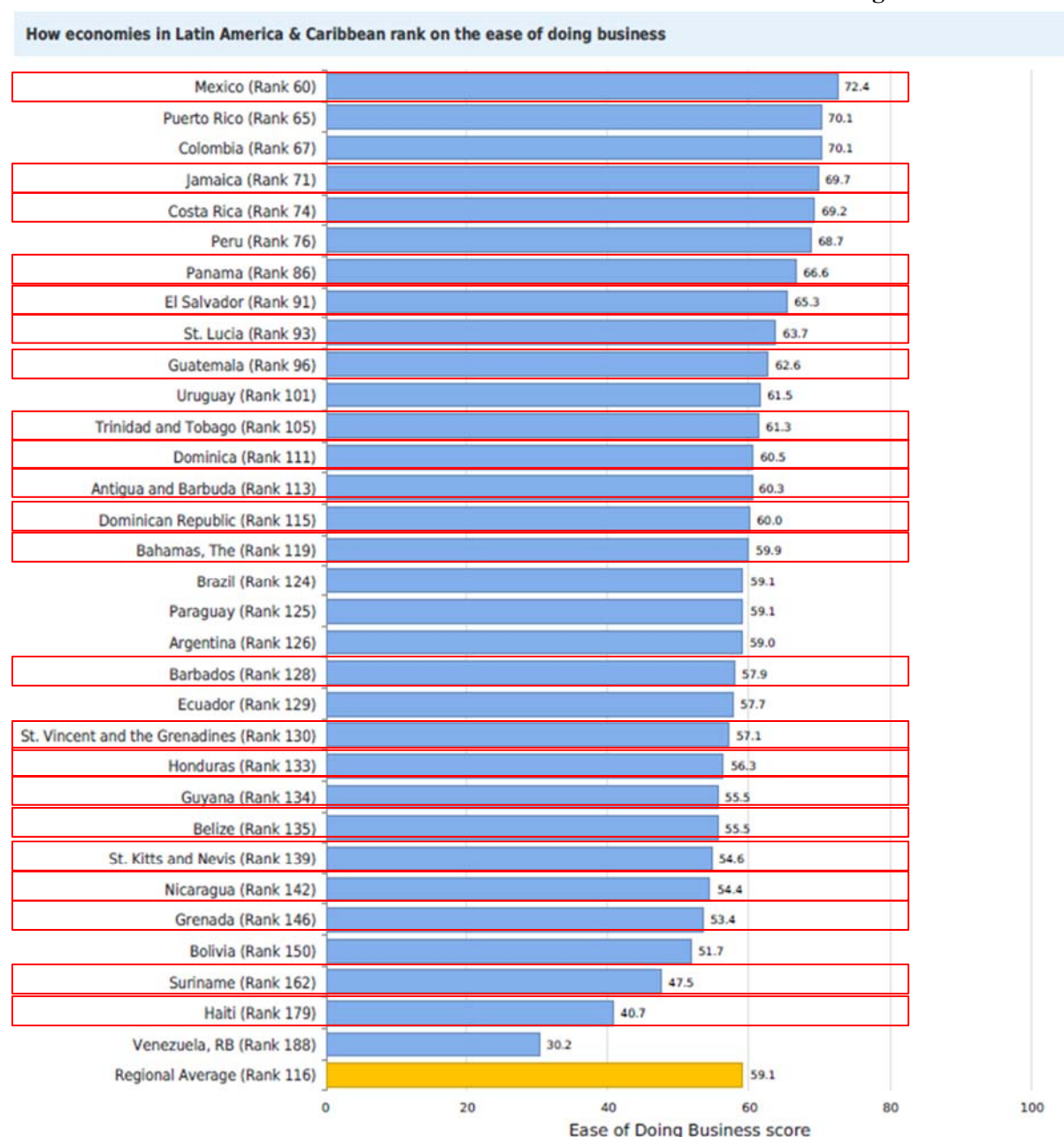
Source: Trade Statistics, Ministry of Finance

Figure 15-14 Monthly Value of Exports to Japan (Caribbean, Guyana, Suriname, January 2019-March 2021)

(8) The Reality of the Investment Environment

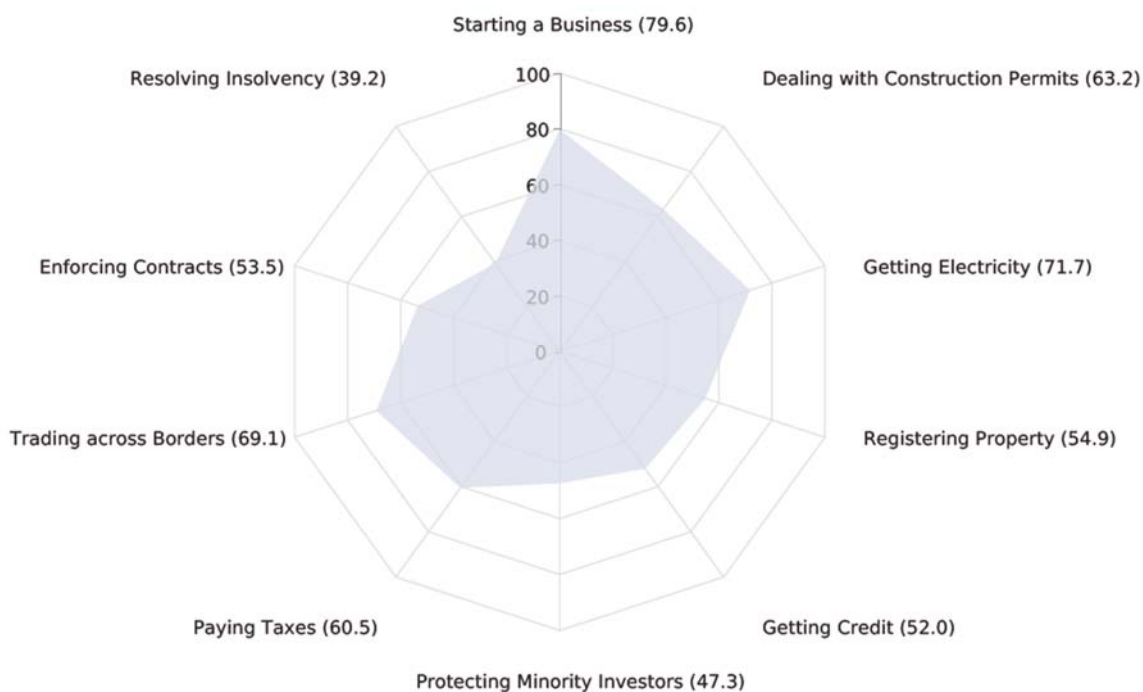
Based on the World Bank's Doing Business 2020, Table 15-21 below shows the business environment of countries in Central America and the Caribbean. Mexico has the highest score, however, it is ranked 60th in the world. The average score, which also includes the South American region, is 59.1, which is a region with much room for significant improvement.

Table 15-21 Investment Climate Scores for Latin American Region



Source: World Bank Doing Business 2020 (red boxes: 22 countries surveyed, excluding Cuba)

Scores by sector of the investment climate are shown in Figure 15-15. The average score in each area is between 50 and 70. The score for resolving insolvency is below 40, indicating financial vulnerability.



Source: World Bank Doing Business 2020

Figure 15-15 Investment Climate Scores by Sector (Latin America Regional Average)

(9) Special Economic Zone (SEZ) Policy

Table 15-22 shows the list of SEZ policies in the region. In Central America and the Caribbean, the SEZ policy is used to attract foreign investment. Most SEZs are designed to attract manufacturing companies, and Central American countries are advanced in establishing such systems. On the other hand, in the Caribbean, where the manufacturing culture has not grown, tax haven systems have been introduced for the purpose of capital inflow.

Table 15-22 List of SEZ Policies in the Region

Country	SEZ	No. of SEZ	Incentives	Minimum Wage (USD/Month)	Minimum Wage (Local Currency)	Currency	Per Hour/Day/Week/Month	URL	
Central America	Mexico	○	17	<ul style="list-style-type: none"> Corporate Tax Exemption (10 years, 50% for the next 5 years) Import tax exemption for machinery, parts, and materials Allowed employment of foreign labour Tax exemption for labour training costs permanent residency for foreign investors and family 100% foreign fund company is allowed 	114.01726	117.35	MXN	Day	https://www.ibic.go.jp/ia/information/investment/images/inv_mexico09.pdf
	Honduras	○	39	<ul style="list-style-type: none"> Corporate Tax Exemption (Max 12 years) Import tax exemption for machinery, parts, and materials 	352.819816	8636.96	HNL	Month	https://taxsummaries.pwc.com/honduras/corporate/tax-credits-and-incentives
	Guatemala	○	18	<ul style="list-style-type: none"> Corporate Tax Exemption (Max 10 years) No particular difference with domestic companies, the country has signed many free trade agreements with the United States and other Latin American countries. 	346.694208	2742.4	GTQ	Month	https://www2.deloitte.com/content/dam/Deloitte/gt/Documents/tax/Doing%20Business%20GT%202020%20English-Complete-VF.pdf
	Nicaragua	○	52	<ul style="list-style-type: none"> Corporate Tax Exemption (10 years, 60% for the next 10 years in case) Import tax exemption for machinery, parts, and materials Tax exemption on capital gain tax for Capital tax, stamp tax, indirect tax, excise tax, export tax, local tax, real estate transfer tax, real estate transfer after FTZ operation period 	158.476465	5615.75	NIO	Month	https://taxsummaries.pwc.com/nicaragua/corporate/tax-credits-and-incentives
	Panama	○	15	<ul style="list-style-type: none"> Corporate Tax Exemption (no limit years) Exemption of Import tax, income tax, revenue tax, and export tax 	352	2.2	PAB	Hour	https://taxsummaries.pwc.com/panama/corporate/tax-credits-and-incentives
	El Salvador	○	17	<ul style="list-style-type: none"> Corporate Tax Exemption (MAX 40 years) Import tax exemption for machinery, parts, and materials Exemption of CIT/VIT Exemption of Regional Tax Exemption of real estate transaction tax 	304.166	304.166	USD	Month	https://taxsummaries.pwc.com/el-salvador/corporate/tax-credits-and-incentives
	Belize	○	4	<ul style="list-style-type: none"> Corporate Tax Exemption (10 years, +5 years in case) Import tax exemption for machinery, parts, and materials Exemption of foreign funds restriction Exemption of permits for import and export 	256.67136	3.3	BZD	Hour	https://www.beltraide.bz/investment-incentives.html
	Costa Rica	○	49	<ul style="list-style-type: none"> Corporate Tax Exemption (18 years) Import tax exemption for manufacturing Exemption of VAT, export tax, consumption tax, and real estate transfer tax Use of foreign funds allowed 	476.0807744	309143.36	CRC	Month	https://taxsummaries.pwc.com/costa-rica/corporate/tax-credits-and-incentives

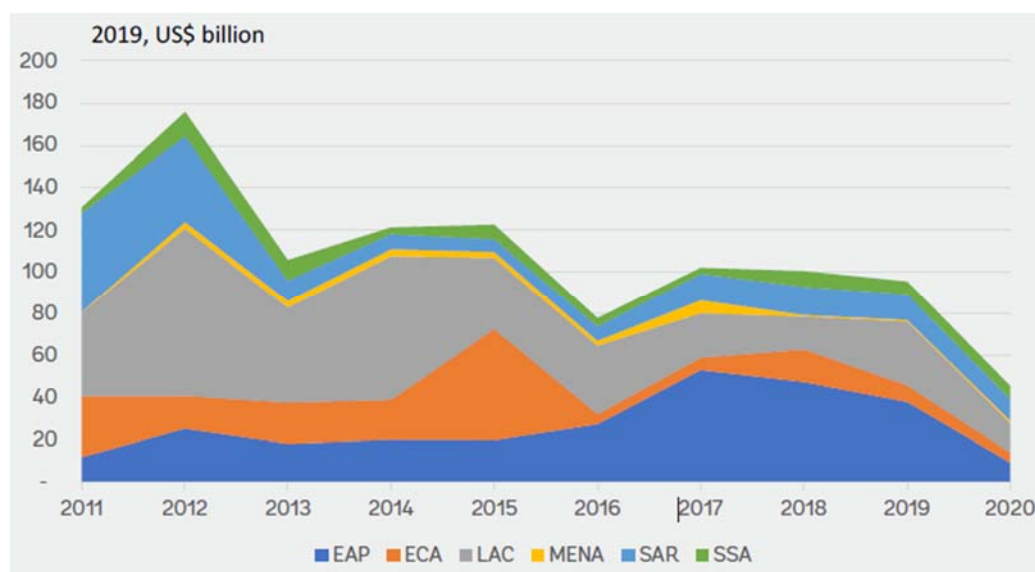
Country	SEZ	No. of SEZ	Incentives	Minimum Wage (USD/Month)	Minimum Wage (Local Currency)	Currency	Per Hour/Day/Week/Month	URL	
Caribbean	Cuba	○	1	<ul style="list-style-type: none"> Exemption of various taxes including export tax Goods and services produced in the district can be traded with other Cuban companies outside the district and exported abroad Direct employment of foreign workers (skilled workers) by companies is allowed (basically up to 15%). Companies can hire foreign workers (skilled workers) directly (basically up to 15%), but are required to hire local workers through government agencies. Dedicated container terminal 	84	2100	CUP	Month	https://www.zedmarie.com/en
	Dominican Republic	○	73	<ul style="list-style-type: none"> Corporate Tax Exemption (max 20 years, ones on Haiti border is 20 years, the others are 15) Import tax exemption for machinery, parts, and materials Exemption of property tax 	188.6334	10730	DOP	Month	https://unctad.org/system/files/official-document/iteipc20079_en.pdf
	Haiti	○	13	<ul style="list-style-type: none"> Corporate Tax Exemption (15 years) Depreciation rule for real estate, facility, hardware, software Exemption of regional tax except for patent licensing 	100.1	500	HTG	Day	https://cfihaiti.com/images/pdf/Investment_Code.pdf https://cfihaiti.com/index.php/en/invest-in-haiti/incentives
	St. Lucia	○	1	<ul style="list-style-type: none"> Corporate Tax Exemption (5 years, tax reduction for the years after) Import tax exemption Exemption of rules for foreign exchange Exemption of gains from dividends (20 years) Single window for labour permits Exemption of import/export license No fixed prices by the government 	59.2592	160	ECD	Month	https://www.stluciafreezone.com/
	Jamaica	○	17	<ul style="list-style-type: none"> Corporate Tax Exemption for rental income Tax exemption for trades Exemption of consumption tax for goods traded within SEZ Exemption of taxes for real estate transactions within SEZ 	179.2	7000	JMD	Week	
	Antigua Barbuda	○	2	<ul style="list-style-type: none"> Exemption of all taxes 	485.92544	8.2	XCD	Hour	https://www.antiguaabsez.com/
	Bahamas	○	6	<ul style="list-style-type: none"> Property Tax Exemption (15 years) Import tax exemption Bahamas has tax haven status 	840	210	BSD	Week	Bahamas Investment Authority HPより
	Barbados	×			500	250	BBD	Week	
	Dominica	×			237.0368	4	XCD	Hour	
	Guyana	×			202.878	44200	GYP	Month	
	Grenada	×			259.259	35	XCD	Day	
	Suriname	×			62.25408	8.4	SRD	Hour	
Saint Christopher and Nevis				533.3328	360	XCD	Week		
Saint Vincent and the Grenadines				296.296	40	XCD	Day		
Trinidad and Tobago	○	1	<ul style="list-style-type: none"> Corporate Tax Exemption Import tax exemption for machinery, parts, and materials Exemption of land and building law Exemption of income tax, VAT Exemption of the payment for labour license Exemption of the payment for Green Levy funds Exemption of import/export licence 	405.272	17.5	TTD	Hour	https://www.finance.gov.tt/wp-content/uploads/2017/08/MQF-Investment-Incentives-in-Trinidad-and-Tobago-web.pdf http://www.sice.oas.org/investment/NatLep/TTO/FreeZones_e.pdf	

Source: Study Team

(10) Trends in PPP Business Initiatives

In the Latin American region, private sector investment has been an important source of financing for infrastructure development. In many countries, legal frameworks to promote public-private partnership (PPP) projects have been developed, and many PPP projects based on public-private contracts have been implemented. In 2020, there will still be approximately USD 14 billion in private investment, the highest level of any major region in the world. Of these, 55% are in Brazil, but Mexico also accounts for 30%, and El Salvador, Honduras, Peru, and other countries are actively developing infrastructure using private funds.

On an annual basis, Figure 15-16 shows the amount in 2020 was 54% lower than the level in 2019. This is a 48% decrease compared with the 2015-2019 annual average and is considered to be a strong impact of COVID-19. The PPP projects have characteristics that make them prone to financial difficulties due to schedule delays and reduced demand.



Source: World Bank Private Participation in Infrastructure (PPI) 2020 Annual Report

Figure 15-16 Private Investment in Infrastructure by Region (2011-2020)

(11) PPP Projects Undertaken by Japanese Private Companies

As shown in the Table 15-23, in Central America and the Caribbean, there are 17 PPP infrastructure projects in which Japanese private companies are participating. Of these, 15 are in Mexico, 2 in Costa Rica, and 2 in Jamaica. In the energy sector, power generation projects account for the largest number of projects (14), and the other four projects are for the construction and operation of sewage treatment plants. In 2020, Marubeni Corporation participated in a PPP project for expressways in Mexico by purchasing the shares of a local general contractor. The majority of the projects, 14, have a total investment amount exceeding \$100 million, indicating that major trading companies and power companies are entering the market for relatively large-scale infrastructure projects.

Table 15-23 PPP Projects with Japanese Companies

Company Name	Project	Unsolicited Proposal	Primary Sector	Sub Sector	Investment Year	Total Investment	PPP Form
Mexico							
Nichimen Corp.	Merida-3	No	Energy	Electricity	1998	260	BOO
Mitsubishi	Electricidad Aguila de Tuxpan	No	Energy	Electricity	2001	250	BOO
Mitsubishi	Altamira	No	Energy	Electricity	2002	300	BOO
Nichimen Corp.	Merida-3	No	Energy	Electricity	2003	null	BOO
Mitsubishi	Tuxpan V	No	Energy	Electricity	2004	300	BOO
Mitsui	Valladolid III	No	Energy	Electricity	2004	275	BOO
Sumitomo Corporation	San Luis Potosi Wastewater Treatment	No	Water and sewerage	Treatment plant	2004	315	BOT
Mitsui	Queretaro Aqueduct II	No	Water and sewerage	Treatment plant	2007	246	BOT
Mitsui	San Pedro Martir Waste Water Treatment Plant	No	Water and sewerage	Treatment plant	2007	32.8	BOT
Mitsui	Agua Prieta Wastewater Treatment Plant	No	Water and sewerage	Treatment plant	2009	193	BOT
Mitsui	Eoliatec del Pacifico Wind Power Plant	No	Energy	Electricity	2013	401.1	BOO
Mitsui	Bii Stinu Wind Energy Project	No	Energy	Electricity	2013	400	BOO
Tokyo Gas	Calpulalpan Solar Plant	No	Energy	Electricity	2019	283.39	BOO
Eurus Energy	Coromuel Wind Farm	-	Energy	Electricity	2020	100	BOO
Marubeni Corporation	Veracruz - Tabasco Toll Roads	-	Transport	Toll roads	2020	-	-
Costa Rica							
Marubeni Corporation	Miravalles-3 Geothermal Power	No	Energy	Electricity	1997	70	BOT
ERI Services facilities Management Group	Dona Julia	No	Energy	Electricity	1998	34	BOT
Jamaica							
Marubeni Corporation	Jamaica Public Service Co.	No	Energy	Electricity	2001	201	P
Marubeni Corporation	Old Harbour Combined Cycle Power Station	No	Energy	Electricity	2017	330	BOO

Source: Study Team based on the World Bank PPPIF PPP Database; Mexico Expressway Project (Marubeni) was added based on information in Marubeni's website (2020 - participation)

Of these, Marubeni's investment in a power company in Jamaica is not one of the projects under the PPP law framework, however, it is an example of a project in which capital is injected into a company that has a national infrastructure development function. In Jamaica, the project investment was made because regulations against foreign companies are relaxed, and business operations can be conducted in English.

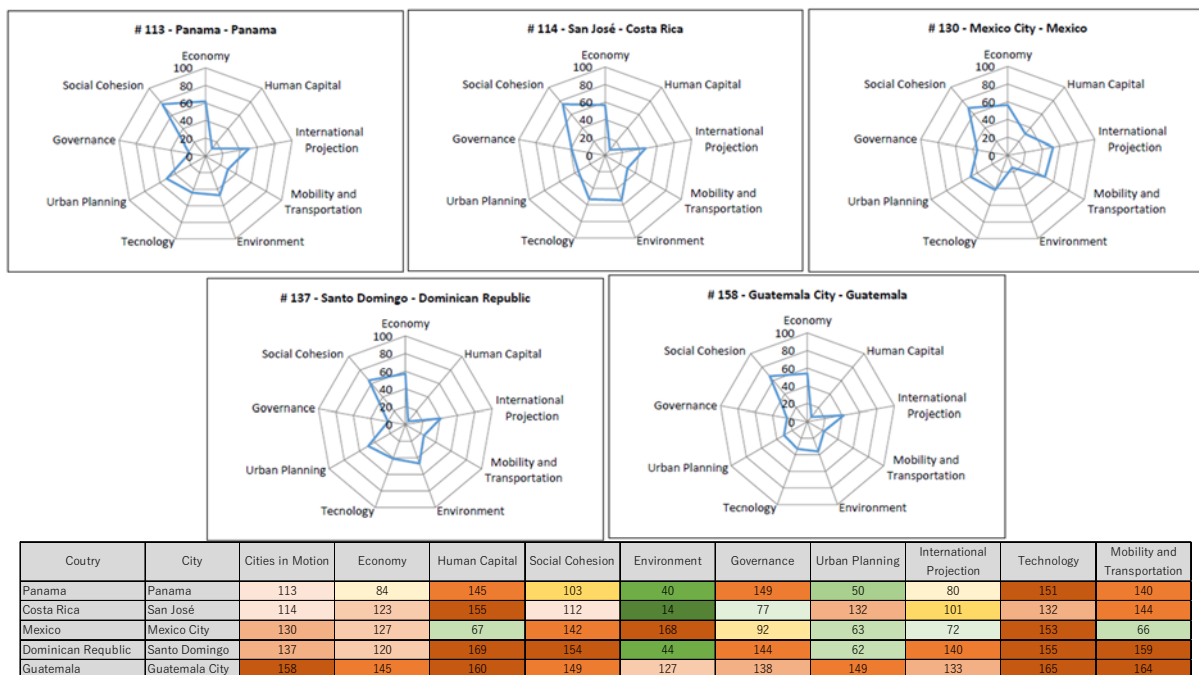
JICA has several support schemes for the structuring of PPP projects, including Viability Gap Funding (VGF) yen loan, Equity Back Finance (EBF) yen loan, and PPP infrastructure credit enhancement stand-by loans. In addition, preparatory survey for private sector investment finance can be used at the project study stage. On the other hand, there have been no cases of the use of preparatory survey for private sector investment finance in the region. There are opportunities for business operations under PPP, it is necessary therefore to provide support for business formation while promoting the support scheme.

(12) Trends in Smart City Initiatives

In light of the fact that Japan's Strategy for Overseas Deployment of Infrastructure Systems 2025 mentions efforts in a wide range of infrastructure fields with a focus on "smart cities," the Study Team selected countries and cities that are leading the way in the smart city field in the regions covered by this study.

While there are many initiatives in the area of smart cities, the Study Team will identify countries and cities in the region that are making advanced efforts in smart cities based on the world rankings issued by IESE as shown in Figure 15-17.

In this ranking, 174 cities around the world that are working on smart cities are selected and ranked. Five cities have been selected from the Central American and Caribbean regions. The top global rankings, in order, are Panama (Panama), San Jose (Costa Rica), Mexico City (Mexico), Santo Domingo (Dominican Republic), and Guatemala City (Guatemala).



Source: IESE Cities in Motion Index 2020

Figure 15-17 Cities with Advanced Smart City Initiatives in Latin America

Although the area has an inferior overall global ranking, it is worth noting that Mexico City is ranked 67th in Human Capital (Human Resources) and 66th in Mobility and Transportation, which is higher than the rest of the world. In terms of environment, San Jose, Panama, and Santo Domingo are ranked 14th, 40th, and 44th, respectively. In terms of urban planning, Panama, the Dominican Republic, and Mexico are ranked 50th, 62nd, and 63rd, respectively, and tend to be rated higher than the other indicators. In terms of other indicators, even in the limited ranking of 174 cities, many indicators are positioned at 140th or lower, suggesting that at present, efforts related to smart cities are inferior to the rest of the world. However, these cities can be considered to have higher affinity for the adoption of smart technologies than other Central American and Caribbean cities.

15.5.3 Evaluation of Various Policies Related to COVID-19 Taken by the Government

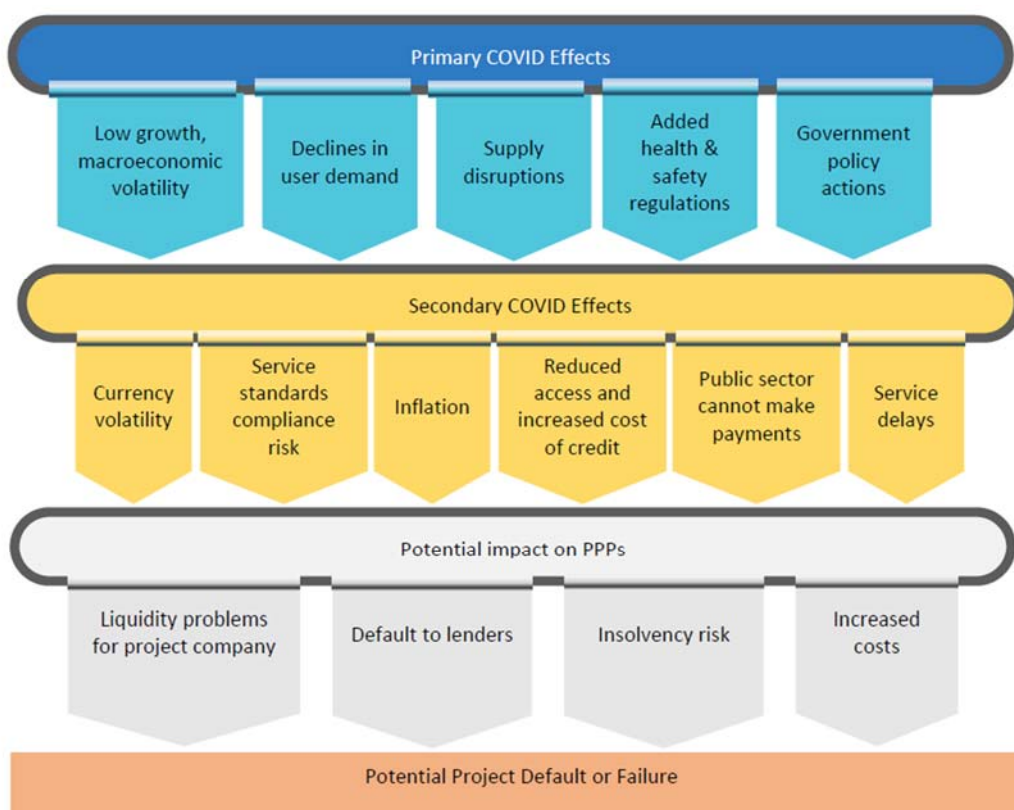
The Public-Private Partnership sector will study the future of development cooperation through collaboration between the public and private sectors in Japan. The economic and employment promotion measures of the private sector in each country will be referred to in the private sector ("10.2.3 Evaluation of Various Policies Taken by the Government for COVID-19 (Private Sector)").

15.5.4 Trends in Development Partners

The World Bank has traditionally supported infrastructure development through PPPs globally and in the regions studied, using platforms such as the International Finance Corporation (IFC) and the Public-Private Infrastructure Advisory Facility (PPIAF). The IFC provides PPP advisory services for the proper development and operation of PPP systems and the effective structuring of PPP projects. On the other hand, the PPIAF has established the PPP Knowledge Hub and PPP Library to provide tools that can be used by governments and businesses.

In response to COVID-19, the PPIAF launched the "COVID-19 PPP Rapid Response Umbrella Program" to provide support to government agencies in assessing the impact of COVID-19 on PPP projects being implemented in various countries. In response, the PPIAF established the "COVID-19 PPP Rapid Response Umbrella Program" to provide support to government agencies on COVID-19 impact assessments of PPP projects underway in various countries. Impact assessments include scenario setting, review of PPP contract provisions, and identification of financial impacts.

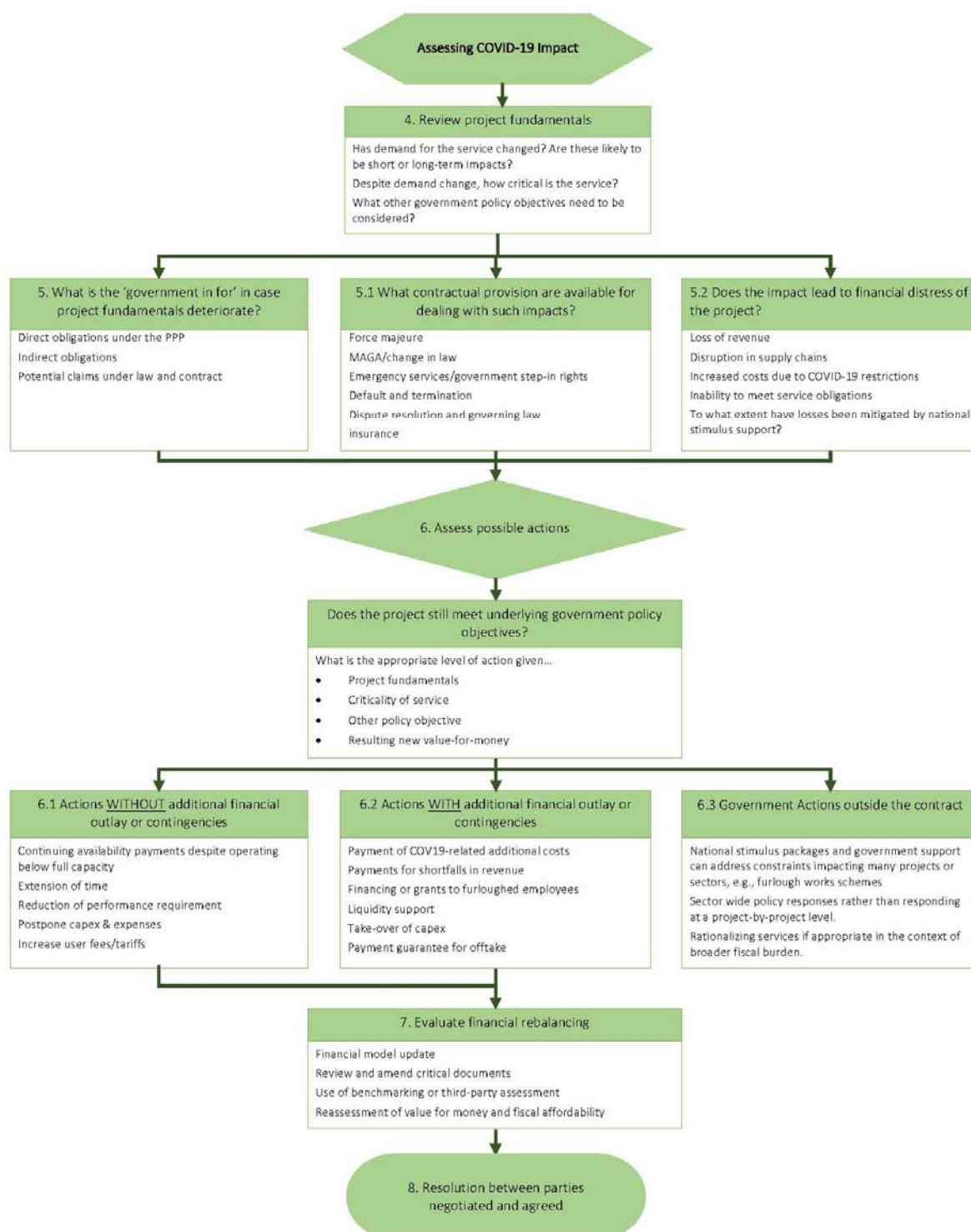
The PPIAF's report on the evaluation of PPP operations amid the COVID-19 disaster illustrates a scenario in Figure 15-18 in which low macroeconomic growth, reduced demand, disruption of supply, and additional health and safety regulations due to COVID-19 lead to fluctuations in currency values, inflation and reduced public solvency, leading to PPP infrastructure illustrating scenarios that led to project failure through worsening cash flows, default, bankruptcy risk and increased costs for the project's operating companies.



Source: WB PPIAF COVID-19 AND PUBLIC-PRIVATE PARTNERSHIPS PRACTICE NOTE

Figure 15-18 Impact of COVID-19 on PPP Project Operations

As shown in Figure 15-19, the PPIAF is also developing a process to assess and respond to the COVID-19 impact of each PPP infrastructure project, leading to a review of the public and private contract provisions. These tools are being used to provide support to countries that need to restructure their PPP projects.



Source: WB PPIAF COVID-19 AND PUBLIC-PRIVATE PARTNERSHIPS PRACTICE NOTE

Figure 15-19 Evaluation of PPP Project Management and Response to COVID-19 Disaster

15.5.5 Development Policy by Country

Public-private partnership takes a multi-sector approach. As there is no special mention as a sector of efforts by the Ministry of Foreign Affairs and JICA, the country development plan policy is not described.

15.5.6 Grouping of Countries Surveyed by Sector

The countries were formed into three groups for the survey of the public-private partnership sector as shown in Table 15-24.

Group 1 is Mexico alone. Considering the scale of the public-private activity base in this region, it is completely different from other Central American and Caribbean countries, and thus requires its own measures.

Group 2 includes countries other than Mexico in Central America. Unlike Mexico, the number of Japanese companies operating in these countries is limited, and in view of the economic, linguistic, and cultural similarities, they are placed in the same group.

Group 3 consists of Caribbean and South American countries. Compared with Central America, there are fewer or no bases of operation in Japan. In view of the economic, linguistic, and cultural similarities such as the economic base of the island countries, mainly in tourism, and the English-speaking CARICOM countries, they will be placed in the same group.

Table 15-24 Grouping of Countries Surveyed in the Public-Private Partnership sector

Group	Country
(1) [Central America: Mexico]	Mexico
(2) [Central America: Others]	Belize
	Guatemala
	El Salvador
	Honduras
	Nicaragua
	Costa Rica
	Panama
(3) [Caribbean and Others]	Cuba
	Haiti
	Dominican Republic
	Jamaica
	Antigua and Barbuda
	Saint Kitts and Nevis
	Dominica
	Santa Lucia
	Saint Vincent and the Grenadines
	Barbados
	Grenada
	Trinidad and Tobago
	Guyana
Suriname	

Source: Study Team

15.6 Selection of Priority Countries by Sector

15.6.1 Selection Criteria for Priority Countries

As a general policy and as show in Table 15-25, the Study Team will select as priority countries those with high potential for capturing the vitality of Japanese companies as well as for implementing future development cooperation. In this context, indicators will be set in three categories: the collaborative achievements of private companies, collaborative efforts of public institutions, and the local business environment.

- (1) The number of companies, the number of local legal persons, the number of private sector projects adopted, and the number of PPP projects implemented in Japan will be evaluated in terms of the results of collaboration by private sector companies.

In the area of collaborative efforts among governmental organizations, the following countries will be evaluated: JICA overseas, embassies, JETRO, and the Japanese Chamber of Commerce and Industry overseas.

- (3) In terms of the business environment in the country, the Study Team will evaluate the Doing Business ranking and the track record of PPP projects in the country (not limited to Japanese companies).

Table 15-25 Selection Criteria for Priority Countries

1: Private Sector Track Record	No. of Japanese Companies' Operation Offices	(Group 1: more than 100, Group 2: more than 10)
	No. of Japanese Companies' Incorporated Offices	(Group 1: more than 100, Group 2: more than 5)
	No. JICA Public Private Partnership Projects (After 2012)	(◎ : more than 10, ○ : more than 1)
	PPP Projects with Japanese Companies	(Group 1: more than 1, WB PPIAF)
2: Public Sector Track Record	JICA Office	(◎ : Office, ○ : Branch Office)
	Japanese Embassy	(◎ : Located, ○ : Concurrent Jurisdiction)
	JETRO Office	(◎ : Office)
	Japanese Chamber of Commerce	(◎ : Office)
3: Business Environment	Doing Business Rank	(Group 1: best 100)
	No. of PPP Projects	(Group1: more than 100, Group 2: more than 10, WB PPIAF)

Source: Study Team

15.6.2 Selection of Priority Countries

Based on the above criteria for selecting priority countries, three priority countries and two priority candidate countries were selected as a result of comprehensive evaluation as shown in Table 15-26. As a result, one priority country was selected from each of the aforementioned groupings (1) to (3).

Priority Countries: Mexico, Costa Rica, Jamaica

Priority Country Candidates: El Salvador, Honduras

Table 15-26 Selection Process of Priority Countries

	MEX	BLZ	GTM	SLV	HND	NIC	CRI	PAN	BHS	CUB	HTI	DOM	JAM	ATG	KNA	DMA	LCA	VCT	BRB	GRD	TTO	GUY	SUR	
	Mexico	Belize	Guatemala	El Salvador	Honduras	Nicaragua	Costa Rica	Panama	Bahamas	Cuba	Haiti	Dominican Republic	Jamaica	Antigua and Barbuda	Saint Kitts and Nevis	Dominica	Santa Lucia	St. Vincent and the Grenadines	Barbados	Guatemala	Trinidad and Tobago	Guyana	Surinam	
Private Track Record	No. of Japanese Companies' Operation Offices	1,299	2	23	13	13	6	32	45	2	21	6	13	16	0	0	0	0	0	1	0	7	0	0
	No. of Japanese Companies' Incorporated Offices	724	0	2	3	1	1	7	18	0	0	0	3	3	0	0	0	0	0	0	0	3	0	0
	No. JICA Public Private Partnership Projects (After 2012)	22	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PPP Projects with Japanese Companies	12	0	0	0	0	0	1	-	-	0	0	0	2	-	0	0	0	0	-	0	-	0	-
Public Track Record	JICA Office	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Japanese Embassy	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	JETRO Office	○																						
	Japanese Chamber of Commerce	○																						
Business Environment	Doing Business Rank	60	135	96	91	130	142	74	86	119	-	179	115	71	113	139	111	93	130	128	146	105	134	162
	No. of PPP Projects	401	17	47	32	43	27	38	-	-	9	7	50	20	-	1	2	12	1	-	11	-	3	-
	Selection Priority	1			4	5	2						3											

Source: Study Team

15.7 Detailed Survey by Sector

15.7.1 Selection of Countries for the Survey

The countries to be surveyed are Mexico, Costa Rica and Jamaica, which have been set as priority countries.

15.7.2 Conduct of Detailed Surveys

(1) Investment Climate

Details of the World Bank "Doing Business 2020" in priority countries are shown in Table 15-27.

In Mexico, the credit index is particularly high, suggesting a financing advantage. It also scores highly in entrepreneurship and facilitation of international trade, making it a relatively easy place to start a business. On the other hand, the scores of investor protection and registration are low, and this is a field where the risk of entering the market is apparent. The world ranking is 60th, which is the highest in the Latin American area, including South America. It is the country with the lowest entry hurdle for companies starting and developing business in Central America and the Caribbean.

Costa Rica has an advantage in terms of electricity supply. In the recent past, the company has been actively involved in the renovation of power facilities, making it easy for industries that require stable power to do business. The score is significantly lower for bankruptcy resolution and also below 50 for investor protection. Risks become apparent in determining business continuity and exit strategies.

Jamaica scores sixth in the world on the Entrepreneurship Index, making it the easiest country in Central America and the Caribbean to start a business. According to interviews with the Jamaica Promotion Agency (JAMPRO), there are no restrictions on foreign investment or land acquisition for foreign entrepreneurs, and the environment is conducive to the development of new businesses. On the other hand, there is still room for improvement in terms of contract performance, and the country has not achieved notable scores in other indicators.

Table 15-27 Investment Climate Scores for Priority Countries, 2020

Country	Indicator	Score (out of 100)	Improved	Issues
Mexico (60th place)	Starting a Business	86.1	-	Issuance of construction permits: Application fees for construction permits have skyrocketed, especially in Mexico City, making it difficult to obtain them.
	Dealing with Construction Permit	68.8		
	Getting Electricity	71.1		
	Registering Property	60.2		
	Getting Credit	90.0		
	Protecting Minority Investors	62.0		
	Paying Taxes	65.8		
	Trading Across Borders	82.1		
	Enforcing Contracts	67.0		
Resolving Insolvency	70.3			
Costa Rica (Ranked 74th.)	Starting a Business	79.9	Electricity supply: The stability of electricity supply has been enhanced through substation renovation and mapping. The speed of the process from application to supply has also increased. Contract enforcement: the establishment of pre-trial procedures in the judicial system has facilitated contract enforcement.	-
	Dealing with Construction Permit	70.8		
	Getting Electricity	88.9		
	Registering Property	74.4		
	Getting Credit	85.0		
	Protecting Minority Investors	48.0		
	Paying Taxes	78.0		
	Trading Across Borders	77.6		
	Enforcing Contracts	55.2		
Resolving Insolvency	34.6			
Jamaica (71st place)	Starting a Business	97.4	Registration: easier with lower costs of transcription tax and stamp duty. Contract enforcement: Increased disclosure	-
	Dealing with Construction Permit	71.9		
	Getting Electricity	65.0		
	Registering Property	65.3		
	Getting Credit	85.0		

Country	Indicator	Score (out of 100)	Improved	Issues
	Protecting Minority Investors	62.0	through judicial reform has facilitated contract enforcement.	
	Paying Taxes	64.9		
	Trading Across Borders	61.5		
	Enforcing Contracts	53.7		
	Resolving Insolvency	70.1		

Source: World Bank Doing Business 2020

(2) Expansion of Japanese Private Companies

The following Table 15-28 is a list of the sectors in which Japanese companies have advanced into the three priority countries.

In Mexico, about 700 of the 1,300 companies are engaged in manufacturing. In addition, less than 300 companies are in the wholesale and retail industry. The current situation in Mexico is that many automobile manufacturing companies targeting the United States market are located in the country.

Table 15-28 Number of Japanese Companies Operating Overseas in Priority Countries (2019 Survey Results (as of October 1, 2019))

Country	No. of Companies	Corporate Type																	
		Overseas branches of Japanese companies, etc.	Local corporations or branches wholly owned by Japanese companies		Joint ventures (local corporations in which Japanese companies have a direct or indirect stake of 10% or more) and their branches, etc.		Companies established by Japanese nationals who have moved abroad (Japanese nationals own at least 10% of the company)	Unknown											
			Incorporated	Branch Office	Incorporated	Branch Office													
Mexico	<u>1,299</u>	43	<u>724</u>	<u>280</u>	109	46	93	4											
Costa Rica	32	2	7	8	0	0	15	0											
Jamaica	16	0	3	0	2	0	11	0											
Country	Sector																		
	Agriculture, forestry	Fishery	Mining, quarrying	Construction	Manufacturing	Utility (Power, Water, etc.)	Telecommunications	Logistics	Wholesale/Retail	Finance and insurance	Real Estate	Academic research, technical services	Tourism	Entertainment	Education	Healthcare	Service (unclassified)	Unclassified	Unknown
Mexico	1	1	5	20	691	23	6	93	276	25	5	23	38	3	5	6	65	5	8
Costa Rica	1	0	0	1	2	0	0	0	10	0	0	4	4	0	0	1	8	1	0
Jamaica	0	0	0	0	0	1	0	0	4	0	0	0	5	0	0	0	6	0	0

Source: Ministry of Foreign Affairs of Japan Survey on the Number of Japanese Companies Operating Overseas (2019 Survey Results (as of October 1, 2019))

A large number of Japanese companies have established operations in Mexico, creating a major manufacturing base in the Central American and Caribbean regions. In particular, automobile manufacturers have plants for manufacturing finished vehicles in Mexico, and the country functions as a supply base for North America and Central and South America. Japan established an Economic Partnership Agreement with Mexico in 2005.

As shown in Figure 15-20, according to an interview with the Japanese Chamber of Commerce and Industry in Mexico (CÁMARA), the ratio of local companies procuring locally in Mexico's manufacturing bases is just under 30%, and there are currently many companies considering the room for expansion of manufacturing in Mexico and neighboring countries. In fact, due to the impact of the issuance of the USMCA (also known as the New NAFTA) in July 2020, an increasing number of companies are reviewing their supply chains in order to increase the rate of local procurement as shown in Figure 15-21.

On the other hand, it is difficult to expand supply chains to Central America and the Caribbean, including Jamaica, due to stricter controls based on proof of origin within the agreement countries (Mexico, the United States, and Canada). Jamaica is subject to some preferential tariffs under the Caribbean Basin Initiative (Central American and Caribbean Support Scheme). It has a similar scheme (CaribCAN) with Canada. However, it is not connected to Mexico.

Reflecting the protectionist political background of the United States, the USMCA is designed to keep the supply chain of automobiles and other products within the agreement's borders, and is expected to have an impact on the future construction of manufacturing supply chains in the region, including Central America and the Caribbean.

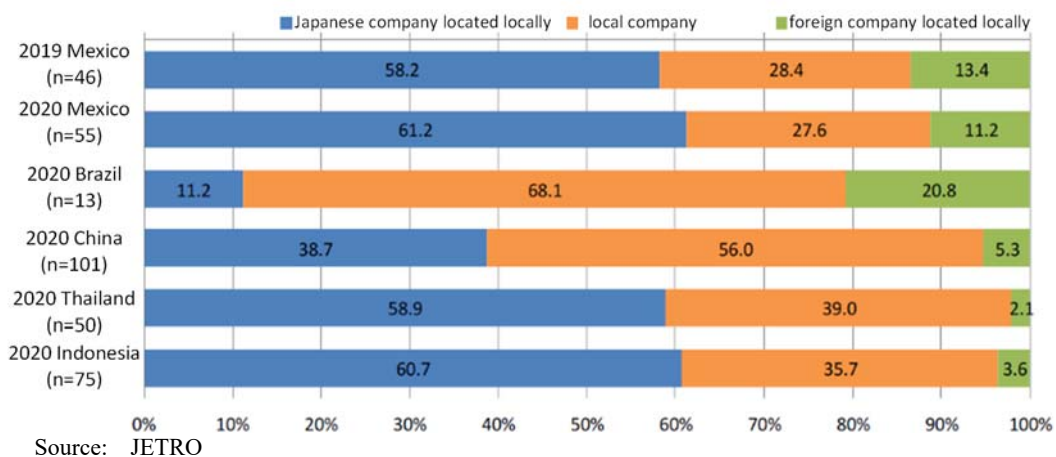


Figure 15-20 Breakdown of Capital and Nationality of Local Suppliers of Parts and Raw Materials for Japanese Companies Overseas

Change in Procurement Country

before	after	number
Japan	Mexico	5
Japan	US	5
Outside	Inside	5
Asia	Inside	2
Phillipines	Mexico	1
Japan	Inside	1
Asia	Mexico	1
Mexico	Others	1
Mexico	Others	1
	Total	22

Change in Manufacturing Country

before	after	number
Outside	Mexico	1
Japan	Mexico	1
Vietnam	Mexico	1
US	Mexico	1
Mexico	US, etc.	1
	Total	5

Source: JETRO

Figure 15-21 Plans to Change Suppliers and Production Sites due to the USMCA

Costa Rica has 32 companies based in the country. The number of wholly owned local subsidiaries is seven. Jamaica has 16 offices and 3 wholly owned subsidiaries. Table 15-29 provides details of the companies that have entered the market. Most of them entered the market before 2010, and only a few have entered the market recently.

Table 15-29 Japanese Companies in Costa Rica and Jamaica

Country	Incorporated Company Name	Investing Japanese Companies	Year of Establishment	Business
Costa Rica	Bridgestone de Costa Rica, S.A.	Bridgestone (car brand)	-	Manufacture and sale of automotive tires
	Consorcio NJS-Sogreah S.A.	NJS	2010	Environmental improvement projects, water supply and sewerage projects, and other general consulting services in Costa Rica
	Epson Costa Rica, S.A.	Seiko Epson	1988	Sales and service of printers and computer peripherals
	Mayekawa Centroamerica S.A.	Maekawa Manufacturing	1997	Sales of industrial refrigeration equipment
	MicroVention Cost Rica, SRL	Terumo	1997	Manufacture and sale of medical equipment
	Ricoh Costa Rica S.A.	Ricoh	-	Sales of Ricoh products
Jamaica	Jamaica Public Service	Marubeni Corporation (2008-)	1923	Electricity business in Jamaica
	Jamaica UCC Blue Mountain Coffee Co., Ltd.	UCC UESHIMA COFFEE	1981	Coffee plantation management
	Toyota Jamaica Ltd.	Toyota Tsusho Corporation	2000	Sales and service of vehicles and their parts

Source: Toyo Keizai, "Comprehensive Directory of Companies Expanding Overseas (by Country) 2021

(3) Business Development Issues for Japanese Private Companies

According to an interview with the Mexican Chamber of Commerce, the conclusion of the Japan-Mexico EPA in 2004 also provided momentum, and the automobile manufacturing industry in particular has been growing since 2010. However, the rate of local procurement of parts is less than 40%, and imports from Japanese parts manufacturers account for about 30%. In order to meet the USMCA's regulations on origin and to reduce overall costs, it is a major policy for Japanese companies to increase their local procurement rate. In order to achieve this, it is important to strengthen the capacity of local industries, and JICA is already providing support for the development of human resources in the automobile cluster, but there is a need for continuous improvement. In Mexico, the turnover rate tends to be high, which is thought to be due to cultural and language barriers, but there are also expectations for human resource development in the industry as a whole. However, support for the automotive industry is an area where the government has been providing support for some time, and it is not an area where there are greater needs or impact than in the past. In Mexico, the business environment is relatively well-developed even in Central America and the Caribbean, and many Japanese companies have already advanced into the country, making it easy for not only large companies but also small- and medium-sized companies to advance into the country. As the country has sufficient business infrastructure in terms of both hardware and software, it is likely that the government will increase its support for attracting new companies, including start-ups in the digital innovation field.

The Japanese Chamber of Commerce in Mexico has identified low purchasing power and the small size of the market as issues that need to be addressed in terms of the potential for business development in countries other than Mexico in Central America and the Caribbean. In addition, since the industrial infrastructure is already concentrated in Mexico, the advantages of expanding to other regions are low. In addition, the Central American and Caribbean countries have a large time difference from Japan, which is a disadvantage when starting a new business that requires mobility. Many large companies already have bases in North America, and are conducting operations in Central America and the Caribbean from their North American bases, but it is difficult for small- and medium-sized companies to do the same. Geography is another factor that hinders business expansion, as it takes a long time to travel. The only country in Central America and the Caribbean with direct flights from Japan is Mexico, and the other countries require one or more connections, making it difficult to make frequent round trips to and from Japan.

In Costa Rica, there are offices in charge of promoting direct investment in Japan at diplomatic missions abroad, and they provide consultation services to Japanese companies when they enter the country. In addition, regular economic reports from the embassy's economic section are sent out on a

monthly basis, making it relatively easy to obtain information in the Central American and Caribbean regions. One of the challenges for foreign investment in the country is that it is an agricultural country, which makes it difficult to attract foreign capital because of the low level of skills in manufacturing, a field in which Japan excels, and the relatively high labor costs. In addition, the Trade and Investment Facilitation Business Council, for which the Japan Machinery Center for Trade and Investment serves as the secretariat, cites unclear industrial standards as a problem in Costa Rica, and requests the enactment of fair regulations. Other obstacles in Costa Rica include business development in the western language. In Mexico, there are already many Japanese companies and the surrounding environment is being developed to facilitate the expansion of Japanese companies.

Since Jamaica is an English-speaking country, there are fewer language barriers than other Spanish speaking Central American countries. In fact, Marubeni Corporation, a Japanese company, has invested in JPS, the only electricity operator in Jamaica, and the country is actively developing its business, including next-generation electricity business such as renewable energy and storage batteries. However, the country as a whole face a high security risk, and it is costly to ensure the safety of expatriate staff. In addition, there are many cases of electricity theft due to the unstable security situation, and electricity rates are set at a high level. As a result, the country has not been able to promote the concentration of manufacturing industries. The primary industry that produces the raw materials that support the manufacturing industry is also weak, making it difficult for the industry to become more sophisticated, so multifaceted support is required.

15.7.3 Analysis of Detailed Survey Results

(1) Lessons Learned from the Pilot Projects

Through the pilot projects conducted in this study, lessons will be extracted on how development cooperation through public-private partnership should be in the with/Post COVID-19 society. In addition to the pilot projects, this study also conducted a basic survey on the development of a special economic zone in Jamaica and an information gathering survey on urban transportation in the Dominican Republic. In many of these pilot projects, Japanese private companies' technologies were utilized. The lessons learned from the pilot projects and related studies are summarized below.

1) Online Medical App in Dominican Republic

This pilot project attempted to solve the medical system issues in the Dominican Republic by using a telemedicine application from Allm Inc. in Japan. In terms of the organizational system, regulations prohibiting the use of mobile devices in ambulances and insufficient supply of drugs during actual treatment were cited as implementation issues. In addition, during implementation, it was assumed that the technology would be introduced according to the budget execution of the medical institution, but it was found that due to the budget structure of the local medical institution, it was necessary to obtain permission from the SNS, which is a national organization. Furthermore, in terms of technology, it is important to improve the IT environment in hospitals, and in terms of business operation, unification of systems among hospitals is expected to be an issue in the future. In addition, even during the actual pilot project, the time difference was a bottleneck in the dialogue between Japanese companies and the Dominican Republic, and it took more time than necessary to operate the project.

As for governmental support, no financial support is envisioned at this time. A dialogue and coordination role is required to promote the use of the system, including negotiations with the SNS, a national organization, and support for the introduction of the same system to neighboring hospitals.

2) EWBS System in Nicaragua

In this pilot project, Tanabiki Corporation in Japan and the Japan Telecommunications Engineering and Consulting Service (JTEC) took the lead in introducing a system for the establishment of a network for the rapid transmission of lifeline information via EWBS (broadcast radio waves) in the Republic of Nicaragua. In the future, the private sector plans to promote the spread and expansion of EWBS receivers in Nicaragua, as well as to expand the system horizontally to other ISDB-T (Integrated

Services Digital Broadcasting for Terrestrial Use) adopting countries such as Costa Rica, El Salvador, Guatemala, and Honduras.

At present, only sample units have been launched to introduce the technology, and efforts will be made in the future to commercialize the receivers. In this case, it is necessary to find an influential integrator who can have a strong local sales network. In addition, in order to expand the spread of EWBS, it is necessary for local organizations to prepare an introduction roadmap for purchase and to secure a budget. The government is required to coordinate with local organizations for this purpose. Moreover, since the introduction of this equipment will lead to the strengthening of disaster prevention capacity in the target country, technical cooperation projects for strengthening disaster prevention capacity, including the provision of equipment, are envisioned as an option for assistance. Considering the requests of local governments, the project study will consider providing support and promoting the use of this system in countries with high affinity for it.

3) Satellite Image SaaS in Guatemala

This pilot project proposed a smart disaster management system using the results of ground displacement analysis based on satellite observation data provided by Synspective Inc. in Japan. Synspective's service is assumed to be a business model as Software as a Service (SaaS). Synspective's service is designed as a Software as a Service (SaaS) business model, which requires continuous purchase of the service to continue using it.

Since the financial constraints of the local government have been identified as an issue to be addressed at the time of implementation, the government is expected to provide financial support for the implementation and operation of the system. For example, the introduction of the service could be funded by a technical cooperation project to strengthen disaster prevention capacity for the next three to five years. On the other hand, it is necessary to continue to study the framework for continuous and sustainable support for the purchase of digital services, which is different from the conventional infrastructure support.

4) Security Seminar in Guatemala

In this pilot project, a study session was held to introduce technologies of Japanese private companies to improve public safety, which is a social issue in Guatemala. In the webinar, five Japanese private companies introduced their ICT technologies related to security management: Aimesoft Japan, Dawn, ELSYS JAPAN, Singular Perturbations, and V-Cube. Among them, a study session was held to discuss the introduction plan for Dawn and Cingular Partitions.

JICA is currently conducting technical cooperation projects on security management in Guatemala and Honduras. In the future, it is necessary to consider using Japanese companies' ICT technology for security management in these projects, and to verify the actual impact of the introduction. Alternatively, support for small- and medium-sized enterprises through private sector partnership projects is also envisioned, but since the target audience for the introduction are government agencies, it is important for the government to coordinate with related organizations.

5) OVOP in St. Lucia

This pilot project does not include the use of Japanese technologies or funds.

6) Inclusive Education Webinar

In this pilot project, a wide-area webinar was held for Central American and Caribbean countries to promote understanding and simulate experiences of digital educational materials (DAISY/EPUB) in order to solve educational issues. In addition, from the perspective of inclusive education, the Study Team introduced solutions for students with reading disabilities and those who are feared to be behind in their learning. In the future, the participation of Japanese companies that develop and operate digital learning materials and learning applications is likely to be considered as a private sector collaboration. An environment that can promote the introduction of digital learning materials and

applications/software is rapidly being established in the surveyed areas as distance education progresses in the Corona disaster.

So far, Japanese companies such as Surara Net (Sri Lanka), Sakura (Rwanda), KJS Company (Kenya), and Wonder Lab (Cambodia) have been selected for private sector collaboration projects, but there is no experience yet in Central America and the Caribbean.

In terms of implementation issues, language (Spanish) specifications and time lag were cited. In Central America and the Caribbean, it is assumed that the possibility of introduction will be relatively low in English-speaking countries. On the other hand, the English-speaking countries in Central America and the Caribbean have small population, and it is feared that they may not be attractive as a market for private businesses.

As for the direction of public support, it is expected that the government will promote the transfer of DAISY/EPUB production technology and its utilization through group training, utilize the Marrakesh Treaty to improve the educational and reading environment for students with disabilities, and seize the opportunity to switch to accessible digital textbooks and create a good example of the introduction of accessible EPUB digital textbooks through technical cooperation projects.

7) Tourism Sector Resiliency Improvement in Jamaica

This pilot project aimed to strengthen tourism resilience through crisis management planning in Jamaica, a country with a high GDP ratio in the tourism sector. Webinars on tourism and crisis management were held and workshops were conducted to develop a tourism crisis management plan and specifications for the use of ICT technology to strengthen resilience. In doing so, the project utilized the manuals prepared by the Japan Tourism Agency of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) and the United Nations World Tourism Organization (UNWTO) office in Japan, and this is an example of technological utilization of the knowledge accumulated by Japanese government organizations.

In the future, it is necessary to disseminate the Tourism Risk Management Plan to tourism businesses and reflect the identified issues through the actual utilization of the plan. For this purpose, it is desirable to launch a technical cooperation project by Japanese governmental organizations. At that time, the involvement of Japanese private companies in the introduction of the ICT tools discussed in this pilot project will lead to high-impact development cooperation through public-private sector collaboration. In addition to ICT software, it is also possible to promote Japanese private sector involvement by considering the implementation of technical cooperation projects that include the introduction of hardware and equipment, such as the introduction of sensors for smart disaster prevention.

8) Innovation Seminar in Panama

In this pilot project, an open innovation seminar was held mainly for startup companies in Japan and Panama with the aim of realizing industrial promotion through value creation by open innovation in Panama.

The seminar was attended by two Japanese start-ups, Allm and Synspective, which conducted a separate pilot project for this study, and one Japanese start-up, Brazil Venture Capital, an investment firm that supports Japanese companies entering the Latin American market.

In terms of future collaboration between Japanese start-ups and start-ups in Central America and the Caribbean, including Panama, it was mentioned that there are few start-ups with special solutions in the region. At present, there are few startup companies that would attract interest from overseas. This is due to the lack of investment in startups and R&D, a lack of entrepreneurship capacity building, and insufficient incubation in the past. Other issues such as language and time difference were also mentioned in the survey of participating companies.

Options for support that can be provided by the public sector include dispatching industrial promotion experts in a way that includes open innovation as a theme, providing training and technical

cooperation related to open innovation, and supporting start-up companies through business contests. When dispatching experts, it is desirable to consider Central America and the Caribbean as single market and dispatch personnel who can provide support over a wide area. By expanding the quantity and quality of local start-ups through such activities, it is expected to contribute to the expansion of Japanese start-ups into the region.

9) Special Economic Zone Preliminary Study in Jamaica

This preliminary study collected basic information on the industrial and infrastructure aspects of Jamaica with a view to developing a special economic zone in the Inverness area in the suburbs of Kingston, the capital of Jamaica, with the aim of diversifying and upgrading the country's industries, which are dependent on the tourism sector.

Four Japanese companies have established operations in Jamaica, including Marubeni Corporation, which has invested in its electricity business. The development of SEZs and the resulting expansion of Jamaica's economic base will lead to increased demand for electricity, and the support for SEZ development will contribute to the expansion of Japanese companies' business in Central America and the Caribbean. The development of surrounding cities, including SEZs, is expected to be developed as smart cities, and Japanese companies are expected to enter the region to introduce smart city platforms and provide services and applications.

As the country has no experience in developing large-scale SEZs and with limited know-how and resources, the development of a master plan for SEZs by Japanese government officials will be one of the options for future support. At present, one of the challenges is that the SEZs are located in an environmental protection zone. The government's support through the formulation of the development plan, including environmental clearance, will promote the expansion of Japanese private companies' business in the country and lead to the realization of high-impact development cooperation through public-private partnership.

10) Urban Transport Study in Dominican Republic

This study focused on the Santo Domingo metropolitan area, where congestion caused by automobile traffic has become serious. The study collected information on the actual urban traffic situation and urban transportation planning including the urban transportation master plan, and examined the possibility of future development cooperation, focusing on the upgrading of the operation of the track system and existing transportation facilities.

If yen loans are to be used for track development in the future, the participation of Japanese companies should be considered. In the procurement of rolling stock, it would be possible to realize high-impact development cooperation through public-private partnerships if the participation of companies such as Hitachi, Ltd. In Central America and the Caribbean, there is a lack of experience of Japanese construction companies, so it is desirable to continue to use ODA as a foothold for Japanese private companies to enter the region.

(2) Trends in Issues in the Public-Private Partnership Sector

To identify trends in issues by priority country and group as Table 15-30:

Table 15-30 Trends in Issues by Public-Private Partnership Sector Group

Group	Country	Trends in Issues in the Public-Private Partnership Sector
(1) [Central America: Mexico]	Mexico	<ul style="list-style-type: none"> • Quality of human resources in local industries • Growth of new sectors outside the automotive industry
	Belize	<ul style="list-style-type: none"> • Lack of information on business environment • Lack of business infrastructure (hard and soft infrastructure) • Conducting business in Spanish language • Immature secondary industry • Risks related to citizen security and political conditions
Guatemala		
El Salvador		
Honduras		
Nicaragua		
Costa Rica		
(2) [Central America: Others]	Panama	
	Cuba	<ul style="list-style-type: none"> • Lack of information on business environment • Lack of business infrastructure (hard and soft infrastructure) • Immature primary and secondary industry • Risks related to citizen security and political conditions
	Haiti	
	Dominican Republic	
	Jamaica	
	Antigua and Barbuda	
	Saint Kitts and Nevis	
	Dominica	
	Saint Lucia	
	Saint Vincent and the Grenadines	
	Barbados	
	Grenada	
	Trinidad and Tobago	
	Guyana	
Suriname		
(3) [Caribbean and others]		

Source: Study Team

15.8 Development of Hypothesis on the State of Sectoral Development Cooperation in With/Post COVID-19 Society

15.8.1 Grouping of Countries Surveyed by Sector

In order to develop hypotheses on the nature of development cooperation in the public-private partnership sector, Table 15-31 describes the trends in issues by the groups and perspectives on future support approaches.

Table 15-31 Problem Trends and Perspectives on Support Approaches by Public-Private Partnership Sector Group

Group	Country	Trends in Issues in the Public-Private Partnership Sector	Approaches for Development Cooperation
(1) [Central America: Mexico]	Mexico	<ul style="list-style-type: none"> Quality of human resources in local industries Growth of new sectors outside the automotive industry 	<ul style="list-style-type: none"> Support for expanding the foundation of local industries Support for the expansion of the digital industry
(2) [Central America: Others]	Belize	<ul style="list-style-type: none"> Lack of information on business environment Lack of business infrastructure (hard and soft infrastructure) Conducting business in Spanish language Immature secondary industry Risks related to citizen security and political conditions 	<ul style="list-style-type: none"> Provision of information on business environment Development of business infrastructure (hard and soft) Support for the expansion of the digital industry
	Guatemala		
	El Salvador		
	Honduras		
	Nicaragua		
	Costa Rica		
(3) [Caribbean and others]	Panama	<ul style="list-style-type: none"> Lack of information on business environment Lack of business infrastructure (hard and soft infrastructure) Immature primary and secondary industry Risks related to citizen security and political conditions 	<ul style="list-style-type: none"> Provision of information on business environment Development of business infrastructure (hard and soft) Support industrialization to expand economic sectors to businesses other than tourism and raw material exports Support for the expansion of the digital industry
	Cuba		
	Haiti		
	Dominican Republic		
	Jamaica		
	Antigua and Barbuda		
	Saint Kitts and Nevis		
	Dominica		
	Saint Lucia		
	Saint Vincent and the Grenadines		
	Barbados		
	Grenada		
	Trinidad and Tobago		
Guyana			
Suriname			

*1: Bold, underlined countries are the focus countries of this sector

*2: Includes some national economic issues

Source: Study Team

15.8.2 Analysis of Vulnerabilities in the Countries and Priority Sectors to be Studied

The implementation of Japanese public-private partnership projects in the study area has been poor since before COVID-19, so it is not worthy of vulnerability analysis. On the other hand, this is an area where COVID-19 can be used as an opportunity to strengthen the foundation for cooperation and to Build Back Better.

15.8.3 Hypothesis on the Nature of Development Cooperation of with/Post COVID-19 Societies in Central America and the Caribbean

The key issues for achieving development cooperation with high-impacts in the region through public-private partnerships are (1) information disclosure to Japanese companies, (2) improvement of the business environment, (3) expansion of the value chain of the manufacturing industry, (4)

encouraging large companies to participate in infrastructure development projects, and (5) supporting the business development of small- and medium-sized companies and start-up companies.

15.8.4 Consideration of Possible Actions and Support Measures to Overcome Vulnerabilities

Table 15-32 below shows the results of the study of measures and support measures to overcome the priority issues mentioned above. The specific measures for the various measures and support measures are described in 15.9.2.

Table 15-32 Priority Issues and Countermeasures

Priority Issue	Countermeasure
(1) Information disclosure to Japanese companies	<ul style="list-style-type: none"> • Build a framework for information collection and sharing using JICA offices • PR of the business environment in the region • Create matching opportunities for companies in Japan and target countries • PR the use of public-private partnership program
(2) Improvement of the business environment	<ul style="list-style-type: none"> • Improvement of investment environment and legal system for industrial and investment promotion • Technical cooperation on capacity building for industrial and investment promotion
(3) Expansion of the value chain of the manufacturing industry	<ul style="list-style-type: none"> • Technical cooperation for human resource development in industrial sector • Development of gateway infrastructure for supply chain expansion • Support for industrialization • Technical cooperation for improving public safety
(4) Encouraging large companies to participate in infrastructure development projects	<ul style="list-style-type: none"> • Infrastructure development through yen loan and grant schemes • Support for formulating PPP infrastructure projects • Utilization and PR of co-financing options with multi-donors • Support with private sector investment finance
(5) Supporting the business development of small- and medium-sized companies and start-up companies	<ul style="list-style-type: none"> • PR of public-private partnership program • Utilization and PR of co-financing options with multi-donors • Support for introducing digital technology • Support for smart city formation

Source: Study Team

15.9 Analysis and Recommendations Contributing to Sectoral Cooperation Policy

15.9.1 Summary of the Analysis Contributing to Sectoral Cooperation Policy

This study analyzed the state of development cooperation in Central America and the Caribbean through public-private partnerships. According to the Development Cooperation Charter of Japan, in implementing development cooperation by the government and government-related organizations, mutually beneficial partnerships with various actors are to be strengthened so that they can play the role as catalysts for mobilizing and bringing together various forces, including the private sector. On the other hand, with the exception of Mexico, Japanese private companies have not been actively developing their businesses in the region since before COVID-19. In addition, the utilization rate of the private sector partnership program prepared by JICA is lower than that of other regions.

In collecting basic information on the 23 countries, the Study Team evaluated the performance of the public and private sectors in the region. The private sector's achievements are summarized in terms of the number of private-sector partnerships, the number of Japanese private companies operating in the region, and the number of PPP projects. While a large number of Japanese private companies have established operations in Mexico, the number of Japanese companies establishing operations in other Central American and Caribbean countries is limited. The governmental achievements are organized focusing on the existence or non-existence of governmental offices that serve as a medium to support the expansion of Japanese private companies. At the same time, the business environment of each country was evaluated, and Mexico, Costa Rica, and Jamaica, three countries with remarkable achievements in recent years, were designated as priority countries, and detailed business trends were organized.

In addition, eight pilot projects were carried out in this study. In most of the projects, the know-how of Japanese private companies was utilized in order to achieve high impact development cooperation. As a result, the superiority of Japanese technologies and issues for implementation were identified in each project.

As a result of the detailed survey and pilot projects, the following priority issues were identified: (1) information disclosure to Japanese companies, (2) improvement of the business environment, (3) expansion of the value chain of the manufacturing industry, and (4) promotion of participation of large companies in infrastructure development projects, and (5) supporting the business development of small- and medium-sized companies and start-up companies. Recommendations for solving the key issues are described in the next section.

15.9.2 Recommendations for Sectoral Cooperation Policy

In order to create public-private partnership projects with high development impact, the following measures and support measures are proposed. Each measure is presented as an option for support and is not a recommendation to implement all of the support measures for the target group. A specific support measure or a combination of several support measures should be implemented at an appropriate time based on the requests of Japanese companies and local governments. In addition, since there are only a limited number of countries for which detailed surveys were conducted in this study, the support measures and the timing of their implementation are presented by group, but these do not necessarily apply to all countries in the group.

Table 15-33 Options of Support Measures for Target Groups

Policy	Support Context	Group 1	Group 2	Group 3
Business Information Dissemination	Investment desk functions utilizing JICA overseas offices and branches	—	short	short
Business Matching Support	Establishment of an information sharing platform for sharing information of the business environment and holding regular investment seminars	—	short	short
Improvement of Business Environment and Strengthening of Administrative Capacity	Dispatch of experts to improve the business environment, or provision of technical cooperation projects to local investment-related ministries and agencies as counterparts.	—	short	short
Human Resource Development in Industrial Sector	Support for the development of human resources for the revitalization of local manufacturing industries.	short	mid	mid-long
Gateway Infrastructure Development	Infrastructure development to facilitate international logistics, such as ports and highways	—	mid	mid-long
Support for Industrialization	Support for the formulation of national and regional strategies for the development of industrial parks and special economic zones through development surveys	—	mid	mid-long
Support for PPP Infrastructure Projects	Utilization and PR of public-private partnership schemes	short – mid	mid	mid-long
Use of Private Sector Investment Finance	Conducting projects with pilot projects using Japanese technologies, and preparatory survey for private sector investment finance.	short	short-mid	mid-long
Support with Co-finance Loans	Support through co-financing with multi-donor agencies	short	mid	mid
PR for the use of Public-Private Partnership Scheme	Implementation of development studies, including pilot projects, and support for the horizontal development of companies that are implementing private sector collaborative projects in other regions.	short	short	short
Support for Digital Technology Utilization and Smart City Formation	Support for the formation of smart cities and the application of digital technologies	short	short	short

Source: Study Team

(1) Business Information Dissemination

JETRO's overseas offices are heavily focused on countries where companies have already established operations, but there is a lack of information gathering and sharing on the local investment environment in countries where there are few or no companies operating. In Central America and the Caribbean, there is almost no information dissemination in countries other than Mexico and Cuba, and this makes it difficult for private companies to obtain the necessary information when considering expansion.

JICA's overseas offices and branch offices have useful information for private companies looking to expand their business, based on their experience in conducting surveys in their home countries. There is a great deal of information related to the business environment, which can be fully utilized. For example, the existing survey includes information that can be used by private companies, such as relevant laws and regulations, relevant plans, financial and organizational systems of the government, natural disaster risks, information on local companies, and the possibility of external financing. However, most of the private companies have not yet been made aware of the perspectives to effectively utilize the JICA library and other resources. By setting up an investment desk function in the offices and branch offices to provide information on the business environment and the development of the surrounding infrastructure environment, it is possible to archive this useful information and provide it effectively to Japanese private companies to uncover new business demand. However, due to the limited resources of overseas and branch offices, it is difficult to do this at all locations. In such case, it would be effective to group several countries together for selection and concentration of functions. In this case, Costa Rica (Group 2) and Jamaica (Group 3), which were listed as priority countries for the public-private partnership sector in this study, are desirable as centers.

By strengthening the collection of information and effectively disseminating it, while also utilizing the dispatch of experts in industry and investment attraction as indicated in Support Measure (3), it will be possible to attract private sector technologies and formulate projects with a high development impact in connection with those technologies.

(2) Business Matching Support

It would be effective to create opportunities to match the technologies of Japanese companies with urban issues in Central America and the Caribbean by utilizing JICA's network with local government agencies. In addition, since collaboration with local companies is important for business development, it is desirable to proactively create opportunities for matching Japanese companies with local companies. On the other hand, in Central America and the Caribbean, each country has a small market, making it difficult to attract sufficient interest. In order to increase interest in the region, it would be effective to organize business missions and investment seminars for several countries at once. Efforts will also be made to increase the interest of Japanese private companies through the establishment of an information-sharing platform to share the actual status of the investment environment and the holding of regular investment seminars. It is also important to inform Japanese companies of the government support available for their expansion. It is proposed that the support should be divided between the two groups (2) and (3), each of which has a similar tendency in terms of issues related to business expansion and implemented jointly. For this support, it is also effective to collaborate with experts in industry and investment attraction, as will be described in Support Measures (3).

(3) Improvement of Business Environment and Strengthening of Administrative Capacity

As shown in the Doing Business rankings, the investment environment in the countries covered by this survey region is still far from satisfactory. There is still room for improvement in terms of both hardware and software. One of the most effective short-term measures is to use government assistance to strengthen the soft functions of investment-related legal systems and administrative capacity.

To this end, support for the improvement of the investment environment through the dispatch of experts as advisors for the improvement of the investment environment or technical cooperation projects with local investment-related ministries as counterparts will be effective in increasing the willingness of Japanese companies to enter the market. At the same time, while the hurdle of Western-language business is an issue in Group 2, monitoring of relevant legislation and Japanese culture at the time of business expansion will also be an effective support to promote private sector expansion. For the assignment of Group 2 and Group 3 to countries, it is desirable to assign personnel who are capable of providing industrial support in the fields of "promotion of small- and medium-sized enterprises" and "innovation".

In addition, experts could be assigned not only to national investment institutions but also to regional institutions. When promoting investment by Japanese companies, it is necessary to devise ways to expand the size of the market by supporting the introduction of products and services in multiple

countries as one market. In doing so, consideration should be given to assignments such as SICA's CENPROMYPE, which mainly supports the private sector in Group 2 countries, and CARICOM's Private Sector Organization (CPSO) in Group 3.

Furthermore, the improvement of public safety in Central America and the Caribbean is an important issue in terms of the investment environment. Specific methods (such as strengthening the human resource development system, and enhancing and disseminating local police forces) will be proposed in the security sector, but it is desirable to improve security in the target countries through technical cooperation projects. Finally, when implementing technical cooperation projects, it is possible to create new business opportunities by involving Japanese private companies related to the fields of public safety and smart security, as was done in the pilot project of this study.

(4) Human Resource Development in the Industrial Sector

In Mexico, many companies related to the automotive industry are located, but the local procurement rate is still less than 30%. In order to build a more competitive production system, it is important to develop the industrial human resources of local companies. On the other hand, as this is an area where a lot of support has already been provided, it is desirable to not only continue the existing support, but also to implement measures to expand the value chain of the manufacturing industry to Central America and the Caribbean, such as the implementation of South-South cooperation to Central American countries other than Mexico. In the Central American countries of Group 2, although the SEZ system and other systems have been put in place, the foundations of secondary industries, including manufacturing, are weak. By expanding Mexico's strong manufacturing value chain to Central American countries, this support will contribute to the business expansion of Japanese private manufacturing-related companies.

(5) Gateway Infrastructure Development

As mentioned earlier, in order to expand Mexico's manufacturing value chain to neighboring countries, the development of infrastructure that facilitates international logistics, such as ports, highways, and railroad tracks, will have high development impact. Since the market size of countries in Central America and the Caribbean is small when viewed on a stand-alone basis, it is necessary to devise ways to have the entire region be viewed as a single market in order to attract foreign private companies. In this case, improving the logistics and human flow network in the region will be extremely effective. Since the scale of the gateway infrastructure is relatively large, support for the participation of large Japanese companies, as proposed in support measures (7) and (8), should also be considered.

For large-scale infrastructure development using Japan's paid and free schemes, the possibility of equipment and construction by Japanese companies should be examined to expand the business.

(6) Support for Industrialization

It will also be effective to provide support for the hardware development of bases for Japanese companies to expand into the region, such as the development of industrial parks and special economic zones, which have been focused on in Asia and Africa. In Central America and the Caribbean (excluding Mexico), secondary industries are not yet mature, and there is a tendency to be biased toward primary and tertiary industries. Although it varies from country to country, the Central American countries in Group 2 tend to rely on the primary sector, while the Caribbean countries in Group 3 tend to rely on the tertiary sector (especially the tourism sector).

Countries that depend on specific sectors have suffered serious economic damage from COVID-19 and overcoming their vulnerability by diversifying and upgrading their industries has been identified as a priority issue. Attracting foreign capital and technology is an effective way to achieve this. In Group 2, the SEZ legal system with incentives to stimulate the attraction of foreign capital is well developed, and the soil for industrialization is growing, making it relatively easy to provide support. In Group 3, many countries are lacking in industrial resources and do not have a deep-rooted industrial culture, so it is necessary to tackle industrialization from a medium- to long-term perspective. Specific measures to support industrialization are expected to include support for the formulation of national and regional strategies for the development of industrial parks and special economic zones through

development surveys. In the process of the survey, incentives to attract investment will be promoted to Japanese companies to create public-private partnership.

(7) Support for PPP Infrastructure Projects

In the study area, support for the formation of PPP infrastructure projects is one of the support measures to promote the business development of large-size Japanese companies. Particularly in Group 2, the legal system and track record of PPP projects are advanced, and in some countries in Group 3, foreign companies are actively participating in infrastructure development based on PPP projects.

In some of the countries in Group 3, foreign companies are actively participating in infrastructure development based on PPP projects. Although the number of projects is small, some Japanese companies have already made inroads in the fields of electricity and wastewater treatment. In addition to the aforementioned preparatory cooperation surveys, JICA has also provided Viability Gap Funding (VGF) yen loans and Equity Back Finance (EBF) yen loans. It is effective to actively provide information on the local PPP business environment and effectively promote the support schemes to form new PPP infrastructure development projects.

(8) Use of Private Sector Investment Finance

As for Private Sector Investment Finance, there are still few initiatives in Central America and the Caribbean. Existing cases include two investments in funds, one investment in a local energy company, and one investment in a local financial institution. The current situation is that Japanese companies have not been able to create investments and loans to business entities. First of all, it is important to increase the certainty of business development through the implementation of pilot projects within JICA projects and preparatory studies for cooperation. After that, it is also effective to show active support for investment and loans to business entities in order to increase the number of public-private partnership initiatives. The use of the Private Sector Investment Finance is also effective as an outlet for some of the private-sector collaborative projects presented in support measure (10).

(9) Support with Co-finance Loans

In addition to JICA, a number of other multi-donors are implementing development cooperation in Central America and the Caribbean, among which the IDB is particularly active in the region. JICA and the IDB have a partnership on promoting economic recovery and social inclusion in Latin America and the Caribbean.

Since 2011, the IDB has been providing co-financing in the fields of renewable energy and energy efficiency, water and sanitation, and transportation and traffic as part of the "Co-financing for Renewable Energy and Energy Efficiency in Latin America and the Caribbean.

On the other hand, in supporting small- and medium-sized enterprises (SMEs) and start-up companies, it is desirable to collaborate with IDB Lab, which is a part of the IDB Group that provides technical cooperation and fosters micro-, small- and medium-sized enterprises with the aim of promoting private investment, and IDB Invest, which provides investment and loans to private companies in Latin America and the Caribbean. TSUBASA is being implemented in cooperation with IDB Lab, and it is necessary to maintain the cooperative relationship and promote efforts to commercialize the adopted companies.

In addition, co-financing with the International Finance Corporation (IFC) of the World Bank Group is also effective from the perspective of private sector business formation and expansion. In the region, JICA and IFC have a track record of co-financing solar power projects in Mexico, and JICA and IFC have a basic cooperation agreement.

(10) Public Relations (PR) for the Use of Public-Private Partnership Scheme

In order to increase the number of public-private partnership projects in the region, it is effective to promote JICA's public-private partnership schemes and provide the support from JICA's overseas offices. It will be effective to implement mechanisms to encourage private sector proposals, such as conducting development surveys that include pilot projects, and publicizing the initiatives in Central

America and the Caribbean to companies that are implementing private sector collaborative projects in other regions.

(11) Support for Digital Technology Utilization and Smart City Formation

With the COVID-19 crisis, there was renewed focus on the technological advantages of the digital innovation sector. There is a tendency to support the introduction of technologies that enable remote and contactless access. It is also easy to support the fact that the impact of development can be seen in a short period of time, compared with the construction of the hard infrastructure.

Support for the formation of smart cities that package these digital technologies should also be considered for implementation in Central America and the Caribbean. The introduction of leapfrog digital technologies to compensate for the lack of hard infrastructure will benefit the target organizations and residents. Unlike traditional infrastructure development, it is necessary to demonstrate the effectiveness of new digital technologies through pilot projects. By introducing new digital technologies on a pilot basis in development studies and technical cooperation projects conducted by the public sector, and then implementing them, development cooperation through public-private partnerships can have high impact.

In the field of digital technology, the introduction of technology "as a service (aaS)" with a subscription model that enables real-time monitoring and improvement is emerging as a new business model, rather than the conventional infrastructure system of one-time purchase. In order to promote the use and purchase of digital technology services in Japan, a sustainable design in terms of financing is necessary.

It is recommended that the various support measures listed above to be implemented selectively to promote business development by Japanese private companies in order to achieve effective development cooperation through the public-private partnership approach.

16. Impact Study of COVID-19 on the JICA Project Site

16.1 Introduction

In the "Investigation of the Impact of COVID-19 on the Japan International Cooperation Agency (JICA) Project Site", the information is regularly collected from ongoing JICA projects through questionnaire surveys, web conferences, and field surveys of project teams, counterparts, and beneficiaries. The Study Team will analyze and consider the impact of COVID-19 and related policies in Central America and the Caribbean.

16.2 Method of this Survey

The procedure of this survey is as follows:

- (1) Interview with each project and conduct of interview survey on the impact of COVID-19 on project management
- (2) Selection of beneficiaries to be the target of the fixed-point observation questionnaire survey, and determination and implementation of the questionnaire contents
 - 1) First survey (in October 2021): the socio-economic variables, in which the COVID-19 effects are manifested, were identified by questionnaires or interviews with the beneficiaries of each project (e.g., income amount, number of tourists).
 - 2) Additional survey (from December 2021 to January 2022): As a result, the Study Team conducted questionnaires for data aggregation, focusing on items that can be statistically analyzed, based on the prediction of causal relationships for the identified variables. Interviews were conducted for projects which were difficult to conduct with questionnaires.

16.3 Selection of Target Project of Impact Study

In Central America and the Caribbean, the Study Team discussed with JICA and selected two cases in Central America and two cases in the Caribbean, which started before the occurrence of the COVID-19 pandemic in March 2021 and ended after December 2021. In addition, the selected ongoing projects were from the following priority sectors of this survey: social and economic policy, health care and nutrition, education, agriculture and rural development, private sector, environment and disaster prevention, governance and security, DX and innovation, infrastructure and energy, and tourism.

16.4 Strengthening the Mechanism Project for Tourism Development Based on Sustainable Community in the Northern Region (Dominican Republic)

(1) Results of Interview Survey to Project

With the aim of conducting a COVID-19 impact study on the project operation itself, interviews during the project were conducted in May 2021.

(2) Overview of the Interview Survey with the Project Coordinator

The outline of the questionnaire survey on the ongoing project, "Strengthening the Mechanism Project for Tourism Development Based on Sustainable Community in the Northern Region (Dominican Republic)" is described below. The first interview survey was conducted with the project coordinator in November 2021, and it was confirmed that "attracting domestic tourists" and "using social networking sites (SNS) as tourism public relations (PR)" are necessary to strengthen tourism resilience. Therefore, the second interview survey was conducted in January 2022, focusing on "utilization of SNS as tourism PR".

Table 16-1 Dominican Republic Questionnaire Survey Summary

Objective	The Study Team will conduct fixed-point observations on the impact of the COVID-19 pandemic on community-based tourism products, grasp changes before and after the outbreak of the pandemic (March 2020), and understand the relationship among the changes, the number of infected people, vaccination rate, and outdoor restrictions. Lastly, the Study Team will understand the relationship among the measures taken by the government, and at the same time, obtain useful information for the project.
Target	<p><In July 2021> North 14 Regions</p> <ul style="list-style-type: none"> - UP (tourism production group): maximum of 37 samples (each group) - GT (tourist area management organization/territorial group): maximum of 17 samples (each group) <p><Modification (in September 2021)>Because of the timing of approaching the final stage and concluding the ongoing target project, it became difficult for the project leader to cooperate with this survey. Thus, the Study Team changed the target person and target sample size as follows:</p> <ul style="list-style-type: none"> - Target person: project coordinator (three persons) - One representative from each group: UP (tourism production group) and GT (tourist area management organization/territorial Group) <p>Figure 16-1 shows the implementation system diagram of the survey target project, while Figures 16 2 and 16-3 show the location information of UP and GT, supported by the survey target project.</p> <p><Modification (in January 2022)> The Study Team had planned to interview one representative from each group of UP (tourism production groups) and GT (tourism community management organizations) as the second interview survey, but due to lack of additional coordination, the Study Team changed the subjects and sample size as follows.</p> <ul style="list-style-type: none"> - Project coordinator (one person) (SNS staff)
Methods	<p><In July 2021> The Study Team distributed and collected questionnaires from UP and GT. The questionnaire was conducted in the form of an online questionnaire (interview) by local employees three times in total: August 10, 2021 and January 2022. The assignment of local mercenaries is 2.10 MM (0.70 MM x 3 times x 1 person).</p> <p><Modification (in September 2021)> The Study Team conducted the interview with the project coordinators online.</p>
Questions	<p><In July 2021> The Study Team conducted a questionnaire survey, with around 20 questions, to quantitatively understand the following changes during the COVID-19 pandemic: 1) the number of tourists, 2) income from tourism products, 3) changes of needs and behavior, and 4) changes of price of the tourism products.</p> <p><Modification (in September 2021)> The Study Team conducted another questionnaire survey, with around 20 questions, mainly selection formulas, to qualitatively understand the following changes: 1) the UP and GT activity status, 2) the attributes of domestic and foreign tourists, and their increase/decrease in number, 3) changes in tourist needs, and 4) activity examples corresponding to the influence of COVID-19.</p> <p><Modification (in January 2022)> In the second interview survey, about 10 questions were asked, mainly in descriptive form. The questions included: (1) the status of SNS use for tourism PR, (2) examples of SNS use, and (3) future support needed from the perspective of digital marketing.</p>
Results	The Study Team conducted an interview for the questionnaire survey on November 10, 2021.

Source: Compiled by the Study Team

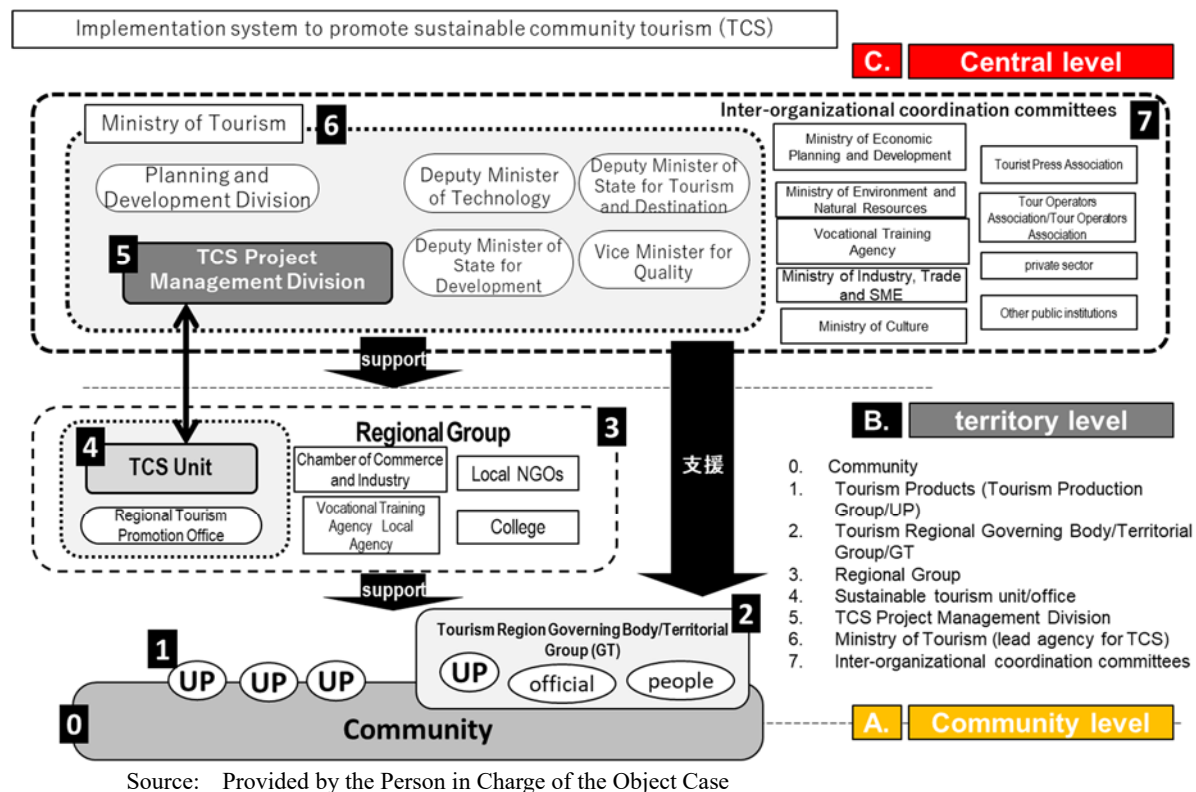


Figure 16-1 Implementation Structure of this Project

(3) Results and Discussion of the First Interview Survey

The results of the interview conducted on November 10, 2021 for the two project coordinators are shown in Volume 5. As a result of the first questionnaire survey, the following could be confirmed:

1) UP and GT Activity Status

- The number of UPs (tourism production groups) has increased from 24 groups in March 2020 to 28 groups in November 2021. (It may increase to 32 groups in the future.)

As the number of domestic tourists increased, the demand for souvenir shops and ecotourism experience facilities increased, and the whole number of UP (tourism production group) employees increased.

- The number of GTs (tourism area management organizations) increased from 9 groups in March 2020 to 12 groups in November 2021.

The number of target organizations of the protocol by the government through the countermeasure for tourism has increased, and it led to an increase in the number of personnel as a result.

2) Attributes and Number of Domestic and Foreign Tourists and their Increase/Decrease

- The number of overseas tourists has decreased compared to before the spread of COVID-19, and there is no tendency of recovery as of November 2021. This is likely to be related to the border closure associated with COVID-19.
- The number of domestic tourists has more than doubled under the COVID-19 pandemic compared to before the pandemic. This may be related to the limited indoor activity and the preference for activity in nature because of the low risk of infection. However, as of November 2021, the number of domestic tourists has been on a downward trend.
- As a tourism measure, the government has taken action through infection control, ensured safety, promoted vacations, and relaxed restrictions on activities in nature, which have helped increase the number of domestic tourists.

3) Changes in Tourist Needs

- The needs of domestic tourists visiting the northern region have changed significantly. This may be related to the limited indoor activity, low risk of infection, and preference for activity with nature.



Source: Compiled by the Study Team

Note: UMPC Guanatico is a family-owned cocoa farm. Visitors can experience through guided tours the production process from planting cacao trees to making chocolate.

Figure 16-2 Outdoor Activities (UMPC Guanatico, Photo by the Study Team)

4) Activity Examples Corresponding to the Influence of COVID-19

- Compared to before COVID-19, SNS and the internet have been effectively used for tourism PR, leading to an increase in the number of tourists in some groups. There are also cases where influencers have been used successfully.

5) Future Issues and Goals of the Activity

- It is expected that the number of overseas tourists visiting the Dominican Republic will increase proportionately as the vaccination rate under post-COVID-19 pandemic, and this would likely attract those tourists to the northern region. The northern region is difficult to access, and it is necessary to increase the length of stay for overseas tourists.
- On the other hand, being a remote location is an appealing point to tourists, and it is necessary to improve marketing, promotion, and management methods.

6) Summary of the First Interview Survey

About the first questionnaire survey, the following changes and the indicators are shown in Table 16-2. The Study Team also showed the hypothesis that might be the cause of the change.

Table 16-2 Trend Indicators and Factors of Change in Ongoing Tourism Projects

Factor of Change	Changes under COVID-19	Factor (Hypothesis)
① The number of activity groups and member of UP and GT	Both have increased	<ul style="list-style-type: none"> • Change of demand of tourists • Policy of government • Achievement of project
② The attribute and number of tourists	Domestic tourists have increased Overseas tourists have decreased	<ul style="list-style-type: none"> • Orientation to outdoor activities with safety infection control • Government measures (recommendation for taking vacations and relaxation of restrictions)
③ The needs of tourists	Needs for outdoor tours have increased.	<ul style="list-style-type: none"> • Orientation to activities with low risk of infection
④ The activity of UP and GT	There are some groups that have succeeded in increasing tourists	<ul style="list-style-type: none"> • Public Relations (PR) utilizing SNS

Source: Compiled by the Study Team

In general, the tourism sector is a thriving industry in a stable social environment, so it is less resistant to natural disasters, international conflicts / terrorism, economic crises, and event risks such as the recent COVID-19 pandemic. While the tourism sector has these vulnerabilities, in many countries it is a key industry in terms of gross domestic product (GDP) and secure employment. Strengthening tourism resilience is also an urgent issue in each country within the Caribbean region of Central America. This is the target area of this project, and it is highly dependent on the tourism industry. The results of the first interview survey revealed that in the Dominican Republic, "revitalization of domestic tourism" and "tourism PR using social networking sites" are important as solutions to the problem of strengthening resilience.

(4) Results and Discussion of the Second Interview Survey

1) Use of SNS for Tourism PR

- GT is not very active in the use of social networking sites, partly because most of the organizations are still in their infancy.
- UP has a high percentage of social networking sites being used. According to the results of a survey conducted by the project coordinator, of the 65 people belonging to UP who were surveyed, 78% use Google Maps, 67% use Facebook, 53% use Instagram, and 42% use Trip Advisor.
- In fact, digital marketing is now being used more in the wake of Covid-19. As an example, a chocolate farm has been developing original products for a long time, diversifying their products in the wake of Covid, and using social networking to promote sales. Some of them have succeeded in attracting customers by having influencers and reporters write articles about them.
- Many of the domestic tourists come to the city through social networking sites. Therefore, attracting domestic tourists is the key to surviving the Corona vortex, and it is also important to gain the trust of domestic tourists.

2) Future Support Needed for Digital Marketing as Tourism PR

- The most important factor in overcoming a "crisis" like Covid-19 is "quality". Education and various facilities are needed to improve the quality of the products, as well as training camera techniques, to convey their appeal through social networking services.
- Communication and relationships among organizations (e.g., one's own organization, local community, and consumer community) are also important as measures to strengthen resilience in the tourism sector. Therefore, it is important to strengthen these relationships, as well as digital marketing.

Based on the above two points, the supports needed in the future will be technical educational support, financial support, and promotion of professional collaboration and cooperation.

3) Summary of the Second Interview Survey

The first interview survey confirmed the importance of "revitalization of domestic tourism" and "tourism PR using SNS" as solutions to the problem of strengthening resilience in the Dominican Republic, while the second interview survey was conducted focusing on "tourism PR using SNS". As a result, it became clear that while there is little publicity using SNS in GT, many groups in UP are implementing publicity using SNS, and that it is important to attract the interest of domestic tourists and gain their trust by posting attractive messages. In terms of digital marketing, it was confirmed that educational support, financial support, and promotion of professional cooperation and collaboration are needed in the future.

16.5 Project Phase 2 (GENSAI-2) in Support of the Office of Climate Change and Risk Management Strategies for Strengthening Public Infrastructure (El Salvador)

The following is a summary of the questionnaire survey on the ongoing project in El Salvador, "Phase 2 of the Project in Support the Office of Climate Change and Risk Management Strategies for Strengthening Public Infrastructure".

(1) Results of the Interview Survey

Interviews with the project were conducted in May 2021. The results are shown in Volume 5. In addition, a second interview will be conducted in January 2022 to elicit changes in COVID-19 impact on project operations after eight months.

(2) Survey Summary and Progress

The following is a summary of the questionnaire survey on GENSAI-2, a project currently being implemented in El Salvador.

Table 16-3 El Salvador Questionnaire Survey Summary

Objective	The Study Team will conduct interviews and surveys to evaluate the positive and negative impacts of road infrastructure on society during pandemics and disasters, and will consider how road infrastructure can contribute to further strengthening resilience in the future.
Target	<As of July 2021> - Employees of the Ministry of Public Works and Transportation (18 people) <After the change (planned figures as of September 2021)> - Ministry of Public Works and Transport staff (12 people): Web-based questionnaire distribution - DACGER: Director/Deputy Director (4 people) - Directors of other departments in the Ministry of Public Works and Transport (6 people) - Deputy Minister for Public Works, Deputy Minister for Transport (2 people) - Participants of the JCC and workshop held on November 3 at GENSAI-2 (50 people): Paper questionnaire distribution
Method	<As of July 2021> Based on the results of the interviews with the projects, it was confirmed that the impact of COVID-19 on road infrastructure over time is minimal. It was then decided to conduct a survey on the cooperation needs of road infrastructure required to strengthen resilience. <After change> Based on the above policy, the survey was conducted jointly with the GENSAI-2 project.
Question	Positive and negative impacts of existing road infrastructure with COVID-19 • Disaster resilience assessment. • Changes in infrastructure demand. • Ideas for desirable future road policies to support the new lifestyle (new normal) and social economy under post-COVID-19 pandemic.
Progress	The questionnaire survey was conducted at the end of October 2021, and responses were received from 37 respondents.
Policy	-

Source: Compiled by the Study Team

1) Questionnaire Survey Results

The questionnaire survey started at the end of October 2021, and was also conducted at the JCC and workshop of GENSAI-2 held in El Salvador on November 3, 2021. The results of the questionnaire survey are shown in Volume 5.

Table 16-4 Composition of Survey Respondents and Number of Responses

Organization	Number of Answers
Ministry of Public Utilities (MOPT)	
Vice President of Public Affairs	1 person
Department of Climate Change and Risk Management (DACGER)	9 people (including the director)
Construction and Maintenance Bureau of Public Utilities (DCMOP)	1 person
Public Utilities Sub-Provincial Public Utilities Planning Bureau (DPOP)	1 person
Development and Planning Bureau of Public Utilities (DIDOP), Sub-Prefecture of Public Utilities	1 person
Construction and Maintenance Bureau of Public Utilities (DCMOP)	1 person
Social Management Unit (UGS), Road Maintenance Fund (FOVIAL)	1 person
In-province (deployment not recorded)	10 people
Permanent Secretariat of the General Treaty on Central American Economic Integration (SIECA)	1 person
Cámara Salvadoreña de la Construcción (CASALCO)	1 person
Fondo Salvadoreño para Estudios de Preinversión (FOSEP)	2 people
INTREC S.A DE C.V	2 people
Other organizations	6 people
Total	37people

Source: Compiled by the Study Team

2) Survey Results and Summary Policy

In addition to the Ministry of Public Works, the survey was able to obtain responses from several other relevant organizations such as the Permanent Secretariat of the General Treaty on Central American Economic Integration (SIECA). The Study Team was also able to collect opinions from key officials of the country's road disaster management policy, including the Deputy Minister of Public Works and the Director General of Climate Change Risk Management.

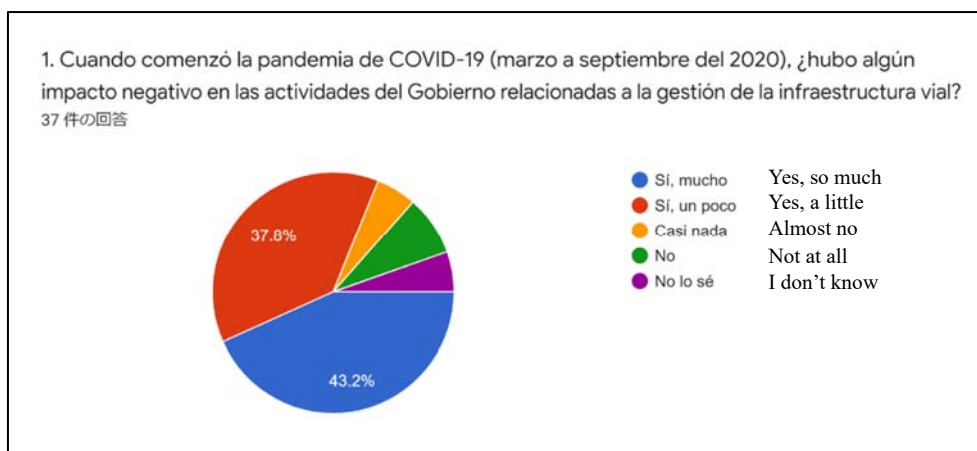
The questionnaire consisted of two major parts. In Part A, the Study Team asked about the status of road infrastructure under the COVID-19 disaster. This question asked about the positive and negative impacts on government activities for road infrastructure management under COVID-19, traffic volume changes, and transportation infrastructure policies that contribute to preventing the spread of disease and improving public health.

In Part B, "Road Infrastructure in a Post-Corona Society," the Study Team investigated measures for road infrastructure to contribute to disaster prevention and mitigation, information dissemination during disasters, and road infrastructure development to ease traffic congestion during disasters and pandemics.

This study showed the role played by road infrastructure in El Salvador under the COVID-19 disaster and provided many concrete proposals for desirable future road policies to support the new lifestyle and social economy of a post-COVID-19 society, based on the local conditions.

(3) **【Part A: Status of Road Infrastructure under COVID-19 Disasters】**

1) **COVID-19 Negative Impact on Government Activities for Road Infrastructure Management during a Pandemic**



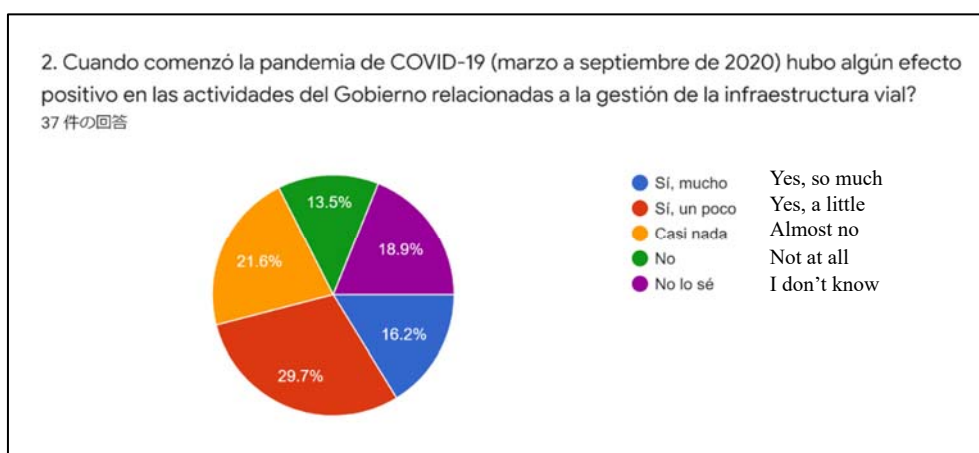
Source: Compiled by the Study Team

Figure 16-3 Negative Impact on Government Activities Related to Road Infrastructure Management

More than 90% of the respondents reported that COVID-19 had a negative impact on them. Examples of impacts are as follows:

- Road construction projects that were in progress had to be suspended, causing delays for three to six months.
- Since the MOP project was suspended, it has deteriorated due to lack of maintenance and management (of the parts that were in progress). In addition, some parts were left unfinished.
- In the meantime, MOP staff were sent out to work on health infrastructure (hospital construction). (This is also a case where civil engineers have been put to work.)
- During the pandemic, the country was hit by two hurricanes: *Cristobal* and *Amanda*. At that time, the Department of Climate Change and Risk Management (DACGER) had to respond to the emergency situation with insufficient number of vehicles and technicians to mobilize.
- Congress spent so much money on COVID-19 measures that it was forced to suspend all activities funded by the 2020 budget, and it did not have sufficient resources to combat slope erosion.

2) Positive Impact on Government Activities for Road Infrastructure Management in the Event of a COVID-19 Pandemic.



Source: Compiled by the Study Team

Figure 16-4 Positive Impact on Government Activities Related to Road Infrastructure Management

Nearly half (46%) of the respondents indicated that there was a positive impact of COVID-19. Examples of impacts are as follows:

- Traffic congestion has been reduced due to the decrease in traffic volume. In addition, road deterioration was minimized.
- The Study Team was able to unify their movements with other ministries and provide mutual support.
- As for the road infrastructure, construction did not proceed, but it did take time to review the design, considering the new issues for bridge reinforcement that were discovered after the hurricane.

3) Contribution of Road Infrastructure to Society in the Event of a COVID-19 Pandemic

The following were cited as examples of the contribution of road infrastructure to the society during the pandemic.

- Roads supported the transportation of medical personnel and food supplies, as well as the passage of different vehicles from various ministries and agencies, contributing to the functioning of the pandemic response.
- In addition to COVID 19-related support, the Study Team was also able to assist in the transport of people in other emergency situations.
- It became possible to transport people and goods to places that are difficult to access by public transportation.

4) Changes in Road Infrastructure Demand before and after COVID-19

About 57% of the respondents indicated that the traffic volume increased, 32% indicated there was no change, and 11% indicated that there was a decrease.

- The main reasons for "increased significantly," "increased," and "little change" are as follows:
 - The number of people using private vehicles instead of public transportation to prevent infection increased.
 - The number decreased at the beginning of the pandemic due to work from home and online classes, but it has recently returned to normal.

- On the other hand, the following reasons were given for the "decrease" response.
 - The traffic volume decreased due to work from home and because online classes are still ongoing.
 - The pandemic caused economic and production activities to stagnate and traffic to drop drastically, from which people have yet to fully recover.

5) Transportation Infrastructure Policies that Contribute to Preventing the Spread of Infection and Improving Public Health

Nearly 90% of the respondents said that they would like to see public transportation with high sanitation standards.

- There was also an opinion that "improvement of roadside rest areas, parking lots, toilets, and other facilities" was not a priority due to public safety issues.

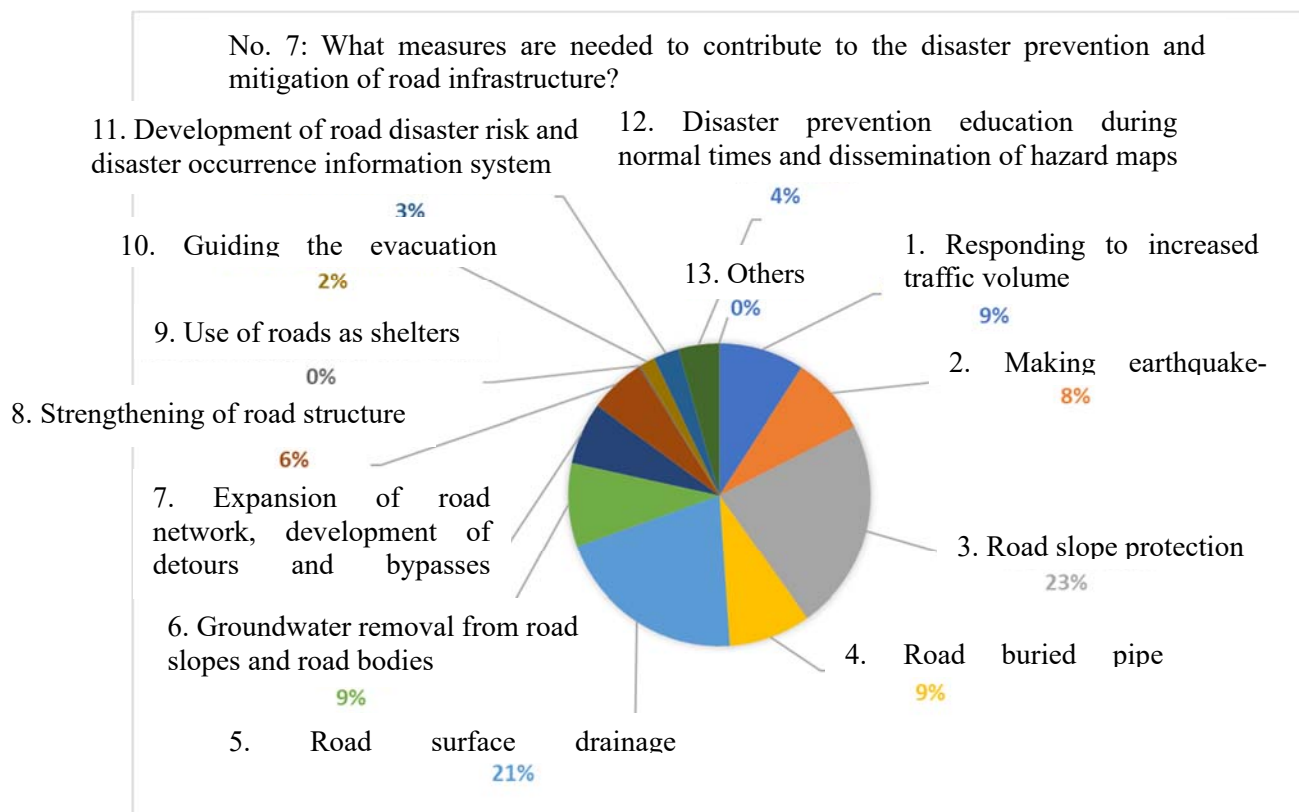
(4) [Part B: Safety and Guidelines for Road Infrastructure]

1) Geohazards that Need to be Specifically Addressed to Secure the Road Network

The top five geohazards, in the order based on the number of responses, were landslides, road cave-ins and road body erosion (culverts), road flooding, heavy rainfall hazards on bridges, and seismic hazards on bridges.

2) Measures Needed to Ensure that Road Infrastructure Contributes to Disaster Prevention and Mitigation

Multiple answers were selected, but "road slope protection" and "strengthening road surface drainage" were the most common, accounting for 20% each.



Source: Compiled by the Study Team

Figure 16-5 Necessary Measures for Disaster Prevention and Mitigation of Road Infrastructure

3) Measures to Strengthen the Information Gathering and Sharing Capabilities of the National Government, Local Governments, and Other Relevant Organizations in the Event of a Disaster.

- It was pointed out that it is necessary to establish a "real-time on-site monitoring rig system" and to build a system that enables "centralized management of information" and "information sharing among related organizations".

4) Measures to Enhance the Dissemination of Information to "Users" in the Event of a Disaster

- Creation of a database to centralize information and share it in real time
- Dissemination of information using digital media and applications
- On the other hand, not everyone has access to the internet, so radio is still a major tool

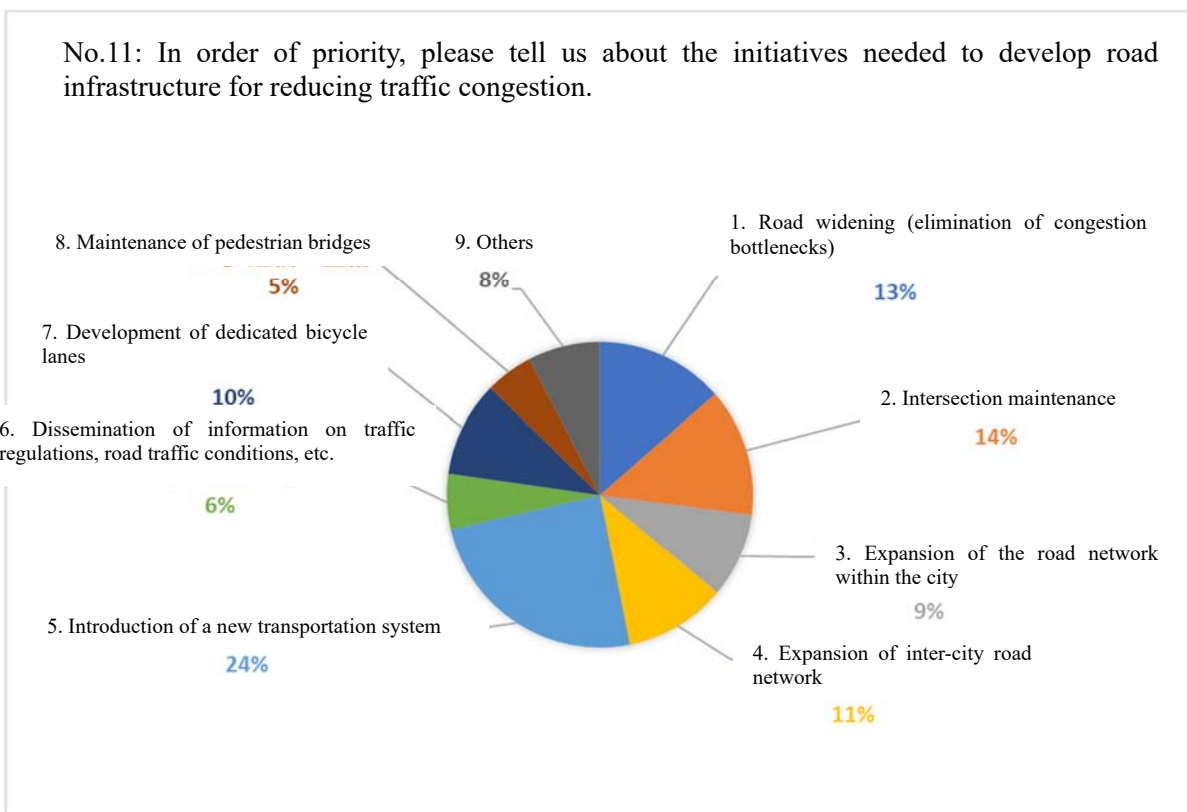
5) Traffic Volume Countermeasures in the Event of a Pandemic

- Improvement of the safety and sanitation of existing public transportation systems
- Introduction of a new transportation system

6) Development of Road Infrastructure to Reduce Traffic Congestion

The most popular answer, at 24%, was "introduction of a new transportation system". This was followed by "improvement of multilevel intersections," "road widening," and "expansion of inter-city road networks".

- The "new transportation system" includes monorails, subways, and railroads.



Source: Compiled by the Study Team

Figure 16-6 Prioritization of Road Infrastructure Development for Congestion Mitigation

7) Road Infrastructure Development for Traffic Safety

The report pointed out the need for both soft improvements, such as "strengthening traffic enforcement" and "improving drivers' traffic manners", and hard improvements, such as "widening roads" and "building multilevel intersections".

(5) Summary

The questionnaire survey indicated that the road infrastructure contributed to the maintenance of social functions by enabling the transportation of medical personnel and food supplies during the COVID-19 pandemic. The following is a summary of the opinions raised as desirable road measures to support the new lifestyle (new normal) and social economy of a post-COVID-19 society in the future:

- Improving sanitation of public transportation
- Infrastructure development that contributes to traffic congestion mitigation and road disaster prevention during normal times (multi-purpose projects that include new transportation systems, traffic congestion mitigation, road disaster prevention, and road traffic safety)
- Introduction of DX for road infrastructure/disaster prevention (e.g., DX for damage assessment that contributes to reducing the spread of infection during heavy rains and earthquakes)

16.6 Project on Strengthening Conservation and Management of Coastal Fisheries Resources through Collaboration between Fishermen and Government (Saint Lucia)

(1) Results of Interviews with the Project

With the aim of conducting a COVID-19 impact study on the project operation itself, an interview survey with the project was conducted in May 2021. The results are presented in Volume 5.

(2) Survey Summary and Progress

A summary of the questionnaire survey on the project "Strengthening Conservation and Management of Coastal Fisheries Resources through Collaboration between Fishermen and Government" currently being implemented in St. Lucia is provided in Table 16-5. The questionnaire survey was conducted twice in total: in October 2021 and in January 2022.

Table 16-5 Saint Lucia Survey Summary

Objective	The impact of the COVID-19 pandemic on the fisheries sector will be monitored before, during, and after the pandemic (March 2020) and will be compared to the previous survey. In addition, the Study Team will obtain useful information for the project.
Target	<As of July 2021> Saint Lucia Fisheries Department staff (20 people) (The original plan was to conduct a questionnaire survey for the fishermen. However, since they are unable to read or write, and it is likely to take time for them to understand the questions, the survey was changed to include fisheries officers.) <After the change (September 2021)> In preparation for the start of the survey, the Study Team held a meeting with the local Fisheries Department staff and confirmed that there are 11 regional management areas in St. Lucia, nine of which are managed by four Fisheries Department staff. Therefore, the sample size was changed to nine regions.
Method	<As of July 2021.> Questionnaire-based survey. The questionnaire will be administered in a face-to-face format by local experts in the survey for a total of three times: August 2021, October 2021, and January 2022. <After change> Since it took longer than expected to prepare for the start of the survey, the survey will be conducted twice in total: in October 2021 and in January 2022.
Question	<ul style="list-style-type: none"> Approximately 20 questions, including optional and descriptive questions, will be used to interview participants about changes in the following indicators under the COVID-19 disaster: (1) fish catch, (2) sanitation, (3) sales, costs, and (4) changes in demand. In the second questionnaire survey, about 20 questions were asked, both selective and descriptive, and interviews were conducted in terms of changes from the first questionnaire survey and support measures needed to strengthen the resilience of fisheries.
Results	<ul style="list-style-type: none"> A questionnaire survey was conducted at the end of October 2021 to the persons in charge of the nine regions. A questionnaire survey was conducted in January 2022 among the staff in charge of the nine regions.

Source: Compiled by the Study Team

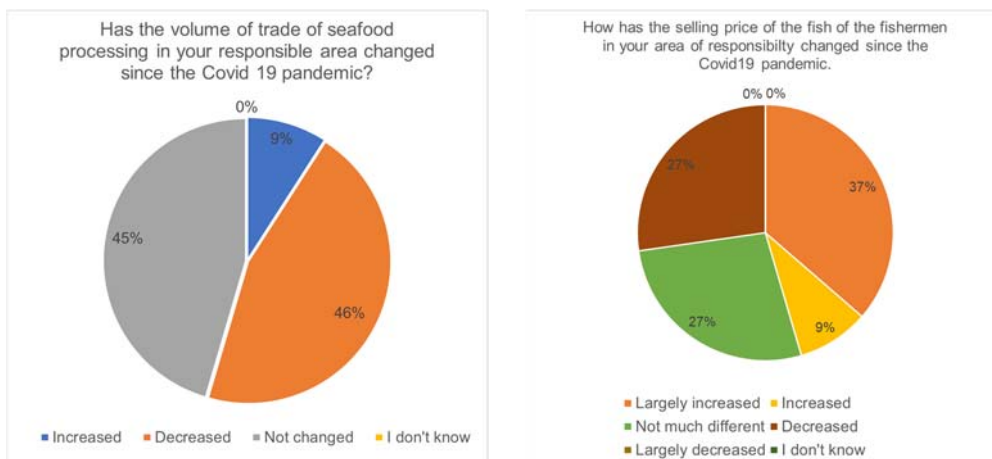
(3) Results of the First Questionnaire Survey

The first questionnaire survey was conducted at the end of October 2021, and a sample of nine regions was collected. The results of the first questionnaire survey are shown in Volume 5.

The implications of the results of this survey are as follows:

1) Increase or Decrease in Fish Catch and Income

The COVID-19 pandemic has reduced the number of days available for fishing from an average of six days per week before the pandemic to about four days per week due to restrictions on weekday nighttime curfews and voluntary weekend curfews. In addition, the use of ice increased to accommodate the sale of fish outside the community, as the cost of hygiene products such as masks became more expensive, and fish could no longer be sold on the same day. As described in Figure 16-7, the Study Team observed a decrease in fish catches and a corresponding increase in the selling price of fish.

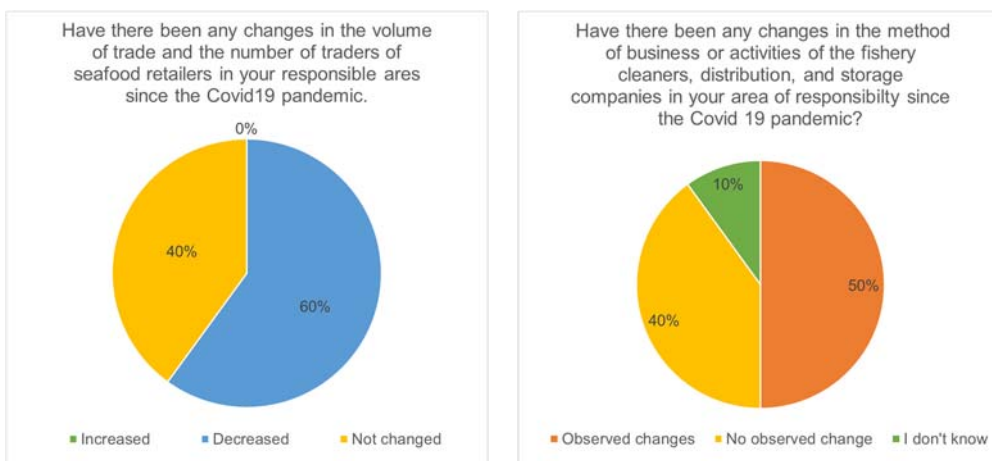


Source: Compiled by the Study Team

Figure 16-7 Changes in the Volume of Trade in Fish Processing and the Selling Price of Fish in Saint Lucia

2) Increase/Decrease in Demand, Changes in Product Sales Routes

COVID-19 restrictions caused the closure of many businesses, including hotels, resulting in a decline in the volume of retail trade and the number of traders. The results in (i) and (ii) also suggest that the existing channels for selling goods in St. Lucia are limited, and the food chain is fragile. On the other hand, there was a tendency to process, refrigerate, and sell online.

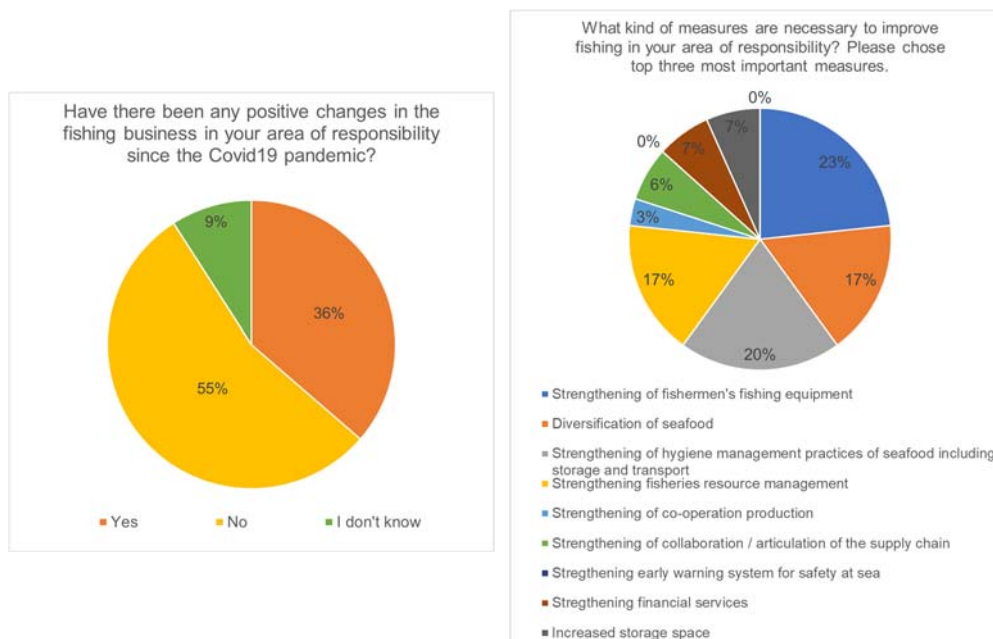


Source: Compiled by the Study Team

Figure 16-8 Volume of Fisheries-related Transactions and Changes in Fisheries-related Businesses in Saint Lucia

3) Hygiene Control and Product Quality

When asked if there had been any positive changes in their area of responsibility since COVID-19, more than half of the respondents answered "No". On the other hand, there were some areas that answered "Yes". As for positive changes, it became clear that there were improvements in terms of quality and hygiene, such as "the use of ice has improved the quality of fish, and awareness of hygiene has increased as a measure against COVID-19". When asked about the fishery-related measures needed, majority of the respondents said strengthening fishing gears followed by strengthening hygiene management practices, and promoting awareness of hygiene management is increasing in the fishing industry.



Source: Compiled by the Study Team

Figure 16-9 Positive Changes due to COVID-19 and Needed Fisheries-related Measures

4) Summary of the First Questionnaire Survey

The results of the first questionnaire survey are summarized in Table 16-6.

Table 16-6 Indicators of Change and Causes of Change in Fisheries Projects under Implementation

Change Index	Changes due to COVID-19 Disasters	Factor (Hypothesis)
① Increase or decrease in fish catch and income	Both decreased	1) No longer able to go fishing due to restrictions on going out 2) Reduced sales opportunities, reduced hotel demand, forced to sell on the street
② Increase or decrease in demand	Decrease	3) Decreased volume of purchases by retailers and brokers
③ Product sales route	Restricted	1) The volume of purchases by retailers and intermediaries decreased. 2) In areas where respondents indicated that there were positive changes due to COVID-19, they may have been able to make better use of the internet to secure income.
④ Health Management	Improved hygiene awareness and management.	Improved hygiene due to the need for masks and disinfection Improved hygiene management due to the need for infection control
⑤ Product quality and price	Quality has improved and prices have increased.	1) The cost of hygiene measures (e.g., masks, disinfection, use of ice) affected the price of the product. 2) The use of ice has improved the freshness (quality) of the product.

Source: Compiled by the Study Team

The results of the first questionnaire survey revealed that the fisheries industry in St. Lucia is less resilient to the risk of events such as the COVID-19 pandemic, as it is the case with the tourism sector in the Dominican Republic, since many of its products are traded with hotels, restaurants, and other facilities that cater to tourists. On the other hand, in St. Lucia, the fisheries industry is the backbone work that supports employment for some of the population. Therefore, strengthening the resilience of the fishing industry is an urgent issue in St. Lucia. In order to strengthen resilience, "promoting domestic demand" is considered to be important, as it is in the Dominican Republic. In addition to that,

"improvement of preservation methods of marine products" to improve quality is also considered to be an essential issue.

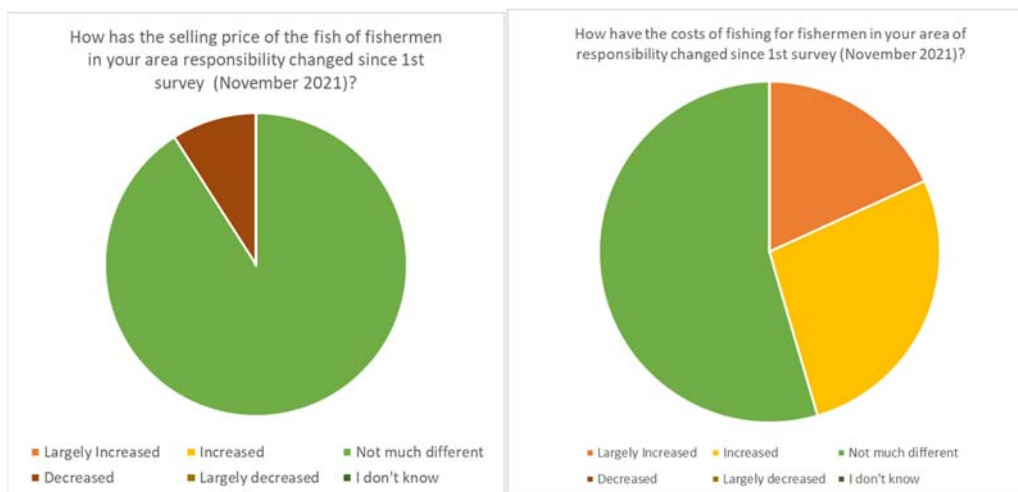
(4) Results of the Second Questionnaire Survey

In the second questionnaire, the Study Team set questions focusing on "changes in selling costs" to confirm the price situation at that time. Meanwhile, "changes in preservation methods" and "promotion of local production for local consumption of fish," in the first questionnaire survey, were identified as issues that needed to be resolved to strengthen resilience.

1) Changes in Selling Costs and Fishery Operating Costs

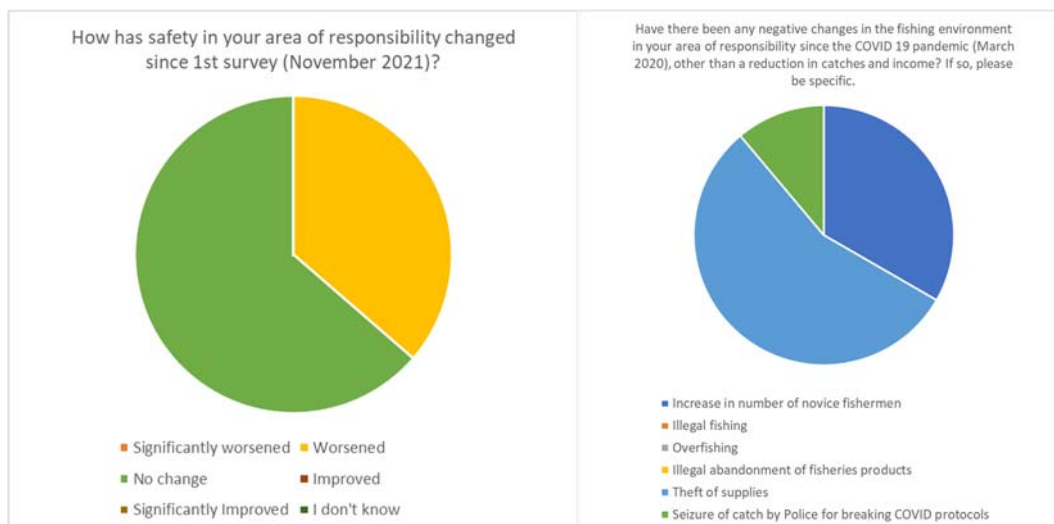
As a result of confirming the change in selling prices, from the left graph in Figure 16-10, most respondents answered that there has been no change since the first questionnaire survey. In other words, it is considered that the selling price has remained the increase in some areas, as it was at the time of the first questionnaire survey (Figure 16-7). On the other hand, when the Study Team checked the changes in fishery operation costs, the right graph in Figure 16-10 shows that the costs have increased further than the costs in the first survey. This can be attributed to the increase in fuel prices due to the rise in crude oil prices, which is caused by inflation, as well as the shortage and theft of fish, which further increased the cost.

As for public safety, the left graph in Figure 16-11 shows that it has actually worsened since the first survey. Furthermore, from the graph on the right of the same Figure 16-11, it can be seen that the negative changes related to the increase in costs, include the increase in fishing by the general public (related to the shortage of fish) and the theft of fishing equipment.



Source: Compiled by the Study Team

Figure 16-10 Changes in Selling Prices (left) and Fishing Costs (right) Since the First Survey



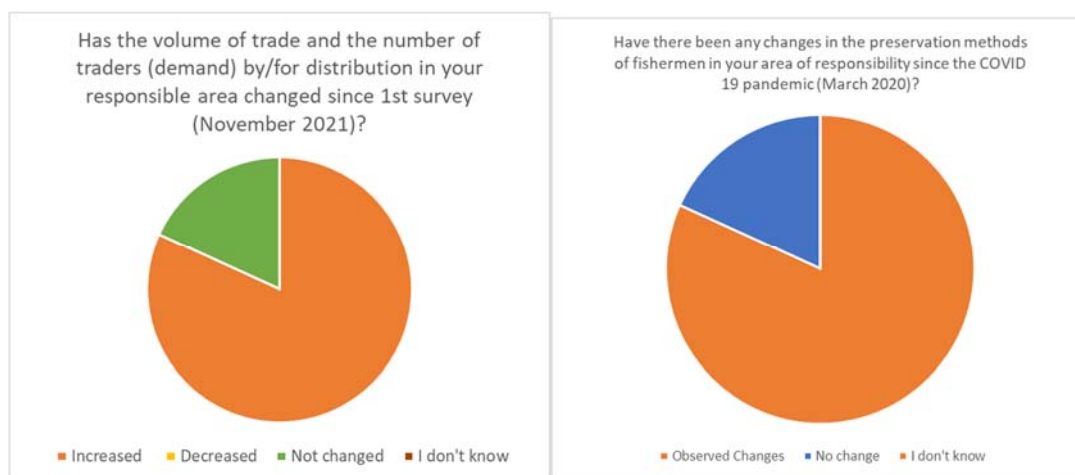
Source: Compiled by the Study Team

Figure 16-11 Changes in Security in the Fishing Area (left) and Negative Changes Other than Reduced Fish Catch and Income Since the COVID-19 Outbreak (right).

2) Increase or Decrease in Demand and Changes in Storage Methods

When the Study Team checked to see if there had been any changes in the volume of fish distributed and traded since the first survey, the graph on the left in Figure 16-12 shows that the demand for fish has increased since the first survey. This can be attributed to a decrease in the volume of trade at hotels and restaurants, which forced them to sell their products on the street, resulting in an increase in sales at markets and an increase in sales volume (this may also have something to do with the "growing health consciousness of the public" mentioned in Section 16.6(4)3). In addition to this, from the comments of the respondents, it was confirmed that the increase in street sales has necessitated the need for personnel to travel to local areas, and that the time available for sales is limited due to restrictions on going out, and that facilities for storing unsold fish are needed.

From the graph at the right of Figure 16-12, it can be seen that storage methods have changed significantly since the COVID-19 pandemic. This is due to the fact that most fish used to be sold fresh, but the pandemic has promoted the use of ice and frozen storage. In the past, people have been educated and instructed on the use of ice to preserve fish, and this has led to a preference among residents for fresh fish preserved with ice. In addition to this, after COVID-19, the availability of fresh fish was restricted, and iced fish was found to be safer, leading to an increase in the preservation of fish using ice. Furthermore, markets began to sell fish on ice. On the other hand, many landing sites do not have refrigeration or freezing rooms, so storing fish on ice has become the norm.



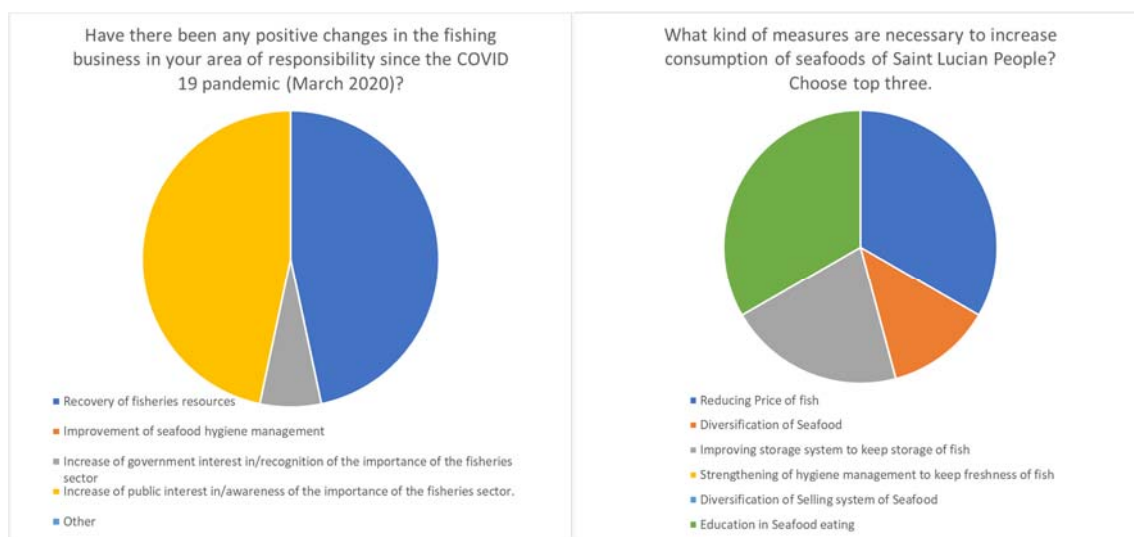
Source: Compiled by the Study Team

Figure 16-12 Changes in the Volume and Number of Traders Since the First Survey (left) and Changes in Fishermen's Conservation Practices Since COVID-19 (right)

3) Necessity to Increase Interest in Fisheries and Local Production for Local Consumption of Marine Products

After reviewing the positive changes that have occurred since the COVID-19 outbreak, the left graph in Figure 16-13 confirms that, in addition to the recovery of fishery resources, there has been an increased interest in fisheries from the government and the general public. This may be related to the fact that the new government, which came into power on July 26, 2021, has shown a great willingness to improve the agricultural sector (and the fisheries subsector) and to put the local people first. Efforts are still underway to increase local people's investment in the subsector, and the government is also looking into revitalizing the local fisheries industry and promoting linkages with the tourism industry, which accounts for much of the island's GDP. In addition, the government and other stakeholders have a strong interest in the blue economy. As for the general public's interest, it is related to the fact that consumers have become more health conscious in the wake of COVID-19, and the demand for fish as a health food has increased. On the other hand, there was no respondent for the option "improvement of hygiene management" (the Study Team confirmed changes in this regard in the first survey (see Section 16.6(3)3)). This may be related to the fact that awareness of hygiene management has become more of a routine than in the first survey.

As a result of identifying what is needed to promote more local production and consumption of the fisheries that are beginning to attract attention in St. Lucia, it is clear from the right graph in Figure 16-13 that "lower fish prices", "diversification of seafood for sale", "improved preservation facilities", and "fish food education" are needed. As indicated above, the COVID-19 pandemic triggered an increase in health consciousness, which in turn increased the demand for fish. This has led to the demand outstripping the supply, which in turn has led to the need for "diversification of seafood for sale". In fact, fish shortages are also associated with higher fishery operating costs (Figure 16-10). In addition, "improvement of preservation facilities" is considered to be further demanded due to the increased public understanding of ice preservation and freezing, as well as the restrictions on the purchase of fresh fish due to the COVID-19 pandemic (Figure 16-12). In terms of preservation facilities, JICA has provided ice and fish storage facilities, and it was confirmed that these facilities are being fully utilized.



Source: Compiled by the Study Team

Figure 16-13 Positive Changes to Fisheries Since COVID-19 (left) and What is Needed to Promote Fish Consumption (right)

4) Summary of the Second Questionnaire Survey

The results of the second questionnaire survey are summarized in Table 16-7.

Table 16-7 Indicators of Change and Causes of Change in Fisheries Projects under Implementation

Change Index	Changes due to COVID-19 Disasters	Primary Factor
① Changes in selling prices and operating costs	Selling price: No change since the first survey (prices have increased in some cases) Operating costs: Increased since the first survey	<ul style="list-style-type: none"> Costly hygiene products, increased use of ice In addition to the high cost of fuel due to rising oil prices, fish shortages and theft have added extra costs.
② Increase or decrease in demand	Increase since the first survey	<ul style="list-style-type: none"> Hotels and restaurants were closed down to sell their products on the street. COVID-19 led to an increase in fish consumption as the public became more health conscious.
③ Changes in storage methods	Since the COVID-19 pandemic, more ice and cryopreservation has been used.	<ul style="list-style-type: none"> As for the preservation of fish, the use of ice was promoted and taught. COVID-19 crisis has limited the availability of fresh fish. Fish began to be sold at markets, displayed, and sold with ice
④ Changes in interest in fisheries	Government: Improved since COVID-19 General public: improved since COVID-19	<ul style="list-style-type: none"> The new government is revitalizing the fishing industry. Increased health consciousness associated with COVID-19 has increased interest in fisheries

Source: Compiled by the Study Team

From Table 16-7, it was confirmed that there has been an improvement in the quality (preservation methods) of domestic marine products and an increase in public demand, compared to the time of the first questionnaire survey. This suggests that there is ample potential in the local production for local consumption of marine products in St. Lucia. This is appropriate to promote local production for local consumption, especially now that the interest in the fishing industry is increasing. In order to promote local production for local consumption, it is necessary to lower the price of fish, diversify the seafood sold (both of which will lead to a stable supply of fish), improve preservation facilities, and

provide fish food education. Therefore, it is thought that support for stable fish supply (e.g., aquaculture technology support), provision of equipment, and fish food education will be necessary.

16.7 Community Policing Project (Guatemala)

(1) Interview Survey for the Project

Interviews with the project were conducted in May 2021. The results are shown in Volume 5. In addition, a second interview will be conducted in January 2022 to elicit changes in COVID-19 impact on project operations after eight months.

(2) Summary of Questionnaire Survey of Police and Residents

A summary of the questionnaire survey on the project "Community Policing Project", currently being implemented in Guatemala, is provided in Table 16-8. The first questionnaire survey of the police and residents was conducted in October 2021, and the second was conducted in December 2021.

Table 16-8 Guatemala Questionnaire Survey Summary

Objective	The impact of the COVID-19 pandemic on public safety will be monitored before, during, and after the pandemic (March 2020), and will be compared to the previous survey to understand the changes and the relationship with the number of infected people, curfews, and other measures taken by the government. In addition, the Study Team will obtain useful information for the project.
Target	<As of July 2021> - Police officers at 55 bases of the National Police Guatemala City District (up to 50) - Residents (up to 100) <After change (September 2021)> - Police officers at 55 bases in the Guatemala City District of the National Police (maximum of 100) - Residents (maximum of 100)
Method	<As of July 2021> Questionnaire-based survey. The questionnaire will be administered in a face-to-face format by the mercenaries employed in the survey for a total of three times: August 2021, October 2021, and January 2022. Assignment of mercenaries is 4.20 MM (0.70 MM x 3 times x 2 persons). <After change> Since it took longer than expected to prepare for the start of the survey, the survey will be conducted twice in total, at the beginning of October 2021, the end of November 2021, and in January 2022.
Question	• About 20 questions for each subject, mainly in the form of multiple-choice questions, to check on changes in public safety, such as theft, future prospects for public safety, and the quality of police services.
Progress	• A questionnaire survey was conducted in mid-October 2021 for 118 police officers and 129 residents. • A questionnaire survey was conducted on 122 police officers and 131 residents in December 2021.

Source: Compiled by the Study Team



Source: Compiled by the Study Team

Figure 16-14 Results of the First Questionnaire Survey: Regions Where the Survey was Conducted, Sample Size, and Implementation

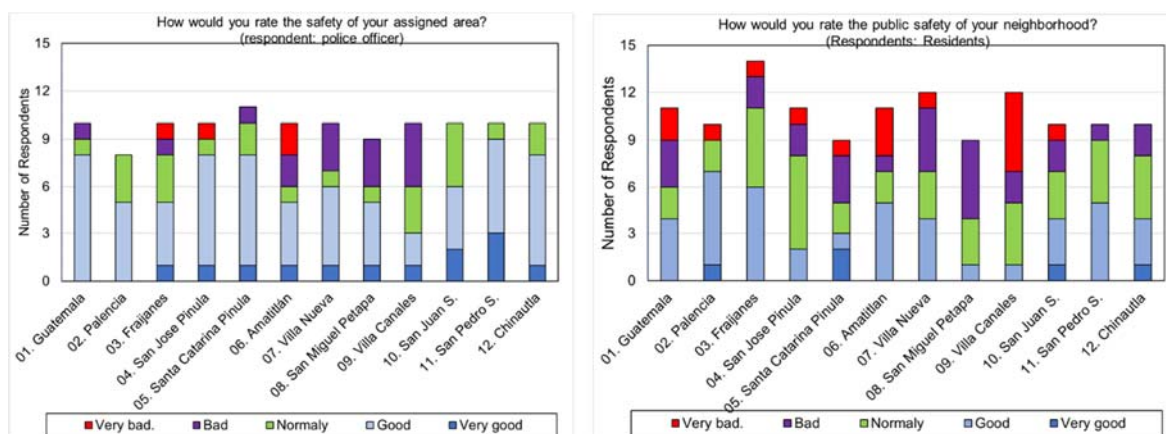
(3) Questionnaire Survey Results

The first questionnaire survey was conducted in mid-October 2021 to obtain a sample of 118 police officers and 129 residents, while the second questionnaire survey was conducted in December 2021 to obtain a sample of 122 police officers and 131 residents. From the results of the first and second questionnaire surveys, the following can be inferred. The list of the questionnaire survey results is shown in Volume 5.

1) Security Situation

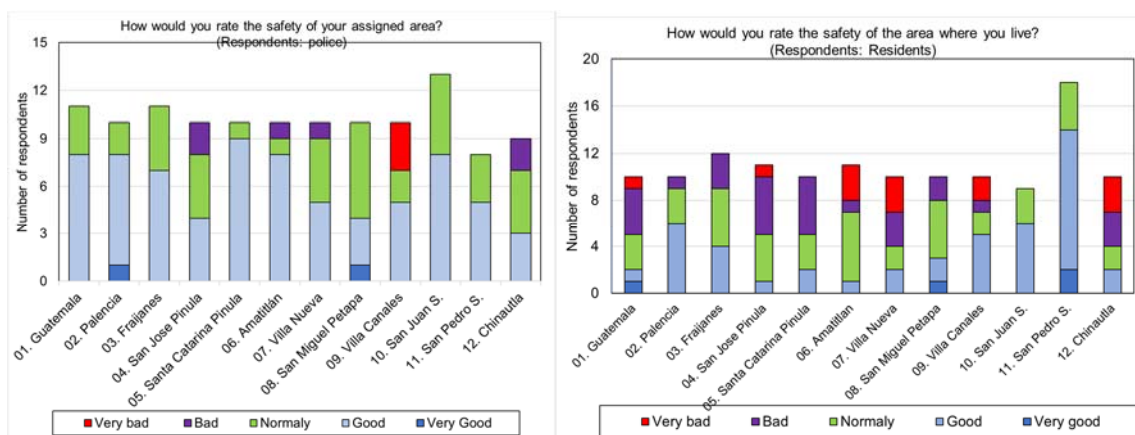
When asked about public safety in the first survey, more than half of the respondents on the police side answered "very good", "good," or "normal" in all areas. On the other hand, the percentage of those who felt "very bad" or "bad" was higher among residents, accounting for more than half in San Miguel Petapa and Villa Canales. Therefore, it is thought that residents are more concerned about public safety than the police think. (Figure 16-15)

As a result of asking the same question in the second questionnaire survey, the number of people who felt that public safety was improving increased among the police compared to the previous survey, while the number of residents who felt that public safety was improving in some areas but deteriorating in others increased. The reason why the residents felt that public safety had worsened is because public safety usually tends to worsen in December, when the second questionnaire survey was conducted, and it is thought that this change in the situation was reflected in the questionnaire results. (Figure 16-16)



Source: Compiled by the Study Team

Figure 16-15 How Police and Residents Perceive the Public Safety Situation (Results of the First Questionnaire Survey)



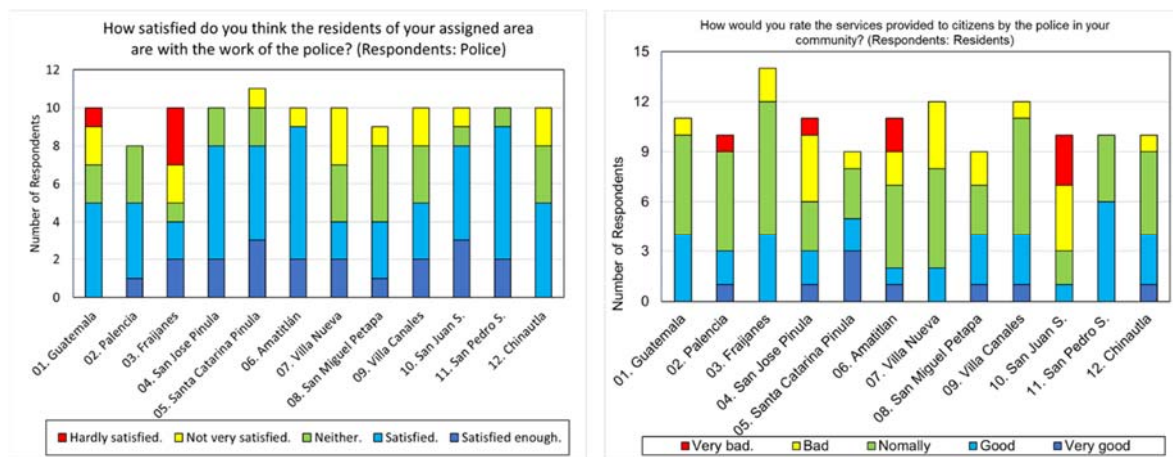
Source: Compiled by the Study Team

Figure 16-16 How Police and Residents Perceive the Public Safety Situation (Results of the Second Questionnaire Survey)

2) Evaluation of Police Services

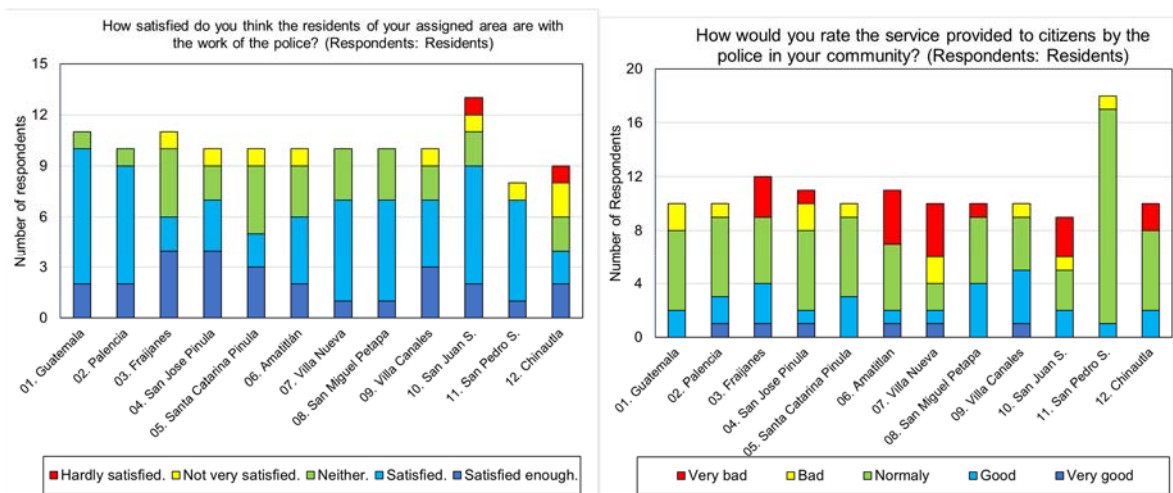
When the Study Team checked the residents' satisfaction with police work, more than half of the respondents in the first survey recognized that the police considered the residents to be "satisfied" or "fully satisfied" in all areas. On the other hand, when the Study Team checked how the residents evaluate the police service, more than half of the residents in most of the areas answered "normal". Meanwhile, in San Jose Pinula and San Juan S., more than half of the residents answered "poor" or "very poor". Therefore, the number of residents who are satisfied with the police service is less than what the police expect. Some police and residents responded that police corruption has reduced their trust in the police, which also confirms that not enough has been done to improve the image of the police. (Figure 16-17)

In the second questionnaire survey, the proportion of respondents who answered "hardly satisfied" or "not satisfied" on the police side decreased, compared to the first questionnaire survey. On the residents' side, the percentage of respondents who answered "mostly unsatisfied" or "unsatisfied" was almost the same as in the first survey. As for the first survey, fewer residents were satisfied with police services than the police had expected, confirming that there has been no change in improving the image of the police. (Figure 16-18)



Source: Compiled by the Study Team

Figure 16-17 Police and Residents' Perceptions of Police Work (First Questionnaire Survey)

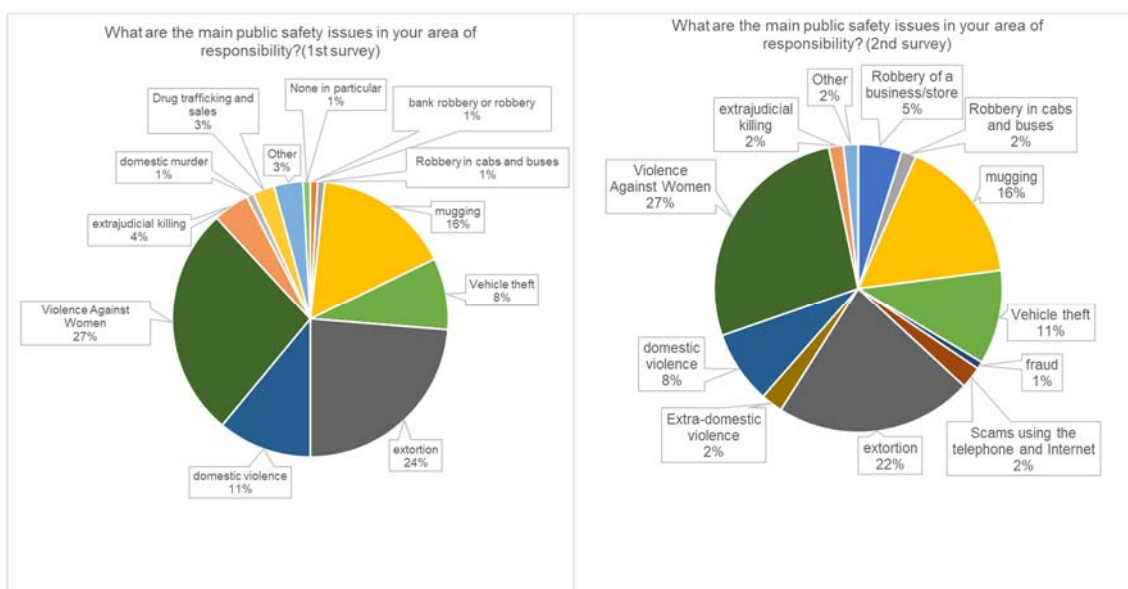


Source: Compiled by the Study Team

Figure 16-18 Police and Residents' Perceptions of Police Work (Second Questionnaire Survey)

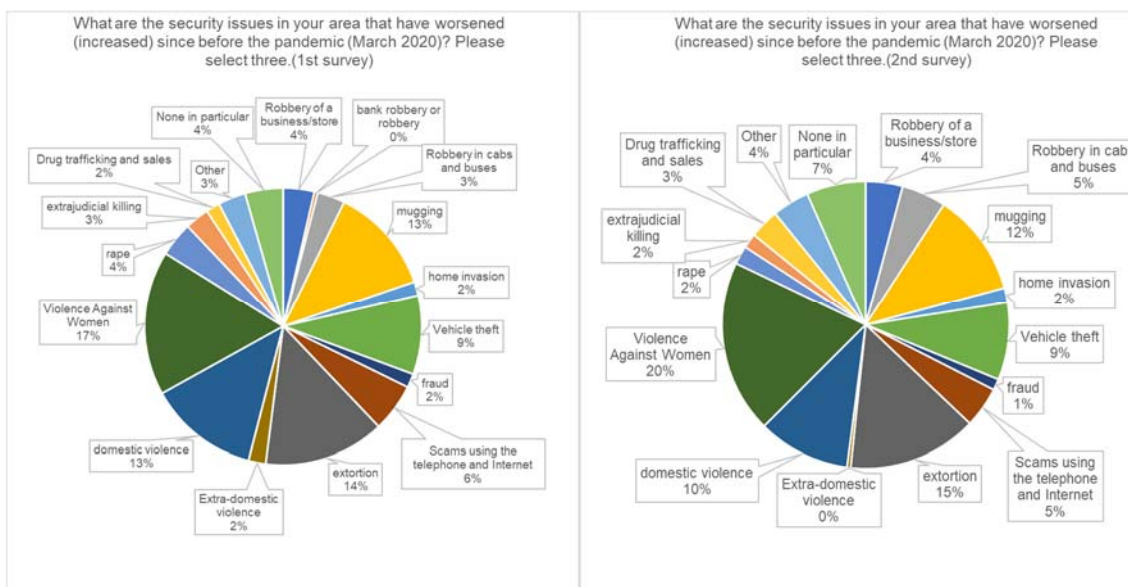
3) Changes in Public Safety Issues

When the Study Team checked with the police about public safety issues, the first questionnaire survey showed that the most common issues were "violence against women", "extortion", "street robbery", "vehicle robbery", and "domestic violence". This was also the case from the results of the second questionnaire survey (Figure 16-19). In both the first and second questionnaire surveys, many respondents indicated that these issues worsened after the pandemic. In particular, the Guatemalan government has imposed curfews and restrictions (March 2020 to September 2021: school closures, and no going out after 9 p.m.), which may have encouraged domestic violence, extortion, and violence against women (Figure 16-20).



Source: Compiled by the Study Team

Figure 16-19 Police Perceptions of Issues in their Assigned Districts (Left: 1st Survey, right: 2nd Survey)

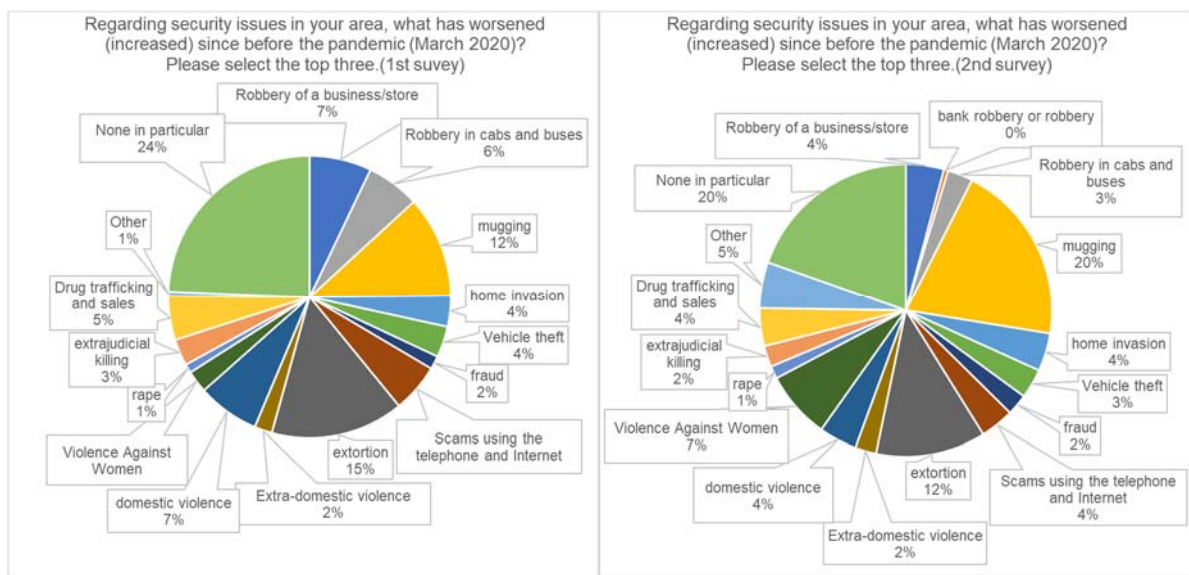


Source: Compiled by the Study Team

Figure 16-20 Police Perceptions of Changes in Security Challenges (Left: 1st Survey, Right: 2nd Survey)

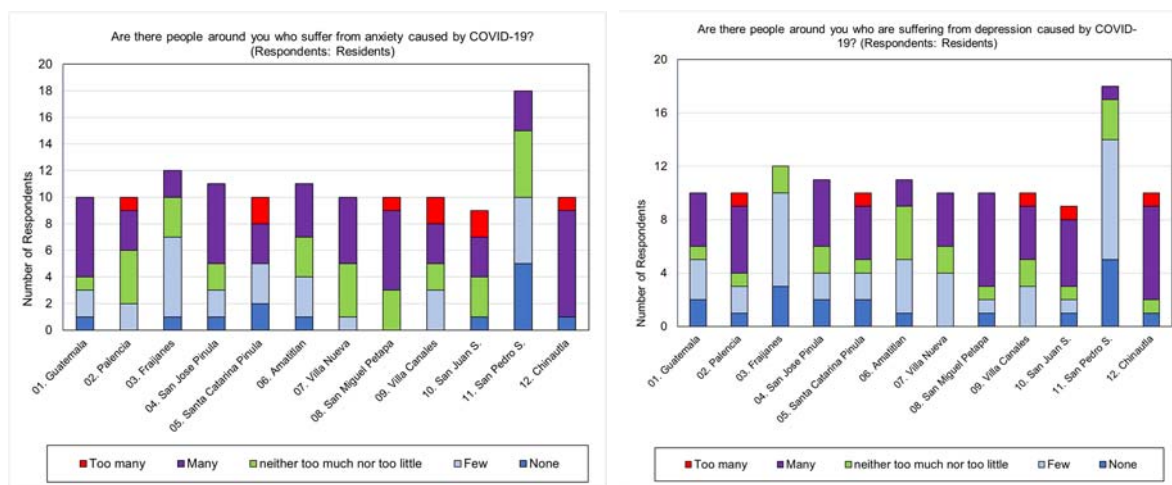
4) Increase or Decrease in Invisible Crime

Regarding the public safety issues that have improved after the COVID-19 pandemic, most of the residents answered "none" in both the first and second questionnaire surveys. One of the reasons may be that the number of opportunities to witness crimes has decreased due to the refrain and restriction of going out. On the other hand, regarding the public safety issues that worsened after the COVID-19 pandemic, most of the residents in both the first and second questionnaires answered that "extortion", "domestic violence", and "street robbery" worsened (Figure 16-21). This may be due to the fact that residents have become more closed off due to the voluntary restraint/restriction on going out, making crime less visible to the police. In addition, there is information that the number of depressed people has increased due to the voluntary curfew restrictions and school closures. A few residents responded in free text that "people are becoming snappier due to stress and unemployment" as a change when compared to pre-COVID-19 conditions. The results of the second questionnaire survey also showed that people were feeling anxious and stressed about COVID-19 (Figure 16-22). Therefore, the increase in stress due to restrictions, such as refraining from going out, is considered to be one of the reasons for the increase in domestic violence.



Source: Compiled by the Study Team

Figure 16-21 Residents' Perceptions of Public Safety Issues (Left: 1st Survey, Right: 2nd Survey)



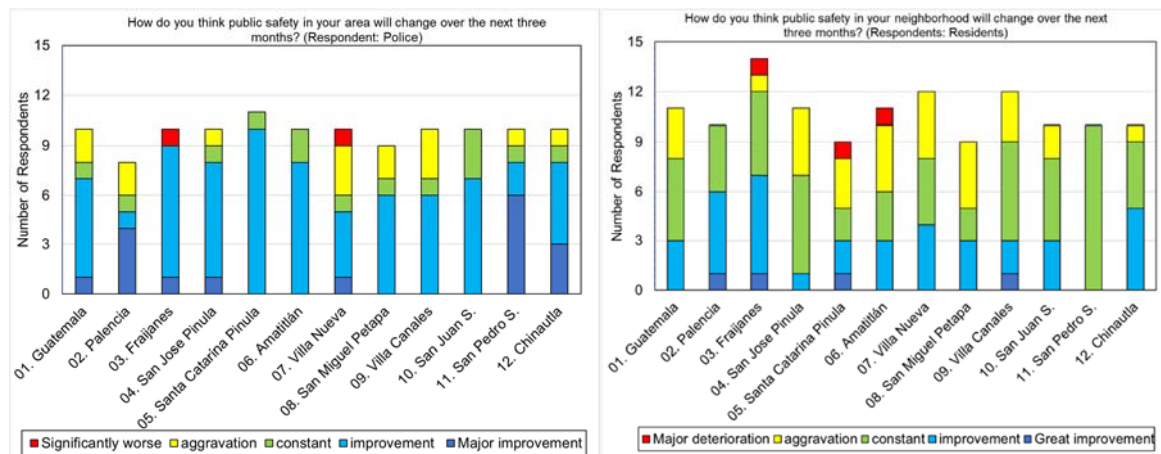
Source: Compiled by the Study Team

Figure 16-22 People Experiencing Anxiety and Stress due to COVID-19 (2nd Survey)

5) Future Public Safety

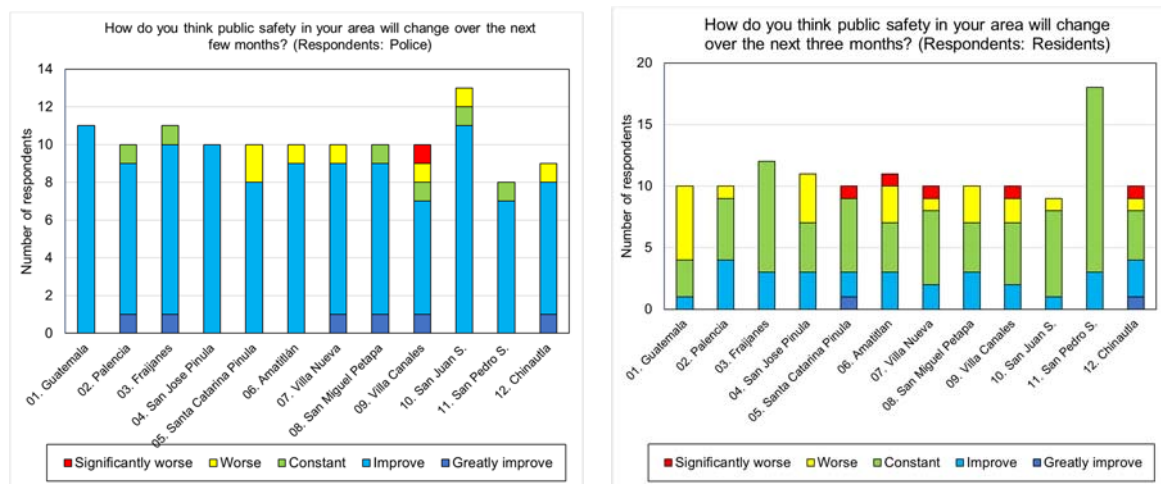
In the first survey, more than half of the police respondents thought that public safety would improve in the next three months, while more than half of the residents thought that it would remain the same or improve, indicating that the perceptions of both sides regarding public safety in the future are roughly the same in many areas. However, in some areas, such as Santa Catarina Pinula and Amatitlan, the percentage of residents who think that public safety will worsen is high, and the perception of public safety varies from area to area. (Figure 16-23)

In the second survey, more than half of the police respondents thought that the situation would improve, which was not much of a change from the first survey. On the other hand, on the residents' side, the number of people who answered "no change" increased from the first survey. This is thought to indicate that residents have come to view the prolonged situation in the COVID-19 pandemic as "no change" in the future. (Figure 16-24)



Source: Compiled by the Study Team

Figure 16-23 Police and Residents' Predictions for Public Safety in the Next Three Months (First Survey)



Source: Compiled by the Study Team

Figure 16-24 Police and Residents' Predictions for Public Safety in the Next Three Months (Second Survey)

(4) Summary

The results of the first and second questionnaire surveys are shown in Table 16-9.

Table 16-9 Indicators and Drivers of Change in Community Policing Cases during Implementation

Change Index	Results of the First Questionnaire Survey	Results of the Second Questionnaire Survey	Primary Factor
① Security situation	<ul style="list-style-type: none"> Police: "good" or "very good" for more than half of the respondents in all regions Residents: "poor" or "very poor" for more than half depending on the region <p>※ This is not a change due to COVID-19, but a confirmation of the current situation.</p>	<ul style="list-style-type: none"> More people felt that the police are improving public safety compared to last time. Residents felt that public safety is improving in some areas, but an increasing number felt that it is worsening in others. <p>→ As before, the police responded more positively.</p>	<ul style="list-style-type: none"> There is a distance between the police and residents, creating a gap between their perceptions of public safety. (This may have a lot to do with the fact that respondent is not actually answering honestly.)
② Evaluation of police services	<ul style="list-style-type: none"> Police: More than half of the police perceived that residents are "satisfied" or "fully satisfied" with their police service. Residents: More than half of the respondents answered "Normal," and more than half answered "Poor" or "Very poor" in some areas. <p>* This is not a change due to COVID-19, but a confirmation of the current situation.</p>	No change from the first round	<ul style="list-style-type: none"> Police corruption still exists and has not won the trust of the residents. There is also a serious shortage of police manpower, and they may not be able to adequately implement their services. There are regional differences in perceptions of public safety, and poverty disparities between regions may also have an impact.
③ Public safety issue	<ul style="list-style-type: none"> Decrease 	As for the first round, a decrease was found compared to pre-COVID-19 pandemic conditions.	<ul style="list-style-type: none"> Restrictions on going out have been a deterrent to some crime outbreaks. On the other hand, from the data collected, it is confirmed that murder, rape, missing persons, robbery, and theft have increased in 2021 compared to 2020. (This may also be related to domestic violence as described below.)
④ Increase or decrease in invisible crime	<ul style="list-style-type: none"> Increase 	<ul style="list-style-type: none"> As for the first round, an increase was found compared to pre-COVID-19 pandemic conditions. Additional questions confirm that the number of people suffering from unemployment, depression, anxiety, and hysteresis is increasing. 	<ul style="list-style-type: none"> There is a confirmed increase in crime in the households due to increased stress.
⑤ Future Public Safety	<ul style="list-style-type: none"> Police: More than half of the respondents answered "will improve" or "will improve greatly." Residents: More than half of the respondents answered that the situation would "remain the same" or "improve. However, in some areas, the percentage of respondents who think it will "worsen" is high. 	<ul style="list-style-type: none"> Police: No change from the first round. (More than half of the respondents answered that public safety "will improve" or "will improve greatly".) Residents: Fewer respondents answered that public safety "will improve", and more of them thought that it "will remain the same". 	<ul style="list-style-type: none"> Compared to two years ago (before COVID-19), more people believed that security is recovering and will improve. However, in light of the prolonged situation in Corona, residents have come to view the situation as remaining the same in the future.

Source: Compiled by the Study Team

From the results of the first and second questionnaire surveys, it was confirmed that the reputation of the police has not yet been sufficiently improved. It became clear that "extortion," "domestic violence," and "violence against women" have increased compared to before due to the restrictions because of COVID-19, such as depriving people from going out. Therefore, it is considered essential for the community police to implement measures to deter "invisible violence" in order to gain the trust of residents and improve public safety in the future.

16.8 Summary of this Study and Directions for Development Cooperation

16.8.1 Summary of this Study

(1) Strengthening the Mechanism Project for Tourism Development Based on Sustainable Community in the Northern Region (Dominican Republic)

As for the impact of COVID-19 on the target projects revealed in this study, the number of tourists from overseas decreased as a result of the implementation of entry restrictions as a countermeasure against COVID-19. On the other hand, as a result of the restriction of indoor activities as a countermeasure against COVID-19, it was confirmed that the number of domestic tourists increased as they preferred activities in nature where the risk of infection was low. It was found that government measures to support tourism have helped to increase the number of domestic tourists, and that the use of social networking sites in UP has helped to increase the number of domestic tourists. In general, the tourism sector is an industry that can thrive in a stable social environment and is therefore less tolerant of event risks such as the recent COVID-19 pandemic. In order to maintain a certain level of tourism demand even in the face of a catastrophe such as COVID-19, the resilience of the tourism sector can be strengthened by promoting domestic tourism as well as overseas tourism. In order to maintain a certain level of tourism demand even in the face of a catastrophe like COVID-19, resilience will be enhanced by promoting domestic tourism as well as overseas tourism.

(2) Project Phase 2 (GENSAI-2) in Support of the Office of Climate Change and Risk Management Strategies for Strengthening Public Infrastructure (El Salvador)

As for the impact of COVID-19 on the projects identified in this study, it was confirmed that there was a negative impact such as the delay in infrastructure development as a result of the dispatch of personnel to priority projects such as the construction of hospital facilities due to COVID-19. On the other hand, we also confirmed the positive impact of COVID-19, such as unification of movements with other ministries and agencies and mutual support. We confirmed the contribution of the road infrastructure developed in the past cooperative projects to the society by supporting the transportation of medical personnel and food supplies, as well as the passage of various vehicles of various ministries and agencies, which contributed to the functioning of pandemic preparedness.

(3) Project on Strengthening Conservation and Management of Coastal Fisheries Resources through Collaboration between Fishermen and Government (Saint Lucia)

As for the impact of COVID-19 on the subject cases identified in this study, the following impacts were confirmed to have occurred as a result of the implementation of entry restrictions and restrictions on refraining from going out as a response to COVID-19.

- The volume of fish trade with hotels and restaurants has decreased due to the decline in foreign tourists.
- On the other hand, we confirmed that there are some vendors who are implementing Internet-based sales in order not to decrease their sales volume in COVID-19
- COVID-19 led to an improvement in the public's sense of hygiene. As a result, fish preservation methods were improved and the quality of fish increased. It was also confirmed that the facilities provided by JICA were effectively used for fish preservation.
- COVID-19 triggered an improvement in the public's health consciousness, confirming a gradual increase in the demand for fish in the country.

(4) Community Policing Project (Guatemala)

As for the impact of COVID-19 on the target cases revealed in this study, the number of people suffering from stress and depression increased due to COVID-19's restrictions on refraining from going out and unemployment. As a result, it was found that "invisible crimes" such as domestic violence, extortion, and against women increased. On the other hand, although community policing is conducted with the aim of building trust between police and residents, COVID-19 vortex still confirmed that corruption cases have not been prevented and that the police have not fully gained the trust of residents because there is still a distance between residents and police.

16.8.2 Direction of development cooperation

(1) Strengthening the Mechanism Project for Tourism Development Based on Sustainable Community in the Northern Region (Dominican Republic)

It was confirmed that the UP groups, which has been successful in increasing the number of domestic tourists, has been practicing the use of social networking sites and attractive posts to attract the interest of domestic tourists and gain their trust. Based on the above, it was confirmed that the measures needed in the with/post COVID-19 society include the use of digital marketing, educational support to improve the quality of products, financial support, and promotion of professional collaboration and cooperation.

(2) Project Phase 2 (GENSAI-2) in Support of the Office of Climate Change and Risk Management Strategies for Strengthening Public Infrastructure (El Salvador)

Based on the results of this study, in order for road infrastructure to contribute to disaster prevention and mitigation, such as COVID-19, it is considered necessary to construct a system that enables "information sharing among related organizations" in addition to drainage systems and congestion mitigation, which are directly related to disaster prevention and mitigation. Therefore, the measures required for the with/post COVID-19 society are considered to be the improvement of sanitation in transportation, the easing of traffic congestion during normal times, the development of infrastructure that also contributes to road disaster prevention, and the creation of a DX system for sharing information on road infrastructure and disaster prevention.

(3) Project on Strengthening Conservation and Management of Coastal Fisheries Resources through Collaboration between Fishermen and Government (Saint Lucia)

Like the Dominican Republic, St. Lucia is highly dependent on tourism, and the impact on fisheries, which is highly dependent on overseas tourists, is also significant. As in the tourism sector, strengthening the resilience of fisheries is an urgent issue. In order to maintain a certain level of demand even in the face of a major disaster like COVID-19, resilience can be strengthened by promoting domestic consumption as well as overseas consumption. Therefore, in order to strengthen the resilience of fisheries, it is considered important to promote local production for local consumption, improve the quality of products for local consumption, improve preservation facilities to further increase demand, and develop new markets. The measures required by the with/post COVID-19 society to achieve these goals include the development of a stable supply of fish and shellfish, provision of facilities, and promotion of fish-eating education.

(4) Community Policing Project (Guatemala)

In order to improve public safety in the COVID-19 vortex and to gain trust in the police, it is essential to deter "invisible crime" in order to gain trust in the police and to further improve public safety. To this end, measures needed in the with/post COVID-19 society include the strengthening of consultation services and patrols by local police to prevent "invisible crime."

17. Pilot Project

17.1 General

Eight pilot projects are being conducted with the aim of contributing to the Data Collection Survey on Development Cooperation With/Post COVID-19 Society in Central America and the Caribbean Region. All projects ended on January 10, 2022 by receiving project completion reports from the subcontractors, and hold a final reporting meeting with the stakeholders to explain the lessons learned and confirm the project formulation procedures for the next fiscal year. In addition, the report of all pilot projects would be summarized into the final report of this study to be submitted in February.

For details of the eight pilot projects, related materials of each project are compiled as "Part 4: Pilot Project".

17.2 Selection of Pilot Projects

Regarding the selection of pilot projects, consultations with Japan International Cooperation Agency (JICA) and experts were conducted by considering the affinity and synergistic effect with existing projects, the availability of resources in Japan and locality, and the implementation system after the pilot project. Furthermore, evaluation is based on the selection criteria as shown in Table 17-1, and the selected projects are as shown in Table 17-1.

Table 17-1 Criteria for Selecting Pilot Projects

No.	Evaluation Items	Score	
		Compulsory (5/10 each)	Additional (1~10~20)
1	Consistency with the hypothesis of development cooperation		1~10
2	Presence of local needs		1~10
3	Project implementation entity	Confirmed (10)	
4	Project period	Within the study period Possible to start/end (5)	
5	Project expenses	Within JPY 10 million (5)	
6	Project plan/ management plan	Drafted (10)	
7	Explanation to stakeholders	Agreed (10)	
8	Project continuity	Future project can be assumed (5)	
9	Relationship with JICA projects		1~10
10	JICA's intentions and priorities		1~20
11	Other	Agreement on start/end requirements (5)	
		50	Total up to 50

Source: Study Team

Table 17-2 Pilot Project List and Evaluation Points

No.	Target Countries	Sectors Covered ^{Note1}	Project Name (Project Abbreviation)	Evaluation Points
1	Dominican Republic	Health	Pilot Project on Mobile-based Telestroke (telemedicine)	91
2	Nicaragua	Disaster Management	Technical Assistance Pilot Project for Expanding Emergency Warning Broadcasting System (EWBS) Reception in Nicaragua (EWBS)	90
3	Guatemala	Disaster Management	Introduction of SaaS-based Land Displacement Monitoring Service (Satellite Image Analysis)	92
4	Saint Lucia	Tourism/Agriculture	One Village One Product Pilot Project (OVOP)	90
5	Jamaica	Tourism/Disaster Management	Strengthening Domestic Tourism Resilience through Preparation of Tourism Crisis Management Plan against Natural Disasters (Tourism Resilience)	91
6	Multi Countries	Education	Webinar "Utilization of DAISY/EPUB ^{Note 2} Textbooks and Education Materials in Inclusive Education" (DAISY Seminar)	91
7	Panama	Private Sector	Acceleration of International Open-Innovation through Online-Seminar between Japan and Panama (Innovation Seminar)	91
8	Guatemala	Citizen Security/Private Sector	Introduction of ICT Solutions in the Field of Citizen Security (Citizen Security ICT)	94

Source: Study Team

Note 1: Every project incorporates with digital transformation (DX) / innovation perspective, but is not listed as a target sector

Note 2: DAISY is an international standard for digital recording books that stands for Digital Accessible Information System. EPUB is also one of the international standards for e-books, and it is a completely open standard and relatively easy to create.

Table 17-3 Pilot Project Overview

No.	Project Name	Project Description	
1	Dominican Republic Telemedicine	Background • Purpose	Telemedicine using mobile technology is provided for patients with strokes amid the imminent movement restrictions and beds caused by COVID-19.
		Project Overview	<ul style="list-style-type: none"> ● Introduce telemedicine systems at the five hospitals and emergency services in Santiago City to realize multi-disciplinary and regional medical collaboration in hospitals ● Establish a telemedicine network with stroke specialists in the United States. to provide cross-border medical support
		Implementing Organization	Allm Inc.
2	Nicaragua EWBS	Background • Purpose	Since uncertain information on disaster prevention is transmitted via the Internet and other media under the COVID-19, the purpose of this project is to create an environment in which effective content through EWBS can be enriched by related organizations.

No.	Project Name	Project Description	
		Project Overview	<ul style="list-style-type: none"> ● Transmit lifeline information centered on emergency disaster information to the public by utilizing digital TV broadcasting radio waves ● Promote local utilization by demonstrations to display them on smartphones and speakers
		Implementing Organizations	Tanabiki Inc. Japan Telecommunications Engineering and Consulting Service (JTEC)
3	Guatemala Satellite Image Analysis	Background · Purpose	Under the with/post COVID-19, the purpose is to realize efficient and smart disaster management by acquiring disaster information without contact by using satellites, as budget allocation to disaster prevention projects is not sufficiently allocated and existing investigation work is expected to be difficult.
		Project Overview	<ul style="list-style-type: none"> ● Demonstrate and introduce a ground change monitoring system using a wide-area satellite via SaaS system for Guatemala City, which is at risk of potential ground fluctuation disasters. ● With INSIVUMEH as a counterpart, knowledge acquisition on the method of evaluating ground deformation risk by using satellites and operation capability of a satellite monitoring system are expected.
		Implementing Organization	● Synspective Inc.
4	Saint Lucia OVOP	Background · Purpose	With tourism being stagnant across the Caribbean and sluggish demand for fisheries and agricultural products, the Government of Saint Lucia has launched BUYLOCAL as a measure to boost domestic consumption. In order to promote this, it is important to improve and brand products and spread platforms that connect producers and consumers. In this project, the Study Team will introduce the One Village One Product (OVOP) movement that has been promoted in Central America to Saint Lucia and support the value improvement of specialty products utilizing local resources and the expansion of the market.
		Project Overview	<ul style="list-style-type: none"> ● In order to introduce and establish the OVOP concept, three selected municipalities hold workshops to produce special products based on the OVOP concept. ● Formulate criteria for selecting products with the goal of OVOP certification and hold a fair/contest based on it. ● Create a catalog introducing OVOP specialties as part of the achievement product
		Implementing Organizations	Study Team, JAHNUS Inc.

No.	Project Name	Project Description	
5	Jamaica Tourism Resilience	Background • Purpose	In Jamaica, which relies more on the tourism industry, a sharp decline in number of tourists due to crises and disasters has a fatal impact on the economy of the country as a whole. For this reason, in order to minimize damage, it is important to identify crisis factors that have a profound impact on tourists and industries, to implement plans and training such as disaster mitigation measures based on them and countermeasures in the event of a crisis, and to take measures in accordance with preparation in the event of an actual crisis. From the perspective of this project, the purpose of this project is to strengthen the tourism sector by supporting the formulation of a tourism crisis management plan.
		Project Overview	<ul style="list-style-type: none"> ● Hold webinars on tourism and crisis management ● Hold workshops on the formulation of tourism crisis management plans and comparative evaluation meetings for the plans formulated ● Study on utilization of ICT technology to strengthen resilience
		Implementing Organizations	Study Team, Global Tourism Resilience and Crisis Management Centre
6	Multi Countries DAISY Seminar	Background • Purpose	The biggest impact of COVID-19 had on the education sector in Central America and the Caribbean is the long-term closure of schools, which exposes vulnerabilities such as delays in academic ability, an increase in dropout students, and a lack of educational access for vulnerable and disabled children. Under these circumstances, from the perspective of "ensuring high-quality educational opportunities that no one leaves behind" in SDGs Goal 4, the promotion of inclusive education is also required in the region. In this project, the Study Team aims to promote class participation of students with learning disabilities such as visual impairments and dyslexia, and to complement learning understanding for children with learning delays who are concerned about dropouts, and webinar students who have difficulty reading through the program, introduce the roles and effects of DAISY/EPUB textbooks and teaching materials that support reading comprehension, and examine the effects of their reflection and introduction potential in future policies in participating countries.
		Project Overview	<ul style="list-style-type: none"> ● Multi countries Webinar (2.5 hours*3 including workshops, 3 days each in English and Spanish languages)
		Implementing Organization	Assistive Technology Development Organization (ATDO)

No.	Project Name	Project Description	
7	Panama Innovation Seminar	Background • Purpose	<p>In Central America and the Caribbean, COVID-19 has increased unemployment, and there is a need to build a stronger economic foundation. In particular, in Panama, it relies on sectors that do not require a large number of employment and labor force, such as telecommunications, finance, and real estate, and there is a gap between recent economic growth and employment conditions. In building a stronger economic foundation, job creation and industrial diversification are urgent issues, but due to the current industrial structure and high wage levels, it is difficult to promote and strengthen traditional labor-intensive manufacturing and agriculture in the country.</p> <p>In response to this situation, the "Japan-Panama Open Innovation Seminar" in collaboration with Fundación Ciudad del Saber, which plays the role of innovation hub in Panama, is held to explore clues for local startups to promote industry through the creation of new value.</p>
		Project Overview	<ul style="list-style-type: none"> ● Hold an Open Innovation seminar ● Create a portfolio of Panamanian startups ● Conduct interviews and questionnaires with stakeholders and prepare recommendations for future initiatives
		Implementing Organizations	Study Team, Fundación Ciudad del Saber
8	Guatemala Citizen Security ICT	Background • Purpose	<p>The number of crimes caused by contact with others (e.g., street theft incidents and residential intrusions) is decreasing due to stagnant economic activity and longer hours at home due to restrictions on the outings caused by COVID-19. However, from a medium to long-term perspective, changes in the economic living environment, such as business closures and an increase in the unemployment rate in each industry, are expected to make the security issue an even more serious issue.</p> <p>The JICA Technical Cooperation being implemented in Guatemala is a form of police work aimed at preventing crimes developed in relation to the community, but in COVID-19, certain consideration is required for activities involving residents. In addition, due to restrictions on movement and gatherings, it is required to consider a different approach in how to provide incumbent education and training opportunities for police officers, and the introduction of technical solutions of Japanese companies to these issues will be examined.</p>

No.	Project Name	Project Description	
		Project Overview	<ul style="list-style-type: none"> In the field of citizen security, which is a challenge in Central America, webinars between Japanese companies with solutions in this field and Guatemalan security-related organizations are held with the aim of matching local needs with Japanese ICT solutions to respond to them. In addition, the technical services introduced are examined specifically regarding the possibility of their introduction and advised on the demonstration of the current project.
		Implementing Organization	Study Team

Source: Study Team

17.3 Implementation of Pilot Projects

Since the pilot project starts from time to time on projects that have been agreed upon among the parties concerned, the progress of each is different as shown in Table 17-4. Each pilot project monitors the progress based on the monthly progress report submitted by the subcontractor, and when the Study Team conducted a field survey, the project impact was confirmed based on the relevant consultations. As stated above, all projects ended on January 10, 2022.

The implementation of the pilot project is an important process of "Proof of Concept" of policy proposals, and project management with a view to policy proposals will be implemented. On the process of project monitoring, the project management system "TERESSA" is adopted for project process visualization and information sharing among the stakeholders.

Table 17-4 Pilot Project Progress

No.	Project Name	Start Date	Report		Wrap-up Meeting by Project Members	Final Report Meeting by the Study Team
			Project Plan/ Inception Report	Project Completion Report		
1	Dominican Republic Telemedicine	7/15	※	※	-	-
2	Nicaragua EWBS	7/15	※	※	12/16	1/18
3	Guatemala Satellite Image Analysis	8/20	※	※	1/7	1/24-25
4	Saint Lucia OVOP	9/30	※	※	1/27	2/1
5	Jamaica Tourism Resilience	9/30	※	※	-	1/14
6	Multi Countries DAISY Seminar	10/5	※	※	-	-
7	Panama Innovation Seminar	11/1	※	※	-	1/25
8	Guatemala Citizen Security ICT	11/28	※	※	-	1/26-27

Source: Study Team

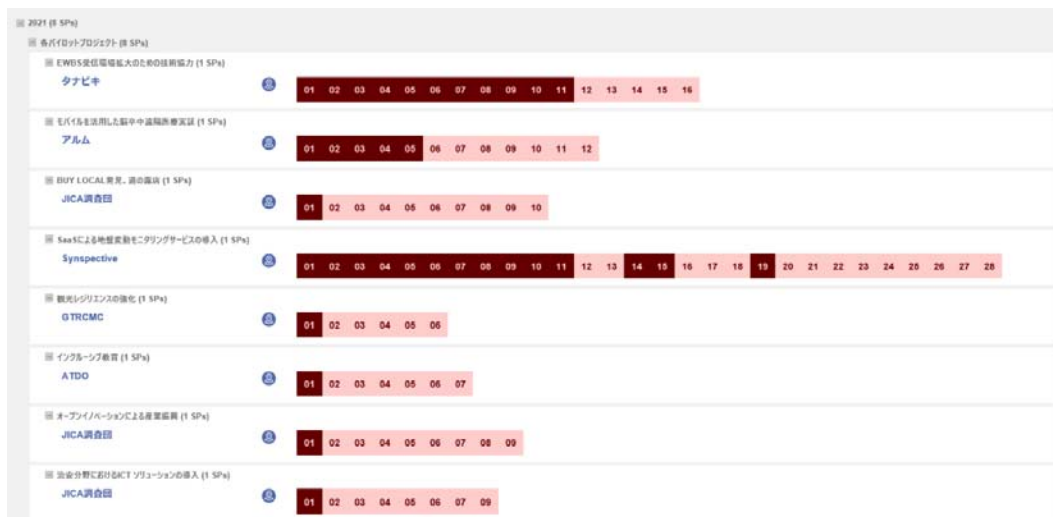
Note 1: the condition of submission (*: Yes, -: Not applicable)

(Progress Monitoring by Project Management System “TRESSA”)

TRESSA is a project management system that enables (1) visualization of progress management of each project, (2) map display according to the project implementation location, and (3) sharing management information with each project operator. By using TRESSA, the specifications allow stakeholders to grasp the progress of each pilot project at a glance.

(1) Visualize tracking for each project

TRESSA prepares each task of each pilot project based on the progress management table described in the consignment agreement with the implementation subject of each pilot project. According to the progress of each task created, the status is displayed in three stages: "Completed", "Progress", and "Not started".

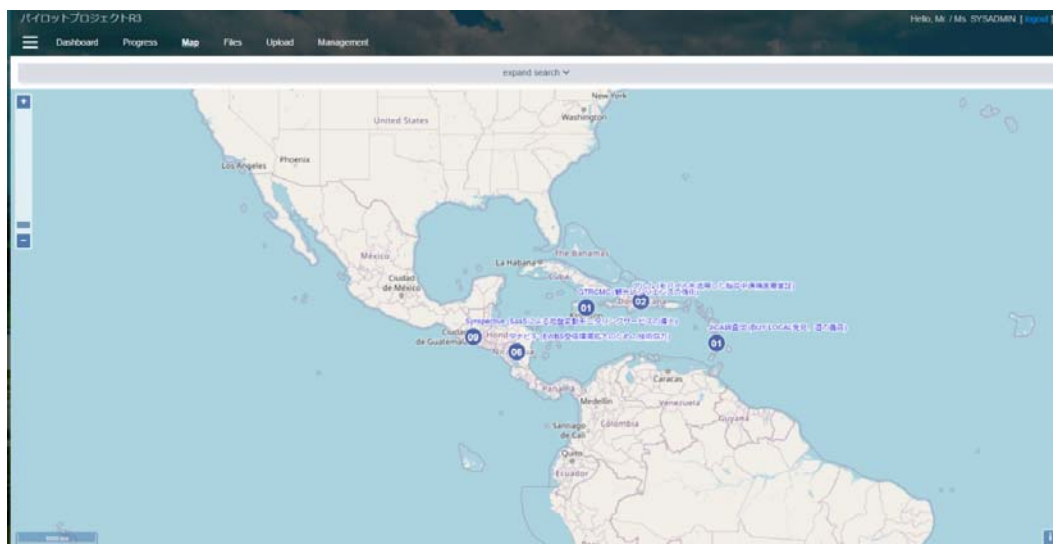


Source: Study Team

Figure 17-1 TRESSA Progress Management Screen

(2) Map view of information

For each pilot project, it is possible to check from the map according to the implementation location.



Source: Study Team

Figure 17-2 Project Location Display Screen

(3) Share information with each project operator

Since each implementation subject is required to submit a monthly report, TRESSA was updated based on the monthly report, and progress management of all pilot projects was carried out.

17.4 Evaluation of Pilot Project

The evaluation of each pilot project at the time of project selection is summarized in Table 17-5. In addition, regarding the evaluation of this pilot project, the implementation period was limited unlike the normal JICA project, therefore the projects are not evaluated from of relevance, coherence, effectiveness, impact, efficiency, sustainability of the JICA project evaluation criteria. Instead, the items of "innovation," "versatility," and "relationship with COVID-19" that were emphasized when selecting the pilot project were evaluated based on each project completion report and field survey as shown in Table 17-6.

Table 17-5 Selection Evaluation of Each Pilot Project

No.	Project Name	Selection Evaluation
1	Dominican Republic Telemedicine	Allm's JOIN is a solution that has been approved in the United States and Europe and has already been implemented in South America. Due to the impact of COVID-19, there is a high need for telemedicine from the viewpoint of shortage of doctors or contactless, and strong relationships of trust with the five hospitals is built. In the Central American and Caribbean regions, there are many remote areas and remote islands, and it is estimated that the need for telemedicine to complement physical distance is very high, so it is expected that this project will be used to expand to neighboring countries and regions.
2	Nicaragua EWBS	The Central American and Caribbean regions, including the countries covered by the project, are areas facing natural disasters such as earthquake and tsunami, and Japan has been cooperating with them in disaster prevention for many years. This pilot project is a highly synergistic project that can support the independent operation of EWBS through cooperation with the Ministry of Internal Affairs and Communications project, which is separately implemented while promoting capacity building on the receiving and operation side using EWBS applying the Japanese terrestrial digital method. In addition, amid the transmission of uncertain information on the Internet under the COVID-19, it is highly regarded as a significant project that enables the government to transmit accurate lifeline information by utilizing EWBS.
3	Guatemala Satellite Image Analysis	Japan has been cooperating in disaster management for many years with Central America and the Caribbean where many natural disasters occur. This pilot project demonstrates and introduces a ground change monitoring system using a wide-area satellite using a SaaS system, and it is possible to conduct non-contact surveying even under COVID-19. In addition, it is in line with local needs that it is difficult to increase investment in disaster prevention in response to COVID-19, and it is possible to efficiently identify dangerous areas due to ground fluctuations such as landslides and land subsidence. In the future, it is expected to expand to the Central America by providing satellite services to respond to disasters that take into account issues specific to each country, such as floods, forest fires, and volcanic activities other than ground fluctuations.
4	Saint Lucia OVOP	The economic damage of related workers is enormous due to the stagnation of the tourism industry due to COVID-19 and the decline in demand for fishery and agricultural products. In order to mitigate the effects of these external factors, it is also important to change the production and manufacturing processes to create high value-added products that meet the needs of the market. The OVOP movement that JICA has conducted in Latin America and Africa has been effective for areas where production is carried out by

No.	Project Name	Selection Evaluation
		individuals or relatively small groups, and it can be also meaningful initiatives for neighboring Caribbean countries that rely on tourism.
5	Jamaica Tourism Resilience	In Jamaica, which relies more on the tourism industry, it is necessary to prepare natural disasters and external hazards, including COVID-19. This project utilizes the handbooks prepared by the Japan Tourism Agency and the UNWTO Office in Japan, to support Jamaican tourism workers in formulating a tourism crisis management plan which is highly meaningful to support the industry. In addition, the Minister of Tourism of Jamaica has long requested Japan's cooperation in tourism resilience in light of the reconstruction of the Great East Japan Earthquake. It is expected that the results of this project will lead to the spread in Jamaica and the expansion to other countries.
6	Multi Countries DAISY Seminar	While learning opportunities have been lost due to the influence of corona, particular attention to vulnerabilities such as lack of educational access for vulnerable children and children with disabilities should be paid. DAISY/EPUB textbooks and teaching materials are considered to be effective in supporting reading comprehension for students with learning disabilities such as visual impairments and dyslexia. In this project, through webinars, exploring the possibility of introducing the tool to administrative officials in charge of inclusive education in each country through introductions and questionnaire surveys is the significance of implementation in considering future inclusive education initiatives.
7	Panama Innovation Seminar	In this study, DX/innovation is considered to be an important viewpoint in considering the future cooperation in the Central American and Caribbean regions, and it is considered in each pilot project. This time, considering innovation initiatives with a view to reforming the industrial structure is consistent with the content of the study, and it is significant to implement it in terms of strengthening cooperation between Japan and the private sector in Panama. The questionnaire survey and portfolio creation conducted in this project are expected to be an opportunity not only to create this study, but also to create an ecosystem of collaboration between private companies, including startups in Panama and Japan in the future.
8	Guatemala Civic Security ICT	Although the number of crimes has temporarily decreased due to the COVID-19, it is not possible to overlook the possibility that crime would become even more serious in the future. The Guatemalan government has positioned strengthening security as an important issue, and Japan has indicated its support in this field in its country assistance policy, and in March this year it was agreed with the Guatemalan government on the new implementation of a five-year technical cooperation project. This pilot project, which considers the introduction of Japanese technical services, is not only considered for demonstration in the JICA project, but also is useful for market understanding of Japanese companies in Central America.

Source: Study Team

Table 17-6 Evaluation of Each Pilot Project

No.	Project Name	Project Evaluation
1	Dominican Republic Telemedicine	<p>< Innovation: High > Telemedicine is developing in the country, and in the absence of national strategies and policies, it has been highly evaluated for its ability to speed up treatment through simple communication and easily measure the severity and urgency of patients. Unlike free apps, it can be evaluated as highly innovative in that it has already obtained FDA certification.</p> <p>< Versatility: High > The result of user satisfaction was high such as the usefulness of the system was more than 70%, and the usefulness in decision support in the clinical condition was more than 80%. It can be evaluated that it is highly versatile because there were many calls for development at the national level. In addition, it is expected to spread in the future because it is not necessary to acquire new licenses since it took FDA certification in the United States.</p> <p>< Relationship with COVID-19: High > Telemedicine, a non-contact solution, is effective as a COVID-19 countermeasure, and through this technology solution, it is possible to contribute to the shortage of doctors by responding to COVID-19 by sharing medical data and realizing remote diagnosis.</p>
2	Nicaragua EWBS	<p>< Innovation: Fair > As a project of the Japanese Ministry of Internal Affairs and Communications, a demonstration was conducted in March 2018, and it is not so high in terms of technological innovation. On the other hand, since the Swiss International Cooperation Project is being implemented, expectations for EWBS as a disaster prevention ICT tool are high, and it is Fair from the viewpoint of advancement in Nicaragua.</p> <p>< Versatility: High > The content transmitted by EWBS can be applied not only to earthquakes and tsunamis, but also to daily lifeline information such as other disaster species and COVID-19 countermeasures. In addition, Switzerland's assistance is being implemented in neighboring countries such as Costa Rica and El Salvador, and it is expected that similar efforts will be deployed to other countries.</p> <p>< Relationship with COVID-19: Fair > In this pilot project, the Study Team has established a system on the reception of EWBS, and the development of the contents has not been considered, such as disseminating COVID-19 measures to citizens. However, if the spread of EWBS is accelerated by the implementation of this project and Switzerland support, which is strengthening the capacity of the transmission side, it will lead to the expansion of transmission content including the above-mentioned COVID-19 measures.</p>

No.	Project Name	Project Evaluation
3	Guatemala Satellite Image Analysis	<p>< Innovation: High > For the C/P, the utilization of satellite imagery (especially data analysis of yearly change) is only knowledgeable and not used so far. In addition, the accuracy of the analysis results in millimeters is more successful than expected, and the innovation in the country is evaluated as high.</p> <p>< Versatility: Fair > Although there is a purpose of connecting to the investigation of the cause of land subsidence based on the analysis results, there is no plan of a concrete utilization method. In spite of various utilization of satellite imagery in other types of disaster prevention, it seems that knowledge is necessary for use in other fields including agriculture in this area, therefore versatility can be evaluated as Fair.</p> <p>< Relationship with COVID-19: Fair > It is difficult to conduct field survey by COVID-19, and the ability to obtain data remotely and non-contactly has a high relationship as a COVID-19 countermeasure. On the other hand, the C/P was small in number, and it was difficult to conduct field survey before the pandemic, so the relationship with COVID-19 is evaluated as Fair.</p>
4	Saint Lucia OVOP	<p>< Innovation: High > OVOP is a proven concept in Central America and Africa through JICA projects, but it was the first in an English-speaking Caribbean country. For products of small producers, this project, which creates OVOP certification standards for the Saint Lucia version to support their higher quality production activities, is evaluated as highly innovative.</p> <p>< Versatility: Fair > OVOP selection criteria was formulated as a Saint Lucia version through consultation not only with the Ministry of Agriculture, the C/P of this pilot project, but also with related organizations, therefore there is a very high possibility that this certification standard would be officially adopted and disseminated in the country in the future. On the other hand, OVOP's efforts have just begun, and further support is needed, and there are undetermined issues such as coordination with initiatives of other institutions (especially the Ministry of Commerce), therefore it could be evaluated as Fair.</p> <p>< Relationship with COVID-19: High > For small producers who are further down sales due to COVID-19, using the OVOP system to improve their products can also help revitalize the grassroots economy. The relationship with COVID-19 can be evaluated as high.</p>

No.	Project Name	Project Evaluation
5	Jamaica Tourism Resilience	<p>< Innovation: High > The manual adopted in the project was compiled in June 2021 by the Japan Tourism Agency and the UNWTO Office based on Japanese knowledge. Innovation is high from the point that it was utilized in this project from September just after 3 months of publication. In addition, there is a great expectation that Jamaica would learn from Japan's tourism crisis management, including the Minister of Tourism of Jamaica, and Japan's support in this field is novel.</p> <p>< Versatility: High > GTRCMC, the C/P of this project, disseminates this initiative and content on its own web pages and social media, and is working to spread it widely to the public. In addition, C/P, which is an organization of universities, is also considering establishing a diploma course for tourism crisis management. Therefore, it could be evaluated that the versatility is high because it is expected that the efforts of this project will be spread in match with the needs of the region.</p> <p>< Relationship with COVID-19: Fair > Since the prepared manual mainly covers risks of natural disasters, the relationship with COVID-19 could be evaluated as Fair.</p>
6	Multi Countries DAISY Seminar	<p>< Innovation: Fair > Regarding the understanding of the purpose of this project, "reading disorders" and "accessible textbooks and teaching materials lower learning barriers", the response from the Spanish-speaking participants was lower than English-speaking (more than 80% agreed) therefore innovativeness was evaluated as Fair. On the other hand, the results of this questionnaire provide an opportunity to learn about the possibility that the expression rate of the target dyslexia is low because the relationship between spelling and pronunciation is clearer in Spanish than in English, and it is recognized as a point to note when advancing efforts in the future.</p> <p>< Versatility: Fair > As mentioned above, when the effects of this project are divided between participants in English and Spanish languages, it is necessary to promote the spread of this project using a different approach. In addition, it is necessary to first organize the problems in each target area, and the versatility at present could be evaluated as Fair.</p> <p>< Relationship with COVID-19: High > As distance education becomes more widespread due to school closures caused by COVID-19, learning opportunities have been lost for children with disabilities due to the lack of appropriate learning materials for the level of disability and the lack of knowledge of teachers toward it. Through this project, the relationship is high as an effort to solve these problems by deepening educators' understanding of accessible teaching materials (DAISY/EPUB).</p>

No.	Project Name	Project Evaluation
7	Panama Innovation Seminar	<p>< Innovation: High > There is novelty in the first held seminar on innovation between Japan and Panama hosted by JICA, and it is highly evaluated for innovation because companies delivered presentations that are for start-up companies with innovative technology services.</p> <p>< Versatility: High > Building a relationship with Ciudad del Saber, which plays a key role in the Panamanian government's innovation, and holding a seminar are expected to lead to collaboration in future open innovation initiatives. In addition, Ciudad del Saber has created and published a portfolio of Panamanian startups, and it is expected that such efforts to disseminate information would be developed with versatility.</p> <p>< Relationship with COVID-19: Fair > In response to the economic and employment affected by COVID-19 and the strong economic needs reflecting it, it was a project that tried to solve the problem from the approach of open innovation by attracting foreign capital and innovation that the Government of Panama is working on. However, the expression of direct results could be evaluated as Fair because outcome of this effort is a future challenge.</p>
8	Guatemala Citizen Security ICT	<p>< Innovation: High > All Japanese technologies presented at the webinar were confirmed as highly innovative technical services that are not used in Guatemala. For example, the National Civic Police register various data based on the national ID, but it does not analyze and utilize those data. Based on these, the presented technical solutions of Japanese companies could be evaluated as highly innovative.</p> <p>< Versatility: High > Current initiatives of three organizations (National Civic Police, Santa Catarina Pinara City, Villa Nueva City) and the technical services presented such as crime prediction by data, image analysis of CCTV cameras, AI communication with citizens through predictions are respectively highly compatible and versatile. In addition, since the National Civic Police have annual meetings with the eight SICA countries, it is expected to spread to neighboring countries.</p> <p>< Relationship with COVID-19: Fair > Due to COVID-19, crimes outdoors are decreasing and on the contrary crimes indoors are increasing. For the police officers, COVID-19 has taken more time to disinfect and distribute basic commodities to citizens than in normal security/patrol activities. The Japanese technology solution can contribute to the reduction of overall crime but is not related to domestic crime and does not respond to police's work changes, therefore it could be evaluated as Fair on the relation with COVID-19.</p>

Source: Study Team

17.5 Creation of Hypotheses on the Ideal Form of Development Cooperation

Future developments in eight pilot projects are shown in Table 17-7.

Table 17-7 Future Development of Each Pilot Project

No.	Project Name	Next Step
1	Dominican Republic Telemedicine	<ul style="list-style-type: none"> ● Formation of a task force centered on doctors engaged with the project ● An event would be held at the end of March 2022 with the aim of expanding to the capital (aiming to obtain permission to introduce to public hospitals and allocate SNS budgets) ● Considering expansion to the Central American and Caribbean countries based on building trust with SNS
2	Nicaragua EWBS	<ul style="list-style-type: none"> ● Increasing awareness of the EWBS effect through the installation of provided equipment ● Expansion of EWBS coverage area ● Expansion of provided content ● Practical application of EWBS in neighboring Central American countries
3	Guatemala Satellite Image Analysis	<ul style="list-style-type: none"> ● Annual LFM contract with C/P for the Guatemala City area ● Joint research on the generation mechanism of wide-area land subsidence ● Promote LFM spread throughout the country and implement regular LFM services ● Demonstration and introduction of SaaS service model for other disaster prevention needs such as floods ● LFM deployment to six Central American countries
4	Saint Lucia OVOP	<ul style="list-style-type: none"> ● Dissemination of OVOP systems ● Organizing producer groups ● Training producers (finance, packaging, marketing, etc.) ● Logistics and sales support ● Collaboration with research and analysis laboratories ● Cooperation between ministries and agencies
5	Jamaica Tourism Resilience	<ul style="list-style-type: none"> ● Training for key personnel in tourism industry ● Formation of crisis management teams ● Provision of crisis management kits ● Development of crisis management ICT solutions ● Formation of a cluster that enables information sharing related to tourism crisis management
6	Multi Countries DAISY Seminar	<ul style="list-style-type: none"> ● Examination and planning of the introduction of DAISY/EPUB textbooks and teaching materials in the countries participating in the webinar ● Request for group training courses in the Central American and Caribbean countries
7	Panama Innovation Seminar	<ul style="list-style-type: none"> ● Promoting opportunities for innovation by strengthening collaboration with research and academic institutions in Panama ● Implementation of training and technical cooperation for innovation organizations (implementation of training based on innovation incubation programs at Japanese universities) ● Dissemination of information to both countries, including introducing Japanese good practices to Panamanian startups and holding pitch events to provide information on Panama's challenges and approaches to Japanese startups

No.	Project Name	Next Step
8	Guatemala Citizen Security ICT	<ul style="list-style-type: none"> ● Capacity development of ICT human resources within the police ● Development of basic ICT infrastructure ● Providing advanced technology solutions ● Support for smart cities related to data management

Source: Study Team

Table 17-8 also shows the 13 countries in which JICA has offices and the sectors covered by the pilot project that have challenges in the 23 Central American and Caribbean countries targeted. While the future development of the pilot project in each target country is indicated in Table 17-7, as shown in the table below, it is also possible to consider forming new projects in neighboring countries and other regions with similar issues and languages based on the results of the pilot projects.

Table 17-8 Target Sectors of the Pilot Projects and JICA Office Countries which Have Challenges in Each Sector

Legend: Shading: Sector-Most Important Countries, Shading: Sector-Focused Countries, ⊙: Pilot Target Countries

No.	Project Name (Target Sectors)	Central American Countries							Caribbean Countries					
		Belize	Costa Rica	El Salvador	Guatemala	Honduras	Mexico	Nicaragua	Panama	Cuba	Both Dominica	Haiti	Jamaica	Saint Lucia
1	Telemedicine (Health care)										⊙			
2	EWBS (Disaster Prevention)							⊙						
3	Satellite image analysis (Disaster Prevention)				⊙									
4	OVOP (Tourism/Agriculture)													⊙
5	Tourism Resilience (Tourism/Disaster Prevention)												⊙	
6	DAISY Seminar (Education)	⊙	⊙	⊙	⊙	⊙		⊙	⊙		⊙			⊙
7	Innovation Seminar (Private Sector)							⊙						
8	Citizen Security ICT (Citizen Security /Private Sector)				⊙									

Source: Study Team

17.6 Analysis and Recommendations Contributing to Cooperation Policy

17.6.1 Analysis Contributing to Cooperation Policy

With regard to these pilot projects, three aspects are considered to select and implement the pilot projects, namely, (1) innovation, (2) versatility, and (3) relationship with COVID-19. Based on these three-point evaluations, the summary of analysis contributing to the cooperation policy is shown as follows:

Regarding innovation, since concepts, methods, and technical services are novel in the country, its knowledge and effectiveness should be understandable for the C/P and related parties in the field. Although the time for capacity development on OVOP and tourism crisis management from scratch was limited, the promotion and progress of pilot project were supported by the C/P who had related knowledge in past training projects or visits to Japan. On the other hand, for DAISY seminars, the number of participants in Spanish-speaking countries resulted in an extreme decrease from the first day to second day, and while considering the program based on the intentions of the participants, it was also a point to consider the identification of users of the target technology service. From these results, it is important to cooperate in capacity building centered on C/P who plays a key role in introducing and establishing innovative concepts and technical services.

In the case of versatility, cooperation policies are more classified whether innovative is a concept/ method or an ICT technology service. In the case of concepts and methods that have a proven track record in other countries such as OVOP and tourism crisis management, the introduction to these target countries is based on the collection and analysis of related information such as the legal system and the responsibility of related organizations, and standards tailored to culture and customs. On the other hand, with regard to ICT technology services, in addition to related information, the cooperation on establishing basic ICT infrastructure, if it is not in place, could be necessary.

With regard to the relationship with COVID-19, it would be classified whether the concept adopted corresponds to the social changes caused by COVID-19 or corresponding to changes in the works of the relevant organizations. In the latter, DX innovation technology including non-contact and remote elements such as so-called new normal was adopted. In doing so, the participation of private companies that possess technical services in the field is pivotal while webinars and questionnaire surveys to grasp the local situation are beneficial.

17.6.2 Recommendations that Contribute to Another Cooperation Policy

Each recommendation for the above-mentioned analysis is shown as follows:

1) Development of human capacities related to applicable concepts and technical services

In promoting new concepts and technical services in the country, it is first important to have basic knowledge and understanding of the relevant fields of human resources who are directly responsible for these practices. Examples of the utilization of satellite imagery, achievements and effects in other regions of OVOP, tourism resilience and initiatives and security ICT practice in Japan are applicable, but if there is no such knowledge or ICT-related capabilities, it does not lead to effective and efficient project development. Technical training through webinars, third-country training with proven countries, and capacity development of key persons through technical cooperation projects are also necessary to expect their versatility. In addition, Information dissemination, such as SNS from C/P institutions conducted by tourism resilience in Jamaica and open innovation in Panama, is important for the development of knowledge among related parties, and it is desirable to support such efforts in the current information society.

2) Development of basic IT infrastructure and study of related rules to establish innovative ICT technology services

While it is essential to develop basic IT infrastructure in developing ICT project, there are many countries and organizations in Central America and the Caribbean that have problems related to hardware, networks, and information security. It is also possible to consider supporting the system development through grant aid assistance to such target organizations. In addition, the handling of

personal information in the analysis and utilization of data, and licenses which should be obtained for implementing services are effective study for further development of the pilot project.

3) Support for overseas expansion of Japanese companies with innovative technology services

Compared with Southeast Asia, Japanese companies' entry into the Central American and Caribbean regions is facing big hurdles due to physical distance and language barriers. In addition, local information is also difficult to obtain compared with Southeast Asia. Regarding the matching of local issues with Japanese companies, webinars were held at Panama Open Innovation and Guatemala Security ICT, and considering the number of registered people and participants, there is a high interest of those involved in such opportunities. The market survey of Japanese technology, the cultivation of local partner companies, and the implementation of webinars for the purpose of sharing information are beneficial to Japan and the countries concerned, and continuous support is necessary.