

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
Executive Summary**

February 2022

**Japan International Cooperation Agency
(JICA)**

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

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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 Volume 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 the Survey

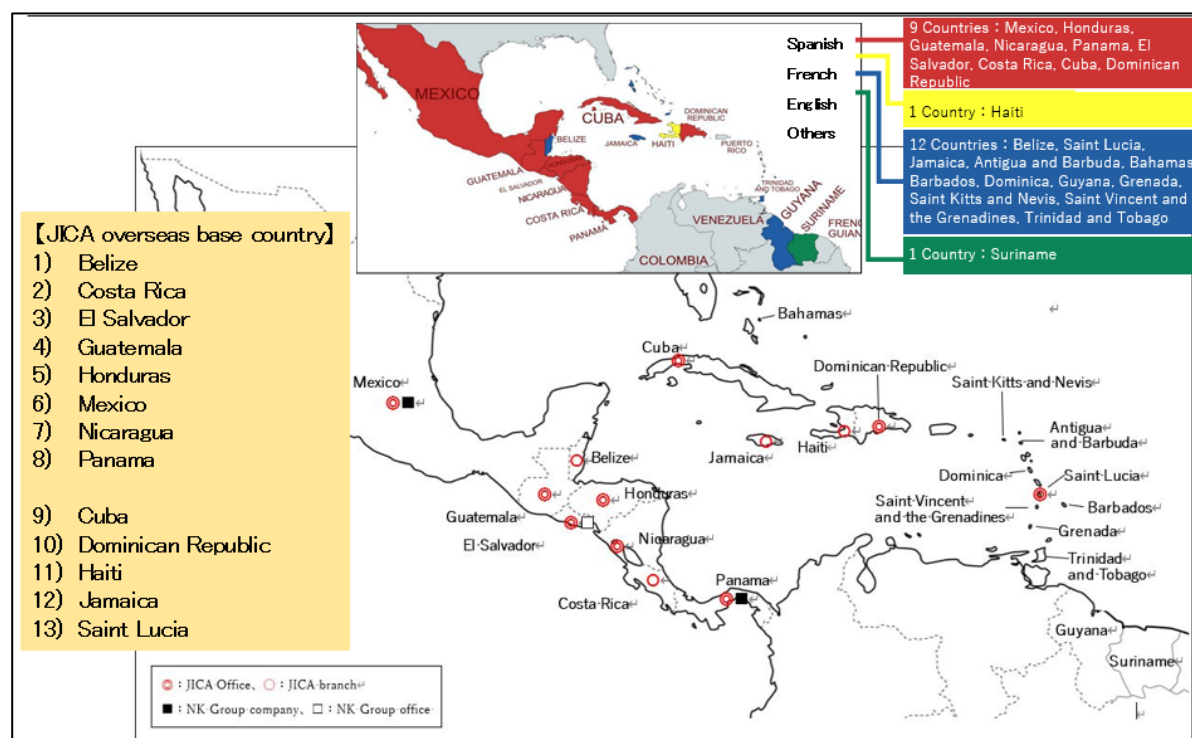
This survey covers the following 23 Central American and Caribbean countries shown in Table 1-3 and Figure 1-1.

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: Survey 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: Survey Team

2. Scope of the Survey

2.1 Work Tasks

Work tasks in the contract is shown in Table 2-1.

Table 2-1 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	Preparatio 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	Preparatio 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
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 Preliminary Study
Suppl. 19	Preliminary Study on Possible Countermeasure on Noncommunicable Diseases in Dominican Republic

Source: Survey Team

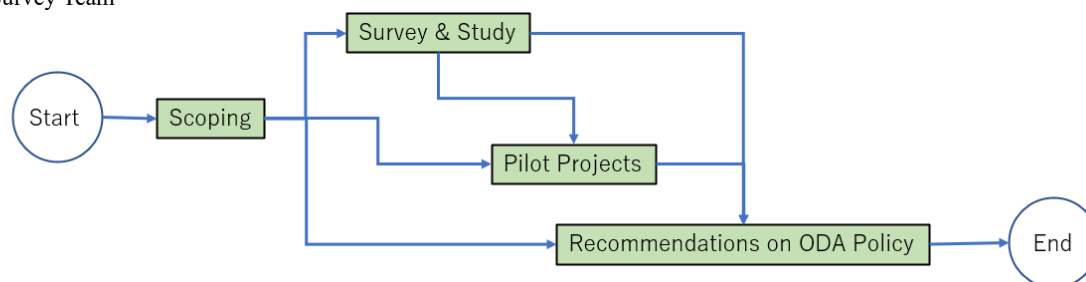
2.2 Overall Structure of the Survey

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

Table 2-2 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
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: Survey Team

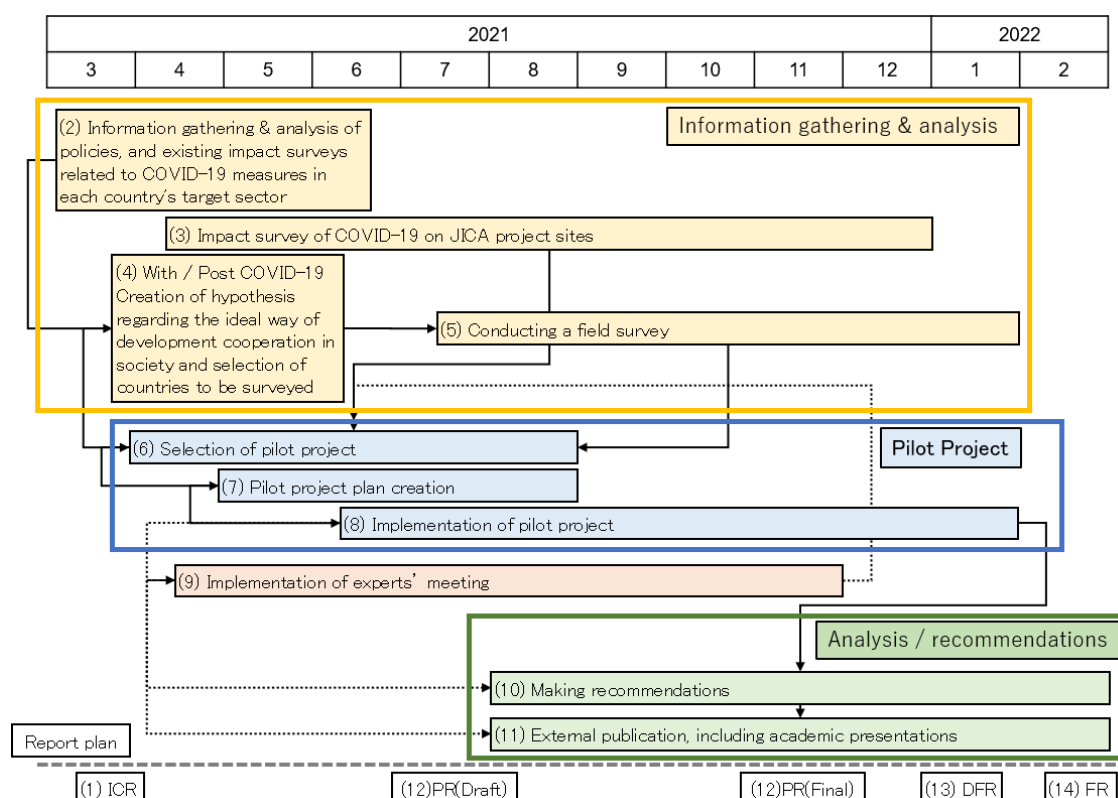


Source: Survey Team

Figure 2-1 Overall Structure of this Survey

2.3 Workflow of Survey Tasks

Figure 2-2 shows the workflow of the survey tasks.



Source: Survey Team

Figure 2-2 Workflow of Survey Tasks

3. Survey Method

3.1 Basic Policy of the Survey

Table 3-1 shows the basic policy applied to this survey.

Table 3-1 Basic Policy of This Survey

No.	Issue	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

3.2 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 3-2 shows the latest sectoral goals and sectoral work scopes.

Table 3-2 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.
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.

No.	Sector	Sectoral Goals
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. •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

3.3 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 3-3 shows the travel restrictions applied during the field survey.

Table 3-3 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 members of the study team infected COVID-19, however those members returned to work after recovery and completed their duty.

Source: Study Team

3.4 Survey Method

Survey method applied in this survey is summarized in Table 3-4.

Table 3-4 Summary of Survey Method

No.	Task	Method of Survey
1	[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	<ul style="list-style-type: none"> Select organizations to be surveyed Data Collection on the Web Distribution and collection of questionnaire Interview by phone-call Online meeting Meeting during field survey
2	[Task 3] Method of Investigating the Impact of COVID-19 on the JICA Project Site	<ul style="list-style-type: none"> Select organizations to be surveyed Data Collection on the Web Distribution and collection of questionnaire Online meeting Hearing by local staff Meeting during field survey
3	[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	<ul style="list-style-type: none"> Select organizations to be surveyed Data Collection on the Web Distribution and collection of questionnaire Interview by phone-call Online meeting Meeting during field survey

Source: Study Team

3.5 Pilot Project

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.

(1) Three Implementation Schemes of Pilot Project

There are three project schemes shown in Table 3-5 for the implementation of the pilot projects. The applicable implementation scheme was confirmed at the project formation stage.

Table 3-5 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 Pilot Project Outline

The project outline shown in the list of pilot project candidate projects, provided by JICA, was organized as the standard form shown in Table 3-6.

Table 3-6 Standard Form of Pilot Project Outline

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 of the pilot project, the Study Team made preliminary evaluation for each candidate based on the evaluation criteria shown in Table 3-7, and the evaluation have been finalized in consultation with JICA.

Table 3-7 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

3.6 Experts Meeting

(1) Experts in This Survey

The experts in this survey are shown in Table 3-8.

Table 3-8 Experts in This Survey

No.	Full Name	Target Field	Affiliation
1	Akio Hosono	Latin America in general / Economic development	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	Faculty of International Studies, Takushoku University, Associate Professor, Former JETRO South American expatriate
3	Tomoyuki Naito	DX / Innovation	Kobe Institute of Computing, Vice President and Specially Appointed Professor
4	Satoshi Sento	Fisheries / regional development	JICA International Cooperation Specialist
5	Norihiro Nishikata	Education	JICA International Cooperation Specialist

Source: Study Team

(2) Achievements of Experts Meeting

Five times of the experts meeting have been held as shown in Table 3-9.

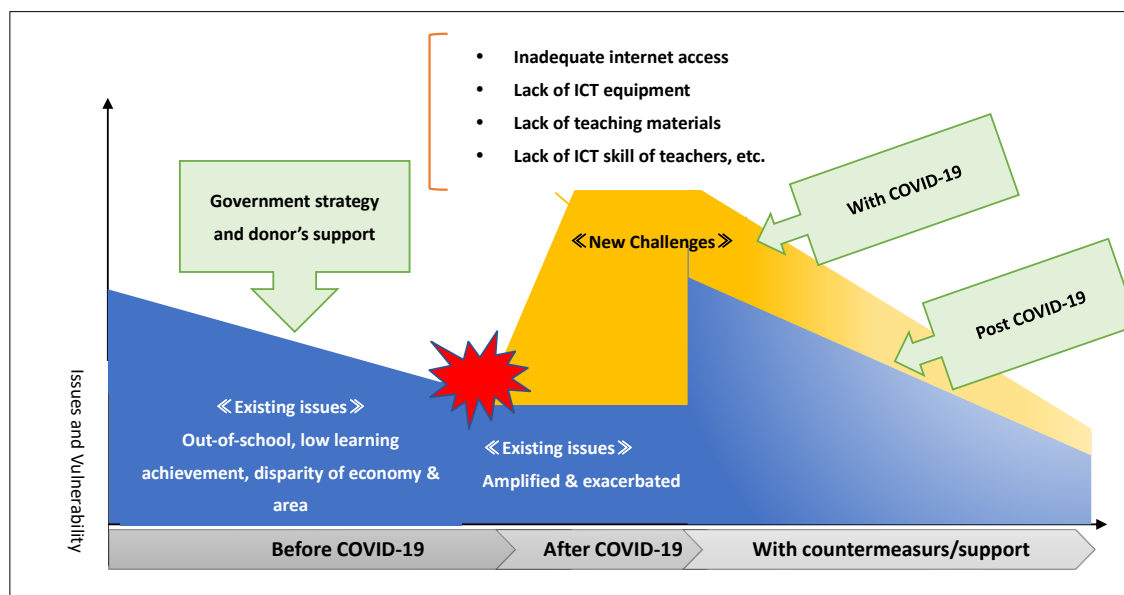
Table 3-9 Experts Meeting held in the Survey

No.	Meeting Name	Meeting Date	Contents of the Meeting
1	Expert Meeting (1)	23 April 2021	[Inception Report] <ul style="list-style-type: none"> • 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)] <ul style="list-style-type: none"> • Progress report of advanced PP business [1st field survey report]
3	Expert Meeting (3)	19 August 2021	[Progress Report (Draft)] <ul style="list-style-type: none"> • 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)] <ul style="list-style-type: none"> • 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] <ul style="list-style-type: none"> • Policy proposal (draft) • Local debriefing session (draft)

Source: Study Team

3.6.1 Procedure of Building Hypothesis for Development Cooperation

Based on the results of detailed survey for selected countries, applying the chronicle model and work steps shown, in Figure 3-1 and Table 3-10 respectively, a hypothesis for development cooperation have been built for each sector.



Source: Study Team

Figure 3-1 Chronicle Model of Building Hypothesis for Development Cooperation

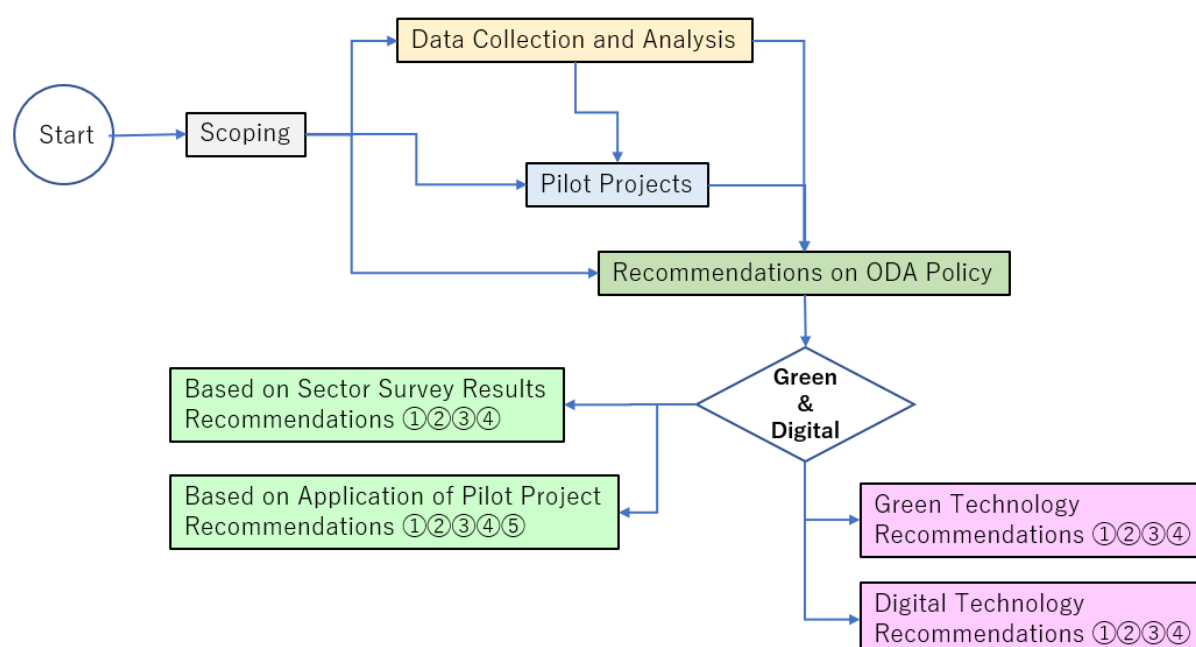
Table 3-10 Work Steps for Building Hypothesis for Development Cooperation

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

Source: Study Team

3.6.2 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 3-1 and Table 3-10 respectively, recommendations for future development cooperation, drafts for each sector and final recommendations as a whole, have been organized shown in Figure 3-2.



Source: Study Team

Figure 3-2 Workflow of Preparation of Recommendations

4. Overview of Central America and Caribbean Region

(1) Economic Index of 23 Countries

Table 4-1 shows economic index of 23 Countries.

Table 4-1 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 : ECLAC

Source: Study Team

(2) Grouping of Target 23 Countries

The countries surveyed can be grouped as shown in Table 4-2 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 4-2 should be used as the baseline for the survey and analysis of the target countries for development cooperation.

Table 4-2 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 4-3 except Mexico and Cuba. Belize belongs to both SICA and CARICOM.

Table 4-3 Regional Organizations

No.	Regional Organization	HQ/ Main Office 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)	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> St Lucia 	Antigua and Barbuda, Dominica, Grenada, St. Christopher Nevis, St Lucia, St Vincent Grenadines

Source: Study Team

5. Summary of Sector Survey

5.1 Overview of Development Status of the Region

(1) Development Status of Central America and Caribbean Region

Prior to the outbreak of COVID-19 pandemic, 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 pandemic 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.

5.2 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 5-1 were selected. Details of selection criteria and procedures are shown in the sectoral reports from Chapter 5 of the main text.

Table 5-1 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

5.3 Detailed Survey by Sector

Table 5-2 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 5-2 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											
	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

5.4 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 3-1 and Table 3-10.

(1) Socio-economic Policy Sector

Table 5-3 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

No.	Item	Socio-economic Policy	
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	Economy and Finance	<ul style="list-style-type: none"> Consideration of new schemes to improve cost efficiency and promote the use of private funds
		Financial Inclusion	<ul style="list-style-type: none"> 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. 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
		Economy and Finance	<ul style="list-style-type: none"> Support for the development of new schemes using private funds Create a system that facilitates the entry of private funds, such as SIBs with pay for success system Support for continuous poverty alleviation and introduction of emerging technologies 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)
		Financial Inclusion	<ul style="list-style-type: none"> Support for the improvement of financial system issues 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.
6	Proposed cooperation strategy and recommendations	Sharing of technical experience in Japan	<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)
		Others	<ul style="list-style-type: none"> Support sustainable and efficient development by Blue economy, anti-sargassum measures, connections with business networks (e.g., IDB)

No.	Item	Socio-economic Policy	
		expanding cooperation with international organizations	Connect America), coordination with international organizations for long-lasting support
		Brokering cross-regional cooperation to enhance competitiveness (further in-depth study)	<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

(2) Healthcare and Nutrition Sector

Table 5-4 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 <ul style="list-style-type: none"> < Central America > <ul style="list-style-type: none"> • Maternal and child nutrition improvement 	<ul style="list-style-type: none"> < Common > <ul style="list-style-type: none"> • Promotion of behavior change for healthy lifestyle • Early detection, follow-up and treatment of health risks
		Health system	<ul style="list-style-type: none"> < Caribbean > <ul style="list-style-type: none"> • Strengthen < Common > <ul style="list-style-type: none"> • Improvement of digital health with base of pyramid (BOP)

No.	Item	Healthcare and Nutrition	
		of inter-regional collaboration	<ul style="list-style-type: none"> • 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

(3) Education Sector

Table 5-5 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)	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	
		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>Intensive, Long-term, and Continuous Measures to Improve Learning Achievement</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>Application of Fundamental and Innovative Technologies and Improvement of School Facilities and Environment</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>Intra-Regional Cooperation and Establishment of a Base in Region</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 Sector

Table 5-6 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.

No.	Item	Agriculture and Rural Development	
		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 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

No.	Item	Agriculture and Rural Development	
			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 5-7 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	1.Large informal sector	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	The limits of economic expansion through the input of labor while productivity growth remains stagnant have become apparent.
		3.Lack of government funding	Lack of support for small businesses and workers affected by the pandemic
		4.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.
4	New issues that emerged during COVID-19	Same as above	
5	Countermeasures (draft)	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
6	Direction and recommendations for development cooperation (draft)	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) • 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)
		2.Stagnation in productivity improvement	
		3.Lack of government funding	<ul style="list-style-type: none"> • Providing stand-by loans in case of a pandemic

No.	Item	Private Sector	
		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 Sector

Table 5-8 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
3	Vulnerabilities Revealed in COVID-19	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 • 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		
6	Direction of development cooperation and Policy recommendations (draft)	Waste management	<ul style="list-style-type: none">Improving management capacity by strengthening administration to realize a recycling-oriented societyRegional cooperation, know-how sharing through South-South cooperation	
		Understanding disaster risk	<ul style="list-style-type: none">ICT utilizationCentralized 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 projectsCapacity 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 resilienceTechnical 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 preparednessPromotion of regional cooperationFostering awareness of crisis management among individuals, companies, and communities	
		Environment	Implementation of concrete measures to address climate change	<ul style="list-style-type: none">Technical and financial cooperation necessary to achieve carbon neutralitySupport for the introduction of renewable energy (geothermal, etc.)Consolidation and management of basic data to achieve zero emissionsImplementation 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 conservationTechnical 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 TourismImprove legal system for management of nature reserves and strengthen management capacitySurveys and resource management of ecosystems, vegetation distribution, wildfires, etc. using digital technology such as satellite imagery dataImprove legal system for management of nature reserves and strengthen management capacity
		Disaster Management	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 economyRealization of 3Rs and establishment of sanitary waste flow through capacity building of local governmentCapital investment, technological innovation (introduction of recycling facilities, autoclaves, waste power generation, etc.)Promotion of private investment
			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

No.	Item	Environment and Disaster Management	
			prevention such as river improvement) • Conducting disaster prevention education
		Improvement of local disaster prevention capacity	• 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 Sector

Table 5-9 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	• Opaque election process/elections with no guarantee of competition • Freedom of speech and media is not guarantee
		Administrative functions	• 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	• 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	• 'Non-punishment' for crime • Insufficient capacity of legal professionals • Insufficient number of legal professionals
		Corruption	• 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	Central America • 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 Caribbean • 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 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	• 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	• The provision of various government services has been suspended or delayed • E-government development has not been sufficiently carried out
		Rule of law	• Suspension or delay of judicial services
		Corruption	• Fraud in public procurement of COVID-19 related goods occurred (skipping the existing checking process due to emergency, etc.)

No.	Item	Governance and Citizen Security	
		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>E-government development</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>Empowerment of local government</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>Control of corruption</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
6	Development cooperation strategy and policy recommendation (proposal)	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>Grand design for digitization of the entire country</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

No.	Item	Governance and Citizen Security	
			collaboration, improve efficiency of administrative services, and enhance transparency and trust Cooperation implementation based on the above <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	Eradicate the deep-rooted culture of impunity <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 Sector

Table 5-10 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.
		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	
6	Direction and Recommendations for Development Cooperation (Draft)	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).
	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. • 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.
	Direction and Recommendations for Development Cooperation (Draft)	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.

No.	Item	Digital Innovation
		<ul style="list-style-type: none"> 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 Sector

Table 5-11 Sector-based Hypotheses and Recommendations (Draft) for Development Cooperation (Infrastructure and Energy)

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.• 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• 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

No.	Items	Infrastructure and Energy		
7	Vulnerabilities Revealed in COVID-19		<ul style="list-style-type: none"> • 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. 	
		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

(10) Tourism Sector

Table 5-12 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

No.	Item	Tourism	
		<ul style="list-style-type: none"> • 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 • 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	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 Sector

Table 5-13 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

No.	Item	Public-Private-Partnership (PPP)	
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 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
		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.

No.	Item	Public-Private-Partnership (PPP)
	Support for Digital Technology Utilization and Smart City Formation	• Support for the formation of smart cities and the application of digital technologies

Source: Study Team

5.5 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 5-14.

Table 5-14 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 5-15.

Table 5-15 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
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

Project	Nos of Sampling	Interviewee Surveyee	Method	Content
Guatemala	1st Questionnaire Police :118 Resident :129	• Police and resident (55 districts)	Questionnaire	Changes in Citizen Security due to COVID-19 pandemic
	2nd Questionnaire Police: 122 Resident: 131	• Police and resident (55 districts)	Questionnaire	Changes in Citizen Security due to COVID-19 (especially focusing on "invisible crime")
JCC: Joint Coordination Committee				

Source: Study Team

(3) Summary Results of Impact Survey

Table 5-16 summarizes the results of the impact survey.

Table 5-16 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. 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.

Project	Summary of Survey Results
	<Recommended Countermeasure in With /Post COVID-19 Society> • To improve the stable supply of fish and shellfish, provide equipment, and promote fish food education.
Guatemala	<Effects of COVID-19 revealed in Survey> • 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> • 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> • To implement measures to prevent "invisible crimes" (strengthening consultation counters, strengthening patrols by local police).

Source: Study Team

5.6 Pilot Projects

(1) Selection of the Pilot Projects

Pilot projects shown in Table 5-17 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 5-17 Selected Pilot Project

No.	Project name	Implementation Body	Project Scope
1	Dominican Republic Telemedicine	• 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	• 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	• Synspective Inc.	To introduce LDM satellite technology to local government and let them understand the historical ground changes visually.
4	St Lucia OVOP	• JAHNUS. Inc.	Introduction of OVOP concept and methodology for utilizing local products
5	Jamaica Tourism Resilience	• 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	• 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	• Fundación Ciudad del Saber	Holding an online seminar for gathering information for building good relationships between Japanese companies and Panama companies and promote open innovation.
8	Guatemala Citizen Security ICT	• JICA Study Team	Introduction of Japanese innovative Citizen Security IC 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 5-18.

Table 5-18 Summary of Results of Pilot Projects

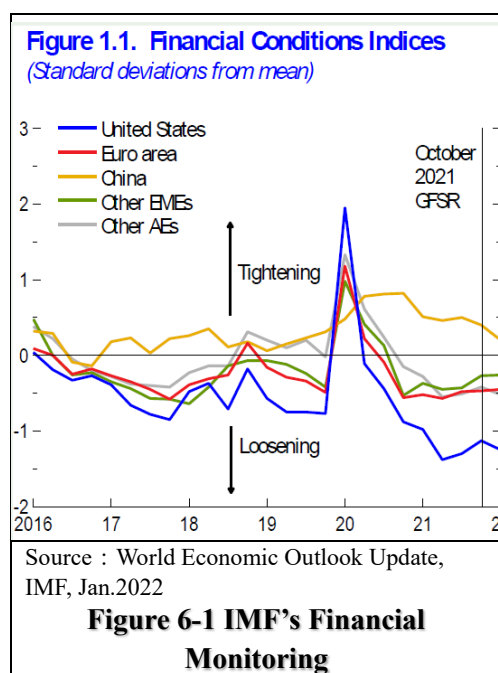
No.	Project	Before Project	Achievement	Possible Future Activities
1	Dominican Republic Telemedicine	Due to the lack of communication tools for doctors and out-of-hospitals, the burden on a doctor is getting larger.	<ul style="list-style-type: none"> The application of JOIN apps enables the transmission 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	Utilization of Satellite images to analyze crustal movements (ground subsidence, landslides, etc.) is only knowledge base, not be implemented in practice.	<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 Synsperspective 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	Saint 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 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 the Caribbean countries
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 project in such country.

No.	Project	Before Project	Achievement	Possible Future Activities
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"> Through Seminars, questionnaire surveys and hearings, it is confirmed that the collaboration between Japanese and Panama companies were to be promoted for both sides. 	<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 Citizen 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

6. 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.



6.1 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 6-1 overviews the current observations of world socio-economic transformation.

Table 6-1 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 Countries)

In Central America and the Caribbean, as of February 2022, some distinct points that differed from the world situation were observed (Table 6-2). 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 6-2 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.
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

6.2 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 6-3, is proposed for further preparation of overall recommendations in this survey.

Table 6-3 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
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

6.3 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 6-4 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 6-4 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) 	—	—	—	⊙	○	○	△
2	Healthcare and Nutrition	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 	—	⊙	○	○	○	○	○
3	Education	Health emergency response	<ul style="list-style-type: none"> Development of business continuity plan (BCP) at PHC level 	—	—	—	—	—	—	—
		Intensive, long-term, and continuous measures to improve learning achievement	<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 	—	⊙	○	○	○	○	○

No.	Sector	Recommendations (Draft) for Development Cooperation		Green & Digital		Support to Sector				Pilot Prj. Possibility
				Green	Digital	Infra	Knowledge	HR	Legal	
4		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.	—	○	◎	◎	◎	○	◎
	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 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.•	◎	◎	○	◎	◎	○	△

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"> • 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 	—	—	—	○	—	◎	—
		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) 	—	—	—	○	○	—	○
6	Governance and Citizen Security	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 • Effective use of data to promote public participation and public-private collaboration, improve efficiency of administrative services, and enhance transparency and trust 	—	◎	○	◎	◎	○	○
		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 	—	◎	—	◎	◎	◎	○

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">Building a system to protect the safety of reporters and witnesses (protection from reprisals)Support victims at the grassroots level							
		Improvement of Citizen Security	<ul style="list-style-type: none">Improvement of Citizen Security for promoting the private investment and tourism by several possible meansExtend on-going “community police model” to other countries in the region.	—	○	○	◎	◎	○	◎
		Implementation of concrete measures to address climate change	<ul style="list-style-type: none">Technical and financial cooperation necessary to achieve carbon neutralitySupport for the introduction of renewable energy (geothermal, etc.)Consolidation and management of basic data to achieve zero emissionsImplementation 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 conservationTechnical 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 TourismImprove legal system for management of nature reserves and strengthen management capacitySurveys and resource management of ecosystems, vegetation distribution, wildfires, etc. using digital technology such as satellite imagery dataImprove 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 economyRealization of 3Rs and establishment of sanitary waste flow through capacity building of local governmentCapital investment, technological innovation (introduction of recycling facilities, autoclaves, waste power generation, etc.)Promotion of private investment	◎	△	◎	◎	◎	◎	◎
		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.	Sector	Recommendations (Draft) for Development Cooperation		Green & Digital		Support to Sector				Pilot Prj. Possibility
				Green	Digital	Infra	Knowledge	HR	Legal	
8	Digital and Innovation		<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 	○	○	○	◎	◎	—	◎
		Policy formulation	<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. 	—	◎	—	◎	◎	△	△
		Training for IT human resources	<ul style="list-style-type: none"> Formulate digital human resource policies that are appropriate for the new era. 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. 	—	◎	○	◎	◎	△	○
		infrastructure improvement	<ul style="list-style-type: none"> 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. 	—	◎	—	◎	◎	—	◎

No.	Sector	Recommendations (Draft) for Development Cooperation		Green & Digital		Support to Sector				Pilot Prj. Possibility
				Green	Digital	Infra	Knowledge	HR	Legal	
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. 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 	—	○	—	⊙	⊙	△	⊙

No.	Sector	Recommendations (Draft) for Development Cooperation		Green & Digital		Support to Sector				Pilot Prj. Possibility
				Green	Digital	Infra	Knowledge	HR	Legal	
		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 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.	—	—	—	○	○	◎	◎
		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	—	—	—	○	○	—	△

No.	Sector	Recommendations (Draft) for Development Cooperation		Green & Digital		Support to Sector				Pilot Prj. Possibility
				Green	Digital	Infra	Knowledge	HR	Legal	
		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	◎	◎	○	○	○	△	◎
◎ : Strong relation, ○ : Good relation, △ : Possible Relation, — : No relation/Unknow Note: In case a technical cooperation scheme is recommended, it is categorized as Pilot Project										

Source: Study Team

6.4 Records of JICA's Support in the Region

Table 6-5 shows the record of JICA's support for Central America and the Caribbean countries.

Table 6-5 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

6.5 International and Regional Organizations in the Region

International and regional organizations in the Central America and the Caribbean region is tabulated in Table 6-6 .

Table 6-6 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	CODICADER				CCP		COMTECA COCESNA			
	Nicaragua	CCJ							CCHAC		COCATRAM		
	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

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

6.6.1 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.

6.6.2 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.