

## 12. Fisheries Value Chain Development

### 12.1 Fisheries Value Chain Development

#### 12.1.1 Outline of the Study

##### (1) Survey Scope

The work shown in Table 12-1 was conducted through desktop research, interviews, and field survey to formulate a development scenario and future Japan International Cooperation Agency (JICA) cooperation scenarios for improving the fisheries value chain.

**Table 12-1 Sector Scope of Work (Fisheries Value Chain Development)**

No.	Task	Scope of Work
1	Study Targets	<p>(6 countries in the Eastern Caribbean region) To identify challenges in the value chain of fishery products, which are for export, and the hotel, restaurant, and cafe (HoReCa) sector. To formulate a development scenario and JICA's future cooperation scenario based on the identified challenges.</p> <p>(Jamaica) To clarify issues surrounding the Jamaican fisheries industry and collect basic information that will contribute to the consideration of future JICA cooperation.</p>
2	Study Scope	<p>(Six countries in the Eastern Caribbean region) Formulate a comprehensive development scenario and JICA's future cooperation scenario for the fisheries value chain improvement of six countries (Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines).</p> <p>(Jamaica) Identify issues surrounding the Jamaican fisheries industry and propose cooperation ideas.</p>
3	Task 2	<p>(Six countries in the Eastern Caribbean region) &lt;Collection and analysis of basic information about the fishery sector of six countries&gt; International statistics data on the fishery sector, fishery development plan of the regional organization, statistics data and annual report, report of ongoing projects carried out by government and development partners. &lt;Selection of target countries and products for a value chain survey&gt; Select target countries and products for general information (value chain) collection based on fishery statistics. &lt;Online interview survey&gt; An online interview/questionnaire survey for the regional organization.</p> <ul style="list-style-type: none"> <li>Region-wide issues/measures on the fisheries value chain.</li> <li>Region-wide policy and plan on the fisheries value chain.</li> </ul> <p>(Jamaica) &lt;Collection and analysis of basic information about the fishery sector&gt; Fishery policy, Fishery statistics, etc.</p>
4	Task 3	<p>(Six countries in the Eastern Caribbean region) &lt;Field survey (1): Information collection and analysis on the fisheries overview&gt; Meetings with target countries (in-person/online), questionnaire survey, site visits, interview survey, etc. &lt;Field survey (1): Preparation of a draft development scenario and JICA's future cooperation scenario&gt; Preparation of a draft development scenario and JICA's future cooperation scenario &lt;Field survey (2): Explanation and modification of the scenario&gt; Modification of scenarios based on the meetings (in-person and online) and questionnaire survey to the target countries.</p> <p>(Jamaica) &lt;Field survey (2): Information collection and analysis on the fisheries overview&gt; Meetings with target countries, site visits, interview survey, etc.</p>

No.	Task	Scope of Work
		<Field survey (2): Drafting and modification of a cooperation proposal> Drafting of a cooperation proposal based on the information collection and analysis. Modification of the proposal based on the feedback from the target country
5	Task 8	<Finalization of the scenario> Finalization of the scenario based on the feedback from relevant governmental organizations and JICA

Source: JICA Study Team

## (2) Selection of Target Countries for Fisheries Value Chain Study

The Eastern Caribbean Region and Jamaica were selected as target countries of the survey on Fisheries Value Chain Development. The reasons for the selection are as follows:

### 1) Eastern Caribbean Region

In the Country Assistance Policy of the Ministry of Foreign Affairs, the six Eastern Caribbean countries of Antigua and Barbuda (ATG), Dominica (DMA), Grenada (GRD), St. Kitts and Nevis (KNA), St. Lucia (LCA), and St. Vincent and the Grenadines (VCT) list "Fisheries" as a priority area<sup>1</sup>. In these six countries, JICA grant assistance for fisheries has been carried out for many years, and the technical project "The Project for Strengthening Sustainable Use and Management of Coastal Fisheries Resource in the CARICOM Countries<sup>2</sup>" is being implemented, as of January 2023.

With this background, as an extension of the ongoing support over the years, forming a project proposal that includes the downstream segment of the fisheries value chain could contribute to building the industrial base of the fisheries industry, strengthening food security, and contributing to social and economic stability.

### 2) Jamaica

During the visit of Jamaican government officials to Japan in October 2022, JICA indicated the possibility of cooperation in the fisheries sector for the country. JICA decided to add Jamaica as a new target country for this sector and to collect basic information for preparing a cooperation proposal.

The Study Team does not narrow down the fishery products as a survey target. The target is a broad cooperation proposal, which is not limited to the fisheries value chain development.

## 12.1.2 Overview of Fisheries Sector in the Caribbean Region

### (1) Outline of Fisheries Sector in the Caribbean Region

Most of member countries of the Caribbean Community (CARICOM) are island countries. For these countries, fishery is an important source of animal protein as well as a crucial source of livelihood (especially capture fishery) for coastal communities. The fisheries industry is in a crucial position in the society and economy of the region.

The most recent 10-year average (2011-2020) of marine capture fisheries production for each country in the region shows that Guyana and Suriname, located on the South American continent, are followed

<sup>1</sup>Ministry of Foreign Affairs (Japan) website < [https://www.mofa.go.jp/mofaj/gaiko/oda/seisaku/kuni\\_enjoyo\\_kakkoku.html](https://www.mofa.go.jp/mofaj/gaiko/oda/seisaku/kuni_enjoyo_kakkoku.html) > (viewed May 2022)

<sup>2</sup>JICA website < <https://www.jica.go.jp/oda/project/1802098/index.html> > (viewed August 2022)

by Haiti, Jamaica, and other Caribbean countries (Table 12-2).

**Table 12-2 Marine Capture Fisheries of the Caribbean Countries (Live Weight)**

	Country/Region	10-year average (2011-2020) of marine capture fisheries production
1	Guyana	41,749 ton
2	Suriname	38,943 ton
3	Haiti	18,132 ton
4	Jamaica	15,322 ton
5	Trinidad and Tobago	12,992 ton
6	Bahamas	11,899 ton
7	Belize	5,177 ton
8	Antigua and Barbuda	4,162 ton
9	Grenada	2,713 ton
10	Turks and Caicos Islands	2,167 ton
11	St. Lucia	1,998 ton
12	St. Vincent and the Grenadines	1,865 ton
13	Barbados	1,621 ton
14	Anguilla	1,105 ton
15	St. Kitts and Nevis	818 ton
16	Dominica	725 ton
17	Montserrat	30 ton

Source: CRFM Statistics and Information Report for 2020

Aquaculture is still in a developing stage compared to fisheries in the region. Aquaculture is practiced in Guyana, Suriname, Haiti, Belize, and Jamaica, but the annual production volume fluctuates.

## (2) Caribbean Regional Fisheries Mechanism (CRFM)

### 1) Organization Overview

The CARICOM officially inaugurated the Caribbean Regional Fisheries Mechanism (CRFM) on 27 March 2003. The CRFM aims to promote the development, conservation, and management of local fishery resources responsibly and sustainably; and to improve the quality of life and livelihood of people dependent on fishery resources.

The member countries are Anguilla, Antigua and Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, and Turks and Caicos Islands.

The CRFM implements various projects in collaboration with donors and serves as a coordinating body among member countries.

### 2) Fisheries Strategy of the CRFM

CRFM developed the CRFM Strategic Plan 2022-2030 as a regional fisheries strategy in 2021. Table 12-3 shows the structure of the strategic plan.<sup>3</sup>

**Table 12-3 Composition of the CRFM Strategic Plan 2022-2030**

<b>Vision</b>	Effective management, conservation and sustainable use of fisheries and aquaculture to maximise social and economic benefits in the CRFM Member States.
<b>Mission</b>	Promote and facilitate responsible and sustainable use of the region's fisheries and other living aquatic resources for improved food security, livelihood, and welfare of the people of the region.

<sup>3</sup>CRFM (2021) "CRFM Strategic Plan 2022-2030"

<b>Ultimate Outcomes</b>	<ul style="list-style-type: none"> <li>▪ Sustainable growth for all CARICOM Member States</li> <li>▪ Reduced environmental vulnerability</li> <li>▪ Improved quality of life for all the Community</li> <li>▪ An integrated Community with equity for all</li> </ul>
<b>Strategic Goal</b>	<ol style="list-style-type: none"> <li>1. Sustainable use and management of fisheries and aquaculture resources in the Caribbean region.</li> <li>2. Improvement of the welfare and sustainable livelihoods of fishing and aquaculture communities in Member States.</li> <li>3. Contribute to the provision of sufficient, safe, and nutritious fish and seafood that meets the dietary requirements for an active and healthy life of Member States' populations.</li> <li>4. Promote development of a regional fishery sector that is resilient to climate change, ocean acidification, natural disasters, and external shocks; and, enhanced through comprehensive disaster risk management and recovery arrangements.</li> </ol>
<b>Functional Goal</b>	Implement good governance practices for the organisation, through emphasis on supporting implementation of a results-oriented management philosophy, approaches, and tools.

Source: CRFM Strategic Plan 2022-2030

Of the strategic goals outlined in this strategic plan, the most relevant to the scope of this study (six Eastern Caribbean countries) is "3. Contribute to the provision of sufficient, safe, and nutritious fish and seafood that meets the dietary requirements for an active and healthy life of Member States' populations".

The two strategic objectives and sub-items that comprise Strategic Goal 3 are shown in Table 12-4.

**Table 12-4 Composition of Strategic Goal 3 of the CRFM Strategic Plan 2022-2030**

<b>Strategic Objectives</b>	
<b>3.1 PROMOTE MARKET DEVELOPMENT AND SAFE CONSUMPTION ALONG THE FISHERIES VALUE CHAINS</b>	
Support fisheries and aquaculture product development through market promotion, value-addition, branding / certification, and enhanced access to low-credit financing mechanisms. Further development, promulgation, and implementation of a Caribbean Regional Fisheries Sanitary and Phytosanitary (SPS) Framework. Promote establishment of a CRFM Commercial Research and Innovation Centre. Develop and adopt protocol under the Common Fisheries Policy to address the role of fish and seafood in contributing to food and nutrition security, including reducing incidences of non-communicable diseases in the region.	
<b>3.2 PROMOTE IMPROVED ACCESS AND CONSUMPTION OF NUTRITIOUS FISH AND SEAFOOD</b>	
Develop innovative seafood products with improved nutritional value. Promote research that will maximise the potential of living aquatic animals and plants to influence nutrition outcomes. Promote nutrition education and awareness programmes to improve understanding of the nutritional value, diverse fish / seafood diets and appropriateness for different age groups. Strengthened capacity for collaborative planning and interaction between and among national and regional agencies responsible for fisheries and food and nutrition security. Improved consumer access to affordable and nutritious fish and seafood. Support transition to and expansion of e-commerce in the fisheries sector.	

Source: CRFM Strategic Plan 2022-2030

The strategic goal and objectives focus on supplying safe food and nutritious fishery products through value chain development. Although the scope of this study (six Eastern Caribbean countries) is fisheries value chain development with a focus on export products and the HoReCa sector, the prerequisites are food security, improved nutrition, and the supply of protein sources to the local population. Therefore, the compatibility between this study scope (six Eastern Caribbean countries) and the CRFM strategic plan is high.

### 12.1.3 Overview of Fisheries Sector in Focus Countries and Development and Cooperation Scenario

#### (1) Six Eastern Caribbean Countries

#### 1) Overview

#### a) Fisheries GDP in the Six Focus Countries

Table 12-5 shows the contribution of the fisheries industry to each country's GDP in 2020. Although Antigua and Barbuda and Grenada show relatively high values (around 1%), the rest of the countries remain at around 0.5%.

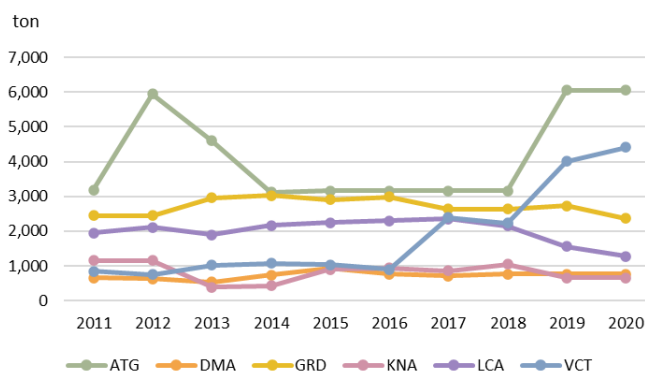
**Table 12-5 Contribution of the Fishery Sector to the GDP of Each Country (2020)**

Country Name	ATG	DMA	GRD	KNA	LCA	VCT
% of fishery GDP	0.93%	0.34%	0.94%	0.57%	0.42%	0.63%

Source: CRFM Statistics and Information Report for 2020

#### b) Annual Variation in Fisheries Production of the Six Focus Countries

The annual variation of each country's fishery production over the past ten years is shown in Figure 12-1. The volume for 2019 and 2020 are projected values. Throughout the decade, Antigua and Barbuda and Grenada have shown relatively high values. On the other hand, Dominica and St. Kitts and Nevis show low values throughout the period covered. St. Vincent and the Grenadines shows a distinctive trend, with a sharp increase in catch amount after 2016 and its production exceeded Grenada after 2019.



\*Annual marine capture fish production (live weight in tonnes)

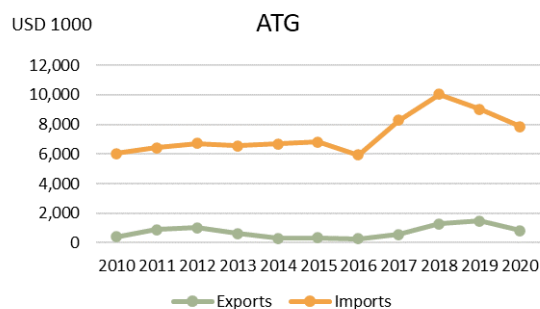
Source: CRFM Statistics and Information Report for 2020

**Figure 12-1 Annual Variation in Fishery Production of the Six Focus Countries**

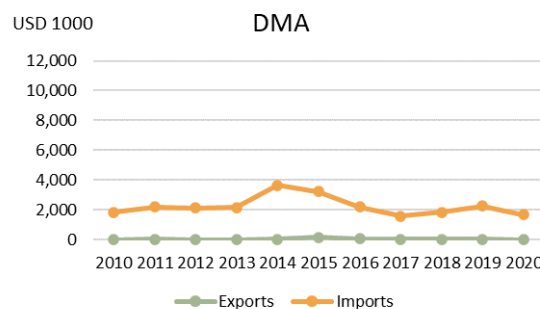
#### c) Annual Changes in the Value of Exports and Imports in the Six Focus Countries

Figure 12-2 through Figure 12-7 show the annual fluctuation of import and export value of fishery products in each country over the past ten years. Imports exceeded exports in all countries, with Antigua and Barbuda and St. Lucia showing particularly high import values compared with the other countries. St. Lucia has very few amounts of exports, indicating that its trade pattern is import-dependent. Turning to exports, Grenada has been relatively high throughout the decade, while St. Vincent and the

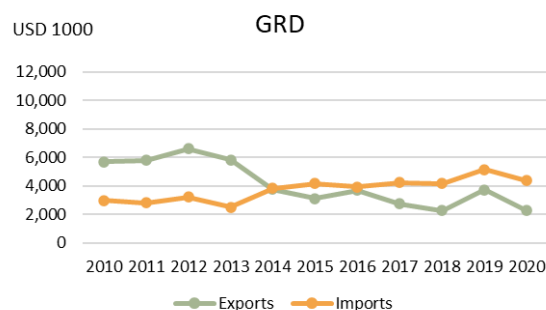
Grenadines has been on the rise since 2016.



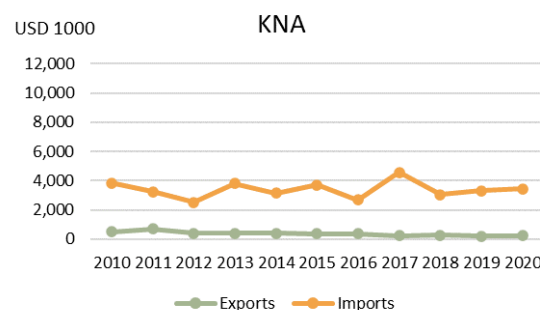
**Figure 12-2 Annual Fluctuations in the Value of Fishery Imports and Exports in Antigua and Barbuda**



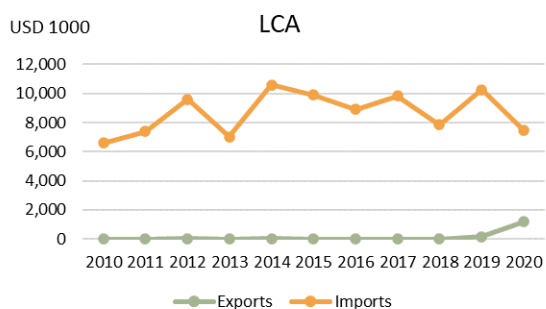
**Figure 12-3 Annual Fluctuations in the Value of Fishery Imports and Exports in Dominica**



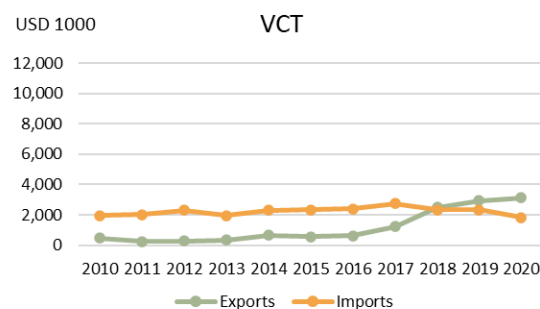
**Figure 12-4 Annual Fluctuations in the Value of Fishery Imports and Exports in Grenada**



**Figure 12-5 Annual Fluctuations in the Value of Fishery Imports and Exports in St. Kitts and Nevis**



**Figure 12-6 Annual Fluctuations in the Value of Fishery Imports and Exports in St. Lucia**



**Figure 12-7 Annual Fluctuations in the Value of Fishery Imports and Exports in St. Vincent and the Grenadines**

Source: FishStatJ (Release: 4.02.04) and FAO Statistical Query Panel (extracted January 2023)

**d) Major Fish Species and General Issues in the Six Focus Countries (Literature Review)**

According to the Food and Agriculture Organization (FAO) GLOBEFISH Market Profile - 2019, the major products of each country can be organized as shown in the table below.<sup>4</sup> General issues from the literature review for some target countries and target fish species are also summarized in the table (the

<sup>4</sup>FAO.GLOBEFISH Market Profile - 2019 < <https://www.fao.org/in-action/globefish/countries/en/> >



## e) Challenges on the Fisheries Value Chain Development in the Focus Countries

### Regional Issues

Based on the received questionnaire responses from the CFRM Secretariat (Eastern Caribbean Office: St. Vincent and the Grenadines) and from additional information collection, the problems/issues on the fisheries value chain in the six focus countries were summarized. The following four main problems/issues were identified (Table 12-7).

**Table 12-7 Major Regional Problems/Issues on the Fisheries Value Chain Development**

No.	Problems/Issue
1	Insufficient establishment of sanitary and phytosanitary measures (SPS) standards and procedures
2	Insufficient regional coordination on SPS standards
3	Insufficient establishment of a traceability system for fishery products
4	Inadequate fisheries inspection capacity

Source: JICA Study Team based on information gathered from CRFM.

An overview of these problems/issues suggests that the emphasis is on seafood safety. Also, SPS and traceability systems may be keywords in particular. Table 12-8 below is the summary of required measures for each problem/issue based on CRFM's views.

The term sanitary and phytosanitary measures (SPS) as used in this context is derived from the "Agreement on the Application of Sanitary and Phytosanitary Measures" contained in the World Trade Organization (WTO) Agreement and is used to indicate the food safety assurance for all stages of the fisheries value chain. In other words, it is not limited to imports and exports, but also includes the perspective of protecting public health with an analysis of hazard factors in the domestic distribution of fishery products.

**Table 12-8 Summary of Major Regional Problems/Issues in the Fisheries Value Chain**

No.	Problems/Issue	Summary
1	Insufficient establishment of SPS standards and procedures	The actors on the value chain do not have sufficient knowledge and expertise on SPS measures, and sanitary measures for fishery products are not well practiced. In solving the problem, technical capacity building related to fishery product handling and general knowledge enlightenment related to SPS is required.
2	Insufficient regional coordination on SPS standards	It is necessary to strengthen the inter-regional cooperation among national fishery bureaus and entities implementing SPS measures, thereby raising the level of sanitary management of regional fishery products. Capacity building of national administrators related to SPS, including fisheries officers, is essential.
3	Insufficient establishment of a traceability system for fishery products	Lack of logistical or commercial recording system in place for each stage in the value chain of fishery products, making it difficult to accurately identify the cause of harm in the event of health hazards or other sanitary problems. Establishing the traceability system by each country's administration and disseminating the measures/procedures to be followed by each actor on the value chain is necessary.
4	Inadequate fisheries	Inspection systems for SPS measures in each country have not been sufficiently

#### economic\_Fishery\_Performance\_Indicators

- The Food and Agriculture Organization of the United Nations. (2022, January 3). Sustaining the Tuna Value Chain in Grenada. Bridgetown, Barbados. Retrieved from [https://ab.gov.ag/pdf/Tuna\\_Value\\_Chain\\_Grenada.pdf](https://ab.gov.ag/pdf/Tuna_Value_Chain_Grenada.pdf)
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- World Integrated Trade Solution. (n.d.). St. Lucia Fish; fillets, frozen imports by country in 2019. Retrieved from WITS: <https://wits.worldbank.org/trade/comtrade/en/country/LCA/year/2019/tradeflow/Imports/partner/ALL/product/030420#>



No.	Problems/Issue	Summary
	inspection capacity	established. Since this problem/issue is categorized into inspection capacity in terms of facilities and equipment and in terms of the skills and knowledge of administrative officials responsible for inspections, it is necessary to resolve the problem/issue from both aspects.

Source: JICA Study Team based on information gathered from CREM.

The following is a country-by-country summary of problems/issues related to the fisheries value chain development in the five focus countries, based on the responses to a simple questionnaire received from the five countries, excluding Grenada, which is under reorganization.

### Antigua and Barbuda

There are five main problems/issues: (1) the need to address ciguatera poisoning related to fresh fish; (2) high production costs as a barrier to value addition; (3) the need to promote fishery development (the need to diversify fish species); (4) the need to develop domestic markets (strengthen competitiveness); and (5) the need to develop infrastructure for SPS compliance.

Table 12-9 below outlines problems/issues (1) through (4) and the measures to address them (except (5)).

**Table 12-9 Problems/Issues and Measures of the Fisheries Value Chain Development in Antigua and Barbuda**

No.	Problems/Issue	Outline and Measures to be Taken
1	Need to address ciguatera poisoning related to fresh fish	Ciguatera toxins can be found in tropical marine fish, and ingestion of them causes serious concern for human health. It is a serious problem particularly in the Northeast Caribbean, including Antigua and Barbuda. The lack of a rapid and effective testing method to detect ciguatera-toxic seafood will harm the entire supply chain. The development and implementation of a monitoring program are required since the method of risk avoidance relies on customary knowledge and information (specific fish species and sea areas) of fishers. Specifically, the collection of samples and investigation of ciguatera toxin content for ciguatera-poisoned fish, establishing a testing system to promptly identify the species of fish that is the likely cause of food poisoning when it occurs, and measures to widely disseminate the results of testing and investigation to the public.
2	High production costs as a barrier to value addition	Focusing on value-added products (dress, steaks, fillets, etc.) of demersal fish species such as snapper and grouper, and marketing them to high-end domestic hotels and restaurants, as well as to niche international markets, is one of the measures to address the problem/issues. (This measure is also common to Problem/Issue No. 4)
3	Need to promote fishery development (the need to diversify fish species)	The fishery development for large migratory fish and other species does not proceed due to the preference trend for reef fish by domestic consumers. As a solution, food festivals and other events to promote the consumption of large migratory fish and continuous awareness activities for consumers through seafood marketing campaigns are required. Fish Aggregating Device (FAD) development through the support for strengthening the FAD Fishers Association also contributes to the problem/issue. (This measure is also common to Problem/Issue No. 4)
4	Need to develop domestic markets (strengthen competitiveness)	(See problems/issues No. 2 and No. 3)

Source: JICA Study Team based on information gathered from the fishery authority of Antigua and Barbuda

### Dominica

There are five main problems/issues: (1) the need for capacity building of small-scale fishers on fish handling techniques; (2) lack of personnel in the fishery authority to provide training in post-harvest fish handling to fishers; (3) lack of easy access to markets for high-value-added fishery products; (4) the need to improve fishing vessels to maintain the freshness (use of appropriate ice) of seafood after the catch; and (5) inadequate basic facilities at landing sites (ice, cold boxes, water, cutting boards for

processing, and seafood sales outlets that comply with sanitary standards).

Table 12-10 below outlines problems/issues (1) through (4) and the measures to address them (except (5)).

**Table 12-10 Problems/Issues and Measures of the Fisheries Value Chain Development in Dominica**

No.	Problems/Issue	Outline and Measures to be Taken
1	Need for capacity building of small-scale fishers on fish-handling techniques	Fishers do not have opportunities to receive adequate training and education on maintaining quality during and after the catch. Insufficient human resources and technology of the fishery authority, the responsible organization for conducting training and training programs, are also noted. Strengthening the capacity of the fishery authority to conduct training is required.
2	Lack of personnel in the fishery authority to provide training in post-harvest fish handling to fishers	
3	Lack of easy access to markets for high-value-added fishery products	Exports to the North American market are expected for fresh fish such as tunas and dolphinfish, but there is a shortage of air cargo flights. Negotiations with the airlines are required.
4	Need to improve fishing vessels to maintain the freshness (use of appropriate ice) of seafood after the catch	Some fishing vessels are not equipped with proper fish storing facility. In most cases, fishers do not have the funds to procure cold boxes or retrofit existing fishing vessels. The establishment of financial systems such as loan programs and installment payment programs is required.

Source: JICA Study Team based on information gathered from the fishery authority of Dominica

### St. Kitts and Nevis

There are four main problems/issues: (1) inadequate quality control during post-harvest processing; (2) the need to develop human resources with a focus on the processing segment; (3) the need for distribution development of the fishery products; and (4) the need for cold chain implementation.

Table 12-11 below outlines problems/issues (1) through (3) and the measures to address them (except (4)).

**Table 12-11 Problems/Issues and Measures of the Fisheries Value Chain Development in St. Kitts and Nevis**

No.	Problems/Issue	Outline and Measures to be Taken
1	Inadequate quality control during post-harvest processing	Training on catch handling and post-harvest processing is necessary for fishers, including gutting, bleeding, and ice-cooling. Entering low-quality fishery products into the supply chain is prevented through these practices. Another measure is the introduction of cold boxes and training for personnel involved in quality inspections.
2	Need to develop human resources with a focus on the processing segment	Training for seafood inspection and grading for seafood processors is needed, as it is noted that existing quality control methods during processing have problems/issues. Standard operating procedures (SOPs) based on best practices should be developed and refined to establish and implement SPS protocols.
3	need for distribution development of the fishery products	Carrying out the distribution survey, evaluating the existing distribution network, and creating a distribution development plan is required since logistics related to the distribution of fishery products are undeveloped.

Source: JICA Study Team based on information gathered from the fishery authority of St. Kitts and Nevis

### St. Lucia

There are five main problems/issues: (1) the need to establish national safety standards and SPS measures for fishery products; (2) the need for distribution development and market development; (3) the need to strengthen institutional aspects of value chain development; (4) the need to develop a traceability system; and (5) the need to foster a hygiene concept.

Table 12-12 below outlines problems/issues (1) through (5) and measures to address them.

**Table 12-12 Problems/Issues and Measures of the Fisheries Value Chain Development in St. Lucia**

No.	Problems/Issue	Outline and Measures to be Taken
1	Need to establish national safety standards and SPS measures for fishery products	The fundamental challenge is the absence of a national policy for SPS in St. Lucia. The development of the SPS policy for fisheries and aquaculture products is needed.
2	Need for distribution development and market development.	Insufficient cold storage at landing sites, undeveloped distribution means of fishery products, undeveloped cold chain, and inadequate sanitary conditions in processing areas are some of the challenges. As well as the infrastructure improvements, support for establishing a system of safety standards and formulating public relations and marketing plans (support for fishery associations) is required.
3	Need to strengthen institutional aspects of value chain development	St. Lucia does not have agencies with the authority to issue certifications for food safety compliance, such as Hazard Analysis and Critical Control Point (HACCP). Overlapped duties of several agencies associated with the SPS is also the cause of functional and institutional gaps. Support for institution building and development of human resources with expertise in value chain development is required.
4	Need to develop a traceability system	While the need to establish a traceability system is pointed out at the administrative level, awareness of food safety at the field level is low. There is a gap in awareness between the government and the private sector. Establishing a basic system, such as recording necessary information, keeping the records, and handing them over to the downstream segment is urgently needed to ensure traceability. The implementation of pilot projects targeting specific fish species is required in order to raise awareness and guidance efforts at the field level.
5	Need to foster a hygiene concept	General consumers, processors, hotel employees, etc., have low awareness of the freshness and quality of fishery products and do not have accurate information. Although the customary practice is continuing since no particular problems have occurred, from the perspective of protecting the health of the public and contributing to the development of the tourism industry, awareness-raising activities and other measures are required to change the mindset of relevant people.

Source: JICA Study Team based on information gathered from the fishery authority of St. Lucia

### St. Vincent and the Grenadines

There are five main problems/issues: (1) the need to utilize seafood residues; (2) the need to develop niche markets; (3) the need to strengthen HACCP execution systems; (4) the need to enhance laboratory inspection capacity; and (5) lack of easy access to funds.

Table 12-13 below outlines problems/issues (1) through (4) and measures to address them (except (5)).

**Table 12-13 Problems/Issues and Measures of the Fisheries Value Chain Development in St. Vincent and the Grenadines**

No.	Problems/Issue	Outline and Measures to be Taken
1	Need to utilize seafood residues	This perspective is to seek the possibility of utilizing the residues generated during the post-harvest processing of conch and lobster. Training and educational activities for processors to minimize food waste and activities focusing on utilizing residues are required.
2	Need to develop niche markets	Inadequate packaging of snapper and dolphinfish reduces their competitiveness against imported marine products. Also, the feeling of rejection for changing traditional practices is a barrier to market development. Revitalizing the domestic fishery products distribution and exports by strengthening markets, improving packaging and labeling, and utilizing e-commerce are needed.
3	Need to strengthen HACCP execution systems	The inadequate execution system of the HACCP system and the lack of its certificate system, limit the access for fishery-related operators to some hotels, restaurants, and export markets. In addition to establishing a HACCP certification system, securing inspection equipment and reagents for the analysis of hazard factors is required.
4	Need to enhance laboratory inspection capacity	

Source: JICA Study Team based on information gathered from the fishery authority of St. Vincent and the Grenadines

## 2) Development and Cooperation Scenario

### a) Development Scenario

#### Development Goal and Strategy

##### Setting of the Development Subject and Development Goals

The six focus countries are all small island nations in the Eastern Caribbean region. In these countries, the fisheries sector is crucial in terms of job creation, food security (food supply and supply of protein), and increasing local income. It is also notable for its potential to earn foreign currency through exports. On the other hand, the countries are vulnerable in the social and economic aspects, as represented by natural disasters and the COVID-19 disaster. Therefore, it is essential to aim for industrial development with resilience.

Behind this background, value chain development is one of the optimal solutions to fulfill the socioeconomic role required of the fisheries industry. The value chain development includes improvements in hygiene (sanitation) and safety, not only financial aspects. International interest in food safety has become even stronger after the COVID-19 disaster. Strengthening hygienic (sanitary) and safety aspects will provide residents access to safe marine products and create export opportunities to western countries with a high awareness of quality.

In other words, focusing on value chain development, including the downstream portion of the fishery supply chain, in parallel with continuing the sustainable use of marine resources, will contribute to food security, increased income, and foreign currency earnings. Also, it will contribute to job creation by developing the fisheries industry.

Based on the above, the development subject of the development scenario for improving the fisheries value chain is set as "sustainable development of the fishery industry". The development goals are set as "ensuring safety and hygienic (sanitary) supply of fishery products" through the development of the fisheries value chain and "promotion of fishery products distribution including export" through the development of the fisheries value chain.

**Table 12-14 Development Subject and Development Goals for Fisheries Value Chain Development**

<b>Development Subject</b>	Sustainable development of the fishery industry
<b>Development Goal</b>	Ensuring safety and hygienic (sanitary) supply of fishery products Promotion of fishery products distribution including export

Source: JICA Study Team

#### Setting of the Basic Strategies

The development goals are: 1. Ensuring safety and hygienic (sanitary) supply of fishery products; and 2. Promotion of fishery products distribution including export. It is necessary to take the viewpoint of strengthening the safety and hygiene (sanitation) of fishery products as an approach that contributes mainly to Development Goal 1. This viewpoint is an issue related to the whole value chain, from the stage of fish handling by actors to the administrative system that has challenges about underdeveloped systems and lack of capacity in fisheries inspection. The issues identified as regional and national issues are of high importance and urgency. This approach is also a functional strategy that can support the

achievement of Development Goal 2 since the direction contributes to the export market development that requires high quality and hygiene (sanitary) standards. Based on the above, Basic Strategy 1 is set as "Strengthening the safety and hygiene (sanitation) of fishery products".

Next, a perspective to increase export competitiveness is required as a strategy that contributes primarily to Development Goal 2. Since the six focus countries have relatively small populations and the consumption by the residents is limited, strengthening distribution to the export and tourism sectors is necessary. The tourism sector is heavily influenced by socioeconomic conditions, as exemplified by the COVID-19 disaster. The exports are also similarly affected by the economic and social situation of exporting partner countries. However, in the export aspect, focusing on resilient measures such as securing multiple export destinations and developing high-value-added products can increase international competitiveness and contribute to foreign currency earnings. Three main export-oriented countries such as Antigua and Barbuda, Grenada, and St. Vincent and the Grenadines can be leading examples and model cases for the other three countries, resulting in the enhancement of the export capacity of the entire region. Based on the above, "Strengthening export competitiveness of fishery products" is set as Basic Strategy 2.

As noted above, none of the focus countries has a large enough market to absorb the supply of fishery products due to their small population size. However, some countries have simple distribution structures due to immature distribution development. In addition to the perspective of market development for the HoReCa sector that takes advantage of the potential in the tourism sector, there is a need for detailed distribution improvements that contribute to the supply of protein sources and nutrition improvement for the local population. Also, one of the measures to achieve food safety and distribution promotion is the establishment of a cold chain. Establishing an integrated cold chain from the catch to the export stage contributes to both domestic distribution and exports. Moreover, it is a measure to ensure the safety of fishery products. Based on the above, "Strengthening the distribution chain of fishery products (domestic distribution and intra-regional and international exports)" is set as Basic Strategy 3.

**Table 12-15 Basic Strategies for Fisheries Value Chain Development**

Sector	Strategy	Strategy Overview
Fisheries	1. Strengthening the safety and hygiene (sanitation) of fishery products	It contributes to ensuring the safety and hygiene (sanitation) of fishery products. It contributes primarily to Development Goal 1 and also has functions to support Development Goal 2.
	2. Strengthening export competitiveness of fishery products	The strategy focuses on diversification of distribution and foreign currency acquisition. It contributes primarily to Development Goal 2.
	3. Strengthening the distribution chain of fishery products (domestic distribution and intra-regional and international exports)	The strategy focuses primarily on the distribution development and contributes to both Development Goal 1 and Development Goal 2.

Source: JICA Study Team

## Program and Project

### Basic Strategy 1: Strengthening the Safety and Hygiene (Sanitation) of Fishery Products

Concerning hygienic (sanitary) control of fishery products, the CRFM is keenly aware of the weaknesses in the SPS measures. In a joint project between Inter-American Institute for Cooperation on Agriculture (IICA) and CRFM, evaluations and issues regarding the SPS system in CFRM member countries are summarized. According to the report, Antigua and Barbuda, Grenada, and St. Vincent and

the Grenadines are rated as having moderate SPS systems and capacities, including equipment and human resources, among CARICOM. St. Lucia, St. Kitts and Nevis, and Dominica, on the other hand, are rated as being in the low degree.<sup>6</sup>

An inadequate traceability system is pointed out by the CRFM and each country. Establishing a traceability system is a labor-intensive and time-consuming effort, as it requires the system establishment from an administrative aspect and the behavioral changes by each actor in the value chain. However, establishing a traceability system is a priority perspective because it contributes to the safety of fishery products in each country and is effective for export promotion.

Based on the above, the programs of Basic Strategy 1 are set as **"Strengthening of the fishery SPS" and "Establishment of a fishery traceability system"**.

### **Basic Strategy 2: Strengthening Export Competitiveness of Fishery Products**

Producing high-quality and fresh fishery products is required to obtain international competitiveness in the export market. Therefore, adding value to fishery products is one of the crucial policies in countries, such as Grenada, that focus on strengthening fishery product exports from the viewpoint of foreign currency acquisition. In addition to the potential for high value-added fishery products to be absorbed in the domestic HoReCa sector, even in countries that do not currently focus on exports, activities on value-adding are an effective direction to examine the feasibility of future exports.

Awareness of issues related to the lack of systems in place for the HACCP certification in St. Lucia and St. Vincent and the Grenadines was expressed. Efforts related to HACCP certification are an important perspective for increasing export competitiveness. However, from the perspective of strengthening the export potential of the whole value chain, including producers, the establishment of a regional eco-label certification system is appropriate. By establishing a high-level eco-labeling system consisting of fishery certification and chain-of-custody certification, and promoting local branding, it is expected to gain international recognition, which may lead to increased export promotion.

Based on the above, the programs of Basic Strategy 2 are set as **"Value-adding of fishery products" and "Establishment of a regional eco-label certification system."**

### **Basic Strategy 3: Strengthening the Distribution Chain of Fishery Products (Domestic Distribution and Intra-Regional and International Exports)**

Establishing a cold chain is a crucial perspective to promote distribution in focus regions where the hygiene (sanitation) and safety of fishery products are a concern. Requiring behavioral changes in practice (use ice for fishing operations and primary processing of fishery products under the proper condition) and taking appropriate measures at each stage of the value chain, such as constructing hygienic (sanitary) processing facilities and introducing refrigerated trucks, are essential.

In addition, there were examples of inadequate market development, such as the distribution of fishery products remaining within the fishing village community and distribution outside the village being limited. Given the large number of tourist destinations in each country and the estimated substantial consumption of fishery products in the HoReCa sector, there is still room for aggressive market development. Since the development of domestic markets may contribute to the provision of food and

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<sup>6</sup>CRFM/IICA. (2022) "SPS Regional Coordination Plan Study & Roadmap \_Section 1: Study & Analysis"

nutrition to the people, the approach has a crucial aspect related to food security.

Based on the above, the programs of Basic Strategy 3 are set as **"Establishment of a seafood cold chain" and "Stable supply of fishery products by market development."**

### Interrelationships of Programs

The six programs based on the above three basic strategies contribute to the development goals and subject by closely involving and complementing each other. Strengthening the SPS is aimed at ensuring food safety throughout the supply chain and is primarily a preventive perspective. In other words, it is an important viewpoint that contributes significantly to the value-adding of fishery products in Basic Strategy 2 and the establishment of a cold chain in Basic Strategy 3.

HACCP is also an important perspective shared with SPS in terms of conducting hazard analysis and preventing problems before they occur. As an established certification system, HACCP is also in demand from the business aspect and the acquisition of HACCP, mainly by processors, contributes to the expansion of sales channels. The regional eco-label is also a certification system that ensures fishery products are sustainable and environmentally friendly while strengthening competitiveness in terms of business. This perspective is an initiative that contributes to Basic Strategy 2 and 3, and serves to ensure the safety and hygiene (sanitation) of fishery products in Basic Strategy 1.

While SPS enhancement and HACCP are efforts from the perspective of preventing harm, a traceability system is a mechanism that allows for response to problems when they occur. Both perspectives are necessary to ensure food safety, and ensuring traceability is also a major part of Basic Strategy 2. It is common for traceability to be required as one of the requirements for eco-labeling.

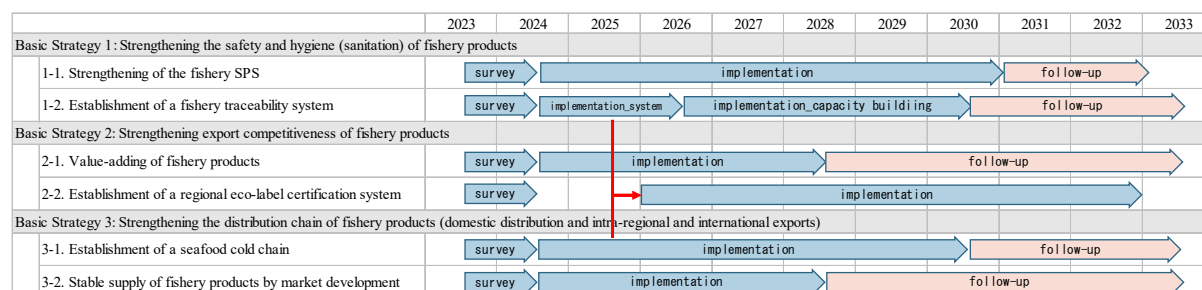
As described above, it is believed that a combination of multiple programs, rather than the implementation of a single set program, will effectively contribute to the achievement of development goals.

Table 12-16 shows the programs/projects under basic strategies. Figure 12-8 is a tentative roadmap for each program established above.

**Table 12-16 Programs/Projects of Fisheries Value Chain Development**

Sector	Strategy	Program/Project	Term
Fisheries	Strengthening the safety and hygiene (sanitation) of fishery products	1-1. Strengthening of the fishery SPS	Long term
		1-2. Establishment of a fishery traceability system	Long term
	Strengthening export competitiveness of fishery products	2-1. Value-adding of fishery products	Medium term
		2-2. Establishment of a regional eco-label certification system	Long term
	Strengthening the distribution chain of fishery products (domestic distribution and intra-regional and international exports)	3-1. Establishment of a seafood cold chain	Long term
		3-2. Stable supply of fishery products by market development	Medium term

Source: JICA Study Team



Source: JICA Study Team

**Figure 12-8 Roadmap of Fisheries Value Chain Development**

**b) JICA’s Cooperation Scenario**

JICA has supported strengthening the upstream portion of the fishery supply chain through the grant assistance scheme by establishing fishery facilities and equipment as well as through technical cooperation projects related to fishery resource management. The direction of future fisheries cooperation is to strengthen the industrial base of the fisheries industry encompassing the entire supply chain, through value chain development, including the downstream portion by using past cooperation outcomes. It will contribute to increasing local income, job creation, food security, provision of nutrition for the people, and foreign exchange earnings.

The rationale for setting up the programs proposed in the development scenario is shown in Section “12.1. 3 (1) 2) a) a-ii)” a-ii-i) to a-ii-iii). The modalities for each program are listed in Table 12-17.

**Table 12-17 Prioritized Programs/Projects of Fisheries Value Chain Development**

Sector	Strategy	Program/Project	Modality
Fisheries	Strengthening the safety and hygiene (sanitation) of fishery products	1.1. Strengthening of the fishery SPS	Survey Technical Assistance
		1-2. Establishment of a fishery traceability system	Survey Technical Assistance
	Strengthening export competitiveness of fishery products	2-1. Value-adding of fishery products	Survey Technical Assistance
		2-2. Establishment of a regional eco-label certification system	Survey Technical Assistance
	Strengthening the distribution chain of fishery products (domestic distribution and intra-regional and international exports)	3-1. Establishment of a seafood cold chain	Survey Technical Assistance (Grant aid)
		3-2. Stable supply of fishery products by market development	Survey Technical Assistance

Source: JICA Study Team

Since the Study Team was unable to conduct field surveys in five of the six focus countries in this study due to travel restrictions caused by the COVID-19 disaster, it is appropriate to conduct a more detailed information collection survey of all programs and consider the necessary support schemes. Table 12-18 shows a summary of the proposed detailed study.

**Table 12-18 Outline of the Detailed Survey**

Item	Contents
Name of Project	Information Collection Survey on Strengthening the Fisheries Value Chain of the Eastern Caribbean Region
Priority	Possible Project (C)
Target Country	Six Eastern Caribbean countries



Item	Contents
Project Site	Six Eastern Caribbean countries
Cooperation Period	2023 - 2024 (12 months)
Counterpart Institution	Fishery authority of each country
Other Organizations	CRFM
Project Goal	Concerning the implementation of the six proposed development programs/projects in the six Eastern Caribbean countries, the following information is collected for smooth execution of technical cooperation and grant assistance (the priorities and urgency of issues, details of activities, implementation arrangements, etc.).
Outcomes	1) Priorities of activities are assessed, and detailed contents of the activities are proposed. 2) Implementation capacities and capability of each country and development partner (assuming CRFM) are evaluated.

Source: JICA Study Team

While it is appropriate to discuss the support details through the information collection survey stated above, Table 12-19 shows a summary of the integrated two proposed programs (2.1 Value-adding of fishery products and 3.2 Stable supply of fishery products by market development).

**Table 12-19 Outline of the Technical Cooperation Project for Value-adding of Fishery Products/ Distribution Improvement of Fishery Products**

Item	Contents
Name of Project	Technical Cooperation Project for Value-adding of Fishery Products/ Distribution Improvement of Fishery Products
Priority	Priority Project (A)
Target Country	Six Eastern Caribbean countries
Basic Strategy	“2. Strengthening export competitiveness of fishery products” and “3. Strengthening the distribution chain of fishery products (domestic distribution and intra-regional and international exports)”
Project Site	Six Eastern Caribbean countries
Cooperation Period	2024 - 2028 (48 months)
Counterpart Institution	Fishery authority of each country
Other Organizations	CRFM
Project Goal	<ul style="list-style-type: none"> <li>Fishery products produced by each country are added high-value and distributed for the export market and HoReCa sector.</li> <li>Domestic and intra-regional distribution of fishery products in each country is promoted.</li> </ul>
Outcomes	1) Detailed distribution networks of fishery products (domestic and intra-regional) are identified 2) High-value-added fishery products are developed (high freshness fishery products and highly processed fishery products) 3) Distribution networks to the domestic, intra-regional HoReCa sectors and export are developed and strengthened.
Remarks	*The development of online portals and e-marketing platforms to link value chain actors in each segment is one of the options. In this case, involving private contractors as stakeholders to promote business development will enhance sustainability.

Source: JICA Study Team

## (2) Jamaica

### 1) Overview<sup>7</sup>

In Jamaica, the fisheries industry is an important sector that contributes to income generation, job creation, foreign exchange earnings, food and nutrition security, and social and economic stability. Fishery activities are the major source of income in coastal and riparian communities.

According to statistical data from the National Fisheries Authority (NFA), the primary means of production is marine capture fishery. The Jamaican fishing industry faces serious challenges such as overfishing, loss of marine habitat, rising production costs, and illegal fishing. From the perspective of

<sup>7</sup>Some additions and corrections were made based on materials provided by the NFA.

fisheries trade, the industry structure is extremely import-dependent, and domestic production does not meet domestic demand. Competition against imported fishery products with low prices has also been one of the challenges in recent years.

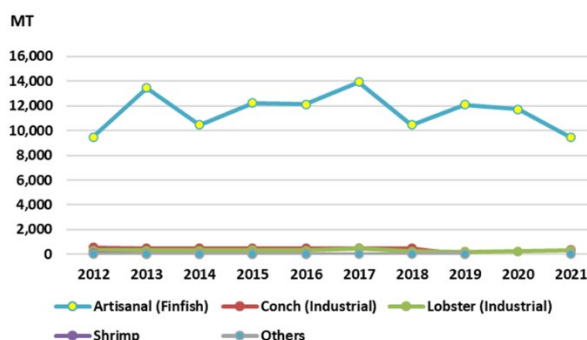
**Table 12-20 Fisheries Statistics in Jamaica**

Indicator	Value	Year
<b>Production</b>		
Marine Production	10,094 tons (rounding off)	2021
Aquaculture Production (Tilapia)	869 tons (rounding off)	2021
<b>Economic and Social Indicators</b>		
% GDP (Fisheries Contribution to Agriculture sector)	5.99%	2019
% GDP (Fisheries Contribution to total DGP)	0.52%	2019
Per capita consumption	17.16 kg	2018
Registered Fishers (fishers who have been registered with the Authority)	28,041 persons	2021
Registered Vessels (vessels which have been registered with the Authority)	8,082 vessels	2021
<b>Fishery Trade (volume)</b>		
Import	37,257 tons	2019
Export	994 tons	2019
Re-Export	340 tons	2019
<b>Fishery Trade (value)</b>		
Import	USD 116,577,817	2020
Exports	USD 14,196,301	2020
Re-Export	USD 1,577,455	2020

Source: Materials provided by Jamaica NFA

**a) Marine Capture Fisheries**

Most fishers are small-scale fishermen (Figure 12-10) who use outboard motors or oar-powered canoe-type fishing boats to catch demersal fish species, migratory fishes, lobster, shrimp, conch, etc. At the end of 2021, registered fishers and fishing vessels in two cays at the Pedro Bank and 187 fishing beaches were 28,041 and 8,082, respectively. It is estimated that around 90% of small-scale fishers operate in the inshore areas (island shelf and proximal banks), and about 10% fish offshore. Finfish catches by small-scale fishers account for the majority of Jamaica's marine fisheries production, which has been flat or slightly declining (Figure 12-9).



Source: Materials provided by Jamaica NFA

**Figure 12-9 Annual Fluctuations in the Production Volume of the Marine Capture Fisheries**

The main gear fishing method used by small-scale fishers is a cage fishing method called Antillean Z-trap (Figure 12-11), while some still use net fishing, handline fishing, and speargun fishing. In addition,

scuba and Hookah gear have been used to catch conch, lobster, and other seafood since the late 1980s.

The caught fish are transported to Kingston Fishing Port and other ports by licensed carriers, or the fishers themselves transport the catch to the south coast, including Whitehouse, Rocky Point (Clarendon), and Rocky Point (St. Thomas).



**Figure 12-10 Typical Artisanal Fishing Boats**

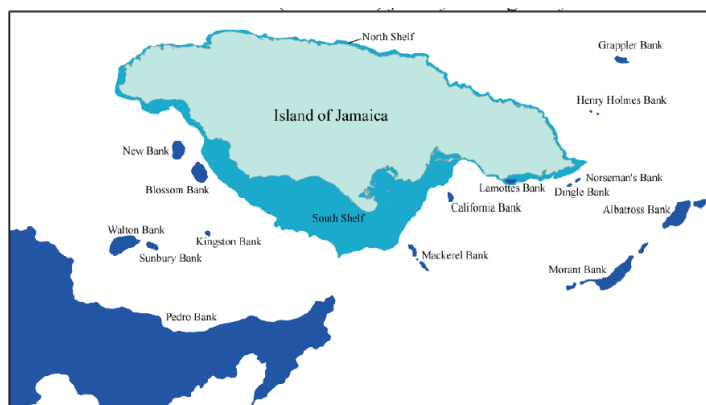


**Figure 12-11 Antillean Z-trap**

Photo: JICA Study Team

Large fishing vessels with special permits operate mainly in Pedro Bank, targeting conch and lobster. Sport fishing is also popular, mainly for yellowfin tuna and other pelagic fish species on the northern coast of Jamaica's main island. In addition, inland fisheries play a role in providing animal protein sources to the local population.

The main fishing grounds are the following: North Shelf waters of the main island of Jamaica, South Shelf waters, Inshore Banks (banks scattered mainly in the southern part of the main island), and Offshore Banks (Pedro Bank and Morant Bank) (Figure 12-12). In addition, fishing is permitted in the Jamaica-Columbia Joint Regime Area.



Source: Materials provided by Jamaica NFA

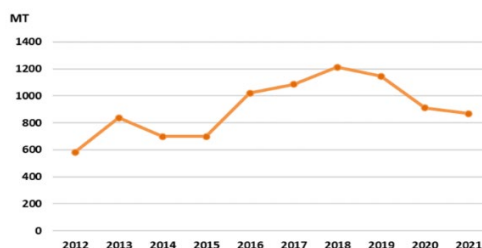
**Figure 12-12 Main Fishing Grounds in Jamaica**

## b) Aquaculture

Commercial aquaculture was introduced to Jamaica in the 1970s, and the main culture method is semi-intensive aquaculture systems. In addition to tilapia farming, which is the main focus of species for food fish aquaculture, there is also ornamental fish farming. About 150 food farmers and 140 ornamental fish

farmers exist. However, changes in market demand due to the influx of inexpensive imported fishery products and high production costs have resulted in sluggish growth in the aquaculture industry, and the weak competitiveness from the perspective of both production and distribution/marketing is pointed out.

The aquaculture area is mainly spread over St. Catherine and Clarendon parishes. Tilapia aquaculture production over the past decade has been on the rise through 2018, but it has declined in recent years (Figure 12-13). The annual aquaculture production in 2020 was 9,117,500 tons, with an estimated value conversion of USD 5.42 million.



Source: Materials provided by Jamaica NFA

**Figure 12-13 Annual Fluctuations in the Production Volume of the Tilapia**

**c) Export and Import of Fishery Products**

Total exports of fishery products in 2020 were approximately USD 14.2 million, while imports in the same year were approximately USD 165.8 million, making the country heavily dependent on imports. The trend of imports is gradually increasing, while the value of exports has remained flat for the past 20 years as shown in Figure 12-14. The main export products are lobster tails and conch, both of which are controlled by the government by setting a closed season. Although strict measures are being taken, including establishing a multi-year closed season for conch based on resource assessments, the problem of illegal fishing by domestic and foreign fishers is becoming more apparent.



Source: GLOBEFISH Market Profile – 2019

**Figure 12-14 Trade in Fish and Fishery Products**

**d) Fishery Administration**

The Ministry of Agriculture and Fisheries of Jamaica developed the Final Draft National Fisheries and Aquaculture Policy (National Fisheries Policy) in November 2014. Eight years have already passed since the policy was formulated. During this period, the Fisheries Division, which was in charge of

fisheries administration, was reorganized into the National Fisheries Authority. Since it is still in the transition period, the policy has not been officially approved. (The policy paper was utilized as discussion material with NFA in the survey since it comprehensively presents the issues and measures to be taken in Jamaica.)

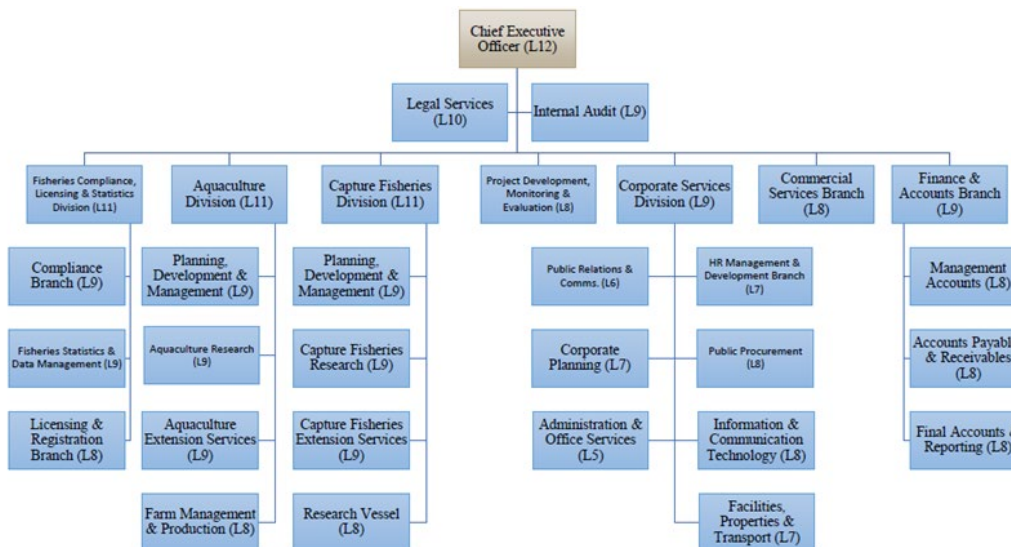
The policy has a vision and goals as shown in Table 12-21.

**Table 12-21 Basic Structure of Jamaican Fisheries Policy**

Vision
“Ensure the optimal contribution of the fisheries and aquaculture sector to Jamaica’s economy, food and nutrition security, poverty alleviation and sustainable livelihoods through the sustainable management and development of capture fisheries and aquaculture.”
Goals
Ensure sustainable development and management of capture fisheries and aquaculture; Promote greater efficiency and improved competitiveness of national capture fisheries and aquaculture enterprises; Promote economic and social development of fishers, fish farmers and fishing communities (coastal and riparian); Forge partnerships with stakeholders in the development and management of capture fisheries and aquaculture, as well as ensuring transparency and accountability in the governance of capture and culture fisheries resources; and Improve the contribution of the fisheries and aquaculture sector to the socio-economic well-being of Jamaica.

Source: Final Draft National Fisheries and Aquaculture Policy

The organization of the NFA is shown in Figure 12-15. The organization is headed by a Chief Executive Officer (CEO), and several sectors, such as fisheries and aquaculture, consist of it. In addition to the headquarters in Kingston, there are regional offices in each region. At the regional office in the fishing village division, Capture Fisheries Extension Officers and others monitor fishing vessel registration and licensing, and sell fishing vessel fuel. Aquaculture Extension Officers at the regional offices of the aquaculture sector are also responsible for the research and production of tilapia seedlings, marketing, and diversification of fish species for aquaculture (Twickenham Park Aquaculture Branch researches Pangasius).



Source: Materials provided by Jamaica NFA

**Figure 12-15 Organizational Chart of the National Fisheries Authority of Jamaica**



**Figure 12-16 Aquaculture Ponds at the NFA Regional Office**



**Figure 12-17 NFA Regional Office (Fisheries Sector)**

Photo: JICA Study Team

### e) **Challenges in the Jamaican Fisheries Sector**

The National Fisheries Policy discusses the challenges facing the Jamaican fishing industry from nine perspectives (1. fisheries resources, 2. inland fisheries, 3. fleet, 4. under-utilized fisheries resources, 5. landing facilities, 6. aquaculture, 7. climate change and disaster risk management, 8. institutional challenges, and 9. poverty, vulnerability, and food insecurity). The following is a summary of each perspective (partially integrated), with additions and corrections made as necessary to reflect the findings of the field survey.

#### **Fisheries Resources**

Overfishing of reef fish, conch, lobster, etc. is reported to be serious, with adverse effects due to the use of small mesh fishing gear, catching undersized fish, ghost fishing, and dynamite fishing in coral reef areas. Likewise, there are adverse effects caused by external factors such as hurricanes, pollution from mining, agriculture, and deforestation, and marine pollution from the construction and development of hotels and other facilities in coastal areas. In the field survey, many fishers complained of declining fish size and catch, suggesting that the decline in abundance is a highly urgent issue, especially in reef areas. Some fishers take the option of going offshore due to the lack of expected inshore catches, but there are also concerns about added negative aspects, such as additional fuel costs and increased risk of marine casualties due to inadequate safety precautions.

Furthermore, illegal, unreported, and unregulated (IUU) fishing by foreigners and Jamaicans is also a serious issue, with foreign poachers primarily targeting conch, lobster, and sea cucumbers.

#### **Inland Fisheries**

Inland fisheries have lagged in terms of institutional framework development compared to marine fisheries and aquaculture because their production is small and they have not been industrialized. In addition, the degradation of the fishing environment has been noted due to factors such as the destruction of vegetation, the impact of invasive species, and pollution caused by industrial activities.

#### **Fleet**

The fishing boats used by most small-scale fishers are small outboard motor boats with simple equipment. The space available for loading cold boxes and fishing gear is limited, making it unsuitable for catching large migratory fish or deep-sea species that require special fishing gear such as line haulers.

The safety of fishing vessels, especially those that operate offshore, is a concern because adequate safety measures are not implemented. Through the interview survey, the Study Team confirmed the possibility of insufficient knowledge and skills of the fishers regarding response measures in the event of a maritime disaster.

### **Under-utilized Fisheries Resources**

While there are indications that inshore stocks are overfished, there is room to promote fishery development in the offshore areas. The NFA is aware of the potential for fisheries development, especially for large migratory fish such as tuna, which has the potential to become one of the target fishes. The NFA also has the intention to develop resources such as sea urchins, sea cucumbers, sharks, shrimps, and flying fish. From the standpoint of exploitation of untapped and underutilized resources, the Diamondback squid that JICA volunteers have conducted catch trials on in Jamaica in the past is one of the target species.

### **Landing Facilities**

It is noted that most fishery products caught and landed by small-scale fishing vessels are not kept cold and are processed under unsanitary conditions. During the field survey, the Study Team confirmed that the primary processing of catches is under the scorching sun. The sales operation of the fishery products, by middlemen who could not fit into the landing facilities, are also under parasols outside the facilities. Efforts at the distribution and processing segments are crucial from the perspective of maintaining the freshness of the catch and adding value.

### **Aquaculture**

The aquaculture industry in Jamaica is underdeveloped compared to marine capture fisheries. The main target species is tilapia, but its weak competitiveness against tilapia products from other countries and inadequate competitiveness against other inexpensive imported frozen fishery products are pointed out.

Regarding the aquaculture production technology, the low quality of seedlings produced by the private sector despite the high price is noted. There are also challenges from diverse perspectives, such as limited water sources, difficulty in securing water for aquaculture ponds, difficulty in procuring materials and equipment necessary for aquaculture operations, and inadequate technical knowledge regarding water quality control.

**“Climate Change and Disaster Risk Management” and “Poverty, Vulnerability and Food Insecurity”**



Photo: JICA Study Team

**Figure 12-18 Primary Processing of Catches under the Scorching Sun**



Photo: JICA Study Team

**Figure 12-19 Scene of a Harvest of Aquaculture Products in a Large-scale Farm**

Because of their geographic location, fishing communities are vulnerable to environmental impacts such as hurricanes and flooding. Therefore, the strengthening of risk management is required. The high poverty rate of small-scale fishing communities accompanies vulnerabilities in terms of food security, including insecure access to food. Moreover, the fishing industry is perceived as having an inferior position in the social structure of Jamaica, and the low standard of living of fishers is pointed out.

### **Institutional Challenges**

One of the challenges is the limited financial situation and personnel (especially the lack of personnel with expertise in fish handling, processing, and marketing) related to fisheries administration. In addition, the collection and accumulation of fishery statistical data are insufficient, and there are issues regarding the credibility of biological data for resource assessment.

## **2) Development and Cooperation Scenario**

### **a) Development Scenario**

#### **Development Goal and Strategy**

#### **Setting of the Development Subject and Development Goals**

The NFA, the responsible body of the Jamaican fisheries sector, formulated a National Fisheries and Aquaculture Policy in 2014. The document sets a policy direction based on eight policy themes (Table 12-22).

**Table 12-22 Eight Thematic Areas in the National Fisheries and Aquaculture Policy**

<b>Thematic Areas of the Policy</b>	
1	Management of Marine and Inland Capture Fisheries
2	Monitoring Control and Surveillance
3	Occupational Health and Safety
4	Development, Management and Resuscitation of a Sustainable and Viable Aquaculture Sector
5	Hygienic Standards, Processing, Marketing and Trade of Fish and Fish Products
6	Disaster Risk Management & Climate Change
7	Economic and Social Development of the Fisheries Sector
8	Governance and Institutional Development

Source: Final Draft National Fisheries and Aquaculture Policy

The policy directions under the eight thematic areas were developed based on the current situation of the Jamaican fisheries industry, and exhaustive measures to address the issues are also considered in the document. Therefore, the Study Team formulates the development scenarios based on the policy directions put forth by the NFA in this policy document. Besides, eight years have passed since the Final Draft National Fisheries and Aquaculture Policy was formulated. The Study Team analyzed the contents of the policy directions in line with the current situation by discussing new perspectives and division of contents as necessary. Based on the 49 policy directions listed in the summary section of the Final Draft National Fisheries and Aquaculture Policy (51 policy directions in total through addition and division), the Study Team and NFA prioritized them by reference to the current status of the Jamaican fishery sector and the intention of NFA (Table 12-23).



**Table 12-23 Priorities in the Thematic Policy of the Final Draft National Fisheries and Aquaculture Policy**

Thematic Policy Direction		Priority
1	Management of Marine and Inland Capture Fisheries	
	1.1 Ensure controlled access to all capture fisheries in Jamaican waters	A+
	1.2 Apply a resource rent to finance the costs of fisheries development and management	B
	1.3 Restore and/or enhance the resources and associated ecosystem in overfished areas, where possible	A+
	1.4 Optimise use of the resources in waters over 200 m deep and on distant shoals and extract rent from their exploitation	A+
	1.5 Sustainably develop and regulate inland fisheries	A
2	Monitoring Control and Surveillance	
	2.1 Establish an efficient and effective monitoring control and surveillance (MCS) system to ensure the sustainable development and management of the fisheries and aquaculture sector	A
	2.2 Increase the capacity of the national Fisheries Authority and other stakeholders to undertake effective MCS operations	A
	2.3 Establish effective partnerships with primary stakeholders and enforcement agencies	A
	2.4 Build awareness of MCS issues through public education, awareness and sensitization	A
	2.5 Establish a compliance unit with the national Fisheries Authority to engage in MCS operations	A+
	2.6 Reduce IUU fishing by foreign and local poachers in Jamaica's maritime space	A+
	2.7 Reduce larceny of fishing gears and equipment and products	A
3	Occupational Health and Safety	
	3.1 Reduce the incidence of accidents, injuries and fatalities during fishery, aquaculture and related activities	A
	3.2 Reduce the incidence of fishers lost at sea	A+
	3.3 Improve the efficiency of emergency response and the institutional capacity of state agencies to effectively conduct search and rescue operations at sea	A
	3.4 Ensure that all occupational health and safety regulations, standards and guidelines for fishery, aquaculture and related activities are developed and enforced	A
	3.5 Raise the level of awareness and knowledge of safety practices among fishers, fish farmers and other stakeholders	A
	3.6 Improving coordination and collaboration between entities (agencies) responsible for occupational health and safety	A
4	Development, Management and Resuscitation of a Sustainable and Viable Aquaculture Sector	
	4.1 Creating an enabling environment to facilitate the revitalization and expansion of aquaculture (ornamental fish, mariculture, aquatic plants)	A+
	4.2 Regulating and controlling aquaculture activities, including preventing the release of exotic species into the wild	B
	4.3 Developing the culture of indigenous species	B
	4.4 Developing and expanding the culture of aquatic flora and fauna to limits dictated by marketing possibilities, including export, without damaging precious wetlands, lagoons, mangroves, reefs, or other sensitive areas	B+
	4.5 Ensuring the development of a viable food fish and ornamental fish (including aquatic plants) sector for local and export markets	A
	4.6 Developing innovative and cost effective production systems and culture technologies	A
	4.7 Improving collaboration with other agencies for the development of standards for both food fish and ornamental fish species	B+
	4.8 Ensuring aquatic animal health and Jamaica's disease free status	A
	4.9 Improving collaboration with other agencies to ensure biosecurity and fish health	A
5	Hygienic Standards, Processing, Marketing and Trade of Fish and Fish Products	
	5.1 Establish safety and quality assurance systems for fish and fish products in order to protect consumer health and prevent commercial fraud	A
	5.2 Promote pre- and post-harvest best practices in capture fisheries and aquaculture	A+
	5.3 Increase education and awareness of the consumer to health, hygiene risk analysis and hygiene standards	A
	5.4 Facilitate the development and management of the value chain for fish and fish products for the domestic and export markets	A
	5.5 Improve marketing and distribution of fish and fish products for the domestic and export markets	A
	5.6 Ensure that the interests of the local fisheries sector, including its sustainable development, are considered in all trade negotiations, whether international, regional or bilateral	A
6	Disaster Risk Management & Climate Change	
	6.1 Increasing the adaptive capacity and reducing vulnerability of fisheries and aquaculture to climate change and hazards	A+
	6.2 Improving the management of fisheries and aquaculture to strengthen the integrity and resilience of aquatic ecosystems	A+

	6.3	Identifying and taking advantages of opportunities that may arise from the positive impacts of climate change on fisheries and aquaculture	A
	6.4	Improving the resilience of fisheries and aquaculture communities and livelihoods to climate change, disasters and hazards	A+
	6.5	Building institutional capacity at the national and local levels to respond to climate change, disasters and hazards	A+
	6.6	Increasing awareness of climate change and disaster risk management issues	A
	<b>Economic and Social Development of the Fisheries Sector</b>		
	7.1	Promote sustainable growth and development of the fisheries and aquaculture sector	A+
	7.2	Strengthen the competitiveness and improve the productivity of fisheries operations	A
7	7.3	Improve the livelihood of fishers, fish farmers and all those associated with capture fisheries and aquaculture	A+
	7.4	Minimize the effects of redeployment on artisanal fishers and promote alternative livelihoods	A
	7.5	Reduce poverty and vulnerability in fishing communities	A+
	7.6	Promote gender equity in the fishing industry	A+
	<b>Governance and Institutional Development</b>		
	8.1	Adopt an inclusive approach to decision making and implementation based on the principles of good governance with the major stakeholders and partners in the fisheries and aquaculture sector	B+
	8.2	Build the capacity of relevant stakeholders and partners to participate in the governance process	A
8	8.3	Ensure the autonomy of the national Fisheries Authority	B
		Enhancing capacity of the NFA to effectively execute its mandate	A+
	8.4	Strengthening collaboration and cooperation with other institutions and stakeholders involved in the management of fisheries and aquaculture	A
	8.5	Collaborate with regional and international institutions to manage shared, straddling and highly migratory stocks and aquaculture	A

Source: JICA Study Team based on the Final Draft National Fisheries and Aquaculture Policy (reflecting the content of consultations)

An overview of the items that received the highest priority "A+" shows a wide range of needs for development, including fisheries development, aquaculture development, IUU, and safety in the fishing operation. In particular, the perspective of fisheries and aquaculture development, which contributes to improving the vulnerability to disaster risk and climate change as well as socioeconomic development, is emphasized.

While there are indications that Jamaica's fisheries industry has ample room for development in both fisheries and aquaculture, there is a need to incorporate approaches that contribute to strengthening the resilience to climate change risks and improving the livelihoods of fisheries workers. In particular, the decline in stock levels due to the overexploitation of coastal resources and the transition in demand for inexpensive imported fishery products have a direct negative impact on the livelihoods of fishers and is an obstructive factor from the social and economic aspects on the long-term development of the fishing industry.

Among the five goals set in the Final Draft National Fisheries and Aquaculture Policy, the following three points are strengthened as development goals.

**Table 12-24 Policy Goals Prioritized in this Study**

Goals
<ul style="list-style-type: none"> <li>● <b>Ensure sustainable development and management of capture fisheries and aquaculture;</b> Promote greater efficiency and improved competitiveness of national capture fisheries and aquaculture enterprises;</li> <li>● <b>Promote economic and social development of fishers, fish farmers and fishing communities (coastal and riparian);</b> Forge partnerships with stakeholders in the development and management of capture fisheries and aquaculture, as well as ensuring transparency and accountability in the governance of capture and culture fisheries resources; and</li> <li>● <b>Improve the contribution of the fisheries and aquaculture sector to the socio-economic well-being of Jamaica.</b></li> </ul>

Source: Final Draft National Fisheries and Aquaculture Policy

## Setting of the Basic Strategies

Since the Study Team evaluated the priority of each policy direction as indicated in Table 12-23 based on the Final Draft National Fisheries and Aquaculture Policy of the Jamaican NFA, the items in the above table that received a priority of "A+" are recognized as basic strategies.

## Program and Project

The experience of JICA's fisheries cooperation in Jamaica is limited, and the function of NFA as a counterpart (C/P) agency is unknown. Proposing a technical project with a large budget size or grant assistance by only conducting this survey (about ten days) is not appropriate in terms of the amount of information to support the proposal. Furthermore, setting up projects, such as technical cooperation projects and facility construction with grant assistance, is difficult from budgetary adequacy.

Considering the discussions with NFA, the Study Team considered appropriate support proposals for the individual strategies (approaches) that were assigned priority "A+" in Table 12-23 based on the premise of four types of support: 1) information collection survey to design technical cooperation projects and grant assistance; 2) expert dispatch; 3) country- and issue-specific training; and 4) volunteer dispatch. Feedback from the site survey results and the views and requests of the NFA was incorporated to consider the appropriate support. Table 12-25 shows the priority items in each of the eight themes as well as the proposed support plan in consideration of the NFA's requests.

**Table 12-25 Measures and Support Scheme for Each Priority Strategy**

1. Management of Marine and Inland Capture Fisheries					
Priority strategies with a rating of "A+"		(Example of measure)			
		Information collection survey	Expert dispatch	Country- and issue-specific training	Volunteer dispatch
1.1	Ensure controlled access to all capture fisheries in Jamaican waters	Exploitation of untapped and underutilized fisheries resources. Use of technologies that contribute to sustainable fisheries development.			
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.3	Restore and/or enhance the resources and associated ecosystem in overfished areas, where possible	Establishment of fisheries management areas in coastal areas. Promote research on untapped and underutilized fishery products in coastal areas. Protection of over-fished species.			
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.4	Optimise use of the resources in waters over 200 m deep and on distant shoals and extract rent from their exploitation	Fisheries development of crustaceans, cephalopods, offshore migratory fish such as tuna. Introduction and utilization of FAD.			
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Monitoring Control and Surveillance					
Priority strategies with a rating of "A+"		(Example of measure)			
		Information collection survey	Expert dispatch	Country- and issue-specific training	Volunteer dispatch
2.5	Establish a compliance unit with the national Fisheries Authority to engage in MCS operations	Strengthening the institutional and implementation capacity of the NFA. Developing partnerships with relevant organizations that contribute to effective Monitoring, control and, surveillance (MCS) implementation.			
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.6	Reduce IUU fishing by foreign and local poachers in Jamaica's maritime space	(same as 2.5)			
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Occupational Health and Safety				
Priority strategies with a rating of "A+"		(Example of measure)		
		Information collection survey	Expert dispatch	Country- and issue-specific training
3.2	Reduce the incidence of fishers lost at sea	Improving access to necessary equipment and fishing vessels that contribute to safety during operations, especially for small-scale fishers. Educating fishers on compliance with safety regulations.		
				○
4. Development, Management and Resuscitation of a Sustainable and Viable Aquaculture Sector				
Priority strategies with a rating of "A+"		(Example of measure)		
		Information collection survey	Expert dispatch	Country- and issue-specific training
4.1	Creating an enabling environment to facilitate the revitalization and expansion of aquaculture (ornamental fish, mariculture, aquatic plants)	Improvement of seed production technology and production amount of food fish and ornamental species. Strengthening the capacity of farmers in enhancing the value chain of farmed fish.		
		○	○	○
5. Hygienic Standards, Processing, Marketing and Trade of Fish and Fish Products				
Priority strategies with a rating of "A+"		(Example of measure)		
		Information collection survey	Expert dispatch	Country- and issue-specific training
5.2	Promote pre- and post-harvest best practices in capture fisheries and aquaculture	Strengthening the value chain by improving the processing technology for existing fish species and developing untapped and underutilized fishery products. Development of market and distribution. Dissemination of best practices on pre-harvest handling methods in the aquaculture sector.		
		○	○	○
6. Disaster Risk Management & Climate Change				
Priority strategies with a rating of "A+"		(Example of measure)		
		Information collection survey	Expert dispatch	Country- and issue-specific training
6.1	Increasing the adaptive capacity and reducing vulnerability of fisheries and aquaculture to climate change and hazards	Measures to reduce fishing pressure on overfished species and areas. Reinforcement of data collection system of fishery statistics Aquaculture development that contributes to strengthening the resilience of coastal communities.		
		○		○
6.2	Improving the management of fisheries and aquaculture to strengthen the integrity and resilience of aquatic ecosystems	(same as 6.1)		
		○		○
6.4	Improving the resilience of fisheries and aquaculture communities and livelihoods to climate change, disasters and hazards	Strengthening stakeholder capacity to enhance resilience to climate change and disaster risks.		
		○		○
6.5	Building institutional capacity at the national and local levels to respond to climate change, disasters and hazards	Capacity building of NFA staff and strengthening of NFA functions.		
		○	○	
7. Economic and Social Development of the Fisheries Sector				
Priority strategies with a rating of "A+"		(Example of measure)		
		Information collection survey	Expert dispatch	Country- and issue-specific training
7.1	Promote sustainable growth and development of the fisheries and aquaculture sector	Cost analysis related to fisheries and aquaculture through research activities.		
		○	○	○
7.3	Improve the livelihood of fishers, fish farmers and	Promote value chain development to improve the		

	all those associated with capture fisheries and aquaculture	livelihoods of fishery and aquaculture workers.			
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.5	Reduce poverty and vulnerability in fishing communities	Improvement of socioeconomic infrastructure Strengthening the level of education, including literacy, for fishery workers.			
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.6	Promote gender equity in the fishing industry	Establishment of a system and environment that encourages women's entry into the fisheries industry.			
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>8. Governance and Institutional Development</b>					
(Example of measure)					
Priority strategies with a rating of "A+"		Information collection survey	Expert dispatch	Country- and issue-specific training	Volunteer dispatch
8.3	Enhancing capacity of the NFA to effectively execute its mandate	Strengthen the capacity of NFA staff in fisheries statistics, biological data collection, and stock assessment.			
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Source: JICA Study Team based on the Final Draft National Fisheries and Aquaculture Policy (reflecting the content of consultations)

### b) JICA's Cooperation Scenario

The above "Program and Project" were organized by theme. Figure 12-20 shows the summary of the proposed supports by support scheme, taking into account similarities in content, the expectation by NFA, and the degree of expectation on effectiveness by JICA support.

Priority strategies with a rating of "A+"	Information collection survey	Expert dispatch	Country- and issue-specific training	Volunteer dispatch
<b>1. Management of Marine and Inland Capture Fisheries</b>				
1.1 Ensure controlled access to all capture fisheries in Jamaican waters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.3 Restore and/or enhance the resources and associated ecosystem in overfished areas, where possible;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.4 Optimise use of the resources in waters over 200 m deep and on distant shoals and extract rent from their exploitation;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>2. Monitoring Control and Surveillance</b>				
2.5 Establish a compliance unit with the national Fisheries Authority to engage in MCS operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.6 Reduce IUU fishing by foreign and local poachers in Jamaica's maritime space;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>3. Occupational Health and Safety</b>				
3.2 Reduce the incidence of fishers lost at sea;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>4. Development, Management and Resuscitation of a Sustainable and Viable Aquaculture Sector</b>				
4.1 Creating an enabling environment to facilitate the revitalization and expansion of aquaculture (ornamental fish, mariculture, aquatic plants);	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>5. Hygienic Standards, Processing, Marketing and Trade of Fish and Fish Products</b>				
5.2 Promote pre- and post-harvest best practices in capture fisheries and aquaculture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>6. Disaster Risk Management &amp; Climate Change</b>				
6.1 Increasing the adaptive capacity and reducing vulnerability of fisheries and aquaculture to climate change and hazards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.2 Improving the management of fisheries and aquaculture to strengthen the integrity and resilience of aquatic ecosystems;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.4 Improving the resilience of fisheries and aquaculture communities and livelihoods to climate change, disasters and hazards;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.5 Building institutional capacity at the national and local levels to respond to climate change, disasters and hazards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>7. Economic and Social Development of the Fisheries Sector</b>				
7.1 Promote sustainable growth and development of the fisheries and aquaculture sector;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.3 Improve the livelihood of fishers, fish farmers and all those associated with capture fisheries and aquaculture;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.5 Reduce poverty and vulnerability in fishing communities;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.6 Promote gender equity in the fishing industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>8. Governance and Institutional Development</b>				
8.3 Enhancing capacity of the NFA to effectively execute its mandate;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Source: JICA Study Team

**Figure 12-20 Proposed Support of Each Support Scheme**

Table 12-26 to Table 12-29 show a summary of support for the four schemes indicated above. The support with high priority is the dispatch of an expert who has a comprehensive knowledge of the fishery sector. Also, including activities such as collaboration with the JICA projects in the Caribbean Region

and formulating the programs of country training (Cooperation Scenario (3)) into the TOR of the expert enables long-term and developable support. Although cooperation scenario (2) envisions the sending out of experts focusing on marine capture fisheries, there is room for consideration of short-term dispatch of aquaculture experts, given the strong desire for aquaculture development by the NFA.

**Table 12-26 Cooperation Scenario (1) (Information collection survey)**

Item	Contents
Type of Cooperation Scheme	Information collection survey
Name of Project	Information collection survey for sustainable fisheries development
Priority	Possible Project (C)
Project Site	Across Jamaica
Cooperation Period	2023 - 2024 (12 months)
Counterpart Institution	Jamaica NFA
Other Organizations	CRFM
Project Goal	A support proposal that contributes to sustainable fisheries development is developed.
Outcomes	1) A highly valid support scheme is proposed. 2) Priorities for activities to be implemented are assessed and activity details are proposed. 3) The system, functions, and capability of the C/P agency are evaluated.
Remarks	The main focus of the proposal is on the formation of technical projects, but the budget must be taken into account.

Source: JICA Study Team

**Table 12-27 Cooperation Scenario (2) (Expert dispatch)**

Item	Contents
Type of Cooperation Scheme	Expert dispatch
Name of Project	Promotion of the sustainable marine capture fisheries development
Priority	Priority Project (A)
Project Site	Across Jamaica
Cooperation Period	2023 - 2026 (36 months)
Counterpart Institution	Jamaica NFA
Other Organizations	—
Project Goal	Fishery development that contributes to improving the livelihoods of fishers and the vulnerability of fishing communities is promoted.
Outcomes	1) Stock of marine fisheries resources is assessed. 2) Untapped and underutilized fishery resources are developed (fishing techniques, post-catch processing, and market development). 3) Extension plans for livelihood improvement of fishing communities are developed.
Remarks	Since the NFA sees potential for aquaculture development, dispatching an aquaculture expert is an option.

Source: JICA Study Team

**Table 12-28 Cooperation Scenario (3) (Country- and issue-specific training)**

Item	Contents
Type of Cooperation Scheme	Country- and issue-specific training
Name of Project	<Knowledge Co-Creation Program> <ul style="list-style-type: none"> <li>• Policies and Countermeasures Against Illegal, Unreported, and Unregulated (IUU) Fishing</li> <li>• Enhancing Capacity for Sustainable Fisheries Development</li> <li>• Small-Scale Inland Aquaculture</li> <li>• Sustainable Small-Scale Fisheries for Blue Economy</li> <li>• Value-Chain Development for Sustainable Use of Fisheries Resources</li> <li>• Sustainable Use of Fisheries Resources through Diversification of Fisheries-Based Livelihoods in Small-Island States</li> </ul>
Priority	Priority Project (A)
Project Site	Japan
Cooperation Period	2023- (It is desirable to implement the project on an ongoing basis, such as annually/biennially)
Counterpart Institution	Jamaica NFA

Other Organizations	—
Project Goal	The capacity of NFA staff on marine capture fisheries, aquaculture, and IUU measures is strengthened.
Outcomes	—
Remarks	Given the requests for training in a wide range of fields, forming a country-specific training program focused on the Jamaican fisheries industry is one option.

Source: JICA Study Team

**Table 12-29 Cooperation Scenario (4) (Volunteer dispatch)**

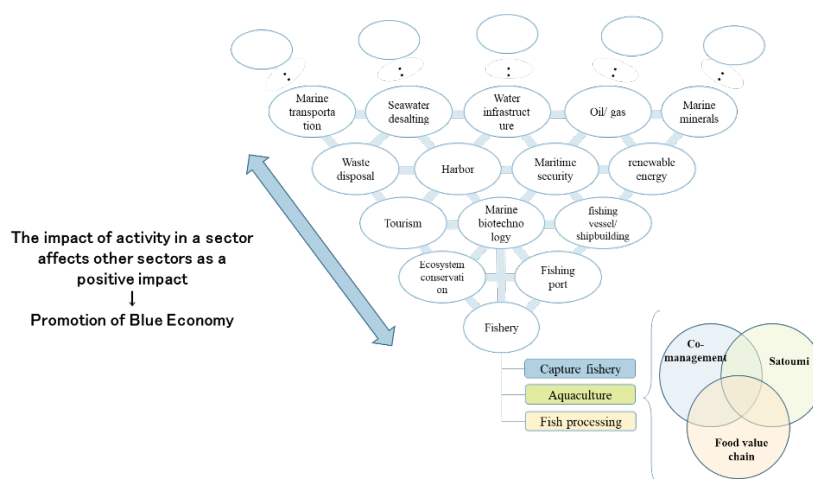
Item	Contents
Type of Cooperation Scheme	Volunteer dispatch
Name of Project	<ul style="list-style-type: none"> <li>• Community Development</li> <li>• Fisheries Development</li> <li>• Aquaculture</li> </ul>
Priority	Possible Project (C)
Project Site	Across Jamaica (excluding hazardous areas)
Cooperation Period	2023- (continuous dispatch is preferred)
Counterpart Institution	Jamaica NFA
Other Organizations	—
Project Goal	—
Outcomes	—
Remarks	<ul style="list-style-type: none"> <li>• In the fisheries sector, assigning a senior volunteer to work in the fisheries administration at the NFA headquarters and a young volunteer to work in fishing village communities is appropriate.</li> <li>• In the aquaculture sector, research, and dissemination activities in the regional offices are expected. Therefore, assigning a senior volunteer with expertise is appropriate.</li> </ul>

Source: JICA Study Team

### (3) Positioning of the Development and Cooperation Scenarios in the Blue Economy Concept

The movement toward building a sustainable society has become a global trend, as governments and various development partners have announced their commitment to the Blue Economy. There is no common definition of the Blue Economy. The term is used to describe sustained growth with the interrelationships among the various sectors that relate to the ocean directly and indirectly. This concept includes a wide range of activities such as: fisheries and marine minerals exploitation (that utilizes marine resources), marine transportation business and harbor operation, renewable energy sectors (that use the ocean as a site for their activities), and ecosystem conservation and waste disposal (related to environmental conservation and management).

It is important to ensure the sustainability of the Blue Economy as a whole, by simultaneously implementing the concept of the spillover of positive impacts on other sectors while assuming the development and promotion of the focus industry. In addition, the range of the Blue Economy includes not only the sectors that have marine activities but also connections with industrial activities conducted on lands, such as fish processing and waste disposal. It should be noted that the relationship (distance) with each sector varies depending on the nature of activities related to the fisheries industry (in case the center is the fishery industry).



Source: JICA Study Team

**Figure 12-21 Conceptual Diagram of the Blue Economy with Focus on the Fisheries Industry**

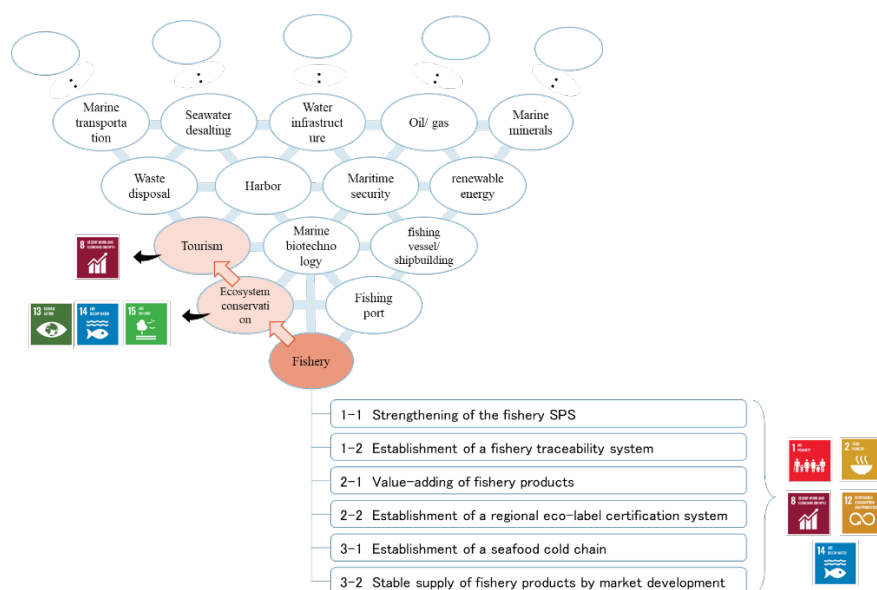
Planning and implementing various activities in the fisheries industry under the larger unit of the Blue Economy enables a highly sustainable and effective development assistance. It is essential to take into account not only the development of the fisheries sector but also the benefits to other related sectors, as well as the synergistic effects of the positive impacts from the activities in other sectors.

The expected spillover effect to other sectors by implementing the fisheries development scenarios in the Eastern Caribbean and Jamaica are shown in Figure 12-22 and Figure 12-23, including their relation to the UN Sustainable Development Goals (SDGs).

The development scenario in the Eastern Caribbean includes the perspective of promoting industrialization of the fisheries sector, which is expected to improve nutrition and enhance food security through domestic distribution development, improve the livelihoods of fishing communities, and promote employment. Moreover, the scenario contributes to value addition and food loss reduction through value chain development. The implementation of the development scenarios directly contributes to SDGs 1, 2, 8, 12, and 14.

Since these scenarios are closely related to the sustainable development of marine resources, positive impacts on the ecosystem conservation sector and the tourism industry are expected to spill over. As an example, the perspective of establishing a regional eco-label certification system is expected to contribute to ecosystem conservation by reducing fishing pressure on fish species whose abundance is in danger of declining. Furthermore, the preservation of the ecosystem of the surrounding sea area is expected to contribute significantly to the use of tourism as an ecosystem service. The positive impact of fisheries development will contribute to SDGs 8, 13, 14, and 15 by promoting ecosystem conservation and tourism.

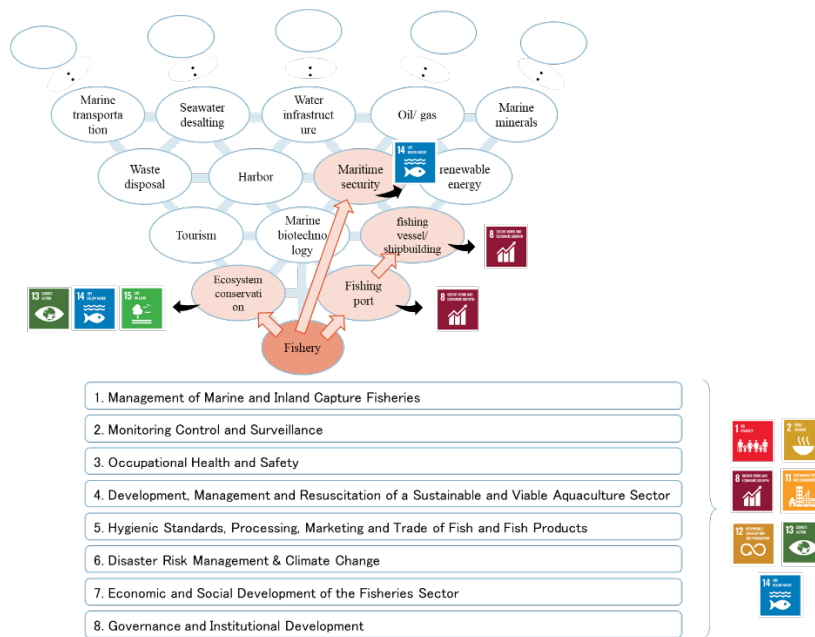




Source: JICA Study Team

**Figure 12-22 Impact of Development Scenarios of the Eastern Caribbean in the Blue Economy Concept**

It should be noted that the development scenario in Jamaica includes a wide variety of subsectors that make up the fisheries sector, which will need to be narrowed down for the project implementation. Compared to the development scenario in the Eastern Caribbean, the scenario in Jamaica is expected to make a direct contribution to SDGs 11 and 13, as the perspective of strengthening resilience against climate change and disasters is strongly emphasized. The scenario also includes the perspective of aquaculture development in addition to marine fisheries, which is expected to contribute to job creation and food security. On the other hand, the Jamaican NFA has intentions to improve facilities and infrastructure such as fishing ports, fishing gear, and fishing vessels, in addition to the IUU measures. In the Blue Economy concept, positive impacts on the maritime security, fishing port, and fishing vessel and shipbuilding sectors are expected, and contributions to job creation and marine resource conservation are anticipated.



Source: JICA Study Team

**Figure 12-23 Impact of Development Scenarios of Jamaica in the Blue Economy Concept**

## 12.2 Sargassum

### 12.2.1 Outline of the Study

The work shown in Table 12-30 was conducted through desktop research, interviews, and field survey to formulate a development scenario and future JICA cooperation scenarios on the Sargassum measures.

**Table 12-30 Sector Scope of Work (Sargassum Measures)**

No.	Task	Scope of Work
1	Study Targets	To identify the impacts of Sargassum influx and issues in the current response. To formulate development scenarios and cooperation scenarios.
2	Study Scope	Focus on collecting information and summarizing knowledge through document investigation. Select some countries (2-3), and conduct interviews and information exchange with related government agencies, regional organizations, and private companies (as necessary).
3	[Task 2]	<Summarizing the outline of influences and case examples of measures> Collect the below information and analyze Influences on each country and sector Case examples of measures by countries
4	[Task 3]	<Field work (1)> Interview survey for governmental organizations, regional organizations, and private companies (as necessary) in selected countries, and exchange information  <Preparation of a draft development scenario and JICA's future cooperation scenario> Preparation of a draft development scenario and JICA's future cooperation scenario based on the results of the field survey
5	[Task 6]	Provide advice on pilot project implementation.

Source: JICA Study Team

### 12.2.2 Overview of Sargassum Measures in the Central America and the Caribbean Region

#### (1) Overview of Impacts of Sargassum

The impact of sargassum, which began to flow in the region in 2011, has had a multifaceted impact in Central America and the Caribbean region. The situation of the influx fluctuates from year to year. While the influx of Sargassum has positive impacts, such as providing a hiding place for juvenile fish of some species and increasing the catch of some species, the negative effects far outweigh the positive aspects. For example, economic damage to the industry, such as tourism and the fishery, is identified. Also, there is a negative effect on the human body.

In the tourism industry, the influx of sargassum has caused significant damage to the landscape, and the awful smell emitted by the sargassum that has drifted ashore and accumulated on the beaches has caused tourists to avoid the area. Negative impacts allegedly caused by sargassum, such as changes in catch volume and catch size, have also been reported in the fisheries industry.

Although community-level and hotel-based removal efforts as well as beach beautification activities by government-related organizations have been undertaken as a coping strategy, implementation varied from country to country and region to region. The Study Team confirmed through a field survey that while removal work is relatively advanced in tourist areas, the efforts in fishing villages and areas with few houses are not active, and the adrift Sargassum tends to be left behind.

## (2) Examples of Support by Development Partners

In addition to the support from the United Nations Development Programme (UNDP), Food and Agriculture Organization (FAO), and other UN agencies, projects by international cooperative organizations in various countries, such as the New Zealand government, the German *Kreditanstalt für Wiederaufbau* (KfW), and others, are implemented (Table 12-31). Apart from those listed in the table, there is information on project plans by the Taiwanese government, Organization of Eastern Caribbean States (OECS), the European Union (EU), as well as activities by numerous universities, research institutes, government-affiliated companies, and non-government organizations (NGOs).

**Table 12-31 Examples of Support for Sargassum Measures**

	Supporting Entity	Project Name
1	New Zealand Government	Sargassum Products for Climate Resilience in the Caribbean
2	UNDP	The Project for Improving National Sargassum Management Capacities in the Caribbean
3	Germany KfW	Adapting to a New Reality: Managing Response to Influxes of Sargassum Seaweed in the Eastern Caribbean as Ecosystem Hazards and Opportunities (SargAdapt)
4	FAO	Climate Change Adaptation in the Eastern Caribbean Fisheries Sector (CC4FISH) Project

Source: JICA Study Team

The following is an overview of some of these major projects.

### 1) "Sargassum Products for Climate Resilience in the Caribbean"<sup>8</sup>

The project is a joint project between the New Zealand government and CRFM, and the implementers are "Plant & Food Research Limited," which is a New Zealand government-owned Crown Research Institute, and CRFM. The period is 2020-2023, and the project has four outputs tied to four activities, as shown in Table 12-32. The starting phase of the project focuses on evaluating safety aspects through sample collection and analysis, followed by exploring the potential for utilization. The project seeks directions for activity development and expansion, including collaboration with UNDP projects.

**Table 12-32 Activities and Outputs of the CRFM-NZ Project**

	Activity	Output
1	Raw material safety testing and harvesting operations review	Sargassum-derived production and harvesting method options
2	Product and Process Development	Product specifications and process design for Sargassum-derived product
3	Product Commercialisation Strategy Development	Commercialisation strategy for Sargassum-derived product developed
4	Outreach and Supply Chain Development	Dissemination of model to industry stakeholders and wider Caribbean

Source: Sargassum Products for Climate Resilience in the Caribbean

### 2) "The Project for Improving National Sargassum Management Capacities in the Caribbean"

The UNDP project covers five countries, i.e., Barbados, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago. The project period is three years, from 2022 to 2025. The purpose is to strengthen state functions related to sargassum management by introducing equipment and

<sup>8</sup>CRFM and Plant & Food Research (2020) "Sargassum Products for Climate Resilience in the Caribbean."

providing expertise and technical knowledge for the collection, removal, transportation, and disposal of sargassum. The project will also develop scientific monitoring techniques using drones, geographic information system (GIS), and other mapping tools for quantitative assessment of sargassum influx. In addition, a plan for Sargassum collection and management by regions will be developed to minimize the impact on coastal erosion and sea turtle nesting beaches.

**Table 12-33 Equipment to be Provided in UNDP Projects**

	BRB	KNA	LCA	TTO	VCT
Nearshore					
Floating booms and barriers / running meter	0	250	800	1,800	1,600
Aquatic conveyor sargassum harvester (in-water collection)	2	2	2	2	2
Workboats/barges/water cranes (in-water removal)	2	2	2	2	2
Onshore (Beach)					
Machine surface beach rakes	3	3	3	3	3
Walk-behind beach surface rakes	8	8	8	8	8
Lightweight tractors	3	3	3	3	3
Dump truck	1	1	1	1	1

Source: UNDP Barbados

### 3) "Adapting to a New Reality: Managing Response to Influxes of Sargassum Seaweed in the Eastern Caribbean as Ecosystem Hazards and Opportunities (SargAdapt)"

The project is through the German KfW, and the target countries are Dominica, St. Lucia, St. Vincent and the Grenadines, Grenada, and Barbados. The project consists of three components as shown in Table 12-34, and the project period is three years. The activities cover broad measures, including formulating management plans, knowledge sharing, and human resource development.

**Table 12-34 Activities of SargAdapt**

	Component	Summary
1	Knowledge Mobilised	To develop appropriate management responses to sargassum influxes to lessen damage to coastal and marine ecosystems and human livelihoods based on enhanced knowledge and understanding of patterns and impacts of sargassum influxes. This will enhance stakeholders' knowledge to appropriately respond and adapt to sargassum influxes with good practices.
2	Capacity Developed	To enhance the technical and institutional capacity of stakeholders to cope with, plan for, sustainably manage, and adapt to sargassum influxes. This will build networks and partnerships among science, industry and community stakeholders to promote best practices and innovation and sustain adaptation to sargassum influxes.
3	Adaptation Plans Institutionalised	To reinforce the ability of marine and coastal stakeholders for adaptive planning, management and ecosystem and livelihood resilience through practical applications. This will enable sargassum-smart communities with reduced climate risk and tangible climate adaptation benefits.

Source: CERMES website

### 4) Assistance Plan by Taiwan

Taiwan's International Cooperation and Development Fund (ICDF) plans to form a project in St. Lucia focusing on the utilization of sargassum and invites a university professor from their country to conduct a survey in September 2022. The organization plans to establish a project scope through the survey. Possible activities include capacity building and training for residents, intending to commercialize products using sargassum. According to the ICDF, the test results of the heavy metals of sargassum collected in St. Lucia in 2021 indicated that the contained amount is acceptable for human consumption.

The test was carried out in a laboratory in Taiwan.

### **(3) Assistance by Japan**

#### **1) For Antigua and Barbuda**

The official exchange of notes was signed on November 30, 2020 regarding the grant aid for the development of fisheries and tourism in Antigua and Barbuda (Economic and Social Development Programme) with a grant amount of JPY 200 million<sup>9</sup>. The cooperation aims to contribute to the sustainable development of both industries by providing seaweed removal equipment to counter the adverse effects of sargassum influx on tourism and fisheries, such as the deterioration of the landscape, awful smell, generation of hydrogen sulfide, and reduction of oxygen levels in the sea.

#### **2) For Grenada**

The official exchange of notes was signed on December 2, 2020 regarding the grant aid for the development of fisheries and tourism in Grenada (Economic and Social Development Programme) with a grant amount of JPY 200 million<sup>10</sup>. The cooperation will contribute to the sustainable development of both industries and the early reconstruction of the post-COVID society by providing seaweed removal equipment to counter the negative effects on the fishing and tourism industries caused by the accumulation and decomposition of sargassum near the coast.

#### **3) For the Five Eastern Caribbean Countries**

The official exchange of notes was signed on February 19, 2022 regarding the grant aid “The Project for Improving National Sargassum Management Capacities in the Caribbean (in Collaboration with UNDP)” with a grant amount of JPY 1.419 billion (assistance to St. Kitts and Nevis, St. Vincent and the Grenadines, St. Lucia, Republic of Trinidad and Tobago and Barbados for the development of fisheries and tourism)<sup>11</sup>. The cooperation will provide equipment for sargassum removal, strengthen the capacity for monitoring and removal of seaweed influx, and build an information-sharing network among the countries involved. UNDP will be the implementation body for the project.

### **12.2.3 Overview of Sargassum Issues in Focus Countries and Development and Cooperation Scenario**

#### **(1) Overview**

##### **1) Selection of Focus Countries for Survey**

There are many reports of sargassum damage in Central American and Caribbean countries. The Study Team selected Belize from the Central American region and Barbados and St. Lucia from the Caribbean region.

Belize was a candidate site for the pilot project related to sargassum to be implemented in this study. The Study Team had collected preliminary information that the damage situation in Belize was relatively serious. In addition, it was expected to collect comprehensive regional information from

<sup>9</sup>Ministry of Foreign Affairs (Japan) website. [https://www.mofa.go.jp/mofaj/press/release/press25\\_000011.html](https://www.mofa.go.jp/mofaj/press/release/press25_000011.html)

<sup>10</sup>Ministry of Foreign Affairs (Japan) website. [https://www.mofa.go.jp/mofaj/press/release/press22\\_000116.html](https://www.mofa.go.jp/mofaj/press/release/press22_000116.html)

<sup>11</sup>Ministry of Foreign Affairs (Japan) website. [https://www.mofa.go.jp/mofaj/press/release/press1\\_000729.html](https://www.mofa.go.jp/mofaj/press/release/press1_000729.html)

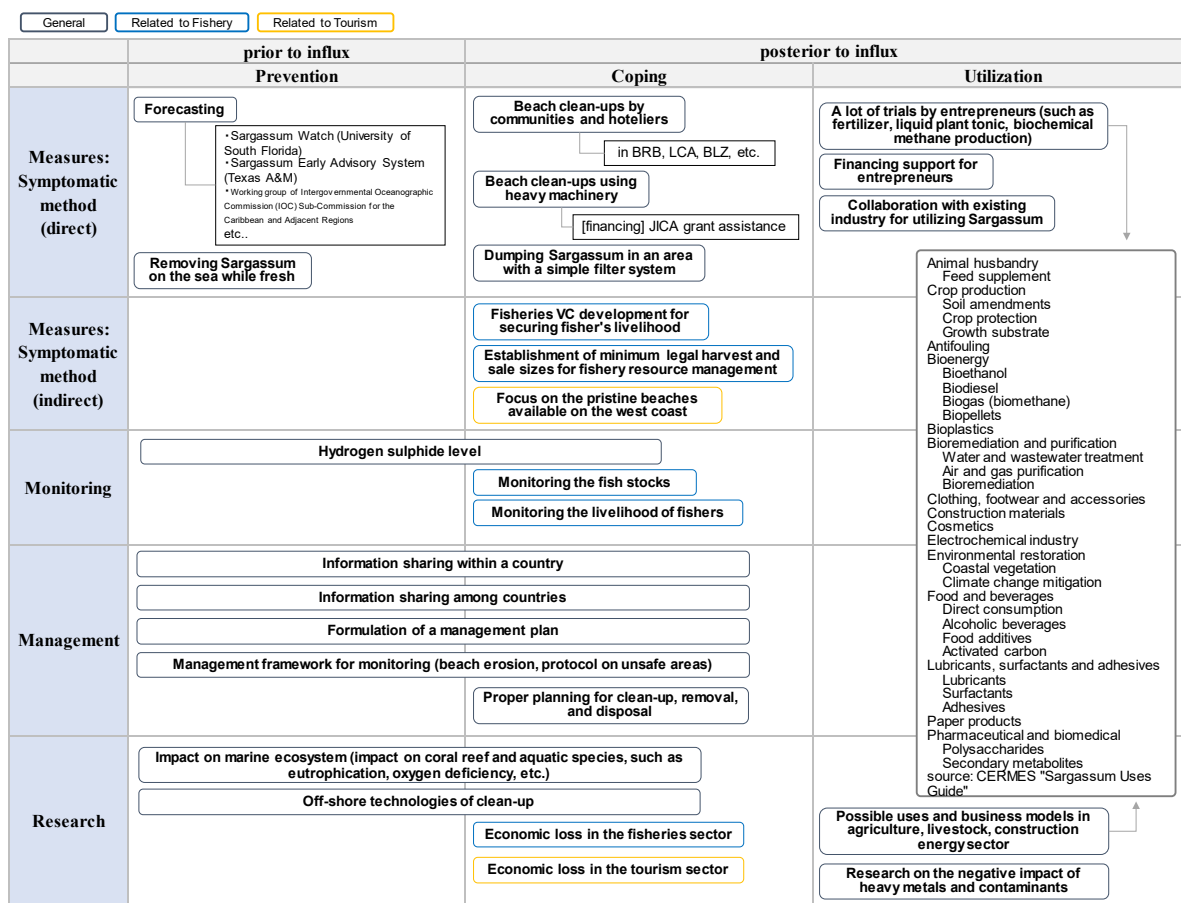
CRFM Secretariat, which is located in Belize.

Barbados is the target site of the pilot project for sargassum in this study, and it was expected to gather information from related institutions such as Caribbean Agricultural Development Institute (CARDI) and the National Conservation Commission (NCC). Also, it was expected to form contacts with people involved in large projects such as the University of the West Indies (UWI) and UNDP.

St. Lucia is one of the focus countries of the survey on the fisheries sector, and it was expected to understand the impact from the perspective of the fisheries sector. Also, St. Lucia is the target site of several projects, such as UNDP and New Zealand/CRFM projects, and it was expected to grasp the contribution of these projects.

## **2) Key Areas of Sargassum Measures**

Sargassum influx has a wide range of adverse impacts on the local socio-economy. Also, there is a wide variety of approaches to countermeasures. The stages of countermeasures can be classified into three levels (segments): "Preventive measures prior to the influx," "Countermeasures posterior to the influx," and "Utilization." There are several approaches to be taken: 1) a direct approach such as forecasting and removal operations, 2) a supporting approach to the affected industries (e.g., support for fishers), and 3) a side support approach such as monitoring, management, and research on the impacts caused by sargassum influx (Figure 12-24).



Source: JICA Study Team based on the CRFM (2019), CERMES (2020),<sup>12</sup> etc.

**Figure 12-24 Overview of Sargassum Measures**

Various initiatives at each stage are being undertaken by the national government agencies, universities, and research institutes in Central America and the Caribbean region, as well as by aid organizations in the United States, France, New Zealand, and other countries. Regarding precautionary measures before the sargassum influx, there is the University of South Florida's "Sargassum Watch" and Texas A&M University's "Sargassum Early Advisory System", which provide observations information and drifting forecasts. Further research on preventive measures, such as forecasting, is needed to enable the sargassum control implementing agencies in each country to access more accurate information.

As a coping strategy after the influx, beach cleanups by environmental agencies, communities, and hotel units in each country are conducted. In Barbados, the NCC takes a role in the response from an environmental conservation standpoint by removing sargassum from the coast. In addition, the provision of removal equipment through the Japanese grant aid is one of the measures included here.

On the other hand, a wide range of research activities, demonstration tests, and commercialization are conducted by UWI and entrepreneurs and companies in various countries. However, many issues remain, such as annual fluctuations in the influx of sargassum resulting in the lack of a stable supply of sargassum, which is a barrier to commercialization. Also, drastic technology for consuming large

<sup>12</sup> CRFM (2019) Fact-finding Survey Regarding the Influx and Impacts of Sargassum Seaweed in the Caribbean Region, CERMES (2020) Sargassum Uses Guide: A Resource for Caribbean Researchers, Entrepreneurs and Policy Makers



amounts of sargassum has not yet been developed.

The following items are set as priority fields for further measures based on the above.

- Improving the accuracy of influx forecasting.
- Provision of equipment to countries with a high level of urgency.
- Research projects for utilization.
- Technical cooperation for utilization; and
- Wide-area expansion of utilization technology.

### **3) Examples of Measures and Issues in Focus Countries**

#### **a) St. Lucia**

St. Lucia is one of the target countries for various support by the development partners. As for the approach for sargassum removal, equipment will be provided by the UNDP project. A sample survey was conducted by the New Zealand/CRFM project on the premise of utilization. In addition, a management plan was developed for sargassum measures by the Sargadapt Project. As mentioned above, there are various activities for dealing with sargassum measures in St. Lucia.

As an example of efforts by the country's government, a task force was organized in 2018 by stakeholders such as the National Conservation Authority, Ministry of Finance, Department of Fisheries, and fishermen's associations to conduct coastal sargassum removal, identification of discard areas, and assessment of the amount of drift. However, no similar activities have taken place since the task force was disbanded in early 2019 for financial reasons.

In St. Lucia, sargassum influx to the east coast is notably high similar to other countries. In Micoud and Dennery, large quantities of sargassum have washed up near the coast, especially in Micoud, where the entire area where fishing boats are moored is covered with brown drifting debris. The shoreline is covered with a sludge-like substance and the area is filled with a strong sulfur smell. A single power shovel was removing the sargassum but compared with the amount, the removal capacity was far short of what was needed. On the other hand, the drifting quantities of sargassum in Cas-en-Bas, a resort area with a golf course located on the east coast of the northern part of the island, were smaller compared with Micoud. Generally, in tourist areas, removal work is promoted by tourist agencies by paying a daily work allowance to nearby residents. However, it is thought that there is no incentive for removal work in fishing villages and general settlements resulting in remaining sargassum on the beach.

Although the site is the target of numerous projects, conditions on the ground remain difficult. While conducting removal work is an urgent task, basic research for utilizing sargassum and the establishment of a management system in cooperation with government agencies are required.

It should be noted that sargassum influx is seasonal, and its impact varies greatly depending on the time of year. The amount of sargassum covering the shoreline is markedly different in August than in November, as evidenced by the comparison between Figure 12-27 and Figure 12-28, which depict the Micoud fishing port. The degree of foul odors that can be smelled in the settlements has also noticeably improved. According to the interviews with the staff of the fishery authority and local residents, the main reason for the change in conditions is due to ocean currents. However, because some sargassum

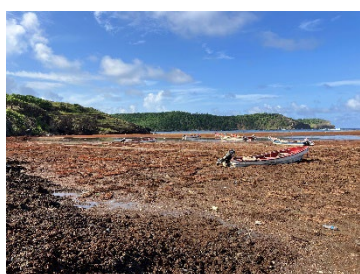
have permeated the seafloor, the color of the waves is nearly black and the landscape challenges are long-term.



**Figure 12-25 Dennery Fishing Port**



**Figure 12-26 Dennery Settlement**



**Figure 12-27 Micoud Fishing Port (August)**



**Figure 12-28 Micoud Fishing Port (November)**

Photo: JICA Study Team

## **b) Barbados**

The University of the West Indies (UWI), which has its campuses in Barbados, is one of the centers of sargassum studies. Various research activities are conducted, including the production and research of sargassum mulch, research on bioethanol production using sargassum, research on the production of bioplastics, extraction of alginate for use in the cosmetic field, and extraction of polysaccharides and secondary metabolites for use in other fields<sup>13</sup>. Several examples of commercialization by private companies have also been identified, including research on anaerobic co-digestion, research on manufacturing synthetic resin sheets for building materials, commercialization of bio stimulants, commercialization of fertilizers, and utilization as a raw material for soap<sup>14</sup>.

The NCC, a state-owned company, plays a role in beach beautification activities by removing, transporting, and disposing sargassum from the coast. The NCC is primarily focused on environmental conservation and has plans for a variety of initiatives, including a joint project with CARDI and the International Trade Center (ITC) to generate methane for power generation, construction of a wave break structure using sargassum blocks (compacted sargassum blocks), and monitoring and evaluation of sargassum influx using drones. However, it should be noted that not all the ideas have been implemented due to financial constraints.

The situation regarding sargassum on the east coast of Barbados appears to be less severe than on the east coast of St. Lucia. However, it is largely due to geographical differences, periodical differences in

<sup>13</sup>CERMES (2020). "Sargassum Uses Guide: A Resource for Caribbean Researchers, Entrepreneurs and Policy Makers".

<sup>14</sup>(Same as note 13.)

the influx, and the prevalence of beautification activities. Since the influx fluctuates yearly, the study of drastic solutions is a crucial issue in Barbados.



**Figure 12-29 Bathsheba**



**Figure 12-30 Bathsheba**



**Figure 12-31 Martins Bay**

Photo: JICA Study Team

### c) Belize

Belize has a high concentration of tourist destinations on the east coast where the sargassum influx is serious, especially in San Pedro and Caye Caulker. The government is aware of the seriousness of the sargassum problem, and a cross-ministry task force including stakeholders was organized. According to the Belize Tourism Board (BTB) website, the task force is composed of the National Emergency Management Organization (NEMO), the Ministry of Blue Economy and Civil Aviation (MBECA), the Ministry of Tourism and Diaspora Relation, BTB, Coastal Zone Management Authority, Ministry of Health and Wellness, Belize Tourism Industry Association (BTIA), Belize Hotel Association (BHA), and representatives from each village (San Pedro, Caye Caulker, Hopkins, and Placencia)<sup>15</sup>. In addition to the above, the Ministry of Agriculture, Food Security and Enterprises and the Ministry of Infrastructure, Development & Housing joined, making a total of 18 members.

The Ministry of Tourism and the Ministry of Blue Economy play a central role in the task force, which meets monthly and has established a decision-making protocol. Since it is a voluntary framework, the funding is not plentiful, and only two projects have been implemented in 2022: information gathering in Mexico and beach cleanup and disposal.

However, beach beautification activities funded by the BTB have been implemented in five villages and have contributed significantly to the removal of sargassum. According to interviews in Hopkins, the budget contributed by the BTB covers the daily allowance for 20 residents responsible for the removal work (BZD 60/day/person) and the transportation costs for disposal.

In addition, the detection of high heavy metal values in samples collected in Belize by the New Zealand/CRFM project has made headlines and raised a variety of concerns related to disposal methods and utilization.

<sup>15</sup>BTB website < <https://belizetourismboard.org/tourism-resources/sargassum-resource/#1560540857329-ccc170c0-336c> > (viewed August 27, 2022)



**Figure 12-32 Hopkins 1**



**Figure 12-33 Hopkins 2**

Photo: JICA Study Team

**d) Supplemental Survey (Jamaica)**

The Study Team collected information supplementally in Jamaica, the target country for the fisheries survey. Sargassum drift has also been observed in Jamaica, where the National Environment and Planning Agency (NEPA) has published best practice guidelines with recommendations for removal and disposal. According to the guideline, using tractors, wheel loaders, etc. is prohibited for sargassum removal on the beach, and NEPA permits are required when the need for heavy equipment arises. The Faculty of Science and Technology (FST) Sargassum research group at UWI's Mona Campus (Kingston) is conducting research activities including chemical analysis. A joint project between NEPA and UWI University is also underway to utilize it as compost, extract biologically active compounds, generate energy, etc.

**(2) Development and Cooperation Scenario on Sargassum Sector**

**1) Development Scenario**

**a) Development Goal and Strategy**

**Setting of the Development Subject and Development Goals**

The development subject in the sector is "Dealing with the Impact of Sargassum," and the development goals are "Reduction of Impact of Sargassum" and "Utilization of Sargassum."

**Table 12-35 Development Subject and Development Goals of the Sargassum Sector**

<b>Development Subject</b>	Dealing with the Impact of Sargassum
<b>Development Goal</b>	1. Reduction of Impact of Sargassum 2. Utilization of Sargassum

Source: JICA Study Team

**Setting of the Basic Strategies**

As mentioned above, sargassum control can be broadly classified into three segments, namely "prevention segment", "coping segment", and "utilization segment". Since these segments have strategic implications in the measures, they are utilized as the basic strategies for the scenario.

Each segment has many activity groups, including measures, monitoring, and research. To solve the issues, the implementation of comprehensive efforts in all segments and activities is required.

**Table 12-36 Basic Strategies for Solving the Sargassum Problem**

Sector	Strategy	Strategy Overview
Sargassum	1. Sargassum influx prevention	The strategy has the perspective of mitigating the damage associated with drifting, such as using satellite information to predict inflows and implementing prevention based on the predictions. This strategy contributes to Development Goal 1.
	2. Dealing with the sargassum influx	The strategy focuses on damage reduction and recovery from damage, including coping strategies at the time of influx and assistance to affected industries.
	3. Utilization of sargassum	This strategy contributes to overcoming challenges by viewing drifting sargassum as a resource and creating new value. The strategy mainly contributes to Development Goal 2.

Source: JICA Study Team

## b) Program and Project

More than ten years have passed since the first report of sargassum damage, and many development partners have implemented various initiatives in the Central American and Caribbean regions. On the other hand, Japan's assistance lags behind that of other development partners, as Japan's principal support is the provision of equipment through grant aid.

It is appropriate to summarize the existing efforts and propose cooperation scenarios with consideration of the strong points of Japan.

The programs aligned with Figure 12-24 are shown in Table 12-37.

**Table 12-37 Programs Based on the Basic Strategy**

Sector	Strategy	Program/Project	Term
Sargassum	1. Sargassum influx prevention	1-1 Satellite-based influx forecasting	Long term
		1-2 National and interregional information sharing	Medium term
		1-3 Health hazard prevention	Medium term
		1-4 Fisheries and marine management/marine ecosystem assessment	Medium term
		1-5 Tourism management	Medium term
	2. Dealing with the sargassum influx	2-1 Installation of removal equipment	Short term
		2-2 Removal and disposal management	Medium term
		2-3 Health hazard coping	Medium term
		2-4 Fisheries and marine management (including assessment of economic loss)	Medium term
		2-5 Tourism management (including assessment of economic loss)	Medium term
	3. Utilization of sargassum	3-1 Research on utilization technology	Long term
		3-2 Commercialization of utilization technology	Long term
		3-3 National and interregional information sharing	Medium term
		3-4 Contaminant (heavy metals, etc.) assessment and countermeasures	Long term

Source: JICA Study Team

## 2) JICA's Cooperation Scenario

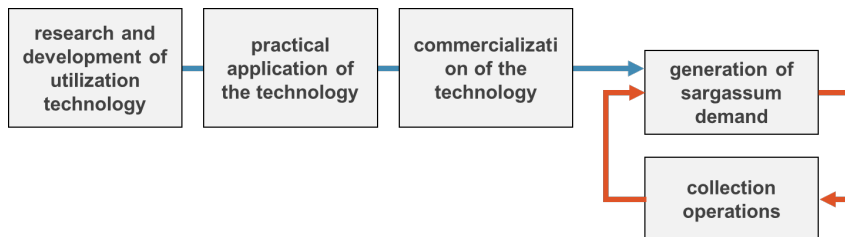
While efforts from a variety of perspectives are required to address the sargassum issue, the following four points are the basic policies for considering cooperation scenarios. The support proposals are considered by taking advantage of Japanese technology, financial resources, and coordination capabilities.

**a) Basic Policy for Cooperation Scenario**

**Establish a Cycle of Utilization and Collection/Removal**

Currently, research on the utilization of sargassum is progressing in some countries, and entrepreneurs are developing products using sargassum. However, there is no technology to utilize a large amount of sargassum. Although sargassum is utilized as compost in some areas, it is discarded after removal or left washed up on the beach without being removed in many places. Also, the removal work is mainly conducted by community-based volunteers or incentivized work by allowances from hotels and municipalities.

A change of mindset that makes people recognize the sargassum as a resource is needed to facilitate the sargassum removal efforts. The development of useful utilization techniques is required to realize the change. In other words, as shown in the figure below, it is important to establish a cycle of research and development of utilization technology, practical application of the technology, commercialization of the technology, generation of sargassum demand, and collecting operations. A semi-permanent cycle of the generation of demand and collection operations is crucial.



Source: JICA Study Team

**Figure 12-34 Ideal Sargassum Utilization and Collection Cycle**

**Design Projects that Benefit a Wide Area to Address Regional Issues**

The impact of sargassum is a regional issue that spans the entire Caribbean from Central America regions such as Mexico and Belize to the Eastern Caribbean. However, there are significant differences among countries in sargassum drift forecasting and utilization techniques, as well as the efforts by the government and private sector to deal with the problem. To deal with the sargassum issues, it is crucial to generate the cycle of the utilization and collection shown in the above figure in multiple technologies and to implement the cycles in several countries.



Source: JICA Study Team

**Figure 12-35 Technological and Regional Expansion of Utilization and Collection Cycle**

## Develop a Clear Policy for Dealing with the Heavy Metal Problem

While there are numerous reports that sargassum contains heavy metals (arsenic, cadmium) at levels that affect the human body, there are also reports that show no effects on the human body or livestock. It seems that the situation has not yet been fully evaluated. The issue remains chaotic as there are differences in perception of heavy metals among countries.

However, since ensuring safety is a high priority for projects of development partners, it is necessary to present measures that ensure safety, such as evaluating the impact of heavy metals, especially during utilization, and examining the operation of technologies for heavy metal removal.

## Actively Incorporate New Ideas and Innovative Perspectives

While various efforts are being made to utilize sargassum, efforts to change perspectives are also identified. As an example, the Sargassum Ocean Sequestration of Carbon, Inc. (SOS Carbon), a company derived from the Massachusetts Institute of Technology (MIT), has developed a device called the Littoral Collection Module (LCM) that enables efficient collection of sargassum at sea. The company is also working to contribute to carbon sequestration by sinking the recovered sargassum to the seafloor. This initiative contributes to climate change countermeasures and has a different perspective than the existing utilization methods. It shows a step forward in expanding the options for countermeasures. Having an information network on the efforts of organizations and companies in each region and exploring the possibilities for contribution by Japan is required.

As for the efforts by Japanese companies, GS Alliance Co., Ltd., an affiliate of Fuji Pigment Co., Ltd. has succeeded in producing biodegradable plastic by utilizing sargassum. It contributes to the effective use of sargassum and is one of the best examples of how to achieve a decarbonized society. However, one of the challenges in its production is the restriction on the heating temperature due to the properties of the naturally occurring raw material (sargassum). Therefore, the hardness or color of the plastic does not meet the requirement of customers in some cases. Another issue is the high cost of forming molds (JPY 2 to 3 million for a full-scale mold) and other expenses required in the plastic manufacturing process.

## b) Proposed Cooperation Scenarios

Of the countermeasure programs listed in Table 12-37, the programs/projects that Japan has the potential to support are shown in Table 12-38.

**Table 12-38 Potential for Cooperation by Japan**

Sector	Strategy	Program/Project	Modality
Sargassum	Dealing with the sargassum influx	2-1 Installation of removal equipment	Grand aid
		2-2 Removal and disposal management	Expert dispatch
		2-4 Fisheries and marine management (including assessment of economic loss)	Survey
		2-5 Tourism management (including assessment of economic loss)	Survey
	Utilization of sargassum	3-1 Research on utilization technology	Survey, SATREPS
		3-2 Commercialization of utilization technology	PPP
		3-4 Contaminant (heavy metals etc.) assessment and countermeasures	Survey, PPP

Source: JICA Study Team

## **13. Local Economic and Social Development (Local Branding)**

### **13.1 Outline of the Study**

In the preliminary study, private sector and tourism studies were conducted in relation to regional economic and social development. In the private sector, Mexico, Costa Rica, and Panama were selected as priority countries to study mechanisms of providing support for small and medium-sized enterprises (SMEs), and recommendations were made to promote innovation for sophistication of industries. In the tourism sector, El Salvador, Dominican Republic, and Jamaica were selected as priority countries, where development of SMEs and digitalization to minimize tourism leakage were recommended. As pilot projects, a seminar was held in Panama to promote innovation through Japan-Panama collaboration in the private sector, and a One Village One Product (OVOP) fair was held in Saint Lucia in the tourism sector. Among the findings of these surveys are recommendations for cooperation through regional branding, which is the scope of this study, in "Minimizing Tourism Leakage" and in the pilot project in Saint Lucia.

Among others, stagnant productivity growth and economic disparity between urban and rural areas in the Central American region, and high dependence of economy on tourism and tourism leakage in the Caribbean region are identified as general issues. One of the solutions for them is higher value addition to local products and promotion of participation of local producers in the tourism value chain.

JICA has been working on cooperation for local branding in the world including the Central American region. In the Central American region, it supported OVOP movement in El Salvador and other countries. In the Caribbean region, while community tourism project in the Dominican Republic and sectorial training programs are implemented, no local branding project has been realized.

Considering the above situation, in the local economic and social development sector, this study focuses on local branding, aiming to propose development and cooperation scenario, considering the current situation after a series of JICA's cooperation in Central America and a possibility of formulating new cooperation projects in Saint Lucia, in the Organization of Eastern Caribbean States (OECS), and Jamaica in the Caribbean.

### **13.2 Overview of Local Economic and Social Development in the Region**

#### **13.2.1 Overview of Local Economic and Social Development in Central America**

##### **(1) Local Economy**

In the preliminary study, Mexico, Costa Rica, and Panama were selected as priority countries of the private sector, to study the impact of COVID-19. The general problems of the region identified in the study are large informal sector, stagnant productivity growth, lack of government funding, and high unemployment rates for women and young people.

The export industry was resilient to the pandemic in macroeconomic terms, as industries were temporarily affected by strong behavioral controls but quickly recovered. However, in a labor-intensive production environment, this resiliency is partly realized at the expense of burden on workers, such as the risk of infection and overwork due to the shortage of personnel. Particularly in recent years, productivity improvement has been barely realized, and economic growth has been supported by labor



input. Therefore, improving productivity is both a traditional challenge and a vulnerability in a pandemic that restricts people from gathering and moving around.

In addition, although assistance was provided to small- and medium-sized enterprises and workers affected by the pandemic in many countries, most of it was "life-saving measures" such as providing loans and exemption from paying taxes and public services to delay the economic impact of the pandemic. On the other hand, there were limited job training and other opportunities to improve productivity and acquire more resilient job skills for the Build-Back-Better (BBB). In terms of financing measures, the government's lack of funds and support for the segments of the population that need assistance the most have also been pointed out as issues. These challenges may be due to a lack of government funding to respond to emergencies, difficulties in understanding the situation and providing public support due to the large size of the informal sector, and a lack of systems to improve productivity and capacity building.

As for the employment situation, the large informal sector is a challenge for the entire region, and as mentioned earlier, it leads to the vulnerability in the difficulty of public support in a pandemic. Unemployment rates among women and young people tend to be higher than the total unemployment rate, and the impact of the pandemic was also significant. The background to women's unemployment is that there was a lot of informal employment, a lot of employment in the service sector, and an increase in work at home due to school closures.

In 2021, the World Bank (WB) realized the study named "Unleashing Central America's Growth Potential" (*Desatando el Potencial de Crecimiento de América Central*), which shows that the priority of the region is to recover from the worst economic contraction and to resume the path of strong and sustainable economic growth. Since it is foreseeable that the working age population will decrease drastically, the only possibility of achieving robust growth in the long term is with greater productivity, for which it is necessary to implement innovation process.

Prior to COVID-19, the Central American region experienced economic growth at an average rate of 4.5% per year for the last thirty years (between 1991 and 2017). However, this sustained growth was achieved with little productivity growth. The WB study insists on the need to improve the productivity of the region, for which it is necessary to implement long term reforms to induce significant structural changes. Investment in innovations is essential to achieve increased productivity, but the suitability and availability of complementary factors such as quality education, infrastructure, efficient markets, and quality institutions are also important.

Another element to consider is the need to increase the participation rate of women in the labor force. In Central America, women still face considerable obstacles in terms of educational and labor policies. A background paper for this report on Costa Rica, El Salvador, and Panama found that removing these obstacles could generate a significant increase in the female participation rate in the region, boosting productivity growth, and increasing output per capita.

Also, 59% of the population of Central America is currently concentrated in urban areas and the remaining 41% in rural areas. However, according to the WB estimates, the region's urban population will double by 2050, increasing by 25 million people. That is, seven out of ten people will live in cities.

Economic activity and employment opportunities are concentrated in large cities. In the world, more

than 80% of global economic activity is concentrated in urban areas. In the case of Central America, using a spatial disaggregation model of gross domestic product (GDP), the WB found that cities contribute 78% of economic activity in the region. For example, in Panama and Costa Rica, cities contribute 84% of the GDP.

Moreover, tourism is a main sector in the local economy, but a large part of the tourist offering depends on foreign companies, which reduces the economic benefits that flow into the region. Therefore, it is essential to increase tourist offerings, and the provision of services related to this activity by enhancing the capacity of small and medium-sized local companies, taking advantage of the attractions that exist in the towns of rural areas, creating tourist corridors, and to diversify the offer.

## **(2) Cooperation of JICA**

JICA has been promoting the regional expansion of assistance in the Latin American region, utilizing the OVOP concept, with the aim of revitalizing local economies and strengthening community capacity. Table 13-1 shows JICA's cooperation in the five target countries in Central America. In El Salvador in particular, the OVOP movement spread nationwide with the implementation of “the Advisor for One Village One Product (OVOP) Movement” project from 2012 to 2017. Using this as a model case for neighboring countries and regions in Central America, the OVOP regional advisor project was implemented from 2018 to 2020, with the three Central American target countries of El Salvador, Guatemala, and Honduras. In Guatemala, the "Local Industry Promotion Project" was implemented from 2010 to 2013 to support the promotion of local industries through the introduction of local promotion movements such as OVOP and roadside stations. In Mexico, technical cooperation was conducted in the state of Chiapas, and training on the OVOP Movement is undertaken as part of a program to dispatch trainees to Japan. In Nicaragua, a local industry promotion advisor was sent to Nicaragua, and technology transfer related to decentralized hands-on program exhibition and roadside stations took place.

**Table 13-1 Regional Branding Cooperation Projects in the Target Central American Countries**

Country	Before 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Mexico		Technical cooperation project related to coffee processing and roasting and coffee shop opening and management for 3 indigenous people's organization in Chiapas, Mexico					Mexico-Japan Exchange Program for the Strategic Global Partnership							
Honduras										OVOP regional advisor				
Guatemala		Local industry promotion project								OVOP regional advisor				
										Project for the Development of Human Resources and Support of Self-Organization in the Tikal National Park Tourist Corridor				
Nicaragua							Advisor for local industry promotion			Advisor for local economy development by Roadside Stations				
El Salvador	Eastern region development				Advisor for One Village One Product (OVOP) Movement					OVOP regional advisor				

Source: JICA Study Team

### (3) Initiatives of Other Organizations

#### Workshop of Solidarity (Taller de Solidaridad)

Since 2018, Guatemala has been receiving funding from the Xunta de Galicia. Works are being done on the development of entrepreneurship and self-employment of women agroecological producers, with the aim of improving the economic situation of the indigenous peasant communities of the municipality of Huitán. The Huitán Agroecological Cooperative has been created, which brings together 276 women and 34 men. Throughout this year, the cooperative will work on the management and marketing of agri-food products and will focus on strengthening capacities in the production, transformation, and marketing of agro-ecological products, improving the development of the local economy from an inclusive and sustainable approach, and promoting employment and decent work.

In Nicaragua, in consortium with Treball Solidari and hand-in-hand with local partners, receiving the economic collaboration of the Madrid City Council and the Generalitat Valenciana, since 2017, the start-up of four family businesses has been promoted in three municipalities of the Department of Madriz. This year, it is planned to work in two other municipalities, with seven more ventures, in which around 500 people will participate. Two of the objectives that are intended to be achieved with the promotion of these initiatives are: to focus on strengthening the enterprises of the local economy, through family, associative, cooperative, and community action, and to promote the revitalization of municipal management in the development of the territory based on the capacities of the people who are part of the communities.

#### Municipal Tool Guide for the Promotion of Local Economic Development

The Foundation for Local Development and Municipal and Institutional Strengthening in Central

America and the Caribbean (La Fundación para el Desarrollo Local y el Fortalecimiento Municipal e Institucional en Centroamérica y el Caribe) is an institution based in San José, Costa Rica, whose purpose is to design strategies and execute projects and actions aimed at improving the management capacities of municipalities in the different areas of municipal work and its various associative forms.

With the collaboration of the Spanish Agency for International Development Cooperation, they published the first edition of the document called “Municipal Tools Guide for the Promotion of Local Economic Development” (Guía de Herramientas Municipales para la Promoción del Desarrollo Económico Local) in 2009, with the purpose of municipal governments developing strategies for the promotion of projects for the creation of local brands, based on structured support for entrepreneurs who contribute with their initiatives to the local economic development. These efforts are fundamentally oriented towards the small- and medium-sized business sector, considering the potential of human and natural resources and the vocation of cities.

The same document includes an annex with a compendium of good municipal practices in local economic development in Central America and the Dominican Republic. This document was also adopted by the Economic Commission for Latin America (ECLAC).

### **Local Central América**

In November 2021, the United States Agency for International Development (USAID) announced a five-year, USD 300 million initiative to empower local organizations in El Salvador, Guatemala, and Honduras to address the causes of irregular migration to the United States.

With this new initiative, called “Local Central America,” USAID intends to invest up to USD 300 million, subject to the availability of funds, to engage, strengthen, and finance local organizations to implement programs to promote sustainable and equitable economic growth, improve governance, combat corruption, protect human rights, strengthen citizen security, and combat sexual and gender-based violence. These programs are being carried out under the Root Causes Strategy of the Biden-Harris Administration and meet the Agency's goal of promoting work with local organizations and communities in El Salvador, Guatemala, and Honduras, and to generate stability in the region.

### **Petatán, Huehuetenango, Guatemala**

Networks of small producers organize themselves, create their commercial brands to enter more markets, and achieve better income. The search to improve income for their homes and promote the development of their communities has led thousands of local producers to associate, generate better conditions, and added value to their products, as well as create their own brand.

In Petatán, Huehuetenango, the drive to produce and improve market presence arises from the need of women, because many are left alone with their children, as some parents emigrate to the United States, and others are single mothers.

This and eight other community organizations have managed to develop ten commercial brands that will help some 10,000 small producers to promote their products in the national market and will motivate them to export in the future. Nine of the brands are already registered: four are for coffee, two for honey, one for potatoes and chips, another for artisanal fishing, and one for sustainable forestry and furniture manufacturing. In addition, one other cocoa brand is pending in the Registry of Intellectual Property.

To get there, they spent years of individual, family, and associative work with cultivation or preparation of their products, learning techniques and standards of quality and safety, and the opportunity to reach a collection center that opens the doors to various markets.

The European Union (EU) contributed €3 million for the entire project and €500 thousand came from the Norwegian Development Fund; however, they have not only been used to register the 10 trademarks. They worked with several axes of productive infrastructure, harvest management, training, and technical assistance, with the purpose of defining what was needed in infrastructure and equipment, as well as the construction of a collection center and give added value to the product, and the production process to ensure quality.

### **Financial Inclusion Efforts by Startups**

In response to the challenges of financial inclusion, many startups in the fintech sector have emerged in Latin America and are currently achieving success. It is said that there are more than 1,000 fintech companies<sup>1</sup>. Moreover, as of the end of 2022, 14 of the 31 unicorns in Latin America (45%) are fintech companies<sup>2</sup>. Against the backdrop of the lack of access to traditional banks, various companies are offering deposit, remittance, and payment systems to larger economic groups. From a microcredit perspective, Konfio, for example, offers loans of up to MXN 150,000 to small businesses in Mexico. The initiative attracted the interest of more than 200,000 companies in its first two years.

## **(4) Summary**

The countries in the Central American region have been greatly affected by the economic contraction caused by the spread of COVID-19. While the economy has achieved sustained growth over the past decade, productivity has stagnated, and migration to North American countries, such as Mexico and the United States, and to urban areas has led to slower development in rural areas.

Tourism is a strategic activity in Central American countries and one of the sectors most affected by the pandemic. Restoring this activity to pre-COVID-19 levels and breaking away from dependence on foreign companies will contribute to the local economy.

Another fundamental element that is currently missing is the funding of productive projects for SMEs through microcredit grants. The introduction of this kind of program is an unavoidable aspect of achieving sustainable economic development. As it is difficult for SMEs to meet the requirements to obtain loans from commercial banks, various levels of government need to implement policies to address this shortage. Also, solutions of growing startups are expected in this area.

Regarding the development of small and medium-sized enterprises and the creation of local brands, there are also regional efforts by organizations such as the Central American Integration System (SICA) that unite countries in the region. However, most of these efforts involve international cooperation through development cooperation agencies, as is the case in the countries of the European Union, the United States, and Japan. The success of these cooperative projects requires the active participation of the target local communities to understand their development potential, their needs, and their assets. This applies to different sectors of the economy, from agriculture to tourism.

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<sup>1</sup> <https://www.finnovista.com/2017-sera-el-ano-del-fintech-for-inclusion-en-america-latina/?lang=en>

<sup>2</sup> CB Insights

According to a June 2021 report by the American newspaper The New York Times, funding from the US government to invest in the development of Central American countries through USAID was a major failure in terms of preventing immigration. This was due to a lack of focus on effectively promoting local economic development and a failure to consider the views of local non-governmental organizations and residents of the communities to which these programs are directed. Guatemala, for example, received USD 1.6 billion in aid from the United States in the last decade. But poverty rates have risen, malnutrition has become a national crisis, and the country sends more immigrants, including children, to the United States than any other part of the world. At the regional level, Central American immigration has surged since 2019 and is on the rise again.

### **13.2.2 Overview of Local Economic and Social Development in the Caribbean Region**

#### **(1) Local Economy**

As for the impact of COVID-19 on Central America and the Caribbean region, the magnitude of the impact on the Caribbean region, which is highly dependent on tourism, was confirmed in the previous study. For example, tourism as a percentage of GDP has plummeted from 68% (2019) to 29% (2020) in Saint Lucia and from 28% (2019) to 12% (2020) in Jamaica. Many countries in the Caribbean region account for more than 90% of international travel consumption in tourism, and thus, the travel restrictions caused by the pandemic are thought to have had a significant impact. In addition, a report by the United Nations World Tourism Organization (UNWTO) Committee for the Coordination of Statistical Activities (CCSA) indicates that Small Island Developing States (SIDS), including countries in the Caribbean region, are significantly affected by COVID-19 because of the following four causes:

- (a) High dependence of the economy on tourism.
- (b) Vulnerability of the domestic market, which is expected to recover faster than the inbound market.
- (c) Dependence on a small number of markets with flights primarily on long-haul routes; and
- (d) Severe impact of the pandemic in major originating areas and strict movement restriction measures.

In the Caribbean region, pre-COVID-19 challenges such as dependence on cruises, dependence on the "Sun, Sand and Sea" tourism by all-inclusive foreign hotels, tourism leakage, and exclusion of local SMEs from the tourism value chain have existed since before COVID-19. These issues have caused delays in responding to new needs such as experiential tourism, responsive tourism, and long-stay remote workers since COVID-19.

One of the ways to overcome these challenges is to promote the participation of local producers in the tourism value chain by adding higher value to local products. An OVOP fair was held in Saint Lucia as a pilot project, demonstrating that promoting local production for local consumption and increasing demand for domestic products through OVOP, could be one of the solutions. On the other hand, as a challenge, it became clear that it is necessary to form a consensus on the goals of OVOP. During the implementation of the pilot project, it was found that the Ministry of Agriculture is considering the use of OVOP as a means of social development, such as poverty reduction and community revitalization, while the Ministry of Commerce has a vision of OVOP for economic development, such as export promotion and productivity enhancement. Another future task is to expand the efforts in Saint Lucia to

the Eastern Caribbean region.

## (2) Cooperation of JICA

Three countries, namely: the Dominican Republic, Saint Lucia, and Jamaica, have specific related policies in their Country Development Cooperation Policy and Rolling Plan.

As a problem of the tourism industry in the Dominican Republic, it is pointed out that consumption activities are limited to resort hotels, and that the surrounding local economies are not benefiting, although 7.3 million foreign tourists visited in 2017, making it an important source of income for the country, being one of the main resort areas in the Caribbean region. On top of that, the pillar of priority (goal) is to utilize local resources, support the promotion of the tourism industry, including areas around resorts, and revitalize the local economy. Based on this policy, the technical cooperation project, "The Project for Strengthening Mechanisms for Sustainable Community-Based Tourism Development in the Northern Region", is currently being implemented.

Saint Lucia's country development cooperation policy points out the need for industrial diversification because, like other Caribbean Community (CARICOM) countries, the country's economy is based on industries that are susceptible to external factors, such as tourism. A cooperation making use of the facilities and equipment introduced through past fishery grant aid projects is also planned in the rolling plan, considering that the government of Saint Lucia is taking measures to promote the development of the fishery industry in cooperation with the tourism industry.

In Jamaica, economic and financial issues such as negative growth, high unemployment rate, and large amount of debt due to the global economic crisis in 2008 are pointed out. For this reason, cooperation policies are formulated to strengthen the economic foundation, such as expanding employment opportunities, supporting small and medium-sized enterprises for human resource development, and providing education for the socially vulnerable.

**Table 13-2 Country Development Plan Related to Local Branding in the Caribbean Region**

No	Country	Basic Assistance Policy (Overall Goal)	Pillars of Priority (Goals)
1	Dominican Republic	Realization of sustainable and balanced development	(1) Sustainable economic development Strengthening the competitiveness of domestic industries is essential to achieving sustainable economic development. Emphasis will be placed on improving the productivity of SMEs, and support will be given to human resource development efforts.
2	Saint Lucia	Overcoming vulnerability (common to CARICOM member countries)	(2) Fisheries In Saint Lucia, which is aiming for economic revitalization through industrial diversification and job creation, the fisheries industry contributes to the supply of high-quality animal protein to the people and plays an important role in securing employment opportunities. Japan will continue to provide cooperation for the sustainable development and management of Saint Lucia's fisheries industry, taking into account the perspective of sustainable use of marine biological resources.
3	Jamaica	Overcoming vulnerability (common to CARICOM member countries)	(2) Reducing disparities Correcting income disparity, unemployment rate, and poverty countermeasures, which hinder sustainable and stable economic growth over the long term, are urgent issues. Support for improving productivity of SMEs and expansion of vocational training for persons with disabilities.

Source: Country Development Cooperation Policy to Dominican Republic (Ministry of Foreign Affairs of Japan, 2018), Country Development Cooperation Policy to Saint Lucia (Ministry of Foreign Affairs of Japan, 2016), Country Development Cooperation Policy to Jamaica (Ministry of Foreign Affairs of Japan, 2016)

### **(3) Initiatives of Other Organizations**

#### **CARIFORUM**

Caribbean Forum (CARIFORUM) is a place of economic dialogue between the 15 countries of the Caribbean and EU. Participating countries are Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Saint Lucia, Saint Vincent and the Grenadines, Saint Kitts and Nevis, Suriname, and Trinidad and Tobago. In the CARIFORUM-EU Economic Partnership Agreement, capacity enhancement of the exportation market, accomplishment of quality norms, promotion of private investment in the production and food security issue are priority areas in the agriculture sector.

#### **Community Tourism of ACS**

The Association of Caribbean States (ACS) is promoting the concept of "Community Tourism" as an alternative to overcome the social and economic disparities that rural communities suffer, as well as a way for communities that seek to generate other income within their daily economic activities, using the cultural, natural, and local resources in a particular region. The benefits for the communities that participate in the development of tourism are several, such as the reduction of poverty and the generation of sources of employment. Several successful examples can be cited, such as the case of Jamaica, where the "Country Style" community tourism network and the "Unique Jamaica" program have been successfully implemented with the purpose of promoting community tourism in Jamaica itself and internationally, offering visitors a diverse community experience while on vacation. There is a proposal for the creation of a "Regional Network of Community Tourism Initiatives in Latin America and the Caribbean", which will exchange information on the different projects in the region and their promotion as a travel option.

#### **OCOP by Food and Agriculture Organization of the United Nations (FAO)<sup>3</sup>**

The Caribbean region has joined in the Global Initiative on the Development of Special Agricultural Products: "One Country, One Priority Product" (OCOP), promoted by the Food and Agriculture Organization of the United Nations (FAO) (as of May 2022). OCOP's objective is to support small farmers to promote in global markets agricultural products with special value and developed with sustainable and innovative practices. FAO seeks to support countries to promote investment in innovation, technology, training, technical assistance, and marketing, to improve the performance of the sector.

Trinidad and Tobago is one of the eight countries certified as a producer of fine aroma cocoa, a product of high quality and international recognition. Sixty-five percent of the country's cocoa comes from small producers (less than five hectares), and the country exports mostly fermented beans. The total economic potential of this product is currently underexploited. The FAO seeks to promote investment in strengthening this value chain by providing market intelligence.

### **(4) Summary**

The dependence of the economy on the tourism industry is a major challenge in the Caribbean region. This challenge has been more acutely recognized in recent years, being a sector heavily affected by the

<sup>3</sup> <https://mexico.un.org/es/183325-la-fao-lanza-un-pais-un-producto-prioritario-en-america-latina-y-el-caribe>



COVID-19 pandemic. Dependence on “Sun, Sand and Sea” tourism is also an issue, and efforts such as community tourism are being practiced diversifying industries and contributing to the local economy. In recent years, JICA has also implemented a community tourism project in the Dominican Republic, but as described later in Jamaica, community tourism efforts are already progressing in the Caribbean region with the support of various international organizations. It is necessary to pay attention to the consistency and demarcation with such preceding activities.

On the other hand, it is considered that OVOP, which is expected to increase connectivity between tourism and other industries, especially agriculture, is still at the concept introduction stage. There is a potential to incorporate the OVOP movement as a next step or one of the methodologies of community tourism that is already widespread in the region.

### **13.3 Overview and Development and Cooperation Scenario of Local Economic and Social Development in Focus Countries**

#### **13.3.1 Local Branding in Saint Lucia and OECS**

##### **(1) Overview**

##### **1) Past Cooperation of JICA**

JICA's cooperation project on local branding implemented in Saint Lucia and OECS is a pilot project “Introduction and Establishment of the One Village One Product (OVOP) Movement” in the preliminary study. In this pilot project, Japanese experts introduced the OVOP concept and examples, held workshops to disseminate the OVOP concept, held an OVOP fair, and created a catalog introducing OVOP specialties. Sea moss, crafts, and cacao were selected as special products from the three municipalities of Praslin, Choiseul, and Soufriere, respectively. It revealed that producers lack knowledge of accounting and marketing and need support in sales, thus, the collaboration of the Ministry of Agriculture, Fisheries, Physical Planning, Natural Resources and Co-operatives and the Ministry Commerce, Industry & Consumer Affairs is desirable.

In addition, one person each from the Antigua and Barbuda Tourism Bureau, the Saint Lucia Tourism Bureau, and the Saint Lucia Ministry of Commerce participated in JICA Okinawa's issue-specific training "Product Branding and Marketing Using Local Resources (B)" held in 2022. Previous participation dates were back in 2016 and earlier. Emailing these three people about the current situation, the JICA Study Team got a response from a participant from the Saint Lucia Ministry of Commerce. Currently, she oversees export promotion with the focus on supporting local producers, and it was confirmed that she is engaged in a job that allows her to utilize the results of the training.

##### **2) Related Plans, Systems, and Organizations**

##### **a) Plans, Systems, and Organizations in Saint Lucia**

The pilot project in the preliminary study confirmed that cooperation between the Ministry of Agriculture and the Ministry of Commerce is desirable in implementing projects based on the OVOP concept. After that, the Ministry of Agriculture took the lead in submitting a request for the OVOP project to JICA (as of August 2022), as the staff member in charge of the pilot project at the Ministry of Commerce already resigned. Therefore, it is likely that the Ministry of Agriculture will take the lead

and the Ministry of Commerce will participate in the OVOP project as a related agency.

Other relevant ministries include the Ministry of Tourism, Investment, Creative Industries, Culture and Information, and the Ministry of Equity, Social Justice, and Empowerment. The Ministry of Social Affairs is the organization responsible for community and regional development.

In addition to the ministries, the Saint Lucia Hospitality and Tourism Association (SLHTA), Saint Lucia Bureau of Standards (SLBS), and Saint Lucia Marketing Board are also related to OVOP. The SLHTA implements the “SLHTA linkages program,” in which it supports local farmers to sell their produce directly to hotels, restaurants, and food and beverage distributors. The SLBS is a legal national certification authority, which is in charge of setting standards of food and granting license to use the Saint Lucia Standard Mark on products. The Saint Lucia Marketing Board is in charge of stimulating, facilitating, and improving the production, marketing, and processing of produce, but its restructuring and revitalization are required according to the Agricultural Policy Framework and Strategy.

#### a-i) **Agricultural Policy Framework and Strategy 2016-2021**

The Agricultural Policy Framework and Strategy 2016-2021 describes priority areas, vision and mission, and action plan of five years. There are 11 priority areas listed, among which area 1, 5, 6, 7 and 8 are related to OVOP.

**Table 13-3 Priority Areas of the Ministry of Agriculture of Saint Lucia**

No.	Priority Area	Summary
1	Agriculture diversification- based on improved research and development and utilization of improved technologies	Against the background of the decline of the banana industry, there is a growing momentum to expand the production of non-traditional crops. Enhancing R&D and human resource development, it is aimed to increase the productivity of crops other than bananas.
2	Resuscitation of the banana industry	The banana industry was hit hard by the epidemic of black sigatoka disease in 2010, and since then the ministry has worked to strengthen the resiliency. It is aiming to revitalize the banana industry by strengthening marketing.
3	Enhance national food and nutrition security	To improve the food and nutrition situation of the nation through the production and consumption of safe, affordable, nutritious, and high-quality Caribbean food.
4	Reduction in the food import bill	To strengthen the production, marketing, consumption, and utilization of local products in response to the current situation where food imports are increasing.
5	Agro-processing and agribusiness development	To develop competitive agro-processing and agricultural businesses by creating the suitable environment.
6	Market development- domestic and export	To promote efficient and effective marketing of local products and their by-products in domestic and export markets. To restructure and revitalize the Saint Lucia Marketing Authority.
7	The development and strengthening of appropriate institutional structures, mechanisms, and human resource capacities within the sector institutions, including the linkages and partnerships (local, regional, and international)	To strengthen agricultural cooperatives, etc., and strengthen capacity development of human resources and organizations.
8	Increased youth and women involvement in agriculture	To strengthen youth participation in the aging agricultural sector.
9	Effective management and utilization of fisheries resources	To strengthen the fisheries sector through effective management, conservation, and sustainable use of available marine resources.
10	The protection, conservation, and sustainable utilization of natural resource (land, water, and forestry)	To develop legal systems and implement programs to ensure the protection, conservation, and sustainable use of natural resources in the agriculture, forestry, and fisheries sectors.
11	Disaster risk reduction and climate change adaptation	To strengthen disaster preparedness, response, recovery, and rehabilitation.

Source: JICA Study Team based on Agricultural Policy Framework and Strategy 2016-2021

## a-ii) 7 Crops Project

The project “Enhancement of the Efficiency of Production-Distribution Supply Chain of Fruit and Vegetable Sector in St. Lucia”, also known as the “7 Crops Project”, has been implemented with the support of Taiwan. Phase 1 was implemented from May 2019 to December 2021, and Phase 2 is presently ongoing from 2022 to 2026. The selected products in the project are cantaloupes, honeydew melon, lettuce, tomatoes, pineapple, watermelon, cabbage, and bell peppers. The major achievements are summarized in Table 13-4 below. The objectives of the second phase are: 1. To increase the local production of all selected crops and decreasing importation; and 2. To enhance diversification of the agricultural sector through increased production of targeted crops.

**Table 13-4 Major Outcomes of 7 Crops Project**

No.	Item	Details
1	Subsidized Inputs and Seedlings Distribution	Total sales to date: USD 318,630 1,485 farmers have benefitted Savings of over USD 400,000 to farmers A total of 140,000 seedlings distributed
2	Hoop greenhouses	Island wide trials in 2020 and 2021: 18 hoops 470 farmers trained Installation of 39 additional hoop greenhouses
3	Varietal trials	New varieties introduced on the island for all crops. 11 demo plots. Training of extension officers and 485 farmers. Linkages with markets for the introduction of the new varieties.
4	Weather station installation	Station is complete and collects data on all parameters inclusive of rainfall, relative humidity, light intensity, wind speed and direction, and soil water saturation.
5	Capacity building exercises	4 trainings with farmers and extension 5 days of tastings Contract with Massy Mega
6	Classroom training	A total of 297 farmers completed the certification training in Good Agriculture Practices (GAP). 480 farmers benefitted Training of all extension officers
7	Packhouse and SLMB Support	National Fresh Produce Pack House meeting HACCP requirements was built.
8	Market intelligence, importers, supermarkets and hotel Engagements	10 hotel visits for conducting of needs assessments, problems, and solutions. Weekly supermarket and vendors market assessments and inspections
9	Farmers market	312 participants 30 farmers markets
10	Love St. Lucia campaign/massy premium corner	Promoted healthy eating Supported local farmers Promoted premium quality produce
11	IFarmApp	Development of farm app and user training in the following: 1. The capturing and analysis of crop planting information with a view to anticipating and informing the market of potential yield; 2. The capturing of and reporting on data relating to market prices of listed crops; and 3. Producing reports based on geographical location of farms and market outlet.

Source: Ministry of Agriculture, Fisheries, Food Security and Rural Development

In comparison with OVOP, it focuses rather on import substitution and local consumption. It not only supports the improvement of farmers’ productivity, but also conducts promotion campaign for local consumption, named as “Love St Lucia.” Since they have some similarity in terms of aiming for a better agriculture development with marketing and promotion, demarcation of activities is necessary for better project definition, design and implementation. Table 13-5 shows a possible option of such demarcation.

**Table 13-5 Example of Demarcation between OVOP and 7 Crops Project**

Project	OVOP Project in Saint Lucia	7 Crops Project
Objective	Product development and exportation	Import substitution and local consumption
Marketing target	Tourists and foreigners	Saint Lucian people
Target activity	Processing and packaging	Production
Capacity development	Marketing, accountability, product development, and processing	Production
Certification and Standard	HACCP, SLBS, and OVOP certification	HACCP and SLBS
Target products	High price goods	Affordable goods

Source: JICA Study Team

## b) Plans, Systems and Organizations in OECS

The OECS will be an important stakeholder in developing the OVOP project regionally. OECS formulates strategies in the field of tourism and carries out activities to complement the activities of each country as a region. The strategy consists of four main items (1. Ease of Intra-Regional Travel, 2. Marketing, 3. Improved Research and Development, 4. Product Development). Among them, niche tourism, branding, community tourism, investment in product development, and inter-sectoral cooperation in tourism are listed as components, which are consistent with OVOP. In addition, OECS has implemented the OCOP project in the past, and thus, there is a basic understanding for the regional implementation of the OVOP concept.

When the study team explained to OECS that there was a plan to expand the OVOP project in Saint Lucia over a wide area, OECS expressed positive response to implement the project with OECS as a counterpart. Specifically, there was an opinion that the Economic Affairs Division, which is responsible for tourism, business, export promotion, entrepreneurship support, business incubation and acceleration, formulation and implementation of agriculture and tourism development strategies would be suitable. Also, according to interviews, although JICA does not have experience in implementing projects with OECS as the implementing body, OECS has experience in implementing projects with other donors. Since 45 to 50 people are working in the Economic Affairs Division and about 160 in the whole entity, it is possible for OECS to become a project implementation body in terms of experience and scale.

## 3) Current Situation and Issues

### a) Overview and Needs of Local Branding

Although the tourism industry is thriving in Saint Lucia, it is considered dependent on tourism as a Caribbean beach resort. There are few appealing local products, and thus, it is considered that the beneficial effect of tourism on local industries is small.

Among the agricultural products, banana has been the biggest product of Saint Lucia. Saint Lucia has been the largest banana exporting country, dominating 53% in its peak. However, from 2010 to 2015, the export from the two major banana export companies, Tropical Quality Fruit Company and St. Lucia National Fair Trade Organization, decreased from 21,701 ton to 8,319 ton. This drop was caused by the spread of the Sigatoka Disease, which infected about 70% of banana trees. While the decline of the banana industry caused huge damage to the country's agriculture, it enhanced the improvement of production and value addition of other products, which are called non-traditional crops.<sup>4</sup>

<sup>4</sup> Agricultural Policy Framework and Strategy 2016-2021

The “Agricultural Policy Framework and Strategy 2016-2021” describes the current situation of some non-traditional crops. Although the reasons for selection are not clearly mentioned, it is considered that they are products prioritized by the Ministry of Agriculture. Table 13-6 below summarizes their description.

**Table 13-6 Summary of Products Described in Agricultural Policy Framework and Strategy**

No.	Product	Description
1	Cocoa	<ul style="list-style-type: none"> <li>The production was 39.5 ton and exportation was 16.7 ton on average from 2010 to 2015. The production highly depends on climate such as hurricane and drought. The 78.4% of exportation (20.3 ton out of 25.9 ton) in 2013 was toward Hotel Chocolat UK.</li> <li>The cocoa industry is an important component of the Government’s overall policy for transformation of agricultural sector and the sustainable development of Saint Lucia through agricultural diversification.</li> </ul>
2	Coffee	<ul style="list-style-type: none"> <li>The production and purchase has declined over the past few years.</li> <li>It is typically produced by small farm holders.</li> <li>Since Saint Lucian year-round tropical climate and volcanic soils are suitable for producing high quality coffee, future plantings should be of very high quality coffees.</li> </ul>
3	Coconuts	<ul style="list-style-type: none"> <li>There are increasing opportunities for farmers and processors to exploit the value-added opportunities, due to demand for fresh coconut water and coconut-based health and beauty products, including virgin coconut oil.</li> <li>Critical challenges are fragmented and unorganized sector, insufficient access to quality planting material for rehabilitation and expansion of coconut plantations, small-scale value-added operations, lack of certification, and compliance to international standards by coconut processors, limited access to finance to support much needed investment in the sector.</li> <li>The purchase of coconut products is increasing in major supermarkets and hotels. <ul style="list-style-type: none"> <li>➤ Dry coconuts (supermarket): 21,060 units (2011) to 41,963 units (2015)</li> <li>➤ Dry coconuts (hotel): 741 units (2011) to 16,825 units (2015)</li> <li>➤ 1.5 L bottled coconut water: 997 in 2011 to 34,682 in 2015</li> </ul> </li> </ul>
4	Fruits	<ul style="list-style-type: none"> <li>The domestic production of fruits increased from 3,411 ton in 2011 to 4,916 ton in 2015. It was attributed to increasing demand by local consumers and the hotel sector.</li> <li>The increase of stay-over tourist arrivals has contributed to a significant increase in the demand for local fruits such as watermelon, cantaloupes, pineapples, mangoes, and other tropical fruits. On the other hand, the inconsistencies in supply of fruits from local farmers have resulted in huge imports of fruits to satisfy the needs of the growing tourist population.</li> </ul>
5	Vegetable	<ul style="list-style-type: none"> <li>The production increased from 1,840 ton in 2011 to 2,551 ton in 2015.</li> <li>The purchase in major supermarkets and hotels increased from 646 ton in 2011 to 1,243 ton in 2015.</li> <li>Growing interest in prevention of lifestyle diseases has led to increase of domestic demand.</li> </ul>
6	Herbs and Spices	<ul style="list-style-type: none"> <li>Local production data on herbs and spices is not readily available. However, purchases of herbs and spices by major supermarkets and hotels are available including ginger, turmeric, basil, cinnamon, rosemary, thyme, mint, nutmeg, parsley, clove, mint, and celery.</li> <li>The purchase increased from 55.4 ton in 2011 to 105.2 ton in 2015.</li> </ul>
7	Livestock	<ul style="list-style-type: none"> <li>Although the production of chicken is increasing, its import is also increasing. The import is seven times larger than production.</li> <li>Production and purchase of pork beef and other meats are very small compared with chicken.</li> </ul>
8	Apiculture	<ul style="list-style-type: none"> <li>Beekeeping has been promoted for agricultural diversification from 2011 to 2015.</li> <li>The production increased from 21,000 gallons in 2011 to 24,000 gallons in 2015. It fell in 2013 and 2014.</li> <li>The industry is vulnerable to weather and climate change.</li> <li>There are two major honey producer organizations: The Mile Fleurs Honey Producers Co-operative and the St. Lucia Association of Beekeepers, which comprises 80 percent of honey producers. The products are honey, pollen, wax, soap, wine, candles, and others.</li> </ul>
9	Fisheries	<ul style="list-style-type: none"> <li>Fish landings are 1,616 ton in 2015 and slightly decreasing.</li> <li>Dolphin fish and tuna occupy most of the fish landings.</li> </ul>
10	Aquaculture	<ul style="list-style-type: none"> <li>The major products are sea moss, tilapia, and macrobrachium.</li> </ul>

Source: Agricultural Policy Framework and Strategy 2016-2021

## b) Current Situation

In this study, the local branding in Saint Lucia consists of four studies: 1) three products featured in OVOP fair; 2) community survey; 3) tourist perception survey of local products, and 4) situation of

organization. The contents of each study and their subsequent results are given below.

**b-i) Three Products Featured in OVOP Fair**

According to interviews with the Ministry of Agriculture, three promising local products are sea moss, cocoa, and handicrafts. Sea moss and cocoa are popular locally and are sold at supermarkets. On the other hand, it is rare that these products can be purchased and consumed at souvenir shops, hotels, etc., and the stories and "sales point" of Saint Lucia products are not shown. Pictures of examples of these products and other local products are shown below.



Dry Sea Moss



Sea Moss Drink



Sea Moss Powder

Photo: JICA Study Team

**Figure 13-1 Examples of Local Products of Saint Lucia (Sea Moss)**



Cacao Bar Sold in Supermarket



Chocolate Sold in Souvenir Shop



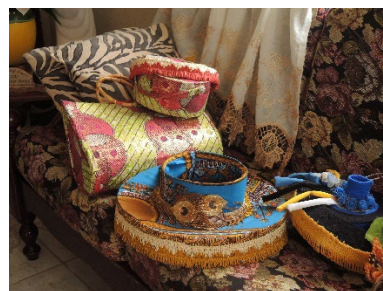
Cacao Tea Sold in Souvenir Shop

Photo: JICA Study Team

**Figure 13-2 Examples of Local Products of Saint Lucia (Cacao)**



Coal Pot



Traditional Clothes



Clock

Photo: JICA Study Team

**Figure 13-3 Examples of Local Products of Saint Lucia (Handcrafts)**



Spice



Sauce



Fruits and Vegetables

Photo: JICA Study Team

**Figure 13-4 Examples of Local Products of Saint Lucia (Others)**

The current situation and issues of the above three products are summarized in the table below. In general, the problem is the lack of storytelling as a local product of Saint Lucia and lack of strategy from the perspective of market-in. For example, sea moss is a product that the locals love and is known as a superfood by some, but the target market for this product is not clear and lacks certain approaches on how to sell it. In addition, the strength of Saint Lucia for marketing and product placement is unsure. Taking into account the characteristics of Saint Lucian sea moss, strategies are required such as selling the product to the vegetarian market as a substitute for gelatin. This, for example, could be done by utilizing the similar texture of gelatin in the local product. Moreover, the product could be developed as a handy health food, because dried sea moss requires time and effort to process.

**Table 13-7 Current Situation and Issues of the Three Products of Saint Lucia**

Product	Current Situation	Issues
Sea moss	Popular with locals, but rarely seen by tourists. It is sold as a drink, and in dried and powder forms. Prices have fallen in recent years due to international competition. A sea moss catalog, which shows recipes invented by local restaurants, was created. However, its effect is unknown.	Lack of appeal to tourists as a local food of Saint Lucia. Lack of market and differentiation strategy for export from a market-in perspective. Improving productivity and quality under international competition.
Cocoa	Rarely seen by tourists Few Saint Lucia cacao products in supermarkets. Cacao industry has been developed to the extent that souvenir shops sell expensive chocolate bars for about USD 10 each, but the branding to show its added value is insufficient. Hotel Chocolat, a British company, offers hotels and agritourism. About 70% of export is to Hotel Chocolat UK.	Branding of Saint Lucia cacao. Fostering the cacao industry as a local industry.
Handicrafts	Not any product that conveys the characteristics of Saint Lucia is found.	Rediscovery and redefinition of Saint Lucian handicrafts.

Source: JICA Study Team

To understand the actual situation of the producers of the above products, an interview survey was conducted targeting the exhibitors of the OVOP fair held in the previous year. For the interviews, questionnaires were prepared in advance and answers were collected face-to-face. The questions and summary of answers are shown in the table below. A total of eight people were interviewed: two sea moss producers, three cocoa producers, and three folk craft producers. Therefore, it should be noted that the results of this survey have no statistical significance but are merely a preliminary survey to grasp basic information.

The points clarified by this interview survey are as follows:

- Inaccurate bookkeeping and lack of understanding of sales, profits, and expenses.
- They are not in a very vulnerable situation, because they have no debts and no decrease in sales or profits due to bad weather.
- The business is run by an individual or a family. Sea moss and cocoa producers do not belong to any producers' unions, and each person carries out all the processes from production to sales, which is inefficient. Likewise, there is no use of shared facilities.
- Lack of quality assurance and high added value through compliance with standards and acquisition of certification.
- There are no sales destinations such as hotels, supermarkets, souvenir shops, and restaurants, and thus, they poorly benefit from the tourism industry.

**Table 13-8 Summarized Result of Hearing Survey from Local Producers in Saint Lucia**

No.	Question	Summarized Answer
1	Business entity	Family (63%), Individual (25%), Others (13%)
2	Number of workers	5 (25%), 3 (38%)
3	If belongs to association, etc.	No (50%), Choiseul Craft Association. Producers of sea moss and cocoa do not belong to any association.
4	Annual sales	Accurate answer is not collected, because most producers had difficulty to answer.
5	Annual profit	Accurate answer is not collected, because most producers had difficulty to answer.
6	Annual expense	Accurate answer is not collected, because most producers had difficulty to answer.
7	Most selling month	October (75%). Many replied from October to December.
8	Monthly sales in the most selling month	Accurate answer is not collected, because most producers had difficulty to answer. Many answered about 15-20% of annual sales.
9	Least selling month	January – February (63%)
10	Public support	No one receives public support.
11	Debt	No one has debt.
12	Sudden drop of sales or profit in recent ten years	50% answered that they experienced. The cause was only COVID-19, and not climate.
13	Customer	All the interviewees directly sell their product, such as in community and market. Other distribution routes are limited to exportation by one sea moss producer and hotel by one handicraft producer.
14	Difference of unit price by customer	In case of sea moss, exportation : local people = 10 : 8. In case of handicrafts, hotel : local people = 4 : 3.
15	State of products	Sea moss is sold processed and/or packaged. Cacao is sold in simple package (plastic bag).
16	Business area	Sea moss and cacao producers mostly do all production, processing, packaging and retailing.
17	If facility is owned or shared	Most producers own their facility, and do not use any shared facility. The only answer other than “own facility” is printing for package (outsourcing).
18	Bookkeeping	75% do not bookkeep.
19	Standard	75% do not comply with any standards. The other 25% answered Saint Lucia Bureau of Standards (SLBS).
20	Certification	88% do not obtain any certification. The other 12% answered U.S. Food and Drug Administration (FDA).

Source: JICA Study Team

## b-ii) Community Survey

As a result of discussions with the Ministry of Agriculture, it became clear that the ministry wanted to develop products selected by the residents of each community, but such products in each community were not clearly identified. Therefore, a random sampling questionnaire survey was conducted.

Nine communities were selected as targets. In consultation with the Ministry of Agriculture, the required sample size was calculated based on each population. A confidence level of 80% and a margin



of error of 10% were set as feasible levels considering the research budget and period. The questionnaire survey was conducted from November 4th to November 15th, 2022. The selected communities, targeted sample size, acquired sample size, and dates of survey are shown in the table below.

**Table 13-9 Abstracts of Community Survey in Saint Lucia**

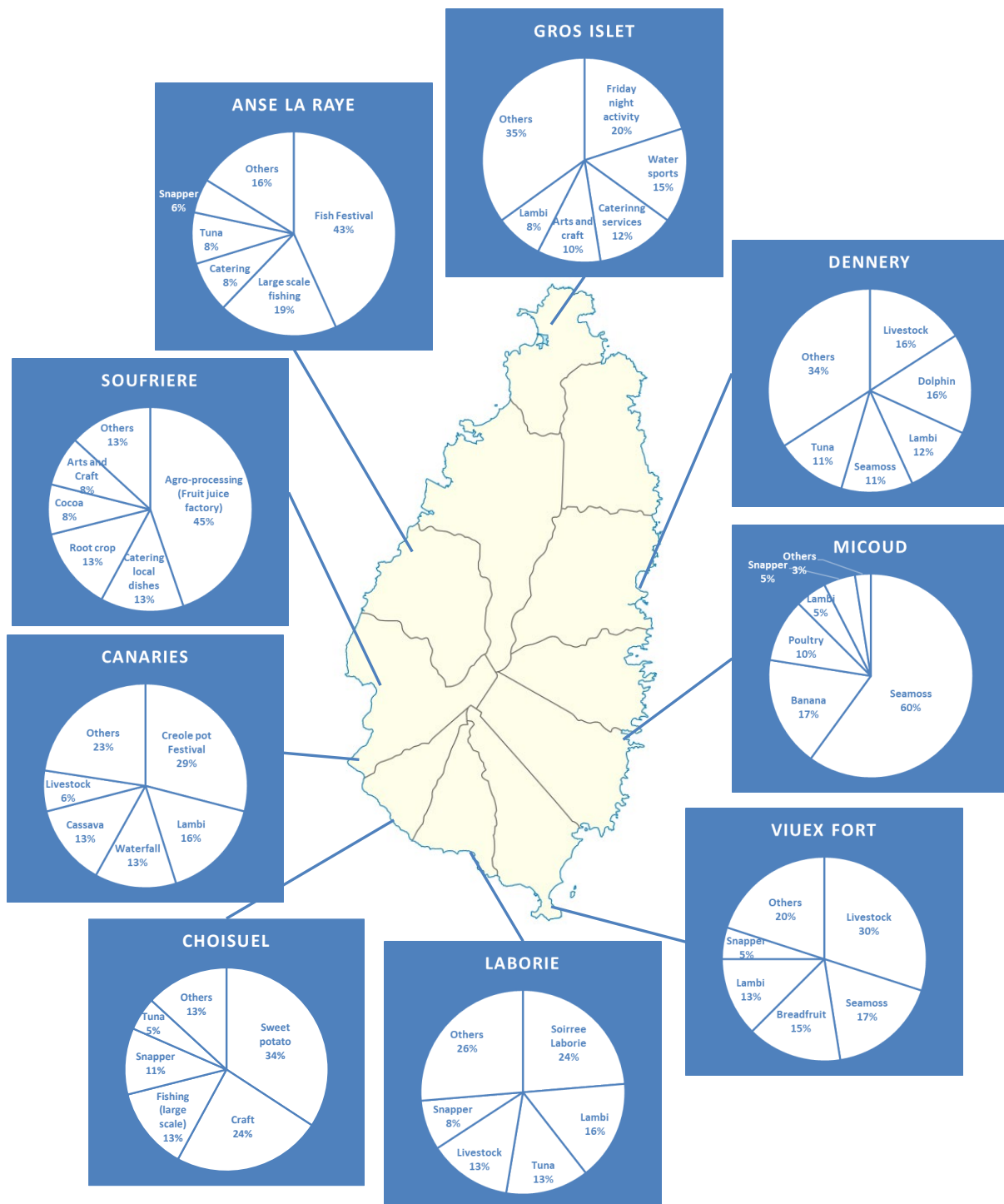
Community	Population	Sample Size (Target)	Sample Size (Actual Value)	Date of Survey
Soufriere	8,468	38	38	November 7, 2022 November 8, 2022
Choiseul	6,147	37	38	November 8, 2022 November 9, 2022
Micoud	16,518	40	40	November 14, 2022
Dennery	12,523	39	43	November 14, 2022
Canaries	2,022	31	31	November 15, 2022
Vieux Fort	16,714	40	40	November 11, 2022
Laborie	6,563	38	38	November 10, 2022
Gros Islet	25,985	40	40	November 4, 2022 November 6, 2022
Anse la Raye	6,401	38	37	November 15, 2022

Source: Made by Ministry of Agriculture and JICA Study Team

As a result of this survey, it became clear that there are differences in products in each community. As many hotels are located in Gros Islet, many tourism-related activities were mentioned. In Anse la Raye, fisheries occupied most. In Soufriere, agro-processing accounted for 45%. In Canaries, it is characteristic that nature (waterfall) and cassava were mentioned. In Choiseul, sweet potato and craft were mentioned a lot. In Laboorie, festivals (Soirree Laborie) and seafood were mentioned. Livestock was the most common in Viuex Fort. Sea moss accounted for 60% of Micoud. Seafood dominated in Dennery.

It is characteristic that many festivals were mentioned. Gros Islet's Friday night activity (20%) is centered around the "Friday Night Street Party" held every weekend. Anse la Raye's Fish Festival (43%), Canaries' Creole Pot Festival (29%) and Laborie's Soirree Laborie (24%) are also festivals. On the other hand, many crops were mentioned for the agricultural and fishery products, and processed products were hardly mentioned.

Since the questionnaire survey was conducted face-to-face, the surveyors tried to elicit answers by devising ways, but many people had trouble answering when they were asked about their "product." In some cases, respondents first answered sectors such as "tourism" and "farming," and only after being asked again about specific products did, they finally answer. This suggests that the awareness of the product as a product has not permeated the community. For this reason, it is desirable to promote awareness and rediscovery of products through workshops and seminars in addition to questionnaire surveys.



Source: JICA Study Team (Map is taken from Wikipedia)

**Figure 13-5 Products Selected in Community**


**b-iii) Tourist Perception Survey of Local Products**

As an example of market research, the JICA Study Team investigated foreign tourists' perception of Saint Lucian products. The purpose of the survey is to quantitatively grasp the degree of recognition and evaluation of Saint Lucian products by foreign tourists, to use this as a baseline information for technical cooperation, and to provide feedback for conducting a full-scale statistical survey.

A random sampling questionnaire survey was conducted for about one hour by three interviewers at the Hewanorra International Airport, a major airport in Saint Lucia, and 35 valid responses were obtained. The reason for conducting the survey at the airport is that most tourists are expected to use the airport, and a high response rate is expected while they are waiting for their flight. Since it was positioned as a pilot study, the sample size was small, with a confidence level of 90% and a margin of error of 15%. In the future, when conducting a full-scale survey, it is necessary to secure a sample size of about 400 cases.

To simplify the questionnaire, five specific products were determined in advance. The five items are the products selected at the previous year's OVOP fair (sea moss and cocoa), the products listed in the "Agricultural Policy Framework and Strategy 2016-2021" that are easy to take home as souvenirs (spices and honey), and rum, that is assumed to be the most popular product. Since it is assumed that the image of sea moss does not come out to most tourists, the photograph of the product was shown separately. The questionnaire and aggregated results are shown below.

**Table 13-10 Questionnaire of Tourist Perception Survey of Local Products in Saint Lucia**

1	Country of residence		2	Age	-10s	20s	30s	40s	50s	60s-
3	How many times have you come to Saint Lucia?		1	2	3	4	5-			
4	Where did you stay?									
		Seamoss	Cacao	Rum	Spice	Honey				
5	Did you find it?	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No				
6	Did you buy it?	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No				
7	Satisfied with package?	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5				
8	Satisfied with quality and price?	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5				
9	Do you think it is specialty product of Saint Lucia? (Unique and branded)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5				

\*In Q7-9, 1 means the worst and 5 means the best.

Source: JICA Study Team

**Table 13-11 Result of Tourist Perception Survey of Local Products in Saint Lucia (1)**

Country of residence			Age			How many times have you come to Saint Lucia?			Where did you stay?		
Ans.	No.	%	Ans.	No.	%	Ans.	No.	%	Ans.	No.	%
USA	28	80%	-10s	0	0%	1	30	86%	Gros Islet	16	46%
Canada	3	9%	20s	11	31%	2	4	11%	Castries	7	20%
UK	3	9%	30s	11	31%	3	0	0%	Anse la Raye	1	3%
Barbados	1	3%	40s	6	17%	4	0	0%	Canaries	0	0%
			50s	4	11%	5-	1	3%	Souffriere	4	11%
			60s-	3	9%				Choisel	0	0%
									Laborie	1	3%
									Vieux Fort	4	11%
									Micoud	0	0%
									Dennerly	1	3%
									Others	1	3%
Total	35	100%	Total	35	100%	Total	35	100%	Total	35	100%

Source: JICA Study Team based on result of questionnaire

**Table 13-12 Result of Tourist Perception Survey of Local Products in Saint Lucia (2)**

Result	Sea moss	Cacao	Rum	Spice	Honey
Q5: Did you find it? – Yes.	23%	46%	83%	34%	11%
Q6: Did you buy it? – Yes.	0%	11%	29%	0%	0%
Q7: Satisfaction with the package (average)	3.0	3.9	4.0	3.4	3.1
Q8: Satisfaction with the quality and price (average)	3.5	3.9	4.1	3.8	4.5
Q9: Recognition as a specialty product (average)	3.5	4.0	3.9	4.2	4.3

Number of valid responses	Sea moss	Cacao	Rum	Spice	Honey
Q5: Did you find it?	35	35	35	35	35
Q6: Did you buy it?	35	35	35	35	35
Q7: Satisfaction with the package	5	11	20	9	4
Q8: Satisfaction with the quality and price	5	11	20	8	2
Q9: Recognition as a specialty product	8	13	27	11	4

Source: JICA Study Team based on result of questionnaire

The following items were clarified as a result of this survey:

- Most of the foreign tourists (80%) live in the United States.
- Most of them are in their 20s and 30s.
- Most (83%) are visiting Saint Lucia for the first time. The only people who answered more than 5 times were for transits from Barbados, and there were no repeaters.
- Comparing among the five products, many people found rum (83%) and purchased it (29%).
- No one bought sea moss, spices, or honey.
- Sufficient responses for Q7 to Q9 were not collected, so it is difficult to make a judgment.

In addition, the impressions of the interviewers that do not appear in the table above include the

following:

- About survey method:
  - There were many people who responded to the questionnaire, thus the survey at the airport is efficient.
  - Since many people did not know what sea moss is, it is effective to present a picture.
  - Responses from Q7 to Q9 vary depending on the respondent.
- About result interpretation:
  - There are many tourists who come to enjoy the resort and do not shop.
  - When answering questions about rum in Q9 (specialty product), some said that it is common in other countries as well.

From the above, it became clear that Saint Lucian products are not yet widely recognized by tourists, nor are they linked to purchases. Especially for sea moss, despite efforts such as promotional activities by Export Saint Lucia and the production of catalogs by the Ministry of Agriculture, less than a quarter of the people saw it, and no one bought it. Rum, which was assumed to be the most popular product, was the most seen and purchased among the five items, but it was suggested that it was not differentiated from other countries' rum. In addition, it was suggested that there are many tourists who are aiming for resort tourism and are not interested in local products in the first place, and that there are few repeaters.

The feedback for conducting similar surveys in the future is as follows:

- Conducting surveys at airports is efficient. On the other hand, it is also necessary to carry out a survey of cruise passengers.
- It is effective to show pictures of unusual products such as sea moss.
- The purpose of travel (resort and beach tourism, nature, culture and history experience, shopping, etc.) should be added to the questionnaire. The transition from resort beach tourism to non-resort beach tourism can be considered as one of the achievements of OVOP.
- Regarding Q7-Q9, not only numbers but also words should be written to reduce the variability among respondents.

#### **b-iv) Situation of Organization**

In order to investigate the status of organization of producers' associations, four organizations were interviewed. A summary of the results is shown in Table 13-13 below.

Bellevue Farmers' Cooperative has been conducting activities such as (1) growing and selling seedlings, (2) selling agricultural supplies such as pesticides and fertilizers, (3) purchasing agricultural products from individual farmers and selling them to hotels and retail stores, and (4) growing organic herbs. Although located in Soufriere in the southwest, its activities were large enough to be used by the farmers in Gros Islet in the north. Although it had annual sales of XCD 1.8 million before the COVID-19 pandemic, hotel demand, which accounted for about half of those sales, has plummeted. Furthermore, in 2021, a hurricane hit and destroyed 16 greenhouses that were growing seedlings and organic herbs. As a result, most of its activities have ceased, and the cooperative is currently inactive.

Since the Bellevue Farmers' Cooperative, which was a large-scale producers' union, has ceased its

activities, each farmer now sells his crops individually to supermarkets, etc. It is inefficient in terms of transportation and personnel costs, and farmers are exposed to price competition.

Honey production has been organized and commercialized. At the time of its founding, Orising Brothers financed the construction of the building with public assistance, but it procured its own filtering and bottling equipment and is now making a profit of XCD 22,000 a year. It is licensed by SLBS and Public Health Board to conduct formal business. Recently, national and international actions have been taken to promote this industry. Under the leadership of Export Saint Lucia, efforts are about to begin to unify Saint Lucia honey as a single brand, while IDB supports Bee City Honey Cluster Project, which aims to develop the beekeeping industry<sup>5</sup>. In addition to this, the Small Grants Programme (SGP) of the Global Environment Facility (GEF) supports beekeepers in Saint Lucia<sup>6</sup>.

Many of Saint Lucia's craft products are produced in Choiseul. Its producer organization is the Choiseul Arts, Craft and Tourism Heritage Association. However, the income is so limited that it is not possible to raise transportation expenses even when exhibiting at opportunities such as fairs, thus the commercial situation is severe. This is thought to be due to issues such as the low quality of handicrafts, the lack of items that tourists can easily purchase due to their size and weight, and the lack of definition of the characteristics of Saint Lucian handicrafts. In addition, since there is also an aspect of cultural promotion, independence as a business is not simply required, but dependent on government support is also an issue. In order to promote local branding, it is thought that long-term efforts such as defining Saint Lucian characteristics, changing the mindset of producers, and improving technology and product design are necessary.

**Table 13-13 Situation of Producers' Organizations in Saint Lucia**

Organization	Membership	Items	Services	Sales/profits	Others
Bellevue Farmers' Cooperative	More than 100 active members	Farming products in general	(1) Growing and selling seedlings, (2) selling agricultural supplies, (3) marketing, and (4) growing organic herbs	XCD 1.8 million/year Hotel: Supermarket=50: 50 (before COVID-19)	In addition to the closure of hotels due to COVID-19 in 2020, hurricanes in 2021 destroyed the facilities. Thus, presently it is shut down.
Farmers with Disabilities Beekeeping Association	35 members (mostly decapacitated)	Honey	Occupational training, support and care-giving, support for marketing	Sales: About 300 gallon/year Unit Price: XCD 30 for 250ml, XCD 60 for 750ml Distribution: Direct to individuals	It is supported by NGO.
Orising Brothers	4 members	Honey	Production, processing, and sale of honey	Profit: XCD 22,000 Sales: 558 gallon/year Local people: Wholesale: Supermarket=50: 25: 25	Private firm. The building was constructed by public support, and the filtering and bottling facilities by own expense.
Choiseul Arts, Craft and Tourism Heritage Association	150 registered members, among which 50 members are active	Crafts	Training, exhibition and sales facility (in development), depot, support for shipping, sale of materials	Collect a fee of 5% of sales Approximately local people are 10%, tourists are 80%, and charity is 10%	Most Saint Lucian crafts are made in Choiseul. The profits are so limited that they cannot afford transportation fee to participate in fairs.

Source: JICA Study Team

<sup>5</sup> <https://caribbean.loopnews.com/content/st-lucia-seeking-develop-overseas-markets-honey>

<sup>6</sup> <https://www.facebook.com/gefsgpsaintlucia/>

### **c) Comparison with Common Issues of OVOP**

Fujikura (2015)<sup>7</sup> analyzes the conditions for the success of the OVOP projects based on a comparison of cases in Japan and overseas. The JST reorganized the contents and extracted four important elements for the success of the OVOP business. The four elements are (1) construction of marketing channels, (2) improvement of accounting capabilities, (3) compliance with standards and provision of certification, and (4) local initiative (self-reliance and creativity). The current situation in Saint Lucia on each element is described below.

#### **(1) Construction of Marketing Channels**

Saint Lucia has a tourism industry that accounts for 68% of GDP before COVID-19 (2019). It is considered effective to build channels with the domestic tourism industry such as hotels and restaurants. Further research is needed to determine the quality and standards required by the sector. Also, in order to build a system that can connect hotels and producers, it is important to collaborate with tourism-related organizations such as the Ministry of Tourism and the Saint Lucia Hospitality and Tourism Association.

#### **(2) Improvement of Accounting Capabilities**

As a result of interviews with the producers of the three products featured at the OCOP Fair, it became clear that accounting is not properly implemented. Therefore, it is necessary to develop human resources and establish a system to conduct training aimed at improving accounting skills.

#### **(3) Compliance with Standards and Provision of Certification**

It is considered necessary to satisfy the existing domestic standards of SLBS and the international standards of HACCP in developing specialty products, building channels, and exporting them overseas. Another measure is to establish an OVOP certification system, as was done in El Salvador, and to provide incentives such as providing channels for products that have achieved a certain level of evaluation. However, it is necessary to conduct a separate survey on the standards and certifications emphasized by tourism business operators.

#### **(4) Local Initiative (Self-Reliance and Creativity)**

The Ministry of Agriculture attaches importance to the community-led perspective. Therefore, in this study, the JICA Study Team investigated the products selected by residents in each community. While the characteristics of each community were clarified as a result, it was also suggested that it is necessary to foster awareness of product development and the relative evaluation of Saint Lucian products compared with other countries. In the future, it will be necessary to promote community-participation initiatives such as holding onpaku and workshops, and foster awareness of the need to grow products.

Another issue is that there are few existing producers' associations when implementing initiatives led by local people. In order to carry out activities for each community or product, support from organizations is required. It is also important to provide guidance so that independent management can be established without expecting too much support from the outside.

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<sup>7</sup> Kanako Mukai and Ryo Fujikura, One village one product: evaluations and lessons learnt from OVOP aid projects, April 2015

#### 4) Direction for Cooperation

An OVOP pilot project has already been implemented in Saint Lucia and has gained the understanding and interest of relevant ministries. A request for technical cooperation of OVOP has been submitted to JICA, and considering the current issues, consistency with existing plans, and the willingness of local organizations, it is desirable that this technical cooperation project be implemented. In terms of implementation, it is important to conduct activities that are easy to visualize, such as holding events and introducing certification systems, but it is more important to take appropriate measures based on current issues.

Recommendations from this study are as follows:

- From product-out to market-in
  - The Ministry of Agriculture listed sea moss, cocoa, and craft as OVOP target products. While these products are already being produced and consumed in Saint Lucia, it is necessary to adopt a market-in approach when promoting branding with an eye on the international market. In other words, at the initial stage, it is necessary to confirm the presence or absence of needs in the international market and the relative competitiveness of Saint Lucian products, examine whether it is appropriate to develop these products, and to develop products, packaging and quality improvement that meet the needs of the market.
- To steadily support capacity development
  - It became clear that sales, profits, and expenses were not kept track of due to lack of bookkeeping. In addition to initiatives that are easy to visualize, such as holding events and OVOP certification, it is necessary to support the improvement of basic accounting capabilities for sustainable and spontaneous development.
  - Completion of existing standards such as SLBS and HACCP is required for product development. It will be necessary to provide support to those who have difficulties, such as capacity development and organization building.
- Cooperation with the tourism industry
  - Although most of Saint Lucia's export industry is tourism, local products are not sufficiently getting the benefits. Increasing sales at facilities visited by tourists, such as hotels, restaurants, souvenir shops, and supermarkets, is also considered an effective measure.
  - In order to understand demands and to realize cooperation, the cooperation with Ministry of Tourism and Saint Lucia Hospitality and Tourism Association is important.
- Differentiation between OVOP in Saint Lucia and OECS
  - Saint Lucia is a small country with a population of about 180,000, so that there is a limit to the scale of diversification and differentiation within a single country.
  - Furthermore, as represented by “Sun, Sand and Sea”, it has a uniform image as a Caribbean beach resort. Differentiation of each country is important to escape from this situation and develop local industries.
  - Therefore, in the medium to long term, it is desirable to work on OVOP regionally at OECS, develop industries with uniqueness of each country, and brand them.

#### (2) Development and Cooperation Scenario

##### 1) Development Scenario

##### a) Development Issues and Strategies

While the OECS countries, including Saint Lucia, have strengths in tourism, they face the problem of



tourism leakage as well as the strong economic dependence on tourism. These issues have become apparent under the COVID-19 pandemic, which has restricted the movement of people, and there is a need to build a resilient economy that does not depend on the “Sun, Sand, and Sea” tourism. Based on the experience of the OVOP fair held in 2021, the Ministry of Agriculture has shown a high interest in local industrial development through OVOP, which is consistent with the above challenges. Therefore, the proposed development scenario aims to promote local industries by improving their productivity, product development, and public relation (PR), likewise improving the connectivity between tourism and local industries through the OVOP movement. The Ministry of Agriculture considers it appropriate to call it One Community, One Product (OCOP) instead of One Village, One Product (OVOP), reflecting the actual situation in Saint Lucia. Thus, OVOP is called OCOP in this scenario.

### b) Programs and Projects

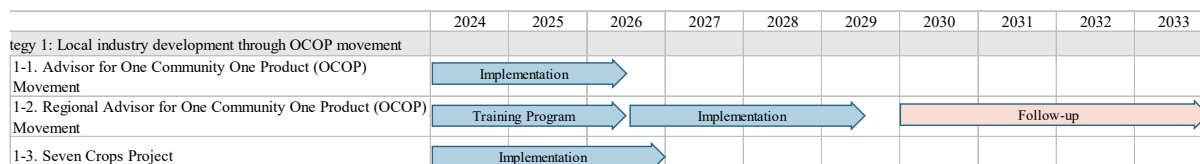
The programs and projects to be implemented in Saint Lucia under the above strategy are shown in the table below. Among these, the Seven Crops Project is an agricultural promotion project implemented with assistance from Taiwan. In Phase 1, it supported the expansion of production of seven items, namely, cantaloupes, honeydew melon, lettuce, tomatoes, pineapple, watermelon, cabbage, and bell peppers, with the aim of replacing imported agricultural products. The launch of Phase 2 was officially announced in February 2022, and over a period of five years, it was decided to work on agricultural promotion targeting products including sweet corn, squash, zucchini, and sugar apple, in addition to the seven items in Phase 1. Phase 2 plans to provide production support with a focus on market access and marketing. Proper collaboration between the Seven Crops Project, which promotes local production for local consumption, and the OCOP movement, which promotes branding, is expected to promote a comprehensive local industry development.

**Table 13-14 Proposed Programs and Projects in Saint Lucia**

Country	Strategy	Program and Project	Period	Implementation Body
Saint Lucia	Local industry development through OCOP movement	Advisor for One Community One Product (OCOP) Movement	Short	Ministry of Agriculture (supported by JICA)
OECS		Regional Advisor for One Community One Product (OCOP) Movement	Mid	OECS (supported by JICA)
Saint Lucia		Seven Crops Project (Production-Distribution Supply Chain of the Fruit and Vegetable Sector Project)	Short-Mid	Ministry of Agriculture (supported by Taiwan)

Note: Short: 2023-2025, Mid: 2023-2027, Long: 2023-2032

Source: JICA Study Team



Source: JICA Study Team

**Figure 13-6 Roadmap of Development Scenario in Saint Lucia**

## 2) Cooperation Scenario

Among the abovementioned development scenarios, the following are the projects in which the support of JICA is expected.

### a) Advisor for One Community One Product (OCOP) Movement

The Ministry of Agriculture has already submitted a request to JICA for this project. In fact, this is consistent with the issue being faced by the economy of Saint Lucia and by local producers, therefore, the implementation of this project is significant. Although the request from the Ministry of Agriculture was for the implementation of a technical cooperation project, it would be appropriate to provide support through the dispatch of long-term advisor. The reasons for this are: (1) Since the Ministry of Agriculture positions OCOP as a means of branding, interviews with producers also revealed that there are issues with branding, including accounting and marketing, and Taiwan is supporting the production of agricultural products, the scope of support of JICA will be limited to branding; and (2) As the size of the country is small, the relationship among ministries, agencies, and the community is close, so that it is considered to be better to build a relationship by engaging a few number of expert(s) in the long-term.

Suggestions for the implementation of the project are as follows:

- Review of pilot products
  - The 2021 OVOP Fair handled three products: sea moss, cacao, and crafts, which the Ministry of Agriculture has also listed as target products. On the other hand, the position of these products in the Saint Lucian local industry is unclear, so taking into account the result of the community survey of this study, it is important to reconsider the products via community-participatory process such as workshops
- From product-out to market-in
  - The Ministry of Agriculture listed sea moss, cocoa, and crafts as OVOP target products. While these products are already being produced and consumed in Saint Lucia, it is necessary to adopt a market-in approach when promoting branding with an eye on the international market. In other words, at the initial stage, the presence or absence of needs in the international market and the competitiveness of Saint Lucian products will be confirmed to examine whether it is appropriate to develop these products, in addition to product development, packaging, and quality improvement will be promoted according to the needs of the market.
- Steadily improve management capabilities
  - It became clear that sales, profits, and expenses were not kept track due to lack of knowledge in bookkeeping. While the actions such as holding events and OCOP certification will be effective to motivate stakeholders and promotion, the project will also put emphasis on supporting the improvement of basic management capabilities for sustainable and spontaneous development.
- Cooperation with the tourism industry
  - Although most of Saint Lucia's export industries focused on tourism, local products are not

sufficiently getting the benefits. The project will support local producers to promote their products, establish distribution channels, and improve quality and comply with standards and certifications to increase sales in tourism facilities such as hotels, restaurants, souvenir shops and supermarkets.

**Table 13-15 Outline of Advisor for the One Community One Product (OCOP) Movement**

Item	Content
Project	Advisor for One Community One Product (OCOP) Movement
Priority	Prioritized Project (A)
Country	Saint Lucia
Strategy	Local industry development through OCOP movement
Project site	Saint Lucia (about three pilot project sites)
Period	June 2023 – May 2026 (36 months)
Counterpart	Ministry of Agriculture, Fisheries, Food Security and Rural Development
Other related organizations	Ministry of Commerce, and Ministry of Tourism, Information, Broadcasting, Culture and Creative Industries
Project goal	To strengthen cross-sectorial institutional system to promote OCOP movement
Outcome	1) OCOP Secretariat is established with participation of related ministries. 2) OCOP Council (tentative name) is established in each community or product. 3) Capacity development capacity of OCOP Secretariat and OCOP Councils for marketing, accountancy, product development, standards and certifications are strengthened. 4) OCOP brand acknowledged and distribution and sales route are established. 5) OCOP movement is acknowledged in OECS.

Source: JICA Study Team

**b) Regional Advisor for the One Community One Product (OCOP) Movement**

After supporting the OCOP movement in Saint Lucia, it would be desirable for the knowledge to be shared and put into practice within the OECS region, and for the region to work on OCOP. Similar to Saint Lucia, the OECS countries face problems such as dependence on the tourism industry. Moreover, because they are all small island countries, there is a limit to the scale of diversification and differentiation within a single country. In this project, by supporting the OCOP movement, each country will rediscover its uniqueness and differentiate itself from the stereotypical image of Caribbean beach resorts as represented by Sun, Sand, and Sea.

**Table 13-16 Outline of Regional Advisor for One Community One Product (OCOP) Movement**

Item	Content
Project	Regional Advisor for One Community One Product (OCOP) Movement
Priority	Prioritized Project (A)
Country	OECS
Strategy	Local industry development through OCOP movement
Project site	OECS
Period	August 2026-July 2029 (36 months)
Counterpart	OECS
Other related organizations	Relevant ministry in each country
Project goal	OCOP Movement developed in OECS
Outcome	1) OECS OCOP Network is established. 2) Experiences of Saint Lucia on OCOP are shared with OECS countries. 3) OECS-common certification and promotion scheme is established. 4) Uniqueness of each country of OECS is recognized within and out of the region.

Source: JICA Study Team

### 13.3.2 Local Branding in Jamaica

#### (1) Overview

##### 1) Past Cooperation of JICA

Recently there has been no cooperation of JICA in Jamaica related to local branding. An officer of TPDCo participated in JICA Knowledge Co-Creation (KCC) Program “Branding and Marketing of Products Utilizing Local Resources (B)” in 2022.

On the other hand, related to the development for future cooperation, high-level talks between Japan and Jamaica have been realized. On October 5, 2022, Akimoto, Parliamentary Vice-Minister for Foreign Affairs visited Jamaica and held talks with the Honorable Senator Kamina JOHNSON SMITH, Minister of Foreign Affairs of Foreign Trade of Jamaica. Both sides confirmed that they would promote bilateral cooperation in a wide range of fields and strengthen cooperation to maintain and strengthen a free and open international order. On October 12, the following week, a meeting was held between The Hon. Parnell Charles Jr., Minister of Agriculture and Fisheries of Jamaica, who was visiting Japan, and Parliamentary Vice-Minister Akimoto. Parliamentary Vice-Minister Akimoto made a statement about strengthening economic ties in the fields of agriculture and fisheries, and Minister Charles Jr. said that he would like to utilize Japan's knowledge of fisheries and agriculture for the development of Jamaica.<sup>8</sup>

##### 2) Related Plans, Systems, and Organizations

###### a) Plans

The related effective plans related to local branding found in the study are the national plan titled “Vision 2030 Jamaica – National Development Plan”, “Strategic Plan MTF 2021-2025”, which is the plan of the Ministry of Tourism aligned with the national plan, “National Community Tourism Policy and Strategy”, “Master Plan for Sustainable Tourism Development” and “Ministry of Agriculture & Fisheries, Strategic Business Plan 2022/2023-2025/2026”.

###### **Vision 2030 Jamaica – National Development Plan**

This is a wholistic national development plan published in 2009. It consists of four goals and outcomes corresponding to each goal, and action plan for the following three years. The four goals are the following: “Jamaicans are Empowered to Achieve their Fullest Potential”, “The Jamaican Society is Secure, Cohesive and Just”, “Jamaica’s Economy is Prosperous”, and “Jamaica has a Healthy Natural Environment”.

###### **Strategic Plan MTF 2021-2025**

The strategic plan was made public in 2021, after the start of the COVID-19 pandemic. Tourism is one of the most pandemic-affected sectors. For its recovery, Jamaica aims for differentiation and diversification under the blue ocean strategy, with each destination branded with its own unique characteristics. The table below shows a comparison of the existing strategy (red ocean strategy) and the blue ocean strategy aimed at by the Ministry of Tourism of Jamaica. In this way, the goal is to break away from the current state of the tourism industry, which is dominated by beach resorts, and to acquire

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<sup>8</sup> Source: the Ministry of Foreign Affairs of Japan

new customers and markets by providing diverse and unique values.

Also, in the five-year action plan, “Increased Resilience of Tourism Sector” is listed at the top of the outcomes, above others related to the promotion of the tourism industry itself, such as “Increased Offering of Natural & Cultural Heritage Experiences” and “Improved Readiness of the Tourism Workforce for Employment”. Under the outcome, activities are planned such as the conduct of disaster risk assessments for each resort destination, development of local disaster management plans, assisting tourism enterprises, strengthening the Business Continuity Planning (BCP), and developing environmental conservation management plans for each resort destination.

**Table 13-17 Blue Ocean Strategy of Tourism in Jamaica**

Strategy	Red Ocean Strategy	Blue Ocean Strategy
Outline	Focus on current customers	Focus on serving specific niches
Perspective 1	Compete in existing markets for the traditional leisure or business traveler who wants to travel to a warm weather destination.	Create uncontested markets to access and serve customers that previously were not even in the market for the rich and unique experiences that the destination has to offer.
Perspective 2	Beat the competition by offering either premium products or services at high prices, or budget package experiences at discounted prices.	Make the competition irrelevant by focusing on the destination’s internal capabilities and unique attributes of natural and cultural heritage, health and wellness, and urban tourism in Kingston.
Perspective 3	Exploit existing demand for “Sun, Sea and Sand” through aggressive mass marketing.	Create and capture new demand by leveraging through Brand Jamaica the global interest in the island’s unique natural and cultural heritage.
Perspective 4	Make the value-cost trade-off of either premium value at a high price or reasonable value for travelers at a lower price.	Break the value-cost trade-off by offering unique premium experiences at different price points to access new customers and market segments.
Perspective 5	Align the whole system of a destination’s activities with its strategic choice of either differentiation, such as Bermuda, or low cost such as Mexico or the Dominican Republic	Align the whole system of a destination’s attributes with the strategic choice of differentiation at different price points. The choices would include high-end resorts, vibrant urban tourism, quaint heritage towns and villages, relaxing spa towns, pristine nature reserves, bucolic rural and community tourism, and budget homestays.

Source: Strategic Plan MTF 2021-2025

### National Community Tourism Policy and Strategy

This policy and strategy were formulated in 2015 with the aim of breaking away from “Sun, Sand and Sea” tourism and drawing out the potential of Jamaica’s various communities as a tourism industry. Funding from the Jamaican government and the WB was utilized in its formulation. It is a comprehensive plan that includes not only policies but also implementation programs and implementation plans.

### Master Plan for Sustainable Tourism Development

This master plan was formulated in 2002. Currently, it is in the process of update and will be called “Tourism Strategy Action Plan”.

### Ministry of Agriculture and Fisheries, Strategic Business Plan 2022/2023- 2025/2026

This is a four-year plan formulated by the Ministry of Agriculture and Fisheries. It has been updated yearly.

The ministry upholds strategies such as “#newFACEoffood” and “#GrowSmartEatSmart,” focusing on the implementation of 49 main initiatives which responds to the four pillars: (1) Food Security, (2) Agribusiness Development, (3) Climate-Smart Technologies, and (4) Export Expansion. Its target value

includes to increase agricultural production by at least 15% for the domestic by 2025, to increase select agricultural export by 20% and to increase agro-processing output and value-added exports of the agricultural sector by 5% annually. In regards to local branding, the ministry is working on market-driven development of domestic, export, and niche market and creation of various job opportunities in agricultural and non-agricultural works by developing agro-industry.

## b) Organizations

The JICA Study Team listed up related ministries and organizations in Jamaica and studied its responsibility and importance on implementation of local branding cooperation. Also, the concept of OVOP was introduced to the Ministry of Tourism, the Tourism Product Development Company (TPDCo), Ministry of Agriculture and Fisheries, Rural Agricultural Development Authority (RADA), and Ministry of Local Government and Rural Development, whose importance is considered high, and their keen interest and willingness were confirmed. Also, it was confirmed that RADA is currently working on tourism linkage under the Agri-Linkages Exchange (ALEX) Project.

Unlike the Ministry of Tourism and the Ministry of Agriculture, which work on a sector-by-sector basis, it is characterized by its focus on the “place” of the community. The country is working to ensure that no region is left behind. In terms of community support, the Social Development Committee (SDC), a national organization, is in charge of being the arm of the ministry, developing profiles (population, etc.) of each community, supporting organization, and facilitating community-related programs. Also, community development committees (CDCs) are organized in each community.

The SRC is an organization in charge of research, application, and dissemination of technology, and conducts inspections equivalent to food processing, but also has roles such as contracting food processing and providing technical guidance. There is only one processing plant in Kingston, which has equipment for smoking, sauce processing, bottling, and canning. The company mainly undertakes processing for small- and medium-sized enterprises, and has a function like a joint processing factory that performs processing while supporting the acquisition of new technology by working together with the client. It provides support such as workshops and consulting on food hygiene and food processing. The facility is HACCP compliant. There are about 70 corporations using the system, but most of them are private companies, and there are almost no agricultural cooperatives. Another issue is that there is only one facility in Kingston, thus the access of farmers is very limited.

**Table 13-18 Organization Related to Local Branding in Jamaica**

Organization	Responsibility	Importance	
Ministry of Economic Growth and Job Creation	Mainly land, housing, environment, climate change, water, and sewage and jobs	Low	Although it is indirectly related, there is no specific need of involvement in project implementation.
Ministry of Tourism	Policy and plan related to tourism Main products are natural, historical, and cultural heritage.	High	It has the blue ocean strategy which has an affinity with the OVOP. Mr. David Dobson, Senior Director of Technical Services, knows OTOP of Thailand, and has interest in the OVOP project supported by JICA.
Tourism Product Development Company (TPDCo)	Subagent to the Ministry of Tourism. Implementation of policies and plans of the Ministry of Tourism	High	It is the implementation body of the Ministry of Tourism. An officer took the subject-specific training “Product Branding and Marketing Using Local Resources (B)”, so that she has a high degree of understanding of the OVOP.
Ministry of Local	Community development	High	There is a Community Development Committee

Organization	Responsibility	Importance	
Government and Community Development	and rural development as a whole.		(CDC) in each community, and Social Development Committee (SDC) head them in the national level. It is recommended to mobilize CDC via SDC for local practices.
Ministry of Agriculture and Fisheries	In charge of agriculture and fisheries, including agribusiness and agroindustry.	High	It is important to involve the agricultural sector where about 18% of the population is engaged. Strong involvement of the Ministry of Agriculture and Fisheries is indispensable for the development of local specialty product and improvement of quality and stability of agricultural products.
Rural Agricultural Development Authority (RADA)	Subjacent to the Ministry of Agriculture and Fisheries, in charge of marketing of agricultural produces.	High	It is the implementation arm of the Ministry of Agriculture and Fisheries, and is working on the ALEX project for linkage with the tourism sector.
Jamaica Promotions Corporation (JAMPRO)	Subjacent to the Ministry of Agriculture. Exportation promotion and promotion of foreign investment	Mid	Although JAMPRO promotes exportation including supports for small and medium enterprises, since it also promotes foreign investment, the strategy of the organization does not coincide with the concept of OVOP. Although it could be an implementation body for support for small and medium enterprises, it would be better to discuss the project design among ministries.
Scientific Research Council (SRC)	Scientific research and application and dissemination of technology. It is under the Ministry of Science, Energy and Technology.	Mid	In order to promote the food processing industry, inspection and processing, consulting and technical training are being carried out. There is only one processing plant in Kingston, and it provides guidance while contracting the processing of private companies.

Source: JICA Study Team



Photo: JICA Study Team

**Figure 13-7 Food Processing Facilities of SRC**

**c) Initiatives**

**c-i) Tourism Linkages Network and Agri-Linkages Exchange (ALEX) Project**

The Tourism Linkages Network is an initiative led by the Ministry of Tourism. It was founded in 2013 in order to strengthen the linkage between the tourism sector and other production sectors. In 2015, it implemented the “Tourism Demand Study”.

The ALEX project is formulated under the Tourism Linkage Network. It aims to strengthen the linkage

between local agricultural products and tourism industry such as hotels and restaurants. A team of six persons with strong initiatives of RADA engages in this project. Currently it operates an internet platform where farmers can be connected to the tourism sector. There are over 1,200 farmers registered, the sales were about USD 24,000 in October 2022, which is projected to keep increasing<sup>9</sup>.

### **c-ii) Community Tourism**

The TPDCo actively works on community tourism. The Product Development and Community Tourism Department that oversees it, conducts business consultation for small and medium enterprises related to tourism, provides technical guidance to merchandize heritage, and promotes involvement of the community in the development of tourism. With the support of the UNWTO and the WB, it formulated and implements the Human Capital Development Plan, establishing the Jamaica Centre of Tourism Innovation, Craft Development Institute, and Artisan Village at Falmouth.

## **3) Current Situation and Issues**

### **a) Tourism Leakage**

Services account for more than 70% of GDP in Jamaica, with foreign exchange heavily dependent on tourism, and remittances from diaspora and mining (bauxite and alumina). As for tourism, it is said to be the birthplace of all-inclusive hotels and attracts foreign tourists mainly at beach resorts on the north side. Montego Bay and Ocho Rios are lined with all-inclusive hotels, foreign-affiliated stores, and many souvenir shops. In the tourist areas of these cities, prices are as high as in the United States, and even without extravagance, about USD 20-40 per meal and about USD 150 per night will be needed.

On the other hand, the treatment of local products in the tourism industry is poor. All-inclusive hotels offer attractions such as food, beverages, and beaches, but they are all international attractions. In the music and dance attractions, Jamaican elements such as reggae are incorporated, but in any case, it does not go beyond the framework of the “Caribbean”. There are few restaurants serving local food, and souvenir shops are lined with similar shops selling items such as Jamaican flag-colored T-shirts, towels, and magnets. The Jamaican rum Appleton Estate factory offers a tour of the factory for USD 39 per person, which attracts many foreign tourists. There is a store called “Community Market”, but it sells potato chips and others, not local products.

The Tourism Demand Study implemented under the initiative of the Ministry of Tourism and Entertainment in 2015, studied about the linkage between the tourism sector and local products. It quantitatively estimates the value of tourism leakage based on answers to the interview survey replied by 28 tourism business entities, including 12 hotel business entities. According to the result shown in Table 13-19 below, herbs, vegetables, tubers, and cereals and grains has little leakage at around 10%. On the other hand, fruits and poultry, meats, and seafood account for 87% of the total leakage due to their high demand value.

However, it is important to note that the accuracy of estimation is not clear. Another source shows that hotels and other sectors are destinations of about 60% of USD 1,122 million agricultural imports<sup>10</sup>. It is equivalent to USD 673 million (JMD 102 trillion), five times larger than the total demand shown in

<sup>9</sup> According to hearing from the Ministry of Agriculture and RADA

<sup>10</sup> USA International Trade Administration, Jamaica – Country Commercial Guide, Last published date: 2022-07-13, <https://www.trade.gov/country-commercial-guides/jamaica-agriculture>



the table. Because it is assumed that the trading statistics are more reliable in terms of total amount, and the sample size of the Tourism Demand Study is small, the leakage could be underestimated than the actual leakage.

**Table 13-19 Estimated Tourism Leakage Value**

Product	Estimated Value of Demand (JMD)	Percentage of Total Value of Demand	Estimated Value of Leakage due to Imports (JMD)	Leakage as a Percentage of Total Demand	Percentage of Total Leakage
<b>Herbs</b>	<b>469,364,391</b>	<b>2.4%</b>	<b>53,791,179</b>	<b>11%</b>	<b>1.6%</b>
Onion (Red Jumbo)			25,007,034	12%	0.8%
<b>Fruits</b>	<b>5,273,673,640</b>	<b>27.2%</b>	<b>87,342,431 – 3,396,655,961</b>	<b>2-64%*</b>	<b>52.8%</b>
Cantaloupe			25,979,508	20%	0.8%
<b>Vegetables</b>	<b>1,570,956,523</b>	<b>8.1%</b>	<b>140,492,100</b>	<b>9%</b>	<b>4.3%</b>
Lettuce (Iceberg)			40,499,897	14%	1.2%
<b>Cereals and Grains</b>	<b>291,791,791</b>	<b>1.5%</b>	<b>162,416,131</b>	<b>56%</b>	<b>4.9%</b>
Rice			69,906,211	50%	2.1%
Sweet Corn			57,370,234	67%	1.7%
Other Cereals and Grains			35,139,686	100%	1.1%
<b>Teas</b>	<b>245,256,789</b>	<b>1.3%</b>	<b>0</b>	<b>-</b>	<b>0.0%</b>
<b>Tubers</b>	<b>522,940,755</b>	<b>2.7%</b>	<b>66,973,597</b>	<b>13%</b>	<b>2.0%</b>
Irish Potato			66,973,597	18%	2.0%
Legumes			5,339,025	12%	0.2%
Other Fresh Produce			0	-	0.0%
<b>Poultry, Meats and Seafood</b>	<b>10,926,028,819</b>	<b>56.3%</b>	<b>1,130,572,510</b>	<b>10%</b>	<b>34.2%</b>
Beef Mince			40,619,655	27%	1.2%
Beef Oxtail Whole			120,925,759	25%	3.7%
Beef Rib Eye			27,027,300	22%	0.8%
Beef Tenderloin			71,857,990	20%	2.2%
Beef Top Butt			104,918,917	33%	3.2%
Lobster			103,797,953	18%	3.1%
Shrimp			110,545,841	13%	3.3%
Smoked Marlin			39,707,207	12%	1.2%
Salmon			37,495,819	17%	1.1%
Tilapia			46,989,990	33%	1.4%
Ground Pork			44,489,681	20%	1.3%
Bacon			138,430,181	14%	4.2%
Pork Sausage			46,291,922	29%	1.4%
Lamb (Sausage)			95,990,351	20%	2.9%
<b>Total</b>	<b>19,408,559,757</b>	<b>100.0%</b>	<b>1,646,926,973- 4,956,240,503*</b>	<b>8.5 – 25.5%*</b>	<b>100.0%</b>

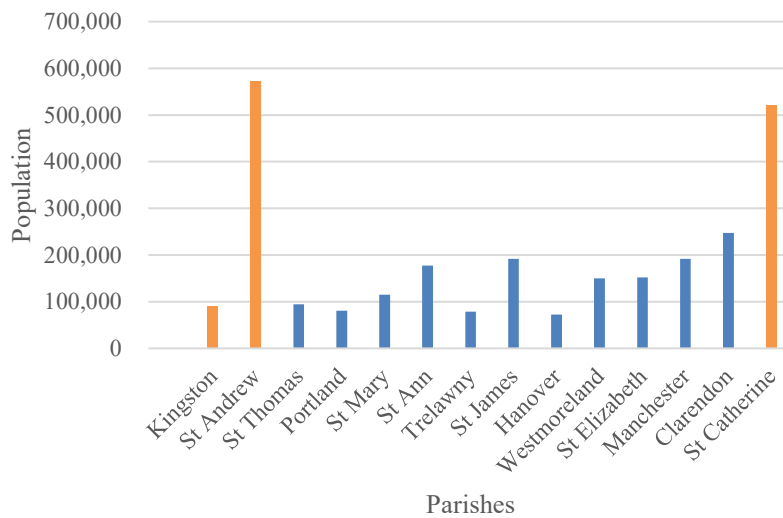
Source: Tourism Demand Study (2015)

Looking at the wages, Jamaica's minimum wage is JMD 9,000 per week (as of April 2022 when the Minimum Wage Law was amended. The minimum wage for security guards is JMD 10,500), which is approximately USD 60 as of August 2022. That is, it is about two meals at a tourist spot. Although exact statistics are not available, salaryexplorer.com estimates that 25% of workers earn less than JMD 56,100 (about USD 374) a month and 50% earn less than JMD 100,000 (about USD 667).

In this way, despite the thriving tourism industry and the provision of high-priced services and products, it has not made a sufficient contribution to the local economy. For economic development, it is considered effective to incorporate the local economy, including local products, into the tourism industry. In interviews with the Ministry of Tourism and TPDCo, it was confirmed that they both have an awareness of tourism leakage as a problem.

**b) Regional and Rural Development**

In Jamaica, the population is concentrated in the metropolitan area, with Kingston and two surrounding parishes (St. Andrew and St. Catherine) together accounting for 43% of the total population. According to the Ministry of Local Government, behind the outflow of population from the region, there are issues such as lack of employment, lack of education such as vocational training, and lack of basic infrastructure such as water and roads. Although no data have been found, tourism, which is Jamaica’s largest industry, is concentrated in the northern beachside areas such as Montego Bay and Ocho Rios, so that it is thought that there are disparities in population and economy even in rural areas.

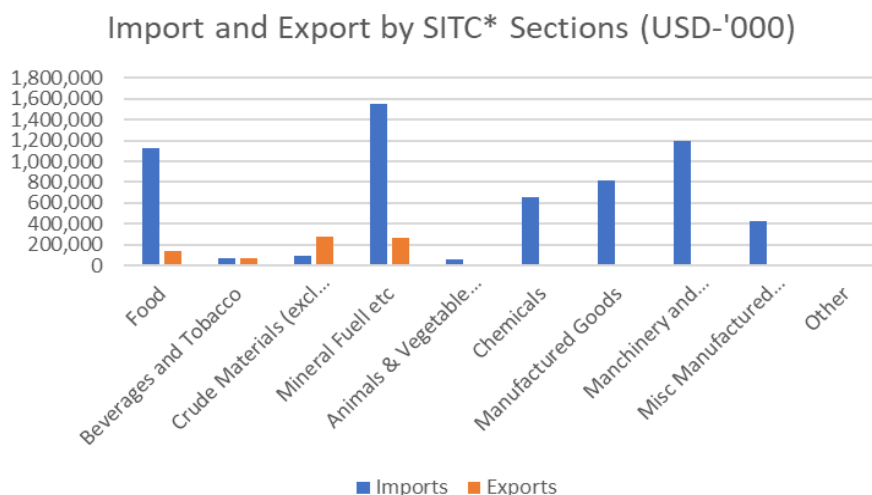


Note: Orange shows Kingston and two surrounding parishes.

Source: Made by JST based on the Economic and Social Survey Jamaica (ESSJ)

**Figure 13-8 Population by Parish in Jamaica (2019)**

About 18% of the total working population is engaged in the agricultural and fisheries industries, but there are issues of excess food imports and high prices as shown in Figure 13-9. The Ministry of Agriculture is trying to promote the shift to market-oriented agriculture and the use of domestic products in the tourism sector, but the results have not yet been satisfactory. Issues include dependence on imports for the necessary materials such as fertilizers, risk of volatility due to exchange rates, lack of know-how in producing new products, lack of crops suitable for soil conditions, small-scale farmers farming on land in mountainous areas, and lack of union organizations that can deal with these issues. Moreover, although the SRC provides scientific and technical support for the processing of agricultural products, it has facilities only in Kingston and lacks the capacity.



\*Standard Import Trade Classification

Source: Statistical Institute of Jamaica

**Figure 13-9 Import and Export of Jamaica**

In carrying out local branding, there is concern that, for example, even if a specialty product is developed, its international competitiveness will be limited due to high raw material prices and limited supply. Also, the capacity and accessibility of public support can become a bottleneck in the case of food processing. Therefore, it is desirable to promote measures such as support for improving agricultural productivity and the establishment of SRC facilities in rural areas in parallel.

### c) Security

Security is a characteristic social issue in Jamaica. As mentioned above, foreign tourists stay in limited tourist spots such as all-inclusive hotels, which accompanies the problem that they make little contribution to the local economy. The insecurity issue is supposed to be one of the causes.

The table below shows the latest statistically captured homicide rates by country. Jamaica has 44.95 homicides per 100,000 population, the worst in Central America and the Caribbean region. According to the preliminary study, violent incidents continued to surge in 2021, with an average of more than 100 murders per month. Poverty, drug trafficking, gangs, arms smuggling from Haiti and structural weaknesses in the police force are among the main causes of Jamaica's security problems. In addition, according to an interview with Professor Anthony Clayton of West Indies University, the causes of security problems in Jamaica are deeply rooted cultural factors, socio-economic factors (high levels of violent crime, low levels of education), and the judicial system, vulnerabilities, corruption, and connections between organized crime and the judicial system. Further complicating matters is the lack of public trust in the judicial system, resulting in "community reprisals". Furthermore, there is strong resistance in Jamaica against restricting access to firearms. In the past interventions in the security field, low efficiency, not lack of funding, was the reason for their failure.

Perceptions of the impact of security issues on tourism are divided even within Jamaica. In the interview with the Ministry of Tourism, it was shown that crime is not as big a problem because it does not target foreigners. On the other hand, in the interview with TPDCo, it was revealed that efforts to maintain public order were taken especially in designated touristic sites, which means it would be

difficult to extend the maintenance of public order to the national level as in those tourist spots.

This security problem is not a problem that can be solved in the short term, and even if local branding succeeds, it is considered difficult, if not impossible, to attract the flow of people to rural areas. Therefore, the short-term goal will be to encourage existing tourist spots, including all-inclusive hotels, to use local products, and to develop products that match this demand. In the interviews with TPDCo, it was revealed that the reason why all-inclusive hotels do not use local products is the issue of quality and stable supply.

**Table 13-20 The Worst 15 Countries in Homicide Rate**

Rank	Country	Region	Year	Homicide Rate (per 100,000)
1	Venezuela	Latin America and the Caribbean	2017	49.88
2	Virgin Islands	Latin America and the Caribbean	2012	49.28
3	Jamaica	Latin America and the Caribbean	2020	44.95
4	Lesotho	Sub-Saharan Africa	2015	43.56
5	Trinidad and Tobago	Latin America and the Caribbean	2019	38.57
6	El Salvador	Latin America and the Caribbean	2019	37.16
7	Honduras	Latin America and the Caribbean	2020	36.33
8	South Africa	Sub-Saharan Africa	2020	33.46
9	Mexico	Latin America and the Caribbean	2020	28.37
10	Anguilla	Latin America and the Caribbean	2014	28.34
11	Saint Lucia	Latin America and the Caribbean	2020	28.32
12	Saint Martin (French side)	Latin America and the Caribbean	2016	27.73
13	Belize	Latin America and the Caribbean	2020	25.65
14	Colombia	Latin America and the Caribbean	2020	22.64
15	Brazil	Latin America and the Caribbean	2020	22.45

Source: JICA Study Team based on UNODC

#### d) Specialty Products

The following table and figures show local products which could have potential to be specialty products. These are listed as a result of hearing survey of ministries and other organizations and field survey.

**Table 13-21 Local Products with Potential to be Specialty Products**

Proposer	Products	Explanation
JAMPRO	Blue Mountain Coffee and High Mountain Coffee	Out of target because they are already branded and mostly exported.
	Black Castor Oil	It is utilized as hair oil. Improvement in package and PR could lead to better brandings.
	Bamboo	Bamboo Avenue is a famous tourism spot. There are tableware made of bamboo.
Ministry of Tourism	Cultural heritage	Festivals, etc..
	Historical heritage	Fortress, etc.
Ministry of Agriculture and Fisheries	Yellow yam and sweet potato	It is considered to be worthy of attention in the ALEX project. There are demands of Jamaican diaspora in USA, UK, and Canada.
	Irish potato, onion, and tomato	They are heavily used in the gastronomy sector.
	Fruits	-
Others	Goat and goat milk	Curry goat is popular. The processing of milk will allow the development of a variety of products. It is considered to be easier for differentiation than beef, pork, and chicken. Moneague College is interested.
	Potatoes (Yam, dasheen and coco)	These are popular to local people, but not considered as local specialty products.
	Ginger	Ginger beer and ginger wine are produced. In Appleton Estate, a cocktail is prepared with local rum and ginger beer.
	Spice	It is often utilized in local foods. Bottled sauce is sold in many souvenir shops and supermarkets. Jerk sauce is well-known as Jamaican taste.
	Fruits (Soursop, tamarind,	Fruit liquor is sold in some stores.

Proposer	Products	Explanation
Out of target	guinep, and June plum)	
	Oil, candle, and soup	They are sold in many souvenir shops. Jamaican ingredients are used such as coconut oil.
	Ceramics	In a souvenir shop in Kingston, the products of local artists are sold.
	Rum	There is little need of support, because it is produced by a company with large capitalization.
	Marijuana	Its industrialization is advancing after substantive legalization, but it should be left to the market under appropriate regulations.

Source: JICA Study Team



Castor Oil



Bamboo Coaster



Ginger Beer



Marijuana Shop in Mall



Fruit Liqueur



Ginger Wine



Potatoes (from left, dasheen, white yam and coco)



Ceramics



Candles



Sauce

Photo: JICA Study Team

### Figure 13-10 Examples of Local Products in Jamaica

Interview survey was realized with the stakeholders of some of the products as follows.

#### **d-i) Black Castor Oil**

The North East Jamaica Castor Group was interviewed as a group of producers of black castor oil. The organization is a private enterprise set up to expand the formal production of castor beans, which is the source of black castor oil. It has contracts with farmers all over Jamaica, aiming for a stable supply and growth.

According to the group, most castor beans are currently harvested from plants that grow naturally, so the production is not stable enough to meet domestic and international needs. Unstable supply therefore causes price fluctuations, as well as unstable incomes for producers. In addition, there are almost no producers who have equipment such as a huller.

Although there are several producer associations (Grow Castor, Manchester Castor Association, Jamaica Castor Association, etc.), they are not very organized enough to work with common goals. Meanwhile, the Jamaica Baptist Union is engaged in research, cultivation, and formalization.

#### **d-ii) Moneague College**

The Moneague College is a college located in Saint Ann. It was established as Moneague Teachers College in 1956 for the purpose of teacher training, but since 1993 it has added the function of Community College as an interdisciplinary university. Therefore, it is now renamed Moneague College. The community college provides two-year educational programs to high school graduates and have the function of providing education and vocational training before transferring to universities. It offers courses such as Business Administration, Criminal Justice, Environmental Studies, and Hospitality and Tourism. Two years ago, the course of Applied Science in Climate Smart Agro Processing was added and is currently in enhancement stage.

Moneague College hopes to receive a dispatch of food processing experts and training in order to acquire food processing techniques and strengthen its educational capacity. There is a high interest in making dairy products such as cheese and yogurt using the milk of goats. Although the equipment is very small, it has it and hopes to receive the know-how. In Jamaica, goat meat is widely consumed, but dairy products are hardly processed, thus it is hoped that Moneague College will promote the accumulation and dissemination of the processing techniques.

However, although it is named as a college, its function regarding food processing is rather for vocational training. The facilities are not large, so in Japan it is more like an agricultural high school than a college or university. Therefore, it would be effective to send personnel who are good at practical education and vocational training, rather than researchers, or to conduct training at such places.



Photo: JICA Study Team

**Figure 13-11 Goats (Left) and Food Processing Facilities (Middle and Right) of Moneague College**

#### 4) Directions for Cooperation

Jamaica still faces comprehensive challenges such as economic development and the reduction of domestic disparities. From the point of view of local branding, there are issues of (1) tourism leakage, (2) regional and rural development, and (3) security. To address these issues, it is considered effective to take measures such as shifting from imported products to domestic products, improving agricultural productivity, and developing specialty products through local branding. Especially in Jamaica, it is necessary to change the mindset from imported goods to domestic products, from external development (invitation of investment) to spontaneous development, and from dependence on foreign aid to sustainable development. For example, it is desirable to put up an easy-to-understand message such as “Proudly Local” and carry out awareness reforms across sectors, ministries, companies, and individuals.

In the Ministry of Tourism Strategic Plan 2021-2025, the Ministry of Tourism has set a blue ocean strategy as the future direction of Jamaica's tourism industry and is trying to differentiate and diversify the tourism industry. The OVOP concept of developing more than one special product in one village is highly compatible with this strategy. In this survey, when the OVOP concept was introduced to the Ministry of Tourism, a high affinity and interest in working on OVOP was confirmed.

To implement local branding cooperation, the participation of the Ministry of Tourism and its affiliated TPDCo is considered important, having a highly compatible strategy, and having participated in topic-based training. However, since the Ministry of Tourism and TPDCo are solely responsible for the commercialization of tourism, there is a concern that the target "products" will be limited to soft components such as cultural heritage, historical heritage, and natural heritage. For example, to handle local products at tourist facilities such as all-inclusive hotels, it is necessary for producers to expand and stabilize the quality and supply volume, but such efforts are out of the jurisdiction of the Ministry of Tourism. In the video "OVOP (One Village One Product Movement): Challenges for Regional Revitalization" produced by JICA, it is shown that there are three types of local brands: namely, tourism brands, cultural and environmental brands, and specialty product brands. However, the development of these specialty product brands may be left out.



Source: “OVOP (One Village One Product Movement): Challenges for Regional Revitalization” (JICA)

**Figure 13-12 Three Components of Local Brand (Tourism Brand, Cultural and Environmental Brand, and Specialty Product Brand)**

Jamaica's Ministry of Tourism is already actively working on community tourism with donor support. Therefore, if the OVOP project is promoted under the strong initiative of the Ministry of Tourism alone, it will overlap with the other existing projects. From Jamaica's point of view, it would be better to continue working on ongoing community tourism projects.

Meanwhile, the Ministry of Agriculture has set up the FACE strategy and is working on food security, agribusiness development, climate smart technologies and export expansion. Among these, agribusiness development and export expansion have particularly high affinity with local branding. The ministry is likewise currently working on a shift to market-oriented agriculture, which is also highly compatible. The Ministry of Agriculture is thus an important stakeholder in the need to strengthen the productivity of crops as raw materials for the development of specialty products.

From the viewpoint of community-based approach such as OVOP, the Ministry of Local Government is suitable. With respect to "self-reliance and creativity" and "human resource development" of the three principles of OVOP, it is particularly important to involve the Ministry of Local Government, whose main activity is to support communities, its organizations, the SDC, and the CDCs.

Local branding cooperation, including the development of specialty products, is therefore of interest to the Ministry of Tourism, Ministry of Agriculture, and Ministry of Local Government. It is important for these three parties to work together, but it is necessary to identify the ministry that will be the main responsible party when conducting cooperative projects. In this survey, the introduction of local branding cooperation to each ministry and confirmation of interest were realized, although coordination among them has not yet been achieved. If there is a high possibility that JICA will provide assistance in this field in the future, it is recommended that the relevant ministries and agencies build a consensus while formulating a concrete project proposal.

## **(2) Development and Cooperation Scenario**

### **1) Development Scenario**

#### **a) Development Issues and Strategies**

Comprehensive issues such as economic development and mitigation of domestic disparities remain in Jamaica. From the perspective of local branding, the three areas of tourism leakage, regional and agricultural development, and security are noteworthy issues. Although the tourism industry, centered on beach resorts, is already prospering, the ripple effect on the local economy is small, such as relying on imports for food. Population is concentrated in the metropolitan area from rural areas where there are few opportunities for employment, and this has led to the deterioration of public safety.

Under such circumstances, the Ministry of Tourism has set the Blue Ocean Strategy as the future direction of Jamaica's tourism industry in the "Ministry of Tourism Strategic Plan 2021-2025" and is trying to differentiate and diversify the tourism industry. In fact, the ministry is making efforts in line with the Blue Ocean Strategy, such as promoting community tourism, receiving support from the World Bank, and others. The Ministry of Agriculture has set up the "#newFACEoffood" strategy and "#GrowSmartEatSmart" strategy. In relation to local branding, the ministry is working on market-oriented development in the domestic market, export market, niche market, and agricultural and non-agricultural employment through the development of the agricultural industry.



From the perspective of local branding, it is important for both ministries to work together to improve the quality, productivity, and connectivity of the entire value chain. Efforts such as the Tourism Linkages Network are being implemented, and further strengthening of this cooperation is required. It is assumed that high prices will become a bottleneck when developing specialty products. Since the prices of domestically produced agricultural products are particularly high, it is necessary to identify the causes through value chain analysis and to implement improvement measures.

The Ministry of Local Government is an important actor in promoting local and community initiatives. The SDC, which collects community information, and the CDC, which is organized in each community, can be the core of community activities. It is thought that a more effective bottom-up support will be possible by utilizing these organizations.

## b) Programs and Projects

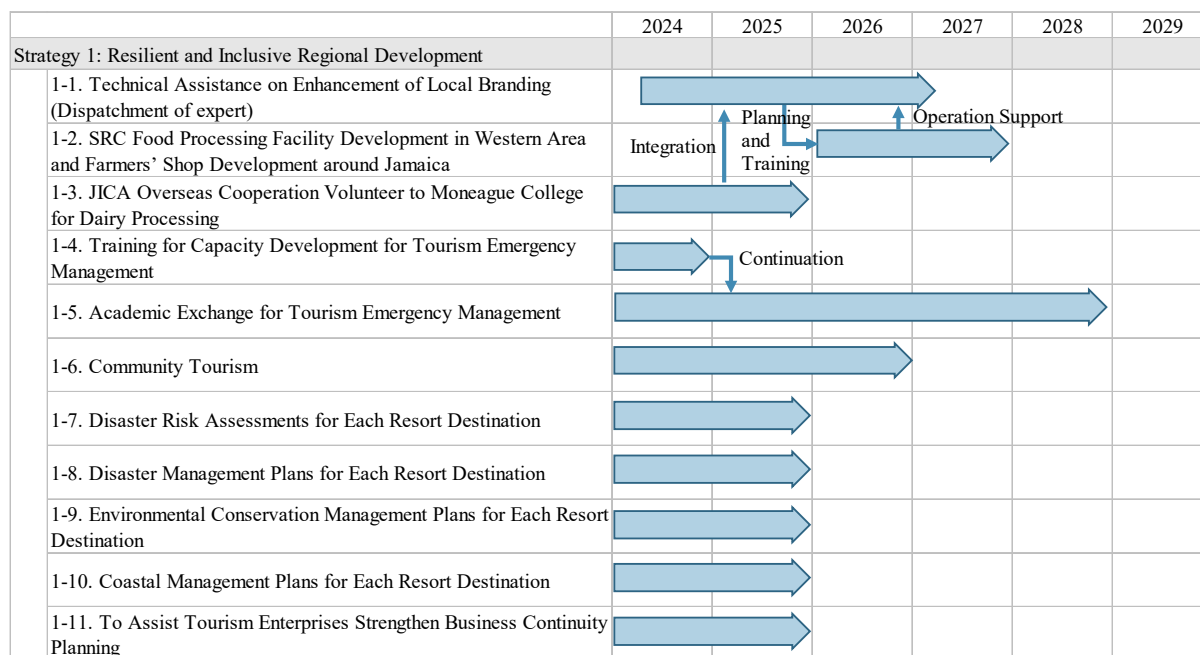
Proposed programs and projects to be implemented in Jamaica under the above strategy are shown in the table below. Although there are many more projects listed in the Ministry of Tourism's plan, the table below lists only OVOP and disaster risk reduction related projects that have a high possibility of utilizing Japanese knowledge.

**Table 13-22 Proposed programs and projects in Jamaica**

Country	Strategy	Program and Project	Period	Implementation Body
Jamaica	Resilient and Inclusive Regional Development for Economic Development	Technical Assistance on Enhancement of Local Branding (Dispatchment of expert)	Mid to Long	Ministry Agriculture and Fisheries (supported by JICA)
		SRC Food Processing Facility Development in Western Area and Farmers' Shop Development around Jamaica	Mid to Long	SRC and Ministry of Local Government and Rural Development (Supported by JICA)
		JICA Overseas Cooperation Volunteer to Moneague College for Dairy Processing	Short	Moneague College (supported by JICA)
		Training for Capacity Development for Tourism Emergency Management	Short	JICA and GTRCMC
		Academic Exchange for Tourism Emergency Management	Short to Long	Universities of Japan and GTRCMC
		Community Tourism	Short to Mid	Ministry of Tourism (supported by WB and others)
		Disaster Risk Assessments for Each Resort Destination	Short	Ministry of Tourism
		Disaster Management Plans for Each Resort Destination	Short	Ministry of Tourism
		Environmental Conservation Management Plans for Each Resort Destination	Short	Ministry of Tourism
		Coastal Management Plans for Each Resort Destination	Short	Ministry of Tourism
		To Assist Tourism Enterprises Strengthen Business Continuity Planning	Short	Ministry of Tourism

Note: Short: 2023-2025, Mid: 2023-2027, Long: 2023-2032

Source: JICA Study Team



Source: JICA Study Team

**Figure 13-13 Roadmap of Development Scenario in Jamaica**

## 2) Cooperation Scenario

Among the development scenarios, the projects expected to be supported by JICA are as follows.

### a) Technical Assistance on Enhancement of Local Branding (Dispatchment of expert)

From the perspective of local branding, by increasing the connectivity between tourism and local industries such as agriculture, implementing outer and inner branding, and improving organization and business capacity of local community, the project will solve the issues of tourism leakage and increase the ripple effect of tourism on local industries.

This technical assistance aims to develop the economy of Jamaica through local branding, so that it is located as a effort related to issues mentioned in 10.3.2.

#### a-i) Activities

In the discussions with RADA and TPDCo that took place during the third trip, a verbal agreement was reached on the activities shown in the table below. As input from Japan, two experts (tourism development and industrial promotion advisor and community business advisor) will be dispatched. The Tourism Development and Industrial Promotion Advisor is mainly in charge of Outputs 1 and 2, and the Community Business Advisor is mainly in charge of Outputs 3 and 4.

**Table 13-23 Activities of Proposed Technical Assistance on Enhancement of Local Branding**

Output	Activity	Related organizations	Notes
1. To establish national policy for local branding	1-1 To analyze product value chain 1-2 To develop national vision and strategy	Ministry of Agriculture, Ministry of	

Output	Activity	Related organizations	Notes
	1-3 To identify role of stakeholders	Tourism, Ministry of Industry and Ministry of Local Government	
2. To enhance organizational system to promote local branding under the policy	2-1 To develop platform with cross-sections in national level 2-2 To develop local branding certification system 2-3 To develop impact assessment system	TLN, TPDCo, ALEX, RADA and JAMPRO	As the cooperation system, there are two options raised: • To establish a organization in the Tourism Linkage Network (e.g., Local Branding Office) • To enhance ALEX to be local branding promotion organization.
3. To support local business support system to local communities	3-1 To organize local actors for product development 3-2 To identify (rediscover) local resources by local people through events ( <i>onpaku</i> , Decentralized Hands-On Program Exhibition) 3-3 To support to formulate local business plan 3-4 To conduct promotion activities at major domestic touristic sites (antenna shops, booths and fairs)	ALEX and RADA	• To be implemented as pilot projects.
4. To share experiences of Jamaica on local branding	4-1 To develop domestic platform to share initiatives 4-2 To share experiences in Jamaica with countries in Central America and the Caribbean region	ALEX, RADA and TLN	• Especially the synergy with cooperations in Saint Lucia and OECS is highly expected. • It is recommended to add “4-3 To share experiences with Japan”, considering that Jamaica has a friendship with Tottori Prefecture.

Source: JICA Study Team

## a-ii) Organizational Structure for Implementation

As mentioned above, ministries and agencies related to local branding include the Ministry of Tourism and TPDCo, the Ministry of Agriculture and RADA, and the Ministry of Local Government. From the perspective that it would be effective to utilize the Tourism Linkage Network and the ALEX project, which are existing collaborative systems, the Study Team requested discussions with the Ministry of Tourism, TPDCo, the Ministry of Agriculture and RADA during the 3rd field survey, and a joint meeting was realized with participation of TPDCo and RADA. During the meeting, both parties agreed to the cooperation with the aforementioned activities. Based on this, the C/P and implementation system centered on the Ministry of Tourism, TPDCo, the Ministry of Agriculture and RADA were examined.

As a result of the examination, the Study Team recommends that the Ministry of Agriculture be the C/P, that the actual working bodies for Output 1 should be RADA and TPDCo, the Tourism Linkage Network for Output 2, and ALEX for Outputs 3 and 4. The reason why the C/P is the Ministry of Agriculture is that it is important to promote branding with an emphasis on products, based on the three issues raised in this study (tourism leakage, regional and agricultural development, and security). In addition, the development of market-oriented agricultural product development and productivity improvement activities can be expected during and after the cooperation. The table below shows the main actors of each output and the reasons for their selection.

**Table 13-24 Organizational Structure for Implementation of Proposed Technical Assistance on Enhancement of Local Branding**

Output	Implementation Organization	Collaboration Organization	Reasons
1: National policy	Ministry of Agriculture and Ministry of Tourism	Ministry of industry and Ministry of Local Government	To establish a national policy, it is necessary that the ministries work on it.
2: Organization	TLN and TPDCo	ALEX • RADA	It is effective to utilize the Tourism Linkage Network, which is an existing collaboration system.
3: Local Business	ALEX	RADA	ALEX, which is implementing similar efforts, can provide suitable pilot project sites.
4: Knowledge sharing	ALEX	RADA, TLN	It is expected effective to share knowledges gained through implementation on fields.

Source: JICA Study Team

**a-iii) Possibility of Collaboration with Other Cooperation Projects**

The impact of collaborations among the projects proposed is considered necessary in this chapter such as facility planning and establishment of operation system for the project “SRC Food Processing Facility Development in Western Area and Farmers’ Shop Development around Jamaica” and collaboration with the Moneague College for "JICA Overseas Cooperation Volunteer to Moneague College for Dairy Processing". In addition, by collaborating with Saint Lucia's "Advisor for One Community One Product (OCOP) Movement" and OECS' "Regional Advisor for One Community One Product (OCOP) Movement", which are expected to be implemented in advance, knowledge sharing and regional expansion are expected.

**Table 13-25 Outline of Technical Assistance Project on Local Branding**

Item	Content
Project	Technical Assistance on Enhancement of Local Branding (Dispatchment of expert)
Priority	Prioritized Project (A)
Country	Jamaica
Strategy	Resilient and Inclusive Tourism Development for Economic Development
Project site	Jamaica
Modality	Dispatchment of Expert
Period	April 2024 - March 2027 (36 months)
Counterpart	Ministry of Agriculture and Fisheries and RADA (ALEX)
Other related organizations	Tourism Linkage Network, Ministry of Tourism and TPDCo, Ministry of Local Government and Rural Development, Ministry of Industry, SRC and Moneague College
Project goal	To strengthen the ripple effect of the tourism sector on local industry.
Outcome	1) To establish national policy for local branding 2) To enhance organizational system to promote local branding under the policy 3) To support local business support system to local communities 4) To share experiences of Jamaica on local branding

Source: JICA Study Team

**b) SRC Food Processing Facility Development in Western Area and Farmers’ Shop Development Around Jamaica**

The SRC plays a role of food processing subcontractor and technical guidance for small and medium enterprises, but the only processing plant is in Kingston. It is desirable to develop similar facilities in the western part of Jamaica from the viewpoint of regional development, as it is not possible that the current plant can cover all of Jamaica.

There are no facilities for purchasing local products in rural areas, thus farmers individually open

shops on the roadside. Considering profitability, a facility like a roadside station is over-engineered, but by constructing a simple direct sales store, it is expected that regional branding efforts will be visualized in rural areas and citizen participation will be enhanced.

**Table 13-26 Outline of SRC Food Processing Facility Development in Western Area and Farmers' Shop Development Around Jamaica**

Item	Content
Project	SRC Food Processing Facility Development in Western Area and Farmers' Shop Development around Jamaica
Priority	Possible Project (C)
Country	Jamaica
Strategy	Resilient and Inclusive Tourism Development
Project site	Jamaica
Modality	Grant
Period	January 2026 – December 2027 (24 months)
Counterpart	SRC and Ministry of Local Government
Other related organizations	Ministry of Agriculture and RADA
Project goal	To strengthen processing and sales function of local agricultural products.
Outcome	1) To construct SRC food processing facility in Western area of Jamaica. 2) To construct farmers' shops around Jamaica.

Source: JICA Study Team

### c) **JICA Overseas Cooperation Volunteer to Moneague College for Dairy Processing**

Moneague College hopes to receive a dispatch of food processing experts and training in order to acquire food processing techniques and strengthen educational capacity. There is high interest in making dairy products such as cheese and yogurt using the milk of the goats. Although the equipment is very small, it has it and hopes to receive the know-how. In Jamaica, goat meat is widely consumed, but dairy products are hardly processed, thus it is hoped that Moneague College will promote the accumulation and dissemination of the processing techniques.

Although it is named as a college, its function regarding food processing is for vocational training. The facilities are not large, so in Japan it is more like an agricultural high school than a college or university. Therefore, it would be effective to send personnel who are good at practical education and vocational training, rather than researchers, or to conduct training at such places. The suitable modality would be a dispatch of JICA volunteer, but a grassroots technical assistance project will also be an option if there is any private organization, local government, etc. interested in Japan.

The Moneague College is a college located in Saint Ann. It was established as Moneague Teachers College in 1956 for the purpose of teacher training, but since 1993 it has added the function of community college as an interdisciplinary university. Therefore, it is now renamed Moneague College. The community college provides two-year educational programs to high school graduates and have the function of providing education and vocational training before transferring to universities. It offers courses such as Business Administration, Criminal Justice, Environmental Studies, and Hospitality and Tourism. Two years ago, the course of Applied Science in Climate Smart Agro Processing was added and is currently in enhancement stage.

**Table 13-27 Outline of JICA Overseas Cooperation Volunteer to Moneague College for Dairy Processing**

Item	Content
Project	JICA Overseas Cooperation Volunteer to Moneague College for Dairy Processing
Priority	Prioritized Project (A)
Country	Jamaica
Strategy	Resilient and Inclusive Tourism Development
Project site	Jamaica
Modality	Volunteer (or Grassroot Technical Assistance Project)
Period	April 2024 – March 2026 (24 months)
Counterpart	Moneague College
Other related organizations	Ministry of Agriculture and RADA
Project goal	Capacity development for processing of dairy products and education
Outcome	Capacity development for processing of dairy products and education

Source: JICA Study Team

**d) Training for Capacity Development for Tourism Emergency Management and Academic Exchange for Tourism Emergency Management**

Although this project is not in the local branding sector, it is included as part of a series of cooperation scenarios as it is relevant from the perspective of industrial resilience.

Jamaica established the “Global Tourism Resilience and Crisis Management Center (GTRCMC)” at the University of the West Indies in 2019 with the support of the United Nations World Tourism Organization (UNWTO). In the previous study, the pilot project "Strengthening disaster resilience in the tourism sector" was implemented together with the GTRCMC. Through this pilot project, guidance documents prepared by the Japan Tourism Agency and the UNWTO Office in Japan were used to assist in the development of a tourism crisis management plan for the Jamaican tourism business.

The GTRCMC continues to work on the same theme and hopes to conduct training to share knowledge on tourism crisis management in Caribbean countries and Japan. This is expected to deepen the results of the pilot project in the previous study and spread it to other countries in the region so that its realization is achieved. It is therefore desirable to continue academic exchanges with Japanese universities that have concluded agreements with the University of the West Indies, in order to continuously accumulate and put into practice acquired knowledge.

**Table 13-28 Outline of Training for Capacity Development for Tourism Emergency Management**

Item	Content
Project	Training for Capacity Development for Tourism Emergency Management
Priority	Possible Project (C)
Country	Jamaica
Strategy	Resilient and Inclusive Tourism Development
Project site	Jamaica
Modality	Training
Period	January 2024 – December 2024 (12 months)
Counterpart	GTRCMC
Other related organizations	Ministry of Tourism
Project goal	To strengthen cooperation for tourism emergency management among Caribbean countries
Outcome	1. To share knowledges and experiences for tourism emergency management of Caribbean countries 2. To share knowledges and experiences for tourism emergency management of Japan 3. To arrange to regularly hold annual conference for tourism emergency management

Source: JICA Study Team

### 13.3.3 Local Branding in Central America

#### (1) Overview

##### 1) Past Cooperation of JICA

In Central America, many cooperation projects related to local branding have been realized as shown in the table below.

**Table 13-29 Cooperation Projects Related to Local Branding in Central America**

No.	Country	Project	Period	C/P	Scheme
1	El Salvador, Guatemala and Honduras	OVOP Regional Advisor	1 Mar. 2018 – 28 Feb. 2020	CONAMYPE (ES), Ministry of Economy (GU), Presidential Office (HO)	Advisor
2	El Salvador	Advisor for One Village One Product (OVOP) Movement	1 Nov. 2012 – 28 Feb. 2018	CONAMYPE	Advisor
3	Guatemala	Project for the Development of Human Resources and Support of Self-Organization in the Tikal National Park Tourist Corridor	30 Jun. 2017 – 31 Mar. 2022	Ministry of Culture and Sport	Grass-root technical assistance (Kanazawa University)
4	Costa Rica	Community-based Entrepreneurship for Local Development for Promotion of OVOP Movement	1 May 2016 – 31 Mar. 2017	Ministry of Economy	Training by country (Japan)
5	Dominican Republic	Project for Enhancing the Mechanism for Sustainable Community-based Tourism Development in the North Region	16 Apr. 2016 – 15 Apr. 2021	Ministry of Tourism	Technical assistance project
6	Nicaragua	Advisor for Local Economy Development by Roadside Stations	20 Nov. 2019 – 19 Nov. 2021	INIFOM	Advisor
7	Nicaragua	Advisor for Local Industry Promotion	14 Sep. 2015 – 14 Sep. 2017	INIFOM	Advisor
8	Panama	Community based Entrepreneurship for Local Development	10 May 2016-29 May 2016	Ministry of Economy and Finance	Training by country (Japan)
9	Mexico	Mexico-Japan Exchange Program for the Strategic Global Partnership	2012 – 2016	CONACYT and AMEXCID	Training by country (Japan)
10	Mexico	Technical Cooperation Project Related to Coffee Processing and Roasting and Coffee Shop Opening and Management for 3 Indigenous People's Organization in Chiapas, Mexico	1 Apr. 2010 – 31 Mar. 2013	-	Grass-root technical assistance (Keio University)
11	Guatemala	Local Industry Promotion Project	May 2010 – Aug. 2013	Ministry of Economy	Technical assistance project

Source: JICA Study Team

##### 2) Situation After JICA Cooperation in El Salvador

In El Salvador, there was a change of government in 2019 after the JICA cooperation. Since then, the priority of OVOP within CONAMYPE has been lowered, and despite years of efforts, JICA support through CONAMYPE and support for the OVOP movement by CONAMYPE ceased. The outbreak of the COVID-19 pandemic around the same time also has a significant impact. Although the national OVOP network, which operates on a national scale, acquired the legal status of Unión de Personas and was able to operate independently, all members were involved in the OVOP movement on a volunteer basis. Due to organizational restructuring of CONAMYPE after the change of government, the OVOP office in CONAMYPE was abolished, and the request for “OVOP Regional Advisor” to JICA was

suddenly withdrawn. The support from CONAMYPE, which had been received until then, suddenly disappeared, and the economic situation of the members themselves worsened due to the impact of COVID-19, so the activities of the nationwide OVOP network have practically stopped.

The national OVOP network was planning to open an antenna shop at the airport in conjunction with CONAMYPE. A tenant was going rent out in accordance with the renovation of the airport, and to be operated by the national OVOP network. Although CONAMYPE and the airport signed an agreement, it was eventually abandoned. After that, in 2020, the national OVOP network rented tenants in San Salvador to open an antenna shop. At that time, there were 23 merchandise suppliers from 13 cities. But the pandemic forced the closure of the entire building with the tenants. Operations resumed in 2021, but the members were dispersed and just focused on their own personal undertaking during the period of activity suspension. The store was closed in early 2022 because the store's profitability was poor and it was necessary to move out due to reconstruction of the building.

On the other hand, there are some activities that continue despite the fact that support from the national government and nationwide activities have stopped. In some cities, city OVOP committees work on their own activities. The cities that are still active today (as of August 2022) include San Juan Opico, San Lorenzo, Santa Ana, Ciudad Arce, Colón, San Vicente, Ilobasco, and Apaneca.

In San Juan Opico, about 50 people participate in activities as the city OVOP committee. Activities include regular monthly meetings, skill development in areas such as management, accounting, and commercialization, and holding events. There are three events to be held in 2022, namely: a "Fruit Day" event (May), by which other cities in the OVOP network with characteristics in fruits were also invited, featuring oranges which is the city's specialty; Encuentro Opico (July 31st), where products are gathered around the city; and the Orange Festival (late October to early November), which coincides with the orange harvest season.

The participants are volunteers, and the funds are mainly made up of monthly contributions of about 5 USD from the participants. The incentive in paying contributions is access to development opportunities. They also receive support from local governments and human resources provided by students in collaboration with universities. Since the city OVOP committee is a voluntary organization and does not have legal status, it utilizes a separate organization to which its members belong when it needs legal status.

Although the antenna shop has been closed, Mr. Orlando Corvera, who led it, is currently working in opening a "Kiosco OVOP" (see Figure 9 7). This is an initiative to set up booths to display and sell OVOP products at hotels in El Salvador. Since his main business is tourism, strengthening ties with hotels will have a ripple effect on his main business. He aims to open five Kioscos by the end of 2022.



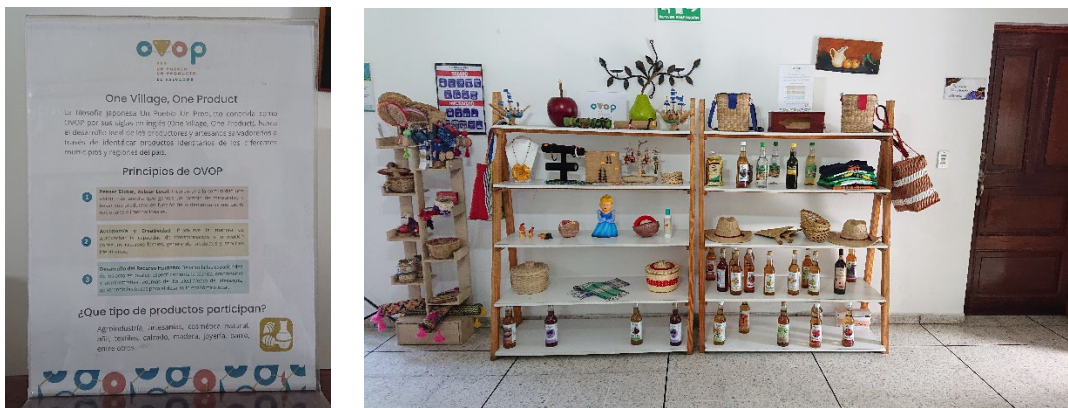


Photo: JICA Study Team

**Figure 13-14 Photos of Kiosco OVOP**

In general, OVOP is said to have a top-down type, such as OTOP in Thailand, and a bottom-up type, such as in Oita Prefecture. One of the drawbacks of the top-down approach is that activities come to a halt due to changes in government or policies. However, in the case of El Salvador, grassroots activities have been continuing despite the ceasing of support from the national government. Therefore, it can be regarded as a good example of successful establishment of OVOP in a sustainable manner.

On the other hand, considering that 94 cities were working on OVOP at the time of JICA's assistance, only a few cities are continuing their activities, which means that some activities have stagnated. In addition, even if activities continue at this point, it is feared that if the state continues to be unable to receive support, the activities will shrink further.

Therefore, efforts to revitalize the activities are desirable, but since CONAMYPE, the El Salvador C/P, has no intention of receiving OVOP's support, it is considered to be difficult for JICA to provide support unless there is a change in the system by those involved in the program. The El Salvador Office of JICA has been providing possible supports to maintain the relationships with the practitioners of OVOP, such as by holding OVOP seminar with trainees. As grassroots activities continue, relationships are being built with the Ministry of Tourism, the Ministry of Culture, and local governments, so some of those involved have an opinion that project implementation with these other public institutions at the core is also an option.

In addition, SICA and JICA are working together on "sustainable tourism development" and "agricultural and rural development", and these are being planned as cooperation programs in the Plan de Acción para la Cooperación Regional SICA - JICA 2021-2025. This includes promoting the implementation of tourism sector micro, small, and medium-sized enterprise support projects and the introduction of JICA approaches and tools that promote regional and rural social and economic revitalization, including OVOP. In addition, as part of the activities of the "One Village, One Product Movement Regional Advisor," participating countries proposed the establishment of a "Central America and the Caribbean OVOP network". Therefore, it is an option to support El Salvador's OVOP through regional cooperation with SICA as C/P.

## (2) Development Scenarios

### 1) Development Issues and Strategies

In Central America, stagnation in productivity growth, economic disparities between urban and rural areas, and population migration are issues. JICA has already implemented cooperation projects related to local branding in various countries, and it is desirable to utilize the results of these projects to address remaining or new issues. In El Salvador, the problem is the stagnation of the OVOP movement throughout the country and the activities of some local governments due to the lack of support from the national government. The human resources who have been involved in JICA's cooperation projects are still practicing the OVOP movement at their respective scales, and it is expected that the OVOP movement will be reactivated in other local governments and countries centered on them.

### 2) Programs and Projects

JICA has prepared an "Action Plan for Regional Cooperation" to plan cooperation projects with SICA. The table below shows the strategies and projects related to local branding based on the document. In agriculture and rural development, it is supposed to promote the introduction of approaches including OVOP. Considering the situation in El Salvador, where it is difficult to provide assistance through the national government, and the fact that participating countries proposed the establishment of an OVOP network in the Central America and the Caribbean region in the past "OVOP Regional Advisor" project, an additional project of regional OVOP advisor is proposed with SICA as C/P.

**Table 13-30 Proposed Programs and Projects in SICA**

Country	Strategy	Program and Project	Period	Implementation Body
SICA	Development of Sustainable Tourism	Data Collection Survey about Micro, Small and Medium Enterprises in the Tourism Sector in Central America	Short	SICA (supported by JICA)
		Project to Support Micro, Small and Medium Enterprises in the Tourism Sector in Central America	Short	SICA (supported by JICA)
		Study about Marine Contamination due to Sargassum and its Utilization	Short to Mid	SICA (supported by JICA)
	Agricultural and Rural Development	Regional Advisor in Agricultural and Rural Development	Short	SICA (supported by JICA)
		Course about Agricultural and Rural Development for SICA Region	Short to Mid	SICA (supported by JICA)
		SICA Regional OVOP Advisor*	Short	SICA (supported by JICA)

Note: Short: 2023-2025, Mid: 2023-2027, Long: 2023-2032

\*Added by the JICA Study Team

Source: JICA Study Team based on "Action Plan for the Regional Cooperation"

## 14. Climate Change

### 14.1 Outline of the Study

Three subsectors, "Climate Change Countermeasures in General", "Waste Management", and "Disaster Risk Reduction", were studied with the aim of achieving a carbon-neutral, recycling-oriented, and resilient society that can endure increasingly severe climate change and disaster risks. This is in order for Central American and Caribbean countries to achieve sustainable development and progress. The study was conducted to analyze issues and development needs in three subsectors.

In the general climate change measures subsector, a survey on the current situation was conducted with Mexico as the focus country in order to confirm the status of greenhouse gas (GHG) emission reduction in Central America and the Caribbean and air quality controlling efforts in Mexico to examine development and cooperation scenarios that will contribute to future atmospheric environment conservation.

In the waste management subsector, field surveys were conducted in four priority countries (Nicaragua, Cuba, Guatemala, and Panama) to examine development and cooperation scenarios in the target countries. In addition, the status of plastic waste initiatives in Mexico was investigated, and good practices that can be applied to neighboring countries were collected and organized.

The disaster risk reduction subsector analyzed statistical data on priority disaster types in Central American and Caribbean countries, organized issues related to the mainstreaming of disaster risk reduction, and proposed items to be considered in future development cooperation.

Table 14-1 shows the survey scope for the climate change sector.

**Table 14-1 Scope of Work (Climate Change)**

No.	Task	Subsector	Scope of Work
1	Sector Targets		With the aim of realizing a carbon-neutral, circular economy, and building a society that is resilient to increasingly serious climate change and disaster risks with/post Covid-19 society, collect and analyze information related to the fields of disaster risk reduction and climate countermeasures, and propose development policies and cooperation scenarios.
2	Scope Update	Climate Change Countermeasures in General	Study the current situation and organize issues related to Greenhouse Gas (GHG) emission control and atmospheric environment conservation and consider future development/cooperation scenarios.
		Waste Management	Consideration of cooperation policy based on the organization of issues related to appropriate waste management for the realization of a recycling-oriented society.
		Disaster Risk Reduction	To identify the needs of Central American and Caribbean countries for the development of disaster reduction infrastructure (including the use of ICT technology) and capacity building based on the Sendai Framework to contribute to disaster risk reduction, and to discuss future cooperation policies based on the identification of issues related to the mainstreaming of DRR.
3	Literature Review	Climate Change Countermeasures in General	<ul style="list-style-type: none"> <li>■ Climate Change/ Air Pollution</li> <li>Target countries: Mexico</li> <li>• To examine the state of air pollution control in Mexico's metropolitan areas, as well as an overview of environmental agencies and environmental sector-related institutions and their strategies for reducing GHG emissions.</li> </ul>
		Waste Management	<ul style="list-style-type: none"> <li>■ Waste Management</li> <li>Target countries: Nicaragua, Cuba, Guatemala and Panama</li> <li>• Review of relevant institutions in the waste sector in the four focus countries, their legal systems, and projects already implemented or underway by JICA, and identify needs based on each country's stage of development (stage I-III).</li> </ul>

No.	Task	Subsector	Scope of Work
			<p>■ Plastic Waste Target country: Mexico</p> <ul style="list-style-type: none"> <li>General survey of waste management in Mexico to gather information on 3R and waste plastics management and actual conditions, and to summarize the status of efforts to marine plastics in the Alliance Pacifico (Alianza del Pacifico).</li> </ul>
		Disaster Risk Reduction	<p>■ Mainstreaming of DRR Target country: Central America and the Caribbean</p> <ul style="list-style-type: none"> <li>Assess critical disasters in each region by reviewing disaster statistics and JICA projects that have been implemented or are in progress, and organize issues.</li> </ul>
4	Field Survey	Climate Change Response in General	<p>■ Climate Change/ Air Pollution &lt;Field survey 1: Implementation of data collection survey&gt; Country to visit: Mexico</p> <ul style="list-style-type: none"> <li>Conduct information gathering surveys, analyze the current situation and sort out cooperation needs. The place to visit is selected by a literature search.</li> </ul> <p>&lt;Field survey 2: Explanation/Review of Draft Development Scenario/Draft Cooperation Scenario&gt; Country to visit: Mexico</p> <ul style="list-style-type: none"> <li>Draft development scenarios and draft cooperation scenarios are prepared in PR, and explanations and opinions will be exchanged with government agencies and JICA overseas offices, and scenarios will be revised.</li> </ul>
		Waste Management	<p>■ Waste Management &lt;Field survey 1: Implementation of data collection survey&gt; Country to visit: Nicaragua and Cuba</p> <ul style="list-style-type: none"> <li>Conduct data collection surveys, analyze the current situation and sort out cooperation needs. The place to visit is selected by a literature search.</li> </ul> <p>&lt;Field survey 2: Implementation of data collection survey&gt; Country to visit: Guatemala and Panama</p> <p>Conduct data collection surveys, analyze the current situation and sort out cooperation needs. The place to visit is selected by a literature search.</p>
			<p>■ Plastic Waste &lt;Field survey 1: Implementation of data collection survey&gt; Country to visit: Mexico</p> <ul style="list-style-type: none"> <li>Conduct an information gathering survey on the status of efforts to tackle marine plastic litter, and identify the department in charge of the Pacific Alliance. In addition, the current situation will be analyzed and cooperation needs organized.</li> </ul> <p>&lt;Field survey 2: Survey for sharing good practices&gt;</p> <ul style="list-style-type: none"> <li>Investigate, analyze, and organize good practices related to plastic waste management in Mexico to be shared with neighboring countries.</li> </ul>
		Disaster Risk Reduction	<p>■ Mainstreaming of DRR &lt;Field survey 1: Implementation of data collection survey&gt; Country to visit: Belize</p> <ul style="list-style-type: none"> <li>Conduct information gathering surveys and hold discussions with overseas offices and regional organizations to confirm the current situation of mainstreaming of DRR.</li> </ul> <p>&lt;Field survey 2: Cross-cutting survey by the sector of “Economic Infrastructure Development - Transportation”&gt; ※DRR sector does not conduct the 2<sup>nd</sup> field survey. Target Country: Belize, Barbados(CDEMA) and Guyana</p> <ul style="list-style-type: none"> <li>Conduct research and study on mainstreaming disaster reduction in the transportation and transport sector.</li> </ul>
5	Recommendations	Finalize development and cooperation	<ul style="list-style-type: none"> <li>Based on the opinions and requests from JICA field offices, regional organizations, and development partners, as well as the results of the survey analysis, development scenarios for each subsector and cooperation</li> </ul>

No.	Task	Subsector	Scope of Work
		scenarios	scenarios will be finalized. <ul style="list-style-type: none"> <li>• DRR sub-sector will propose priority items for consideration for the disaster management sector in future development cooperation (no cooperation scenarios will be proposed).</li> </ul>

Source: JICA Study Team

## 14.2 Climate Change Countermeasures in General

### 14.2.1 Overview of Climate Change in the Region

#### (1) Regional Overview

All countries in Latin America and the Caribbean have ratified the Paris Agreement, and many have accepted the more ambitious target of limiting temperature rise to 1.5°C, as shown in the Figure 14-1. Mexico, which is the focus country for Climate Change sector of this study, is also included.

In addition, by January 8, 2021, 82 countries around the world and EU with 27 countries have submitted revised versions of their Nationally Determined Contributions (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC). About 40 of these countries correspond to the 2<sup>nd</sup> edition of their NDCs. Most Latin American and Caribbean countries have set clear deadlines to achieve carbon neutrality by 2030 or 2050 at the latest (IDB, 2021).



Source: IDB (2021) “Climate Policies in Latin America and the Caribbean” Data from COP 25 Chile (2019)

**Figure 14-1 Countries in Central America and the Caribbean that Have Accepted the 1.5-Degree Goal at COP 25**

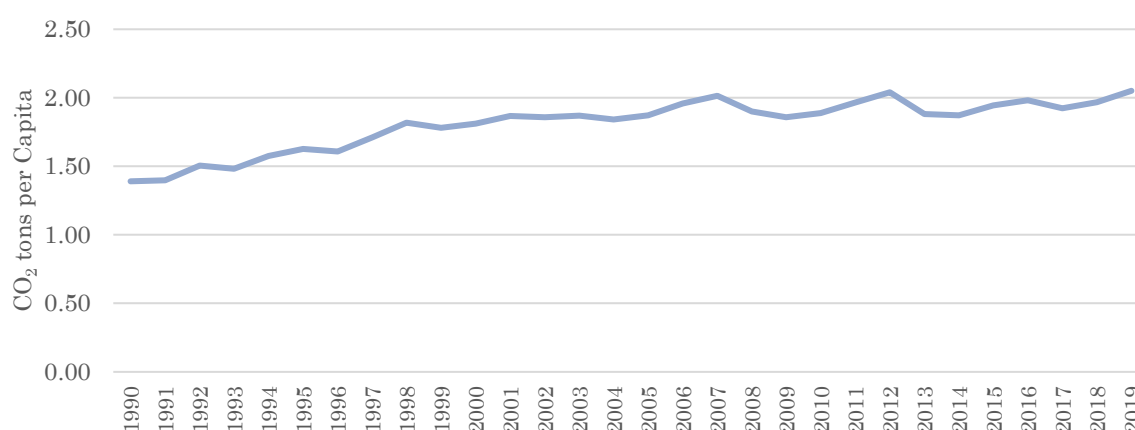
The greenhouse gas reduction targets for Central American and Caribbean countries are shown in Table 14-2. The countries included in this analysis are Mexico, Guatemala, Honduras, Nicaragua, El Salvador, Costa Rica, Panama, Belize, Cuba, Dominican Republic, Haiti, Jamaica, Saint Lucia, and Guyana. These reduction targets are based on the Nationally Determined Contributions (NDC) Registry of the United Nations Framework Convention on Climate Change (UNFCCC).

**Table 14-2 Greenhouse Gas Reduction Targets for Each Country**

Country	Reduction Target for 2030 (Not Conditioned)	Reduction Target with International Support for 2030 (Ambitious/Conditioned)	Latest Update
Mexico	30%	40%	17/11/2022
Honduras	16%	-	19/05/2021
Guatemala	11.2%	22.6%	23/05/2022
Nicaragua	8%	10%	24/12/2022
Panama	11.5% reduction for energy sector emissions 24% for 2050		28/12/2020
El Salvador	39% - 61%	-	04/01/2022
Belize	Increase of 63% of GHG removals		01/09/2021
Costa Rica	<ul style="list-style-type: none"> <li>Absolute maximum of net emissions by 2030 of 9.11 MtCO<sub>2</sub>e and an absolute maximum budget of net emissions during 2021-2030 of 106.53 MtCO<sub>2</sub>e</li> <li>100% renewable in energy mix by 2030</li> </ul>		29/12/2020
Cuba	Generate 24% of electricity from renewable sources and increase forest coverage to 33% by 2030		17/09/2020
Dominican Republic	7%	27% with external financing	29/12/2020
Haiti	6% (reference year is 2000)	32%	01/06/2022
St. Lucia	7% in GHG emissions compared to 2010	-	27/01/2021
Jamaica	25.4%	28.5%	01/07/2020
Guyana	100% renewable energy power supply by 2025		20/05/2016

Source: Prepared by the JICA Study Team based on NDC reports from various countries.

The emissions situation in each country has been reviewed. Figure 14-2 shows the evolution of average per capita CO<sub>2</sub> emissions in the Central America and Caribbean region from 1990 to 2019. For the region as a whole, the average CO<sub>2</sub> emissions per capita increased from 1.39 ton-CO<sub>2</sub> to 2.05 ton-CO<sub>2</sub> from 1990, the base year, to 2019, the latest reporting year. This corresponds to a 47% increase over a 30-year period, or an average annual increase of 1.6%. This trend contrasts with that of developed countries or regions, such as the EU with a 28% cumulative decrease, the US with a 24% decrease, and OECD member countries with an average decrease of 17%. Note that in 2019, Japan's per capita emissions are 8.4 ton-CO<sub>2</sub> while the United States' per capita emissions are 14.5 ton-CO<sub>2</sub>.

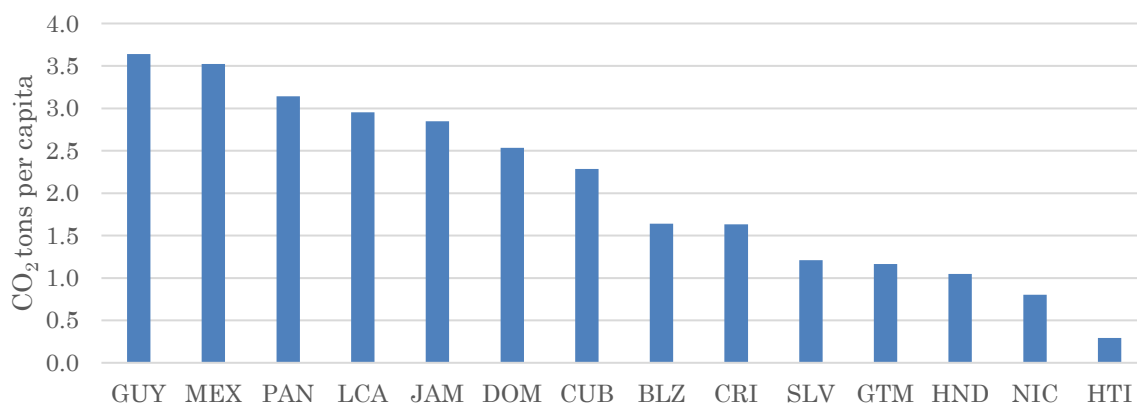


Source: Prepared by the JICA Study Team based on Climate Watch Database

**Figure 14-2 CO<sub>2</sub> Emissions per Capita in Central America and the Caribbean (1990-2019)**

The per capita CO<sub>2</sub> emissions for each country in 2019 are shown in Figure 14-3. They are listed in descending order from left to right on the graph. Guyana, Mexico, and Panama are the countries with

the highest per capita CO<sub>2</sub> emissions among these countries. The countries with the lowest per capita

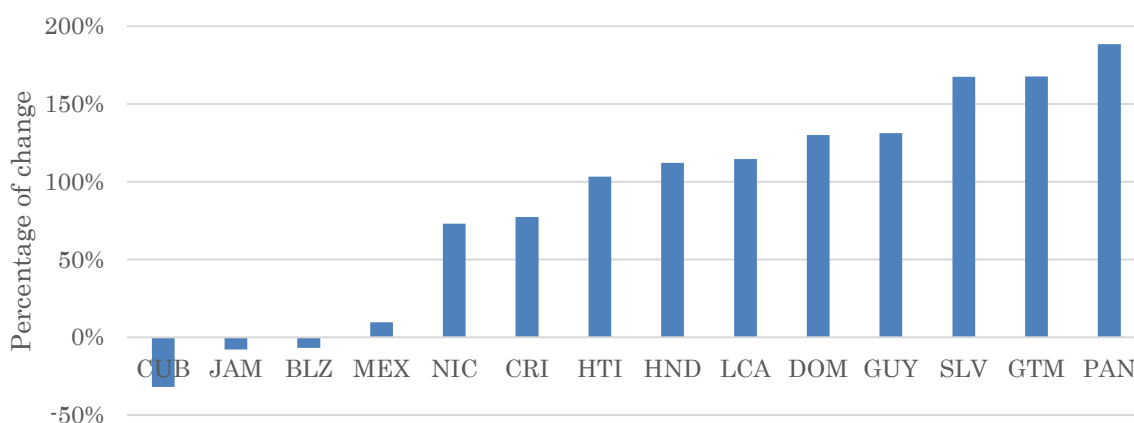


emissions are Haiti, Nicaragua, and Honduras.

Source: Prepared by the JICA Study Team based on Climate Watch Database

**Figure 14-3 CO<sub>2</sub> Emissions per Capita in Each Country (2019)**

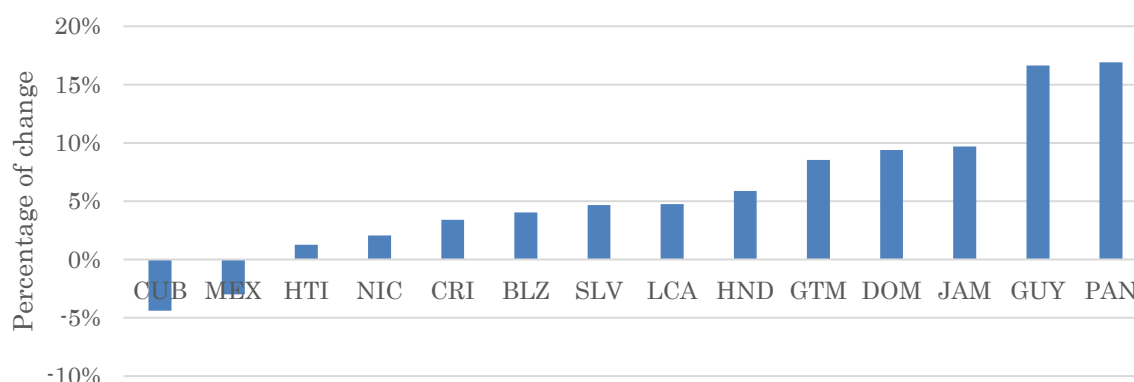
The percent change in emissions from 1990 to 2019 for each country is shown in Figure 14-4. Cuba, Jamaica, and Belize have negative rates of change, with current per capita emissions below the 1990 emissions. In contrast, El Salvador, Guatemala, and Panama showed increases in emissions of more than 150%.



Source: Prepared by the JICA Study Team based on Climate Watch Database

**Figure 14-4 Percentage Change in Emissions for Each Country (Compared to 1990 and 2019)**

Next, the total emissions of each country after the Paris Agreement are reviewed. Since reduction targets are based on total emissions rather than per capita emissions, it is possible to determine how well countries have achieved their reduction targets in recent years. Figure 14-5 shows the percentage change in total emissions from 2016 to 2019. This shows that Cuba and Mexico have achieved negative emissions.



Source: Prepared by the JICA Study Team based on Climate Watch Database

**Figure 14-5 Percentage Change in Emissions for Each Country after the Paris Agreement (2016 vs. 2019)**

Although the region is generally positive about compliance with the Paris Agreement, many NDCs have been assessed as deficient in reaching the required level of action. With this, the countries will still continue to work under the Paris Agreement mechanism. The following are said to be necessary: (i) setting more ambitious goals, (ii) designing an implementation mechanism to ensure the realization of the goals, and (iii) organizing mechanisms for reporting and verifying the results.

Even though the GHG reduction targets are in line with the UNFCCC guidelines, the base year and monitoring indicators are not uniform from country to country. For example, Panama sets its reduction target in terms of energy sector emissions, Costa Rica in absolute terms of net emissions (MtCO<sub>2</sub>e: metric ton of CO<sub>2</sub> [carbon dioxide] equivalent), and Cuba in terms of electricity generation from renewable energy sources. Furthermore, it is not easy to analyze and compare the progress of reduction targets among countries since the situation differs depending on various factors such as forest area, land use, energy mix, population growth, and emissions by sector. In the future, a single follow-up tool or mechanism needs to be defined to identify specific initiatives in each country and assess their effectiveness.

## (2) JICA's Ongoing Cooperation in the Environmental Sector

Table 14-2 below shows JICA's implementation of cooperation in the environmental field (including climate change, waste management, and general environment) in the Central America and Caribbean region. Based on country-specific development policies, active cooperation has been carried out in the region so far, and regional projects are being implemented through SICA and CARICOM.

**Table 14-3 JICA's Ongoing Cooperation in the Environmental Sector**

Region	Country	Project name	Form of cooperation	Status*1
Central America	El Salvador	Oromega and Scotol Lakes Integrated Wetland Management Project	Project-based	Being carried out
	Environment	Water Supply Improvement Plan in Managua City	Grant	Being carried out
	Honduras	La Unión Biological Corridor Project	Project-based	Being carried out
		Data Collection and Confirmation Survey for the Tegucigalpa Water Supply Project	Basic information collection and	Being carried out



Region	Country	Project name	Form of cooperation	Status*1
			confirmation survey	
		Project to Establish a Municipal Collaborative Management Model for Integrated Solid Waste Management	Project-based	Before implementation
	Costa Rica	Capacity Development for Geothermal Development	Training in 3 <sup>rd</sup> country	Being carried out
	North America and Latin America (Regional)	Capacity Building Project on Integrated Management and Conservation of Biodiversity in SICA Region	Project-based	Being carried out
Caribbean	Cuba	Master Plan Development Project for the Development of Renewable Energy	Development plan survey	Being carried out
		Capacity Building Project for Integrated Management of Water Resources in the Artemisa-Matansa Region	Project-based	Being carried out
	Saint Vincent	Project for Strengthening Conservation and Management of Coastal Fisheries Resources through Cooperation between Fishermen and Government	Project-based	Being carried out
	Jamaica	Advisor to the Caribbean Region on Marine Plastic Litter	Individual experts	Being carried out
	Dominican Republic	National Integrated Waste Management System and Capacity Enhancement Project Phase 2	Project-based	Being carried out
	North America and Latin America (Regional)	CARICOM Energy Conservation Promotion Project	Project-based	Being carried out

\*1: Status as of February 2022

Source: Materials provided by JICA

## 14.2.2 Climate Change Countermeasures in Mexico

### (1) General

#### 1) Climate Change Impacts and Economic Development Opportunities

Climate change is a global issue, but vulnerability to climate change varies from country to country due to various factors such as geography, ecosystems, infrastructure, and local resources. In the case of Mexico, according to Banco de Mexico and National Institute of Ecology and Climate Change (INECC), the areas showing vulnerability to climate change are (i) hurricanes and severe weather event, (ii) coastal environment, and (iii) water security as shown in Table 14-3.

**Table 14-4 Systems Vulnerable to Climate Change in Mexico**

Systems	Impacts	Examples of Impacted Sectors
Hurricanes and severe weather events	<ul style="list-style-type: none"> <li>- Increase in frequency and intensity of hurricanes</li> <li>- Impacts on biodiversity from increase in sea water temperature (ex: fucus – “sargazo”)</li> </ul>	<ul style="list-style-type: none"> <li>- Tourism</li> <li>- Agriculture yields</li> <li>- Fishing yields</li> </ul>
Coastal	<ul style="list-style-type: none"> <li>- Impact of sea level increase</li> <li>- Increased cost from coastal floods</li> </ul>	<ul style="list-style-type: none"> <li>- Housing and infrastructure</li> <li>- Port/communications</li> <li>- Agriculture (salinization)</li> <li>- Increase above 10% in health costs due to vector-borne, gastrointestinal, and heat wave diseases</li> </ul>
Water Security	<ul style="list-style-type: none"> <li>- Increase in rainfall in certain areas</li> <li>- More frequent droughts</li> <li>- Increase in fluvial floods</li> </ul>	<ul style="list-style-type: none"> <li>- Agriculture yields, viability of specific crops</li> <li>- Tourism</li> <li>- Urban water security</li> </ul>

Source: Climate and Environmental Risks and Opportunities in Mexico's Financial System, Banco de Mexico, 2020

In addition, INECC has been evaluated as contributing to the transition to a low-carbon society as a countermeasure against climate change, as well as to economic development through the initiatives in the following sectors as shown in Table 14-4.

**Table 14-5 Economic Opportunities Associated with the Transition to a Low-Carbon Economy**

Sector	Contents
Electricity Generation	<ul style="list-style-type: none"> <li>- Clean energy generation</li> <li>- Reduction of transmission losses</li> <li>- Energy efficiency</li> </ul>
Oil and Gas	<ul style="list-style-type: none"> <li>- Mitigation of methane emissions in oil refining process</li> <li>- Energy efficiency</li> </ul>
Transport	<ul style="list-style-type: none"> <li>- Transport efficiency plan</li> <li>- Energy efficiency for cargo transport</li> <li>- Biofuel development for air transport</li> <li>- Electromobility</li> </ul>
Manufacturing	<ul style="list-style-type: none"> <li>- Focus on cement, iron, steel industries, and chemical</li> <li>- Energy efficiency</li> <li>- Cogeneration</li> <li>- Recycling</li> </ul>
Residential and Commercial	<ul style="list-style-type: none"> <li>- Residential and commercial energy efficiency/high performance buildings/green mortgages</li> </ul>
Waste Management	<ul style="list-style-type: none"> <li>- Investment in municipal infrastructure</li> <li>- Cogeneration</li> </ul>
Agriculture and Livestock/Land Use Changes	<ul style="list-style-type: none"> <li>- Payment for environmental services in the forestry sector</li> <li>- Renewable energy investments</li> <li>- Adoption of sustainable agriculture practices</li> </ul>

Source: Climate and Environmental Risks and Opportunities in Mexico's Financial System, Banco de Mexico, 2020

## 2) Climate Change Sector Overview

Organizations and roles related to climate change and air pollution responses in Mexico are summarized below in Table 14-5.

**Table 14-6 Organizations and Roles Related to Climate Change in Mexico**

Organization/Institution	Role in the Climate Change Sector
Instituto Nacional de Ecología Y Cambio Climático (INECC)	<ul style="list-style-type: none"> <li>- Coordination and implementation of research and scientific and technological research projects on climate change, environmental sustainability, green growth, and assessment of climate change policies</li> <li>- National registration of emissions</li> <li>- Assessment of adaptation to climate change and achievement of mitigation goals</li> </ul>
Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT)	<ul style="list-style-type: none"> <li>- A national agency that develops the legal systems for environmental management and conducts management procedures</li> <li>- Emissions to air from activities listed in the General Act on Ecological Equilibrium and Environmental Protection (LGEEPA), discharges into national water bodies, land, and green belts</li> </ul>
Secretaría de Medio Ambiente de la Ciudad de México (SEDEMA)	<ul style="list-style-type: none"> <li>- Government Environment Secretariat for Mexico City</li> </ul>
Secretaría de Energía (SENER)	<ul style="list-style-type: none"> <li>- National agency responsible for energy policy, legal system development, and management procedures</li> </ul>

Organization/Institution	Role in the Climate Change Sector
Petróleos Mexicanos (PEMEX)	- National oil company
Agencia de Seguridad, Energía y Ambiente (ASEA)	- Decentralized administrative body of the Ministry of Environment and Natural Resources that regulates and supervises industrial safety, operational safety, and environmental protection for activities in the hydrocarbon sector
Comisión Federal de Electricidad (CFE)	- State-owned power company

Source: JICA Study Team

### 3) Laws and Strategies for Climate Change in Mexico

Laws, legislation, and national strategy for climate change in Mexico are summarized in Table 14-6.

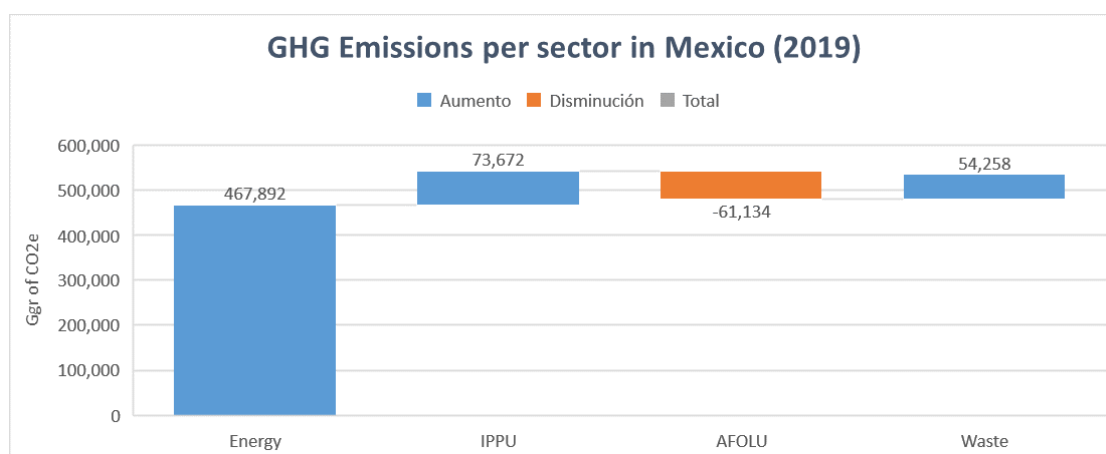
**Table 14-7 Laws and Strategies for Climate Change in Mexico**

	Strategy/Legal System		Contents
Strategy/Plan	National GHG Emissions Inventory	Inventario Nacional de Emisiones de Gases y Compuestos de Efecto Invernadero	National inventories of greenhouse gas and compound emissions
	Institutional Programme of the National Institute of Ecology and Climate Change 2020-2024	Programa Institucional del Instituto Nacional de Ecología y Cambio Climático 2020-2024	INECC program for climate action approved in 2020
Legislation	General Law of Ecological Equilibrium and Environmental Protection	Ley General del Equilibrio Ecológico y Protección al Ambiente	The first Mexican law issued with the purpose of establishing the country's environmental legal system. Establishes a general framework for information and participation in environmental issues and responsibility for environmental damage
	General Law of Climate Change	Ley General de Cambio Climático	Establish provisions to address the adverse impacts of climate change and regulate mitigation and adaptation actions
	Energy Transition Law	Ley de Transición Energética	Regulate the sustainable use of energy, define clean energy use and emissions reduction obligations in the power sector, and strengthen the competitiveness of the production sector
	Electricity Sector Law	Ley de la Industria Eléctrica	Promote sustainable development of the electricity sector, ensure continuous, efficient, and safe operation of the electricity system, provide universal and public electricity services, use clean energy, and reduce pollutant emissions.

Source: JICA Study Team

#### 4) GHG Emissions in Mexico

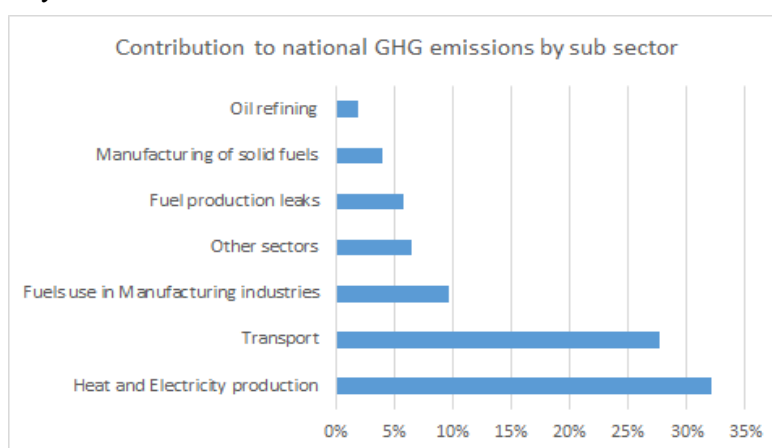
Greenhouse gas (GHG) emissions in Mexico are managed by the Inventario Nacional de Emisiones de Gases y Compuestos de Efecto Invernadero (National GHG Emissions Inventory: INEGYCEI). Figure 14-2 shows the emissions by sector in Mexico in FY2019. From left to right: Energy, Industrial Processes and Product Use (IPPU), Agriculture, Forestry and Other Land Use (AFOLU), and Waste Sector emissions. Agriculture and forestry work as a negative because they absorb GHGs.



Source: Inventario Nacional de Emisiones de Gases y Compuestos de Efecto Invernadero (National GHG Emissions Inventory) (INEGYCEI)

**Figure 14-6 GHG Emissions by Sector in Mexico (2019)**

The energy sector accounts for 88% of total emissions, the breakdown of which is shown in Figure 14-3. Heat and electricity production is at 32%, followed by the transport sector at 28%. It is pointed out that it is necessary to focus on these sectors to control emissions.



Source: IINEGYCEI

**Figure 14-7 Breakdown of Energy sector GHG emissions (2019)**

#### 5) Assistance Provided by JICA

JICA has implemented several studies and projects in the fields of environmental management and natural environment conservation in Mexico.

Table 14-7 shows the projects implemented since 2007.

**Table 14-8 Environment-related Studies and Projects Implemented by JICA in Mexico**

Project	Year	Form of Cooperation
Development of Waste Management Policy Based on the 3Rs in Mexico	-2008	Technical Cooperation
Coastal Water Quality Monitoring Network Project	-2008	Technical Cooperation
Project on Capacity Enhancement for Establishing Mexican Norms of Water Quality Criteria	-2010	Technical Cooperation
Mexico City Air Pollution Control Related Business	-	Loan (1990 E/N)
Strengthening of Air Monitoring Program	-2008	Technical Cooperation
Coastal Wetland Conservation in Yucatan Peninsula	-2010	Technical Cooperation
Connectivity and Management of Protected Areas in the Mesoamerica Biological Corridor	2008	Training
Potable Water Quality Control Project II in Mexico City	2008-2010	Technical Cooperation
Improvement Project of Sewerage System in Mexico City	2011-2012	Technical Cooperation
Regional Development on Sustainable Waste Management	2010-2011	Training
The Project for the Establishment of End-of-Life Vehicle (ELV) Management Plan	2009-2011	Technical Cooperation
International Course on Alternative Technology of Sustainable Water and Sludge Treatment with Focus on Revalorization of Waste	2012-2014	Training
International Course on the Development of Instruments for the Integral Waste Management with Focus on the 3Rs (Reduction, Reuse, and Recycle)	2012-2014	Training
Coastal Water Monitoring in the Mesoamerican Region as Parameters of Climate Change	2013-2014	Training
Joint Research Project on Formation Mechanism of Ozone, VOCs, and PM2.5 and Proposal of Countermeasure Scenario	2013-2015	Technical Cooperation
Project for Improvement of Sewage Treatment in Mexico City	2014-2017	Technical Cooperation
International Course on Establishment of Resource Recycling Society System	2015-2017	Training
Diversity Assessment and Development of Sustainable Use of Mexican Genetic Resources	2014-2018	Technical Cooperation

Source: JICA Study Team

## (2) Efforts for Air Pollution Control

### 1) ProAire Programme

In 1992, the United Nations and WHO measured air quality in 20 cities around the world, and Mexico City was said to be the most polluted city. In 1995, Mexico City and the Mexican national government launched “ProAire”, a program to address pollution on various fronts, including reducing emissions from industry and automobiles, raising public awareness, and promoting clean technology and environmentally friendly transportation.

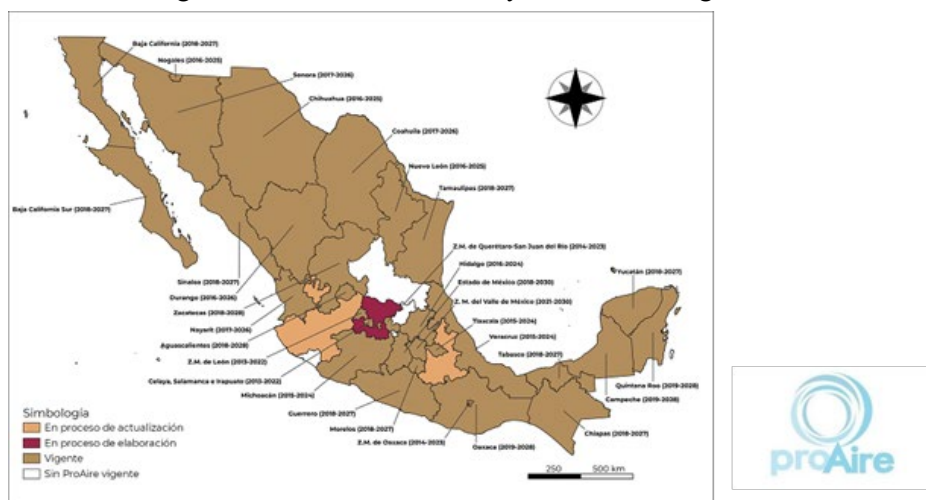
As part of this movement, Mexico formulated the National Air Quality Monitoring Program (2003-2008) in 2002 with the aim of standardizing its monitoring network. Regarding the implementation, JICA is also providing technical assistance to strengthen the capacity of air quality monitoring through projects such as the "National Air Pollution Monitoring Enhancement Support Project".

ProAire Program aims to achieve following goals.

- Participation of three levels of government (federal, state, and municipal), industry, academia, and organized civil society to address air pollution issues
- Diagnosis of causes affecting air quality in the study area
- Identification of major sources of air pollutant emissions
- Implementation of measures and actions focused on emissions reduction, institutional

strengthening, health protection, communication strategies, and environmental education

ProAire was initially implemented in Mexico City, but was later implemented in other cities with similar air pollution problems (e.g., Guadalajara and Monterrey) and then spread nationwide. Currently, 31 ProAires are in force, covering 28 states across the country as shown in Figure 14-4.



Source: SEMARNAT, 2022<sup>1</sup>

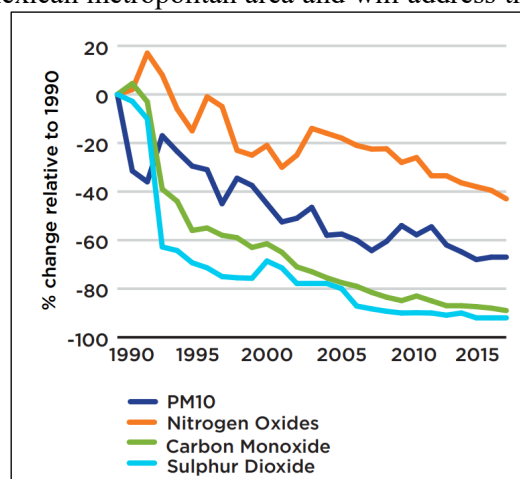
**Figure 14-8 Covered Area of ProAire**

The target air pollutants are SO<sub>2</sub>, NO<sub>2</sub>, CO, Pb, O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. In recent years, the air quality environment has been improving as a result of the continuous efforts. While overcoming technical and financial issues, further sophistication of efforts and development collaboration between local cities are necessary.

The program in Mexico City is now transitioning to ProAire IV (December 2021, SEDEMA), which has been expanded to air quality management for the Mexican metropolitan area and will address the following eight themes:

1. Reduction of energy consumption.
2. Cleaner and more efficient energy across all sectors.
3. Promoting public transport and regulating fuel consumption.
4. Technology shift and controlling emissions.
5. Environmental education.
6. Creating a sustainability culture and citizen participation.
7. Green areas and reforestation.
8. Institutional capacity building and scientific research.

The following three points are the main aspects of ProAire IV:



Source: ProAire

**Figure 14-9 Air Pollution Improvements in Mexico City (compared to 1990)**

<sup>1</sup> <https://www.gob.mx/semarnat/acciones-y-programas/programas-de-gestion-para-mejorar-la-calidad-del-aire>

- Diagnostics, emissions inventories, and modeling based on monitoring.
- Strategies for improving air quality based on concrete measures and actions; and
- Pact with all stakeholders and social participation.

ProAire's results in Mexico City have improved significantly since the 1990s, as shown in Figure 14-9.

## **2) Emission Inventory**

### **a) Activity of SEDEMA (Secretaría del Medio Ambiente de la Ciudad de México)**

Every two to three years, municipalities in Mexico compile emissions inventories to identify the sources of emissions. Air pollution control measures are taken based on this scientific evidence.

In Metropolitan Mexico, SEDEMA or the Secretariat of the Environment of the Government of Mexico City has established the ProAire unit to prepare emission inventories.

According to this inventory, 40% of PM<sub>10</sub>, 43% of PM<sub>2.5</sub>, 95% of CO, and 86% of NO<sub>x</sub> are emitted by the transportation sector in Metropolitan Mexico. Therefore, there is a need to design sustainable mobility strategies in the transportation sector.

In addition, the following five sectors have been identified as other spot sources:

- Power Transmission and Distribution
- Basic Metals Industry
- Nonmetallic Mineral Products Manufacturing
- Paper Manufacturing Industry
- Printing and Chemical Industry

Regulation of these spot sources is the responsibility of the federal government, which needs to focus on reviewing and monitoring efficiency and updating regulations in the process for each targeted industry in order to advance emissions reductions.

In addition, these inventories provide basic data for air pollution control. However, since SEDEMA, which manages these inventories, manages the input of reports submitted in the form of image data and translates them into Excel data, it is necessary to move forward with digitization to improve the efficiency and accuracy of data management.

### **b) Activity of SEMARNAT (Secretaría de Medio Ambiente y Recursos Naturales)**

SEMARNAT conducts an annual inventory of emissions from industry. For the inventory survey, SEMARNAT receives annual reports of emissions from each company using the tool called COA (Cédula de Operación Annual<sup>2</sup>). The SEMARNAT Secretariat manually performs data verification, processing, tabulation, and storage using Excel for approximately 18,000 reports per year.

Therefore, SEMARNAT would like to introduce dedicated software, and the issues to be addressed include improving staff capacity for development, and creating operation manuals and instructions.

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<sup>2</sup> <https://www.gob.mx/tramites/ficha/cedula-de-operacion-anual-coa/SEMARNAT259>

### **(3) Development and Cooperation Scenario for Climate Change**

In general, measures to cope with climate change can be divided into "mitigation measures" to reduce GHG emissions and "adaptation measures" to avoid or reduce damage caused by climate change, both of which need to be addressed in a dual role. In this study, "adaptation" is analyzed and discussed in the disaster risk reduction sector and other affected sectors. For the general sector of climate change countermeasures, development scenarios are discussed below, focusing on "mitigation" to control GHG emissions. In addition, future cooperation scenarios by JICA were focused on air pollution control from the perspective of utilizing the assets of Japanese assistance to date.

#### **1) Development Scenario**

##### **a) Development Issues and Strategies**

In the "Programa Institucional del Instituto Nacional de Ecología y Cambio Climático 2020-2024" (National Climate Change Research Institute Program), the Government of Mexico has identified "strengthening adaptation processes and Strengthening Resilience," "Reducing Greenhouse Gas Emissions by Creating a Low-Carbon Society," "Implementing Policies that Create Synergies between Mitigation and Adaptation," and "Strengthening Coordination, Financing, and Implementation Mechanisms among Government Levels" as development issues to be addressed by the country.

In addition, the ProAire program is being implemented to address air pollution in Mexico City and other large cities, with "monitoring, emissions inventories, and modeling," "strategies for improving air quality based on specific measures and actions," and "stakeholder and social participation" as the key priorities of the program.

Some air pollutants have a greenhouse effect (SLCPs: Short-Lived Climate Pollutants), and it has been pointed out that reducing emissions of these pollutants will lead to a reduction in global warming. Therefore, it can be said that air quality protection is a part of climate change countermeasures. Here, however, this study distinguishes between air pollution control as a pollution problem within Mexico and GHG emission reduction as a global climate change countermeasure, thereby separating the entities and targets of development scenario implementation.

Based on the above, two general development targets for climate change countermeasures in Mexico were set: air pollution control in urban areas and climate change countermeasures through nationwide GHG emission reduction.

- Development Goals: (1) Air quality preservation, (2) GHG emission reduction
- Objective: (1) To conserve the atmospheric environment in urban areas by reducing emissions of pollutants into the atmosphere. (2) Realize a green society that contributes to future climate change countermeasures to achieve GHG emission reduction targets.

The strategies are organized below as air pollution control in metropolitan areas and other large cities, and GHG emission reduction at the national level.



**Table 14-9 Strategies for Climate Change Action in Mexico in General**

Target	Strategy	Action
Climate Change (Mexico)	1. Reduction of air pollutant generation and air quality preservation	Protecting the air quality through the implementation of regulations, science and technology, and monitoring systems to reduce emissions of pollutants into the atmosphere
	2. Climate change countermeasures through GHG emission control	Implement regulations and technical standards to achieve GHG emission reduction targets, as well as achieve a green society through environmental education and promotion of clean energy use.

Source: JICA Study Team

**b) Program and Project**

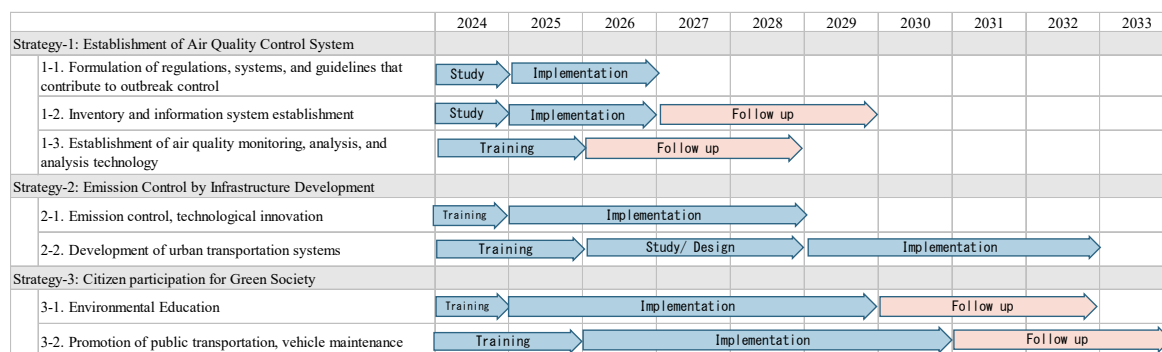
The following is a summary of the programs and projects to be undertaken by the Mexican government under the strategy. Figure 14-10 shows an image of the roadmap for the air pollution control program.

**Table 14-10 Proposed programs/projects in Mexico's general climate change policy**

Target	Category	Program/ Project	Term	
Climate Change (Mexico)	1. Reduction of air pollutant generation and air quality preservation (Mexico City)	Establishment of a system for air quality management	1-1 Formulation of regulations, systems, and guidelines that contribute to outbreak control	Short
			1-2 Inventory and information system establishment	Short
			1-3 Establishment of air quality monitoring, analysis, and analysis technology	Medium
		Emission Reduction through Infrastructure Development	1-4 Emission control, technological innovation	Medium
			1-5 Development of urban transportation systems	Long
		Citizen Participation for a Green Society	1-6 Environmental education	Long
			1-7 Citizen participation (promotion of public transportation, vehicle maintenance, etc.)	Long
	2. Climate change countermeasures through GHG emission control (National)	Building a system to promote GHG emission reduction	2-1 Development of regulations, systems, and guidelines that contribute to emission control	Short
			2-2 Standardization of inventories, establishment of technical standards	Short
			2-3 Establishment of information systems	Short
		Promoting the use of clean energy	2-4 Reduction of energy consumption, promotion of clean energy use	Medium
			2-5 Improvement and promotion of public transportation	Long
			2-6 Green space and reforestation and conservation	Long
			2-7 Environmental education and awareness (residents, companies)	Long

Short term : 2023-2025、 Medium term : 2023-2027、 Long term : 2023-2032

Source: JICA Study Team



Source: JICA Study Team

**Figure 14-10 Roadmap for Air Pollution Control Program**

## 2) Cooperation Scenario

### a) Requests for Cooperation from Related Organizations in Mexico

JICA's cooperation scenario for Mexico's climate change measures in general will be examined. In this study, the target is focused on “Reduction of air pollutant generation and air quality preservation” from the viewpoints of specificity of current issues and needs, relevance to previous cooperation projects implemented by JICA, and utilization of its assets.

Through interview surveys, organizations related to GHG (including air pollutants) emission regulations for general climate change countermeasures in Mexico indicated the following cooperation needs are shown in Table 14-11.

**Table 14-11 Requests for Cooperation from Related Organizations in Mexico**

Organizations	Request for Cooperation
Instituto Nacional de Ecología (INECC) :	<ul style="list-style-type: none"> <li>- Policy reviews to enable the application of regulations and sanctions to emitters Policy review of authorization to apply sanctions</li> <li>- Introduction and development of standards and guidelines</li> <li>- Technology transfer, human resource development, capacity development</li> </ul>
Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT) :	<ul style="list-style-type: none"> <li>- COA Inventory digitization and tool improvements (currently using simple XLS files).</li> <li>- Data management software</li> <li>- Ability development through courses and materials</li> </ul>
Secretaría de Medio Ambiente de la Ciudad de México (SEDEMA) :	<ul style="list-style-type: none"> <li>- Technical assistance for the development of regulations, standards and laws.</li> <li>- Opportunities for integration of infrastructure and technology for mobility</li> <li>- Policy making for introduction of electromobility</li> </ul>
ProAire : Air Pollution Control Program	<ul style="list-style-type: none"> <li>- Human resource development</li> <li>- Support for developing strategies and tools for communicating emergency situations to residents</li> <li>- Digitalization of existing tools</li> <li>- Improved reporting tools (digital tools for measuring goal achievement)</li> <li>- Information disclosure tools, public relations to improve access to open information</li> </ul>

Source: JICA Study Team

### b) Program and Project Selection Criteria

In addition, the following criteria were established to select programs/projects for JICA to work on. When selecting a project in Mexico, it is important to "implement a project that should serve as a model for the Central American and Caribbean region" and to keep in mind regional collaboration, such as implementing triangular cooperation through the project.

**Table 14-12 Program and Project Selection Criteria (Mexico: Climate Change Measures in General)**

Selection Criteria	Contents
(1) Consistency with the Japanese government's country-by-country development cooperation policy	<ul style="list-style-type: none"> <li>- The Japanese government has set "mitigation of risks that impede global development: cooperation in strengthening the ability to respond to global challenges including climate change" as a priority area for cooperation with Mexico.</li> </ul>
(2) Consistency with JICA's global agenda goals	<ul style="list-style-type: none"> <li>- The goals of “16. Contributing to the realization of the construction of society”.</li> <li>- In "18. Environmental management," the goals of the agenda are to implement cooperation centered on strengthening the capacity of</li> </ul>

Selection Criteria	Contents
	administrative organizations in charge of environmental management, and to promote environmental measures such as waste management and the prevention of water and air pollution.
(3) Modalities Applicable in Mexico and JICA's Development Policy for Mexico	- Implement a project that should serve as a model for Central America and the Caribbean region.
(4) Effective utilization of results of past projects implemented by JICA	- Effectively utilize the results of JICA's past projects in Mexico.

Source: JICA Study Team

### c) Proposed Cooperation Scenario

Based on the results of the studies conducted to date, and in accordance with the above selection criteria, the highest priority programs/projects were selected, as shown in Table 14-13.

In the field of air pollution, the inventory study currently being conducted by the Mexican government and Mexico City will provide basic data for appropriate measures to be taken in the future. JICA believes that it is meaningful to provide possible technical assistance in this field.

In addition, efforts to solve global environmental problems require the ability to make policy proposals based on academic knowledge and to implement them. In this regard, the training will be effective not only in improving the technical skills of government officials, but also in developing human resources who can lead Mexico's environmental sector in the future.

**Table 14-13 Proposed Programs/Projects in General Climate Change Countermeasures in Mexico**

Strategy	Target	Program/Project	Modality	Implementation Organization
Suppressing the generation of air pollutants and preserving the air environment (state, city of Mexico)	Country	1-1 Formulation of regulations, systems, and guidelines that contribute to curbing outbreaks	Training Dispatch of experts	SEMARNAT, INECC
		1-2 Inventory technical support, information system construction	Training Dispatch of experts SATREPS	SEMARNAT INECC
	Municipality	1-3 Improvement of monitoring capacity (based on continuity evaluation of past assistance)	Technical cooperation Training Dispatch of experts	SEDEMA SEMARNAT INECC
		1-4 Emission regulations, technological innovation (examination of the applicability of Japanese technology for automobile emission regulations)		
	Private	1-6 Citizen participation (promotion of public transportation, vehicle maintenance, etc.)	Private sector partnerships	Private SEMARNAT INECC

Source: JICA Study Team

### d) Other Cooperation Possibilities

In Central America and the Caribbean, Japanese air quality-related companies have not made as much progress as in other regions. Daikin Industries, Ltd. has established an office and factory in Mexico to expand its market in the North, Central, and South American regions. The company is implementing the "Promotion of Environmentally Conscious Air Conditioners Project" in Mexico (JICA, 2021) through a JICA interlinked project, with the Comisión Nacional para el Uso Eficiente de la Energía (CONUEE) (Energy Conservation Agency) as the counterpart. The project was conducted in five major Mexican cities (Mexico City, Guadalajara, Monterrey, Cancun, and Mexicali) as a demonstration

project to reduce greenhouse gas emissions and install air conditioning units that promote energy conservation. Through this dissemination demonstration project, they succeeded in confirming the emission reduction effect and in gaining the understanding and interest of the Mexican government. It is expected that the project will be promoted as a policy initiative in the future.

In order for Japanese companies to promote their businesses that can contribute to air quality conservation in Mexico and the Central American and Caribbean regions, it is expected that the understanding of related institutions and officers will be promoted through pilot projects and training programs in Japan, and that updated standards and criteria will be reflected in policies.

### 14.3 Waste Management

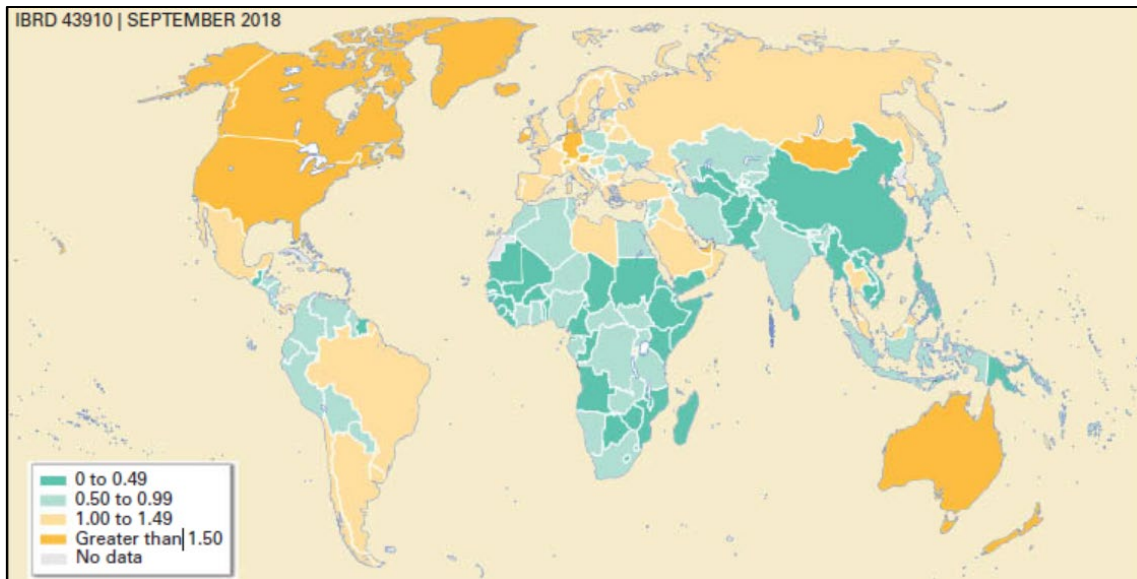
#### 14.3.1 Overview of Waste Management in Central America and Caribbean

##### (1) Regional Overview

Regional characteristics related to solid waste management in Central America and the Caribbean are shown in this section.

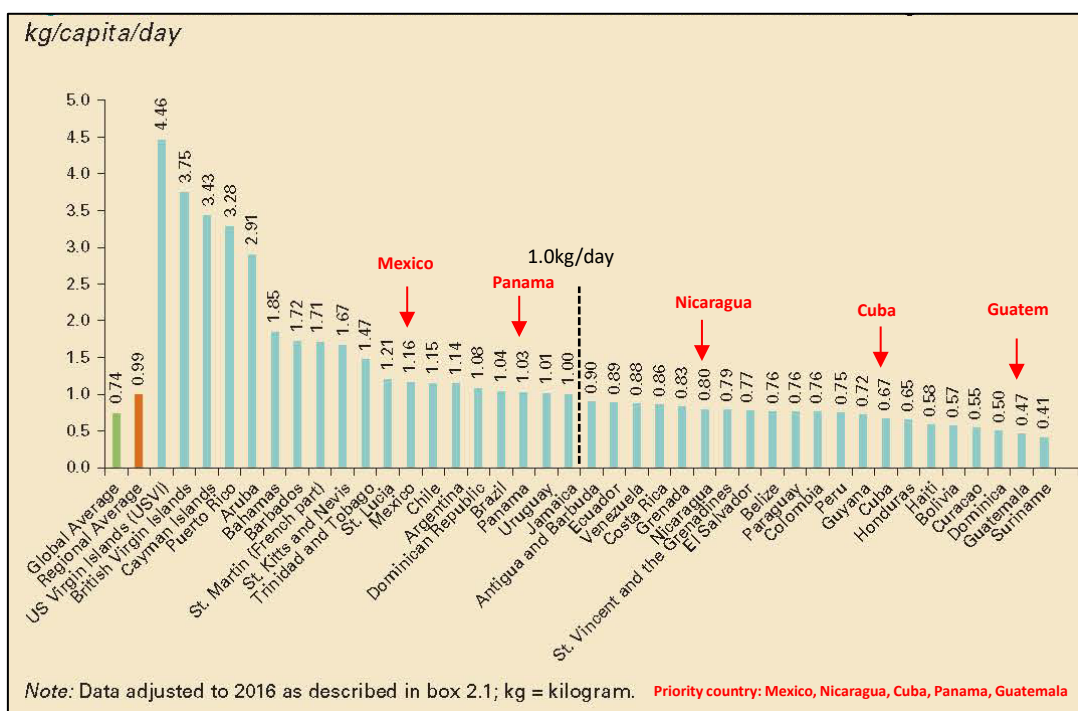
In general, the amount of waste generated per capita in the world tends to be large when income is high. In the region concerned, the high-income countries of Mexico, Barbados and Panama are above 1.0 kg/day, while most countries in Central America and the Caribbean are low-income countries with less than 1.0 kg/day generation as shown in Figure 14-11 and Figure 14-12.

Looking at the amount of waste generated by region in the world, the amount generated per person is small, but the amount generated in the East Asia-Pacific region, which has a large population, is large, and Central America and the Caribbean ranks fourth out of seven regions.



Source: World Bank (2018) "What A Waste 2.0"

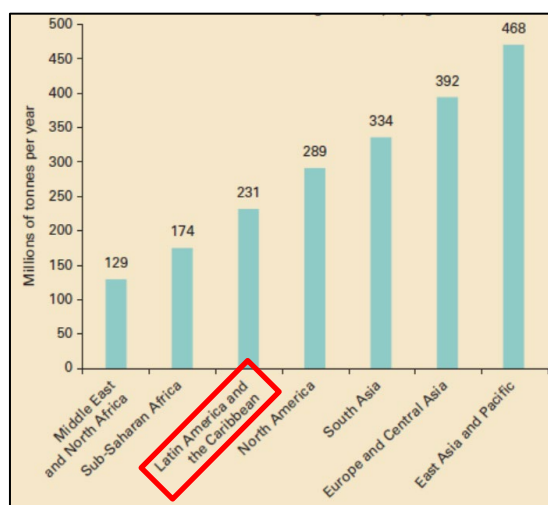
**Figure 14-11 Per Capita Waste Generation by Country in the World**



(Reference: Japan generates 0.95 kg/day of waste)

Source: World Bank (2018) "What A Waste 2.0"

**Figure 14-12 Amount of Waste Generated per Capita in Latin America and the Caribbean Region**



Source: World Bank (2018) "What A Waste 2.0"

**Figure 14-13 Amount of Waste Generated by World Region**

In addition, Table 14-14 and Table 14-15 show the amount and composition of waste generated in each country in the Central America and Caribbean region, as well as management indicators related to collection rates and disposal. While the table shows that waste recovery rates are generally good in the region, data on intermediate and final treatment are lacking. In reality, waste management systems in the region are still oriented toward final disposal, with low material recovery and recycling rates. Central American and Caribbean countries will need to reduce waste, establish recycling flow, and make the transition to a circular economy.

**Table 14-14 Waste Management Indicators in Central America**

country_name	Total generated waste		Composition(%)				Collection coverage (%)	Treatment(%)				
	(t/day)	(kg/capita/day)	food_organic	plastic	glass	metal	population/*households	controlled_landfill*unspecified	open_dump	recycling	sanitary_landfill	unaccounted
Belize	278	0.77	47	19	8	5	85	NA	66	NA	34	NA
Costa Rica	4,000	0.84	58	11	1	2	90	24	9	1	68	NA
El Salvador	4,518	0.73	65	10	4	2	79	NA	14	NA	78	0
Guatemala	7,553	0.46	38	17	4	NA	78	10	70	NA	15	5
Honduras	5,923	0.65	58	14	1	2	65	60	15	NA	11	14
Mexico	145,479	1.16	52	11	6	3	NA	NA	21	5	75	NA
Nicaragua	4,189	0.73	NA	NA	NA	NA	92	NA	59	NA	NA	NA
Panama	4,034	1.02	46	12	6	4	85	16	23	NA	42	NA

Source: World Bank “What A Waste Global Database” (<https://datacatalog.worldbank.org/search/dataset/0039597>)

**Table 14-15 Waste Management Indicators in the Caribbean Region**

country_name	Total generated waste		Composition(%)				Collection coverage (%)	Treatment(%)				
	(t/day)	(kg/capita/day)	food_organic	plastic	glass	metal	population/*households	controlled_landfill*unspecified	open_dump	recycling	sanitary_landfill	unaccounted
Antigua and Barbuda	84	0.32	46	13	7	7	99	99	NA	NA	NA	1
Bahamas	723	0.68	46	13	7	7	NA	NA	NA	NA	NA	NA
Barbados	479	0.62	18	17	4	5	90	90	NA	9	NA	1
Cuba	7,377	0.24	69	10	5	2	77	31	42	9	NA	18
Dominica	36	0.18	45	16	8	5	94	94	NA	NA	NA	6
Dominican Republic	11,134	0.39	51	10	6	3	75*	NA	73	8	0	19
Grenada	81	0.28	27	16	3	2	98*	98	NA	NA	NA	NA
Guyana	491	0.24	50	14	5	4	89	61*	NA	1	NA	38
Haiti	6,328	0.21	61	13	2	3	12*	10	NA	NA	NA	90
Jamaica	2,881	0.37	62	12	3	2	76	64	NA	NA	NA	7
St. Kitts and Nevis	90	0.61	27	23	8	9	95	100	NA	NA	NA	NA
St. Lucia	213	0.44	45	22	7	5	100	97	NA	NA	NA	1
St. Vincent and the Gren	86	0.29	50	8	6	4	96*	100*	NA	NA	NA	NA
Suriname	215	0.15	57	11	3	3	80	NA	63	NA	NA	37
Trinidad and Tobago	1,994	0.55	27	19	10	4	94	12	84	NA	NA	3

Source: World Bank “What A Waste Global Database” (<https://datacatalog.worldbank.org/search/dataset/0039597>)

## (2) JICA’s Ongoing Cooperation

In Central America and the Caribbean, JICA currently has projects underway in Dominican Republic, and individual experts have been dispatched to Jamaica (see Table 14-3 above).

## (3) Development stage of the waste sector in Central America and the Caribbean Region

In Central America and the Caribbean, all countries are working to solve their waste management problems, and JICA has been cooperating with them for many years. While there are differences in development achievement from country to country and region to region, there are many similarities in the challenges that countries and regions still face today. Therefore, in examining development and cooperation scenarios, we will first analyze and evaluate the region as a whole, and then consider the direction of development and cooperation with a view to wide-area collaboration.

Next, based on the situation in Nicaragua, Cuba, Guatemala, and Panama, which were surveyed as priority countries, we will examine cooperation scenarios for each country. The scenarios for bilateral cooperation, including technical cooperation in each country, are assumed to be materialized through

training in the wide-area cooperation, and no prioritization of each project will be made.

#### **(4) Stages of Development in the Waste Sector in Central America and the Caribbean**

In 2015, the international community established the 2030 Agenda for Sustainable Development (SDGs), and established Goal 11: “Make cities and human settlements inclusive, safe, resilient, and sustainable”, and Goal 12: “Ensure sustainable production and consumption patterns” sets out targets for reducing the generation and release of waste and chemical substances.

JICA's cooperation in the field of solid waste considers these goals aimed at the realization of sustainable development. The basic policy is to provide support according to the stage of development.

The country's development stage is divided into the following three stages as shown in Figure 14-10.

- Phase 1: Improving public health
  - The priority is to improve the collection rate of garbage, which has increased due to the progress of urbanization and population concentration, and appropriate collection and disposal will be carried out.
- Stage 2: Reduction of environmental impact and prevention of pollution
  - The range of environmental impacts will expand due to industrialization, the emergence of pollution risks, and the diversification of types of waste. In addition to municipal solid waste management, the environmental load will be reduced, and pollution is prevented by properly treating and managing hazardous waste.
- Third stage: Building a circular economy through 3Rs
  - Economic development and awareness of civil society have matured, promoting waste volume reduction and recycling, aiming to reduce environmental impact including GHG and build a recycling-oriented society.

The GDP and per capita waste generation and collection rates of Central American and Caribbean countries were compared to assess the stage of development of each country as shown in Table 14-16. Although higher GDP does not necessarily imply higher recovery rates, in general, the maturity of waste management tends to be proportional to the economic level as shown in Figure 14-14, and GDP and sanitary landfill rates are also proportional (JICA, 2012). Therefore, in consideration of the local conditions, the following thresholds were established for the evaluation. The development goals are also indicated represented by groups separated by thresholds.

- Countries with GDP per capita less than USD 10,000: need to increase collection rates (GDP: blue)
- Countries with GDP per capita less than 20,000 USD: need sanitation reclamation (GDP: orange, blue)
- High-income countries with GDP per capita over 20,000USD: Need to reduce waste (GDP: red)
- Countries with a refuse collection rate of less than 90%: Need to increase their collection rate (collection rate: blue)
- Countries with waste generation of 1,00 kg/day/capita or more: Need to reduce waste (generation: red)



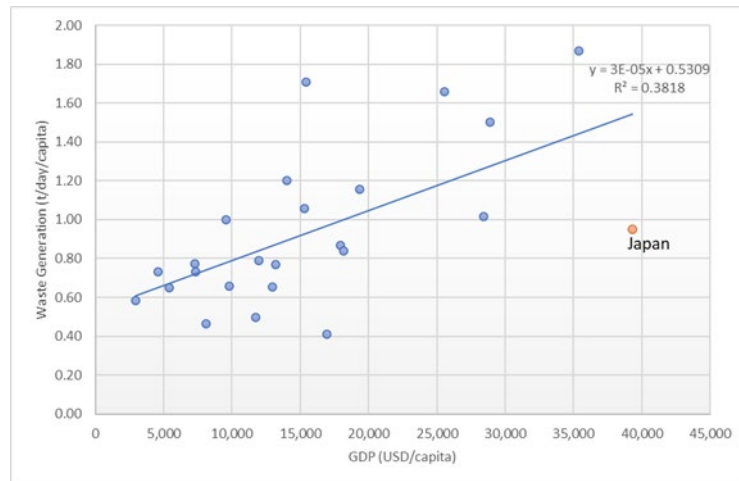
This allowed each country's stage of development to be evaluated as shown in the right column of the table. Generally, countries with large GDP and recovery rates are in the third stage, countries with large GDP but small recovery rates, and countries with small GDP but large recovery rates are in the second stage, and countries with small GDP but large recovery rates are in the first stage. This is not very different from the actual situation in the four countries where the field survey was conducted. El Salvador, where the field survey was not conducted this time, was evaluated as Stage II, one step higher, because of its high sanitary landfill rate of 78.6%.

Note that the evaluation of development stages using this indicator is based on available statistical data, and the local situation may differ from this. There are also several countries for which recovery rate data are not available, and even within a country, the level of development varies greatly from region to region. These are preliminary estimates based on the information obtained in this study, and more detailed information and stepwise evaluation are needed when considering development scenarios for each country.

**Table 14-16 Waste Management Stage Assessment for Central American and Caribbean Countries**

Country	GDP (USD/capita)	Collection Rate (%)	Waste Generation (kg/day/capita)	Immediate Action			Stage
				Collection Rate	Sanitary Landfill	Reduce	
Antigua and Barbuda	17,966	98.6	0.87		X		II
Bahamas	35,400	-	1.87			X	III
Barbados	15,445	90.0	1.71		X	X	II
Cuba	12,985	76.9~100	0.65		X		II
Dominica	11,709	94.0	0.50		X		II
Dominican Republic	15,328	-	1.06		X	X	II
Grenada	13,208	-	0.77	X	X		II
Guyana	9,812	89.0	0.66	X	X		I
Haiti	2,953	-	0.58	X	X		I
Jamaica	9,551	76.0	1.00	X	X	X	I
St. Kitts and Nevis	25,569	95.0	1.66			X	III
St. Lucia	14,030	100	1.20		X	X	II
St. Vincent and the Grenadines	11,972	-	0.79		X		II
Suriname	16,954	79.5	0.41	X	X		I
Trinidad and Tobago	28,911	94.3	1.50			X	III
Belize	7,259	85.2	0.77	X	X		I
Costa Rica	18,169	90.4	0.84		X	X	II
El Salvador	7,329	78.8	0.73	X	X		II
Guatemala	8,125	77.7	0.46	X	X		I
Honduras	5,396	64.6	0.65	X	X		I
Mexico	19,332	-	1.16		X	X	III
Nicaragua	4,612	92.3	0.73	X	X		II
Panama	28,436	84.9	1.02	X	X	X	II

Source: Prepared by JICA Study Team based on "What A Waste 2.0.



Source: Prepared by JICA Study Team based on "What A Waste 2.0."

**Figure 14-14 Relationship between GDP per Capita and Waste Generation**

Based on the above, the urban waste management stages of the priority countries for this project are evaluated as follows: the Mexican Metropolitan Area is in the second to third stage, Nicaragua and Cuba are in the second stage, and Guatemala and Panama are in the first to second stage.

In response to this, JICA will provide development cooperation through "institutional establishment support," "cooperation with the private sector," "utilization of municipal know-how," and "comprehensive support," depending on the development stage of each country, toward the realization of integrated waste management for a recycling-oriented society.



Source: Study Team based on JICA, 2017

**Figure 14-15 Concept of JICA's Solid Waste Management Cooperation by Development Stages**

## (5) Analysis of cooperation Needs in the Waste Sector in the Focus Countries

In order to achieve proper waste management, it is necessary to increase the capacity of society as a whole to manage waste and build a sustainable system, and it is important to improve the capacities possessed by each level: individual, organizational, institutional, and social aspects (JICA 2017). JICA has implemented technical cooperation in many countries, including the countries concerned, and in doing so, JICA considers the selection and combination of cooperation contents from the following seven aspects.

For the focus countries of this study, Nicaragua (urban waste management), Cuba (urban waste management), Guatemala (urban and rural waste management), and Panama (urban waste management), the information obtained in this survey was used to assess the priority of cooperation needs at this time as shown in Table 14-16.

**Table 14-17 Evaluation of Cooperation Needs for Establishing Solid Waste Management System in Each Country**

Field of Cooperation	Implementation Aspects (JICA,2017)	Nicaragua	Cuba	Guatemala	Panama
(1) Improving the legal system	Clarify the classification of waste, and stipulate the person in charge of management and standards according to the type of waste. Thorough enforcement by local governments based on national policies and plans. Development of laws to promote the 3Rs.	Medium (Update MP, 3R promotion legal system)	Medium (3R strategic plan formulation)	High (establish MP, legislation formulation for local government)	Medium (3R strategic plan formulation)
(2) Organizational improvement	Establishment of a system for coordinating functions among related departments responsible for waste management. Inspection and evaluation of service content, maintenance of statistical information, improvement of labor management and working environment. Implementation of continuous human resource development.	High (Inter-administrative coordination, working environment, Capacity building)	Medium (Inter-administrative coordination)	High (Formulation system, capacity building)	High (Inter-administrative coordination, Service Improvement)
(3) Improvement of finance	Detailed cost analysis for budget allocation review and cost reduction. Awareness-raising activities to increase collection from beneficiaries. Introduced garbage bag fees and a personal bag system to reduce the amount of waste and reduce processing costs.	High (Collection and transportation, landfill improvement)	High (Collection and transportation, landfill improvement)	High (Fee collection, Collection and transportation, landfill improvement)	High (Fee collection, Collection and transportation, landfill improvement)
(4) Promoting appropriate collaboration with the private sector	Private sector participation in waste management operations varies from partial outsourcing to full privatization. Appropriate division of roles between the public and private sectors and construction of an effective monitoring system.	Medium (Mechanism for utilization of the private sector)	Medium (Mechanism for utilization of the private sector)	Medium (Mechanism for utilization of the private sector)	Medium (Mechanism for utilization of the private sector)
(5) Promotion of efforts by waste generators	Implementation of appropriate waste management by companies themselves. Reduce waste generation and promote	Low	Low	Low	Low

Field of Cooperation	Implementation Aspects (JICA,2017)	Nicaragua	Cuba	Guatemala	Panama
	recycling by improving production processes.				
(6) Promotion of public participation	Promotion of educational and public relations activities through community organizations and the media from the perspective of promoting citizens' awareness and practice of waste management.	High (Restraint, sorting)	High (Restraint, sorting)	High (Restraint, sorting)	High (Restraint, sorting)
(7) Consideration for culture and society	Establishment of a mechanism that facilitates the cooperation of housewives who manage the garbage in each household. Establishment of disposal site management rules through joint work between the final disposal site manager and waste pickers*.	High (3R promotion, anti-poverty measures)	High (3R promotion, anti-poverty measures)	High (3R promotion, anti-poverty measures)	High (3R promotion, anti-poverty measures)

\* While "waste pickers" are those who earn cash income by informally collecting and selling bottles, cans, and other valuable materials at waste disposal sites, efforts are underway in the target countries to situate them within the waste management system, and the following refers to formalized workers.

Source: JICA Study Team based on Classification in JICA, 2017

In addition, schemes that could be adapted for the cooperation needs of each country are summarized in the table below.

**Table 14-18 Cooperation Needs of Countries and Proposed Schemes to be Adapted<sup>14</sup>**

Funding scheme		Contents of cooperation (example)	Nicaragua	Cuba	Guatemala	Panama
Technical cooperation	Technical Cooperation Projects	Capacity building, policy and planning, organizational management, public awareness	○	○	○	○
	Development Plan Study Type Technical Cooperative	National policy and planning, M/P formation	○	○	○	○
	Induction course	Home country, third country training	◎	◎	◎	◎
	SATREPS	Study of pollution prevention measures, support for establishment of treatment technologies	△	△	△	△
	Dispatch of Experts	Policy advisor and field guidance	○	○	○	○
	Grass-roots technical cooperation	Grassroots level technical cooperation with local governments, etc.	○	○	○	○
	Follow-up cooperation	Provide equipment and follow-up for returning trainees	○	○	○	○
	Paid Account Technical Cooperation	Operation and maintenance of facilities developed for a fee	-	-	-	-
Financial cooperation	Grant aid	Provision of materials, equipment, heavy machinery, etc.	△	△	△	-
	Loan	Disposal facilities, intermediate treatment facilities, etc.	△	△	○	○
Other	JOCV	Environmental education at the field level	◎	◎	◎	◎

◎: immediately applicable, ○: applicable as needed, △: difficult to apply in the short to medium term, -: not applicable

Source: JICA Study Team

The results of the country-specific overview survey are presented in the next and subsequent sections. In addition, development scenarios proposed based on the analysis of current issues and JICA's cooperation scenarios based on Table 14-17 and Table 14-18 above will be discussed.

### 14.3.2 Waste Management in Nicaragua: Current Situation and Development/ Cooperation Scenarios

#### (1) General

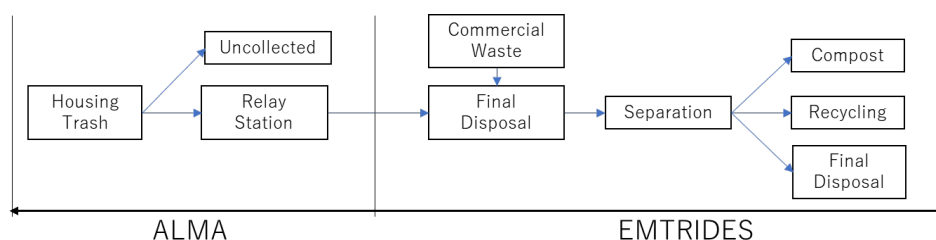
#### 1) Outline of the Waste Management Sector

Organizations and roles related to Nicaragua's waste sector is shown in Table 14-18 and Figure 14-16.

**Table 14-19 Organization and Role of Waste Sector in Nicaragua**

Organization/Institution	Role in the Waste Management Sector
Ministry of Environment and Natural Resources (MARENA)	<ul style="list-style-type: none"> <li>Organization responsible for enacting, revising, and monitoring legal systems related to waste management</li> <li>In 2012, the National Waste Management Strategy was put into operation, and electric waste, hazardous waste, and non-hazardous waste are being managed.</li> <li>Promotion of recycling to reduce waste and authorization of contractors.</li> </ul>
Municipality of Managua (ALMA)	<ul style="list-style-type: none"> <li>Responsible for collecting household waste and transporting it to final disposal sites via relay stations.</li> <li>One hundred collection vehicles owned by the company are equipped with GPS to monitor movement routes.</li> </ul>
Empresa Municipal de Tratamiento Integral de Desechos Sólidos (EMTRIDES)	<ul style="list-style-type: none"> <li>It is operated with subsidies from Managua City, profits from the sale of valuables, and profits from the business-related waste collection business.</li> <li>Responsible for operation and management of the final disposal site. Hired a former waste picker and separated valuables (PET, cans, paper, etc.) at the separation plant next to the disposal site and sold them to recycling companies.</li> <li>Expansion of the current disposal site and construction of a new disposal site are being considered.</li> <li>After concluding a contract with a company, it collects business-related waste, transports it directly to the final disposal site, and manages the final disposal site. Collection from hospitals does not include hazardous materials, only general waste.</li> </ul>
Camara de Recicladores Nicaragua (CARENIC)	<ul style="list-style-type: none"> <li>Recycling chamber. It was organized in 2016 with the aim of formalizing the sector and complying with the ethical code of the waste management site.</li> <li>They mainly recycle iron and export to Central America, EU, Asia, etc.</li> </ul>
Red De Emrendedores Nicaraguenses del Reciclaje (REDNICA)	<ul style="list-style-type: none"> <li>An action union that aims to improve the quality of life of waste pickers and realize a recycling-oriented society. We collect, manufacture, and sell recycled products, and provide support so that they can operate as a corporation.</li> <li>Currently, it organizes 25 cooperatives nationwide. Of these, 14 are legal while the remaining 11 are not certified.</li> </ul>

Source: Compiled by the JICA Study Team with reference to JICA2019



Source: JICA 2019

**Figure 14-16 Solid Waste Management Flow in Managua City**

The indicator data on waste management in Nicaragua and Managua City are summarized below in Table 14-20 and Table 14-21. These data were collected and organized from interviews and various literatures.

**Table 14-20 Waste Related Data for Nicaragua**

Indicator	Data	Source
Total inhabitants	6,796,957	UN, 2022
Total waste generation (ton/year)	1,528,816	World Bank, 2018
Generation per capita (kg-capita-day)	0.73	World Bank, 2018
Collection coverage (ton)	1,411,097	World Bank, 2018, BID, 2010
Collection coverage (%)	92.3	BID, 2010
Collection service frequency	2 to 5 time a week (94.2 %) Once a week (5.8%)	BID, 2010
Types of final disposal (%)	Open dump, 10% Controlled Landfill, 90%	World Bank, 2018
Recycled material (ton/year)	255,536	CIA, 2022
Recycling rate (%)	Undetermined	
Recycling material (ton)	N/A	
Waste composition (%)	Organics: 62% Recyclable Waste: 34% Other: 4% - Glass: 1.84% - Metals: 1.45% - Paper and paperboard: 7.37% - Plastics: 9.29% - Others: 7.12%	ONU-Habitat, 2011 Hanio B.. and Lisset B., 2021
E-Waste: Total generated in 2019	16 kt, 2.5 kg/inhabitant	M. Wagner, C.P. Baldé et. al., 2022
E-waste formally Collected in 2019	0.1 kt; 0.01 kg/inhabitant	M. Wagner, C.P. Baldé et. al., 2022

Source: JICA Study Team

**Table 14-21 Waste Related Data for Managua City**

Indicator	Data	Source
Total inhabitants	1,083,094	UN, 2022
Total waste generation (ton/year)	438,000	González N and Ortega, G. 2020
Generation per capita (kg-capita-day)	N/A	
Collection coverage (ton)	N/A	World Bank, 2018, BID, 2010
Collection coverage (%)	N/A	PSI, 2017
Collection service frequency	2 to 5 times a week (?? %)	BID, 2010
Types of final disposal (%)	N/A	
Recycled material (ton/Year)	N/A	
Recycling rate (%)	19% Recovered by formal sector; 3%, Recovered by informal sector 16% (% informal/total 84)	PSI, 2017 Rodic, L. et. al., 2010
Recycling material (ton)	N/A	
Waste composition (%)	N/A	

Source: JICA Study Team

## 2) Assistance Provided by JICA

JICA has implemented the following surveys and projects in the solid waste sector in Nicaragua in the past.

**Table 14-22 Projects on Waste Management Implemented by JICA in Nicaragua**

Project	Year	Form of Cooperation	Contents
Project for Urban Development Master Plan for Managua City	2017	Technical Assistance	Technical cooperation through M/P formulation for urban development in Managua. In this, a development policy for solid waste management was set.
Data Collection Survey for Waste Management in the Republic of Nicaragua.	2019	Technical Assistance	Basic information gathering survey to consider appropriate cooperation details for the solid waste sector in Managua City

Source: JICA Study Team

### 3) Laws and Strategies on Waste Management and Recycling

The national strategy and legal system for solid waste management in Nicaragua are shown in Table 14-23.

**Table 14-23 Waste Related Strategies and Legislation in Nicaragua**

	Strategy/Legal system		Overview
Strategy	National Policy on Comprehensive Management of Solid Waste (2004-2023)	Política Nacional sobre Gestión Integral de Residuos Sólidos	Integrated Solid Waste Management National Policy: - To realize comprehensive management of solid waste, non-hazardous waste, and hazardous waste, and to avoid and minimize their generation from various aspects of technology, administration, economy, environment, and society; Promote its recovery and reduce the amount of waste that ends up in final disposal, prevent and mitigate health and environmental risks, reduce pressure on natural resources, strengthen the competitiveness of the production sector, and achieve sustainable development. It is to have a common responsibility.
	Municipal Strategic Development Plan 2018-2022		Managua City Development Plan (2018-2022): - Municipal service planning, including waste collection, cleaning, traffic control, decoration, parks, markets, cemeteries, etc.
Legislation	Law no. 168 of 1994	Ley que prohíbe el Tráfico de Desechos Peligrosos y Sustancias Tóxicas	- Prohibitions on transportation of hazardous wastes and toxic substances
	Ley No. 217 of 1996	Ley General del Medio Ambiente y los Recursos Naturales	- General law on the environment and natural resources
Standard	Environmental Technical Standard 05-014-02	Norma Técnica Ambiental para el Manejo Tratamiento y Disposición Final de los Desechos Sólidos No Peligrosos	- Environmental Technical Standards for Handling and Final Disposal of Non-Hazardous Solid Waste
	Environmental Technical Standard 05-015-02	Norma Técnica Obligatoria Nicaragüense HD para el Manejo y Eliminación de Residuos Sólidos Peligrosos	- Nicaraguan Essential Technology HD in Hazardous Solid Waste Management and Disposal

Source: Updated by the Study Team based on JICA 2020

### 4) Waste Management in Managua City

#### a) Issues of Waste Management

The status of waste management in the City of Managua is organized by management stage.

In the 2017 JICA Cooperation "Urban Development Master Plan Project of Managua, Nicaragua", the basic development policy for solid waste management in Managua is defined as follows: 1. establish proper waste management; 2. The basic development policies for solid waste management in Managua are: 1. the establishment of proper waste management; 2. the promotion of the 3Rs (Reduce, Reuse, Recycle); and 3. the application of a sustainable waste management system that is environmentally, socially, economically, and technologically sound.

In Managua City, the Waste Collection Authority (EMTRIDES) has been established to properly collect and dispose of general waste by tracking collection vehicles using GPS, relay transportation, setting up small-scale waste collection points, and installing a waste selection plant. In addition, there is a need to extend the life of satellite landfills and build new ones, but studies have not progressed (JICA, 2019).

### i) Generation, Collection, and Transportation

- ALMA collects and transports household waste. According to ALMA, collection vehicles are aging and in short supply.
- The waste collection coverage rate in Nicaragua exceeds 90%, but it is necessary to confirm the accuracy of the data (JICA, 2019).



The weight of the transport vehicle is measured at the entrance of the disposal site in Managua City.



Heavy machinery in the Managua Municipal Landfill. Some are broken and abandoned.

Photo: JICA Study Team

### Figure 14-17 Transportation and Trucks at Disposal Site in Managua City

### ii) Processing and Recycling

- On the premises of the final disposal site in Managua City, a sorting facility was constructed with assistance from Spain, and around 150 former waste pickers are employed to sort waste.
- It is difficult to improve the separation rate because waste is not sorted at home and is transported to the disposal site and sorted manually at the disposal site. As the useful life of landfill sites approaches, there is a need for waste separation and reduction at the source. EMTRIDES' strategy for weight reduction is mainly enlightenment activities through education.
- Another issue pointed out is the lack of companies in the country that purchase segregated recyclable raw materials.





Material Sorting



Sorting Plant at Disposal Site

Photo: EMTRIDES (left), JICA Study Team (right)

### Figure 14-18 Intermediate Treatment Facility in Managua City

#### iii) Disposal

- Managua City owns one final disposal site (commonly known as the Chuleca landfill site). The remaining years of this disposal site are approaching the limit, and there is an urgent need to construct a new disposal site together with the gradual closure.
- In response to this, the JICA 2019 survey pointed out the need to optimize landfill management, extend the life of landfills, and strengthen practical capacity for management and operation.



Managua City Final Disposal Site



Water Treatment Facility at the Final Disposal Site in Managua City

Photo: JICA Study Team

### Figure 14-19 Landfill Site in Managua City

#### b) Plan of Final Disposal Site

There was a new candidate site on the west side of the current Managua City final disposal site. The site is owned by Banco Centroamericano de Integración Económica (BCIE) and is undergoing decontamination of mercury, and will be provided to EMTRIDES after, but the completion date is undecided. In 2019, ALMA did not approve the eastern area, which was listed as a candidate site, because it is in the groundwater recharge area. In addition, according to EMTRIDES, it was excluded from the candidates due to cost and technical issues such as installation of relay points.

For this reason, EMTRIDES is in the process of selecting another land of 270,000 m<sup>2</sup> next to the

existing disposal site in Ciudad Sandino. According to a preliminary study, the development is expected to take 4-6 years and USD 24 million. EMTRIDES indicated the need for support for technical examination of new disposal site development.

### c) 3R Promotion Initiatives

According to CARENIC, 13,500 people are involved in the recycling sector in the country. There are three formal companies, and 420 consolidation centers are managed by ALMA nationwide. The sector is on a growth track, with total sales for CARENIC this year reaching USD 68 million. On the other hand, the market is unstable, and in May 2022, the demand for iron in China has declined due to the war in Ukraine, and sales have declined.

As a business issue, there is a middleman with a MARENA certificate, and there is a conflict with CARENIC's activities. In addition, there is a lack of incentives, such as a 25% tax on equipment procurement, and information and technology are still immature.



CARENIC's depot for recycled materials



The main export item is iron, which increased from 122 tons in 2020 to 162 tons in 2021.

Photo: JICA Study Team

**Figure 14-20 CARENIC's Facility for Recycling**

## (2) Development and Cooperation Scenario in Nicaragua

### 1) Development Scenario

#### a) Development Issues/Strategies

The development issues related to solid waste management in Nicaragua are summarized as follows based on literature surveys and interview surveys. The fields of cooperation and numbers in the table correspond to Table 14-17 Evaluation of Cooperation Needs for Establishing Solid Waste Management System in Each Country.

**Table 14-24 Issues in Waste Management in Nicaragua**

Field of Cooperation	Issues
(1) Improving the legal system	Although a legal system exists to a certain extent, there is a gap with the actual situation, and activities to resolve individual issues are not progressing. Promotion based on the development of a master plan for comprehensive waste management is necessary.
(2) Organizational improvement	Insufficient organization, lack of staff, and lack of capacity

Field of Cooperation	Issues
(3) Financial improvement	Lack of financial resources for new investment
(4) Promoting appropriate collaboration with the private sector	No government support for the recycling industry
(5) Promotion of efforts by waste generators	The political priority of controlling the outbreak is low, and the awareness of business operators is low.
(6) Promotion of citizen participation	Residents' awareness and participation in sorting and collection is low
(7) Consideration for culture and society	Incorporation of waste pickers and informal sectors

Source: JICA Study Team

Based on this, the development goals and development strategies for solid waste management in Nicaragua are shown below.

- Development Goal: Improving public health and reducing environmental impact in Greater Managua through appropriate waste management
- Objective: Implementation of environmental conservation through appropriate waste management and 3R promotion in the Managua metropolitan area.

**Table 14-25 Strategies for Solid Waste Management in Nicaragua and Outlines of Each Strategy**

Subject	Strategy	Strategy overview
Waste (Nicaragua)	1. Improving public health by strengthening solid waste management in Managua City	To improve public health by promoting volume reduction and separation of waste in Managua City, and by implementing appropriate collection, transportation, and treatment.
	2. Reduction of environmental load and prevention of pollution through proper disposal of waste	Reduce the environmental burden and prevent pollution through appropriate landfill management in Managua City.

Source: JICA Study Team

## b) Programs and Projects

In the waste sector of the Managua metropolitan area, efforts related to waste management are steadily progressing, but there are many problems at each management stage. It is necessary to organize the issues based on the evaluation of the current situation based on the efforts up to this point and consider an action plan. Depending on the stage of development, ensure the implementation of a basic waste management system that contributes to the improvement of public health, reduce the volume of waste, implement separate collection, and at the same time prepare for the closure and construction of new disposal sites. The aim is to build a recycling-oriented society by promoting the 3Rs.

**Table 14-26 Proposed Programs and Projects in Solid Waste Management in Nicaragua**

Subject	Strategy	Program	Project	Period
Waste management (Nicaragua)	Improving public health by strengthening solid waste management in Managua City	1. Integrated planning	1-1 Managua Metropolitan Area Solid Waste Management M/P	Short
			1-2 Formulation of 3R Promotion Strategy in Nicaragua	Medium
			1-3 Capacity building of government organizations	Long
			1-4 Construction of information management system	Medium
		2. Establishment of waste collection, transportation and sorting system in Managua City	2-1 Updating operation guidelines and improving systems	Medium
			2-2 Provision of materials and equipment such as vehicles, maintenance and management capacity	Short

Subject	Strategy	Program	Project	Period
	Reducing environmental impact through appropriate waste management	3. Reduction of environmental load and prevention of environmental pollution through appropriate landfill management	2-3 Volume reduction, raising residents' awareness of sorted collection, publicity activities	Long
			3-1 TA for technical study on phased closure of disposal site	Short
			3-2 Implementation of landfill closure	Medium
			3-3 FS on development of new disposal site	Short
	3-4 Construction of a new disposal site	Medium		
Building and realizing a recycling-oriented society	4. Realization of a society with a low environmental impact by promoting the 3Rs	4-1 3R promotion system development, technological innovation, funding, etc.	Long	

Short term : 2023-2025、 Medium term : 2023-2027、 Long term : 2023-2032

Source: JICA Study Team

## 2) Cooperation scenario

Table 14-27 proposes programs/projects that JICA should work on based on the selection criteria in Table 14-26.

**Table 14-27 Program and Project Selection Criteria (Nicaragua: Solid Waste Management)**

Selection Criteria	Contents
(1) Consistency with the Japanese government's country-by-country development cooperation policy	- As a priority area for cooperation with Nicaragua, the Japanese government has indicated that assistance will be provided in the area of environmental conservation, such as the deterioration of the living environment due to the influx of population into cities.
(2) Consistency with JICA's global agenda goals	- In "18. Environmental Management," the goals of the agenda are to implement cooperation centered on strengthening the capacity of administrative organizations in charge of environmental management, and to promote environmental measures for waste management.
(3) Applicable modalities in Nicaragua	- In the short and medium term, it is difficult to provide assistance through loan aid and grant aid, but we will consider the possibility of realization in the future.
(4) Effective utilization of results of past projects implemented by JICA	- Effectively utilize the results of JICA's past projects in Nicaragua and neighboring countries.

Source: JICA Study Team

In Managua City, in addition to strengthening the administrative organization's capacity for waste management, closing the final disposal site at the end of its useful life, and constructing a new disposal site to replace it are urgent issues, and technical and financial assistance is required for this. It's becoming

JICA's cooperation projects/programs will support the future efforts of the Nicaraguan government from the technical and financial aspects. In view of the issues, the urgency and priority of continuous improvement of waste collection (first stage) and proper disposal site management (second stage) are evaluated as high.

Regarding the closing/construction of the final disposal site, as shown in the selection criteria (3) above, it is currently difficult to provide a yen loan to the country, but the possibility of IDB co-financing is taken into consideration. and posted as a cooperation menu.

**Table 14-28 JICA Assistance Proposal for Solid Waste Management in Nicaragua**

Development Stage	Strategy	Items for Cooperation	Cooperation Modalities
【First stage】 Improving public health	1. Integrated planning	1-1 Managua Metropolitan Area Solid Waste Management M/P	Technical cooperation training Dispatch of experts
		1-2 Formulation of 3R Promotion Strategy in Nicaragua	
		1-3 Information system construction, administration	
	2. Establishment of garbage collection, transportation, and separation treatment in Managua City	2-1 Update of operation guidelines System improvement	Technical cooperation training Dispatch of experts Grant aid
		2-2 Provision of materials and equipment such as vehicles, maintenance, and management capacity	
		2-3 Volume reduction, raising residents' awareness of sorted collection, publicity activities	
[Second stage] Reduction of environmental load and prevention of pollution	3. Reduction of environmental load and prevention of environmental pollution through appropriate landfill management	3-1 TA for technical study on phased closure of disposal site	Technical cooperation Grant/loan aid Training Dispatch of experts
		3-2 Implementation of landfill closure	
		3-3 FS on development of new disposal site	

Source: JICA Study Team

### 14.3.3 Waste Management in Cuba: Current Situation and Development/ Cooperation Scenarios

#### (1) General

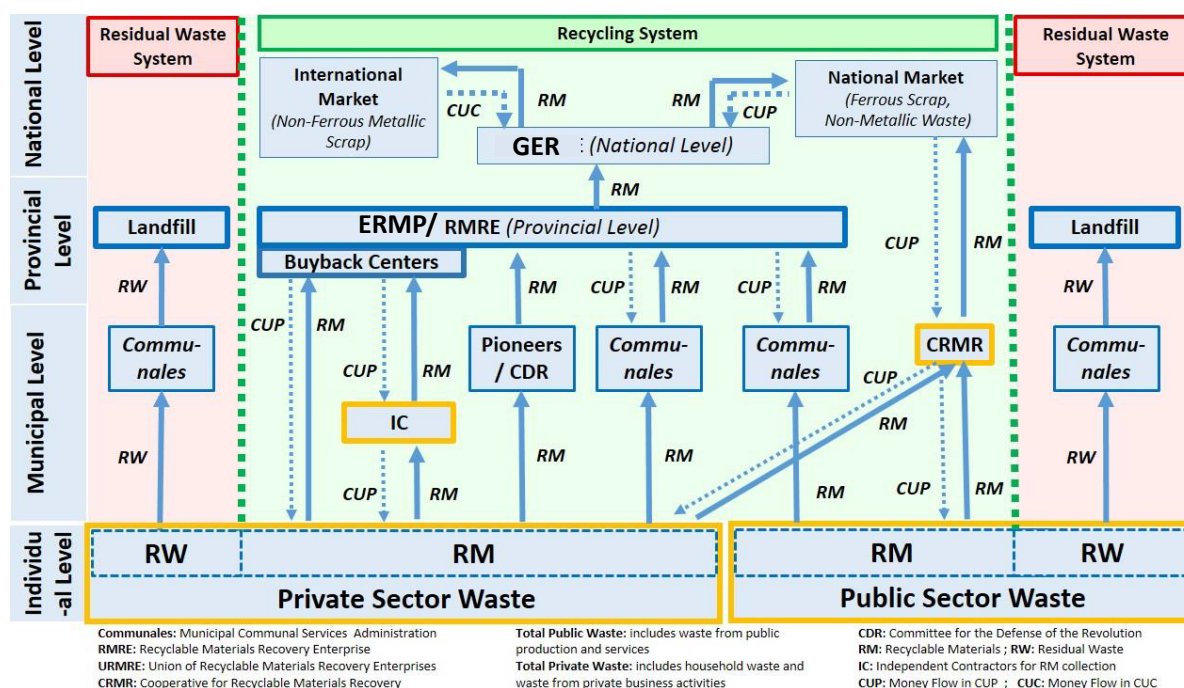
#### 1) Outline of the Waste Management Sector

Organizations and institutions related to the Cuban solid waste sector and their roles are shown in Table 14-29 and Figure 14-21.

**Table 14-29 Waste-Related Organizations and Roles in Cuba**

Organization/Institution	Role in the Waste Management Sector
Ministerio de Ciencia, Tecnología y Medio Ambiente (CITMA)	<ul style="list-style-type: none"> <li>Responsible for environmental protection and general environmental management.</li> <li>Formulate the “Strategy for Transitioning to a Circular Economy: Estrategia para Transición hacia una Economía Circular (2021)” and lead activities toward the realization of a recycling-oriented society in the country.</li> </ul>
Ministerio de Economía y Planificación (MEP)	<ul style="list-style-type: none"> <li>Administrative agency responsible for public services including waste management</li> </ul>
Grupo Empresarial de Reciclaje (GER)	<ul style="list-style-type: none"> <li>It collects, processes, and sells recyclable waste nationwide.</li> <li>It has 26 affiliated companies (16: Raw Material Recovery Company (ERMP), 2: Municipal Waste Plant, 3: Specialized Company, 3: Logistics Related Support, 2: Others).</li> </ul>
Dirección de Prevención y Seguridad Ciudadana Empresa Provincial de Higiene (DPSC-EPH)	<ul style="list-style-type: none"> <li>DPSC is the public service department of the City of Havana under the Ministry of Economic Planning (MEP). The City of Havana is made up of 15 municipalities, each of which is equivalent to a department.</li> <li>EPH (before July 2022, Unidad Provincial Presupuestada de Higiene (UPPH)) manages and directs municipal solid waste collection and final disposal, as well as related activities. It is an organization of local governments, and its financial resources come from the national government.</li> </ul>
Empresa de Recuperación de Materias Primas (ERMP)	<ul style="list-style-type: none"> <li>A raw material recovery company belonging to GER. It operates an office in each region.</li> </ul>

Source: JICA Study Team based on JICA2020 and each ministry's website



Source: Edited by the JICA Study Team based on Ahlheim, M., et. al., 2019

**Figure 14-21 Waste Management System in Cuba**

The indicator data on solid waste management in Cuba and Havana City are summarized in Table 14-30 and Table 14-31. These data were collected and organized from interviews and sources in the list.

**Table 14-30 Waste Related Data for Cuba**

Indicator	Data	Source
Total inhabitants	11,311,502	UN, 2022
Total waste generation (ton/year)	2,692,692	CIA, 2022, World Bank, 2018
Generation per capita (kg-capita-day)	0.67	World Bank, 2018
Collection coverage (ton)	5,169,200	ONEI,2020
Collection coverage (%)	100% 76%	ONEI,2020 World Bank, 2012
Collection service frequency	N/A	
Types of final disposal (%)	Open dump, 42.2% Controlled Landfill, 30.7%	World Bank, 2018
Recycled material (ton/Year)	255,536	CIA, 2022
Recycling rate (%)	9.5%	CIA, 2022, World Bank, 2018
Number of collection posts for recycled resource	GER has 716 fixed recycling points and implementation of 589 clean points	Diaz, B.W., 2022
Recycling material (ton)	467,000	ONEI,2020
Waste composition (%)	Organics: 69% Recyclable Waste: 29% Other: 2% - Glass: 5% - Metals: 2% - Paper and paperboard: 12 % - Plastics: 10% - Others: 3%	World Bank, 2012
Volume of waste disposed in final disposal site (ton/year)	5,241,000	ONEI, 2020

Source: JICA Study Team

**Table 14-31 Waste Related Data for Havana**

Indicator	Data	Source
Total inhabitants	2,124,953	EPH, 2022
Extension (km <sup>2</sup> )	772	EPH, 2022
People's councils (administrative divisions)	105	EPH, 2022
Communal services zones (for the purpose of community services)	109	EPH, 2022
Total daily solid waste generation (m <sup>3</sup> )	27,814	EPH, 2022
Daily average collection (m <sup>3</sup> )	19,355	EPH, 2022
Garbage containers	23,000	EPH, 2022
Ampirole- metal boxes	548	EPH, 2022
Total waste generation (ton/year)	598,235 538,120	World Bank, 2012 Espinosa, Ma.C. et. al, 2019
Generation per capita (kg-capita-day)	0.7	Espinosa, Ma.C. et. al, 2019
Collection coverage (ton)	5,169,200	ONEI, 2020
Collection coverage (%)	100%	World Bank, 2012
Collection service frequency	N/A	
Types of final disposal (%)	Open dump, 10% Controlled Landfill, 90%	World Bank, 2018
Recycled material (ton/Year)	255,536	CIA, 2022
Recycling rate (%)	N/A	
Number of collection posts for recycled resource	GER has 716 fixed recycling points and implementation of 589 clean points	Diaz, B.W., 2022
Recycling material (ton)	N/A	
Waste composition (%)	Organics: 62% Recyclable Waste: 34% Other: 4% - Glass: 3% - Metals: 2% - Paper and paperboard: 12% - Plastics: 9% - Others: 4%	Lorenzo Ll. J. and Kalogirou, E., 2019
Volume of waste disposed in final disposal site (ton/year)	5,241,000	ONEI, 2020

Source: JICA Study Team based on interviews with EPH

## 2) Assistance Provided by JICA

JICA has implemented the surveys and projects shown in Table 14-31 in the past for the waste sector in Cuba.

**Table 14-32 Projects Related to Solid Waste Implemented by JICA in Cuba**

Project	Year	Form of cooperation	Contents
The Study on Integrated Management Plan of Municipal Solid Waste in Havana City, Republic of Cuba	2007	Technical Cooperation	1) Formulation of Municipal Solid Waste Management Master Plan for Havana City by 2015 2) Pilot project 3) F/S of priority projects 4) C/P capacity development
Improvement of the Capacity on Urban Solid Waste Management in Havana City, the Republic of Cuba	2009-2014	Technical Cooperation	1) Improvement of DPSC's comprehensive solid waste management capacity in line with the M/P 2) Composting PP for organic waste reduction 3) Strengthening of garbage collection and transportation capacity of UPPH 4) Development and improvement of existing final disposal sites, review of new designs, operation, and management training
Improvement of the Capacity on Waste Collection Vehicle Management in Havana City in Cuba	2015-2017	Advisor	Technical support for improving the maintenance capacity of waste collection and transportation vehicles to solve the problem in 3) of the above technical cooperation project

Project	Year	Form of cooperation	Contents
North and Latin America Data Collection Survey on Marine Plastic Litter in the Caribbean Region	2020	Technical Cooperation	Collection and organization of information on the status of marine plastic litter in CARICOM member countries, the status and issues of countermeasures, cooperation needs, related Japanese technology, etc.

\* In addition to the above, 100 waste collection vehicles were provided in the 2019 non-project grant aid.

Source: JICA Study Team

### 3) Laws and Strategies for Waste Management and Recycling

Cuba's national strategy and legal system for solid waste management are shown in Table 14-33.

**Table 14-33 Waste-related Strategies and Legislative Systems in Cuba**

	Strategy/Legal System	Contents
Strategy	Constitution of the Republic of Cuba (Updated 2019)	Constitución de la República de Cuba Cuban Constitution Protection and conservation of the environment and the confronting climate change, based on the recognition of common but differentiated responsibilities; the establishment of an economic order fair and equitable international law and the eradication of patterns of irrational production and consumption.
	Guidelines on the economic and social policy of the party and the revolution for the period 2021-2026	Lineamientos de la Política Económica y Social del Partido y la Revolución para el período 2021-2026 y Resolución del 8vo Congreso del Partido 2016-2021 Communist Party and Revolution Economic and Social Policy Guidelines: “Promote science, technology, innovation, environmental policy, develop technologies such as circular economy, low carbon, establish recycling industry development, and promote culture in this regard. Exploit the potential of municipal solid waste and facilitate the sorting, recovery and treatment of ferrous and non-ferrous scrap and non-metallic waste.”
	National Economic and Social Development Plan 2030 (PNDES 2030)	Plan de Desarrollo Económico y Social al año 2030 At PNDES-2030, the “Transition Strategy Towards a Circular Economy” was formulated.
Legislation	Law on Natural Resources and Environment (Approved in 2022)	Ley de Recursos Naturales y Medio Ambiente Environmental Law (approved in 2022, with additional legislation pending): It covers areas as diverse as air quality and waste treatment, assessment of consumption and production, an updated view of climate change, life in the oceans, protection, restoration, and promotion from an ecosystem view of the sustainable use of natural resources.
	NC 133: 2002: Solid urban waste. Storage, collection, and transportation	Norma Cubana 133 RSU Almacenamiento, recolección y transportación y requisitos higiénicos sanitarios y ambientales Sanitary and Environmental Storage, Collection, and Transport Regulations (2002)
	NC 134: 2002: Solid urban waste treatment	Norma Cubana 134 RSU Tratamiento y requisitos higiénicos sanitarios y ambientales Sanitary and Environmental Intermediate Treatment Regulations (2002)
	NC 135: 2002: Solid urban waste. Final disposition	Norma Cubana 135 RSU Disposición final y requisitos higiénicos sanitarios y ambientales. Sanitary and Environmental Final Disposal Regulations (2002)
Recycling related	Policy to increase the recycling of raw materials (Enacted in 2012, amended in 2014)	Política para el incremento del Reciclaje de Materias Primas Approved by the Council of Ministers in 2012, revised in 2014. Promotion of recycling, improvement of added value of recycled products in domestic and foreign markets, development of the recycling industry through the introduction of new technology



	Strategy/Legal System		Contents
			and encouragement of foreign investment (Ministerio de Industrias. 2019., Global Recycling. 2016)
	Policy for the development of the container and packaging industries (2013.3)	Política para el desarrollo de la industria productiva de envases y embalajes	Order to establish the guidelines and principles for the development of industries producers of containers and packaging on sustainable, competitive bases and from a comprehensive conception.
Circular Economy	Strategy for the transition to a circular economy	Estrategia para la Transición hacia una Economía Circular	Transition strategies towards a circular economy: Aims to promote the implementation of circular models, efficient use of natural resources and resilient, through the closure of the cycle, the extension of the useful life of the materials and the reduction of emissions, which respond to the principles of sustainable development, with the participation of all actors in society
Havana city	Decree No. 201 of June 13, 1995	Decreto Ley No. 201:Contra el ormató público y la higiene comunal. La Havana	Landscape and Public Health in the City of Havana in 1995 ordinance concerning

Source: Updated by the Study Team based on JICA 2020

#### 4) Efforts to a Circular Economy

In Cuba, “Estrategia para la transición hacia una economía circular: Strategy for the Transition Towards Circular Economy” was formulated in October 2021 to realize a sound material-cycle society and was announced at the Executive Committee of the Council of Ministers in November. This is the theme of the sustainable production and consumption/circular economy project “Producción y consumo sostenible Economía circula” under the “Recursos Naturales y Medio Ambiente” Programme, led by Director General of CITMA.

The circular economy strategy has four main objectives:

1. Guarantee the full integration of the principles of the circular economy in the policies and practices in force in the country.
2. Achieve a more efficient use of resources, reducing the need to extract and import materials and resources used as inputs in production and service processes.
3. Minimize the generation of waste and emissions at the sources of origin and maintain the value of materials and resources for as long as possible in economic cycles.
4. Promote the active and conscious participation of all actors in society in the implementation of the circular economy, including consumers.

In addition, priority sectors for these activities are identified as shown in Figure 14-17, and “agriculture”, “tourism”, “construction”, “general waste”, and “high potential industrial sectors” shown in the upper row are designated as sectors with high urgency.



Source: CITMA,2021

**Figure 14-22 Priority Sectors in the Transition Strategy Towards a Circular Economy**

Under the “Strategy for transition to a circular economy”, a three-stage action plan has been formulated as shown in Figure 14-18.



Source: CITMA,2021

**Figure 14-23 Three-step Action Plan for the Transition Strategy Towards a Circular Economy**

The following eight actions are planned for the Stage-1 transition preparation period (2022-2023)

1. Diagnosis. Analysis of the metabolism of material flows at the national level and by priority sectors.
2. Preparation of action plans by sectors. Formulation of goals and indicators.
3. Proposal and approval of legal provisions.
4. Design of scientific research programs.
5. Design and implementation of incentives.
6. Coordination between the different actors of the state and non-state sector, academia, and civil society to facilitate the transformation of linear to circular production systems.
7. Implementation of communication and awareness strategies.
8. Establishment of national goals and indicators.

Stage-2 (2024-2026) is the implementation stage, and Stage-3 (2027-2030) is the evaluation stage. Currently, it is Stage-1, and it is an important stage that affects the feasibility of this strategy, such as the creation of sectoral action plans, the development of laws and regulations, and the setting of indicators. CITMA has requested technical support for this initiative.

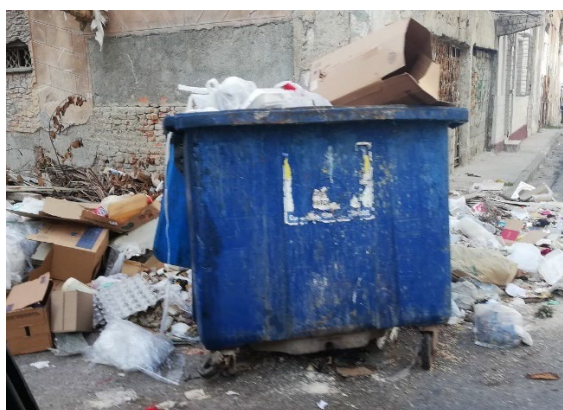
## 5) Waste Management in Havana City

### a) Issues of Waste Management

A master plan was formulated in the “Study for Integrated Solid Waste Management Plan in Havana City” (Developed in 2007, initial target year 2015, revised in 2014 to 2015-2020). At the time of its formulation, the issues related to waste management in Havana City included closures, new construction, and environmental pollution related to "waste management facilities," and the scattering of waste around collection containers related to "waste collection." Since the formulation of the master plan, a certain amount of improvement has been seen through the implementation of recycling and sorted collection, which had hardly been done until then, and the strengthening of the maintenance and management capacity of collection vehicles. On the other hand, it cannot be said that improvements and solutions have progressed as planned due to foreign currency shortages, fuel shortages, and labor problems unique to Cuba. Regarding the final disposal site, construction plans are stagnant due to lack of funds, human resources, and materials, and the authorities need technical and financial assistance.

#### i) Generation

- In Havana City, general waste can be discharged at any time into containers installed at collection stations. About 23,000 containers are in place, and about half of the solid waste from Havana City is collected through containers. Garbage in containers is collected daily.
- Containers are managed by each municipality, and in areas where 770 L containers with lids and casters have not been installed; trucks, tractors, and handcarts are used to collect door-to-door.
- There is no segregation at the time of collection, but a system is in place for citizens to bring recyclables to the buyback center and receive a small amount of money.



Household waste scattered around containers at a collection station in Havana.



A collection center for recyclable materials. Handwritten paper for management of collected amount and ledger

Photo: JICA Study Team

**Figure 14-24 Collection Stations in Havana City**

## ii) Collection and Transportation

- Waste collection is carried out by the DPSC-EPH Havana Public Service Department.
- Collection and transportation in Havana City are as follows: General waste collection is available 24 hours a day, seven days a week. One driver and three workers get into the packer vehicle and collect on average three trips per shift. The average transport volume is 10 ton/time. The final disposal site destination is mainly Calle 100.
- Five of the 15 municipalities have their own collection vehicles but are in need of additional packer vehicles from the EPH. Complaints from residents about non-collection are received by each of the 15 local governments and handled by the EPH. Construction waste materials are collected using heavy machinery in consideration of the impact on traffic. Large containers are installed in areas where a large amount of waste is generated. When full, the hoist truck replaces it with an empty container.



Garbage truck donated by the Japanese government (at Calle 100)



A three-wheeled recovery vehicle for collecting resources in residential areas. Owned by ERMP Habana

Photo: JICA Study Team

**Figure 14-25 Transportation Trucks in Havana City**

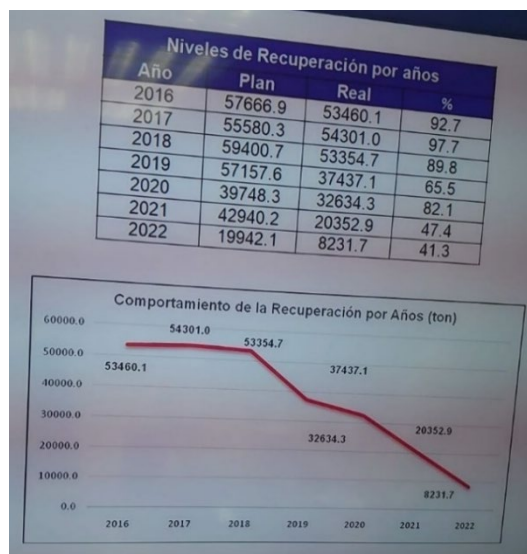
## iii) Processing and Recycling

- Regarding recyclables, some recyclable materials such as ferrous and non-ferrous metal scraps, paper, cardboard, and plastics are collected by independent contractors (IC for Recyclable Material Collection, *Trabajadores por cuenta propia*) and cooperatives for recyclable material recovery (CRMR), *Cooperativas de Recuperación de Materias Primas*. These are often spin-offs of public enterprises.
- ICs and CRMRs pay private households and businesses for recyclable materials and receive payment by bringing them to buyback centers. Buyback centers belong to state-level recyclable material recovery enterprises (ERMPs), where materials are recycled and sold to domestic and international industries. Recycled materials collection activities organized by *Pioneros* and the Committee for Revolutionary Defense (CDR: *Comités de Defensa de la Revolución*). Unlike IC, there is no payment, and they provide the collected recycled materials directly to ERMP (no payment received).
- Public enterprises are obliged to separate waste (recycled material and residual waste). Each state ERMP sends recycled materials to the national Union of Recyclable Materials Recovery Enterprises (UERMP). UERMP sells iron parts of metallic waste and non-metallic waste to the national industry. Non-ferrous metal scrap is sold domestically and internationally. The export and import substitution of non-ferrous metal scrap will save

the national economy more than USD 200 million.



ERMP Habana Resource Recycling Center. (Above) Mainly manual work by workers, (Bottom) Broken equipment



Changes over time in planned and actual recycling amounts. Significant downward trend due to COVID-19 and economic crisis.

Photo: JICA Study Team

**Figure 14-26 Intermediate Treatment Facility in Havana City**

#### iv) Disposal

- There are three disposal sites managed by Havana City: Calle 100 disposal site (100 ha), Ocho Vias disposal site (35 ha), and Campo Florido disposal site (9 ha).
- The Calle 100 site has reached the end of its useful life and has already disposed of waste in excess of the 25 m standard. A phased closure is said to be necessary.
- The paved road becomes a dirt road in the middle of the disposal site, and since there is no side ditch, it becomes muddy after several days of rain, making access difficult (JICA. 2018). Due to lack of equipment, there are problems with soil covering, rolling compaction, vehicle congestion on the approach road and entrance, and waste picker control (JICA. 2014).
- A biogas plant (60-70 kWh) located next to the compost yard has been in operation since 2012, but as of January 2023, it is shut down due to unavailability of spare parts.

#### b) Plan of Final Disposal Site

When the master plan was formulated in 2007, the Calle 100 disposal site was scheduled to be closed in 2011, but due to delays in the development of a new final disposal site, it is still in use as of 2022.

Currently, construction of a new disposal site in Santa Maria Rosalia, located in the southeastern part of Havana City, is under consideration as seen in Figure 19-20. It has an area of 34 ha and is planned to be used for 15 to 20 years. There is a need for F/S for new disposal sites and technical support for the gradual closure of the existing disposal sites. The La Liba site, which was one of the candidate sites, was abandoned because it could not pass the environmental review as it was a water source.



Collection of valuables at the Calle 100 dumping site. In addition to workers employed by the DPSC, non-regular waste pickers are working behind security to collect waste.



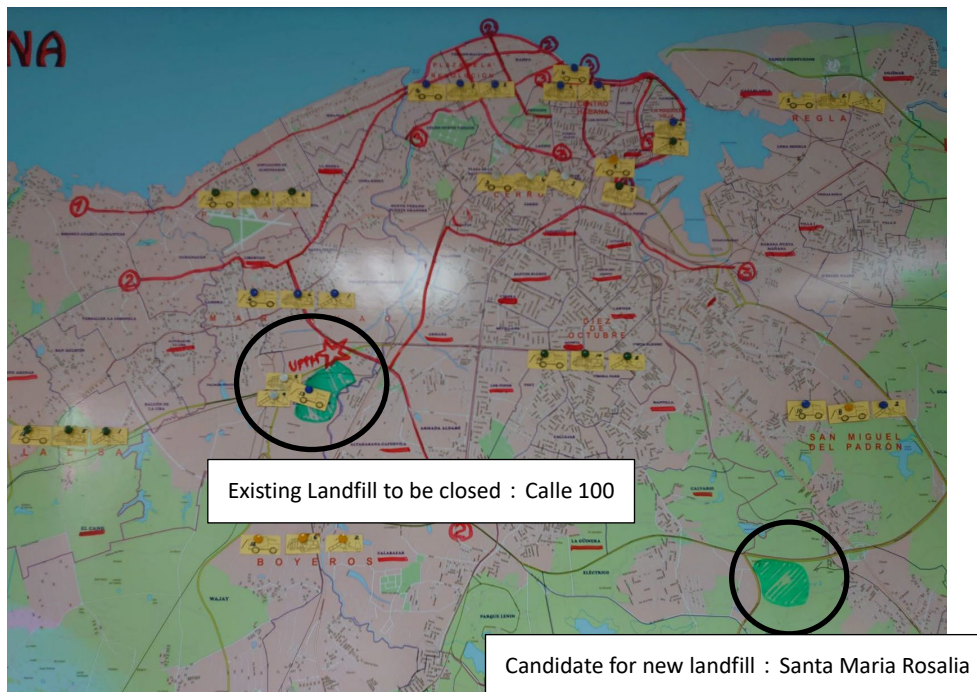
(Above) Calle 100 landfill entrance. The weight scale is out of order and the exact amount of cargo carried in cannot be measured.



(Bottom) Seepage water from the Calle 100 disposal site evaporate or enter the environment untreated.

Photo: JICA Study Team

**Figure 14-27 Landfill Site at Calle 100 in Havana City**



Source: Photo by JICA Study Team at DPSC-EPH

**Figure 14-28 Location of Final Disposal Site in Havana City**

## 6) 3R Promotion Initiatives

In Cuba, the cities of Villa Clara and Fomento, located in the central part of Cuba, are actively engaged in 3R initiatives, especially in the plastic recycling business.

ERMPVC (Resource Recovery Corporation) in Villa Clara City is implementing a recovery system called

“Door to Door” as a pilot project to improve the recovery rate. In addition, through campaigns at schools, they are steadily carrying out enlightenment activities for citizens. Based on these, in recent years the company has been striving to develop products by shifting recycled resources from metals to plastics.

The Recycled Plastic Association (CNA) in Fomento City develops high-quality recycled plastic products and develops sales channels both domestically and internationally. CNA has the desire to increase production and expand its business, but the business model is not yet in place, and it is necessary to develop and improve the external environment such as stable power supply and transportation.



There are 13 green spots in the city. Aluminum, bottles, and plastics are collected separately (Villa Clara City)



The CNA Esperanza (Association of Recycled Plastics) in Fomento City produces products such as baskets, pipes, and cots, which are sold nation-wide.

Photo: JICA Study Team

**Figure 14-29 3R Promotion in Central Cuba**

### (2) Development and Cooperation Scenario in Cuba

#### 1) Development Scenario

##### a) Development Issues/Strategies

Development issues related to solid waste management in Cuba are organized as follows based on literature surveys and interview surveys. The fields of cooperation and numbers in the table correspond to Table 14-16 Evaluation of Cooperation Needs for Establishing Solid Waste Management System in Each Country.

**Table 14-34 Issues in Waste Management in Cuba**

Field of Cooperation	Issues
(1) Improving the legal system	A master plan for comprehensive waste management is necessary
(2) Organizational improvement	Insufficient organization, lack of staff, and lack of capacity

Field of Cooperation	Issues
(3) Financial improvement	Lack of financial resources for new investment
(4) Promoting appropriate collaboration with the private sector	No government support for the recycling industry
(5) Promotion of efforts by waste generators	The political priority of waste generation control is low, and the awareness of business operators is also low.
(6) Promotion of citizen participation	Residents' awareness and participation in sorting and collection is low
(7) Consideration for culture and society	Incorporation of waste pickers and informal sectors

Source: JICA Study Team

In October 2021, Cuba formulated the “Transition Strategy for a Circular Economy: Estrategia para la transición hacia una economía circular,” aiming to build a recycling-oriented society led by the government. On the other hand, in the Havana metropolitan area, there is a need for continuous improvement in waste management. The development goals and development strategies for property management are shown below.

- Development goal: Improving public health and reducing environmental impact through appropriate waste management, and building a recycling-oriented society
- Purpose: Realize a sound material-cycle society through appropriate waste management in urban areas and promotion of the 3Rs on a nationwide scale.

**Table 14-35 Strategies for Solid Waste Management and Outlines of Each Strategy in Cuba**

Subject	Strategy	Overview
Waste (Cuba)	1. Improving public health by strengthening waste management in Havana City	Appropriate implementation of collection, transportation and segregation related to waste management in Havana under the Integrated Waste Management Plan
	2. Reduction of environmental load and prevention of pollution	Reduction of environmental impact through appropriate management of final disposal sites, including closure and construction of new disposal sites
	3. Building and realizing a recycling-oriented society	Each actor formulates an action plan for the realization of a circular economy, strengthens the management capacity to implement it without fail, and implements appropriate monitoring.

Source: JICA Study Team

## b) Programs and Projects

In Cuba, a master plan for integrated solid waste management in Havana has been formulated with JICA assistance, and solid waste management has been implemented despite human, technical, financial, and social constraints. In the future, to shift to a recycling-oriented society, it will be necessary to update the master plan based on the current issues and to upgrade the action plan.

In Havana, the closure of the Calle 100 disposal site, which is reaching the end of its service life, and the establishment of a new disposal site are urgent issues, and technical and financial assistance is required for this.

Based on this, when considering the development scenario, we should set the "transition strategy to a circular economy" as the direction in which society as a whole should move, and we should tackle the realistic waste problem at present while linking it to the program. In the Havana metropolitan area, continuous improvement of waste collection (first stage) is still required, and proper management of final disposal sites (second stage) is also an issue. On the other hand, since 3R activities are active in rural areas and there are successful cases, it also includes initiatives for building and implementing a recycling-oriented society (third stage), such as business support for recycling businesses and horizontal



deployment of good practices.

Based on the above strategy, the programs, and projects that the Cuban government should work on are summarized below.

**Table 14-36 Programs and Projects Proposed in Solid Waste Management in Cuba**

Strategy	Program	Project	Period
Improving Public Health by Strengthening Waste Management in Havana City	1. Integrated planning	1-1 Renewal of Havana City Solid Waste Management M/P Evaluation	Short
	2. Improving the quality of waste collection, transportation and sorting in Havana City	2-1 Updating operation guidelines and improving systems	Short
		2-2 Ability to develop and maintain equipment such as vehicles	Medium
Reduction of environmental load and prevention of pollution	3.Reduction of environmental impact through appropriate landfill management	2-3 Volume reduction, raising residents' awareness of sorted collection, publicity activities	Long
		3-1 Technical Study on Phased Closure of Calle 100 Landfill	Short
		3-2 Implementation of Phased Closure of Calle 100 Landfill	Medium
		3-3 F/S for development of new disposal site	Short
2-Construction and realization of a recycling-based society	4. Strategy for Transitioning to a Circular Economy (CITMA)	3-4 Development of new disposal sites	Medium
		4-1 Support for formulation of action plans, formulation of guidelines	Short
	4-2 Implementation and monitoring of action plans	Medium	
	5. 3R promotion support	5-1 Regional development, sector cooperation (tourism, marine plastic measures, private sector)	Long
		5-2 Development and stable supply of clean energy (power sector)	Medium
		5-3 Improvement of facilities and operations	Long
		5-4 Improving business skills	Long
		5-5 Implementation of the pilot project, sharing and development of good practice	Long

Note: Short term: 2023-2025, Medium term: 2023-2027, Long term: 2023-2032

Source: JICA Study Team

## 2) Cooperation scenario

The criteria for selecting programs and projects that JICA should work on are shown in the table below.

**Table 14-37 Program/Project Selection Criteria (Cuba: Solid Waste Management)**

Selection criteria	Content
(1) Consistency with the Japanese government's country-by-country development cooperation policy	- The Japanese government has identified "environmental conservation" as a priority area for cooperation with Cuba, and has said that it will provide assistance mainly in the area of environmental conservation, in which Japan has provided assistance so far, such as waste disposal.
(2) Consistency with JICA's global agenda goals	- In "18. Environmental Management," the goals of the agenda are to implement cooperation centered on strengthening the capacity of administrative organizations in charge of environmental management, and to promote environmental measures for waste management.
(3) Applicable modalities in Cuba	- In the short and medium term, it is difficult to provide assistance through loan aid and grant aid, but we will consider the possibility of realization in the future.
(4) Effective utilization of results of past projects implemented by JICA	- Effectively utilize the results of JICA's past projects in Cuba and neighboring countries.

Source: JICA Study Team

It is proposed that JICA's cooperation projects/programs, as shown in Table 14-38, provide technical

and financial support for future efforts by the Cuban government. The priority will be determined by updating the evaluation of the Havana City Solid Waste M/P.

Regarding the closure/construction of the final disposal site, it is currently difficult to provide yen loans or grant aid to the country. Posted as a cooperation menu.

**Table 14-38 Projects and Programs Proposed in Solid Waste Management in Cuba**

Strategy	Program	Project	Cooperation Modalities
【First stage】 Improving public health	1. Integrated planning	1-1 Renewal of Havana City Solid Waste Management M/P Evaluation	Technical cooperation Training Dispatch of experts
	2. Improving the quality of waste collection, transportation and sorting in Havana City	2-1 Updating operation guidelines and improving systems	Technical cooperation Training Dispatch of experts Grant
		2-2 Provision of materials and equipment such as vehicles, maintenance and management capacity	
2-3 Volume reduction, raising residents' awareness of sorted collection, publicity activities			
[Second stage] Reduction of environmental load and prevention of pollution	3.Reduction of environmental impact through appropriate landfill management	3-1 Technical study on phased closure of Calle disposal site	Technical cooperation Training Dispatch of experts
		3-2 Implementation of Phased Closure of Calle Landfill	
		3-3 F/S for development of new disposal site	
		3-4 Development of new disposal sites	
[Third stage] Realization of a recycling-based society	4. Strategy for Transitioning to a Circular Economy (CITMA)	4-1 Support for formulating an action plan Guidelines formulation	Technical cooperation Training Dispatch of experts
	5.3R promotion support	5-1 Regional development, sector cooperation (tourism, marine plastic measures, private sector)	Technical cooperation Training Dispatch of experts JOCV
		5-3 Improvement of facilities and operations	
		5-4 Improving business skills	
		5-5 pilot project	

Source: JICA Study Team

#### 14.3.4 Waste Management in Guatemala: Current Situation and Development/ Cooperation Scenarios

##### (1) General

##### 1) Outline of the Waste Management Sector

The organizations and roles associated with the waste sector in Guatemala are listed in Table 14-38.

**Table 14-39 Organization and Role of the Waste Sector in Guatemala**

Organization/Institution	Role in the Waste Management Sector
Ministry of Environment and Natural Resources (MARN)	<ul style="list-style-type: none"> <li>- MARN has the authority to coordinate with municipalities in the preparation of plans and guides for the comprehensive management of waste.</li> <li>- The Directorate General of Solid Waste Management (<i>Dirección de Gestión de Residuos sólidos</i>) is located within MARN.</li> </ul>
Dirección de Gestión y Manejo de Residuos y Desechos Sólidos (Municipalidad de Guatemala)	<ul style="list-style-type: none"> <li>- This is the responsible entity in Guatemala City for formulating policies with technical and professional support, and for carrying out integrated waste management and operation in an environmentally sound manner.</li> <li>- They are responsible for preparing plans, programs, projects, guides, and national</li> </ul>

Organization/Institution	Role in the Waste Management Sector
	regulations to promote national policies.
Ministry of Public Health and Social Welfare (Empresa Municipal de Tratamiento Integral de Desechos Sólidos – EMTRIDES)	<ul style="list-style-type: none"> <li>- They are responsible for the formulation of policies and legislation for the preservation of the environment and health in the country of Guatemala.</li> <li>- The ministry is the coordinating member for comprehensive waste management and operations.</li> <li>- They are responsible for monitoring and inspecting the impact of municipal operations on public health, including illegal dumping and contamination from leachate from rivers and drinking water wells.</li> </ul>
Ministry of Education (Ministerio de Educación – MINEDUC)	<ul style="list-style-type: none"> <li>- Since 2004, the Ministry of Education has been providing training and has been working on various sustainability topics such as forest protection, climate change, and water resources management.</li> <li>- The ministry is the coordinating member for comprehensive waste management and operations.</li> </ul>
Regional Development Agency (Instituto de Fomento Municipal – NFOM)	<ul style="list-style-type: none"> <li>- They help local governments organize their accounts and simplify the operations of collecting, investing, and managing funds.</li> <li>- They provide financial assistance for public works and municipal services, municipal assets, and property utilization.</li> <li>- The agency is the coordinating member for comprehensive waste management and operations.</li> </ul>
National Association of Municipalities (Asociación Nacional de Municipalidades – ANAM)	<ul style="list-style-type: none"> <li>- ANAM is a group of non-profit organizations that influence national policies related to municipalities and advocate the decentralization of support in legal, financial, administrative and management matters for local, regional, and national development and the resulting autonomy of municipalities.</li> <li>- It is a coordinating member for comprehensive waste management and operations.</li> </ul>
Lake Amatitlán Watershed Management Agency (Autoridad para el Manejo Sustentable de la Cuenca y del Lago de Amatitlán – AMSA)	<ul style="list-style-type: none"> <li>- Established by Congressional Decree No. 64-96 of the Republic of Guatemala on September 18, 1996, for the protection and restoration of Lake Amatitlan through the decontamination and rational use of renewable and non-renewable resources in aquifer recharge areas and forest areas.</li> </ul>

Source: Additions by the JICA Study Team

Indicator data on waste management in Guatemala are summarized in Table 14-40 and Table 14-41 below. These data were collected and organized from interviews and various literature.

**Table 14-40 Waste-related Data for Guatemala**

Indicator	Data	Source
Total inhabitants	16,600,000	UN, 2022
Total waste generation (ton/year)	2,756,741	World Bank, 2018
Generation per capita (kg-capita-day)	0.61	World Bank, 2018
Collection coverage (%)	77	BID, 2010
Collection service frequency	2 to 5 times a week (86.5%) Once a week (12.5%)	BID, 2010
Types of final disposal (%)	Total inadequate disposal: 84.5% Total adequate disposal: 15.5%	BID, 2010
Recycling rate (%)	Undetermined	
Recycling material (tons)	Undetermined	
Waste composition (%)	Organics: 41%-53% Recyclable Waste: 41% Other: 18%-14% - Glass: 2% - Metals: 1% - Paper and paperboard: 6% - Plastics: 9%	ONU-Habitat, 2011, MARN, 2018

Indicator	Data	Source
	- Others: 14%	
Total e-waste generated in 2019	2.9 kg/inhabitant	M. Wagner, C.P. Baldé et. al, 2022
E-waste formally collected in 2019	N/A	

Source: JICA Study Team

**Table 14-41 Waste-related Data for Guatemala City**

Indicator	Data	Source
Total inhabitants	994,938	UN, 2022
Total waste generation (ton/year)	1,095,000	WOIMA, 2022
Generation per capita (kg-capita-day)	0.40	Noguera y Oliveros, 2010
Collection coverage (tons)	N/A	World Bank, 2018, BID, 2010
Collection coverage (%)	N/A	PSI, 2017

Source: JICA Study Team

## 2) Assistance Provided by JICA

The following projects have been implemented in the waste sector of Guatemala in the past:

**Table 14-42 Waste-related Projects Implemented by JICA in Guatemala**

Project	Year	Form of Cooperation	Contents
Study on Guatemala Metropolitan Area Domestic Waste Disposal Plan	1990-1991	Technical cooperation	The study established a domestic waste plan for the Guatemala Metropolitan Area (Guatemala City and parts of five adjacent cities).
Advisor of Administrative Capacity Formulation for Waste Treatment Management in Guatemala	2011	Individual cases (specialists)	Third-country experts were dispatched to strengthen administrative capacity for waste management.
Data Collection Survey on Solid Waste Management Sector in the Central American and Caribbean Region	2012	Survey	The team identified the situation extracted in previous cooperation in the Central American and Caribbean region, and presented a draft cooperation policy to the central ministries responsible for policy aspects.

Source: JICA Study Team

## 3) Laws and Strategies on Waste Management and Recycling

Guatemala's national strategy and legislation for waste management are shown in Table 14-43.

**Table 14-43 Waste-related Strategies and Legislation in Guatemala**

	Strategic/Legal System	Overview
Strategy	National Development Plan K'atun "Our Guatemala to 2032"	<i>Plan Nacional de Desarrollo: K'atun Nuestra Guatemala 2032</i> National Development Plan 2032: "Natural resources for today and the future" incorporates a series of actions that are related with the objectives of this institutional policy, such as the efficiency of energy, environmental management, comprehensive management of solid waste, management of water resources, and the use of renewable energy.
	National Policy for the Comprehensive Management of Waste and Solid Waste Government Agreement No. 281-2015-2030	<i>Política Nacional para la Gestión Integral de Residuos y Desechos Sólidos</i> Integrated Solid Waste Management National Policy (2015-2030): This document contains the national policy for the integrated management of waste and solid waste for the 2015-2030 period of national and multisectoral character, and the obligation of all public institutions.
	Municipal plans for the comprehensive management of residues and solid	<i>Planes municipales de gestión integral de residuos y desechos sólidos</i> Instrument that establishes the obligation to separate and classify waste or common solid waste, waste collection and transportation, waste recovery and recycling, and the final disposal of common solid

	Strategic/Legal System		Overview
	waste		waste.
Legislation	Environmental Protection and Improvement Law	<i>Ley de Protección y Mejora del Medio Ambiente</i>	Article 8 establishes that all infrastructure and installation works must have a sanitary authorization, prior to their execution, in accordance with the regulations of the Ministry of Health.
	Regulation for the comprehensive management of waste and common solid waste (Government Agreement 164-2021)	<i>Acuerdo Gubernativo N° 164-2021 - Reglamento para la gestión integral de los residuos y desechos sólidos comunes.</i>	The first regulation in Guatemala that comprehensively regulates the collection, transfer, and treatment and final disposal of waste and solid waste. The agreement establishes health and environmental standards that seek to prevent environmental deterioration. The regulation also seeks to promote the circular economy.

Source: JICA Study Team

#### 4) Waste Management in Guatemala

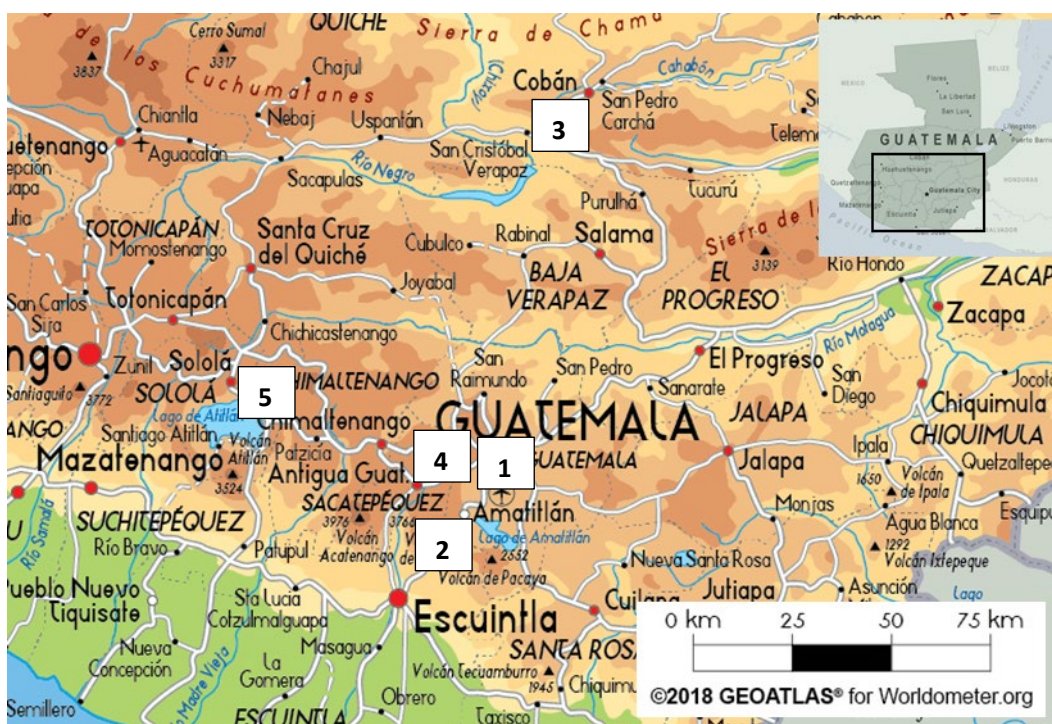
Although waste management in Guatemala is under the supervision of MARN and each city is responsible for its own waste management, it has long been pointed out that the collection and final disposal of waste has been poorly managed, resulting in various problems (JICA, 2012). Even today, there are approximately 2,370 illegal landfills in Guatemala, and approximately 90% of the final disposal sites are said to pollute rivers.

Under these circumstances, some municipalities in Guatemala are actively promoting waste management and are beginning to see some results. In this study, the operational status of five disposal sites have been investigated, including those in these advanced municipalities (see Table 14-44 and Figure 14-30).

**Table 14-44 Waste Management Data of Municipalities**

No.	Location, Municipality	Population	Waste Generation per Capita		No. of Waste Pickers	No. of Collection Vehicles (per day)
			Ton/day	Ton/year		
1	Ciudad Capital, Guatemala	4 million	3,000	1,080,000	1,200	550
2	Villa Nueva, Guatemala	1.8 million	1,200	432,000	150	220
3	Cobán, Alta Verapaz	150,000	125	45,000	60	45
4	Antigua Guatemala, Sacatepéquez	50,000	70	25,200	8	30
5	Panajachel, Sololá	18,000	20	7,200	2	18

Source: CAMS, 2022



Source: JICA Study Team

**Figure 14-30 Location Map of Municipalities**

**a) Guatemala City**

The largest final disposal site in the country is under the jurisdiction of Guatemala City. In recent years, while technical responses to climate change, such as slope collapse and waste runoff due to heavy rainfall, have been required, biogas power generation and composting efforts have also been promoted.

The waste management system in Guatemala City and its current status are given in Table 14-45.

**Table 14-45 Waste Management Systems in Guatemala City**

Collection (%)		Separation	Final Disposal
Private	Municipality		
90	10	Waste Picker	Controlled Landfill

Source: JICA Study Team

- The final disposal site will be located in ZONA-3, Guatemala City. It covers an area of 50 hectares, of which 20% has completed infrastructure development and the remaining 80% is still to be developed.
- It has been in operation for 70 years, but it is calculated to have a life of 15 years, and it is expected that technological innovations will extend its life in the future.
- Guatemala City and 14 surrounding cities use the system. Daily usage is approximately 550 dump trucks with 2,450 tons of solid waste.
- Heavy equipment (caterpillar tractors, bulldozers, and trucks) are owned, operated, and supervised by city government personnel.
- The repository operates with 120 people, including specialists, technicians, and operators.
- Private concession power generation using biogas is taking place in a closed area (4 MW).
- Organic composting is being demonstrated by the JICA trainees, and these composts are

being used for greening the site.

- ZONA-3 has environmental challenges such as waste dumping to fill the valley upstream of the watershed, waste discharge downstream during runoff, and control of seepage water.



Entrance to ZONA-3. The weight and number of large vehicles are controlled by a scale. Green space and composting pilots are underway at ZONA-3.

Source: Photo by the JICA Study Team

### Figure 14-31 ZONA-3 Final Landfill in Guatemala City

#### b) Villanueva City

It is the second repository in the country directly managed by AMSA, the government agency that manages the Amatitlan watershed, and is being constructed under the expertise and leadership of its director based on the plans for expansion of the sanitary landfill and construction of a new intermediate treatment facility.

The waste management system in Villanueva City and its current status are given in Table 14-46.

**Table 14-46 Waste Management Systems in Villanueva**

Collection (%)		Separation	Final Disposal
Private	Municipality		
70	30	Waste Picker	Controlled Landfill

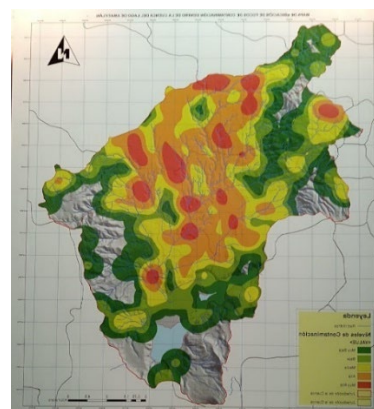
Source: JICA Study Team

- Lake Amatitlan is a volcanic lake with an area of 15 km<sup>2</sup> and a depth of about 40 m. It is located about 10 km south-southwest of the capital, Guatemala City. The AMSA is responsible for the conservation and management of the Lake Amatitlan watershed, and also manages the final disposal site in the city.
- This repository is the second largest in the country (67,000 m<sup>2</sup>) and receives solid waste (220 trucks/day, equivalent to 1,000 tons/day) from 14 municipalities in the basin and 16 municipalities in other provinces (Sacatepéquez, Chimaltenango, Escuintla, Sorolla, and Quiché). Because AMSA is a government organization, it does not charge for the acceptance of these wastes.
- Approximately 120 waste pickers collect valuable materials from 7:00 AM to 4:00 PM.
- To solve the waste problem in the Lake Amatitlan basin, the following improvements and expansions have been studied and are under construction:
  - Expansion of sanitary landfill ponds: purchase of 20 ha of new land.
  - Installation of sorting plants (separation and recycling) is underway. Chinese equipment has already been purchased and will arrive in December 2022 and begin

- operations in March 2023. Processing capacity is 50 tons/hour.
- Development of bio-digesters and power generation from liquid and organic wastes have been started.
- Medical waste will also be transported to this disposal site, and an incinerator will need to be installed, but funding sources are being explored (and assistance from Japan is expected).
- The source of pollution of Lake Atitlan is industrial effluent, with as many as 25% of the country's factories located in the watershed.



Disposal sites are in closed stages. The park will be constructed in 10 years.



Polluted Lake Map of Lake Amatitlan

Source: Photo by the JICA Study Team

### Figure 14-32 Final Disposal Site Managed by AMSA in Villanueva

#### c) Coban City

Until now, the government's lack of interest in waste management has delayed efforts to address this issue. The site is representative of the problems faced by the majority of disposal sites in Guatemala.

The waste management system in Coban and its current status are shown in Table 14-47.

**Table 14-47 Waste Management Systems in Coban City**

Collection (%)		Separation	Final Disposal
Private	Municipality		
90	10	Waste Picker	Controlled Landfill

Source: JICA Study Team

- The current city administration has embarked on a reform of waste management. Compaction and soil covering operations have started in the final disposal site. This is in order to reduce environmental degradation (especially foul odors) in the surrounding area. However, there is a lack of heavy equipment.
- Four private companies collect the waste, and the collectors pay the municipality GTQ 1.5 per user household for admission to the disposal site. On the other hand, GTQ 35 is collected from the households.
- There are 85 registered waste pickers, with 20 working in teams with one-week shifts (photo: left, workers' health and safety are inadequate).
- The city has established a waste department in 2020 and currently has 36 people organized in the waste sector. The main activities include employing 22 single mothers in street sweeping, as well as collection contractors, landfill management, management of sorting operations, and maintenance of access roads.



- Waste management is funded from the city's general fund, and current fee collections and revenues from valuable materials are not sufficient to make capital investments.
- The rainforest association has provided funding for a fractionation plant. An environmental impact assessment also needs to be done.



Waste picker collecting valuable materials at the final disposal site in Coban.



Municipal dump site near Cobán City. Neglected environmental problems such as contamination of soil, groundwater, and rivers, foul odors, and fires.

Source: Photo by the JICA Study Team

### Figure 14-33 Final Disposal Sites in and near Cobán

One example of mismanagement of waste in Guatemala is the fact that municipalities do not control the disposal sites (Figure 14-33, right photo). In addition, many municipalities have left the waste collection business to the private sector, and there is no end to the number of cases of illegal dumping by collection companies.

#### d) Antigua City

Antigua City (called Antigua Guatemala), the former capital of the country, is a World Heritage tourist destination. Since 2013, a project to modernize the final landfill has been implemented, with phased closure and construction and operation of a sanitary landfill.

The waste management system in Antigua and its current status are given in Table 14-48.

Table 14-48 Waste Management System in Antigua City

Collection (%)		Separation	Final Disposal
Private	Municipality		
90	10	Waste Picker	Sanitary Landfill

Source: JICA Study Team

- The city's waste is handled by a private contractor, with a collection rate of 80-90%. Fees collected from households are GTQ 40-50 per month, with about 90% paid. Fees from commercial properties are GTQ 300-500 per month. Each truck pays USD 1.5-2.0 to the city.
- The landfill was put into service in 2000 and engineering began in 2013, with phased closure and construction of a sanitary landfill by 2020. It is currently the only sanitary landfill in operation in the country.
- The repository is estimated to have 3-5 years of remaining useful life and a new landfill site has now been selected, with the EIA already conducted.

- Plans are underway to establish five sorting and collection centers within the jurisdictional area.



Sanitary landfill in operation. Guatemala's first project. The engineer who designed this repository was a JICA trainee.



The status of compaction and covering at the same disposal site.

Source: Photo by the JICA Study Team

**Figure 14-34 Final Disposal Site in Antigua City**

#### e) Panajachel City

Panajachel is located 70 km west of the capital city, on the northeastern shore of Lake Atitlan. It is a scenic spot with views of Mount San Pedro and Mount Atitlan on the opposite shore, attracting many tourists. Lake Atitlan is the deepest lake in Central America, with an area of 130 km<sup>2</sup> and a maximum depth of 340 meters. The area's closed waters make it vulnerable to pollution, and the international community, government, and citizens are more environmentally aware and educated than in other areas of the country.

The waste management system in Panajachel and current status are given in Table 14-49.

**Table 14-49 Waste Management Systems in Panajachel**

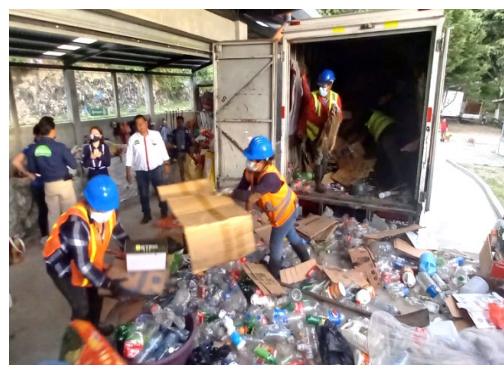
Collection (%)		Separation	Final Disposal
Private	Municipality		
0	100	Mechanized	Controlled Landfill

Source: JICA Study Team

- Waste management in the city is 100% city-owned, including collection and disposal. A concession was attempted four years ago, but due to public outcry, it is now considered an administrative service.
- The recovery rate is as high as 90%, and the controlled landfill accepts 15-20 tons/day.
- The incineration facility needs technical and financial assistance (90% of funding is not yet met. Processing capacity is planned at 2.5 tons/day).
- Separate collection of organic and recyclable waste is in place. Garbage cans have also been installed in the city for separate collection. However, there is concern that the installation of dumpsters will result in unpaid garbage collection fees.
- Waste from the tourism sector is 12-20%. Many liquor bottles (glasses) and littered cans are seen in the tourist area. Although environmental education and guidance on sorting are provided to residents, there are problems with immigrants and tourists who do not follow the rules.



The Panajachel landfill is the only mechanized landfill in the Lake Atitlan basin. Construction will begin in October 2021.



Separate collection is implemented each day of the week, and refuse delivered to the landfill is reclassified. Composting, conversion of food waste into animal feed, and other 3R projects are also being implemented.

Source: Photo by the JICA Study Team

**Figure 14-35 Final Disposal Site in Panajachel**

## 5) Waste Pollution

The Motagua River, Guatemala's largest river, which flows from the western Guatemalan highlands to the Gulf of Honduras, has a long problem of environmental pollution caused by waste and sewage, including plastic. This frequently resulted in international conflict after warnings from neighboring Honduras.

Although Guatemala City's ZONA-3 final disposal site is controlled at the uppermost reaches of the Motagua River, many municipalities along the basin have not implemented proper waste management, and waste and untreated sewage are being discharged directly into the river, a situation that requires immediate action by the international community, including Caribbean coastal countries.



Source: BBC News Mundo, 1 Oct. 2020

**Figure 14-36 Waste Pollution in the Lower Motagua River**

## (2) Development and Cooperation Scenarios in Guatemala

### 1) Development Scenario

#### a) Development Issues and Strategies

Development issues related to waste management in Guatemala were summarized from the literature review and interviews in Table 14-50. The cooperation areas and numbers in the table correspond to Table 14-17 Cooperation Needs Assessment for the Establishment of Waste Management Implementation Systems in Each Country.

**Table 14-50 Issues in Waste Management in Guatemala**

Field of Cooperation	Issues
(1) Improving the legal system	Need guidelines for local governments
(2) Organizational improvement	Lack of organization, staff, and capacity
(3) Financial improvement	Lack of financial resources for municipalities
(4) Promoting appropriate collaboration with the private sector	Inactive recycling industry
(5) Promotion of efforts by waste generators	Low political priority for outbreak control and low awareness among operators
(6) Promotion of citizen participation	Low awareness and participation of residents in sorting and collection
(7) Consideration for culture and society	Improved working conditions for waste pickers

Source: JICA Study Team

Based on this, the development goals and strategies for waste management in Guatemala are presented below.

- Development goal: Improve public health and reduce environmental impact through proper waste management
- Objective: Ensure proper waste management and environmental protection by municipalities

**Table 14-51 Strategies for Waste Management and Outlines of Each Strategy in Guatemala**

Subject	Strategy	Strategy Overview
Waste (Guatemala)	1. Improve public health by strengthening local government waste management systems	Improve public health by implementing proper collection, transportation, and disposal of waste by municipalities
	2. Reduction of environmental impact and prevention of pollution in the watershed through proper disposal of waste	Reduce environmental impact and prevent pollution through proper management of disposal sites in the Motagua River basin

Source: JICA Study Team

## b) Programs and Projects

In Guatemala, environmental pollution due to illegal dumping of garbage is significant, and municipalities have low capacity for implementation of waste management. For this reason, it is important to first help municipalities develop waste management plans and ensure basic waste management for collection, transport, and disposal.

In addition, regarding waste pollution in the Motagua River, the central government needs to take the lead in order for several municipalities in the basin to make improvements. However, it is not easy to unite municipalities in Guatemala, which is a large and culturally diverse country. It is also necessary to establish a management system, including the application of penalties and regulations for noncompliance, and improve management capacity.

**Table 14-52 Programs and Projects Proposed in Solid Waste Management in Guatemala**

Subject	Strategy	Program	Project	Period
Waste Management (Guatemala)	Improve public health by strengthening municipal waste management systems	1. Support for municipal waste management planning	1-1 Support for municipalities to formulate waste management plans	Short
			1-2 Development of guidelines and manuals	Short
			1-3 Strengthening municipal staff capacity	Medium
			1-4 Construction of an Information Management System	Medium

Subject	Strategy	Program	Project	Period
		2. Establishment of waste collection, transportation, and sorting and disposal systems in model cities	2-1 Update of operational guidelines and system improvements	Short
			2-2 Provision of vehicles and other materials and equipment, and ability to maintain and manage them	Medium
			2-3 Raising residents' awareness on weight reduction and sorted collection, and publicity activities	Long
			2-4 Nationwide expansion of good practices	Medium
	Reduce environmental impact through proper waste management	3. Reduction of environmental impact and prevention of pollution in the Motagua River basin through proper disposal of waste	3-1 Institutional development of municipal cooperation	Short
			3-2 Implementation of watershed environmental management	Medium
			3-3-3 Technical studies and improvements for repository management	Medium
			3-4 FS and construction for development of a new repository	Long

Note: Short term: 2023-2025, Medium term: 2023-2027, Long term: 2023-2032

Source: JICA Study Team

## 2) Cooperative Scenarios

Programs/projects to be undertaken by JICA are proposed in Table 14-53 based on the selection criteria in Table 14-52.

In Guatemala, basic efforts to optimize the waste stream need to be made with the cooperation of the central and local governments. One of the measures to achieve this is to share and develop good practices at the level of waste management officers in each city hall, led by returning trainees, as indicated in "Program 2: Establishment of Waste Collection, Transportation, and Sorting and Disposal Systems in Model Cities". In particular, Antigua City Hall has received assistance from the IDB in developing waste management plans for Central American countries, and it is necessary to confirm with the IDB its future support policy in the field of waste management. In addition, it would be effective to dispatch volunteers to promote environmental education as an activity that contributes to raising residents' awareness.

Watershed management of the Motagua River is a difficult initiative in the current waste administration, but there is great potential to utilize the know-how and experience of providing administrative services through multi-municipal collaboration in Japan, as well as many experiences of watershed management across administrative districts by industry, government, and academia, and to utilize this knowledge.

**Table 14-53 Program/Project Selection Criteria (Guatemala: Waste Management)**

Selection Criteria	Contents
(1) Consistency with the Government of Japan's Country Development Cooperation Policy	- As a priority area of cooperation with Guatemala, the Japanese government has stated that it will assist in raising environmental awareness in response to the deterioration of the living environment caused by water pollution and waste disposal.
(2) Alignment with JICA's Global Agenda Goals	- Under "18. Environmental Management", the goals of the agenda are to implement cooperation focusing on strengthening the capacity of administrative bodies in charge of environmental management and to promote environmental measures for waste management.
(3) Applicable modalities in Guatemala	- Support can be provided by grant aid.

Selection Criteria	Contents
(4) Effective utilization of the results of past projects implemented by JICA	- To make effective use of the results of JICA's past projects in Guatemala and neighboring countries.

Source: JICA Study Team

**Table 14-54 Proposed Projects and Programs in Solid Waste Management in Guatemala**

Strategy	Program	Project	Cooperation Modality
Phase 1: Improved public health	1. Support for municipal waste management planning	1-1 Support for municipalities to formulate waste management plans	- Technical cooperation
		1-2 Development of guidelines and manuals	- Training
		1-3 Strengthening municipal staff capacity	- Dispatch of experts
	2. Establishment of waste collection, transportation, and sorting and disposal systems in model cities	2-1 Update of operational guidelines and system improvements	- Technical cooperation
2-2 Provision of vehicles and other materials and equipment, and ability to maintain and manage them		- Training	
2-3 Raising residents' awareness on weight reduction and sorted collection, and publicity activities		- Dispatch of experts	
2-4 Nationwide expansion of good practices		- Grant aid	
Phase 2: Reduction of environmental impact and prevention of pollution	3. Reduction of environmental impact and prevention of pollution in the Motagua River basin through proper disposal of waste	3-1 Institutional development of municipal cooperation	- Volunteer
		3-2 Implementation of watershed environmental management	- Technical cooperation
		3-3 Technical studies and improvements for repository management	- Grant aid and loan
		3-4 FS and construction for development of new repository	- Training
			- Dispatch of experts
			- Other funds

Source: JICA Study Team

### 14.3.5 Waste Management in Panama: Current Situation and Development/Cooperation Scenarios

#### (1) General

#### 1) Outline of Waste Management Sector

The organizations and roles associated with Panama's waste sector are listed in Table 14-55.

**Table 14-55 Organization and Role of the Waste Sector in Panama**

Organization / Institution	Role in the Waste Sector
Panama Municipal and Household Waste Management Authority (Autoridad de Aseo Urbano y Domiciliario de Panamá – AAUD)	- Established by Law No. 51 dated September 29, 2010. Responsible for the management, planning, operation, and inspection of Panama's national, municipal, commercial, and industrial waste management and landfill sites. - AAUD is also responsible for waste collection in Panama City.
Ministry of Health (Ministerio de salud – MINSAs)	- The authority to regulate, promote, evaluate, and monitor the management of solid waste from healthcare facilities. - Chairmanship of AAUD's Board of Directors
Ministry of the Environment (Ministerio de Medio Ambiente – MiAmbiente)	- Responsible for environmental training and educating the public on recycling. - AAUD Board Members
Panama City Environmental Management Agency (Dirección de Gestión Ambiental del Municipio de Panamá a – MUPA)	- The general goal is to reduce waste disposal by implementing the 3Rs through awareness programs, physical regulation, institutional strengthening, and the market economy. This is in order to contribute to the quality of life of Panamanian citizens.

Source: JICA Study Team additions based on JICA 2019

Indicator data on waste management in Panama are summarized below. These data were collected and organized from interviews and various literature.

**Table 14-56 Waste-related Data for Panama**

Indicator	Data	Source
Total inhabitants	4,380,000	UN, 2021
Total waste generation (ton/year)	1,472,262 ton/year, 4,400 ton/day	World Bank, 2018
Generation per capita (kg-capita-day)	1.22	World Bank, 2018
Collection coverage (%)	57.8	AAUD,2021
Collection service frequency	Daily (13.1%), two to five times a week (79.5%), and once a week (7.4%)	BID, 2015
Types of final disposal (%)	Total inadequate disposal: 55.9% (inadequate disposal is the result of the following factors) Total adequate disposal: 44.1% (2)	BID, 2010
Recycled material (ton/year)	Undetermined	
Recycling rate (%)	5% (of the total)	AAUD, 2021
Waste composition (%)	Organics: 31.4%, excluding the following Recyclable Waste: 3% Other: 18%-13.5% - Glass: 2.1% - Metals: 3.8% - Paper and paperboard: 27% - Plastics: 22.2% - Others: 13.5%	INECO/AUUD, 2017 COCA COLA/ FEMSA, 2019
Medical solid waste	30 ton/day, 10,950 ton/year	INECO/AUUD, 2017
E-waste generated in 2019	36 kt; 8.6 kg/inhabitant	M. Wagner, C.P. Baldé et. al, 2022
E-waste formally collected in 2019	0.08 kt; 0.02 kg/inhabitant	M. Wagner, C.P. Baldé et. al, 2022

Source: JICA Study Team

**Table 14-57 Waste-related data for Panama City**

Indicator	Data	Source
Total inhabitants	1,656,339	Instituto Nacional de Estadística, 2020
Total waste generation	1,000 ton/day	WOIMA, 2022
Generation per capita	351.5 kg/year	D-Waste, 2013
Collection coverage (%)	84% 91%	World Bank, 2018 INECO/AUUD, 2017

Source: JICA Study Team

## 2) Assistance Provided by JICA

The following projects in the waste sector have been implemented in Panama in the past.

**Table 14-58 Waste-related Projects Conducted by JICA in Panama**

Project	Year	Form of Cooperation	Contents
The Project for Improvement of Solid Waste Management for the Municipality of Panama in the Republic of Panama	2003	Technical cooperation	Support for human resource development in strengthening the waste relay transportation system, improving collection vehicle management, and enhancing final disposal management in the administrative region of Panama
Establishment of the Integrated	2015	Individual	Guidance in establishing a comprehensive waste

Project	Year	Form of Cooperation	Contents
Waste Management Plan Based on the 3R Approach (Reduce, Reuse, and Recycle) – Expert in Rules and Regulations		cases (specialists)	management plan based on the 3R approach (Reduce, Reuse, and Recycle)

Source: JICA Study Team

### 3) Laws and Strategies on Waste Management and Recycling

Panama's national strategy and legislation for waste management are shown in Table 14-59 below.

**Table 14-59 Waste-related Strategies and Legislation in Panama**

	Strategy/Legal System		Overview
Strategy	National Plan for Comprehensive Waste Management 2017-2027	Plan Nacional de Gestión Integral de Residuos, 2017-2027	National Plan for Integrated Waste Management (2017-2027): <ul style="list-style-type: none"> <li>It defines the guidelines, objectives, and the main lines of action necessary to carry out sustainable waste management in Panama.</li> </ul>
	Municipal Plan for Comprehensive Management of Solid Waste, Panama City (2016)	Plan Municipal de Gestión Integral de Residuos en Ciudad de Panama (2016)	<ul style="list-style-type: none"> <li>It is the result of the effort made to meet the demands of the population to provide a real solution to the management of urban waste and the commitments made by the Mayor's Office of Panama in its Government Plan.</li> </ul>
Legislation	Law 276 Integral Management of Solid Waste in the Republic of Panama.	Ley 276 que regula la gestión integral de residuos sólidos en la República de Panamá	Panama National Integrated Waste Management (2021) <ul style="list-style-type: none"> <li>Integral management of solid waste in the Republic of Panama</li> <li>Establishes rules on the disposal, collection, recycling, and allocation of tax incentives to promote the reuse of waste</li> <li>Defines the competences of MINSA for the management of hazardous and non-hazardous waste and the competences for the Urban and AAUD in relation to non-hazardous waste</li> </ul>
	Zero Waste Policy and its framework of action for comprehensive waste management and dictates other provisions (Law 33 of March 30, 2018)	Política Basura Cero y su marco de acción para la gestión integral de residuos, y dicta otras disposiciones (Ley N° 33 de miércoles 30 de mayo de 2018)	<ul style="list-style-type: none"> <li>This law introduced the Zero Waste Policy as part of a comprehensive waste management framework, based on the concept of a circular economy.</li> <li>The Zero Waste Policy is also modelled on a closed-cycle waste system, where the end-of-life products and waste are treated as resources. The law also creates a National Education Program to promote a Zero Waste Culture (3Rs).</li> </ul>
	Law 41/1988 General of the Environment, with its modifications, such as Executive Decree No. 34/2007	Ley General del Ambiente (Ley No. 31, 1988)	<ul style="list-style-type: none"> <li>Establishes within the Panamanian normative guiding framework a series of policies to be carried out, objectives, and lines of action to be implemented, through "the activities carried out by the public sector and civil society as a whole, so that environmental management progressively applies the minimization of pollution at its source, and the adequate and environmentally sound management of residues and waste, applying the best practices, techniques, and available technologies".</li> </ul>

Source: JICA Study Team update based on JICA 2020



#### **4) Waste Management in Panama City**

##### **a) Current Status and Issues in Waste Management**

In the country of Panama, Law 276 was enacted in December 2021, providing new regulations and financial incentives for integrated waste management and investment throughout Panama. Law 276 specifies the responsibilities of AAUD, MINSA, and MiAmbiente for waste management and provides for joint waste management plans and solutions. In addition, the development of laws and regulations is underway, with Law No. 223 providing environmental incentives to businesses related to 3Rs and Law No. 187 (2021) initiating regulations on disposable plastics.

On the other hand, as for the external evaluation of waste management in Panama, the evaluation at the end of the "Panama Administrative Region Waste Management Capacity Enhancement Project (JICA, 2003)" stated that "the project objectives were partially achieved due to a change of government that was finalized just before the project was completed". As a result, waste management has been left unresolved for many years due to the low policy priority and the fact that plans considered by the previous government were returned to the drawing board due to the change of government. This survey will review the state of waste management in Panama today, and in addition to reassessing outstanding issues, will examine solutions to these issues from new initiatives.

##### **i) Generation, Collection, and Transportation**

- AAUD collects and hauls trash in Panama City and San Miguelito. Some are covered by private operators. According to AAUD, the number of collection vehicles is insufficient and underserved.
- The frequency of waste collection in Panama City varies from one to three times per week, depending on payment status. Coverage rates of 84% or 91% have been reported.
- In the Panama Metropolitan Area (Panama City and San Miguelito), the cost of collecting household waste is USD 7-11/month. However, the high number of delinquent payments is a problem. Other municipalities charge lower collection fees, so even if payment is made, the waste management service fund is still insufficient.
- Panama City's final disposal site is located on the hills of the west side of the city and is inefficiently operated due to the long hauling distance for collection vehicles to and from the disposal site. In addition to this, there is also traffic congestion of vehicles heading to the disposal site within the area.

##### **ii) Processing and Recycling**

- The recycling market is still developing in Panama, and Law 223 will provide economic incentives for intermediate treatment plants, which are expected to promote the 3Rs in the future.
- Currently, the entire system needs to be improved as collection vehicles are not in place to separate household waste.
- Panama City (MUPA) has implemented the Basura Cero program and has installed and is operating sorting and collection bins in the city, as shown in the left photo of Figure 14-38.
- FAS Panama, a non-profit organization, has a recycling station in Ciudad del Saber for the past 12 years, where citizens can bring in their own vehicles with their sorted trash, including plastic bottles, cans, aluminum, and glass. They have 2,000 to 2,500 visitors

per month. Only paper is recycled in Panama, while other valuable materials are sold to Costa Rican traders.<sup>3</sup>



Access road to the disposal site is muddy during the rainy season due to slopes. Garbage left on side roads is observed.



Areas where fee payments are overdue may be littered with garbage due to infrequent collection.

Source: Photo by the JICA Study Team

### Figure 14-37 Waste Transportation in Panama City



Separate collection boxes installed by the City of Panama in 25 locations throughout the city



Recycling station set up by a non-profit organization in Ciudad del Saber

Source: Photo by the JICA Study Team

### Figure 14-38 Panama City Intermediate Treatment Facility

#### iii) Disposal

- Panama City has one final disposal site, a landfill called Cerro Patacon. The landfill covers an area of 132 ha and receives 40% of the waste generated in the country. Of the 2,200 tons/day of waste collected, about 10%, composed mostly of tires, is recycled.
- It has been in operation since 1986, but has been closed and expanded in phases.
- The repository is operated under concession (Urbalia S.A.) and its license will expire in March 2023. To date, the concession has not been successfully operated, and there are many problems associated with the management of the repository, including infrastructure development.
- Environmental problems caused by mismanagement include air pollution from fires in 2013 and environmental contamination from landfill collapse and untreated seepage from heavy rains in 2021.

<sup>3</sup> <https://faspanama.org/>

- Approximately 300 waste pickers work at the landfill, and although ID control and vaccinations are in place, occupational health management is a challenge.
- The repository operation plan after March 2023 is not yet in place.



Cerro Patacon disposal site. Located on a slope, the site requires road maintenance for delivery of transportation trucks and heavy equipment.



Collection of valuable materials by waste pickers.

Source: Photo by the JICA Study Team

**Figure 14-39 Final Disposal Site in Panama City**

#### iv) Private Sector Participation in the Waste Business

- The need to improve the efficiency of waste collection in Panama City has been identified in the master plan. To achieve this, a relay station has been installed and is now operational in the eastern part of the city through a private operator. The operator collects, transports, and performs intermediate treatment.
- This relay base is also used by AAUD.



The number and volume of vehicles entering the relay station are controlled, and separate collection and recycling are promoted.



The waste brought in is transferred to larger trucks for transport to the disposal site.

Source: Photo by the JICA Study Team

**Figure 14-40 Relay Base Built by a Private Operator**

#### b) Basura Cero (Zero Waste) Program

The Environmental Management Department of Panama City (MUPA) has implemented the Basura Cero Program. This program began in 2014 and has been collecting recyclables and collecting data. Activity was stalled in 2020 due to the COVID-19 pandemic, but it has resumed operations in 2021.

Initially, there were 31 separate collection boxes in the city, but now there are only 25. The amount of

recyclables collected from January to October 2020 was 3,348 tons. Although the collection rate is still low, given that Panama City generates 1,000 ton/day of waste, the collected recyclables are sold to two companies.

The *Basura Cero* unit is comprised of 21 officials and faculty members. The company has five collection vehicles. MUPA has contracted ESRI, a GIS software manufacturer, and has plans to gather geographic information on the collection area and collection boxes to create a public map interface in the future.

In addition, MUPA has an educational program called “*Tour de Guayo*,” in which a MUPA staff visits 14 elementary schools in the city to conduct workshops on waste separation and disposal for younger students. Guidebooks and brochures for use in educational programs are also available.

MUPA's analysis indicates that in order to expand these 3R promotion activities in the future, it is necessary to 1) stimulate education and business, 2) expand resources through collaboration with NPOs and other organizations, and 3) promote information sharing with related government agencies.

## (2) Development and Cooperation Scenarios in Panama

### 1) Development Scenario

#### a) Development Issues and Strategies

The development issues related to waste management in Panama City were summarized from the literature review and interviews as shown in Table 14-60. The cooperation areas and numbers in the table correspond to "Table 14-17 Cooperation Needs Assessment for the Establishment of Waste Management Implementation Systems in Each Country".

**Table 14-60 Issues in Waste Management in Panama City**

Field of Cooperation	Issues
(1) Improving the legal system	The master plan for integrated waste management needs to be updated. Guidelines are needed for local governments to promote the 3Rs.
(2) Organizational improvement	Lack of organization and staff, lack of capacity, and failure to perform concessions
(3) Financial improvement	Lack of financial resources for new investments
(4) Promoting appropriate collaboration with the private sector	Inactive recycling industry
(5) Promotion of efforts by waste generators	Low political priority for outbreak control and low awareness among operators
(6) Promotion of citizen participation	Low awareness and participation of residents in sorting and collection
(7) Consideration for culture and society	Improved labor for waste pickers

Source: JICA Study Team

Based on this, the development goals and strategies for waste management in Panama are presented below.

- Development goal: Improve public health and reduce environmental impact in Metropolitan Panama through proper waste management
- Objective: Implement environmental conservation through proper waste management and 3R promotion in Metropolitan Panama

**Table 14-61 Strategies for Waste Management and Summary of Each Strategy in Panama**

Subject	Strategy	Strategy Overview
Waste (Panama)	1. Improving public health by strengthening waste management in Panama City	Improve public health by promoting waste reduction and sorting in Panama City, as well as proper collection, transportation, and disposal.
	2. Reduction of environmental impact and prevention of pollution through proper disposal of waste	Reduce environmental impact and prevent pollution through proper landfill management in Panama City.

Source: JICA Study Team

## b) Programs and Projects

In the waste sector of Metropolitan Panama, waste management efforts are being made, but the problems at each management stage have not been fundamentally resolved. First, AAUD should take the lead in updating the master plan for waste management to evaluate the current status and organize issues based on past efforts. Additionally, there is a need to study action plans that can be implemented in a sustainable manner.

Grassroots actions by MiAmbiente and MUPA to reduce waste and implement separate collection are also important. In addition, with the renewal of the concession for the Cerro Patacon final disposal site coming up in March 2023, this is an opportunity to move the issue of repository management toward a solution and should be fully considered.

In the past, Panama has seen challenges in terms of low policy priority and business continuity, as JICA's cooperation projects have been affected by the change of government. Private sector participation in the operations sector may be one of the solutions, and the government needs to promote institutional development and capacity building in outsourced operations management.

**Table 14-62 Programs and Projects Proposed in Solid Waste Management in Panama**

Subject	Strategy	Program	Project	Period
Waste Management (Panama)	Improvement of public health through better waste management in Panama City	1. Integrated planning	1-1 Update of Waste Management M/P for Metropolitan Panama	Short
			1-2 Panamanian Implementation Plan for 3R Promotion Strategy	Short
			1-3 Strengthening the capacity of government organizations	Medium
			1-4 Construction of Information Management System	Medium
		2. Establishment of a waste collection, transportation, and sorting and disposal system in Panama City	2-1 Update of operational guidelines and system improvements	Short
			2-2 Improvement of management capacity of private sector outsourcing	Short
			2-3 Raising residents' awareness on weight reduction and sorted collection, and publicity activities	Long
			3. Reduction of environmental impact and prevention of environmental pollution through proper repository management	3-1 Renewal of concessions for disposal sites
	3-2 Improvement of the environment at disposal sites	Medium		
	3-3 FS for closure and development of new disposal sites	Short		
	3-4 Construction of new disposal facility	Medium		
	Establishment and realization	4. Realization of a society with a	4-1 Institutional development, technological innovation, private sector participation, and	Long

Subject	Strategy	Program	Project	Period
	of a recycling-oriented society	smaller environmental burden by promoting the 3Rs	financing to promote 3R	

Short term: 2023-2025, Medium term: 2023-2027, Long term: 2023-2032

Source: JICA Study Team

## 2) Cooperation Scenarios

Programs/projects to be undertaken by JICA are proposed in Table 14-64 based on the selection criteria in Table 14-63.

Waste management in the Panama metropolitan area is moving toward the use of the private sector, including the concession of disposal sites. In addition, the private sector has begun to participate in the collection, transportation, and sorting of refuse. It is desirable to promote outsourcing in order to reduce the burden on the administrative side. In addition, there are issues related to the operation and management of the final disposal site, and technical and financial cooperation may be provided at the request of the Panamanian government.

Since Panama is one of the countries in Central America where Japanese companies are highly interested in participating, consideration should also be given in providing business support through new schemes, such as a waste-to-energy project using JCM.

**Table 14-63 Program/Project Selection Criteria (Panama: Waste Management)**

Selection Criteria	Contents
(1) Consistency with the Government of Japan's Country Development Cooperation Policy	- The Japanese government has stated that one of the priority areas of cooperation with Panama will be cooperation in the development of environmentally friendly economic infrastructure.
(2) Alignment with JICA's Global Agenda Goals	- Under "18. Environmental Management", the goals of the agenda are to implement cooperation focusing on strengthening the capacity of administrative bodies in charge of environmental management and to promote environmental measures for waste management.
(3) Applicable modalities in Panama	- In the short to medium term, it will be difficult to provide support through both paid financial cooperation and grants, but the possibility of realization will be considered in the future.
(4) Effective utilization of the results of past projects implemented by JICA	- To make effective use of the results of JICA's past projects in Panama and neighboring countries.

Source: JICA Study Team

**Table 14-64 Projects and Programs in Solid Waste Management in Panama City**

Strategy	Program	Project	Cooperation Modality
Phase 1: Improved public health	1. Integrated planning	1-1 Update of Waste Management M/P for Metropolitan Panama	<ul style="list-style-type: none"> <li>- Technical cooperation</li> <li>- Training</li> <li>- Dispatch of Experts</li> </ul>
		1-3 Strengthening the capacity of government organizations	
		1-4 Construction of Information Management System	
	2. Establishment of a waste collection, transportation, and sorting and disposal system in	2-1 Update of operational guidelines and system improvements	<ul style="list-style-type: none"> <li>- Technical cooperation</li> <li>- Training</li> <li>- Dispatch of Experts</li> </ul>
		2-2 Improvement of Management Capacity of Private Sector Outsourcing	
		2-3 Raising residents' awareness on weight reduction and sorted collection, and publicity activities	

Strategy	Program	Project	Cooperation Modality
	Panama City		
Phase 2: Reduction of environmental impact and prevention of pollution	3. Reduction of environmental impact and prevention of environmental pollution through proper repository management	3-1 Renewal of concessions for disposal sites	<ul style="list-style-type: none"> <li>- Technical cooperation</li> <li>- Loan</li> <li>- Training</li> <li>- Dispatch of Experts</li> <li>- Other funds (co-finance)</li> </ul>
		3-2 Improvement of disposal site environment, introduction of equipment	
		3-3 FS for closure and development of new disposal sites	
		3-4 Construction of new disposal facility	

Source: JICA Study Team

### 14.3.6 Plastic Waste Initiatives in Mexico

#### (1) Overview of the Waste Management Sector

The organizations and roles related to the waste management sector and statistic data in Mexico are summarized in Table 14-65 and Table 14-66.

**Table 14-65 Organization and Role of Waste Sector in Mexico and Mexico City**

Organization/Institution	Role in the Waste Management Sector
Instituto Nacional de Ecología (INECC)	<ul style="list-style-type: none"> <li>- Coordination and implementation of research, and scientific and technological research projects on climate change, environmental sustainability, green growth, and assessment of climate change policies</li> </ul>
Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT)	<ul style="list-style-type: none"> <li>- Promote comprehensive management of municipal solid waste, special waste, and hazardous waste. This includes waste control, economic valuation, and proper final disposal.</li> <li>- Establish the “National Plan of Action on Raw Waste and Plastic Contamination”</li> </ul>
Secretaría de Medio Ambiente de la Ciudad de México (SEDEMA)	<ul style="list-style-type: none"> <li>- Mexico City waste management agency. Action plan for Mexico City circular economy. Implement environmental policies that focus on the sustainable production and consumption of plastic products.</li> </ul>
Secretaria de Medio Ambiente del Estado de México (SMA)	<ul style="list-style-type: none"> <li>- Waste disposal agency of the State of Mexico.</li> <li>- Body responsible for reviewing and approving extended responsibility management plans for producers containing plastics</li> </ul>
Asociación Nacional de la Industria del Plástico (ANIPAC)	<ul style="list-style-type: none"> <li>- Manage the entire supply chain, including producers and distributors of Mexican plastic raw materials, recyclers, producers and distributors of machinery and equipment, and all forms of plastic processing.</li> <li>- Implement the New Plastics Economy initiative.</li> </ul>

Source: JICA Study Team

**Table 14-66 Plastic Waste – Related Data of Mexico**

	Indicator	Data
1. Plastics Market	Consumption of plastics per capita	66 kg/inhabitant/year
	Percentage of packaging use	54% PET, 23% HDPE, 8% LDPE, 8% PP, 0.1 % PVC
	Used plastic for manufacturing in containers and packaging	1.3 million tons
	The apparent consumption of plastics	5,917,000 tons (ANIPAC, 2021)
	Total apparent consumption used for containers and packaging	44.7%
	Sources of supply for the preparation of containers and packaging	<ul style="list-style-type: none"> <li>- Post-consumer recycling: 13.8%</li> <li>- Postindustrial recycling: 2.4%</li> </ul>

	Indicator	Data
		- Renewable virgin raw material: 12.4% - Fossil virgin raw material: 71.3%
2. Plastic waste management indicators	Generation of plastic waste per capita	43 to 59 kg/inhabitant/year (Vazquez, A. (2022)).
	Collection rate of all plastic containers and packaging	40%
	Recovery rate	- PET recovery rate: 52% (ECOCE, 2022) - HDPE recovery rate: 22% - PVC recovery rate: 41% - LDPE recovery rate: 32% - PP recovery rate: 20% - PS recovery rate: 8%
	Content of recycled material in containers and packaging (2021)	14%
	Plastic recycling rate	30% (ANIPAC, 2021)
	Waste composition (%)	- Organics: 46.42% (SEMARNAT 2020) - Recyclable Waste: 31.55% - Other: 22.03%
	Plastic Waste composition in MSW	- PET bottle: 2.63% - Rigid plastic and film: 7.66% - Expanded polystyrene: 1.55% - Polyurethane: 0.55 %

Source: Second Report of the National Agreement for the New Economy of Plastic in Mexico, December 2021

## (2) Assistance Provided by JICA for 3Rs

JICA has implemented surveys and projects related to marine plastic waste shown in Table 14-66 in Mexico.

**Table 14-67 Projects on Marine Plastic Waste Implemented by JICA in Mexico**

Project	Year	Form	Contents
North and Latin America Data Collection Survey on Marine Plastic Litter in the Caribbean Region	2020	Technical Cooperation	For the 17 countries facing the Caribbean Sea (including Mexico), the study team collected and organized information on the status of marine plastic litter, the current status and issues of countermeasures, cooperation needs, and related Japanese technology.

Source: JICA Study Team

On March 15, 2021, JICA and the Alliance to End Plastic Waste (AEPW<sup>4</sup>) agreed to improve plastic waste management on a global scale and contribute to the formation of a circular economy. For this purpose, a memorandum of cooperation was signed. Marine plastic litter has become a global issue that transcends national borders, requiring international efforts to reduce it. Therefore, based on the partnership agreement, JICA and AEPW plan to promote sustainable plastic waste management through the following initiatives (JICA News dated March 16, 2021).

1. Raising awareness and promoting understanding of the global plastic waste problem
2. Consideration and support for improvement measures for waste management at the local level
3. Strategic planning and sharing of knowledge and best practices related to the circular economy

<sup>4</sup> AEPW: An international non-profit organization working with government agencies, environmental and economic development NGOs and civil society around the world to tackle the problem of plastic waste.



### (3) Laws and Strategies for Waste Management and Plastic Waste

The legal system for waste and plastic waste management in Mexico is shown in Table 14-67.

**Table 14-68 Legal System Related to Waste and Plastic Waste in Mexico**

	Plan/Legislation		
Plan	National Plan of Action on Marine Debris and Plastic Pollution (July, 2022) : A joint UN and SEMARNAT initiative, identifying priority actions, interventions and indicators to enable the implementation of public policies on marine waste and plastic pollution to protect human rights to marine and healthy environments;		
	National Private Collective Plan for Post-Consumer Waste Management of PET, HDPE, ALUMINUM and Other Materials in Mexico, with registration folio before SEMARNAT, PM-ROTR-008-2013.		
	National Mixed Collective Plan for the Management of Plastic Waste of Polystyrene, Polypropylene, Polyethylene and its Variants, with folio PM-ROTR-18-2018,		
	Circular Economy and Waste Management Plan Post-Consumption of Containers and Packaging of the Sector of the Personal and Home Care		
	The Plastic Bag and Film Management Plan Marketed in Mexico (PlanBolsa), whose registration before SEMARNAT is PM-ROTR-020-2020		
Legislation	General Law for Prevention and Management Integrated Waste (LGPGIR, October 2003),	Ley general para la prevención y gestión integral de los residuos (LGPGIR), 2003	General Law 2003 on Waste Control and Integrated Management: Laws referring to environmental protection in terms of prevention and comprehensive waste management on the territory. It aims to promote sustainable development through regulation, generation, recovery, and management of hazardous waste and municipal solid waste.
	Official Mexican Standard NOM-161-SEMARNAT-2011	-	Standard for classifying specially controlled waste and determining waste subject to management plans
Others	Article 25, Section XI Bis of the Solid Waste Law of the Federal District	-	Twenty-eight states have laws banning the use of single-use plastics such as straws.

Source: JICA Study Team

Regarding the regulation banning the use of single-use plastics, interview surveys have been conducted with the Mexican government, Mexico City, and plastics stakeholders regarding its effectiveness during the November 2022 field survey. At that time, it was observed that (on the plastics manufacturing side) the definition of single-use plastics differs from state to state, making it difficult to standardize manufacturing processes and products to comply with this regulation. Meanwhile, for the regulatory side, it is not possible to assess how much this regulation contributes to the reduction of plastic waste because monitoring methods and evaluation indicators have not yet been established.

Although this regulation has attracted attention as an epoch-making initiative to promote "Reduce" among the 3Rs, its effectiveness has not been evaluated at this point.

### (4) Pacific Alliance (Alianza del Pacifico)

The Pacific Alliance (PA) is an economic development initiative by the four Latin American countries of Chile, Colombia, Mexico, and Peru. There are 59 observer countries, and Japan has been an observer since January 2013.

There are 26 teams divided into topics such as Trade Facilitation and Customs Cooperation, experts who analyze the proposals of the Business Council of the PA, SMEs, Services and Capitals, as well as

the technical groups of Environment and Green Growth, the Operator subgroup Authorized Economic (OAS), among others. Thus, the consolidation of the PA bloc continues to strengthen and serve as an example for the region. The PA constitutes the eighth economic power and the eighth export power worldwide.

The Technical Group on Environment and Green Growth (GTMACV) arose after the first meeting of the ministers of Environment of the PA, within the framework of the XX Forum of Ministers of Environment of Latin America and the Caribbean, held in Cartagena de Indias on March 30, 2016, recognizing the need to strengthen growth and sustainable development among the member countries of the alliance. Its general objective is to build a space for dialogue between the governments of the PA countries and the private sector, for the development and implementation of an agenda that promotes sustainability in the PA and guides its actions towards green growth, considering the characteristics and realities of each country. The chairmanship of the Pacific Alliance in FY2022 was held by Mexico, but the chairmanship will shift to Peru in FY2023 (scheduled for January 2023).

## **(5) Plastic Management in Pacific Alliance**

The PA's mandate is based on two declarations:

1. Declaration of Santiago (2020). Implement the Roadmap of the Presidential Declaration on the Sustainable Management of Plastics, through the adoption of joint actions with the private sector, strategic partners, and international organizations.
2. Lima Declaration (2019). Work, together with public and private institutions, as well as international organizations, on actions that allow the implementation of the Declaration on the Sustainable Management of Plastics

Its sustainable management of plastics mentioned above defines the following four roadmaps:

1. Innovation, research, and business transformation
2. Plastic waste management and recycling
3. Circular economy
4. Regulations, good practices, and public politics

Each area of action has been assigned to one of the four countries that make up the Alliance, with Mexico assigned to document its implementation under the Plastic Waste Management and Recycling.

In response to this, in Mexico, the Asociación Nacional de la Industria del Plástico: National Plastics Industry Association (ANIPAC) is carrying out the following activities to document the implementation status in Mexico:

- 1) Enlightenment activities for stakeholders related to the plastic use chain
- 2) Organizing information on substitution of recycled raw materials in plastic packaging products and recycling rate of plastic products (PET, HDPE, LDPE, PP, PS)

## (6) Plastic Waste Management in Mexico

### 1) National Agreement for the New Plastics Economy in Mexico : Acuerdo Nacional para la Nueva Economía del Plástico en México

Mexico's National Agreement for a New Economy in Plastics, signed on December 5, 2019, identified institutions with corresponding roles and solutions for companies, government, society, and pollution from plastic waste in the plastic value chain. To realize this vision, stakeholders set ambitious goals to eliminate single-use plastics by 2030 through technological innovation so that all plastics are reusable, recyclable, compostable, or usable.

In accordance with The New Plastics Economy Global Commitment (UNEP)<sup>5</sup>, the following goals are set.

- 1) By 2022, eliminate the use of intentionally added microplastics for exfoliation, polishing, and cleaning
- 2) Set progressive recovery targets and content of recycled materials as follows:
  - 2025: PET recovery rate of 70%, plastic average of 30%, and 20% recycled content
  - 2030: Reuse, recycle, compost, and 100% reusable packaging and containers. Recovery rate: PET 80%, average 45% for all plastics., material content recycle rate 30%

Progress reports on these goals have already been published for 2020 and 2021 (ECOCE). The report includes information from 85 private companies related to plastics, whose sectors include material raw materials, containers and packaging, food, beverages, alcoholic beverages, personal care, and home care.

The recycling status of plastic waste in Pacific Alliance countries is shown in Table 14-68. Although many countries do not publish any specific historical data, it is clear that recycling rates are increasing due to the efforts of each country. In addition, Mexico has made progress in its efforts among the Alliance countries, and the know-how that Mexico possesses could be used as a reference by other countries.

**Table 14-69 Status of Plastic Recycling in Pacific Alliance Countries**

Country	Total amount of generated plastic waste (Million Ton/year)			Plastic recycling rate (%)		
	2010	2015	2020	2010	2015	2020
Mexico	4.51	4.75	5.42	11	—	30
Colombia	—	—	1.2	—	11.82	20
Peru	—	0.8	—	—	0.3	1
Chile	—	—	—	—	—	—
Japan	9.4	8.79	8.22	77	83	85

— : Data not found on internet

Source: Organization website from each country

### 2) "Caribe Circular," a plastic waste prevention project in Central America and the Caribbean

The project is funded by the German Federal Ministry for Economic Cooperation and Development

<sup>5</sup> <https://www.unep.org/new-plastics-economy-global-commitment>

(BMZ), the European Union (EU), and the Government of Mexico, and is implemented by the German cooperation organization GIZ in cooperation with the Central American Commission for Environment and Development (CCAD) and the Central American Integration System (SICA) and the Secretariat of Ecology and Environment of the State of Quintana Roo. The Caribbean Circular Project is included in the Regional Program for Solid Waste Management in the Caribbean promoted by the European Union within the framework of the Economic Partnership Agreement between African, Caribbean and Pacific Member States (CARIFORUM).

The initiative promotes a circular economy with an inclusive economic model that creates opportunities for sustainable growth and aims to promote long-term economic productivity and green jobs while addressing global challenges such as climate change, pollution, and biodiversity loss.

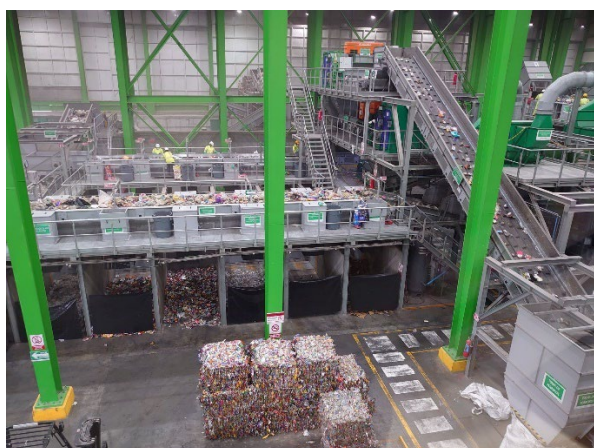
The Caribbean Circular Project is active in the countries of Belize, Guatemala, Honduras, Mexico, and the Dominican Republic. In addition, due to the regional nature of the project and its collaboration with SICA, El Salvador is a strategic partner in the project.

### 3) 3R Initiatives in Mexico City

The study team visited a resource recovery and separation plant operated by Mexico City, the Secretaría de Obras y Servicios de la Ciudad de México (SOS). Automated equipment designed and ordered in Germany is in operation, and separates plastic, paper/cardboard, and metal. The facility can also be viewed by outsiders through the glass walls. It also has a waste treatment facility that can be jointly treated by the RDF (Refuse Derived Fuel) and cement divisions.

In Mexico City, 8,000 tons/day of waste will be transported to the final disposal site and 1,000 tons/day will be transported to the facility (approximately 2,500 truckloads).

SOS has a track record of providing technical cooperation to Bolivia regarding administrative services for solid waste management and showed a positive attitude toward sharing experiences such as South-South cooperation schemes.



Vallejo Waste Separation Facility in Mexico City



It is possible to tour the factory from the 2nd floor of the facility.

Photo: JICA Study Team

**Figure 14-41 Intermediate Treatment Facility in Mexico City**

## (7) Transition to a New Plastic Economy

### 1) Issues

Although Mexico's approach to plastic waste is advanced within the Central American and Caribbean region, the interview survey revealed that, as in other countries, there are several challenges as shown in Table 14-69. In order to realize a circular economy, it is necessary to resolve these issues, which can be said to be universal to waste management in general.

**Table 14-70 Challenges in Managing Plastic Waste in Mexico**

Issue	Challenges
(1) Improving the legal system	Inability to systematize, update, and verify information
(2) Organizational improvement	Lack of coordination among actors There is a dominance of the informal sector
(3) Promoting appropriate collaboration with the private sector	Lack of research and development
(4) Promotion of efforts by waste generators	Low political priority for reducing plastic waste
(5) Promotion of citizen participation	Residents' awareness and participation in the sorting and collection of plastics is low.

Source: JICA Study Team

### 2) Policy for Future Effort

The following table proposes specific actions that the Mexican government could take to resolve the above issues. Under the initiative of all relevant actors, both governmental and private, a national strategy for the new plastic economy must be developed and widely disseminated.

**Table 14-71 Mexico's Policy on Initiatives for a New Plastics Economy**

Issues	Initiatives
Improving the legal system	- Planning and developing a national strategy for the prevention and management of plastic waste - Establishment of reference values for plastic waste management
Organizational improvement	- Building an equal and objective organization based on the participation of all stakeholders
Promoting appropriate collaboration with the private sector	- Strategy and system building at the initiative of all relevant actors (government and private) - Research and development on sustainable management of plastic products and waste under a circular economy scheme
Promotion of initiatives by emitting companies	- Documentation of business initiatives and good practices related to the management and use of plastic waste and the establishment of a public information system
Promotion of citizen participation	- Environmental education in primary education based on the national plan - Promotion of corporate initiatives, review of fee structure and taxation system for waste disposal, and measures to improve incentives

Source: JICA Study Team

## 14.3.7 Recommendation

### (1) Directions for Development Scenarios in the Waste Sector in Central America and the Caribbean

Based on the results of the study on waste management in Central America and the Caribbean, the following four support measures were considered:

#### 1) Assistance for Institution Building to Promote Cooperation between the Central

## **and Local Governments**

For proper waste management, the central government must have laws in place, a plan for implementation, and an implementation system in place. In many cases, local governments are the implementing entities, and in order to facilitate implementation, technical and financial support, continuous guidance for improvement, and the application of penalties and regulations for noncompliance are required.

In many cases, waste management is put on the back burner in the region because local governments cannot keep up with implementation capacity. The central government needs to develop bylaws, guidelines, and practical manuals to help local governments implement the law, as well as provide education and training. In addition, not only municipalities but also the central government need assistance in organizing. This includes the formulation of bylaws, in cases where the organizational structure of the central government is weak and therefore not adequately managed.

The National Waste Management System and Capacity Strengthening Project implemented in the Dominican Republic developed relevant laws and regulations and established management systems for central and local governments, and developed planning guidelines, guidelines, and manuals for municipalities. These results have been shared within the Central American and Caribbean region and are expected to continue to be used effectively.

### **2) Utilizing the Know-how of Japanese Local Governments**

Waste management finally begins to turn around when residents' awareness and participation in environmental conservation, the cooperation of companies, and government services come together. In many countries, there is generally little awareness of the waste problem, and there is no end to improper management, such as residents disposing of household waste in rivers before garbage separation, collection companies illegally dumping waste, and governments leaving waste spills from open dump sites.

Japanese local governments have been working to build a recycling-oriented society through thorough waste management based on consensus building and citizen participation. The ingenuity and know-how that each municipality has brought to the table in the face of differing geography and various conditions are a valuable teaching tool. For example, geographic isolation, peculiarities of economic structure, and the uneconomical nature of recycling in remote islands and insular countries make waste management more vulnerable than in continental countries. Japan also has many remote islands and is thought to have useful knowledge for overcoming challenges unique to islands. In addition, for cases such as the Caribbean Sea, where the garbage problem is destroying tourism resources and seriously affecting the country's economy, Japan's expertise in watershed management may serve as a reference. This is because the country has mountains and oceans that are geographically close and because environmental management has been based on the concepts of “Sato-yama”, “Sato-chi”, and “Sato-umi”.

### **3) Collaboration with the Private Sector**

The use of the private sector in the waste sector includes the outsourcing or privatization of some services, the formation of public-private partnership (PPP) projects, and the development of businesses

by Japanese SMEs.

Particularly problematic in the Central American region is the lack of sustainability. Administrative services are interrupted by elections and changes of government. Plans prepared under the previous administration are not utilized, and know-how is lost due to the transfer of government officials who have transferred technology. One way to compensate for this would be to work with the private sector. However, for the private sector to enter the waste sector, a fee collection mechanism must be in place for the business to continue. In addition, a close cooperative relationship with the Ministry of Environment and local governments is essential, and the basic structure of the waste sector must be in place.

In Panama, there was a case in which JICA trainees developed their own project to establish a waste collection relay station, which was included in the master plan but had not been implemented. They operated it themselves and leased it to the government. Although direct financial support for such private sector projects is difficult under the current JICA scheme, it is possible to provide lateral support by offering training opportunities to private sector personnel, strengthening the administrative capacity to promote private sector outsourcing, and incorporating such projects as pilot projects.

In addition, the use of Japan's strengths in technology includes the installation and maintenance of semi-aerobic landfill (Fukuoka method) disposal sites, collection vehicles, collection services, waste incineration and power generation, medical waste treatment, recycling technology, and the utilization of biomass. Some Japanese companies have already expanded into Asia and other regions, and support for expansion into Central America and the Caribbean and support in business matching are possible.

#### **4) Comprehensive Support**

Development in the waste sector requires solutions to both soft issues. These are building human and organizational capacity and fostering public interest. On the other hand, part of the identified hard issues includes equipment and infrastructure development. For example, JICA provides the following: support for the formulation of master plans through development study-type technical cooperation, equipment (refuse collection vehicles, bulldozers, and other heavy equipment) necessary for the implementation of each project proposed in the master plan through grant aid, and capacity building support in technical cooperation projects.

In Central America and the Caribbean, it is difficult to implement the necessary menu of cooperation in all countries, and in some cases a significant amount of time has passed since the previous assistance. When forming future projects, it is important to strategically provide assistance as a comprehensive program, using the remaining assets in each country.

#### **(2) Study of Wide-Area Collaboration in the Waste Sector in Central America and the Caribbean**

##### **1) Effectiveness of Wide-Area Cooperation**

Central America and the Caribbean are each characterized by similarities in history, culture, and language, and by relatively small nation sizes. There is also a high level of initiative to seek effective development and aid as a region, with regional integration movements such as SICA and CARICOM. Since issues in the waste sector are common to all countries and are also treated as cross-border

environmental issues, wide-area cooperation is considered effective.

On the other hand, waste management is a local issue, and in many regions, local governments are responsible for its implementation. Waste reduction, efficient collection and transportation, proper operation of disposal facilities, and promotion of recycling are generally carried out by administrative units. However, limited budgets and human resources make it difficult to implement these measures.

Improving and developing waste management must be a long-term and waist-deep commitment. In order to respond to the cooperation needs of more countries and regions, it is important to keep in mind wide-area collaboration, actively promote sharing of development experiences within the region, study support models for issues, and increase the flexibility and efficiency of support, such as customizing and implementing support models in response to requests.

## **2) Triangular and South-South Cooperation, Use of Local Resources**

In the region, triangular cooperation has been implemented in Mexico, and the transfer of know-how from countries at an advanced stage of development, such as El Salvador and the Dominican Republic, to neighboring countries is expected to be highly effective.

In this study, the JICA Study Team confirmed the active role of JICA trainees in each country. These trainees from Japan and third country training programs have since returned to their home countries and have become key persons in promoting waste management in their respective positions in the government and the private sector.

JICA trainees and project counterparts are well versed in local conditions and have strong execution skills due to their network of contacts, which is a valuable asset cultivated through past JICA cooperation. The program needs to make them partners in future development cooperation in the region.

To do so, it would first be necessary to list and organize local resources. The organization could be used not only for registration as a project member, but also for providing a place for communication among local resources and for business matching with Japanese companies.

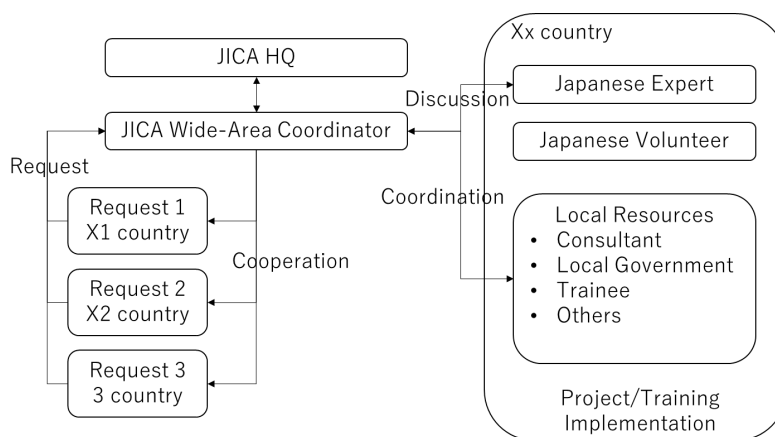
## **3) Consideration of Wide-Area Collaboration Support**

The concept of broad-based collaborative support is illustrated in Figure 14-42 (JICA, 2012). In the wide-area collaboration, a coordinator is assigned to the base office to provide support to target countries within the scope of its jurisdiction. In cases where it is difficult to assign a long-term expert in this manner, it may be possible to place personnel for a long period for the projects being implemented in the region.

The content of support will be considered on an individual basis, including training, dispatch of experts, and project-based support, depending on local needs. The study and implementation will be conducted in consultation with the aforementioned local resources and Japanese experts, and will be carried out with the agreement of the partner country.

It is expected that the ongoing "National Integrated Waste Management System and Capacity Strengthening Project Phase 2" in Dominican Republic can be developed into regional collaboration hubs and training opportunities for efficient sharing of results.





Source: Additions by the JICA Study Team based on JICA, 2012

**Figure 14-42 Conceptual Diagram of Wide-Area Collaboration Support**

The concept of wide-area collaborative support is organized as a roadmap as follows: Establish a wide-area collaboration system by working with local resources and continuing training and follow-up, and consider and provide individualized support as needed. While individual support is considered to be a long-term process, the establishment of a system is indicated as something to be implemented in the short to medium term.

	2023	2024	2025	2026	2027
<b>Strategy-1: Formulation of Wide-Area Collaboration</b>					
1-1. Dispatch of wide-area coordinator	Coordination				
1-2. Collaboration with local experts in each country	Collaboration				
1-3. Training in Japan / Overseas	Training and Follow up				
<b>Strategy-2 : Implementatio of Projects</b>					
2-1. Dispatch of Experts/ Volunteers	Implementation				
2-2. Implementation of Technical/ Financial Cooperation Project	Implementation				
	Implementation				

Source: JICA Study Team

**Figure 14-43 Roadmap for Regional Collaboration**

### (3) Bilateral Crediting Mechanism (JCM)

As of December 2022, there are three countries, namely: Mexico, Costa Rica, and Chile, in the Latin American region covered by JCM. Although there are no JCM projects for waste yet, companies in Costa Rica and El Salvador have also expressed interest in Japanese waste-to-energy projects. However, the track record of Japanese companies in waste-to-energy projects utilizing JCM to date has been limited to Asian countries as large-scale projects, and there are hurdles in terms of market size and financing in Central America and the Caribbean. Since there are only a few years until 2030, the target year for JCM, it is necessary to narrow down the speed and scale of project development. For example, in countries such as Mexico and Panama, where Japanese manufacturers and trading companies are interested in participating, there is a possibility of forming projects with major local beverage manufacturers.

## 14.4 Disaster Risk Reduction

### 14.4.1 Outline of the Study

#### (1) Scope of This Study

The scope and coverage of the disaster risk reduction subsector in this study are shown in Table 14-1.

In this study, natural hazards that should be taken into account by countries in developing disaster reduction infrastructure and strengthening disaster reduction capacity in Central American and Caribbean countries will be identified. In addition, based on the issues related to mainstreaming disaster reduction, items to be considered in future development cooperation for building a society resilient to disaster risk will also be identified.

#### (2) Define “Mainstreaming Disaster Risk Reduction”

In 2015, at the Third United Nations World Conference on Disaster Reduction, the guiding principles for disaster reduction efforts around the world were transferred from the Hyogo Framework for Action (HFA) established in 2005, to the Sendai Framework for Disaster Reduction 2015-2030. It sets seven specific global goals and four priority actions to achieve them, namely: 1. Understanding disaster risk, 2. Strengthening disaster risk management governance for disaster risk reduction, 3. Pre-investment in disaster risk reduction for resilience, and 4. Strengthening of preparedness for effective disaster response and "Build Back Better".

On the occasion of the Third United Nations World Conference on Disaster Reduction, the Japanese government appealed to the world for the importance of "mainstreaming disaster risk reduction". The significance of mainstreaming is to reflect and disseminate disaster prevention efforts. These include efforts to mitigate damage caused by disasters through proactive measures in all policies.

Mainstreaming disaster reduction has been defined in terms of the following three objectives, which will be discussed in this study as a cooperation policy to strengthen the disaster reduction efforts of each country.

[Mainstreaming Disaster Risk Reduction]

- Governments to make "disaster reduction" a policy issue
- Disaster reduction to be included in all development policies and plans
- Increased investment in disaster reduction

In the Sendai Initiative for Disaster Reduction Cooperation, Japan declares that it will continue to actively promote international disaster cooperation from the perspective of mainstreaming disaster reduction.

JICA also states that "disaster reduction mainstreaming refers to the comprehensive, integrated, and continuous implementation and deployment of risk reduction measures for disasters of various scales in all sectors of development at all stages (phases). It also aims to protect lives from disasters, achieve sustainable development, and reduce poverty by building resilient societies (JICA, "Handbook on Mainstreaming Disaster Risk Reduction", 2015).

## 14.4.2 Overview of the Disaster Risk Reduction Sector in the Region

### (1) Introduction

#### 1) Statistical Data to be Used

To assess damage in Central America and the Caribbean, this study will primarily use published data from EM-DAT and ECLAC. Although statistical data on disasters in the region have been systematized through the efforts of relevant organizations, there are differences and deficiencies in the figures depending on the source of information. For example, Table 14-72 shows the number of deaths and economic damage from Hurricane Mitch in 1998, the El Salvador earthquake in 2001, and the Haiti earthquake in 2010, with some variation in the figures depending on the source.

Therefore, when data from multiple sources are referenced in this section, discrepancies may occur. However, the accuracy of the data is acceptable for the purpose of this survey, which is to identify disaster trends and to evaluate important disaster types.

**Table 14-72 Examples of Discrepancies in Disaster Statistics Data**

Event	EM-DAT		DesInventar Sendai		Munich RE NatCatSERVICE		ECLAC	
	Deaths	Losses (million USD)	Deaths	Losses (million USD)	Deaths	Losses (million USD)	Deaths	Losses (million USD)
Hurricane Mitch, 1998	18,820	6,010	15,032	NA	9,068	5,700	9,214	6,008
Earthquake in El Salvador, 2001	1,159	1,849	1,181	NA	853	1,500	1,159	1,255
Earthquake in Haiti, 2010	222,570	8,000	222,521	NA	159,000	8,000	220,000	7,800

Source: GAR "Regional Assessment Report on Disaster Risk in Latin America and the Caribbean, 2021"

### 2) Categories of Natural Disasters

The occurrence and characteristics of natural disasters in Central America and the Caribbean are reviewed in the global hazard distribution (Figure 14-39).

Since the types of natural disasters used by various statistics differ, the disaster classification in this study is as follows. The term “storm” may include tropical cyclones, which often cause combined disasters of flooding and windstorms, so a clear classification is not possible. However, the classification of “storm” is used here.

Floods, storms, and droughts are disasters caused by meteorological phenomena and are sensitive to climate change. Landslides, earthquakes, tsunamis, and volcanic eruptions are disasters caused by geological phenomena such as geology, topography, and crustal movement.

**Table 14-73 Categories of Natural Disasters in this Study**

	Category	Subcategory		Category	Subcategory
Meteorological	Flood	Heavy rainfall, Flashflood, Tropic cyclone (Hurricane, Cyclone)	Geological	Landslide	Landslide, Avalanche, Slope collapse, Mass movement
	Storm	Storm, Storm surge, Wind/Storm		Earthquake	Drought, Fire, extreme temperature
	Drought	Drought, Fire, extreme temperature		Tsunami	Tsunami
		Volcano		Eruption, Lava flow	

Source: JICA Study Team

### 3) Abbreviations of the Names of Countries

In this section, the abbreviations of the names of countries are used as follows.

**Table 14-74 Abbreviations of the Names of Countries**

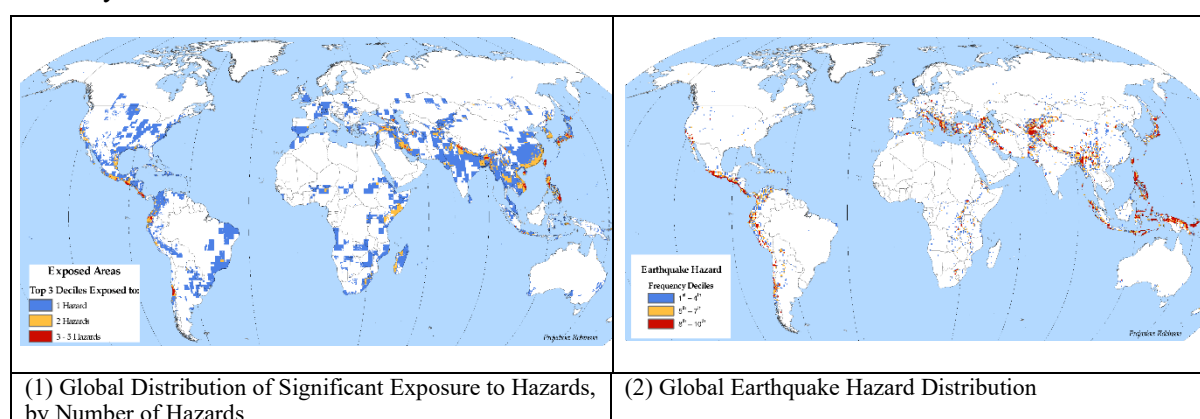
Code	Country	Code	Country
ABW	Aruba	HND	Honduras
AIA	Anguilla	HTI	Haiti
ATG	Antigua and Barbuda	JAM	Jamaica
BES	Bonaire, Sint Eustatius, Saba	KNA	Saint Kitts and Navis
BHS	Tha Bahamas	LCA	Saint Lucia
BLZ	Belize	MSR	Montserrat
BMU	Bermuda	MTQ	Martinique
BRB	Barbados	NIC	Nicaragua
CRI	Costa Rica	PAN	Panama
CUW	Curacao	PRI	Puerto Rico
CYM	Cayman Islands	SLV	El Salvador
DMA	Dominica	SUR	Suriname
DOM	Dominican Republic	SXM	Sint Maarten
GLP	Guadeloupe	TCA	Turks and Caicos Islands
GRD	Grenada	TTO	Trinidad and Tobago
GTM	Guatemala	VCT	Saint Vincent and the Grenadines
GUY	Guyana	VGB	British Virgin Islands

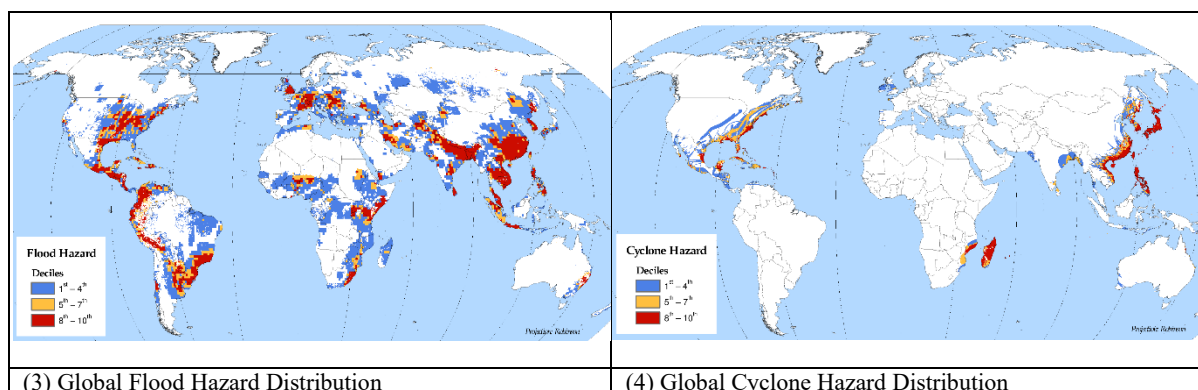
Source: JICA Study Team

## (2) Natural Disasters in Central America and the Caribbean

### 1) Features

The number of disasters, including all natural disasters (Figure (1)), is higher in Southeast Asia and South Asia, as well as in Central America and the Caribbean. The number of earthquake disasters (2) is dominated by orogenic regions, including the Pacific Rim, and includes Central America. Flood disasters (3) have a high risk in Central America and the Caribbean, and cyclones (4) occur globally in East Asia, including Japan, Madagascar on the west coast of the Indian Ocean, the Caribbean to Central America, and along the eastern coast of the North American continent. The distribution of cyclones is unevenly distributed.



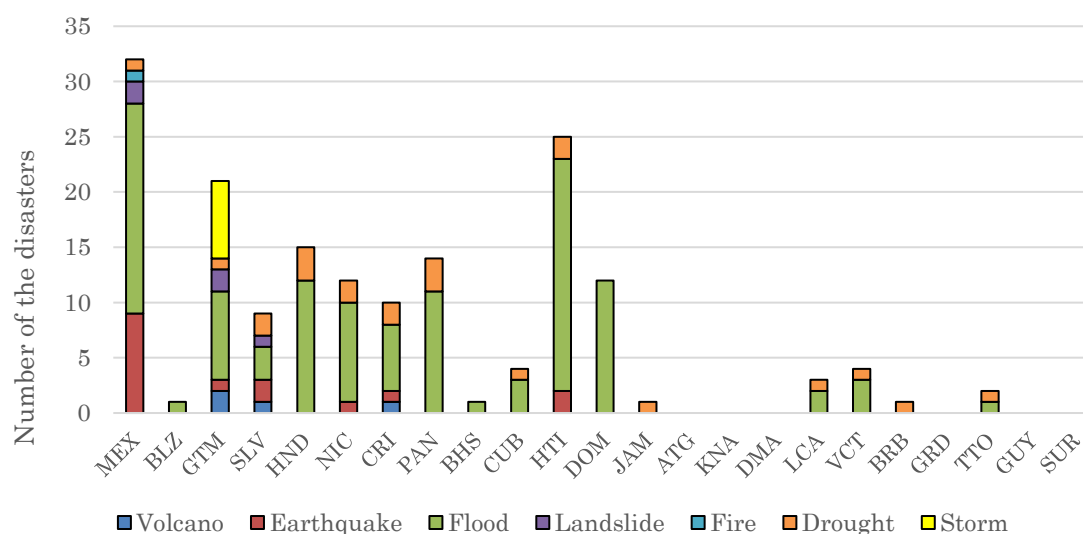


Source: NASA Socioeconomic Data and Applications Center  
Copyright 2005 International Bank for Reconstruction and Development/ The World Bank and Columbia University

**Figure 14-44 Characteristics of Natural Disasters in Central America and the Caribbean on a Global Scale**

**2) Number of Natural Disasters**

Figure 14-45 shows the number of natural disasters that occurred in each country in the Central America and Caribbean region over the past 10 years (2010-2020). Although there is a wide variety of disaster types that affect Central America and the Caribbean, floods, earthquakes, landslides, and droughts are the major disasters in the region, indicating that floods and droughts account for the largest number of natural disasters in the Caribbean region.



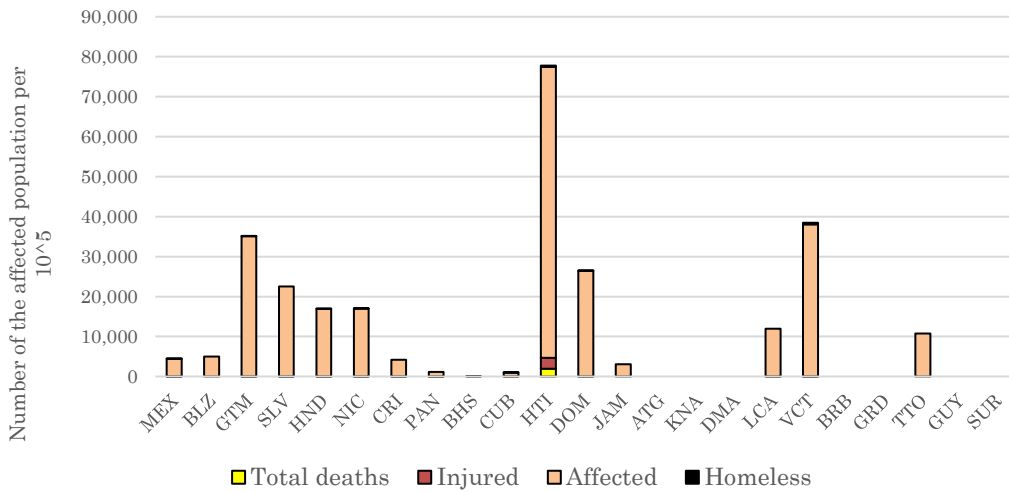
Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. as of May 2021  
※ATG, KNA, DMA, GRB.: No data available

**Figure 14-45 Number of Natural Disasters in Each Country (2010-2020)**

**3) Number of Affected People**

Figure 14-46 shows the total number of people affected by natural disasters per 100,000 population for each country over the past 10 years (2010-2020). According to this figure, in Haiti, more than 75% of the population has been affected in the past 10 years. In Central America, more than 10% of the population was affected in Guatemala, El Salvador, Honduras, and Nicaragua, and in the Caribbean

region, in St. Vincent and the Grenadines and the Dominican Republic.



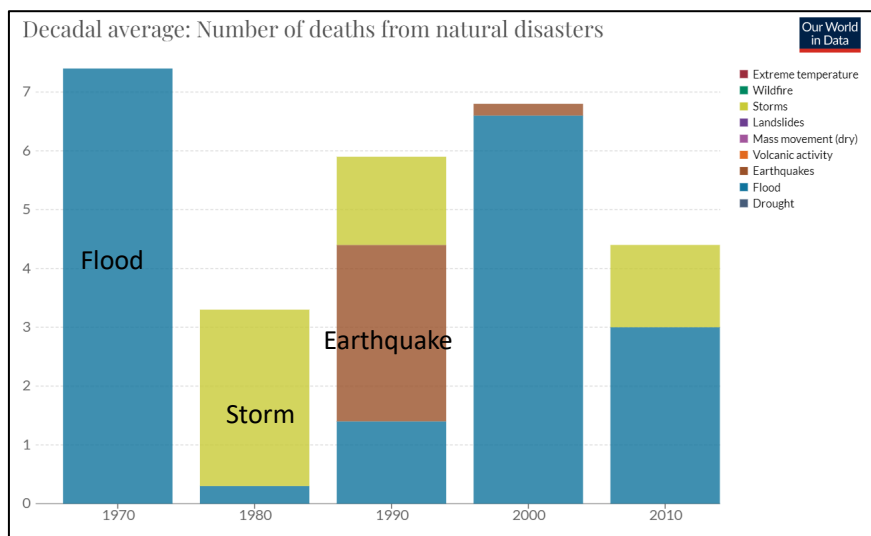
Source: EM-DAT: The Emergency Events Database - Universite catholique de Louvain (UCL) - CRED, D. as of May 2021

\*ATG, KNA, DMA and GRB: No data available

**Figure 14-46 Number of Victims per 100,000 Populations by Natural Disasters (2010-2020)**

As described above, the past ten years of disaster damage has been examined in order to identify disaster types that have a direct impact on the current economic and social conditions of countries in Central America and the Caribbean Region. On the other hand, the return period differs depending on the natural disaster. Some disasters, such as cyclones or hurricanes, have a high frequency, while others, such as earthquakes, have a low frequency but can affect many victims at a time. Therefore, the next step is to review the history of disasters over the past 50 years.

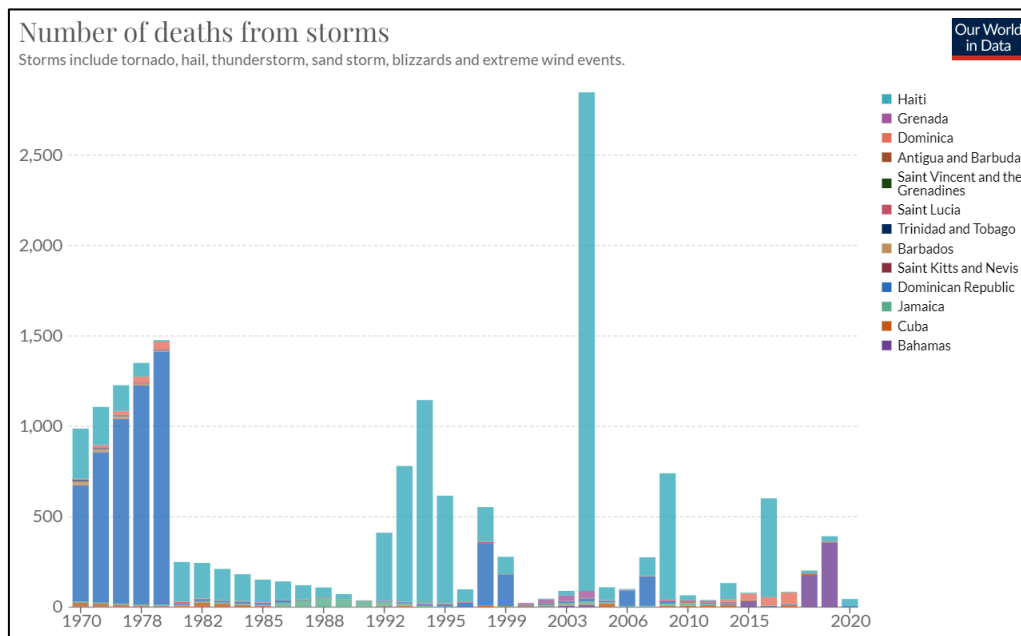
According to the disaster history of the past 50 years, floods, storms, and earthquakes have caused the most deaths in the Central American region (Figure 14-42).



Source: Our-World in Data sourced by EM-DAT

**Figure 14-47 Number of Casualties from Natural Disasters in Central America (1970-2019)**

On the other hand, storms and floods have been the deadliest disasters in the Caribbean region over the past 50 years. The data on storm damage by country shows that Haiti, Grenada, and the Dominican Republic have been affected since 2000, while the Dominican Republic and Jamaica have also been affected in the past, indicating that the entire region is at risk of storm-related disasters (Figure 14-43).



Source: Our-World in Data sourced by EM-DAT

**Figure 14-48 Number of Casualties from Storm Disasters in the Caribbean Region (1970-2020)**

**4) Economic Damage**

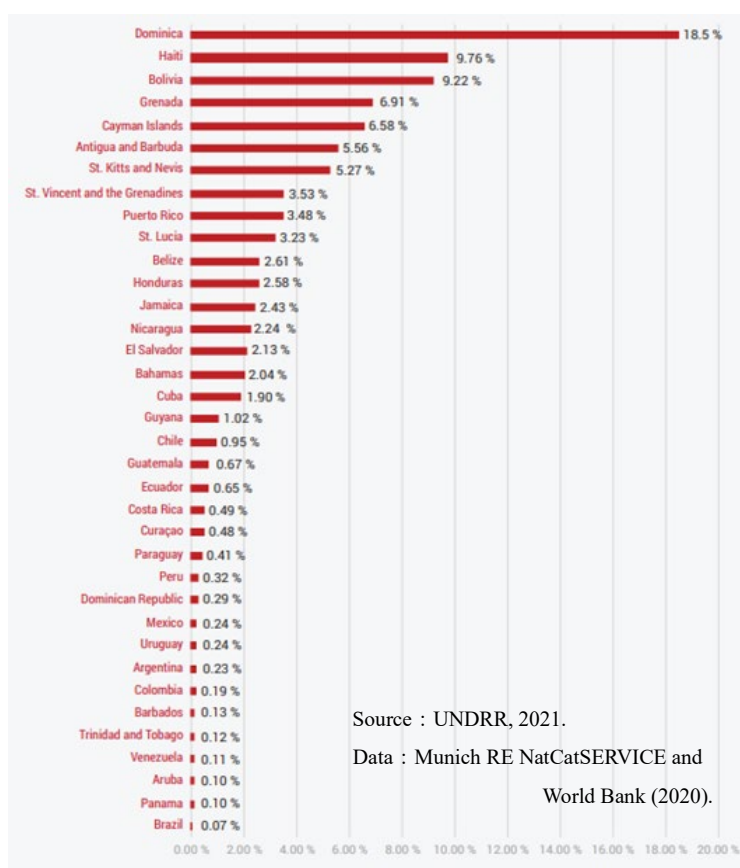
**a) Economic Damages as a Percentage of GDP**

In recent decades, natural disasters in Central America and the Caribbean have had a significant impact on the economies of these countries. Figure 14-49 shows losses as a percentage of annual GDP for Latin American and Caribbean countries over the 38-year period from 1980 to 2018.

In small countries with low economic power, it can be read that damages caused by natural disasters reduce annual GDP by about 2-3.5%. It is even more pronounced in Caribbean Island States (SIDS) such as St. Kitts and Nevis, Antigua and Barbuda, the Cayman Islands, and Grenada, where the average loss is 5-7%. Haiti's loss is equivalent to a 9% decrease in GDP.

In Dominica, disaster losses have amounted to ~18.5% of GDP over the past 38 years. According to the International Monetary Fund (IMF), Hurricane Maria, which struck Dominica in 2017, caused damage equivalent to 220% of the country's annual GDP. According to ECLAC's assessment, the total damage from Hurricanes Irma and Maria in the British Virgin Islands and St. Martin also exceeds 100% of the GDP of both countries.

The "Data Collection Survey on Efforts for Natural Disaster Prevention in Central America (JICA, 2012)" summarizes the economic damages of natural disasters in six Central American countries between 1900 and 2012 using EM-DAT data. According to the report as shown in Table 14-75, storms, followed by earthquakes, floods, and landslides, are the costliest disasters in Central America over the past century.



Source : UNDRR, 2021.  
Data : Munich RE NatCatSERVICE and World Bank (2020).

**Figure 14-49 Losses as % of GDP (1980-2018)**

**Table 14-75 Economic Damages by Disaster Type for Six Central American Countries**

Country	Economic Loss (thousand USD)						
	Flood	Storm	Drought	Landslide	Earthquake	Tsunami	Volcano
GTM	163,413	2,401,300		500,000	1,000,000		
SLV	1,280,000	1,682,800			3,383,500		
HND	314,300	4,624,600			100,000		
NIC		1,753,700			872,000		
CRI	379,000	351,090			300,000		
PAN	580,090	450,000					
<b>Total</b>	<b>2,716,803</b>	<b>11,263,490</b>	<b>0</b>	<b>500,000</b>	<b>5,655,500</b>	<b>0</b>	<b>0</b>

Source: JICA, 2012

In addition, in the "Data Collection Survey on Disaster Risk Management in Caricom Countries (JICA, 2015)", the percentage of disasters and the percentage of economic losses from disasters by cause in Caribbean countries are summarized below (UNISDR, Global Assessment Report on Disaster Risk Reduction (using data from 2015). According to the report as shown in Table 14-76, storms or floods account for more than 50% of the losses in all CARICOM countries, followed by earthquakes and fires as the main causes of economic losses.



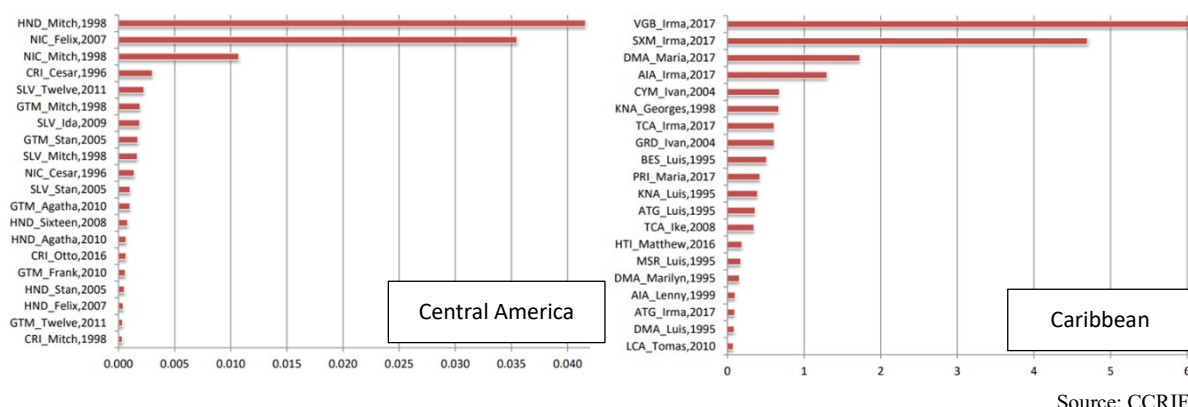
**Table 14-76 Disasters Causing Economic Damage in Caribbean Countries, 1990-2014**

Country	Major Catastrophes Causing Economic Losses (Indicated as 1st and 2nd)					
	Flood	Storm	Fire	Landslide	Earthquake	Volcano
BLZ	2	1				
DOM	2	1				
JAM		1				
ATG		1			2	
KNA		1	2			
DMA	2	1				
LCA	2	1				
VCT	2	1				
BRB		1	2			
GRD	1	2				
TTO		1			2	
GUY.	1				2	
SUR		1			2	

Source: JICA, 2015

The above data indicates that storms are the disaster that cause the most economic damage in the Central American and Caribbean regions.

Storm disasters with the highest amount of damage in the last 25 years in the region are shown as a percentage of GDP in Figure 14-50. These data are organized and published by the Caribbean Catastrophe Risk Insurance Facility (CCRIF)<sup>6</sup>.



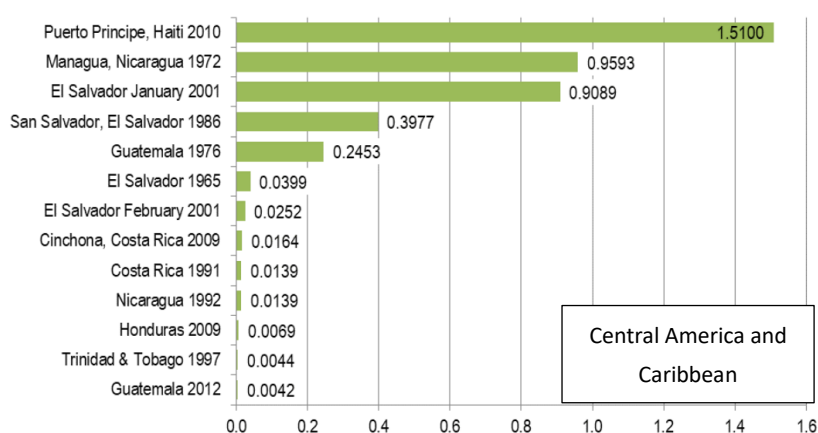
Source: CCRIF

**Figure 14-50 Ratio of Economic Damages to GDP for Storm Disasters (1990-2017)**

In terms of storm disasters, Hurricane Mitch, which hit Honduras in 1998 in the Central American region, and Hurricane Irma, which hit the British Virgin Islands in 2017 in the Caribbean, caused the greatest economic damage. On the other hand, the GDP ratio of damage in the Caribbean countries with small economies is two orders of magnitude larger than that of Central American countries, indicating that the impact on their economies is enormous. Note that the economic damage from Hurricane Mitch is estimated at around USD 600 million (Table 14-72, EM-DAT data).

Next, for earthquake disasters, which are the second most damaging economic disasters after storms, Figure 14-51 shows the ratio of damages to GDP for each of the most damaging disasters in the past.

<sup>6</sup> Tropical Cyclone: [https://www.ccrif.org/sites/default/files/riskprofiles/TC\\_Annex2\\_r2.pdf](https://www.ccrif.org/sites/default/files/riskprofiles/TC_Annex2_r2.pdf)  
 Earthquake: [https://www.ccrif.org/sites/default/files/riskprofiles/EQ\\_Annex2\\_r2.pdf](https://www.ccrif.org/sites/default/files/riskprofiles/EQ_Annex2_r2.pdf)



Source: CCRIF

**Figure 14-51 Ratio of Economic Damages to GDP from Earthquake Disasters, 1965-2012**

Although earthquake disasters occur less frequently than storm disasters, the economic damage suffered from a single occurrence is significant and recovery takes time. The economic damage caused by the 2010 Haiti earthquake was 1.5% of the country's GDP, while the damage caused by the 2017 Nicaragua and 2001 El Salvador earthquakes reached 0.9% of GDP. The economic damage from the 2010 Haiti earthquake was reported at USD 800 million and the 2001 El Salvador earthquake at USD 180 million (Table 14-72, EM-DAT data).

**b) Analysis on Sectors Vulnerable to Disaster Damage**

The region was found to have a high frequency of climate disasters such as hurricanes and floods, followed by geological disasters such as earthquakes and landslides, as well as economic damage. This section discusses the sectors vulnerable to these disasters.

ECLAC analyzed the amount of damage caused by natural disasters in Latin America and the Caribbean over a 38-year period from 1972 to 2010, and then analyzed the magnitude of damage and loss by sector. This makes it possible to assess which sectors are vulnerable to natural disasters.

The table on the right shows the amount of damage and loss caused by natural disasters in Central America and the Caribbean (in USD million as of 2000), from 1972 to 2010. This shows that Nicaragua, Mexico, Guatemala, and the Dominican Republic have suffered the greatest amount of damage, ranging from USD 10 billion to USD 40 billion. El Salvador, Honduras, and Haiti are the next most severely affected economies.

**Table 14-77 Damages and Losses**

Country	Damage (million USD)	Loss (million USD)	Total (million USD)
MEX	28,271	12,547	40,818
BLZ	416	127	543
GTM	20,740	1,593	22,333
SLV	6,761	2,875	9,636
HND	7,172	2,016	9,188
NIC	34,371	8,762	43,133
CRI	222	180	402
PAN	0	25	25
BHS	198	132	330
CUB	-	-	-
HTI	3,508	2,952	6,460
DOM	7,842	5,457	13,299
JAM	673	206	879
ATG	0	0	0
KNA	-	-	-
DMA	367	226	593
LCA	9	5	14
VCT	-	-	-
BRB	-	-	-
GRD	685	85	770
TTO	-	-	-
GUY	-	-	-
SUR	-	-	-

Source : ECLAC “Assessment of the effects of disasters in Latin America and the Caribbean, 1972-2010”

Table 14-78 shows the disaster damage data described above, classified by region and disaster type, and the calculated amount of disaster losses. In the Central American region and Mexico, the total damage and loss from geological disasters were USD 58 billion and USD 28 billion, respectively, far exceeding the Central American region's USD 17 billion and Mexico's USD 3 billion from hurricane storms, which are climate-related disasters. Conversely, in the Caribbean region, climate disasters dominate as hurricane/storm disasters account for USD 21 billion, while there is a total of USD 5 billion in damages and losses from geological disasters. Overall, including Central America and the Caribbean and Mexico, the amount of damage from geological disasters is greater than that from climate disasters.

**Table 14-78 Estimated Disaster Damages by Region and Disaster Type**

Type of Disaster	Region	Damage (million USD)	Loss (million USD)	Total (million USD)
<b>All Geophysical Disasters</b>		<b>78,075</b>	<b>14,463</b>	<b>92,538</b>
Geophysical disasters	Central America	49,799	8,383	58,182
Geophysical disasters	Caribbean	2,979	2,454	5,433
Geophysical disasters	Mexico	25,297	3,626	28,923
<b>All Climate Disasters</b>		<b>39,316</b>	<b>19,158</b>	<b>58,474</b>
Hurricane and storm	Central America	13,088	4,560	17,648
Hurricane and storm	Caribbean	14,122	7,827	21,949
Hurricane and storm	Mexico	1,659	2,094	3,753
El Niño phenomenon	Central America	2,904	1,111	4,015
Extreme precipitations (floods and landslides)		7,543	3,431	10,974
Drought	Central America	0	135	135
<b>Mixed Disaster</b>	<b>Central America</b>	<b>894</b>	<b>486</b>	<b>1,380</b>
<b>All Disasters</b>		<b>118,285</b>	<b>34,107</b>	<b>152,392</b>

Source: Prepared by the JICA Study Team based on ECLAC.

Next, the percentage of disaster losses by economic sector is identified. Table 14-79 shows the percentage impact on economic sectors for each region and disaster type. The economic sector is divided into three sectors, namely: "Production", "Infrastructure", and "Social" sectors. The analysis of losses is not included in this section, but the trend of susceptible economic sectors is roughly the same as that of damage.

**Table 14-79 Percentage of Disaster Damages by Economic Sector**

Type of Disaster	Region	Production (%)	Infrastructure (%)	Social (%)
<b>All Geophysical Disasters</b>		<b>14.8</b>	<b>8.9</b>	<b>76.3</b>
Geophysical disasters	Central America	21.4	5.4	73.2
Geophysical disasters	Caribbean	7.0	13.6	79.4
Geophysical disasters	Mexico	15.9	7.7	76.4
<b>All Climate Disasters</b>		<b>39.3</b>	<b>58.5</b>	<b>19.2</b>
Hurricane and storm	Central America	48.7	30.0	21.3
Hurricane and storm	Caribbean	47.8	21.6	30.6
Hurricane and storm	Mexico	46.1	23.3	30.6
El Niño phenomenon	Central America	29.4	50.7	19.9
Extreme precipitations		86.2	8.7	5.1
Drought	Central America	34.0	45.6	20.4
<b>Mixed disaster</b>	<b>Central America</b>	<b>4.9</b>	<b>73.3</b>	<b>21.8</b>

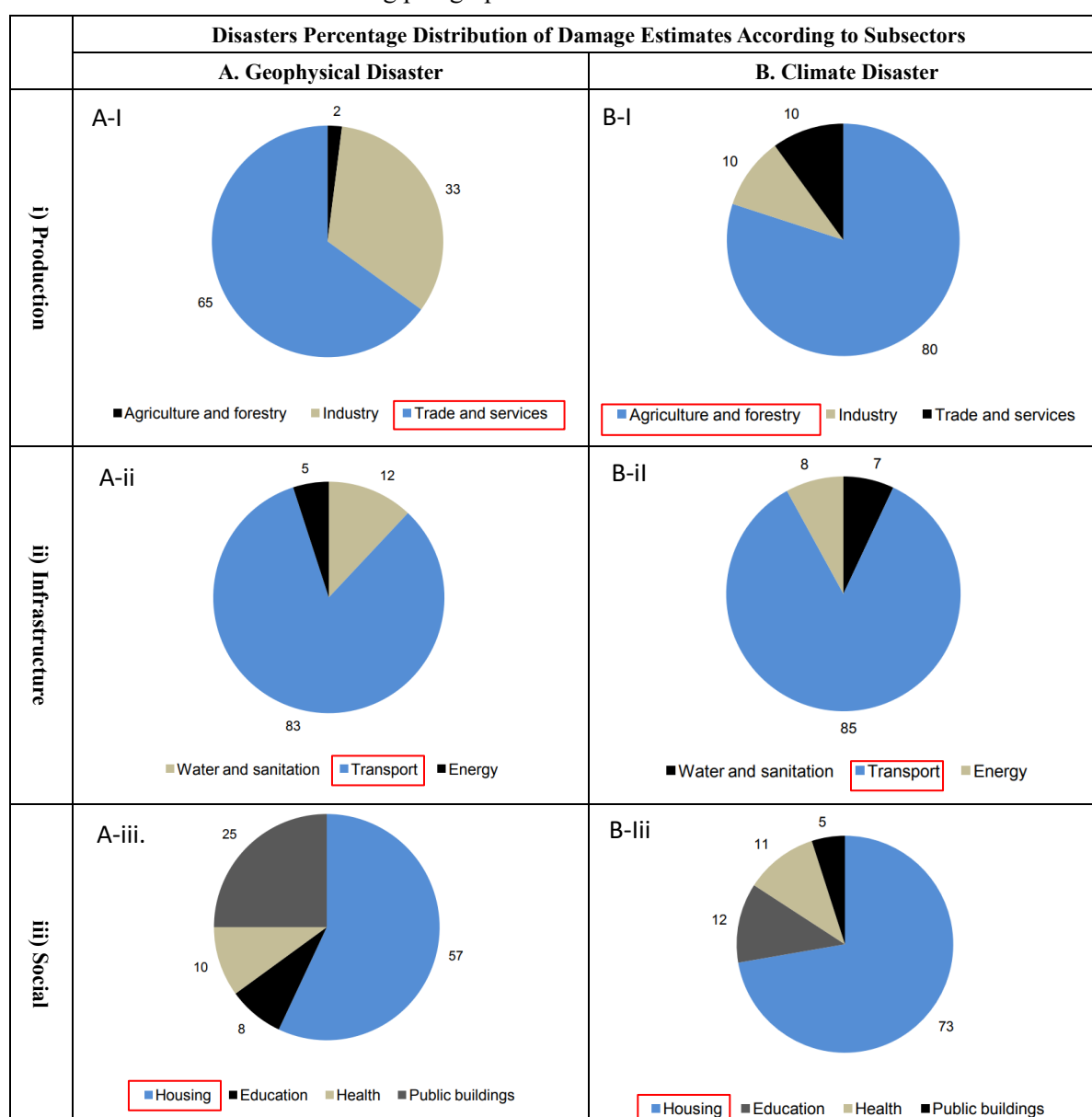
Source: Prepared by the JICA Study Team based on ECLAC.

Looking at the percentage of economic damage caused by geological disasters by sector, the "Social" sector is the largest, at more than 70%, in the Central American region, the Caribbean region, and Mexico. In all regions, the "Production" sector accounted for nearly 50% of the economic damage

caused by hurricane and storm. In addition, the economic damage from El Niño events, droughts, and combined disasters is greater in the “Infrastructure” sector. Thus, the “Infrastructure” sector accounts for the majority of the economic damage share of climate-related disasters overall.

The “Production” sector is divided into "Agriculture and Forestry", "Industry", and "Trade and Service", while the “Infrastructure” sector is divided into "Water and Sanitation", "Transport", and "Service". The “Social” sector includes "Housing", "Education", "Health", and "Public Buildings”.

Figure 14-52 shows the percentage of economic damage for each subsector. The ECLAC report also provides a region-by-region evaluation, although the results of the evaluation, which summarize the data for all regions of Latin America, the Caribbean, and Mexico, are cited here. Trends in economic loss ratios for each subsector are roughly similar across regions, but differences may have occurred and shall be described in the succeeding paragraphs.



Source: Prepared by the JICA Study Team based on ECLAC.

**Figure 14-52 Percentage of Economic Damages by Subsector**

## **i) Production Sector**

"Trade and Service" accounts for 65% of the economic damage by geological disasters to the "Production" sector in the region as a whole (A-i). On the other hand, the data by region shows that in the Central American region, "Agriculture and Forestry" and "Trade and Service" are reversed at 67% and 3%, respectively. In the Caribbean region, "Trade and Service" accounted for 57%, while "Agriculture and Forestry" accounted for 18%.

In the region as a whole, "Agriculture and Forestry" accounts for 80% of the economic damage to the "Production" sector due to climate-related disasters (B-i). This trend is similar in Central America and the Caribbean, but in Mexico, "Trade and Service" and "Agriculture and Forestry" account for 70% and 30%, respectively.

## **ii) Infrastructure Sector**

In terms of economic damage to the "Infrastructure" sector due to geological disasters, "Transport" accounts for 83% of the total for the region, followed by "Water and Sanitation" and "Energy" (A-ii). A similar trend can be seen by region, but in the Caribbean, "Energy" accounted for 25% of the total, higher than "Water and Sanitation" at 6%.

"Transport" accounts for 85% of the economic damage to the "Infrastructure" sector due to climate-related disasters in the region as a whole (B-ii). This is also the case in the Central American region, the Caribbean, and Mexico.

## **iii) Social Sector**

In terms of economic damage to the "Social" sector due to geological disasters, "Housing" accounted for 57% of the economic damage in the region as a whole, followed by "Public Building", "Health", and "Education" (A-iii). By region, "Housing" accounted for around 70% in Central America and the Caribbean as well.

The economic damage to the "Social" sector due to climate-related disasters is the largest in the region, with "Housing" accounting for 73% of the total (B-iii). This is also the case in the Central American region, the Caribbean, and Mexico.

## **5) Evaluation**

The major disasters in Central America and the Caribbean are summarized in Table 14-80. Table 14-81 shows the results of these data organized by country.

By region, the most economically damaging disasters in the Central American region are storms, earthquakes, and floods, while the social sector (houses, etc.) and infrastructure sector (transportation and traffic) are the most affected, mainly in cities. The most economically damaging disasters in the Caribbean region are storms and floods, as well as earthquakes and droughts. The production sector (agriculture, industry, and services) is the most affected sector, with particularly severe economic losses due to damage to tourism, a key industry in the Caribbean.

The procedures for country-specific aggregation are noted in Table 14-81. Although quantitative evaluation is not possible due to the lack of uniformity in the data from the multiple sources consulted

and the insufficient number of data, it was possible to show trends in high-risk disasters and the economic sectors in need of countermeasures.

For each country's major natural disasters, the frequency of occurrence is higher for those disasters that are colored. Economic damage is relatively higher for those disasters that are marked with a symbol (\$, %). These are the types of disasters that require special attention for each country. The report also identifies the main disaster types (geological/climate) that cause economic damage in each country and the economic sectors that are most vulnerable.

In planning and implementing future disaster risk reduction measures, it is necessary to focus on countermeasures for these disaster types and the strengthening of sectors with significant economic damage.

**Table 14-80 Major Natural Disasters in Central America and the Caribbean Region**

	Central America	Caribbean
Disasters with the highest number of disasters in the past 10 years	Flood, earthquake, landslide, and drought	Flood, drought
Disasters with the highest number of casualties in the past 50 years	Flood, tropical storm, and earthquake	Tropical storm
Disasters with significant economic damage	Storms, earthquakes, floods	Storms, floods, earthquakes, and droughts (fires)
Sectors with significant economic damage	Social sector (houses) Infrastructure sector (transportation)	Production sector (agriculture, industry, and services)

Source: JICA Study Team

**Table 14-81 Major Natural Disasters and Economic Damaging Sectors by Country**

Country	Climate Disaster			Geophysical Disaster			Sectors of High Economic Damage/Loss		
	Fl	St	Dr	Ls	Eq	Vol	Type	Subsector	
CA	MEX	\$\$			\$	\$	Geo	Public Building, Housing	
	BLZ	\$	\$\$				Cl	Agri, Industry, Trade and Service	
	GTM	\$	\$\$			\$	Geo	Housing, Transport	
	SLV	\$	\$			\$\$	%	Geo	Housing, Transport
	HND	\$	\$\$			\$	Geo	Housing, Transport	
	NIC		\$\$			\$	%	Geo	Housing, Transport
	CRI	\$\$	\$				%	Geo	Housing, Transport
PAN	\$\$	\$					Geo	Housing, Transport	
CAR	BHS		\$\$				Cl	Agri, Industry, Trade and Service	
	CUB						Cl	Agri, Industry, Trade and Service	
	HTI		\$\$				Cl	Agri, Industry, Trade and Service	
	DOM	\$	\$\$				Cl	Agri, Industry, Trade and Service	
	JAM		\$\$				Cl	Agri, Industry, Trade and Service	
	ATG		\$\$			\$	Cl	Agri, Industry, Trade and Service	
	KNA		\$\$	\$		\$	Cl	Agri, Industry, Trade and Service	
	DMA	\$	\$\$				%	Cl	Agri, Industry, Trade and Service
	LCA	\$	\$\$				%	Cl	Agri, Industry, Trade and Service
	VCT	\$	\$\$				%	Cl	Agri, Industry, Trade and Service
	BRB		\$\$	\$				Cl	Agri, Industry, Trade and Service
	GRD	\$\$	\$					Cl	Agri, Industry, Trade and Service
TTO		\$\$			\$		Cl	Agri, Industry, Trade and Service	
SA	GUY.	\$\$			\$		Cl	Agri, Industry, Trade and Service	
	SUR		\$\$			\$	Cl	Agri, Industry, Trade and Service	

- Abbreviations in the table are as follows: CA: Central America, CAR: Caribbean, SA: South America, Fl: Flood, St: Storm, Dr: Drought, Ls: Landslide, Eq: Earthquake, Vol: Volcano, Cl: Climate, Geo: Geophysical, Agri: Agriculture and Forestry
- Disaster types with high economic losses (\$\$, \$): Comprehensive evaluation of countries and disaster types with high Average Annual Loss (AAL) to Capital Stock in UNDRR (2021), JICA (2012), JICA (2015) results, and GAR2015. A comprehensive evaluation.

- Volcanic hazards (%): In the GAR2015, countries are rated as "Top 20 Countries and Territories: Relative Population Exposed to Volcanic Hazard". The countries with the potential for significant economic damage due to volcanic ash are marked with a % mark.
- Disaster frequency: Disasters are colored red and pink in the order of the disaster type that occurred most frequently in the past based on EM-DAT's statistical data.
- Landslide disasters are included in ECLAC as floods and landslides in the "extreme precipitation" category of meteorological disasters, and in some cases are included in combined disasters such as floods.
- Major disaster types: selected predominant geological and climate disasters (Table 14-77).
- Subsectors with large disaster damage: Sectors with large damage (Damage/Loss) were selected based on Table 14-78, and subsectors with large percentage of damage were selected from Table 14-79. Trade and Service and Industry are listed as the major subsectors for losses in hurricane and storm disaster in the Caribbean.

Source: JICA Study Team

### **(3) Outline of Disaster Risk Reduction in Central America**

#### **1) Central American Disaster Risk Reduction Center (CEPREDENAC)**

The Central American region (El Salvador, Honduras, Guatemala, Nicaragua, Costa Rica, Panama) is at risk of natural disasters such as earthquake, wind and flood damage, landslides, and volcanic disasters. Damage is a major impediment to development in the region. Therefore, in 1993, the Central American Disaster Risk Reduction Center (CEPREDENAC) was established under the Central American Integration System (SICA) with the aim of building disaster-resilient societies in the six Central American countries.

CEPREDENAC is a disaster risk reduction agency in the Central American region, and the representative council, with the highest decision-making function of the center, is the national disaster risk reduction agency responsible for the disaster risk reduction administration of each country, namely Costa Rica's National Disaster Risk Reduction Agency Commission (CNE), Honduran Permanent Commission on Disaster Management (COPECO), El Salvador Civil Disaster Risk Reduction Agency (Civil Protection), Guatemala National Disaster Risk Reduction Coordinating Agency (CONRED), Panama Ministry of Interior Disaster Risk Reduction Agency (SINAPROC), Nicaragua Composed by the National Disaster Risk Reduction Commission (SINAPRED), and Defensa Civil of Dominican Republic.

After Hurricane Mitch, which caused devastating damage to Central America in 1998, the presidents of the six Central American countries issued the Guatemala Declaration, which reaffirmed their determination to build disaster-resilient societies. Centered on CEPREDENAC, the Central America Disaster Risk Reduction Five-Year Plan (2000-2004) was formulated. Subsequently, the 2006-2015 and 2014-2019 plans were developed in turn, and the 2019-2023 plan is currently underway. In this plan, disaster risk reduction capacity enhancement at the community level, promotion of human resource development in the disaster risk reduction field, and consideration of disaster risk reduction, and strengthening regional (municipal) disaster risk reduction capabilities are listed as priority issues.

#### **2) Activities by CEPREDENAC**

Currently CEPREDENAC manages and operates the platform "Plataforma de Monitoreo de Amenazas" jointly developed by Environmental Systems Research Institute (ESRI), National Aeronautics and Space Administration (NASA), and National Oceanic and Atmospheric Administration (NOAA) in cooperation with SICA, CCAD, and CRRH (Figure 14-44). This platform provides weather

information.<sup>7</sup>

In this study, discussions were held with CEPREDENAC, including the implementation of a pilot project, on the possibility of using this platform to reduce disaster risks in the region by establishing a wide-area disaster prevention platform that provides information on various disasters, such as landslides and land subsidence.

The proposed pilot project is shown below, and is intended to verify issues and build the capacity of implementing agencies for the establishment of a disaster information platform that integrates the wide area of Central America.



#### Proof of Concept

- Introduction of satellite utilization services for disaster information such as landslides;
- Data linkage with existing wide-area disaster risk reduction platform;
- Collaborative research for service advancement with universities and private companies

Source: CEPREDENAC Homepage

**Figure 14-53 Disaster Information Platform in Operation by CEPREDENAC**

### 3) JICA's Disaster Risk Reduction Cooperation

Since 2007, JICA, with CEPREDENAC as its counterpart, has been implementing the Central America Regional Disaster Risk Reduction Capacity Development Project. In Phase 1 of the cooperation, efforts were made to develop a system for strengthening the ability to adapt to natural disasters, and then try to strengthen the capacity of local governments and communities for disaster mitigation and disaster response by supporting the establishment of a system for sharing experiences within the Central American region.

In addition, JICA implemented the Central America Tsunami Warning Center Capacity Enhancement Project from 2016 to 2019. The Central American Tsunami Warning Center (CATAC) was approved and established by the UNESCO/IOC General Assembly in 2015 and is responsible for disseminating tsunami warnings to the Central American region. In this project, the Nicaraguan Institute of Terrestrial Research (INTER: Instituto Nicaraguense de Estudios Territoriales), which is the base of CATAC, was the counterpart to support the development of the quantitative tsunami forecasting capacity required for CATAC tsunami advisory information and the establishment of an implementation system for human resource development for relevant organizations in the Central American region. The project supported

<sup>7</sup>[https://plataformaregional.cepredenac.org/portal/apps/experiencebuilder/experience/?id=1751217533234fa4bb78e892f8d04445&page=page\\_0&views=view\\_7%2Cview\\_10](https://plataformaregional.cepredenac.org/portal/apps/experiencebuilder/experience/?id=1751217533234fa4bb78e892f8d04445&page=page_0&views=view_7%2Cview_10)



the establishment of a system for human resource development and implementation in the Central American region.

#### 4) JICA's Cooperation for Disaster Risk Reduction in Central America and the Caribbean Region

Table 14-82 shows the implementation status of JICA's cooperation in the disaster risk reduction sector in Central America and the Caribbean region. Based on country-specific development policies, active cooperation has been carried out in the region.

**Table 14-82 JICA's Ongoing Cooperation in the Disaster Risk Reduction Sector**

Country	Project Name	Type of Disaster	Form of Cooperation	Status*1
El Salvador	Strengthening the Capacity to Analyze Earthquake and Tsunami Information	Earthquake	Individual experts	On-going
Nicaragua	Project to Promote Investment in Advance Disaster Risk Reduction for Building Coastal Disaster-Resilient Communities	Earthquake / Tsunami	Project-based	Pre-implementation
Honduras	Tokyo Metropolitan Area Slope Disaster Countermeasure Management Project	landslide	Project-based	On-going
	Valle de Sula Urban Area Flood Control Master Plan Project	flood	Development plan survey	Pre-implementation
Mexico	Disaster Risk Management Governance Capacity Enhancement Project	Floods, earthquakes	Project-based	On-going

\*1: Status as of February 2022

Source: Materials provided by JICA

**Table 14-83 Projects in the Disaster Risk Reduction Sector Conducted by JICA**

Country	Project	Type of Disaster	Year	Form of Cooperation
Central America	Project on Capacity Development for Disaster Risk Management in Central America "BOSAI"	Floods, storms, landslides, earthquakes, tsunamis, volcanoes	2007-2012	TA
Central America	Project on Capacity Development for Disaster Risk Management in Central America Phase-2	Floods, storms, landslides, earthquakes, tsunamis, volcanoes	2015-2020	TA(Technical Cooperation)
Central America	Data collection study on infrastructure development for natural disaster resilience in Central America	Flood, landslide, earthquake, tsunami, volcanic eruption, strong winds, land subsidence/sinking, drought	2015, 2012	TA
Central America, Mexico and USA	Data collection survey on efforts for natural disaster prevention in central America	Flood, landslide, earthquake, tsunami, volcanic eruption, strong winds, land subsidence/sinking, drought	2012	TA
El Salvador	Enhancement of the Construction Technology and Dissemination System of the Earthquake-Resistant "Vivienda Social"	Earthquake	2009-2012	TA
El Salvador	The Project for Capacity Development of the Department of Climate Change Adaptation and Strategic Risk Management for Strengthening of Public Infrastructure	Earthquake, landslide	2011-2014	Loan
El Salvador	The Project for Capacity Development of the Department of Climate Change Adaptation	Earthquake, landslide	2016-2021	TA

Country	Project	Type of Disaster	Year	Form of Cooperation
	and Strategic Risk Management for Strengthening of Public Infrastructure, Phase 2			
El Salvador	Enhancement of Technology for the Observation of Earthquakes and Tsunamis	Earthquake, tsunami	2015-2017-2021	Dispatch of Experts
El Salvador	Technique Assistance Project for the Department of Adaptation for the Climate Change and Strategic Risk Management for Strengthening of Public Infrastructure in El Salvador	Earthquake, landslide	2011-2014	Loan
El Salvador	Wide Area Disaster Risk Reduction System Maintenance Plan	Earthquake, tsunami	2012	Grant
Nicaragua	Project for the Strengthening of Capacity of the Central American Tsunami Advisory Center (CATAC)	Earthquake, tsunami	2016-2019	TA
Nicaragua	Improvement of the Earthquake-Resistant Housing Construction Technology	earthquake	2011-2013	TA
Nicaragua	Evaluation of Multi-hazards in the South Basin of Lake Managua, Nicaragua	flood	2009-2011	Dispatch of Experts
Nicaragua	undefined	Volcanoes, earthquakes, floods, tsunamis	Before 2007	TA
Honduras	Project for Control and Mitigation of Landslide in Tegucigalpa Metropolitan Area	landslide	2018-2019	TA
Honduras	Assistance for Strengthening and Capacity Building of Professional techniques for the Control and Mitigation of Landslide in Tegucigalpa Metropolitan Area	landslide	2014-2016	Dispatch of Experts
Honduras	Hazard geology focusing on the landslides in Tegucigalpa	landslide	2011-2013	Dispatch of Experts
Honduras	Metropolitan Area Landslide Prevention Plan (detailed design)	landslide	2011-2010	Grant
Honduras	Democlaia Bridge Repair Plan	land subsidence	2012	Grant
Honduras	National Highway No. 6 Landslide Prevention Plan	landslide	2017	Grant
Mexico	The Project for Hazard Assessment of Large Earthquakes and Tsunamis in the Mexican Pacific Coast for Disaster Mitigation (SATREPS)	Earthquake, tsunami	2016-2019	TA

Source: JICA Website

#### (4) Outline of the Disaster Risk Reduction Sector in the Caribbean Region

##### 1) CDEMA

The Caribbean Disaster Emergency Management Agency (CDEMA) has been established as the disaster and resilience related coordinating agency of the Caribbean Community (CARICOM).

It is headquartered in Barbados, where member states participate and act as the supreme decision-making body. Established in 1991, initially as the Caribbean Disaster Emergency Response Agency (CDERA) to co-ordinate emergency response and relief operations to participating countries in need, it became CDEMA in 2009 with the intention of reaching the target completion year of the global Hyogo Framework for Action. It facilitates the implementation of the Integrated Disaster Management CDM Strategy has been established as a brand for promoting disaster reduction in the region. With the intention of establishing the Sendai Framework for Disaster Reduction, the CDM Strategy 2014-2024 is being implemented together with national disaster management bureaus as a regional plan to

implement the Sendai Framework.

CDEMA currently consists of 19 Member States (PS):

- Anguilla, Antigua and Barbuda, Cayman Islands, Bahamas, Barbados, Belize, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos Islands, and Virgin Islands

The main activities of CDEMA are to issue situation reports in case of an emergency, and to divide member countries into four sub-regions to implement the emergency assistance, coordination, and post disaster risk arrangement (PDRA) by invoking the Regional Response Mechanism, Comprehensive Disaster Risk Reduction Management (Comprehensive DRR: CDM), based on "Facilitating CDM Strategy Implementation."

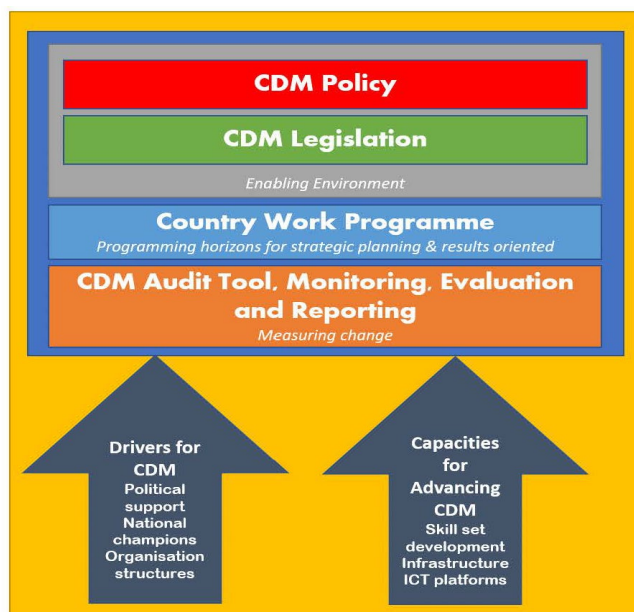
Following a series of disasters in 2017, the CARICOM Summit in 2018 stipulated the Caribbean Resilience Framework on a resilience framework in the Caribbean. In 2021, the Caribbean Resilience Recovery Framework (CRRF) was stipulated, with a new role of leading guidance to each PS on recovery as well.

## **2) Activities by CDEMA**

As part of the promotion of the implementation of the Hyogo Framework and the Sendai Framework for Disaster Risk Reduction, namely the CDM Strategy, CDEMA has been conducting audits, monitoring and evaluation of the implementation of the CDM Strategy. In addition, a Blueprint for a founding assessment of the relevant legislation and the overall planning regime has been conducted in the past for the PS. The Blueprint with respect to the CDM Strategy 2014-2024 was initiated in October 2021 in the form of a review of previous CDM Blueprints.

- 1) To evaluate the 2010 Blueprint as the standard for advancing CDM implementation at the national level and to determine any improvements needed.
- 2) To evaluate the status of Blueprint implementation including an assessment of the barriers, opportunities, and good practice for advancement.
- 3) To provide recommendations for advancing CDM Blueprint implementation in CDEMA PS.
- 4) To assist nine PS in developing plans of actions and projects to implement recommendations for advancing CDM Blueprint implementation.
- 5) To facilitate a virtual regional workshop targeting senior members of the National Disaster Management Organization to share findings and build capacity/awareness on the requirements for advancing CDM Blueprint implementation.

The details of each country's CDM and the preparation status of the CWP (Country Work Program) based on it are under investigation through CDEMA



Source: CDEMA, Programme Area 3 as of May 31,2022

**Figure 14-54 Structure of CDM**

### 3) JICA's Disaster Risk Reduction Cooperation

JICA's cooperation policy in the field of disaster risk reduction in the CARICOM region involves, in addition to earthquakes, tsunamis, and volcanic eruptions, high waves and storm surges caused by flood damage and sea level rise due to the increased frequency of large hurricanes and higher rainfall intensity due to climate change. In the Caribbean region, where such disasters frequently occur, JICA has been implementing technical cooperation such as the formulation of hazard maps and community disaster risk reduction. In the future, while aiming to establish the results of past cooperation, JICA aims to expand pre-disaster risk reduction investment by mainstreaming disaster risk reduction. cooperate. In addition to technical cooperation, grant financial cooperation and loan financial cooperation will also be utilized.

### 4) JICA's Cooperation for Disaster Risk Reduction in Central America and the Caribbean Region

Following shows the implementation status of JICA's cooperation in the disaster risk reduction sector in Central America and the Caribbean region. Based on country-specific development policies, active cooperation has been carried out in the region.

JICA has been implementing the Caribbean Disaster Management Project since 2002 as disaster risk reduction cooperation in the CARICOM region. In Phase 1 of the cooperation, the study team supported the establishment of a disaster risk reduction organizational structure centered on CDEMA, the creation of flood hazard maps in pilot countries (Barbados, Saint Vincent and the Grenadines, and Trinidad and Tobago), and the formulation of community disaster risk reduction plans. In Phase 2, the study team will improve the accuracy of flood analysis and flood hazard maps, establish a flood early warning system using these, and other CDEMA member countries (Belize, Dominica, Saint Lucia, Grenada, Guyana, Barbados) support the dissemination of flood control measures.

**Table 14-84 JICA's Ongoing Cooperation in the Disaster Risk Reduction Sector**

Country	Project Name	Type of Disaster	Form of Cooperation	Status*1
Barbados (regional)*2	Advisor on Integrated DRR for the Caribbean Region	Earthquake	Individual experts	On-going
Dominican Republic*3	Strengthening the Capacity for Seismic Diagnosis of Buildings	Total disaster	Country-specific training	On-going
St. Lucia	The Project for Reconstruction of Bridges in Cul-De-Sac Basin	Hurricane, Flood	Grant	On-going
Jamaica	The Project for Improvement of Emergency Communication System	Hurricane, Flood, Land slide	Grant	On-going

\*1: Status as of February 2022

\*2: Until 2017, an advisor was dispatched with the Disaster Management Authority of Jamaica and St. Lucia as the CP. The Advisor's recommendation that CDEMA be the CP to promote disaster reduction in both countries (and regions) was appropriate, and CDEMA became the Regional Advisor from 2021.

\*3: Non-CDEMA member state

Source: Materials provided by JICA

**Table 14-85 Projects in the Disaster Risk Reduction Sector Conducted by JICA**

Country	Project	Type of Disaster	Year	Form of Cooperation
Dominica	River Control/Management and Sediment Disaster Control Advisor	Flood	2018-2019	Dispatch of Experts
Haiti	The Urgent Rehabilitation and Reconstruction Support Project for Haiti	Earthquake	2010-2011	TA
Haiti	Training program on recovery strategy after the big earthquake	Earthquake	2011	Training
Haiti	Training program on recovery strategy after the big earthquake	Earthquake	2010	Training
Barbados	Data collection survey on disaster risk management in Caricom countries	Total disaster	2015	TA
Barbados	Caribbean DRR Project Phase 2	Floods, hurricanes	2009-2012	TA
Barbados	Barbados Carib DRR Project	Floods, hurricanes	Before 2007	TA
Jamaica	Emergency Reconstruction Loan	Hurricane	2014	Loan

Source: JICA Website

### 14.4.3 Mainstreaming of Disaster Risk Reduction

#### (1) Status of Efforts to Mainstream Disaster Risk Reduction in Central America and the Caribbean

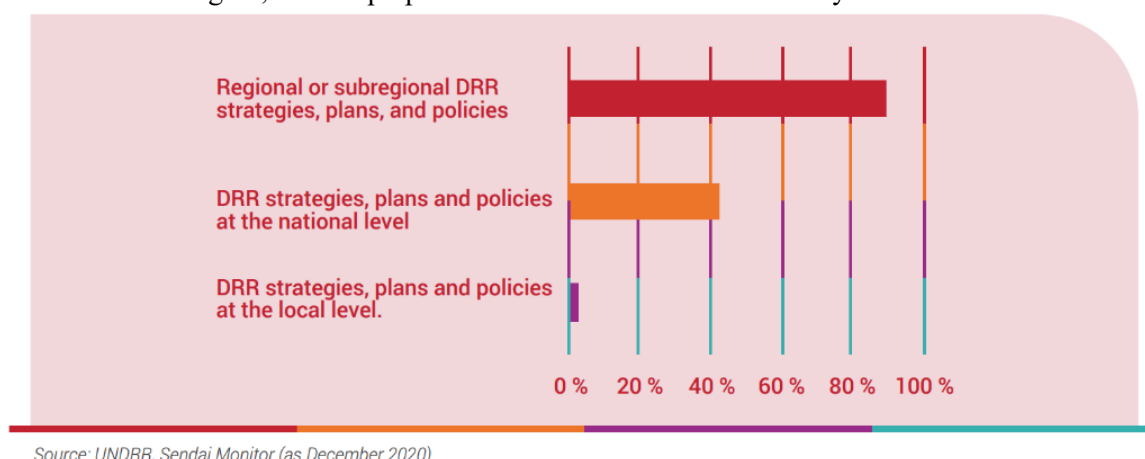
##### 1) Sendai Framework Monitoring

In Latin America and the Caribbean, almost half of the countries in the region have developed national disaster risk reduction strategies, plans, and policies at the end of 2020 (Figure 14-55). Thus, the Sendai Framework for Disaster Risk Reduction (2015-2030) Goal e, which is “By 2020, substantially increase the number of countries developing disaster risk reduction strategies at the national and local levels” has been achieved to a certain extent (UNDRR, 2021).<sup>8</sup>

<sup>8</sup> UNDRR "Regional Assessment Report on Disaster Risk in Latin America and the Caribbean, Challenges in disaster risk reduction and progress towards the Sendai Framework for Disaster Risk Reduction (2015-2030) targets."

On the other hand, as of December 2020, the development of regional disaster risk reduction strategies linked to national strategies (Sendai Framework for Disaster Risk Reduction (2015-2030) Indicator e-2) has not been achieved and the number of countries reporting progress or achievement remains low.

On the other hand, with regard to the Caribbean region, the collaboration between the SENDAI MONITOR, which reports to the UNDRR, and the CDM MONITOR has ultimately failed after several years of searching. It does not reflect the analysis of the situation in each country based on the CDM Strategy 2014-2024, which ensured the implementation of the Sendai Framework for Disaster Risk Reduction in the region, and the preparation of the CWP in each country.



Source: UNDRR "RAR" (2021)

**Figure 14-55 Achievement of Sendai Framework Target E in Latin America and the Caribbean**

## 2) Mainstreaming of DRR

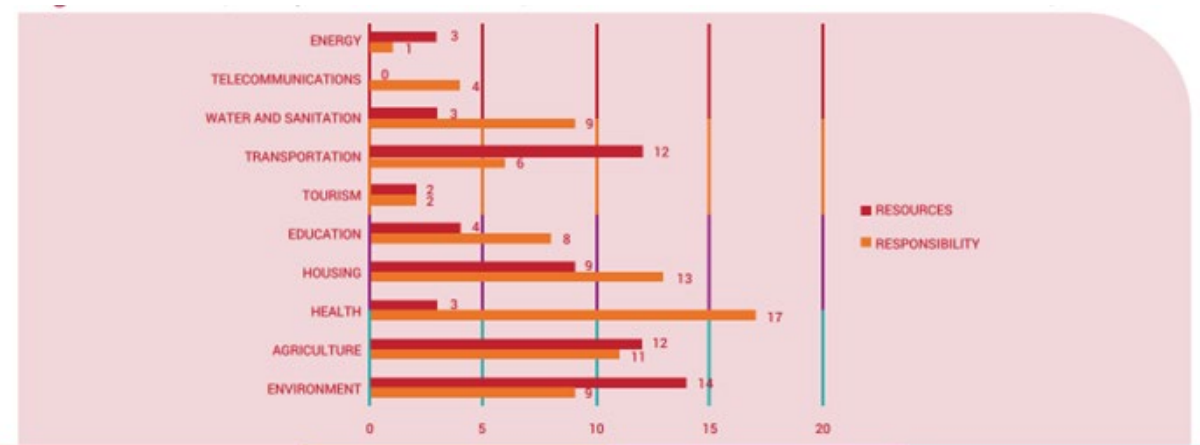
Disaster risk governance in the region has largely focused on building and strengthening institutional, legal, and policy frameworks. While sustained progress has been made over the past two decades toward strengthening public policies on risk reduction, investment and budget allocation remain insufficient (UNDRR, 2021).

Figure 14-56 shows the number of countries in Latin America and the Caribbean with national action plans allocating resources and responsibilities for disaster risk reduction. The target group consists of 26 countries. Only a few countries have articulated a multi-sectoral approach to addressing the drivers of risk, including water resource management, land use planning, and climate change adaptation and mitigation strategies. Furthermore, progress in implementing national and sectoral policies through budget mechanisms and intersectoral collaboration has been very limited.

In addition, the UNDRR (2021) notes the low level of participation and accountability of civil society and scientific and technical institutions in the development and implementation of risk management policies in the region. For example, the COVID-19 pandemic and the refusal of some governments to incorporate recommendations from the scientific community into efforts to control its spread highlight the ongoing challenge of mainstreaming science into decision-making.

Urban management remains fragmented because it is based on political and administrative boundaries that are inconsistent with how cities function or with a view towards strategic and long-term planning.

Such disjointed management generates a lack of coordination between jurisdictions, political conflicts between decision makers at various levels, inefficiencies in infrastructure operations, a failure to utilize economies of scale, inequities in the provision of public services, and delayed decision-making on climate change mitigation strategies (UNDRR, 2021).



Source: Index of Governance and Public Policy in Disaster Risk Management (iGOPP), Inter-American Development Bank.

Source: UNDRR, "RAR" (2021)

**Figure 14-56 Latin American and Caribbean Countries with Sectoral National Action Plans for Disaster Risk Reduction**

**(2) Study on Mainstreaming of Disaster Risk Reduction in Belize**

Belize is located in the southern part of the Yucatan Peninsula in Central America, facing the Caribbean Sea. The long coastline from north to south is followed by a coastal plain, and the northern region is occupied by vast lowlands at elevations of less than 150 m. The central to northern region, including Belize City, is formed from wetlands with many small rivers and lagoons, and flooding disasters caused by tropical cyclones occur frequently.

In this study, Belize is considering support for social resilience through economic infrastructure development (roads and bridges). Promotion of mainstreaming disaster risk management was also examined from the perspective that road and bridge development is directly linked to prior investment in disaster risk management.

**1) General Information on Disaster Risk Reduction Sector**

The organizations and roles associated with the disaster risk reduction sector in Belize are summarized in Table 14-76.

**Table 14-86 Organization and Roles of Disaster Risk Reduction Sector in Belize**

Organization/Institution	Role in DRR Sector
NEMO (National Emergency Management Organization)	<ul style="list-style-type: none"> <li>Disaster risk reduction coordination body under the Ministry of Sustainable Development and Climate Change and Disaster Risk Management (MSDCCDRM)</li> <li>Its purpose is to work with public and private agencies and organizations to respond to emergencies, including threat levels, to protect the lives and property of the public, and to reduce the impact of emergencies.</li> </ul>

Organization/Institution	Role in DRR Sector
Ministry of Sustainable Development and Climate Change and Disaster Risk Management (MSDCCDRM)	<ul style="list-style-type: none"> <li>- Ministry of Sustainable Development and Climate Change and Disaster Risk Management: NEMO.</li> <li>- It has three departments: the Ministry of Environment, the Ministry of Forestry, and the Ministry of Emergency Situations. The Ministry of Emergency Situations has three organizations: Fire, MS, and NEMO.</li> </ul>
NMS (National Meteorological Service)	<ul style="list-style-type: none"> <li>- An agency that implements weather services under the MSDCCDRM. The agency has a weather radar facility on the premises of Philip Goldson International Airport.</li> </ul>
HD (Hydrological Unit)	<ul style="list-style-type: none"> <li>- Hydrological observation and license management under the Ministry of Natural Resources.</li> </ul>

Source: JICA Study Team

## 2) Status of Mainstreaming of Disaster Risk Reduction

### a) Administration of Disaster Risk Reduction

As a system, the NEMO under the MSDCCDR oversees disaster management and disaster response throughout Belize. The NEMO consists of a Cabinet chaired by the Prime Minister, the Cabinet Secretariat, the NEMO Secretariat, and committees headed by chapter secretaries. It has a three-tiered committee consisting of 15 National Emergency Operation Centers, nine District Emergency Operation Centers, and Village Emergency Operation Centers, and is organized nationwide.

In terms of institutions, the Disaster Preparedness Act was enacted, and the National Hazard Management Policy is currently being revised. It is scheduled to be announced around October or November of this year.

### b) Mainstreaming of Disaster Risk Reduction

All Belize development activities are required to obtain approval from the Land Utilizing Authority (LUA). Member institutions of LUA include the Environment Department, Social Department, and NEMO. From the archaeological point of view of the Mayan ruins, and from the point of view of disaster risk reduction, the LUA confirms the resistant structure against hurricanes and earthquakes and gives permission for development activities.

As a mechanism, disaster risk reduction checks are in place for all development permits and licenses, including public works. A detailed investigation is required to determine whether the system is functioning.

### c) Cooperation with Regional Institutions

Belize is a member country of SICA and CARICOM, however, it has little relationship with SICA due to language problems. NEMO has been a founding member of CDEMA. NEMO recognizes its importance in raising the level of science and technology in member countries and strengthening the capacity of its staff.

Although NEMO recognizes the importance of the Country Work Program (CWP) in the Sendai Framework for disaster risk reduction, they are behind in preparation work due to capacity issues. Although CDEMA has provided guidance to support the formulation, the problem of personnel shortages in the country's DRR administration has been pointed out for some time and has not been



resolved yet.

#### **d) Other Donor's Cooperations**

The Pan American Health Organization (PAHO) is implementing the Smart Hospital Project in partnership with the Ministries of Health in the Caribbean region, with funding from the UK Department for International Development (DFID) <sup>9</sup>. The project is based on the Safe Hospitals Initiative and focuses on improving the resilience of hospitals to natural disasters, strengthening structural and operational aspects, and providing green technology. The target countries are Dominica, St. Lucia, Grenada, St. Vincent and the Grenadines, Guyana, Jamaica, and Belize. In Belize, five medical facilities have been constructed with the aim of reducing disaster losses through efficient healthcare delivery in times of natural disaster<sup>10</sup>.

### **14.4.4 Development and Cooperation Scenario of Disaster Risk Reduction (DRR) Sector**

#### **(1) Direction of Development and Cooperation Scenario in DRR**

This study did not result in specific project proposals in the area of disaster risk reduction (DRR). On the other hand, the literature review, online meetings, and the cross-cutting survey by the transportation sector confirmed that there is a growing awareness of the need to mainstream DRR in each country and regional organization.

In summarizing the DRR sector of this study, the needs for cooperation in disaster reduction in Central America and the Caribbean are addressed based on the survey results and directions have been proposed for cooperation that contribute to investment in advance risk reduction in line with the global agenda. In addition, the issues and goals for mainstreaming DRR in the region will be compiled into a development scenario.

#### **(2) Basic Policy for DRR Cooperation**

As indicated in the Global Agenda Project Strategy "Disaster Risk Reduction through Disaster Prevention and Recovery", JICA's basic policy for disaster risk reduction cooperation is to make an efficient and effective contribution to reducing the number of deaths, victims, and economic losses caused by disasters by establishing disaster risk reduction-related organizations that can expand, maintain, and manage investment in advance on their own budget and on a self-sustaining and development basis. Then, the goal is to move these damages into a substantial downward trend by 2030.

To achieve this objective, the following three clusters have been identified as issues to be addressed. JICA has declared that it will focus particularly on "promoting investment in proactive disaster prevention with an emphasis on reducing economic losses".

1. Realization of investment in DRR in capital-intensive areas, especially in large cities: The organizations in charge of disaster reduction infrastructure and critical infrastructure (structural measures or "hard measures") will expand investment in disaster risk reduction in

<sup>9</sup> <https://www.paho.org/en/health-emergencies/smart-hospitals>

<sup>10</sup> <https://www.who.int/news-room/feature-stories/detail/paho-who-and-uk-fcd-ohandover-four-smart-health-care-facilities-in-belize-to-the-mohw>

advance and strengthen their ability to maintain and operate such infrastructure on a self-financing and self-developing basis.

2. Establishment of a DRR promotion body for understanding and managing disasters: Expand and cooperate with an all-round DRR promotion body that is capable of planning and implementing comprehensive DRR measures, including non-structural measures (“soft measures”).
3. Build Back Better: Reduce the risk of future disasters through recovery from disasters that could not be prevented and have actually occurred.

### **(3) Major Disasters and Disaster Management Investment in Central America and the Caribbean**

Examples of major disasters causing economic damages/losses in the Central American and Caribbean regions in particular and examples of proactive DRR investments and measures to reduce or avoid risks are summarized in Table 14-87. The major hazards and particularly vulnerable sectors in each region are based on the analysis in the previous section. Although there are similarities in disaster characteristics within the Central American and Caribbean region, the frequency and magnitude of these events are unevenly distributed. Therefore, disaster prevention plans and projects must be considered based on risk assessments for each country and region, and this assessment captures an overview of the region.

The Central American region requires proactive investments against floods, storms, earthquakes, tsunamis, and landslides, especially for urban and transportation infrastructure. Disaster risk is concentrated in fast-growing small and medium-sized urban areas, with more than half of the region's cities with populations of 500,000 or more assessed as vulnerable to disaster risk (RAR, 2021). Therefore, investment in DRR should not be limited to large cities with a population of over 1 million, but should also include small and medium-sized cities. In urban areas, measures can be taken by making ordinary houses and public facilities water and earthquake resistant. Measures can also include the development of various types of disaster prevention infrastructure. At the same time, non-structural measures include strengthening disaster governance, understanding disaster risks, revising land use regulations and building codes, and developing forecasting and warning systems.

In the Caribbean region, climate hazards such as floods, storms, and droughts are major disasters that require the implementation of climate change adaptation measures. By sector, economic damages/losses to agriculture, industry, services and tourism are significant. With regard to flood control, there are no large cities in Caribbean island countries, and the locations of settlements, public facilities, and infrastructure facilities that are subject to prior investment tend to be dispersed. In addition to river improvement, erosion control weirs, and landslide control works, structural measures include strengthening the wind resistance of houses and critical facilities. Despite the particularly high risk of disasters in Caribbean island countries, pre-disaster investment by governments is not easy due to the size of their economies. However, since maintaining capital city functions and ensuring connectivity through airports, ports, and roads are key to the economy of island countries, implementation of structural measures should be considered a priority. It is also necessary to promote self-help and mutual aid to save lives. Moreover, education and community disaster prevention will also play a major role.

In conjunction with this, early warning systems need to be put in place, and governance needs to be strengthened to support organizational collaboration. In addition, disaster preparedness in the agriculture and tourism sectors, which suffer the greatest economic losses, is required, and sector-specific resilience enhancement measures and BCP development are mentioned as measures to be taken.

**Table 14-87 Major Disasters in Central America and the Caribbean and Examples of Disaster Management Investments and Measures**

Area	Major Disasters	Particularly Vulnerable Sector	Disaster Prevention Investments and Measures	
			Structural Measures	Non-structural Measures
Central America	Flood and storm	Cities (houses, etc.)	River improvement, stormwater drainage facilities, and waterproofing of critical facilities	Governance, land use regulations, revised building codes, forecasts and warnings, and disaster risk understanding
	Earthquake and tsunami	Cities (houses, etc.)	Earthquake resistance of buildings (public facilities and ordinary houses), infrastructure (bridges) (beams, port facilities, and lifelines), and seawalls	Disaster Risk Management Governance, Forecasting/Early Warning/Evacuation, Building Code Revision, Disaster Risk Understanding, and Community Disaster Management
	Landslide	Traffic Infrastructure	Countermeasure works, vegetation works, and erosion control weirs	Disaster governance and bridge diagnosis and road inspection
Caribbean	Flood and storm	Agriculture, Industry & Services	River improvement, erosion control weirs, landslide control works, and strengthening wind resistance of houses Strengthen capital function, airport, port facilities	Disaster governance, building code development, disaster risk understanding, early warning system, community disaster management, industrial sector BCP, and emergency response insurance
	Drought	Agriculture, Industry and Services	Irrigation facilities, water storage facilities, and soil improvement	Disaster governance, early warning systems, agriculture and resilience enhancement (stockpiling, introduction of drought-resistant varieties), and BCP development including farm management plans

Source: JICA Study Team

#### (4) Development Scenarios and Cooperation Approaches

##### 1) Regional Development Scenarios and Proposed Cooperative Approaches

Based on the information compiled above, the development scenario of the DRR sector in Central America and the Caribbean and JICA's cooperation approach have been considered. Table 14-88 shows the development scenarios for the DRR sector corresponding to the three clusters of the JICA Global Agenda, and the corresponding JICA's cooperation and modalities.

A particular disaster prevention measure that should be addressed in the Central American region is the strengthening of disaster preparedness in urban areas. As Central American countries face increasing disaster risks due to urbanization, the expansion of poverty, and the effects of climate change, governments need to prioritize proactive investment in DRR to strengthen the critical infrastructure for hazard-prone disaster species.

On the other hand, the Caribbean region has not formed large cities where capital is concentrated, and the necessary disaster prevention infrastructure and critical infrastructure that must be protected are

often geographically scattered. Therefore, it is expected that priority areas will be identified based on risk assessment, and projects will be formed and implemented through a combination of hard and soft measures. In addition, primary industries and services are the sectors in the Caribbean region that have suffered the most economic damage, and resilience in these sectors needs to be strengthened.

**Table 14-88 Development Scenarios and JICA Cooperation Approaches in Central America and the Caribbean-1**

Area	Cluster based on JICA Global Agenda	Development Scenario			JICA Cooperation Approach	
		Major Disasters Covered	Program to be Addressed	Implementing Agency	Cooperation Details	Modality
Central America	1) Realization of investment in DRR in capital-intensive areas centered on cities	Flood Storm	Disaster prevention infrastructure, critical infrastructure investment, and pre-investment through land use regulations, etc.	<u>Flood control and erosion control authorities, building authorities, infrastructure authorities, development planning, disaster management organizations</u>	Policy advisor, disaster management infrastructure MP/FS formulation, infrastructure development, capacity building	Technical cooperation, dispatch of experts, financial support
		Earthquake Tsunami	Disaster prevention Infrastructure, Critical infrastructure investments, Updated seismic standards, and early warning	<u>Infrastructure authorities, Building authorities, development planning, disaster management organizations</u>	Policy advisor, critical infrastructure MP/FS formulation, seismic system development, capacity building	Technical cooperation, dispatch of experts, financial support
		Landslide	Disaster prevention infrastructure, Critical infrastructure investment and maintenance	<u>Infrastructure government agencies, disaster management organizations</u>	Critical infrastructure MP/FS formulation, implementation and maintenance, and capacity building	Technical cooperation, dispatch of experts, financial support
	2) Establishment of a DRR promotion body for understanding and managing disasters	Disaster Prevention Organization	Conduct meteorological and seismic risk assessments	<u>Disaster management organizations, development planning, local governments, meteorological agencies, reconstruction agencies, digital agencies, other sectors</u>	Strengthening capacity for strategy formulation and implementation, system strengthening, risk assessment, and system building	Technical cooperation, dispatch of experts, cooperation with CEPREDENAC
		3) Build Back Better	Structural	Disaster Prevention Infrastructure and Housing Reconstruction	<u>Reconstruction authorities, flood control and erosion control, infrastructure, building authorities, local government</u>	Recovery MP/FS formulation house reconstruction
	Non-structural		Promote risk management (land use, building codes) and disaster education	<u>Disaster management organizations, reconstruction agencies, health and welfare, education,</u>	Risk assessment, promotion of risk understanding	Technical cooperation, dispatch of experts, and volunteers

Area	Cluster based on JICA Global Agenda	Development Scenario			JICA Cooperation Approach	
		Major Disasters Covered	Program to be Addressed	Implementing Agency	Cooperation Details	Modality
				<u>other sectors, local government</u>		
Caribbean	1) Realization of investment in DRR in capital-intensive areas centered on cities	Flood Storm	Strengthening of disaster prevention infrastructure and wind resistance of houses. Develop forecasting and warning systems	<u>Flood control and erosion control government agencies, construction government agencies, infrastructure government agencies</u>	Policy advisor, disaster management infrastructure MP/FS formulation, infrastructure development, capacity building	Technical cooperation, dispatch of experts, financial support
		Drought	Capital investment in vulnerable sectors and building early warning systems	<u>Industrial and commercial authorities, development planning authorities, disaster management organizations</u>	Policy advisors, capacity building	Technical cooperation, dispatch of experts, financial support, private sector cooperation
	2) Establishment of a DRR promotion body for understanding and managing disasters	Disaster Prevention Organization	Conducting weather observation risk assessments	<u>Disaster Prevention Organization, and development plans, TMA, other sectors, communities</u>	Strengthening capacity for strategy formulation and implementation, system strengthening, risk assessment, and system building	Technical cooperation, dispatch of experts, financial support, cooperation with CDEMA
		3) Build Back Better	Structural	Disaster prevention infrastructure, housing reconstruction	<u>Reconstruction authorities, flood control and erosion control, infrastructure, construction authorities</u>	Recovery MP/FS formulation house reconstruction
	Non-structural		Facilitating Risk Management and Risk Commitment	<u>Disaster management organizations, health and welfare, education, and related sectors</u>	Risk assessment, promotion of risk understanding	Technical cooperation, dispatch of experts and volunteers

Source: JICA Study Team

## 2) Mainstreaming DRR and Strengthening Governance

As the field survey in Belize and the interviews with CDEMA are analyzed, the stove-piped structure within each country continues to be a detriment to mainstreaming DRR in the region, especially the lack of sufficient horizontal relationships between institutions of Engineering and Finance, Infrastructure and Public Works. Although the effectiveness of pre-investment in mitigating damage and speeding up recovery and reconstruction is well known by relevant organizations, it has not been fully incorporated into their policies and budgets.

Disaster prevention governance means that all parties involved must have their own action plans and preparedness in place, as well as promote collaboration. In this context, disaster management institutions in each country are the leaders and they play a central role in disaster management

administration by securing funds and budgets, maintaining and improving technology, raising awareness of the importance and beneficial effects of disaster management, legislation building to promote activities and various studies and reports to position them as issues of national level. JICA will continue to provide lateral support for these activities of national disaster management institutions. JICA cooperation that contributes to the promotion of mainstreaming DRR could include the promotion of investment in disaster reduction in development planning and urban planning support projects, and the provision of training opportunities for officials of infrastructure and building authorities.

As the Economic Infrastructure Sector of this study is conducting research, infrastructure development in the Caribbean region is expected to increase in the future as the economies of the Dominican Republic, Belize, Guyana, and other countries develop. In JICA's cooperation projects, it is important to form a committee that involves all parties concerned into studies on infrastructure development planning based on disaster risks and to promote the mainstreaming of DRR.

In addition, in tourism-driven countries such as Jamaica and St. Lucia, disaster risk reduction in the tourism industry is an urgent issue, and there is a need for JICA's cooperation. The resilience of the tourism industry as a whole is expected, in addition to through disaster prevention infrastructure, to be strengthened through the formulation of BCPs for businesses to reduce disaster risks in advance and to effectively respond to and mitigate damage in the event of a disaster.

### **3) Cooperation with Local Disaster Management Agencies**

In Central America and the Caribbean, regional integration and regional cooperation through regional institutions such as SICA and CARIROM are gaining momentum in order to overcome common socioeconomic challenges and to develop the region. JICA is also working on regional support (wide-area cooperation) for development issues common to all countries in the region, while promoting cooperation with international organizations such as the IDB and other donor countries.

CEPREDENAC and CDEMA, which are regional agencies for disaster management, share disaster information and coordinate emergency response, so cooperation with these agencies would be effective when considering JICA's wide-area cooperation in the DRR sector. For example, one of the important projects that regional agencies are carrying out for disaster management administrations in their countries is to guide them to prepare disaster management plans based on risk analysis. JICA can assist in the formulation of guidelines, monitoring, and information provision by regional organizations. Moreover, JICA can also share assets accumulated through past cooperation projects and Japan's experience and know-how in disaster risk reduction and its deployment in the region.

On the other hand, even if regional organizations have the understanding and awareness of DRR investment and attempt to guide member countries, the final policy decision is left to each country, which is a limitation and challenge for the activities of regional organizations. Therefore, JICA will promote information sharing with regional organizations while promoting the formation of specific projects that meet the disaster risk reduction cooperation needs of each country.

## Part 4

### Sector Cross-cutting Issue

Chapter 15	Root Cause Measures for Central American Migration
Chapter 16	South-South, Triangular and Regional Cooperation
Chapter 17	Cooperation with Local Governments and Co-creational Relationship for Local Revitalization
Chapter 18	Pilot Project

## 15. Root Cause Measures for Central American Migration

### 15.1 Outline of the Study

#### 15.1.1 Introduction

As part of the measures to address the root causes of migration to Central America, the Japan International Cooperation Agency (JICA) Study Team has conducted a study regarding "irregular migration" stemming from the Northern Triangle Region of Central America<sup>1</sup>, which is also related to "forced migration". In addition to understanding the root causes behind this phenomenon, the JICA Study Team has considered measures that contribute to improving the root causes to curb the occurrence of irregular migration. The migration countermeasures in Mexico, Costa Rica, and Panama, which are the destination and transit countries for refugees from Venezuela, Haiti, and Cuba, were also reviewed, as well as Japanese efforts that contribute to tackle those issues.

First, to understand the overall flow of migrants in Central America and the Caribbean, the JICA Study Team organized the characteristics and issues of this sector based on reports from International Organization for Migration (IOM), the Inter-American Development Bank (IDB), United Nations Development Programme (UNDP), United Nations High Commissioner for Refugees (UNHCR), and Central American Integration System (SICA). The JICA Study Team confirmed the scope of the investigation with JICA officials from the offices of El Salvador, Guatemala, and Honduras, which are targets of the detailed investigation, as well as Mexico and Costa Rica, which are migration transit countries. Guatemala has already conducted information collection studies on migration, and any redundancy shall be avoided.

The first field study was conducted from August 15 to September 9, and interviews were conducted with related organizations and non-government organizations (NGOs) in El Salvador, Honduras, and Tijuana, Mexico. Based on the above study results, the JICA Study Team summarized the root causes of migration in the Central American Northern Triangle and sorted out the issues.

Three regular session discussions were held with JICA officials on October 18, November 18, and December 20 to agree on the policies and methods of the study. Interviews in online format were conducted with UNHCR, IDB, and USAID. Additionally, interviews regarding the contribution of individual JICA projects to the root cause of migration were conducted with respective JICA officers and experts.

The final deliverable of this study is to identify potential JICA initiatives that could contribute to curbing the root causes of migration and to prepare analyses and recommendations that will promote future cooperation policies.

In this sector, the report is based on the definitions in the Glossary of Migration Terms of the International Organization for Migration (IOM). Table 15-1 below shows the main migration-related terms.<sup>2</sup>

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<sup>1</sup>El Salvador, Guatemala, Honduras

<sup>2</sup>"IOM Handbook for Assisting Victims of Trafficking" (IOM 2009)



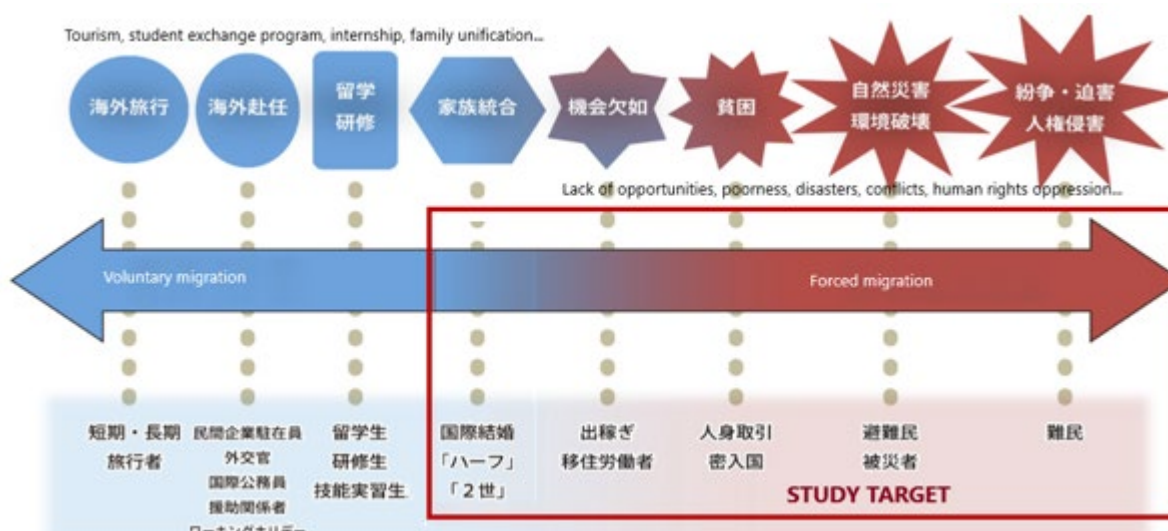
**Table 15-1 IOM Glossary of Migration-Related Terms**

Term	Definition
Migrant	"Migrant" is not defined by international law but is someone who leaves their original place of residence, whether within a country or across national borders, temporarily or permanently, and for any number of reasons. "Migration" may include people with distinct legal categories, such as migrant workers, certain types of movement. They are also those people who choose to move to another place to improve their lives.
Refugee	Refers to persons who have fled their country of origin because of a situation that creates the need for international protection by seriously disrupting public order, such as the threat of persecution, conflict, or the spread of violence. Refugees are defined in the 1951 Refugee Convention, regional refugee agreements, and even the UNHCR Regulations. They are forced to flee in order to save their own lives or to preserve their freedom.
Asylum	Refers to the act of escaping political oppression from the government of one's home country or oppression for religious or ethnic reasons or seeking asylum in a foreign country in order to avoid it. Asylum seekers are not yet legally recognized as refugees and await asylum recognition.
Country of Destination	Countries to which migrants travel, countries to which migrant flows (whether legal or illegal) are headed.
Country of Origin	The country of origin of migrants, the country from which migrant flows (whether legal or illegal) originate.
Country of Transit	Countries through which migrants' transit, countries through which flows of migrants (whether legal or illegal) transit.
Irregular Migration	Movement of persons outside the framework of regulations established by sending, transit, and receiving countries. There is no clear or universally accepted definition of irregular migration. From the point of view of the destination country, there is illegal entry, stay, and employment. This means that migrants do not hold the entry, residence, and work permits or credentials required by migration laws. From the point of view of the country of origin, an irregular situation exists, for example, when a person crosses a border without a valid passport or travel document or without meeting the necessary administrative requirements for departure.
Migrant Worker	"Persons seeking to engage in, currently engaged in, or who have engaged in remunerated activities in a country other than their country of nationality" (International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families) Convention [1990], Article 2).
Circular migration	A migrant who travels repeatedly between two or more countries <sup>3</sup> . Usually, it refers to people who migrate temporarily for work and then return home.
Migration	The process of moving people across borders or within a country. Migration is the movement of human groups and encompasses all types of human movement regardless of period, group composition, or cause. It also includes refugees, displaced persons, and economic migrants.
Migration Mixed Flow	Complex population movements involving refugees, asylum-seekers, economic migrants, and other migrants that are difficult to distinguish by using the same routes and modes of transport.
Organized Crime	Widespread criminal activities coordinated and controlled by a central syndicate.
Smuggling of Migrants	"Illegal entry into a Contracting State of a person who is not a national or permanent resident of a Contracting State in order to obtain, directly or indirectly, financial or other material benefits" (Supplementary Protocol on Smuggling Migrants, Article 3).
Trafficking in Person	"For the purposes of exploitation, the threat or use of force or other forms of coercion, kidnapping, fraud, deception, abuse of power or vulnerability, or the purpose of obtaining the consent of any person who has control over another person; to acquire, transport, deliver, conceal, or receive a person by means of the giving and receiving of money or benefits in the country" (United Nations Supplementary Protocol on Trafficking in Persons [2000] Article 3).
Transportation	To move goods or people from one place to another by any means of transportation. One of the core components of human trafficking. Movement may occur internationally (involving more than one country) or from one part of the country to another (internal trafficking). Transportation can be legal or illegal, and can be by air, land, or sea.
Return Migrant	There are two main types of returnees: voluntary return and forced return. Data on forced returns are typically collected by national and international statistical offices, border protection agencies and migration law enforcement agencies. The International Organization for Migration (IOM) collects data on assisted voluntary repatriation and assisted reintegration programs around the world.
Internally Displaced Persons (IDPs)	People who are forced to flee their original place of residence and move within the country due to natural disasters, war damage, political persecution, among others.

Source: JICA Study Team based on the IOM Glossary

<sup>3</sup> <https://publications.iom.int/system/files/pdf/iml-34-glossary-es.pdf>

The IOM definition of “movement (migration)” shows the following various forms (see Figure 15-1).



Source: IOM website

**Figure 15-1 IOM Definition of “Movement (Migration)”**

This study focuses on involuntary migration caused by conflict/persecution, human rights violations, natural disasters, poverty, and lack of opportunity. Family reunification is also included in this study due to the importance of this factor as migration cause in the Central American region.

### 15.1.2 Study Scope

The scope of work of this sector is shown in Table 15-2.

**Table 15-2 Scope of Work for Root Causes Measures for Central American Migration**

No.	Item	Subsector	Scope of Work
1	Sector Targets		In the era of with/post COVID-19, in order to tackle the root cause of forced migration in the Central American Northern Triangle region, which is expected to continue to increase in the future, the JICA Study Team will consider JICA's competitive advantages and will make recommendations for an international cooperation strategy
2	Scope Update	Central American Northern Triangle	Guatemala, El Salvador, and Honduras will be the priority target countries.
		Central American migration transit and destination countries	A general study will also be conducted in Mexico, Costa Rica, and Panama to capture the large flows of migration.
3	[Task 2] Literature Study		To understand the current situation of migration issues in Central America, the JICA Study Team will investigate the following in the Central American Northern Triangle (Guatemala, El Salvador, and Honduras) and migration transit/destination countries (Mexico, Costa Rica, and Panama). - General information, impact of the political trends - Outline of migration issues shown by statistics - Migration types and profiles, issues and challenges - Migration overseas remittances and diasporas - Impact of COVID-19.
			The study will be conducted from the following perspectives: - Social issues - Economic issues - Environment issues - Security-related issues
			Research regarding the different initiatives will be conducted as follows:

No.	Item	Subsector	Scope of Work
			<ul style="list-style-type: none"> <li>- Development policies of surveyed countries.</li> <li>- Assistance policies and trends of international organizations and donors.</li> <li>- Listing past and present projects.</li> <li>- “Root Causes Strategy” advocated by the United States (U.S.) government.</li> <li>- Assessment of JICA projects from the viewpoint of migration issues contribution.</li> <li>- Policy position, priority, and significance of cooperation in Japan’s Development Policy.</li> <li>- Confirmation of JICA assets and list of project achievements by Japan.</li> <li>- Positioning of JICA and differentiation with other development partners</li> </ul>
4	[Task 3] Field Study	Field study (1)	The JICA Study Team will visit key countries in the Central American Northern Triangle region and migration transit points, and conduct interview surveys with related organizations, development partners, NGOs, among others, to collect the latest information on the root causes of migration.
		Field study (2) and (3)	Complementary information will be added through online interviews.
5	[Task 4]		
6	[Task 5]		No pilot projects are expected to be implemented in the migrant root cause sector. When selecting and implementing pilot projects in other sectors, the JICA Study Team will implement related parts.
7	[Task 6]		
8	[Task 8] Proposal		Finalize recommendations on international cooperation strategies based on feedback from JICA.

Source: JICA Study Team

## 15.2 Overview of Migration in Central America and the Caribbean

### 15.2.1 Current Situation of Migration in Central America and the Caribbean

The Central American region (including Mexico) is characterized by the following migration dynamics<sup>4</sup>:

- (1) Migration from countries in the region to North America, mainly in the United States,
- (2) Intra-regional migrant flows (migrants moving from countries in the region to other countries in the same region), the main destination countries being Mexico, Belize, Costa Rica, and Panama,
- (3) Transit flows (migrants primarily from the Caribbean, South America, Asia, and Africa via countries within the region with the intention of reaching North America), and
- (4) Significant flows of returning migrants from primarily the United States and Mexico to countries of origin in the Central American Northern Triangle (Honduras, Guatemala, and El Salvador).<sup>5</sup>

According to the 2020 United Nations Department of Economic and Social Affairs (UNDESA) data<sup>6</sup>, the number of migrants from Central America has increased significantly over the past three decades, by 137% between 1990 and 2020, from 6.82 million to nearly 16.2 million (worldwide figures). During this period, the countries with the highest migration growth were Honduras (+530%), Guatemala (+293%), and Mexico (+154%), while the countries with the lowest migration growth were Panama (+4%), El Salvador (+29%) and Belize (+46%). In terms of absolute numbers, Mexico, El Salvador, Guatemala, and Honduras have the largest number of migrants<sup>7</sup> (see Table 15-3).

<sup>4</sup> Migration data in Central America, IOM

<sup>5</sup><https://www.migrationdataportal.org/fr/node/3155>

<sup>6</sup> International Migrant Stock 2020: Destination and origin

<sup>7</sup><https://www.migrationdataportal.org/fr/node/3155>

**Table 15-3 Migrant Population from Central America (1990-2020)**

	1990	1995	2000	2005	2010	2015	2020
Central America	6,823,036	9,288,464	12,228,703	13,978,650	16,204,451	16,291,222	16,198,974
Belize	36,101	41,950	48,211	51,883	57,371	63,099	52,756
Costa Rica	69,283	84,980	105,227	117,618	132,317	138,237	150,241
El Salvador	1,241,849	933,103	949,042	1,118,793	1,337,085	1,512,895	1,599,058
Guatemala	348,189	461,891	582,796	736,715	924,898	1,118,115	1,368,431
Honduras	156,379	246,575	342,103	448,882	587,503	729,855	985,077
Mexico	4,395,355	6,949,276	9,562,878	10,817,810	12,415,222	11,923,234	11,185,737
Nicaragua	441,488	437,711	501,517	555,532	610,211	655,577	718,154
Panama	134,392	132,978	136,929	131,417	139,844	150,210	139,520

Source: International Migrant Stock 2020: Destination and origin (UNDESA 2020)

Migration from Mexico and the Central American Northern Triangle is explained by economic, social, political, and environmental factors. The Mexico-U.S. border is one of the busiest and longest borders in the world, and such large-scale cross-border migration is motivated by economic factors, including income inequality, historical factors, and very strong social and family ties. Since the mid-1950s, political instability and economic difficulties caused by civil wars, armed conflicts, dictatorships, coups, gang and drug-related violence, and natural disasters such as hurricanes and earthquakes have shaped the migration situation in the Northern Triangle of Central America, and the flows and numbers have also been altered by migration policies.

Today, countries in the region from Panama to the U.S. form part of an important corridor for undocumented migrants. Many of these undocumented migrants come from Guatemala, Honduras, and now a declining number from El Salvador, and they all generally seek to migrate to the U.S. However, there are also a significant number of people from outside the region who travel through Central America to the U.S.-Mexico border, especially Venezuelan, Haitian, and Cuban migrants, that are rapidly increasing. In addition, an increasing number of migrants are settling in Mexico, Costa Rica, and Panama, making it more difficult for them to reach and enter the U.S., as there are also many people who are seeking asylum.

### 15.2.2 Current Status of Migrants Remaining in the Region

According to the SICA report<sup>8</sup>, regarding migration trends in the surveyed regions, the movement of people between the Central American region and the Dominican Republic is due to the high cost of emigration and the political or economic stability that exists in some of the SICA member countries. Recent studies have found that migrant workers from neighboring countries are very often employed by various labor-intensive economic activities, such as mega-projects in the tourism and infrastructure sectors. In addition, transportation and communication facilities, short distances, and cultural similarities, among others, are promoting movement, especially between countries bordering each other.

<sup>8</sup>"Hallazgos del estudio de línea base sobre migración y desplazamiento en la región del SICA" (July 2019)

Figure 15-2 shows the migration flows that occur within the SICA region.



Source: From SICA report<sup>9</sup>

**Figure 15-2 Migration Flows Within the SICA Region**

### 15.2.3 Current Situation of Migrants from Other Regions

According to the SICA report<sup>10</sup>, even though there is a flow of migrants from outside the region who migrate to SICA member countries or use them as transit points, those who choose Costa Rica or Panama as destinations from Colombia and those who choose Panama from Haiti as transit points to migrate are conspicuous.

Recently, due to Venezuela's political and economic situation, especially restrictions on food and medical care, cash shortages, and political bias, Panama, Mexico, and Costa Rica have become the main destinations, and areas where refugees and migrants come from those countries are mixed and the number is increasing rapidly as shown in Table 15-4.

**Table 15-4 Venezuelan Migration Trends in Panama, Costa Rica, and Mexico**

Emigration Country	2015	2020	Ratio
Panama	9,883	119,553	1,109.68
Costa Rica	1,381	28,214	1,943.01
Mexico	16,491	70,377	326.76

Source: UNDESA 2020

The region is also a transit point for migrants from the Caribbean (mainly Haiti and Cuba) and from off-continental areas (mainly Asia and Africa).

Mexico is primarily a country of origin for migrants, but in recent years it has also become an important destination and transit country for both internal and external migrant flows. Mexico's total international migrant population has increased by 72% since 2000, reaching 1.2 million in 2020<sup>11</sup>. According to UNHCR data, there will be a record 131,448 asylum applications in 2021, mostly from Honduras and El Salvador, but also from Haitians, Cubans, and others. Since 2018 more than 60,000

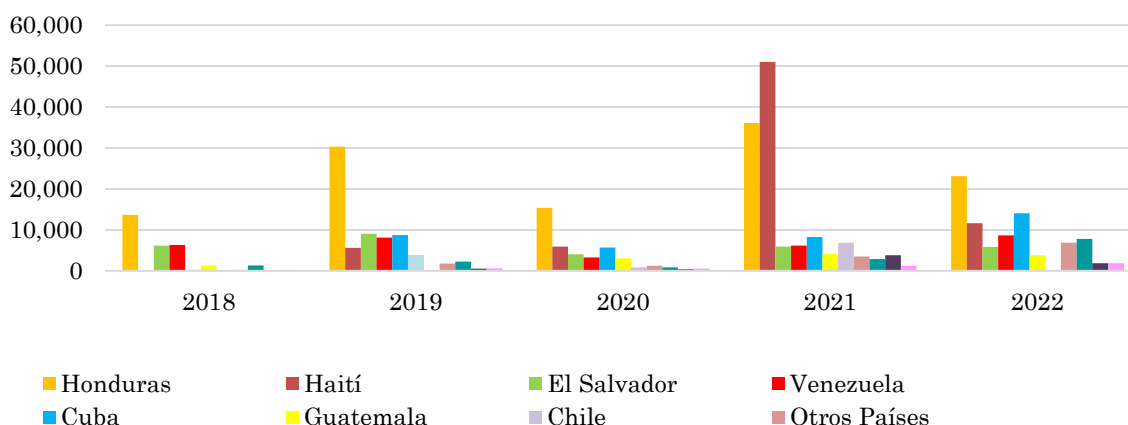
<sup>9</sup>Ibid

<sup>10</sup>Ibid

<sup>11</sup>International Migrant Stock 2020: Destination and origin (UNDESA 2020)

Venezuelans have been displaced abroad.<sup>12</sup>

As shown in Figure 15-3, refugee applications by nationality from the Mexican Commission for Refugee Assistance (COMAR) show a sharp increase in Haitian refugees in September 2021. The number of Cuban and Venezuelan refugees<sup>13</sup> has also increased significantly since 2018 and is the second largest after Honduran refugees (see Figure 15-4).



Source: COMAR

Figure 15-3 Refugee Applicants in Mexico (2018 to September 2022)



Source: COMAR

Figure 15-4 September 2022 Refugee Applicants Outlook in Mexico<sup>14</sup>

In recent years, there has been an increase in "mixed migration," a phenomenon in which refugees and migrants use the same routes and means of transportation, making it difficult to distinguish between them. When these mixed migrants are unable to legally enter a particular country, they embark on

<sup>12</sup><https://data.unhcr.org/es/documents/details/92446>

<sup>13</sup> Since 2018, Venezuelan refugees flow have reached more than 60,000 persons (Evaluación del Impacto Socioeconómico de la COVID-19 en las Personas Desplazadas por la Fuerza, UNHCR)

<sup>14</sup> La COMAR en números Septiembre 2022, Gobierno de México

dangerous sea or land migrations with the help of smugglers and others, often losing their lives. In addressing such mixed migration in transit and destination countries, the situation on the ground has become very complex, according to the UNHCR Costa Rica interview<sup>15</sup>, as it is difficult to distinguish and therefore has to be comprehensively targeted for protection and assistance.

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<sup>15</sup> UNHCR Costa Rica interview realized on November 28, 2022

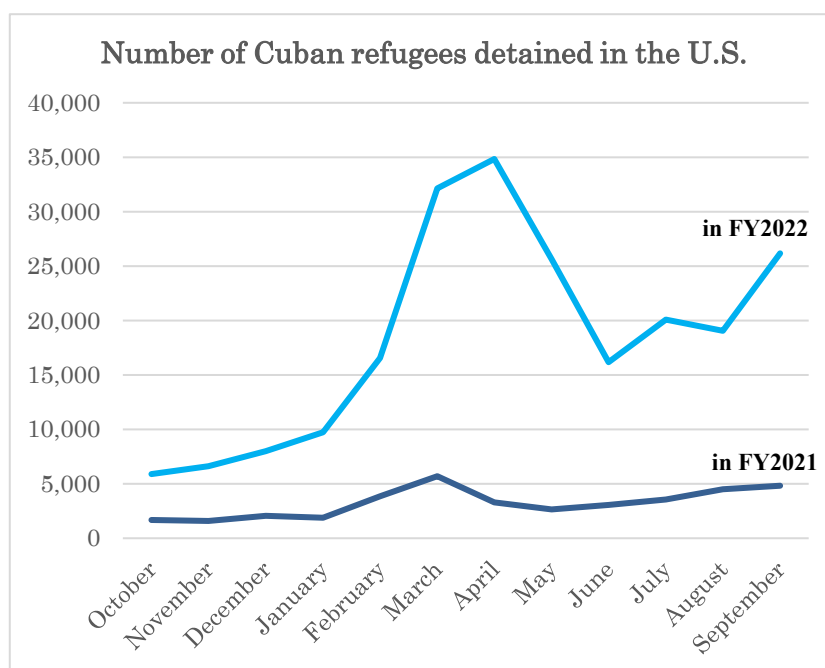
### Box 15-1 Background of the Surge in Cuban, Haitian, and Venezuelan Refugees

#### 〈Cuban Migrants and Refugees〉

According to the Center for Democracy in the Americas (Center for Democracy in the Americas - CDA)<sup>16</sup>, approximately 178,000 Cubans will migrate to the U.S. in FY2022 due to economic, political, and social crises. This figure is reportedly higher than the previous two largest migratory waves from Cuba, the Mariel Migration (1980) and the "Rafter Crisis" (1994), combined.

Since the Ortega administration in Nicaragua abolished visas for Cubans, the Havana-Managua flight has become the starting point for travel from Central America to the U.S., with the Havana-Managua route being the most in demand since November 2021. The route from Nicaragua avoids the crossing of the Darien Gap, a dangerous jungle that connects Colombia and Panama. Nevertheless, crossing Guatemala and Mexico to reach the U.S. border remains a path that puts Cubans, as well as other migrants, at risk for human rights abuses and trafficking, many of whom have lost their lives.<sup>17</sup>

Mexican statistics eloquently illustrate the record migration of Cubans. The total number of cases welcomed from January to June 2022 was 23,526, the highest number since records began to be kept. In addition, according to an October 2022 report by Mexico's COMAR, Cubans have already surpassed Haitians in Mexico as the nationality with the second highest number of asylum seekers after Hondurans, with 14,056 Cubans seeking refugee status by September 2022. However, few seek a long-term migrant settlement in that country, and most of them want to move to the United States. Cubans captured by sea are usually turned back, but many Cubans arriving in the U.S. from the Mexican border are allowed to enter the country.<sup>18</sup>



Source: U.S. Customs and Borders Protection

**Figure 15-5 Number of Cuban Refugees Detained in the U.S. (FY2021-FY2022 Comparison)**



### 〈Haitian Migrants and Refugees〉

According to Migration Policy Institute (MPI)<sup>19</sup>, migration from Haiti in Latin America has been driven by multiple factors, including political and human rights abuses dating back at least to the Duvalier dictatorship in the 20<sup>th</sup> century. In addition to the vast number of Haitians who lost their homes in the 2010 earthquake, tens of thousands were displaced by Hurricane Matthew in 2016. Gangs and state-sanctioned violence have led to widespread unrest, and with the lowest per capita Gross Domestic Product (GDP) in the western hemisphere, many people in Haiti are emigrating for economic reasons. Finally, the large Haitian diaspora abroad is also a pool factor for migrants.

After the 2010 earthquake, Haitians migrated to many countries, most notably Brazil, where an estimated 85,000 migrated between 2010 and 2017.

At the time, Brazil was promising ample construction employment in anticipation of the 2014 World Cup and 2016 Summer Olympics. The Brazilian government also provided humanitarian visas to some Haitians displaced by the earthquake. In addition, between 2010 and 2015, 48,000 Haitians sought asylum, an influx that will continue at least through 2019, and nearly 17,000 Haitians sought protection, more than any other nationality except Venezuelans. As of 2020, Brazil's Haitian population has grown to an estimated 143,000.

However, after the employment boom caused by the 2016 Summer Olympics passed, Brazil's economy stagnated, and corruption and political unrest grew. Many Haitians were already working longer hours and lower wages than Brazilians, and the economic downturn has exacerbated their challenges. In addition to these factors, deep-seated racial discrimination and growing anti-migrant sentiment have led some Haitians to leave Brazil since 2018.

In the mid-2010s, Chile was one of the most politically and economically stable countries in the region, allowing Haitians to enter without visas until 2018. More than 12,000 Haitians arrived in Chile in 2015, and that number exceeded 103,000 in 2017. However, with the change of government in 2017, restrictions on migration were put in place, and visas have been mandatory for Haitians since 2018. These policy changes were made in the face of growing racial and anti-migrant discrimination and limited employment opportunities.

To get to Mexico from Brazil or Chile, one must go through several countries. This migration can take months or years, depending on the migrant's resources, stay in detention centers, or stay enroute for short-term work.

<sup>16</sup> Cuba Analysis, Center for Democracy in the Americas, <https://www.democracyinamericas.org/cubaanalysis>

<sup>17</sup> El éxodo récord e imparable de cubanos hacia Estados Unidos, Deutsche Welle, 2022年9月2日

<sup>18</sup> Ibid

<sup>19</sup> Haitian Migration through the Americas: A Decade in the Making, Migration Policy Institute, September 30, 2021



Source: MPI

**Figure 15-6 Route of Haitian Refugees Heading North**

〈Venezuelan Migrants and Refugees〉

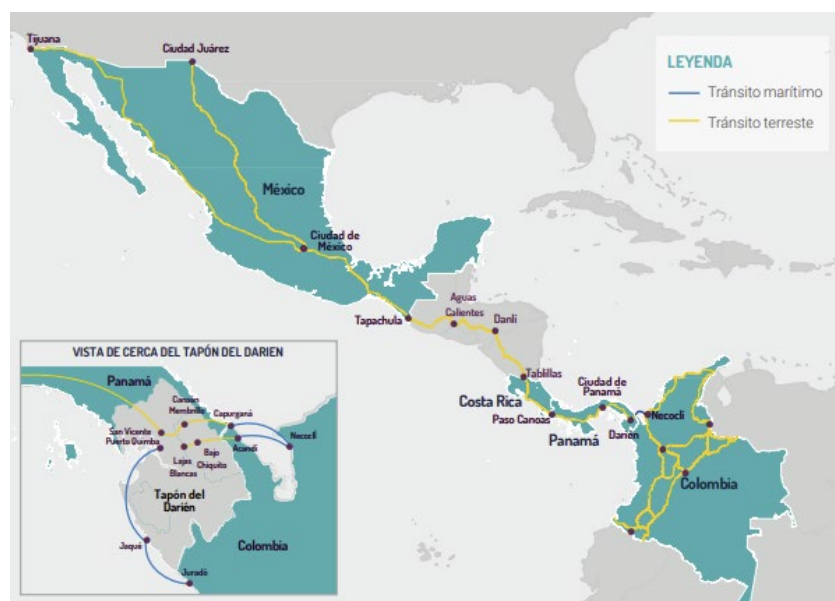
People continue to leave Venezuela to escape violence, insecurity, threats, and lack of food, medicine, and essential services. Having more than six million migrants and refugees from Venezuela, the majority of whom live in Latin America and the Caribbean, making it the second-largest external migration crisis in the world. Due to the political, socioeconomic, and human rights situation in their own country, they are leaving Venezuela for neighboring countries and other regions. Many of these people that are passing through need assistance as many of them are families with children, pregnant women and elderly persons, vulnerable to smugglers and other dangers. They mainly face needs in documentation, food, medicine, and shelters, among others<sup>20</sup>. According to the R4V website, which provides updated data on Venezuelan refugees, Colombia (2.48 million), Peru (1.49 million), Ecuador (500,000), Chile (440,000), and Brazil (380,000) have the largest Venezuelan migrant populations, while in the Central American region, Panama (140,000), Mexico (80,000), and Costa Rica (30,000) have the largest Venezuelan migrant populations, in that order.<sup>21</sup>

A record number of migrants and refugees from Venezuela are traveling north through Central America and Mexico, and due to visa requirements and their costs in all Central American countries, these movements are occurring primarily through irregular routes. Including the dangerous Darien Gap between Panama and Colombia, 48,204 irregular crossings were recorded in September 2022

<sup>20</sup> Situación de Venezuela, UNHCR, <https://www.acnur.org/situacion-en-venezuela.html>

<sup>21</sup> Plataforma de Coordinación Interagencial para Refugiados y Migrantes (R4V)

alone (up 54% from 31,104 in August), of which 38,399 were Venezuelans (up 62% from 23,632 in August)<sup>22</sup>.



Source: R4V

**Figure 15-7 Route of Venezuelan Refugees Heading North**

On October 12, 2022, the U.S. government announced new migration procedures for Venezuelans, and Venezuelans who irregularly cross the U.S.-Mexico land border are now subject to the provisions of the Title 42 Public Health Act<sup>23</sup>. If arrested, they are to be immediately deported to Mexico.

In parallel, a humanitarian new migration program<sup>24</sup> has allowed up to 24,000 eligible Venezuelans to enter the U.S. for two years and apply for work permits. According to Panama’s SENAFRONT, the number of Venezuelan refugees crossing the Darien Gap has declined (Statistics from the Panama Immigration Service to December 2022 showed that 40,593 Venezuelans were passing through the Darien Isthmus in October 2022, down to 668 in November.<sup>25</sup>).

#### 15.2.4 Migration Routes in Central America

The Central American region has become a transit point for migrants heading to the United States, with no infrastructure to cross it, starting at Darien Gap, the giant natural barrier that divides the United States between Colombia and Panama. While many migrants arrive by plane in large Central American cities, others try to cross from the Darien Gap through smaller ports such as Necoclí.

After crossing the Darien Gap, migrants travel through Panama City, through the Central American highlands to San Jose (Costa Rica), Managua (Nicaragua), and through Choluteca in Honduras. According to interviews with the Honduras Migration Service, recent trends have seen more and more migrants flow into Honduras from the village of Trojes, which has no infrastructure at all, due to stricter crackdowns. Cuban migrants also flew first to visa-free Nicaragua, from where they traveled by ground

<sup>22</sup> <https://www.r4v.info/es/special-sitrep-migration-process-esp>

<sup>23</sup> A provision in the Public Health Service Act that prevents people from countries that may carry contagious diseases from entering the United States.

<sup>24</sup> Since January 2023, it applies also to Cubans, Haitians and Nicaraguans. <https://www.uscis.gov/CHNV>

<sup>25</sup> Irregulares en tránsito por Darién por país 2022

route from Honduras to the United States. From there it continues again into the highlands of El Salvador and Guatemala (the last country before entering Mexico).<sup>26</sup>

The Central American Northern Triangle, which is traversed by the Central American Dry Corridor, consists of densely populated temperate highlands. Overdeveloped and deforested, the region is highly vulnerable to natural disasters such as hurricanes, floods, landslides, and droughts that regularly strike the region, beginning cycles of poverty, violence, and migration.

Rural exodus, combined with environmental migration, has led to the concentration of vast numbers of people in the region's large cities, particularly in the impoverished areas around Guatemala, San Salvador, Tegucigalpa, and San Pedro Sula. Gangs, corruption, and violence are rife there, preventing residents from prospering and forcing them to begin emigrating to the United States.

The migrant caravan, which began in 2018, typically departs from San Pedro Sula (Honduras), gathers people from different parts of the Northern Triangle of Central America, travels with them to the United States, and aims to protect them from many dangers. However, they are still exposed to the same threats (coronavirus, hygiene issues, sexual violence, etc.).

Belize, Costa Rica, and Panama are, as mentioned above, regional destination countries<sup>27</sup>. In fact, the latter two countries have achieved very high human development indexes. Costa Rica is developing through the environmental development model, and Panama is developing through its canal and financial sector. On the other hand, sparsely populated Belize attracts workers from neighboring countries.

Nicaragua is a major source of migrants heading south to Costa Rica, other than the United States. Political instability in 2018 has also led to a sharp increase in the number of Nicaraguans attempting to emigrate to Costa Rica (see Figure 15-8).

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<sup>26</sup>Interview with INM Honduras (August 31, 2022)

<sup>27</sup><https://www.migrationdataportal.org/es/regional-data-overview/datos-migratorios-en-centroamerica>



Source: El Orden Mundial<sup>28</sup>

**Figure 15-8 Migration Routes in Central America**

Since early 2020, the COVID-19 pandemic has had a significant impact on migration in the region. General regional movement, migrant return, travel routes and customs, migration detention at the Mexico-Southwestern U.S. border, and visa issuance processes have been significantly impacted and disrupted, in part due to travel restrictions and COVID-19<sup>29</sup>.

Particularly Guatemala, Honduras, and Nicaragua were already severely affected by Hurricanes Eta and Iota in November 2020, and COVID-19 complicated emergency responses.<sup>30</sup>

### 15.3 Overview of the Northern Triangle of Central America

#### 15.3.1 Overview of Migration in the Northern Triangle of Central America

##### (1) Overview of Irregular Migration

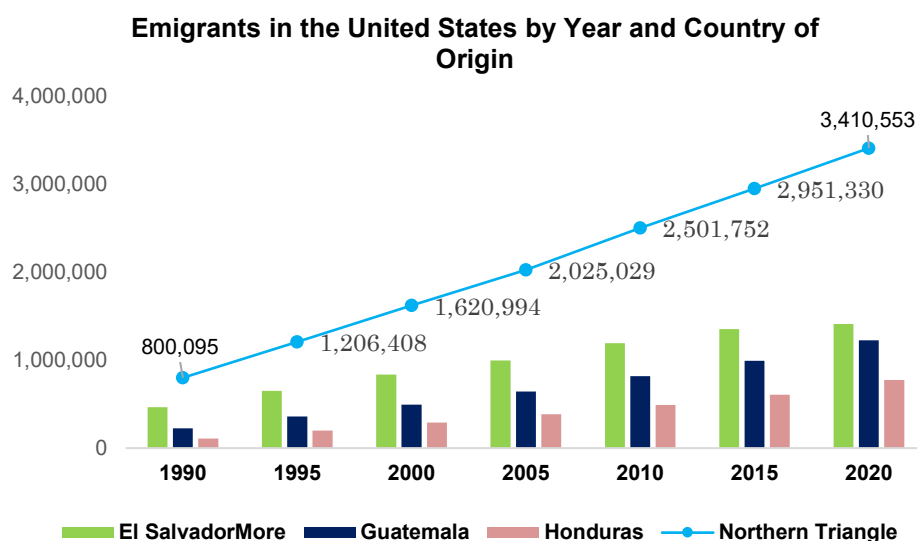
The flow of migrants from the Central American Northern Triangle to the United States began with political conflicts in these countries in the 1980s. Between 1980 and 2017, migration from these three countries increased from 200,000 to more than 3 million (see Figure 15-9). In 2017, 9% of the total population of these countries (8%, 10%, and 30% of the working-age population in Guatemala, Honduras, and El Salvador respectively) lived outside their country of origin (mainly in the United States). Each year, more than 300,000 people, mostly young people, travel from these countries to the

<sup>28</sup><https://elordenmundial.com/mapas-y-graficos/mapa-migratorio-centroamerica/>

<sup>29</sup> Migration data in Central America, Migration Data Portal, <https://www.migrationdataportal.org/regional-data-overview/migration-data-central-america>

<sup>30</sup><https://www.internal-displacement.org/global-report/grid2022/#download>

United States, but only a few are believed to make it to their destination.<sup>31</sup>

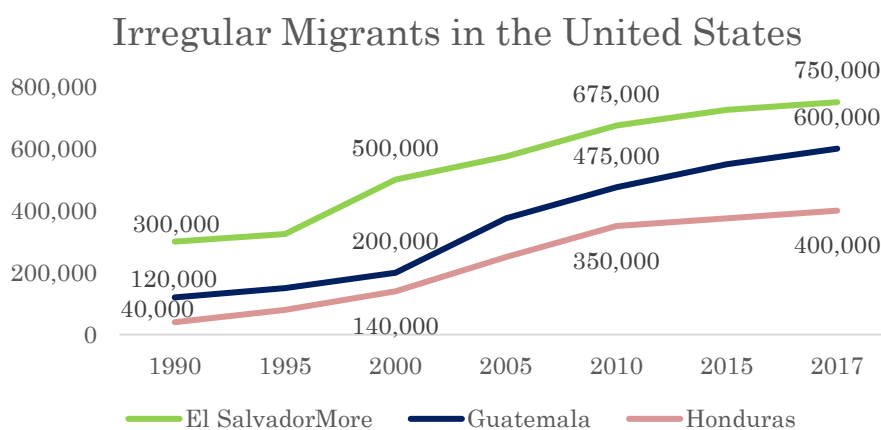


Source: International Migrant Stock 2020: Destination and Origin (UNDESA 2020)

**Figure 15-9 Migration to the United States by Year and Country of Origin**

In recent years, irregular migration from this region has outstripped migration from Mexico, traditionally the main source of cross-border migration in the southern United States.

It is estimated that more than half of the migrants from the Northern Triangle of Central America in 2017 were irregular migrants (750,000 Salvadorans, 600,000 Guatemalans, and 400,000 Hondurans<sup>32</sup>, see Figure 15-10). This severely limits their opportunities for employment and income in the United States. Encouraging them to settle also reduces the likelihood of them voluntarily returning to their countries of origin.



Source: Pew Research Center Estimates Based on US Census Bureau Data

**Figure 15-10 Undocumented Migrants Living in the United States (El Salvador, Guatemala, and Honduras)**

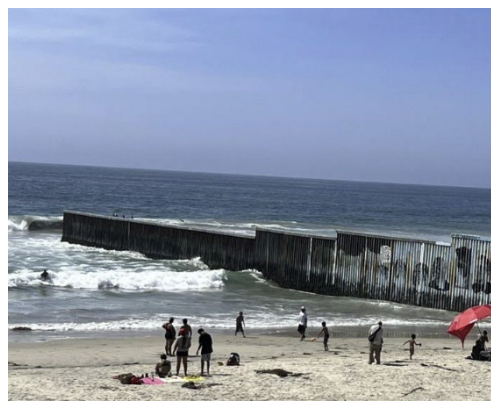
<sup>31</sup>"In the Footprints of Migrants Perspectives and Experiences of Migrants from El Salvador Guatemala and Honduras in the United States" (IDB2019)

<sup>32</sup>Irregular migration is defined as migration that occurs outside the laws, regulations, and international treaties that regulate entry into (or exit from) countries of origin, transit, and destination. (OIM) – (IDB2019)

Mexico and the United States detain and deport thousands of people each year who try to enter the country as irregular migrants<sup>33</sup>. Between January and December 2021, Mexican authorities are detaining around 185,000 irregular migrants. Of these, 92% are migrants from Honduras, Guatemala, and El Salvador, according to the Mexican government's 2021 Annual Report.<sup>34</sup>



Irregular migrants encountered during field study in Tijuana cross the U.S. border wall with their children



Border wall extending to the coast (Tijuana)

Photo: JICA Study Team

## Figure 15-11 Border Wall in Tijuana

### (2) Overview of Returning Migrants

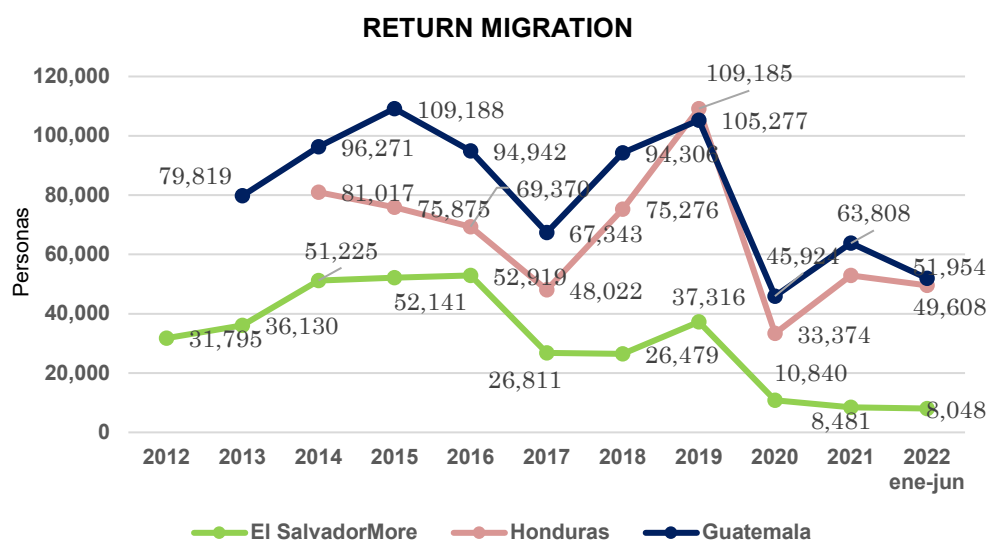
There is a marked trend of return migrants from Mexico and the United States to the Northern Triangle of Central America. According to the IOM Migrant Information Initiative in the North Central American Triangle (NTM), from 2013 (the year official data was first recorded and made available through the platform) to the end of 2020, about 1.32 million migrants were deported to Honduras, Guatemala, and El Salvador. Of these, 47% were returned from the United States.

According to the 2021 IOM statistics<sup>35</sup>, the number of returnees was highest in Guatemala with 63,808, followed by Honduras with 52,968, and El Salvador with 8,481. This trend showed a very pronounced increase from 2017 to 2019 and a significant decline in 2020 due to the impact of the pandemic and border closures. However, with the opening of borders, the number will increase again in 2021, and according to the statistics for 2022, after half a year, the numbers are already surpassing the numbers for 2021 (see Figure 15-12).

<sup>33</sup> 2021 Boletín estadístico anual - actualizado (19/08/2022)

<sup>34</sup> <http://www.politicamigratoria.gob.mx/es/PoliticaMigratoria/CuadrosBOLETIN?Annual=2021>

<sup>35</sup> El Salvador - Unidad de información para los países del Norte de Centroamérica, IOM, <https://mic.iom.int/webntmi/el-salvador-2/>



Source: JICA Study Team based on IOM Statistics

**Figure 15-12 Number of Returning Migrants in the Central American Northern Triangle (2021)**

Of the total number of migrants returning to El Salvador in 2021, 57.3% will be from the United States and 39.1% from Mexico, while Guatemala will have 28% from the United States and 72% from Mexico, and Honduras will have 13% from the United States and 72% from Mexico, underscoring the intensity of crackdowns at the North-South border to curb migration flows into the United States. In addition, the United States and Mexico had concluded and expanded the Migrant Protection Protocol (MPP, commonly known as “Quédate en México”).<sup>36</sup>

Table 15-5 shows the returnees from the United States and Mexico in 2021.

**Table 15-5 Breakdown of Returnees in El Salvador, Guatemala, and Honduras (2021)**

37

El Salvador	USA	Mexico	Others	Total	Ratio
Male	2,240	1,242	126	3,608	64.4%
Woman	1,302	627	64	1,993	35.6%
Boy	750	894	63	1,707	59.3%
Girl	570	554	49	1,173	40.7%
Total	4,862	3,317	302	8,481	
Ratio	57.3%	39.1%	3.6%		

Guatemala	USA	Mexico	Others	Total	Ratio
Male	9,480	29,533	0	39,013	77.7%
Woman	4,533	6,688	0	11,221	22.3%
Boy	1,986	6,707	Four	8,697	64.1%
Girl	1,879	2,993	Five	4,877	35.9%

<sup>36</sup>The Migrant Protection Protocols, or MPP, is a U.S. government program initiated in January 2019 and has been implemented again as of December 8, 2021. This program was created to return some migrants to Mexico while they are awaiting their immigration hearings after being detained (<https://mx.usembassy.gov/es/se-implementan-nuevamente-los-protocolos-de-proteccion-a-migrantes/>)

<sup>37</sup> According to IOM, children are defined as persons between 0 and 12 years of age, and adolescents are defined as persons between 12 and 18 years of age. In this table, boys and girls are all individuals under 18. [http://migracion.iniciativa2025alc.org/download/05COe\\_Conceptos\\_Migracion\\_NinCC83ez.pdf](http://migracion.iniciativa2025alc.org/download/05COe_Conceptos_Migracion_NinCC83ez.pdf)

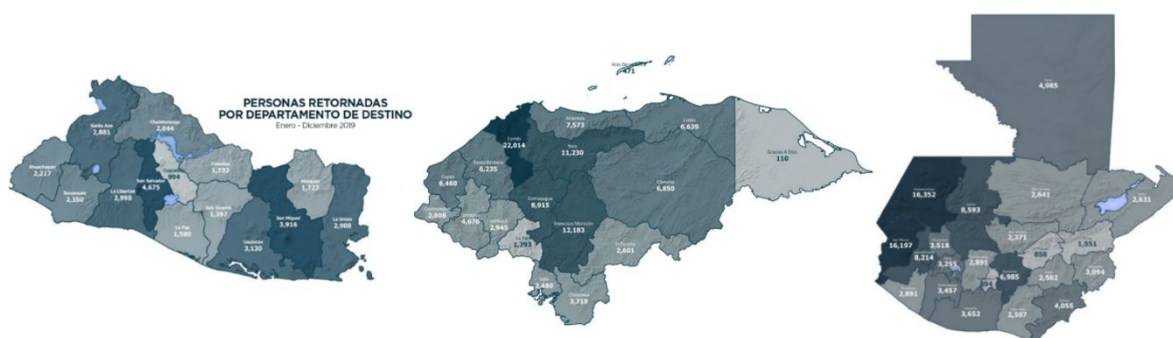


Total	17,878	45,921	9	63,808
Ratio	28.0%	72.0%	0.0%	

Honduras	USA	Mexico	Others	Total	Ratio
Male	4,225	32,578	1,077	37,880	84.0%
Woman	1,328	5,661	232	7,221	16.0%
Boy	672	3,819	313	4,804	61.1%
Girl	680	2,215	168	3,063	38.9%
Total	6,905	44,273	1,790	52,968	
Ratio	13.0%	83.6%	3.4%		

Source: JICA Study Team based on IOM statistics

According to IOM data, most of the migrants who returned to El Salvador in 2019 were from San Salvador, San Miguel, Usulután, La Union, La Libertad, and Santa Ana, but the share of returnees exceeded the share of the population in San Miguel, Usulután, La Unión, and Chalatenango. In the case of Honduras, most of the returning migrants are from Cortés, Francisco Morazán, Yolo, and Comayagua, but Yolo, Colón, and Comayagua have a higher proportion of returnees than the population. In the case of Guatemala, most of the migrants are from Huehuetenango, San Marcos, Quiché, and Quetzaltenango, all of which, the proportion of returnees exceeded the proportion of the population (see Table 15-6). As shown in Figure 15-13, while the migration phenomenon is concentrated in the major cities of each country, it can also be seen that it is a nationwide phenomenon.



Source: IOM

**Figure 15-13 El Salvador, Honduras, and Guatemala Map of Returned Migrants by Place of Origin (January-December 2019)**

**Table 15-6 Percentage of Returnee Population in El Salvador, Honduras, and Guatemala (2019)**

El Salvador	Number of Returnees	Percentage of Returnees (%)	Population Ratio (%)	Population
San Salvador	4,675	14%	27%	1,734,770
San Miguel	3,916	11%	7%	467,174
Usulután	3,130	9%	6%	351,222
La Libertad	2,998	9%	12%	789,274
La Union	2,908	8%	4%	236,304
Santa Ana	2,881	8%	9%	561,300
Sonsonate	2,350	7%	8%	498,543
Ahuachapán	2,217	6%	6%	358,114
Chalatenango	2,044	6%	3%	183,099

El Salvador	Number of Returnees	Percentage of Returnees (%)	Population Ratio (%)	Population
Cabanas	1,732	5%	2%	154,323
Morazán	1,727	5%	3%	193,098
La Paz	1,580	5%	6%	352,585
San Vicente	1,397	4%	3%	174,069
Cuscatlán	994	3%	4%	260,880
Total	34,549	100%	100%	6,314,755

Source: JICA Study Team based on DIGESTYC Demographics

Honduras	Number of Returnees	Percentage of Returnees (%)	Population Ratio (%)	Population
Cortes	22,014	20%	19%	1,751,997
Francisco Morazan More	12,183	11%	18%	1,650,245
Yoro	11,230	10%	7%	622,006
Comayagua	8,915	8%	6%	551,837
Atlantida	7,573	7%	5%	478,876
Olancho	6,850	6%	6%	570,845
Colon	6,639	6%	4%	340,323
Santa Barbara	6,235	6%	5%	462,774
Copan	6,460	6%	4%	406,965
Others	21,086	19%	25%	2,322,477
Total	109,185	100%	100%	9,158,345

Source: JICA Study Team based on INE Honduras Population Statistics

Guatemala	Number of Returnees	Percentage of Returnees (%)	Population Ratio (%)	Population
Huehuetenango	16,352	16%	8%	1,343,784
San Marcos	16,197	15%	7%	1,155,019
Quiche	8,593	8%	6%	1,043,645
Quetzaltenango	8,214	8%	5%	882,792
Guatemala	6,985	7%	21%	3,472,891
Peten	4,985	5%	4%	604,525
Jutiapa	4,055	4%	3%	539,785
Escuintla	3,652	3%	5%	780,667
Totonicapan	3,518	3%	3%	479,417
Suchitepequez	3,457	3%	4%	598,097
Solola	3,255	3%	3%	460,220
Chiquimula	3,094	3%	3%	435,579
Chimaltenango	2,891	3%	4%	720,139
Retalhuleu	2,891	3%	2%	365,661
Izabal	2,631	2%	3%	434,455
Jalapa	2,562	2%	2%	387,462
Baja Verapaz	2,371	2%	2%	322,167
Others	9,574	9%	16%	2,577,721
Total	105,277	100%	100%	16,604,026

Source: JICA Study Team based on INE Guatemala Population Statistics

It should be noted that returning migrants only reflect the approximate reality of migration flows, as most irregular migrants are not included in the statistics. For example, in an interview with FUSADES, there was a story about a woman who “voluntarily” returned to her country of origin without being

deported due to family illness or other reasons.<sup>38</sup> Irregular migrants who are deported soon after trying to emigrate sometimes return with debts to cover the cost of migration, making it difficult for them to be integrated into society out of desperation. A study conducted by ASIES<sup>39</sup> and FUSADES<sup>40</sup> showed many of the Guatemalan returnees said they would try again to reach the U.S.<sup>41</sup>

El Salvador's *Consejo Nacional para la Protección y Desarrollo de la Persona Migrante y su Familia* (CONMIGRANTES)<sup>42</sup> also said that as a country of return, it had to deal with movement restrictions and border closures imposed during the pandemic. The COVID-19 pandemic did not stop deportations, and where deportations were by land prior to the pandemic, they continued to arrive by air, causing major disruption without space for adequate supplies of quarantine and biosafety supplies.

### **(3) Characteristics of Migrants**

#### **1) General**

A CEPAL report shows the majority of migrants in 2015 were men, outnumbering women by 26%. The IDB surveys also found that most migrants are young, single, and often indigenous (15% of respondents indicate they are indigenous), with an average age of 32<sup>43</sup>. A WFP study found that 69% of the migrants were male, and more than half were between the ages of 18 and 34<sup>44</sup>. In the case of returnees, 359,000 returned to the Central American Northern Triangle in 2016-2017, of which 85% were male and only 15% were female. It can be seen that the percentage of women who are deported is lower than that of men.<sup>45</sup>

According to the SICA Migrant Study Report<sup>46</sup>, the main nationalities were Hondurans (72.2%), Guatemalans 12.2%), and Salvadorans (11.7%). Migrants in these migrant caravans reportedly worked in their countries of origin, mainly in sectors such as agriculture (28%), industry (15%), and construction (14%).

Over the past decade, migrants from the Northern Triangle of Central America have had lower levels of education than migrants from other countries, but higher levels than the general population of their countries of origin<sup>47</sup>.

In the field study, the JICA Study Team was able to confirm through many interviews that the recent trend is for men to migrate with their families rather than trying to migrate alone.

#### **2) Feminization of Migration**

There are an estimated 3.2 million Central American migrants living in the United States, 50% of whom are women. The feminization of migrants is on the rise, demonstrating how women are taking

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<sup>38</sup>Interview conducted on August 18, 2022

<sup>39</sup> <http://www.asies.org.gt/>

<sup>40</sup> <https://fosdeh.com/>

<sup>41</sup> Vulnerabilidad de los migrantes retornados frente al COVID-19: Retos y respuestas desde lo local en el norte de Centroamérica

<sup>42</sup>Interview conducted on August 19, 2022

<sup>43</sup> "In the Footprints of Migrants Perspectives and Experiences of Migrants from El Salvador Guatemala and Honduras in the United States" (IDB2019)

<sup>44</sup> "Charting a new regional course of action, the complex motivations and costs of Central American migration" (WFP 2021)

<sup>45</sup> "Atlas de la migración en los países del norte de Centroamérica" (CEPAL 2018)

<sup>46</sup> "Hallazgos del estudio de línea base sobre migración y desplazamiento en la región del SICA" (July 2019)

<sup>47</sup> "In the Footprints of Migrants Perspectives and Experiences of Migrants from El Salvador Guatemala and Honduras in the United States" (IDB 2019)

on the role of family provider and caretaker. One of the main causes of women’s migration is gender-based violence (GBV)<sup>48</sup>. This violence can be both a factor in leaving the country and a hazard on the move in the cycle of migration<sup>49</sup>. When women try to migrate, most of them come with children or families, leading to an increase in the number of minors.<sup>50</sup>

In Honduras and Guatemala, female unemployment rates are higher than male unemployment rates, as shown in Table 15-7, which may be one of the reasons for the trend of increasing female migration.

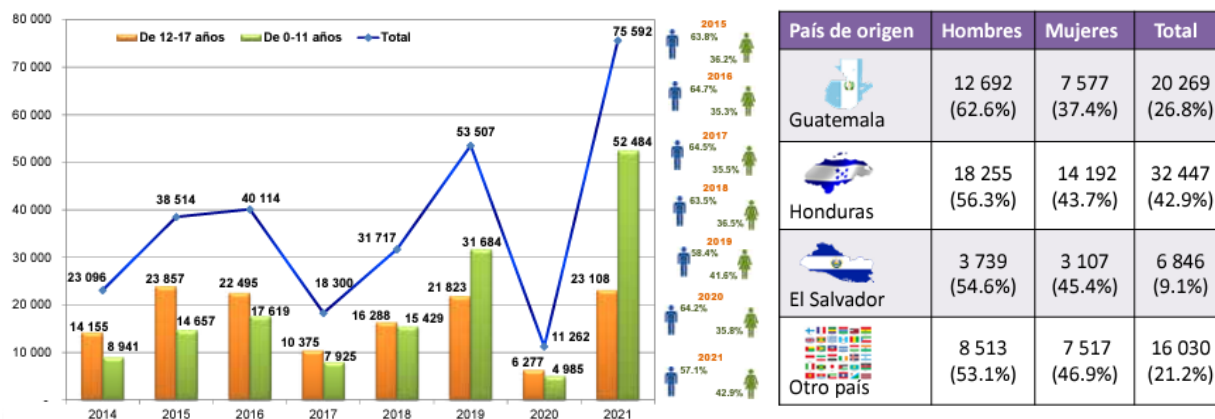
**Table 15-7 Male and Female Unemployment Rates in Central America Northern Triangle**

Country	Sex	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
El Salvador	Male	8.40	8.20	7.30	6.80	8.60	8.40	8.10	8.30	7.33	6.97	7.10
	Woman	5.10	4.40	4.30	4.70	4.70	5.00	5.30	5.20	4.92	5.43	6.60
Guatemala	Male	3.20	2.90	2.40	2.70	2.60	2.00	2.20	2.00	2.09	1.84	
	Woman	4.00	6.60	3.60	3.70	3.50	3.60	3.50	3.50	2.95	2.99	
Honduras	Male	3.20	3.30	2.86	3.31	4.45	4.36	5.14	4.04	4.53	4.22	8.74
	Woman	5.20	6.10	4.97	4.95	6.69	11.72	10.74	10.77	7.38	8.11	13.74
America Latina y El Caribe	Male	5.90	5.24	5.47	5.38	5.34	5.73	6.90	7.10	7.00	6.94	9.22
	Woman	7.53	7.89	7.72	7.50	7.14	7.70	8.99	9.33	9.20	9.33	12.19

Source: JICA Study Team based on CEPAL and ILO Statistics

### 3) Increase in Minors

The presence of unaccompanied children and minors in their teens (NNA) is significant in the study area. In fact, according to Mexican migration statistics, the number of children and young people have increase significantly in 2021, mainly from Honduras, Guatemala, and El Salvador (see Figure 15-14).<sup>51</sup>



Source: Centro de estudios migratorios del Gobierno de México

**Figure 15-14 Flows of detained foreign minors by Instituto Nacional de Migración (INM) of Mexico by Age Group (2014-2021)**

Due to income shortages and deteriorating security, most of them have little education, are female-headed households, and often derive their income from agricultural work and remittances.

Having children in the country of origin increases the motivation for family reunification and is also

<sup>48</sup>According to the study “Factores de Riesgo y Necesidades de Atención para las Mujeres Migrantes en Centroamérica, publicado por la Secretaría General del SICA y la OIM” (SG-SICA y OIM) (2016)

<sup>49</sup>“Hallazgos del estudio de línea base sobre migración y desplazamiento en la región del SICA” (July 2019)

<sup>50</sup>From the interview link of Honduras Promigrantes (implemented on August 30, 2022)

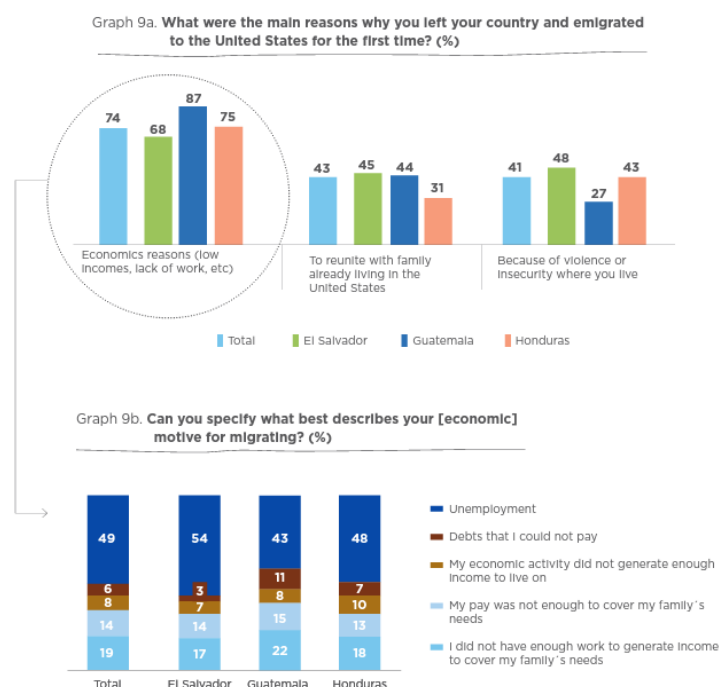
<sup>51</sup>[http://portales.segob.gob.mx/es/Politica\\_Migratoria/Sintesis\\_NNA](http://portales.segob.gob.mx/es/Politica_Migratoria/Sintesis_NNA)

a factor for minors becoming migrants. In addition, the number of migrants with children is increasing due to rumors that it is easier for migrants to enter the United States with children. Under the current U.S. administration, the assumption that migration will become easier has led to some optimism, and migration is expected to increase.<sup>52 53</sup>

### 15.3.2 Root Causes of Migration in the Central American Northern Triangle

#### (1) Economic Factor

According to an IDB study, 7 out of 10 migrants cited economic reasons as one of the main reasons for their decision to emigrate (74%). This trend is stronger among Honduran (75%) and Guatemalan (87%) migrants than Salvadoran (68%). Of those who said they migrated for economic reasons, half said it was because of unemployment in their country of origin (49%). Furthermore, 35% of migrants say they cannot meet their needs because there are not enough jobs or wages are too low, as seen in Figure 15-15.



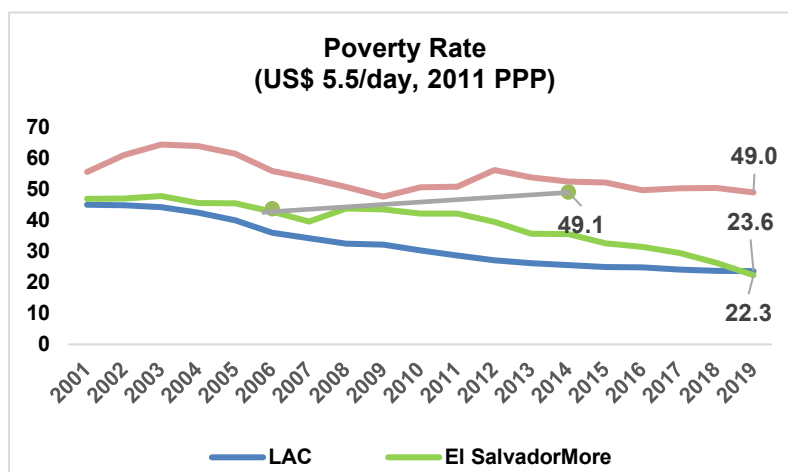
Source: IDB

**Figure 15-15 IDB Questionnaire Study in the Northern Triangle of Central America “Why did you decide to migrate?”**

The Central American Northern Triangle has a lower economic growth rate than Latin American countries. In addition, these countries have some of the highest poverty rates in Latin America and the Caribbean. In 2019, 49% of Hondurans, 49% of Guatemalans (data last 2014), and 22.3% of Salvadorans lived on less than USD 5.50 a day, an increase in income distribution over the past 20 years. Although it has improved somewhat, it is above the regional average except for El Salvador (see Figure 15-16).

<sup>52</sup>From an interview with IOM Honduras (conducted on August 29, 2022)

<sup>53</sup>Según entrevista a INM de México en Tijuana realizada el 6 de septiembre de 2022



Source: JICA Study Team based on World Bank Statistics

**Figure 15-16 Poverty Rates in the Central American Northern Triangle, 2001-2019**

About 100,000 young people enter the Central American Northern Triangle labor market each year, but low economic growth limits their prospects for quality jobs.

According to the 2022 ILO Statistics (see Table 15-8), the unemployment rate in the Northern Triangle region of Central America is higher for both men and women aged 15-24 years old compared with those aged 25 and over, and higher for women than men. Also, according to the 2021 ILO Report, the proportion of non-regular workers was very high at 65.3% in Guatemala and 27.1% in El Salvador.<sup>54 55</sup> According to interviews conducted to FUSADES<sup>56</sup>, the Northern Triangle of Central America has historically suffered from the lack of employment, and it can be said that the economy is unable to meet people’s expectations. The COVID-19 pandemic has had a strong impact on employment in hotels and restaurants, especially in the informal sector. It pointed out that the problem is not so much unemployment but rather a problem of informal employment.

**Table 15-8 Unemployment Rate in Central America Northern Triangle (2022)**

Country	Sex	Unemployment Rate (%)	
		15-24 years old	25 years old or older
El Salvador	Male	11	4
	Woman	18	4
	Whole	13	4
Honduras	Male	11	5
	Woman	24	8
	Whole	15	6
Guatemala	Male	6	2
	Woman	9	3
	Whole	7	2
Central American Countries	Male	9	4
	Woman	12	4
	Whole	10	4

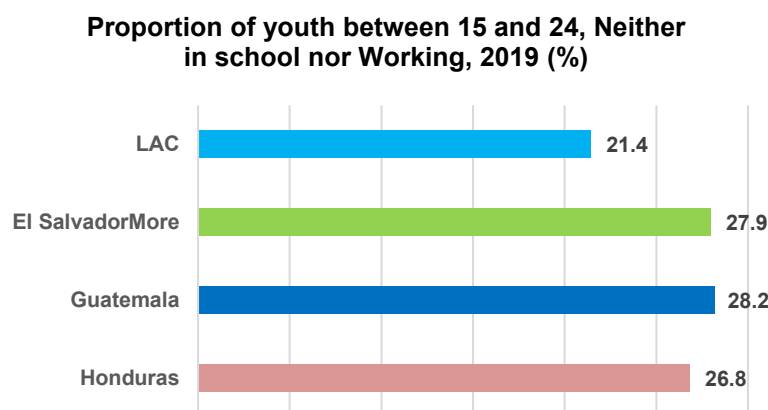
Source: JICA Study Team based on ILO Statistics

<sup>54</sup>"Ficha técnica – empleo y migración – países del norte de Centroamérica 2021" (ILO 2021)

<sup>55</sup>The ILO report states that there are no statistics on non-regular employment in Honduras.

<sup>56</sup> Interview conducted on August 18, 2022

This is also reflected in the high proportion of young people<sup>57</sup> (known in the region as ‘NI NI’) who neither study nor work. In 2017, more than a quarter (28%) of young people in the Central American Northern Triangle was a “NI NI”, higher than the average for Latin America and the Caribbean (see Figure 15-17).<sup>58</sup>



Source: JICA Study Team based on ILO Statistics

**Figure 15-17 Proportion of “NI NI” in the Central American Northern Triangle (2019)**

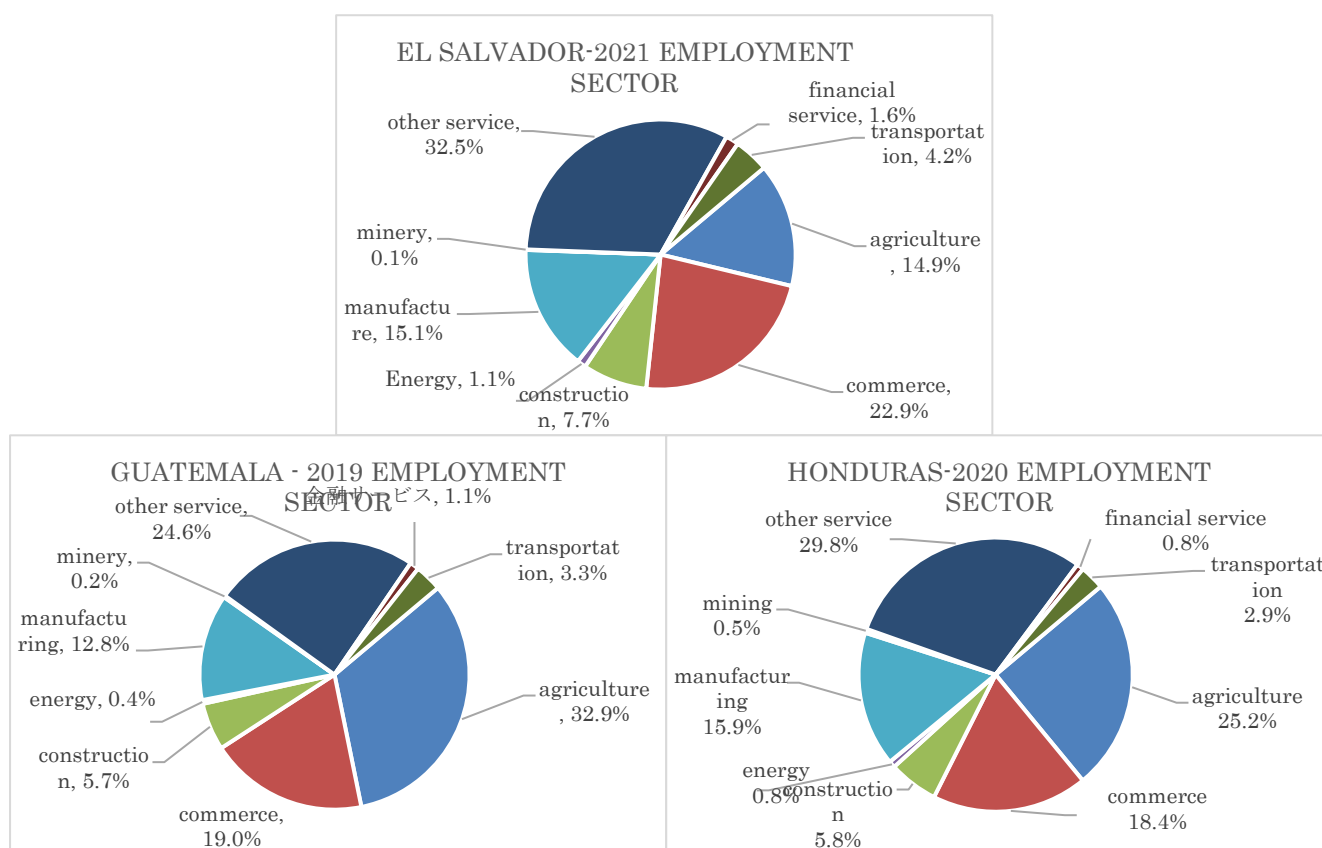
It can be pointed out that it is very difficult for young people in this region to find meaningful employment, and even if they get hired, it is often an irregular employment, which places them in a vulnerable situation. Young people who do not study or work, called “NI NI”, are the most vulnerable, as they lack the necessary academic training for integrated development according to their life stage and opportunities to enhance their professional development. Due to the poor socio-economic integration, many young people are disoriented, feeling frustrated for losing their sense of place in society and the uncertainty about their future. Additionally, they are constantly looking for alternatives within the country and/or abroad. This increases their vulnerability to joining illegal groups or attempting to migrate as illegal migrants.<sup>59</sup>

In both Guatemala and Honduras, agriculture/livestock/forestry/fishery, retail/commerce, manufacturing, and construction have the highest employment rates by industry. In the case of El Salvador, retail/industry is slightly higher than agriculture (see Figure 15-18).

<sup>57</sup> Although there is no universal definition of the concept of "youth," the UN defines a youth as one between the ages of 15 and 24 "for statistical purposes, without prejudice to other definitions by Member States." (ADOLESCENT AND YOUTH DEMOGRAPHICS: A BRIEF OVERVIEW)

<sup>58</sup> "In the Footprints of Migrants Perspectives and Experiences of Migrants from El Salvador Guatemala and Honduras in the United States" (IDB2019)

<sup>59</sup> "Fomento de la inserción laboral de jóvenes de contextos vulnerables – factores de éxito y prácticas prometedoras en la región SICA" (GIZ "Programa ALTERNATIVAS" 2020)



Source: JICA Study team based on ILO database

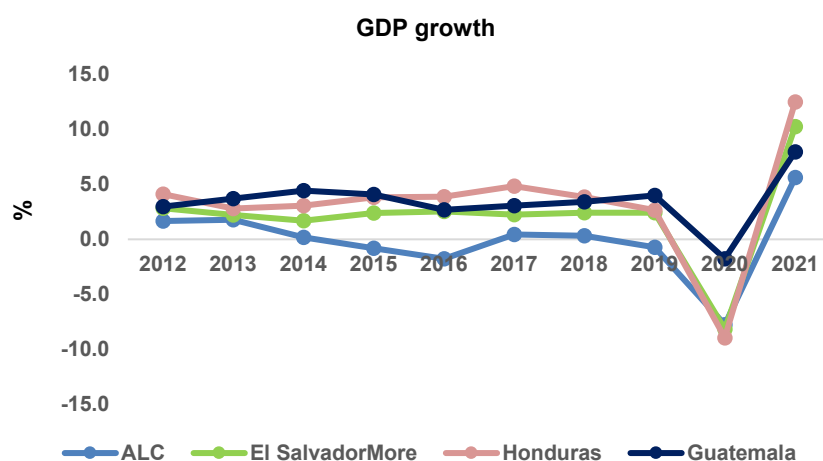
**Figure 15-18 Percentage of Employed Persons by Industry in the Northern Triangle of Central America**

Low wages in migrants’ countries of origin are more pronounced in rural than in urban areas, with particularly low and volatile incomes in the agricultural sector. Also, since farming is a seasonal job, farmers lose their source of income for several months of the year. For coffee producers and others, rising costs of cultivation and falling coffee prices have put them in a situation where they cannot make a profit and are unable to support their families<sup>60</sup>.

As shown in Figure 15-19, COVID-19 has caused the 2020 gross domestic product (GDP) growth rate in the Northern Triangle region of Central America to fall to an average of -6.3%.

<sup>60</sup> La migración forzada desde el Triángulo Norte de Centroamérica Impulsores y experiencias, Sonja Wolf, 2020





Source: JICA Study Team based on CEPAL statistics

**Figure 15-19 GDP Growth Rates in the Central American Northern Triangle (2012-2021)**

## (2) Social Factor

### 1) Lack of Social Infrastructure

According to the SICA Migrant Research Report, inadequate education reduces the potential for better labor inputs, limits social integration, and is an obstacle to advocacy, thus leading to migration. As a result, many families in this region consider migration as an option to improve their children's education.<sup>61</sup>

School education also influences the pattern of migration. Undocumented migrants from El Salvador and Nicaragua are said to be less educated than those who become legal residents, and low educational attainment is also a characteristic factor of Central American migrants.

Similarly, in several countries in the region, the extreme poverty experienced by many people limits access to education, leading to current and future situations of vulnerability. The lower the quality of education, the less likely they can secure a job when they grow up, creating a loophole.

### 2) Family Reunification

Deciding to stay longer in the United States makes migrants want to reunite with their families. According to an IDB study, two out of five migrants say family reunification is one of the main reasons they migrate, especially wanting to be with their parents. Migrants from El Salvador (45%) and Guatemala (44%) are more likely than migrants from Honduras (31%) to indicate that they have moved to the United States to reunite with family.<sup>62</sup>

Developed migrant networks in the United States reduce uncertainty around migration decisions. Research shows that migrant networks are especially important for poorer, less skilled, and unauthorized migrants. Over 47% of migrants from the Central American Northern Triangle arrive at a relative's

<sup>61</sup>"Hallazgos del estudio de línea base sobre migración y desplazamiento en la región del SICA" (July 2019)

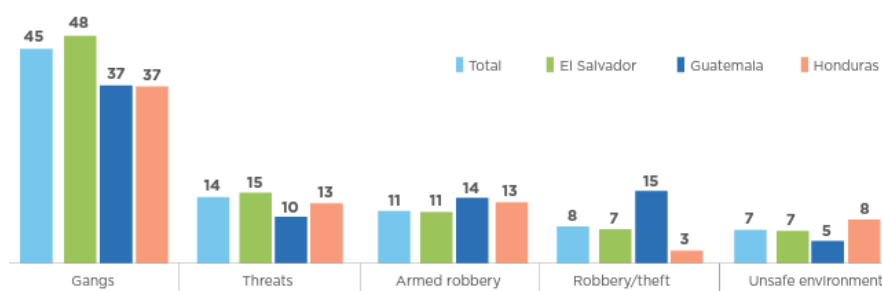
<sup>62</sup>"In the Footprints of Migrants Perspectives and Experiences of Migrants from El Salvador Guatemala and Honduras in the United States" (IDB2019)

home, 27% at another family’s home, and 19% at a friend’s home. Only 6% of migrants declare that they have reached no one. Salvadoran migration follows a striking pattern, with family reunification appearing to be a stronger motivation than migrants from other countries.

### (3) Outflow of Migrants Due to Poor Security

Another important factor is the region’s insecurity, exacerbated by transnational organized crime and drug trafficking. Such an unsettled situation could have a direct impact on increasing migration inflows. A 2018 report by the Salvadorian Ministry of Law and Public Security showed that the majority of internally displaced persons (87%) were displaced due to the direct victimization of one or more family members, citing murder, intimidation, and extortion as forms of violence.<sup>63</sup>

Migrants from El Salvador show a higher motivation for crime and violence (58%) than those from the other two countries. Among those who cite violence as a reason for migration, the presence of gangs (45%) – particularly Salvadorans – was the main factor in their migration to the United States, as shown in Figure 15-20. Therefore, insecurity is the main reason for not returning to their country of origin (43%). When the IDB survey was conducted in 2019, Salvadorans were the most likely to blame the presence of gangs (48%)<sup>64</sup>, while in recent years Salvadoran murders have fallen since the peak of 106.3/100,000 in 2015, the number of homicides continues to decline, to 18 per 100,000 in 2021<sup>65</sup>. The current Bukele administration has implemented the "Plan El Salvador Seguro"<sup>66</sup>, which includes 124 policies, and is focusing on security measures<sup>67</sup>.



Source: IDB

**Figure 15-20 Central American Northern Triangle IDB Questionnaire Survey “Which act of violence led to the decision to migrate?”**

The average homicide rate in the Central American Northern Triangle is 38 per 100,000 population, higher than the world’s 6.1 and Latin America’s 22.3. Gangs, extortion, and drug trafficking are rampant, and people are constantly leaving for the United States. In particular, migrants feel less safe in their country of origin than the average of residents who have stayed there. Murder rates in all three countries have fallen significantly in recent years, but the Northern Triangle of Central America still has one of the highest murder rates in the world among regions not at war (see Figure 15-21).

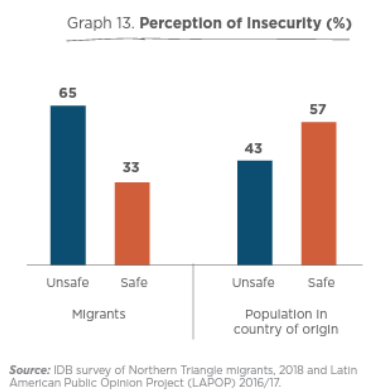
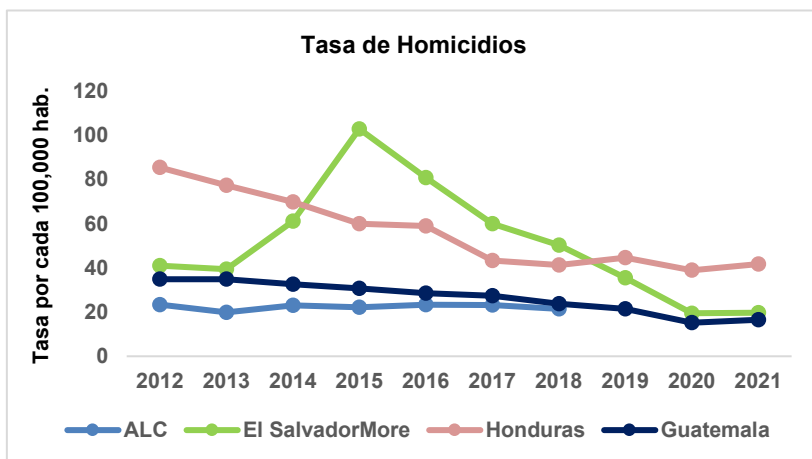
<sup>63</sup>"Hallazgos del estudio de línea base sobre migración y desplazamiento en la región del SICA" (July 2019)

<sup>64</sup>“In the Footprints of Migrants Perspectives and Experiences of Migrants from El Salvador Guatemala and Honduras in the United States” (IDB, 2019)

<sup>65</sup> El Salvador: Análisis sobre la situación de la violencia y la seguridad ciudadana 2021

<sup>66</sup> Plan de seguridad ciudadana en El Salvador en problemas para reducir la inseguridad

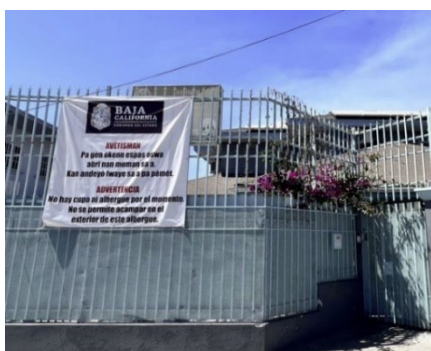
<sup>67</sup> El presidente de El Salvador sugiere a EE.UU. abandonar concepto de triángulo norte en tema migratorio



Source: Study Team based on CEPAL statistics Source: IDB questionnaire survey

**Figure 15-21 Questionnaire Study on Homicide Rates and Security in the Northern Triangle of Central America**

According to interviews with the civil society group CAFEMIN, the amount of money they have to pay to *maras*, which is endemic in the Northern Triangle of Central America, has a direct impact on economic hardship. In interviews with the Tijuana office of International Organization for Migration (IOM), when migrants were asked why they emigrated, many said they didn't have enough economic resources in the first place. It is said that the amount of money needed to cover basic expenses is too high to make a living. Behind the root cause of economic hardship, there might be a violence factor hiding.<sup>68,69</sup>



A migrant shelter that accepts only visiting women and infants in Tijuana. There are many people whose lives are being targeted, and to protect their safety, they try not to see anything from the outside.



"Hotel Filtro" (Tijuana) maintained by IOM. It mainly accommodates families, who can stay until another shelter is found. Domestic violence may occur in some cases, and the perpetrators are said to be kicked out immediately.

Photo: JICA Study Team

**Figure 15-22 Migrant Shelter and Hotel Filtro**

**(4) Outflow of Migrants Due to Disasters**

Some of the causes of migration relate to threats from climate change and natural disasters. Central American countries are particularly vulnerable to natural disasters because they are located on an

<sup>68</sup>Interview conducted on July 20, 2022

<sup>69</sup>Youth violent crime groups prevalent in the Central American triangle region

isthmus that bridges two continents and lies between two oceans, the Pacific and the Atlantic.<sup>70</sup>

One of the main groups migrating from the Central American Northern Triangle to Mexico and the United States are the rural families who make a living from agriculture. Many of them grow staple grains such as corn, beans, rice, and coffee, as well as squash, in the arid regions of Central America.<sup>71</sup>

Climate change will have a direct impact on agriculture, one of the main sources of work and family life for people in the Central American Northern Triangle. Phenomena such as drought threaten food security, especially for cereals such as corn, beans, rice, and coffee, as well as squash. Rural people engaged in these activities are being forced to seek out migration and wage work as the impacts of climate change spread across the Central American Dry Corridor. The arid regions of Central America, particularly Guatemala, Honduras, and El Salvador, are experiencing their worst droughts in a decade, leaving more than 3.5 million people in need of humanitarian assistance as a result. The risk of other catastrophic events such as hurricanes, volcanic eruptions, floods, fires, and most importantly, the long-term effects of the El Niño/Southern Oscillation (ENSO) in the droughts of 2009 and 2015 have left many households at risk of food shortages. The situation has a strong impact on the most vulnerable, especially indigenous peoples and impoverished women and children.

#### **Box 15-2 Impact of November 2020 Hurricanes Eta and Iota on Migration**

On November 3, 2020, Hurricane Eta (Category 4) hit the coast of Central America, affecting more than seven countries. A week later, Hurricane Iota (Category 4) hit the same Central American countries (Honduras, Guatemala, and Nicaragua). Both hurricanes affected more than 9.9 million people in Central America, while floods and landslides isolated or rendered inaccessible dozens of communities and damaged 740 health facilities. In addition to the current COVID-19 pandemic and the difficulty of social distancing at evacuation centers, this situation is compounded by limited access to healthcare services, floods, and road damage made it difficult to access transportation and physical access. Exacerbated by the difficulty, migration and humanitarian assistance have become the only way out for thousands of Central Americans displaced by mud and rain.<sup>72 73</sup>

### **15.3.3 Issues Caused by Migration in the Northern Triangle of Central America**

#### **(1) Economic Challenges**

##### **1) Economic Impact of Migration Outflow**

Migrants from El Salvador, Guatemala, and Honduras have intentional and unintentional economic impacts not only on migrants and their households in their communities of origin but also on communities in the countries of destination, as well as on local labor markets. At the macroeconomic level, high levels of migration from Central America can lead to significant losses to labor markets in their countries of origin. Respondents to the World Food Programme (WFP) study<sup>74</sup> said 89% of migrants are between the ages of 14 and 60 (i.e., working age) and 76% are in the labor force.

<sup>70</sup>"In the Footprints of Migrants Perspectives and Experiences of Migrants from El Salvador Guatemala and Honduras in the United States" (IDB2019)

<sup>71</sup>Atlas of migration in Northern Central America (CEPAL2018)

<sup>72</sup><https://www.paho.org/es/respuesta-huracanes-eta-iota>

<sup>73</sup><https://elpais.com/planeta-futuro/2021-11-05/un-ano-despues-de-los-ciclones-eta-y-iota-se-olvidaron-de-nosotros.html>

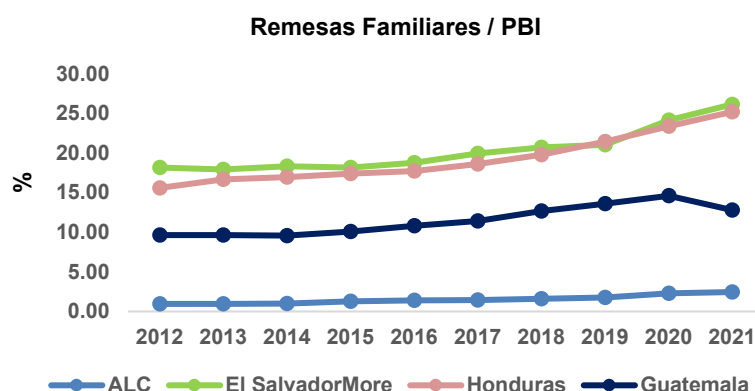
<sup>74</sup> "Charting a New Regional Course of Action - The Complex Motivations and Costs of Central American Migration" (WFP, IDB, OAS, 2021)

Furthermore, 92% of the labor force were employed before migration, while the remaining 8% were unemployed but looking for work. Considering that many of the recent migrants said they were previously farmers, migration from the Central American Northern Triangle is causing huge losses in agricultural productivity. More than half of migrants from Guatemala, Honduras, and El Salvador had jobs in their destination countries similar to those in their country of origin, although the pay was higher.

## 2) About Utilization of Migration Remittance

Among the contributions of migrants to development are the remittances from migrants abroad to their countries of origin. Central American countries accounted for 6% of the Latin American population, but total remittances received in Latin America accounted for 25.9%, according to IDB data.

Remittances as a percentage of GDP in 2021 will be El Salvador (26.2%), Honduras (25.2%) and Guatemala (12.8%), indicating the importance of remittance flows to their economies (see Figure 15-23).

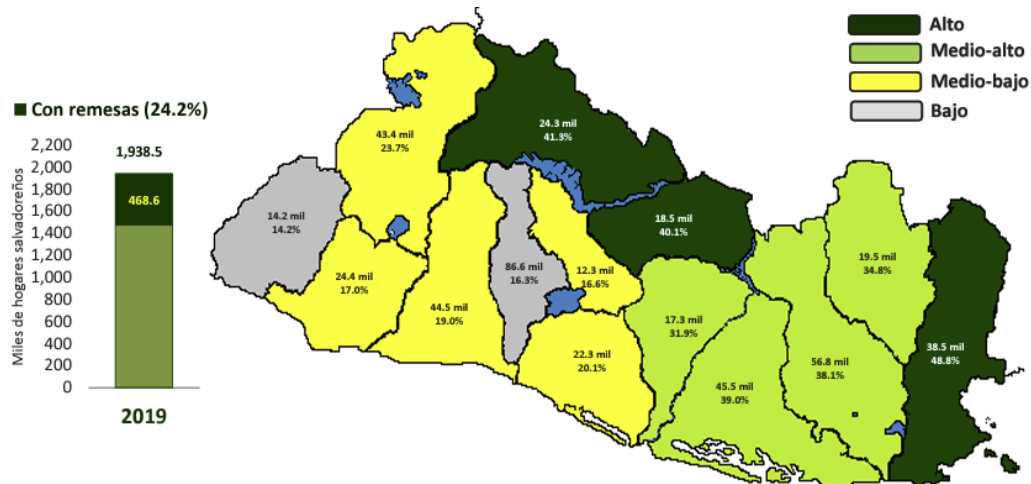


Source: JICA Study Team based on CEPAL statistics

**Figure 15-23 Migrant Remittances as a Percentage of GDP in El Salvador, Honduras, and Guatemala, 2012-2021**

In addition, according to the statistical data of each country, 24.2% of households in El Salvador received family remittances, of which 54% were in urban areas and 46% were in rural areas, the highest proportion by prefecture; La Unión (48.8%), Chalatenango (41.3%), and Cabanas (40.1%).<sup>75</sup> In addition, San Miguel, Usulután, La Unión, and Chalatenango can be said to have a large number of remittance recipients compared with the population ratios of the departments in Table 15-6.

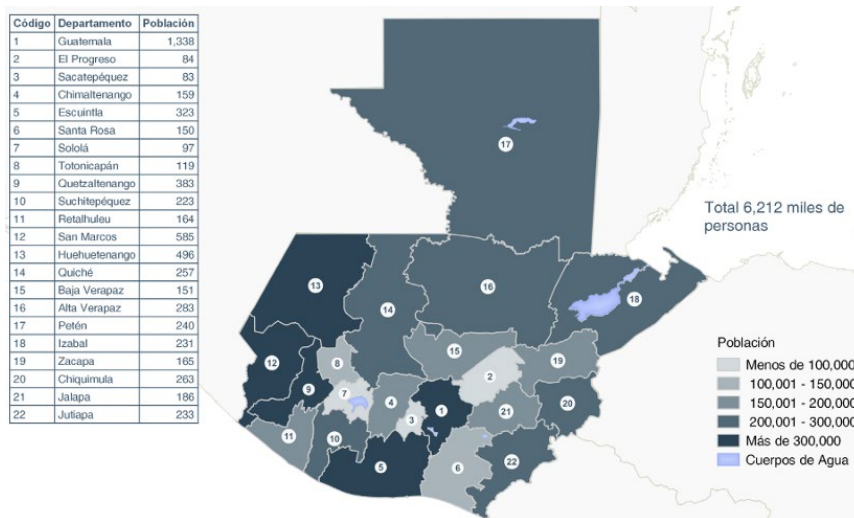
<sup>75</sup>[https://fusades.org/publicaciones/ADEC\\_Remesas%20familiares.pdf](https://fusades.org/publicaciones/ADEC_Remesas%20familiares.pdf)



Source: Encuesta de Hogares de Propósitos Múltiples (EHPM) de la Dirección General de Estadística y Censos (DIGESTYC) de 2019

**Figure 15-24 Number of Recipients of Family Remittances by Prefecture in El Salvador (2019 Study Results)**

Guatemala (21.5%), San Marcos (9.4%), Huehuetenango (8%), and Quetzaltenango (6.2%) account for the highest proportion of recipients of family remittances in Guatemala by province. Comparing the population ratios of the six departments in Table 15-6, Huehuetenango, San Marcos, Quiché, and Quetzaltenango have the largest number of remittance recipients.

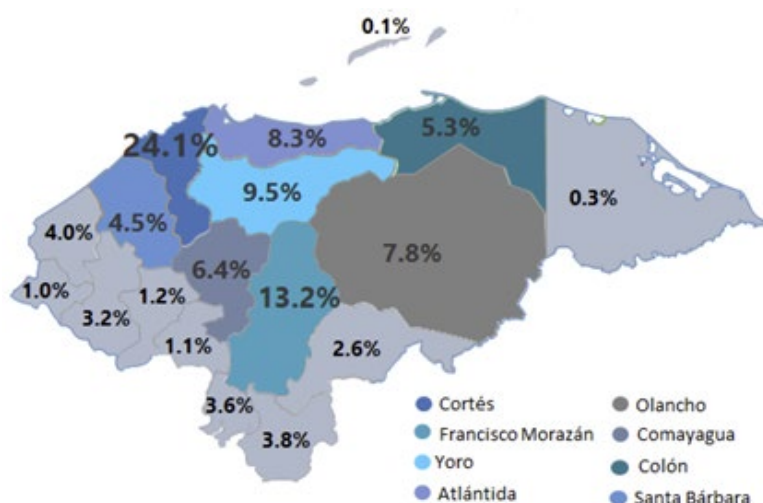


Source: IOM questionnaire survey<sup>76</sup>

**Figure 15-25 Number of Recipients of Family Remittances by Province in Guatemala (2016 Questionnaire Results)**

In Honduras, the percentages of the population receiving migrant remittances are highest in Cortes (24.1%), Francisco Morazan (13.2%), Yolo (9.5%), Atlántida (8.3%), and Olancho (7.8%). Cortés, Joro, Comayagua, Atlántida, Olancho, and Colón have the largest number of remittance recipients in Table 15-6.

<sup>76</sup><https://mic.iom.int/webntmi/descargas/informes/rencuestaremesasgt.pdf>



Source: Departamento de Estadísticas Macroeconómicas, BCH<sup>77</sup>

**Figure 15-26 Number of Recipients of Family Remittances by Prefecture in Honduras (2021 Study Results)**

Internationally, remittances are seen as an important source of income for the recipient’s family and a source of vitality for the financial sector. However, the families who receive these remittances use them for family consumption and repair of household goods and cannot necessarily be considered as a source of savings and production investment (see Table 15-9).

**Table 15-9 Migrant Remittance Expenditure Breakdown**

Expenditure Breakdown	Guatemala	Honduras	El Salvador
Cost of living	68%	77%	84%
Savings	11%	4%	4%
Business investment	10%	4%	4%
Education	7%	10%	4%
Property purchase	3%	3%	2%
Others	1%	2%	1%
Not clear	0%	0%	2%
total	100%	100%	100%

Source : <http://scioteca.caf.com/bitstream/handle/123456789/487/45.pdf>

While it is true that these economic resources received by migrant families do not necessarily enable them to escape extreme poverty, they do constitute an important survival strategy. On the other hand, remittances enable the development of the receiving country’s financial sector, as the families receiving the remittances become bank customers for other financial services/products such as credit. However, there are limits to the quantification of these economic flows and their use in beneficiary countries, making it difficult to formulate policies and programs aimed at influencing community development and measuring their impact. It has also been confirmed that such transfers act as a buffer under complex

<sup>77</sup>[https://www.bch.hn/estadisticos/EME/Resultados%20Encuesta%20Semestral%20de%20Remesas%20Familiare/Resultado%20de%20Encuesta%20Semestral%20de%20Remesas%20Familiare%20agosto\\_2021.pdf](https://www.bch.hn/estadisticos/EME/Resultados%20Encuesta%20Semestral%20de%20Remesas%20Familiare/Resultado%20de%20Encuesta%20Semestral%20de%20Remesas%20Familiare%20agosto_2021.pdf)

circumstances such as natural threats (Hurricane Mitch in Honduras and Nicaragua<sup>78</sup>). Likewise, the impact of an economic crisis or political instability would be mitigated. In addition, remittances sent by migrants to their home countries have a positive impact on local education.

However, various interviews<sup>79</sup> have pointed out that people tend to aim to become migrants rather than look for work, as the income from remittances is higher than the salaries they can earn in their country of origin. Similarly, the role that remittances have played has been due to the structural vulnerabilities of the destination economy, and the underlying question is not the positive impact of remittances, but how to ameliorate the structural deficiencies of the destination economy. It is said that one must not overlook the importance of promoting public policies that enable regional development.<sup>80</sup>

An approach that can be considered for the productive use of remittances is the participation of ‘diasporas’, i.e., migrant communities, who wish to participate in regional development through associations. Central American diasporas play an important role in the economic development of their countries of origin, not only contributing to poverty reduction but also empowering people in their countries of origin. The creation of migration programs and projects for development with diaspora participation can increase productivity and increase the appropriation and value of migrants as a strategic resource.<sup>81</sup>

### **Box 15-3 Practice Example: Mexico’s “3x1 Program”**

The “3x1 Program” is a program that supports the initiative of organized Mexican migrants living abroad, providing them with the opportunity to do philanthropic activities that directly benefit their communities of origin. It is called “3x1” because for every 1 peso donated by a migrant organization or group, another 1 peso is donated through the Secretary of Welfare by the city, state, and federal governments. In addition, the funds can be used for social infrastructure such as schools and hospitals, which is known as a successful example in Mexico.<sup>82</sup>

Similarly, to create more employment opportunities and increase incomes in the community, 3x1 provides an opportunity for individuals or families who seek to create jobs in their hometowns and strengthen family wealth through “Production for Wealth Enhancement Projects”. It also supports production projects.

Since 2016, the 3x1 Program has been strengthened and expanded to include the participation of private sector initiatives as another contributor. This makes it a “4x1 program”.

## **(2) Threats during Transit**

Undocumented migrants embarking on their journey north must navigate a perilous path between the dual threats of law enforcement and criminal gangs. According to Crisis Group’s 2016 Report<sup>83</sup>, increased law enforcement is diverting irregular migrant movements to more expensive, tortuous, and

<sup>78</sup>Hurricane Mitch was one of the most powerful and deadly tropical cyclones seen in the modern era. With a maximum sustained wind speed of 290 km/h, Mitch passed through Central America in 1998. Hardest hit were Honduras and Nicaragua.

<sup>79</sup>Interviews to FUSADES (El Salvador), INM and Promigrantes (Honduras)

<sup>80</sup>Atlas of migration in Northern Central America (CEPAL2018)

<sup>81</sup>"Hallazgos del estudio de línea base sobre migración y desplazamiento en la región del SICA" (July 2019)

<sup>82</sup>Secretaría de Bienestar <https://www.gob.mx/bienestar>

<sup>83</sup>Easy Prey: Criminal Violence and Central American Migration, July 28, 2016



dangerous routes, with desperate people fleeing detention. It is reported that migrants are paying more and more expensive, and criminal gangs and corrupt officials are profiting of it. According to the Global Report on Migrant Smuggling (2018) released by the United Nations Office on Drugs and Crime (UNODC), migrant flows at the Mexico-US border involve more than 800,000 smuggled migrants and smugglers generate about USD 4 billion a year in revenue.

Children “may be at particular risk whether they travel alone or with family or caregivers,” it said. Transiting migrant children are likely to miss out on education and health services, including mental health services and vaccines.<sup>84</sup> According to a study by the Central American Fund for Women,<sup>85</sup> six out of ten women are victims of violence en route to the United States.

One of the sources of information for migration is the coyote<sup>86</sup>, which is recognized as a reliable source of information at the community level. However, asking coyotes to guide their migrations puts them at risk of falling into human trafficking networks and not being identified by governments or NGOs for their protection.<sup>87</sup>

According to a Mexican government report<sup>88</sup>, in 2019, migrants from the Northern Triangle of Central America paid an average of USD 4,559 to travel north through Mexico to the United States. It is stated that there are two types of transportation provided by coyotes: 1) border crossings only, and 2) transit country travel and border crossings. The price for crossing the northern border through Mexico was USD 5,862, and the price for crossing the border alone was USD 2,330. In addition, there are various payment methods, such as a method of paying in installments for each transit point, and a method of paying all at once at the country of origin, Mexico or the United States. Migrants who hired coyotes said they had received payments from family members who already lived in the United States, and part of the remittances sent to their country of origin paid the coyotes to go to the United States, according to a Mexican government report.

This trajectory, the reintegration of returning migrants who have experienced all the trauma, is a major challenge for the host country of origin. Indeed, in El Salvador interviews with INSAMI and CONMIGRANTES<sup>89</sup> (see Table 15-12), the primary need is the psychiatric support for returning migrants.

### **(3) Social Reintegration of Returning Migrants**

From a holistic approach to migration management, the nature of the returnee movement (period of migrant absence, conditions in the receiving country, access to information) or its context (migrants with health and safety needs, victims of trafficking, and unaccompanied migrant minors) needs to be considered. In addition, it was pointed out in the interviews that the capacity and facilities to respond to the rapid increase in the number of returnees are lacking. For example, in the case of Honduras, from 1996 to 2001, in this five-year period there were just under 4,000 returning migrants, but in the period

<sup>84</sup>[https://www.ohchr.org/sites/default/files/Documents/Issues/Migration/StudyMigrants/OHCHR\\_2016\\_Report-migrants-transit\\_SP.pdf](https://www.ohchr.org/sites/default/files/Documents/Issues/Migration/StudyMigrants/OHCHR_2016_Report-migrants-transit_SP.pdf)

<sup>85</sup>[https://oig.cepal.org/sites/default/files/mujeres\\_migrantes\\_centroamerica.pdf](https://oig.cepal.org/sites/default/files/mujeres_migrantes_centroamerica.pdf)

<sup>86</sup>A guide-like person or agent who facilitates smuggling into the United States

<sup>87</sup><https://boletinesredlac.com/wp-content/uploads/2020/12/BOLETIN-REDLAC-11-111220.pdf>

<sup>88</sup>Caracterización de los flujos financieros asociados al tráfico ilícito de personas migrantes provenientes del Triángulo Norte de Centroamérica

<sup>89</sup> Decreto N° 655. Ley especial para la protección y desarrollo de la persona migrante salvadoreña y su familia

from 2009 to 2014 there were 326,000.<sup>90</sup>

There is also the issue of discrimination against returning migrants, and in interviews with CONMIGRANTES, they emphasized the need to work to inform private companies and others that being deported is not a crime.<sup>91</sup>

Interviews with FUSADES indicated that they lacked the capacity and resources to accommodate returning migrants and that they did not adequately respond to traumatized and deported migrants. Most have no intention of returning to their home countries, no interest in returning to work, and need emotional support.<sup>92</sup>

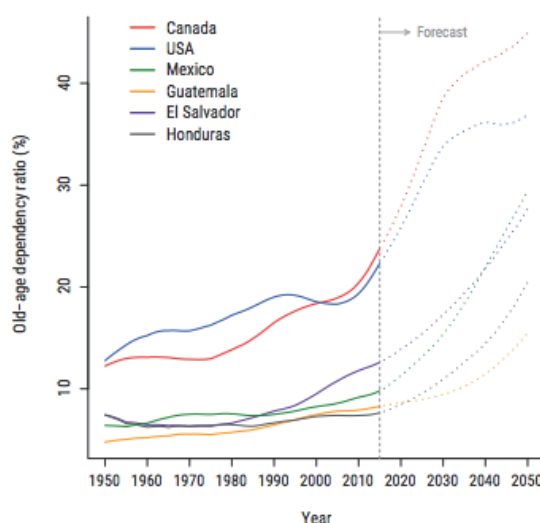
According to INSAMI, the most recent trend is that crackdowns have tightened, and the majority of deported migrants are detained at the border or in transit, and simply returned after suffering human rights violations without gaining any work experience in their new destinations. In this case, apart from the past, it will be necessary to care for migrants who return with trauma. It also emphasized the importance of a system of certifying the foreign work experience of returning migrants.<sup>93</sup>

## 15.4 Efforts of National Governments

### 15.4.1 Destination Country of Migration

#### (1) Canada

Canada has a rapidly growing elderly population, and the elderly dependency rate will rise in the coming decades. As shown in Figure 15-27, Canada is aging faster than the other five countries, followed by the U.S. and El Salvador (by 2040).



Source: UN World Population Prospects 2015 Revision

**Figure 15-27 Elderly Dependency Rate**

According to the migration policy rationale of the Canadian government's Standing Committee on

<sup>90</sup>Hallazgos del estudio de línea base sobre migración y desplazamiento en la región del SICA" (July 2019)

<sup>91</sup>Interview conducted on August 22, 2022

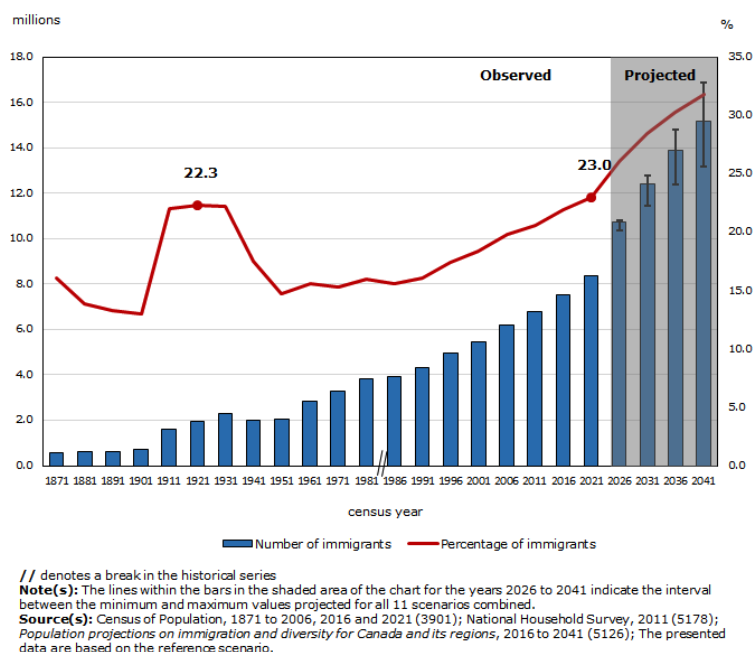
<sup>92</sup>Interview conducted on August 18, 2022

<sup>93</sup>Interview conducted on August 16, 2022

Citizenship and Migration (CIMM), Canada is facing demographic and economic challenges due to its aging population, and migration will contribute to its solution. The need for this challenge is compounded by the economic uncertainty brought about by the COVID-19 pandemic. Canada continues to welcome newcomers, especially economic migrants, through multiple channels. These new entrants are said to bring the skills needed to help Canada’s economic recovery and continue to grow in the years to come. In light of this, a path to increasing migration targets has been laid out, and Canada’s selective migration policy stipulates that approximately 60% of migrants will come from the economic sector. Canada is currently considering admitting more than 460,000 new migrants each year under its Migration Levels Plan, the highest level in Canada’s history.<sup>94</sup>

Migration is a central pillar of Canada’s economic recovery and future growth. Economic migrants can be educated, fill targeted workforce and skill gaps, contribute to innovation and workplace diversity, and integrate into the Canadian labor market. Canada has several initiatives and programs in place to support rural and remote areas through economic migration while supporting settlement and integration to ensure the success of new entrants.

Nearly one in four Canadians will be migrants in 2021, the highest proportion in 150 years of history (see Figure 15-28). Many Canadians are in favor of migration, according to polls, even as many western countries, especially the U.S., are at odds over migration. Fifty-eight percent also said they want more migrants to increase Canada’s population.<sup>95</sup>



**Figure 15-28 Migration in Canada** (Kewf gu"Rtqlge vqpu"ltqo "3; 93"vq"4263+

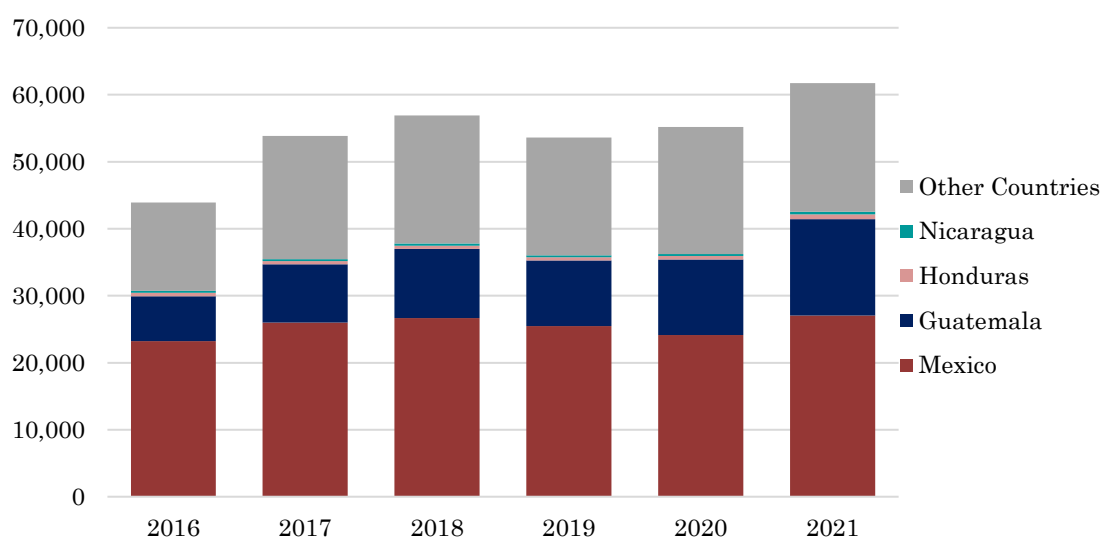
In addition, it has actively worked on migration integration policies, treating migrants as long-term residents, most of whom have obtained permanent residency even if they have never lived in Canada.

<sup>94</sup>Canada typically targets an immigration percentage of about 1% of the total population each year, which is equivalent to about 340,000 immigrants each year.

<sup>95</sup>New York Times

The goals of Canada’s migration policy are to strengthen the economy, reunite families, and assist refugees. A positive integration policy and multicultural approach ensure that the benefits of migration are shared by both the host community and the migrant population. It can be said that an environment where people can enjoy it has been built.

Regarding migration policies for Mexico and the Northern Triangle of Central America, Canada signed the Seasonal Agricultural Workers Program (SAWP) with Mexico in 1974, which later expanded to include Guatemala and the Caribbean countries. This is to allow Canadian farmers to employ workers on temporary visas during the planting and harvesting seasons. In recent years, other temporary foreign worker programs have also been implemented to allow employers outside the agricultural sector to hire foreigners. Canada has a regular influx of temporary and permanent residents, offering legal alternatives to Mexico and the Northern Triangle. Inflows from Mexico and the Northern Triangle are increasing in an orderly manner, but also because they are geographically inaccessible by land. The Temporary Foreign Workers Program (TFWP) allows workers of varying skill levels to fill up temporary labor shortages in certain industries in Canada. Workers from Mexico and Guatemala make up the majority of the TFWP, as shown in Figure 15-29.



Source: Statistics Canada, “Countries of Citizenship for TFWP in the Agricultural Sectors”

**Figure 15-29 Temporary Foreign Workers Program (TFWP) from 2016 to 2021**

**(2) United States (U.S.)**

According to MPI, the trend of low population growth, low fertility, and rapid aging of the population in the U.S. is clear and intensified. It remains an essential factor in ensuring continued economic growth and the well-being of society.

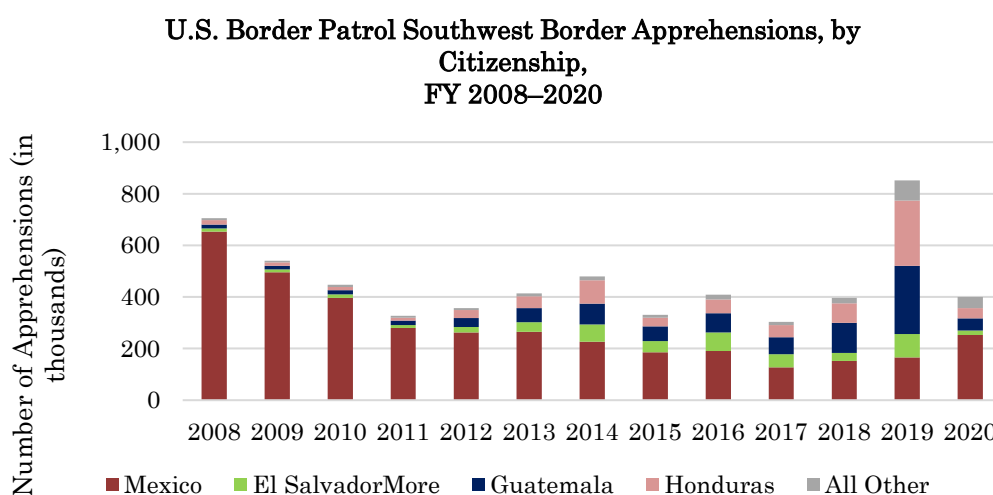
The Migration Reform and Control Act (IRCA), enacted in 1986, allowed the status of many Mexicans and Central Americans to be normalized, but also imposed border controls and migration enforcement. As a result, many people who tried to engage in circular migration were prevented from doing so, and the number of irregular migrants continued to increase. The Illegal Migration Reform and Migration Responsibility Act (IIRIRA) of 1996 continued to focus on crackdowns, and deportations began to rise. Anti-migrant policies have lasted 20 years, reinforced by state legislation, and no comprehensive

migration strategy has been devised to meet the demands of the current economic, political, and social climate.

Although the trend of migration was dominated by the flow of non-regular employment, legal alternatives were not eliminated. Temporary work visas were introduced. Since 1994, with the establishment of NAFTA, the entry of experts from Mexico and Canada has been relaxed. More than 60% of undocumented migrants living in the U.S. are said to have lived there for ten years or more, putting deep roots in the country or region, starting businesses, meeting the labor needs of key sectors, supporting families, and while they have bought homes and become part of the infrastructure, many are unable to reach their full potential as they face the unforeseen event of deportation.

Over the past decade, migration flows between the U.S. and Mexico have changed dramatically. The migration relationship between the two countries was once dominated by irregular flows from Mexico to the U.S. The overall Mexican population in the U.S. has also shrunk since 2014, but at 11.3 million as of 2017, it remains the largest migrant community in the U.S., accounting for 3% of the total population. The American population in Mexico has grown to more than 700,000, making it the country with the largest number of U.S. migrants anywhere in the world. Many of these U.S. citizens are Mexican children born in the U.S., many of whom may have difficulty integrating into Mexican schools in Mexico due to administrative obstacles and cultural differences<sup>96</sup>.

As the number of migrants from Central America surged and the number of people entering the country increased, the issue of the U.S.-Mexico border control caused deep tensions between the U.S. and Mexican governments under the Trump administration. A migration cooperation agreement was signed between the two countries. As shown in Figure 15-30, since 2016, the number of irregular migrants from Mexico has fallen below the number of migrants from the Northern Triangle of Central America, which is considered to be a period in which the country of origin of refugees has changed significantly.



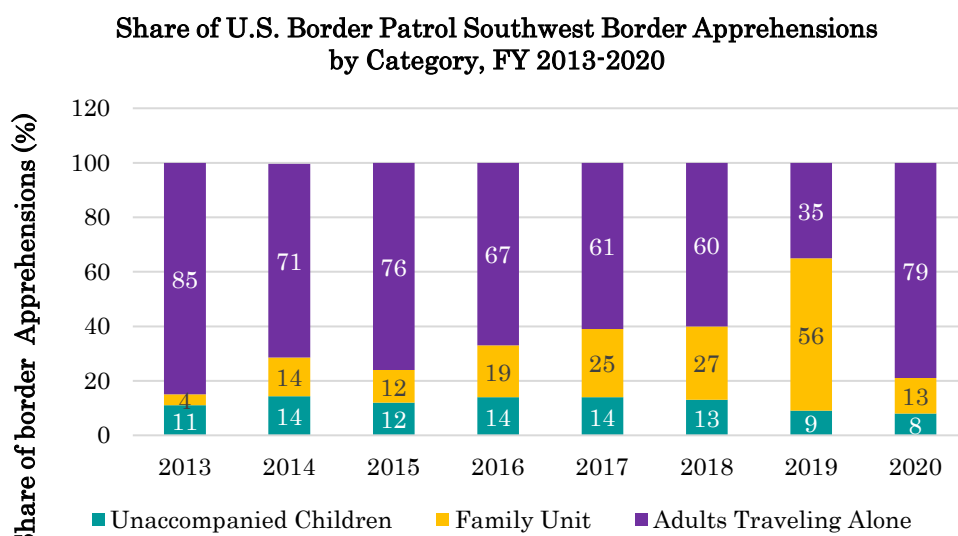
Source: U.S. Customs and Border Protection (CBP)

**Figure 15-30 U.S.- Mexico Border Control**

Also, the influx from Central America follows a pattern since the early 1970s, with more young

<sup>96</sup> School incorporation among migrant students from the US in Baja California, Mexico

families and unaccompanied children seeking asylum and protection in the U.S., rather than young adult men looking for work. This migration flow, known as mixed migration, is more complex than the flow of adult Mexican males from neighboring countries because it includes both economic and humanitarian migration.



**Figure 15-31 U.S. Border Patrol Southwest Border Apprehensions by Category, FY 2013-2020**

With many Central American migrants moving primarily for economic reasons, expanding the few avenues for legal migration to the U.S. that currently exist would help reduce pressure on the southwest border. The expansion of seasonal employment-based H-2 visas (H-2A for agriculture, H-2B for non-agriculture) is likely to increase in the short term due to the wide range of industries covered by these visas, according to the MPI report<sup>97</sup>, which proposed to be the most promising solution. However, the H-2 program is used relatively little to recruit workers in El Salvador, Guatemala, Honduras, and the Central American countries<sup>98</sup>. In 2020, more than 90% of H-2A visas and more than 70% of H-2B visas were given to Mexican workers, less than 2% of H-2A visas and H-2B visas were given to workers from Guatemala, less than 4% of workers from El Salvador, and Honduras which had even lower numbers. Data analysis indicates that the expansion of these seasonal programs has contributed to the decline in irregular migration in Mexico since 2010. Although the factors driving migration from Central America differ, Mexico’s experience suggests that moderate expansion of the H-2 visa program in Central America would reduce irregular migration and allow migrants to enter the U.S. legally in the short term and provide for them the opportunity to work.

<sup>97</sup> Investing in Alternatives to Irregular Migration from Central America: Options for Expanding Employment Pathways in the United States

<sup>98</sup> According to the MPI report, from the perspective of U.S. employers, there is no incentive to build reliable employment networks in Central America (networks of government agencies and NGOs for visa procedures, logistics, etc.). If adopted, additional costs will be incurred compared with Mexico. As a result, U.S. employers will find it easier, cheaper and faster to continue to hire workers from Mexico.

#### **Box 15-4 Details of the 2019 U.S.- Mexico Migration Cooperation Agreement**

- Mexico agreed to deploy a newly created National Guard (Guardia Nacional) to support migration efforts and the functioning of the National Migration Service (INM) to strengthen migration control at the Mexico-Guatemala border and within the country.
- For humanitarian reasons and to comply with international obligations, Mexico, as part of the expansion of the Migrant Protection Protocol (MPP, aka *Quédate en México*), will accept more non-Mexican asylum seekers returned by the U.S., committed to providing employment and health care opportunities and to address humanitarian issues.<sup>99</sup>
- The U.S. promise to expedite asylum procedures.
- To tackle crimes such as human trafficking.
- To address the root causes of migration. Invest in development in southern Mexico and collaborate with regional and international organizations through Mexico and Central America to implement comprehensive development plans.

Regarding migration policies at the U.S.-Mexico border, there are many other systems that prevent refugees from crossing to the U.S., and the number of refugees waiting in Mexico, unable to apply for asylum in the U.S., is rapidly increasing.<sup>100</sup>

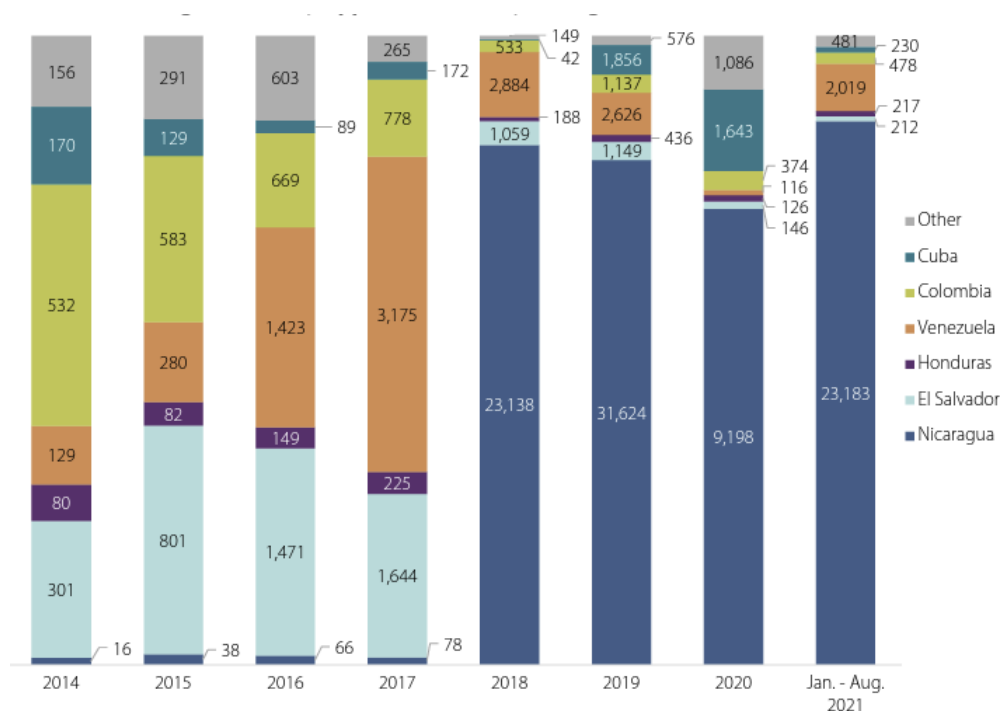
### **15.4.2 Country of Transit for Migration**

#### **(1) Costa Rica**

Nicaraguans make up more than three-quarters of Costa Rican migrants. They entered the country in three major periods: the 1970s, when the Somoza government was oppressed, the 1980s, during the civil war, and the 1990s, during the economic crisis. In addition, there continues to be a low level of migration between the two countries, some of which is seasonal, as Nicaraguans find work in areas of the Costa Rican economy such as agriculture, construction, and domestic work. Since Nicaragua's President Ortega began cracking down on peaceful protests in April 2018, there has been a new influx of Nicaraguan asylum seekers and migrants to Costa Rica of between 80,000 and 100,000. As can be seen in Figure 15-32, Nicaraguan asylum claims have surged since 2018.

<sup>99</sup>From October 2022, the MPP system will be terminated by the Biden administration.

<sup>100</sup>There are a number of institutions that prevent refugees from asylum in the United States, according to MPI, including: Metering, Transit-Country Asylum Ban, Prompt Asylum Case Review, PACR, Humanitarian Asylum. Review Program, HARP, Asylum Cooperation Agreements, ACAs (concluded with Guatemala, El Salvador and Honduras, but currently implemented only in Guatemala), T42, etc.



Source: MPI<sup>101</sup>

**Figure 15-32 Asylum Applications in Costa Rica by Country of Origin (2014-Mid-2021)**

Costa Rica also became the choice of many Colombians in the 1990s and early 2000s, and more recently Venezuelans, seeking refuge in other countries to have a better life. According to the Costa Rican government, there were about 27,000 Colombians in 2017. Meanwhile, according to international estimates, Costa Rica is home to nearly 30,000 Venezuelans, most of whom arrived after 2015, especially after 2017.

While Nicaraguan migrants, refugees, and asylum-seekers tend to be less affluent, many citizens of other countries, including asylum-seekers and refugees from Venezuela and Colombia, are from more educated and sometimes affluent backgrounds. A 2017 study on migration in Costa Rica found that only 7% of migrants from Nicaragua had higher education, compared with 18% of those from Costa Rica, while 53% of migrants from other countries had higher education. However, the Nicaraguans who arrived recently were more educated than those who arrived earlier, including many students and professionals who participated in the protest movement.

Costa Rica is one of the few Latin American countries with a history of investing in migration institutions. This is partly due to Costa Rica's long history as a host country for migrants and refugees, but it also reflects Costa Rica's overall more institutionalized state compared with other countries in the region. Throughout the 20<sup>th</sup> century, the Costa Rican state developed a relatively strong institutional structure, laws, and policies, but this process accelerated after the abolition of the military in 1948. But today, in just a few short years, the surge of about 80,000 to 100,000 Nicaraguans and about 30,000 Venezuelans, as well as migrants from Cuba, El Salvador, and Honduras has put these systems under strain. An analysis of government finances shows that overall budgets for migration-related agencies

<sup>101</sup> The State of Costa Rican Migration and Immigrant Integration Policy



rose slightly from 2017 to 2019, but then experienced significant cuts in 2020 and 2021 due to budget-tightening measures and the economic recession caused by COVID-19. However, the resources of these institutions are considerably less than in recent years. As a result, while the demand for procedures such as asylum applications has increased significantly, the actual resources to meet this demand have not kept pace.

In the area of education, problems with the registration of foreign-born children appear to be few compared with those faced by some countries in other regions. Costa Rica is one of the few countries in Central and South America that has the right to participate in an education system for asylum seekers and refugees, waiving the requirement that students seeking admission be required to provide a previous educational background. It also issues legislation that provides guidelines on how to integrate asylum seekers into the education system.

Still, many migrants, refugees, and asylum seekers in Costa Rica, especially those from Nicaragua, face significant discrimination, often being stigmatized because of their origin. Although recent arrivals from Nicaragua are on average more educated than Costa Ricans, perceptions persist that Nicaraguans are less educated and less skilled. Such stigma creates barriers to social mobility and makes it difficult for migrants to find professional jobs. In some cases, they are denied access to health, education, and other employment.

According to interviews with the UNHCR Costa Rica Office, the border with Nicaragua in Northern Costa Rica is an area where, despite the lack of development, has a mix of inflows from Nicaragua and migrants and refugees from the south of the country. The situation continues to be dire. In particular, the country's readiness to accept migrants and refugees is inadequate, and the demand for cooperation in the development of basic and social infrastructure such as roads, schools, and medical facilities is extremely high.<sup>102</sup>

Costa Rica has formulated a National Integration Plan (2018-2022) and is implementing initiatives for the socio-economic integration of migrants and refugees. Its purpose is to “promote equality of opportunity, equity, and respect for human rights through the joint and explicit actions of public and private institutions to comprehensively improve the social, economic, and cultural space”, and “ensure the integration and social inclusion of refugees within the country”. The initiatives are implemented with the following approaches: human rights, gender, diversity, integration, sustainable human development, social participation, and human rights. This is a cross-sectoral approach. The National Integration Plan is funded by the Migration Social Fund, and in an interview at the Ministry of Foreign Affairs of Costa Rica, there was a call about the need for funding from development partners.<sup>103 104</sup>

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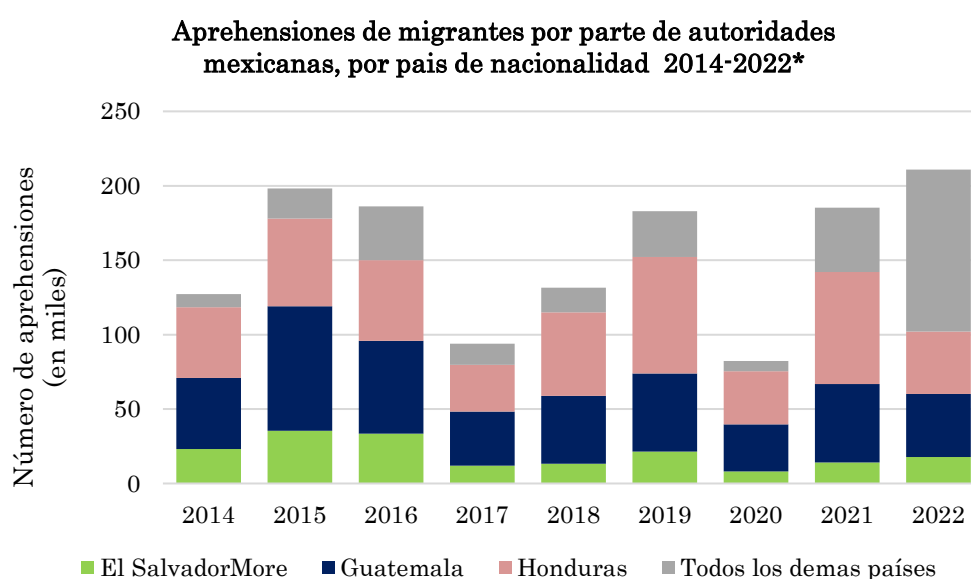
<sup>102</sup>Interview held on November 28, 2022

<sup>103</sup>Plan Nacional de Integración for Costa Rica 2018-2022

<sup>104</sup>Interview held on December 6, 2022

## (2) Mexico

Long a country of origin for migration, Mexico has also become a transit and destination for migrants from other countries in recent years, according to the MPI report. As migration from Mexico to the U.S. slowed and migrants from Mexico began to voluntarily and involuntarily return home, irregular migration from Central America surged. The Southern Mexico Border Program (*Programa Frontera Sur*), which was established in June 2014 with assistance from the U.S., strengthened migration control measures along the Mexico-Guatemala border, improving detention facilities and expanding services for migrants. As the program’s border security and migration control measures were implemented, migrant arrests soared from 127,000 in 2014 to a record 198,000 in 2015. Since 2019, after the signing of the Migration Cooperation Agreement between the U.S. and Mexican governments, the number of crackdowns in Mexico has surged,<sup>105</sup> as can be seen in Figure 15-33.



Source: SEGOB, “Boletín Mensual de 15-43 estadísticas Migratorias, 2014-2022”

\*Until September 2022

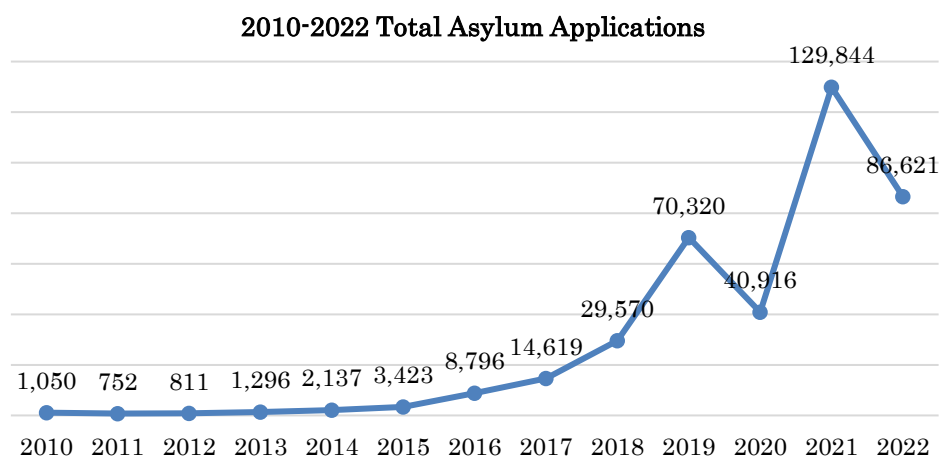
**Figure 15-33 Apprehensions of Migrants by Mexican Authorities, per Nationality 2014-2022**

The most notable trend since 2018 has been the increasing frequency and magnitude of migrants in Central America, often traveling in caravans and seeking humanitarian protection in Mexico and the U.S. Family ties, better employment, and life opportunities in the U.S., and the perception that U.S. migration policies favor children and families also play a role in motivating migrants.

Arrests of migrants by Mexican authorities escalated significantly in 2019, and while not surpassing 2015 levels, included large numbers of families and children. Of the 187,000 arrests in 2019, 54,000 were children, about 75% of whom were traveling with adults.

<sup>105</sup>Laying the Foundation for Regional Cooperation: Migration Policy & Institutional Capacity in Mexico and Central America

Asylum applications in Mexico began to increase gradually around 2014, but as the possibility of asylum in the U.S. narrowed, requests surged in 2019 (see Figure 15-34).



Source: COMAR Statistical Bulletins

**Figure 15-34 2010-2022 Total Asylum Applications**

The migration policy at the U.S.-Mexico border caused asylum applicants to wait in Mexico instead of the U.S., resulting in a surge in refugees at the Northern Mexican border and waiting months to years to reach the U.S.

According to UNHCR information, Mexico ranks third in the world in terms of asylum applications (from 2021), with 131,000 new applications. This is a 220% increase from 2020. Further, according to the COMAR data shown in Table 22-10, more than 80% of asylum applications originate in southern Mexico, and the rule that one must not move from the place where the asylum application was initiated until the process is completed has led to increase the number of vulnerable refugees forced to wait in areas that are lagging behind in terms of development. In addition, migrant and refugee shelters are in a situation where NGOs and Civil Society Organizations (CSOs) are the only ones who can handle the situation.

**Table 15-10 Changes in States with the Highest Percentage of Asylum Applications in Mexico (2018-2022)221**

State	2018	2019	2020	2021	2022
CDMX	28.6%	18.0%	18.9%	13.9%	3.5%
Baja California	0.0%	2.0%	4.1%	2.8%	3.5%
<b>Chiapas</b>	<b>56.1%</b>	<b>65.0%</b>	<b>65.2%</b>	<b>73.4%</b>	<b>80.5%</b>
Tabasco	7.0%	7.4%	6.7%	5.5%	5.6%
Veracruz	8.3%	7.6%	5.2%	4.4%	6.9%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: COMAR

**Box 15-5 “Sembrando Vida” and “Jóvenes Construyendo el Futuro” Initiatives of the Mexican AMLO Administration<sup>106 107</sup>**

The President of Mexico, who took office in 2018, launched “*Sembrando Vida*” as one of the government’s priority programs. It aims to reduce poverty through employment for vulnerable people in rural areas, and as a countermeasure against climate change through reforestation in environmentally damaged areas. The goal is to plant 1 million hectares of timber, fruit, and spice trees by 2024, with each program participant receiving up to USD 250 a month for planting, managing, and harvesting work. Hundreds of technicians are also employed to guide the farmers, each responsible for an area of 2.5 hectares.

On December 1, 2018, on the inauguration of President Obrador of Mexico taking office, the presidents of El Salvador, Guatemala, Honduras, and Mexico proclaimed the Plan *Desarrollo Integral* (PDI) (target areas are shown in Figure 15-35). It has expressed its intention to deepen cooperation on development and migration to end involuntary migration and has requested technical assistance from the Economic Commission for Latin America and the Caribbean (ECLAC) to design and implement this initiative. In 2019, Mexico’s Foreign Minister asserted to the UN Secretary General that the “*Sembrando Vida*” and “*Jóvenes Construyendo el Futuro*” programs are being promoted in countries as part of the PDI<sup>108</sup> (see Figure 22-34).



Source: CEPAL PDI material

**Figure 15-35 Influence Area of PDI**

The “*Sembrando Vida*” and “*Jóvenes Construyendo el Futuro*” programs will be applied in the central districts of Honduras. In the municipalities of San Pedro Sula, La Ceiba, El Progreso, and Choluteca, there are 13,000 beneficiaries that plant fruit and receive USD 250 as a monthly payment. There are 7,000 women and men working as apprentices in the wood and timber sector for a monthly salary of USD 180. In El Salvador, 20,000 people are benefiting from cultivation programs in San Miguel, Santa Ana, Soyapango, San Salvador, and Ahuachapan.

President Obrador of Mexico, in a meeting with U.S. President Biden, has talked about the implementation of “*Sembrando Vida*” in the Central American Northern Triangle. According to interviews with USAID, cooperation within the framework of these projects has started in El Salvador

<sup>106</sup>“Sembrando vida”: qué es el programa con el que AMLO plantea frenar la migración de Centroamérica (y qué resultados ha tenido en México)

<sup>107</sup>Avanza creación de empleos en Centroamérica para contener migración; 35 países respaldan Plan Integral de Desarrollo

<sup>108</sup> At the time of this report, the “*Sembrando Vida*” and “*Jóvenes Construyendo el Futuro*” programs have not yet been implemented in Guatemala.

and Honduras for vocational training and job creation, and Guatemala is also planning to implement initiatives in the future.<sup>109 110</sup>

### (3) Panama

Panama's migrant population is estimated to be around 4% to 5% of the total population of 3.9 million. Colombia and Venezuela make up just over half of the total, with the rest coming from a variety of countries, including China, the U.S., and Nicaragua. Like Costa Rica, Panama also has high- and middle-income labor migrants and retirees, as well as many asylum seekers and low-income labor migrants. Migrants from Colombia arrived in large numbers in the 1990s and early 2000s and continue to migrate today because they share family ties and borders. However, the largest recent influx of migrants are Venezuelans. More than 140,000 people currently live in Panama, making it the sixth-largest Latin American host country for Venezuelan migrants and refugees. The number of Nicaraguan migrants arriving in Panama has also increased since the crackdown on demonstrations began in 2018, with more than 6,000 asylum applications filed, as of October 2019.

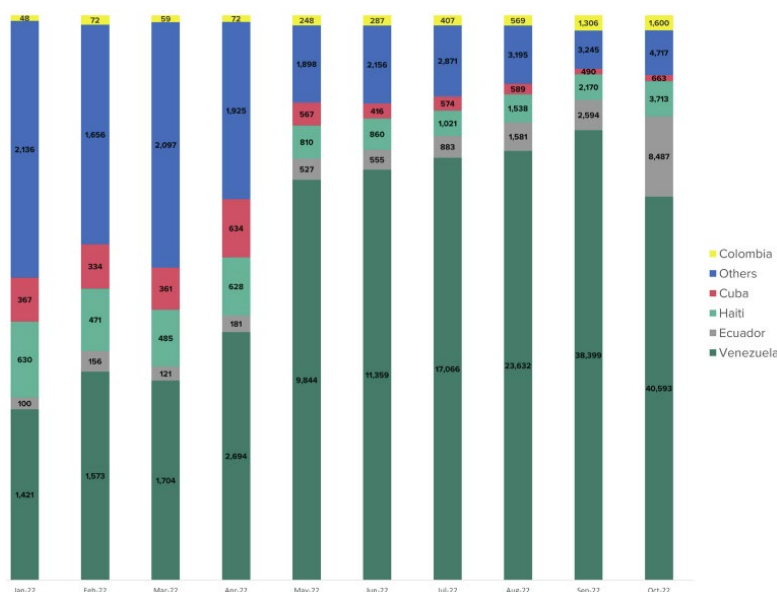
Since 2015, an increasing number of migrants have crossed Central America and Mexico through the Darien Gap, a vast stretch of rainforest between Colombia and Panama, to reach the U.S., thereby passing through Panama and Costa Rica. Transit migration is also increasing. Since 2015, Cubans and Haitians have taken that route the most, according to data. The 36,000 Haitian detentions and 31,000 Cuban detentions by Panamanian authorities, combined, represent the detention of migrants who traversed the Darien Gap irregularly between January 2015 and October 2020. It accounts for 65% of all cases.

Three Asian countries (Nepal, India, and Bangladesh) and five African countries (Cameroon, Democratic Republic of the Congo, Eritrea, Ghana, and Angola) occupy the top ten. According to the latest UNHCR monitoring of the Darien Gap (November 2022), Venezuelans are now the most common nationality to cross the Darien Gap (see Figure 15-36).<sup>111</sup>

<sup>109</sup>AMLO *propondrá a Biden extender Sembrando Vida a Centroamérica*

<sup>110</sup>Interview held on December 15, 2022

<sup>111</sup>Mixed Movements Official Data - Darien Province, Panama-Colombia Border - November 2022



Source: UNHCR

**Figure 15-36 Nationality Comparison of Migrants Passing through the Darien Gap (January to October 2022)**

Migrant movements between the Darien Gap and Costa Rica's southern border are tightly controlled. Migrants who survived the dangerous passage of the Darien River are sent through a process called “control flow” to facilitate transit migration, implemented by the Government of Panama in partnership with Costa Rica. Migrants are taken to the nearest Panamanian village where they undergo health checks and vaccinations. Biometrics security checks will also be conducted using databases inside and outside the U.S., and the results will be shared with the U.S. Department of Homeland Security. The Panamanian government deports few African or Asian migrants. This is due to the costs and the logistical and political complexities of deporting those who do not have a Panamanian diplomatic mission in their country of origin. However, if it is determined jointly with the U.S. government that there is a serious security risk, such as having a criminal record, the person will be detained and deported.

After security checks, migrants will pay to travel by chartered bus to Costa Rica's northern border. The border accepts 100 migrants a day. Panama has built camps in both the south and north to temporarily house migrants while they wait to travel on their next journey. According to the interviews with the UNHCR Panama, the reality of the situation on the ground is that migrants who cannot afford to pay charter bus fares continue to rise, and the number of migrants waiting on the roadside at the Panama-Costa Rica border and travel routes is increasing rapidly. Panama has a role as a transit country for migrants and refugees, but it does not currently have complementary protection for refugees like Mexico and Costa Rica, so it is necessary to appeal to the government.<sup>112 113</sup>

According to the interviews with the International Cooperation Department of the Ministry of Foreign Affairs of Panama, the need for basic infrastructure for residents who accept migrants from the Darien Gap is extremely high. It was pointed out that the need for assistance from international cooperation

<sup>112</sup>Interview held on December 5, 2022

<sup>113</sup>“Complementary protection” refers to a system that recognizes and protects the residence of persons who do not fall under the category of refugees under the Refugee Convention but who find it difficult to return for various reasons and require international protection.

organizations is extremely high as the number of migrants passing through the country is increasing rapidly. Similar needs have also arisen in Bocas de Toro and Chiriqui, which face the border with Costa Rica. The problem of environmental pollution is becoming more serious in the Darien Gap, and according to an interview with the UNHCR Panama, an initiative combining waste disposal, environmental conservation, and job creation for indigenous peoples in the Darien Gap is being considered between Colombia and Panama.<sup>114</sup>

### 15.4.3 Country of Origin

#### (1) El Salvador

#### 1) Development Plan

Table 15-11 below shows the development plans of the Government of El Salvador that have migration-related themes.

**Table 15-11 Themes Related to Migration in the El Salvador Development Plan**

Plan	Overview
Plan Quinquenal de Desarrollo 2014-2019 (enero 2015)	In relation to Goal 9, “Protect the rights of Salvadorans abroad and enable them to be integrated into the development of the country.
Plan Cuscatlan (2019) Equipo de Migraciones y Trabajo <sup>115</sup>	Aims to address issues of legal and illegal migration, Salvadorans residing in other countries with permanent or temporary status.
Plan Estratégico del Ministerio de Relaciones Exteriores 2019-2024 (2019) <sup>116</sup>	Strategic Axis 2: Diaspora and Human Migration <ul style="list-style-type: none"> <li>Care and protection of the Salvadoran diaspora, aimed at improving the capacity, quality of care, and protection of Salvadoran migrants and their families.</li> <li>Aims to lead national efforts to enable movement of people and the transition to circular and orderly movement.</li> <li>Linking the diaspora with the country, with the aim of strengthening the inclusion of the diaspora in the political life and socio-economic and cultural development of El Salvador.</li> </ul>
Política Nacional para la protección y desarrollo de la persona migrante salvadoreña y su familia <sup>117</sup> (Julio 2017)	It covers the causes of irregular migration, protection, and assistance for migrants in transit, settlement and integration of Salvadorans abroad, and comprehensive care for those returning home.

Source: JICA Study Team

#### 2) Migration Agency

Table 15-12 below shows the institutions involved in irregular migration and migrant community participation.

**Table 15-12 Migration Related Agencies in El Salvador**

Institution	Role
Viceministerio de Diáspora y Movilidad Humana	<ul style="list-style-type: none"> <li>Advocates and promotes the rights of migrants abroad, both in destination and transit countries.</li> <li>Facilitates the active and permanent search for favorable migration schemes for Salvadorans abroad, especially for irregulars abroad.</li> <li>Actively manages the national, regional, and multilateral migration policies.</li> <li>Provides legal assistance to Salvadorans abroad when needed.</li> </ul>

<sup>114</sup>Interview held on November 30, 2022

<sup>115</sup>Nayib Bukele (2019). Plan Cuscatlan.

[https://www.plancuscatlan.com/documentos/plancuscatlan\\_modernizacion\\_del\\_estado.pdf](https://www.plancuscatlan.com/documentos/plancuscatlan_modernizacion_del_estado.pdf)

<sup>116</sup>[https://www.transparencia.gob.sv/system/documents/documents/000/402/283/original/PEI\\_MRREE\\_2019-2024.pdf?1607357193](https://www.transparencia.gob.sv/system/documents/documents/000/402/283/original/PEI_MRREE_2019-2024.pdf?1607357193)

<sup>117</sup><https://reliefweb.int/report/el-salvador/pol-tica-nacional-para-proteccion-y-desarrollo-de-la-persona-migrante-salvadore-y>

Institution	Role
Dirección de Movilidad Humana y Atención a la Persona Migrante	Manages, coordinates, and defines public policies, processes, strategies, and actions to prevent irregular migration. Also, support and humanitarian management, reintegration and development of people on the move, regardless of the mode of migration, both at the points of origin, transit, destination, and return, will prioritize vulnerable groups. <sup>118</sup>
Mesa Interinstitucional de Atención a Inversiones de Compatriotas Residiendo en el Exterior	An organization created in 2015 by the Ministry of Foreign Affairs to promote investment in El Salvador by Salvadorans living abroad. <sup>119</sup>
Consejo Nacional para la Protección y Desarrollo de la Persona Migrante y su Familia (CONMIGRANTES)	CONMIGRANTES, an autonomous and interdisciplinary body of 22 national institutions, academics, and civil society, is responsible for migration and development-related affairs, especially between consulates and public and private entities for local investment. Develop policies to protect Salvadorans living abroad and their families in El Salvador to promote coordination of activities. <sup>120</sup>

Source: JICA Study Team

### 3) Collaboration with Migrant Communities

El Salvador has the following laws as a framework for migration participation as shown in Table 15-13.

**Table 15-13 Framework for Migrant Participation in El Salvador**

Year	Law	Overview
2005	Decretos legislativos No. 581 y 685 sobre los documentos de identidad	It enacted a single identity card to identify Salvadorans, both domestically and internationally. <sup>121</sup>
2011	Ley Especial para la Protección y Desarrollo de la Persona Migrante Salvadoreña y su Familia	Protect the rights of Salvadoran migrants and their families by formulating and monitoring public policies focused on development and protection through inter-agency coordination and inter-sectoral relationships with civil society. <sup>122</sup>
2014	Decreto Legislativo No. 663 - Ley creación del Organismo de Promoción de Exportaciones e Inversiones (PROESA)	Promote and attract domestic and foreign private investment, promote the export of domestically produced goods and services, evaluate and monitor the business environment, and propose improvements to investment and export policies.

Source: JICA Study Team

Salvadoran migrant communities in the U.S. exist in the form of prefectural associations and participate in various regional development projects. Some of the existing migrant communities are shown in Table 15-14.

**Table 15-14 El Salvadoran Migrant Community Organizations (United States)**

No	Migrant Community	Target Areas of El Salvador Support	U.S. States
1	COMITÉ PRO-DULCE NOMBRE	Chalatenango	California
2	COMUNIDAD UNIDA DE CHINAME CA EN LOS ANGELES	Chinameca (San Miguel)	California
3	GRUPO 1° DE ABRIL	San Carlos Lempa, Aguilares, La Union y Concepción Quezaltepeque, Chalatenango	California
4	SANTANECOS EN NORTE AMÉRICA	Sant Ana	Nevada
5	INICIATIVAS PARA EL DESARROLLO LOCAL - SAN RAFAEL ORIENTE INDEL	San Rafael Oriente (San Miguel)	Virginia
6	COMITÉ DE INMIGRANTES CON SANTA MARTA	Santa Marta	Virginia
7	COMITÉ SAN ANTONIO DE PADUA	La Palma, Chalatenango, San Vicente	Massachusetts

<sup>118</sup><https://www.transparencia.gob.sv/institutions/rree/documents/organigrama>

<sup>119</sup><https://rree.gob.sv/instituciones-de-gobierno-instalan-mesa-de-trabajo-para-la-atraccion-de-inversiones-de-la-diaspora-salvadorena/>

<sup>120</sup><https://rree.gob.sv/cancilleria-anuncia-la-apertura-del-proceso-de-seleccion-del-nuevo-secretario-ejecutivo-del-conmigrantes/>

<sup>121</sup><https://www.acnur.org/fileadmin/Documentos/BDL/2002/1859.pdf>

<sup>122</sup><https://www.asamblea.gob.sv/sites/default/files/documents/decretos/F33C3EBE-8BBB-4410-8271-005B04B61F0E.pdf>



No	Migrant Community	Target Areas of El Salvador Support	U.S. States
8	UNIDOS POR AGUA FRÍA	Agua Fria	Maryland
9	EMBA JADORES MUNICIPALES USA	Intipucá	Maryland
10	SALVADORAN AMERICAN HUMANITARIAN FOUNDATION	Whole country	Florida

Source: JICA Study Team

According to the IOM diaspora map (see Figure 15-37), migrant community associations originating from El Salvador are likely to be found in California and the Eastern U.S.



Source: IOM<sup>123</sup>

**Figure 15-37 Immigrant Community Associations Originating from El Salvador**

The government continued its work to promote diaspora investment in collaboration with the "*Mesa Interinstitucional de Atención a Inversiones de Compatriotas*" established in the Ministry of Foreign Affairs in 2015. In 2018-2019, the ministry has been working to promote businesses in Los Nonualcos and San Miguel<sup>124</sup>. In December 2018, a special bill was drafted to facilitate access and investment in credit and financial services for repatriated El Salvadorans for the Salvadoran community living abroad.<sup>125</sup>

In October 2019, PROESA Director Salvador Gómez Goches offered to support the agency, calling on Salvadorans living abroad to invest in the country. However, PROESA does not have staff dedicated to working with diasporas and has not been able to engage with and provide professional support to diasporas.<sup>126</sup>

Table 15-15 below shows initiatives in collaboration with migrant communities.

**Table 15-15 Diaspora Collaboration Projects in El Salvador**

Period	Initiatives	Overview
January 2018	Cumbres de Juventudes Salvadoreñas y Campamento Kuskatan	Youth conferences for Salvadoran youth living abroad were held in four U.S. cities (Washington DC, Dallas, Los Angeles, and Milan). The conference aims to empower young people from abroad to share their experiences and generate initiatives for the development of themselves

<sup>123</sup>IOM mapa de Diáspora

<sup>124</sup> Foreign Ministry Report (Memoria de Labores MRREE 2017-2018) There is no mention of whether it is the city or province of San Miguel

<sup>125</sup>"Mapeo de participación de la diáspora El Salvador" EUDIF 2019

<sup>126</sup><https://ultimahora.sv/proesa-ofrece-apoyo-a-la-diaspora-para-invertir-en-el-salvador/>

Period	Initiatives	Overview
		and their communities. <sup>127</sup>
2004-2019	Manos Unidas by El Salvador	Since 2004, Banco Agricola and the Pan American Development Foundation have been working with the Salvadoran diaspora for the social and educational development of El Salvador. As of September 2019, there are numerous school infrastructure programs in place in 140 communities and 86 municipalities. More than USD 6 million was invested in the project, of which more than USD 750,000 was donated by Salvadorans living in the United States. <sup>128</sup>
December 2019	Salvadoreños en el Exterior (SALEX) - Inversión en el Hotel y Restaurante “Bola de Monte Resort” en El Salvador	To promote tourism and investment in El Salvador, SALEX members invested USD 3.5 million in a hotel to be built in Ahuachapán. It will be an ecological resort with 30 guest rooms, a restaurant, and a swimming pool. <sup>129</sup>

Source: JICA Study Team

## (2) Guatemala

### 1) Development Plan

Table 15-16 shows the Guatemalan government's development plans with migration-related themes.

**Table 15-16 Migration Related Themes in Guatemala Development Plan**

Plan	Overview
Plan Nacional de Desarrollo: "K'atun, Nuestra Guatemala 2032" <sup>130</sup>	It constitutes a country's long-term development policy and defines national policies, plans, programs, projects, investments, etc. The plan has a “prosperity for all” axis, and among its guiding principles is to ensure social protection for migrants and respect for their rights.
Política de Protección, Asistencia y Atención al Guatemalteco en el Exterior	Guatemalan migrant communities abroad and their families, as well as the protection and assistance of migrants transiting the country, are envisioned as policies to meet the needs of the migrants. <sup>131</sup>

Source: JICA Study Team

### 2) Related Institutions

Table 15-17 below shows the relevant agencies responsible for dealing with irregular migration.

**Table 15-17 Migration Related Agencies in Guatemala**

Institution	Role
Instituto Guatemalteco de Migración (IGM)	The Guatemalan Migration Service conducts public relations through various media outlets in order to deal with irregular migration such as <i>Todos somos Migrantes</i> (Campaign to prevent discrimination against irregular migrants passing through Guatemala), <i>Campaña Migración Irregular</i> (Campaign to prevent discrimination against returnees).
Centro de Recepción de Retornados en la Fuerza Aérea Guatemalteca (FAG)	It is a returnee reception facility and provides assistance in economic reintegration and education. Donated USD 1.2 million for construction, furniture, and major equipment with support from USAID <sup>132</sup>
Consejo Nacional de Atención al Migrante de Guatemala (CONAMIGUA)	Responsible for coordinating, defining, supervising, and monitoring national actions aimed at protecting, caring for, and providing assistance to Guatemalan migrants, their relatives in Guatemala, and deported and repatriated persons (Decreto 46-2007 y modificado by Decreto 24-2008)
Centro quédate <sup>133</sup>	Vocational Training Center for Supporting Irregular Migrants under the Social Welfare Agency (Secretaría de Bienestar Social). They are located in Santa María Visitación, Sololá, Malacatancito, Huehuetenango, and Joyabal, Quiché. The main activities are extracurricular education with the cooperation of the Ministry of Education, training in English, computers,

<sup>127</sup><https://www.dallasnews.com/espanol/al-dia/dallas-fort-worth/2017/05/31/convocan-a-jovenes-salvadorenos-en-el-exterior-a-participar-en-campamento-kuskatan/>

<sup>128</sup><https://eltiempolatino.com/2018/09/11/local/salvadorenos-del-area-invierten-en-educacion-en-su/>

<sup>129</sup><https://proesa.gob.sv/proesa-apoya-inversion-de-salvadorenos-en-el-exterior-en-proyecto-del-sector-turistico/>

<sup>130</sup><https://observatorioplanificacion.cepal.org/sites/default/files/plan/files/GuatemalaPlanNacionaldeDesarrollo2032.pdf>

<sup>131</sup>Ministerio de Relaciones Exteriores de Guatemala (2007). B3n%20Guatemal.%20Exterior.pdf

<sup>132</sup>Nuevo Centro de Recepción de Retornados brinda atención integral a los migrantes

<sup>133</sup>Centros de Formación “Quédate”

Institution	Role
Instituto Guatemalteco de Migración (IGM)	The Guatemalan Migration Service conducts public relations through various media outlets in order to deal with irregular migration such as <i>Todos somos Migrantes</i> (Campaign to prevent discrimination against irregular migrants passing through Guatemala), <i>Campaña Migración Irregular</i> (Campaign to prevent discrimination against returnees).
Centro de Recepción de Retornados en la Fuerza Aérea Guatemalteca (FAG)	It is a returnee reception facility and provides assistance in economic reintegration and education. Donated USD 1.2 million for construction, furniture, and major equipment with support from USAID <sup>132</sup>
	etc., with the cooperation of the Vocational Training Agency (INTECAP), and scholarships with the cooperation of the Ministry of Labor.

Source: JICA Study Team

### 3) Collaboration with Migrant Communities

Guatemala has the following laws listed in Table 15-18 as a framework for migration participation.

**Table 15-18 Framework for Migrant Participation in Guatemala**

Year	Law	Overview
2007	Ley del Consejo Nacional de Atención al Migrante de Guatemala (CONAMIGUA), Decree 46-2007	Respond to the needs of Guatemalans facing human rights issues by migrating in transit to the United States and Mexico.

Source: JICA Study Team

The Guatemalan diaspora tend to maintain as many ties with their home country as possible, such as the nostalgic market, but they operate primarily in an independent capacity and do not necessarily have ties to the government.<sup>134</sup>

Some of the multiple migrant communities are shown in Table 15-19.

**Table 15-19 Guatemalan Migrant Community Organizations (United States)**

No	Migrant Community	U.S. States
1	Asociación De Guatemaltecos Unidos De Carolina del Norte	North Carolina
2	Asociación de Guatemaltecos Unidos de Oklahoma	Oklahoma
3	Asociacion Guatemaltecos Sin Fronteras DMV	Washington
4	Primaveral Association Inc.	Washington D.C
5	"Cogua" Centro Organizativo Guatemalteco	Texas
6	Asociacion Guatemalteca Americana "AGA"	Florida
7	Red Migrante Guatemalteca	Entire country

Source: JICA Study Team

According to the IOM diaspora map (see Figure 15-38), migrant community associations of Guatemalan origin are likely to be located in California, Texas, and the Eastern U.S.

<sup>134</sup><https://www.thedialogue.org/blogs/2018/10/opportunities-for-development-in-guatemala-a-study-on-the-nostalgic-trade/>



Source: IOM<sup>135</sup>

**Figure 15-38 Immigrant Community Associations of Guatemala**

Diaspora organizations and groups in Guatemala are often informal and small, with weak institutions and capacity to implement. The Guatemalan diaspora is an important source of funding for local start-ups, mainly in the commercial sector. Successful Guatemalans abroad provide international connections to advise and invest in domestic start-ups, as well as job opportunities if they expand into Guatemala.<sup>136</sup>

Table 15-20 shows the initiatives in collaboration with migrant communities.

**Table 15-20 Diaspora Collaboration Projects in Guatemala**

Period	Attempt	Overview
2016-Present	Opportunities for My Community Project	Implemented by USAID and the Inter-American Dialogue, the project will link remittances, education, and savings to boost Guatemala's economy and human development. Engaging the Guatemalan government and diaspora in the development of the country through the mobilization of funds for educational programs in Guatemala <sup>137</sup>

Source: JICA Study Team

### (3) Honduras

#### 1) Development Plan

The Government of Honduras has formulated a long-term plan, entitled the “National Vision (*Visión del País 2010-2038*),” which depicts what Honduras should be in the national development plan. The plan showing the medium-term strategy to achieve this will be the "National Plan (*Plan de Nación*)", and these two medium/long-term plans will be the "Government Plans" formulated by each administration with a four-year term. Contents related to migration are shown in Table 15-21.

**Table 15-21 Themes Related to Migration in the Honduras Development Plan**

Plan	Overview
Vision de país 2010-2038 (Largo plazo)	The National Development Plan prioritizes the repatriation and reintegration of migrants detained at the U.S. border who have left the country. The plan promises to secure employment opportunities to support social reintegration after repatriation. The plan does not address the importance of migration and remittances to the country.
Plan estratégico 2018-2022	Implementation of PEG 2018-2022 will focus in the social sphere on broader and better

<sup>135</sup>IOM mapa de Diáspora

<sup>136</sup>"Diaspora engagement mapping Guatemala" EUDIF 2020

<sup>137</sup><https://www.thedialogue.org/blogs/2019/08/remittances-for-development-engaging-the-diaspora-with-social-projects-in-guatemala/>

Plan	Overview
(Mediano plazo) <sup>138</sup>	opportunities for the poorest, inclusive and quality education, healthy living, adequate housing with quality and affordable basic services, and aims to improve the living conditions of the poorest (including with a focus on migration) through development approach.
Plan de gobierno 2022-2026	The government plans of the current Castro administration regarding migration are as follows: 1) Promotion of human migration policies, 2) Job creation, 3) Promotion of diaspora linkages, 4) Reduction of bank charges in migration remittances, and 5) Loans to all citizens (both domestic and foreign) as part of monetary policy and life insurance.

Source: JICA Study Team

## 2) Related Institutions

Table 15-22 below shows the relevant agencies responsible for dealing with irregular migration.

**Table 15-22 Migration Related Agencies in Honduras**

Institution	Role
El Consejo Nacional de la Protección al Hondureño Migrante (CONAPROHM) <sup>139</sup>	Counseling and Advisory Office attached to the Ministry of Foreign Affairs of Honduras, in charge of research on Hondurans abroad.
Dirección General de Protección al Hondureño Migrante (PROMIGRANTE)	The Honduran Migration Protection Directorate is responsible for implementing policies and programs for the protection of Honduran migrants abroad and for the repatriation of Honduran migrants.
Oficina de Protección al Hondureño Migrante (OPROHM)	The Honduran Migration Protection Office implements policies and programs for the protection of Honduran migrants (e.g., deportation, prisoner, and trafficking cases)
Oficina de Asistencia para el Migrante Retornado (OFAMIR)	The Returning Migration Assistance Office promotes and implements policies and programs for the return of Hondurans abroad and the achievement of social and labor reintegration. In addition to providing technical and financial support to the Center for Returning Migrants, the Center for Returning Migrants (CAMR) is commissioned by the Government of Honduras to operate.
Fondo Hondureño de Solidaridad con el Migrante Retornado FOSMITH	People who migrate regularly, irregularly, in countries of transit or destination, and voluntarily repatriated or repatriated from countries of transit or destination should seek protection from the state. Support and protect Honduran migrants and their families in need.
Centros de Atención al Migrante Retornado (CAMR)	Returnee Migration Support Center
Unidades Municipales de Atención al Retornado (UMAR)	Fourteen municipalities have returning migrant assistance units, which provide full care. This unit assists central and local governments in following up and managing applicants to achieve effective and sustainable reintegration into communities.

Source: JICA Study Team

## 3) Collaboration with Migrant Communities

Honduras has the following laws as a framework for migration participation as shown in Table 15-23.

**Table 15-23 Framework for Migrant Participation in Honduras**

Year	Law	Overview
2013	Ley de Protección de los Hondureños Migrantes y sus Familias	A comprehensive law designed to protect migrants abroad. It aims to facilitate the reduction of financial and other costs, particularly those associated with remittances, and to strengthen the cultural, social, and economic status of Honduran migrants. Establishes the Honduras National Council for the Protection of Migrants, providing for interagency coordination measures concerning the protection of rights <sup>140</sup>

Source: JICA Study Team

<sup>138</sup>Gobierno de la República de Honduras. Plan estratégico 2018-2022. 202018-2022%20%28PR4%29\_0.pdf

<sup>139</sup>Decreto N°106-2013.

[https://portalunico.iaip.gob.hn/portal/ver\\_documento.php?uid=MTU3OTg5ODkzNDc2MzQ4NzEyNDYxOTg3MjM0Mg==](https://portalunico.iaip.gob.hn/portal/ver_documento.php?uid=MTU3OTg5ODkzNDc2MzQ4NzEyNDYxOTg3MjM0Mg==)

<sup>140</sup><https://www.tsc.gob.hn/biblioteca/index.php/leyes/538-ley-de-proteccion-de-los-hondurenos-migrantes-y-sus-familiares>

The Honduran Migrant Community in the United States is an association whose purpose is primarily to support Hondurans who have immigrated to the United States, not to help their home country. Some of the multiple migrant communities are shown in Table 15-24.

**Table 15-24 Honduran Migrant Community Organizations (United States)**

No	Migrant Community	U.S. States
1	Asociación de Hondureños del Norte de California (AHNCA)	California
2	Asociación Hondureños Unidos de Dallas	Texas
3	Organización Hondureña Integrada Francisco Morazan Miami	Florida
4	Asociación de Hondureños in San Antonio Texas	Texas
5	Fundación Olanchanos Unidos Por Honduras	Florida

Source: JICA Study Team

According to the IOM diaspora map (see Figure 15-39), migrant community associations originating from Honduras are likely to be found in California and the Eastern U.S.



Source: IOM<sup>141</sup>

**Figure 15-39 Guatemalan Immigrant Community Organizations in the U.S.**

Most of the Honduran diaspora was a phenomenon caused by Hurricane Mitch in 1998, with a large wave of migration growing at an annual rate of 7%. The 2009 military coup and global recession led to another wave, with thousands of unaccompanied minors leaving Honduras for the United States in 2014. Because migration is a relatively new trend, diaspora communities are less well established, and diaspora collective identities are less common than in other countries. They are trying to materialize their ties with Honduras through cultural activities, philanthropic activities, and outreach to government officials, but the low level of trust in the government of their country of origin is a major obstacle.<sup>142</sup>

In an interview with PROMIGRANTE<sup>143</sup>, the Ministry of Foreign Affairs of Honduras has indicated that under the new administration, there is a move to include initiatives regarding the utilization of migrant remittances and cooperation with the migrant community in the development plan, and the plan will be completed within this year. They are considering minimizing remittance fees and enabling migrants to join the pension system and social insurance through the establishment of a "migrant bank".

Launched in 2010 and relaunched from 2015 to the end of 2017, the program, supported by the United

<sup>141</sup>IOM mapa de diaspora

<sup>142</sup>[https://diasporaforddevelopment.eu/wp-content/uploads/2021/03/CF\\_Honduras\\_SP-v.2.pdf](https://diasporaforddevelopment.eu/wp-content/uploads/2021/03/CF_Honduras_SP-v.2.pdf)

<sup>143</sup>Interview with PROMIGRANTE (conducted on August 30, 2022)

Nations Development Programme (UNDP), had the effort to support 17 community development projects<sup>144</sup>. These projects involved cash donations from the diaspora to schools and community centers in the cities of Comayagua, La Paz, and Intibuca, matched by the government. In addition, in collaboration with IOM, a pilot project called "Remesas Solidarias"<sup>145</sup> is implemented in 2022 and is an initiative to implement Mexico's "Programa 3X1" in Honduras.

## 15.5 Support Policy by Development Partners

### (1) UN Framework

#### 1) Global Compact for Safe, Orderly, and Regular Migration

The Global Compact for Safe, Orderly, and Regular Migration (adopted on 10 December 2018) is based on the protection of the human rights of all migrants and encompasses international migration. This is the first United Nations agreement negotiated at the intergovernmental level on a common approach to comprehensive management of the United Nations, and through this comprehensive approach, member states will promote safe, orderly, and regular migration, promote international cooperation and the 23 goals. It aims to reduce the incidence and negative impacts of irregular migration through a combination of measures set out in the Global Pact for Migration. In the SICA region, the Dominican Republic expressed interest and reservations, but all other member states have ratified it.<sup>146</sup> In North America, Mexico and Canada are members, and the United States, which had expressed its opposition under the Trump administration<sup>147</sup>, has expressed its support under the Biden administration<sup>148</sup>.

As shown in Table 15-25, the frameworks indicated in the Global Pact are wide-ranging.

**Table 15-25 Framework of the Global Compact**

No.	Framework
1	2030 Agenda for Sustainable Development
2	Sustainable Development Goals and the Addis Ababa Action Agenda
3	Paris Agreement
4	Sendai Framework for Disaster Risk Reduction 2015-2030
5	Global Forum on Migration and Development
6	IFAD Global Forum on Remittances, Investment and Development
7	Agenda for the Protection of Cross-Border Displaced Persons in the Context of Disasters and Climate Change – NANSSEN initiatives
8	Principles and Guidelines, supported by practical guidance on the Human Rights Protection of Migrants in Vulnerable Situations

Source: Created by the JICA Study Team based on the Global Compact for Safe, Orderly, and Regular Migration

#### 2) UNHCR

Since 1950, the United Nations High Commissioner for Refugees (UNHCR) has been working with the world's forcibly displaced persons (refugees, asylum-seekers, internally displaced persons), and stateless persons (including those not subject to forced displacement). According to the interviews with the UNHCR Panama, both migrants and refugees who move in mixed groups are subject to

<sup>144</sup> Honduras and UNDP sign agreement to reactivate Solidarity Remittances Program

<sup>145</sup> Proposal for the design and implementation of a national program of solidarity and productive remittances.

<sup>146</sup> According to OCAM interview conducted on August 19, 2022

<sup>147</sup> National Statement of the United States of America on the Adoption of the Global Compact for Safe, Orderly, and Regular Migration December 7, 2018

<sup>148</sup> Revised National Statement of the United States of America on the Adoption of the Global Compact for Safe, Orderly and Regular Migration December 17, 2021

humanitarian assistance.

The 2022-2026 Business Strategy indicates that activities will continue in line with the following three international frameworks: 1) Global Compact for refugees (emphasizing the importance of cooperation and efforts for an “integral response”), 2) the 2030 Agenda for Sustainable Development, and 3) the Common Agenda. UNHCR’s work is also based on five pillars (Protect, Respond, Integrate, Strengthen, and Resolve) and the overall policy is to address the threat of forced displacement (climate change, conflicts, and pandemics), the importance of support for urban areas, support for vulnerable groups (gender, children, persons with disabilities, etc.), strengthening collaboration between governments, development partners, international financial institutions, and the private sector, local civil society and communities. It demonstrates an ever-expanding partnership with the group, leveraging a participatory approach to program design and delivery. It also emphasizes the importance of a medium/long-term approach to development and efforts to strengthen resilience to climate change as points of focus.<sup>149 150 151</sup>

UNHCR has developed the Livelihoods Enhancement Strategy for Las Americas (2020), which aims to engage UNHCR with a wide range of stakeholders to mobilize support and resources for the economic inclusion of refugees. Economic inclusion requires not only policy changes, such as government responses and access to the labor market, but also significant investment from donors in national and regional plans and programs. It aims to catalyze opportunities for financial institutions, private sector actors, and donors to make a tangible impact on access to livelihood issues in the region.<sup>152</sup>

Support for the Comprehensive Regional Protection and Solutions Framework (MIRPS) is an example of migration-related efforts in the Central American region. Belize, Costa Rica, Guatemala, Honduras, Mexico, and Panama adopted the San Pedro Sula Declaration in 2017 and agreed to jointly implement the MIRPS. A concrete application of the Global Compact on Refugees, which encourages regional cooperation between countries of origin, transit, and destination for greater responsibility sharing in matters of prevention, protection, and durable solutions. It is something that needs to be done. It is also a participatory approach, with the direct participation of those in need of protection and those affected by violence and insecurity.<sup>153</sup>

It also builds a MIRPS support platform that includes regional and international organizations and partner countries working on humanitarian and development challenges (Argentina, Brazil, Canada, Colombia, Spain, Switzerland, and Uruguay). The advantage of MIRPS is that it provides a forum for exploring regional and multilateral solutions to problems that transcend national borders and have different impacts at the national and regional levels. It also points to MIRPS as a model of collaboration and cooperation, strengthened by mobilizing technical, political, and financial support from member countries of the supporting platform.

<sup>149</sup>DIRECCIONES ESTRATÉGICAS DEL ACNUR 2022-2026

<sup>150</sup><https://globalcompactrefugees.org/>

<sup>151</sup>Nuestra Agenda Común - Inform del Secretario General

<sup>152</sup>ESTRATEGIA PARA FORTALECER LOS MEDIOS DE VIDA EN LAS AMÉRICAS

<sup>153</sup>What is MIRPS



**Table 15-26 UNHCR Initiatives in Latin America**

Country	Attempt	Overview
Costa Rica (Desamparados), Guatemala (Esquipulas, Flores, San Benito, ANAM, Puerto Barrios, Ciudad de Guatemala, Villa Nueva, Huehuetenango, Quetzaltenango), Mexico (Saltillo, Ciudad de Mexico)	Ciudades Solidarias	It builds on recommendations identified by countries in the region within the framework of the 2004 Mexico Action Plan and the 2014 Brazil Action Plan, with the aim of recognizing the efforts of local governments to provide protection and integration. This initiative is primarily carried out by UNHCR and local governments through agreements under the Solidarity Cities program. Agreements are usually ratified by municipal or state legislatures, become public policy, and remain in force between governments. The purpose is to strengthen the protection and integration efforts of local governments and to inspire other government agencies to develop public policies that include those with whom UNHCR operates in the Americas.
Mexico	Local Integration Program	Since its inception in 2016, it has helped people relocate to one of eight cities in the country's central and northern regions. There, labor markets, housing markets, education and health systems have the capacity to integrate refugees as a result of demographic change and economic growth. UNHCR assists program participants with temporary housing, cultural orientation, vocational training, school enrollment and job placement. Refugees can apply for naturalization after two years of permanent residence. Of the 400 companies participating, there are only five Japanese companies to date. Before: In southern Mexico, 73% are unemployed, 17% are in sporadic and informal employment, and only 10% are employed. Previously in the South, 73% were unemployed, 17% were in sporadic irregular employment, and only 10% were employed. 82% of school-age children are not enrolled in school. After: Of those relocated, 92% are formally employed and contribute to the national economy as taxpayers. The average weekly wage is MXN 1,465 and 100% of school-aged children are enrolled. There are 26,482 participants that were confirmed, relocating from the southern border to nine destinations in central/northern Mexico (38 in 2016, 114 in 2017, 516 in 2018, 21771 in 2019). UNHCR finds suitable jobs, helps children enroll in school, and provides psychosocial follow-up. Legal support is available through the naturalization process. About 86% of transferees remain in their destination city, 10% left the program and live in another city in Mexico, and 4% are believed to have left the program and immigrated to the U.S. Within a year of integration, 60% of displaced refugees graduated from poverty.

Source: Prepared by the JICA Study Team based on UNHCR information

### 3) International Organization for Migration (IOM)

The International Organization for Migration (IOM) is a United Nations agency that provides migration services and advice to governments and migrants, including internally displaced persons, refugees, and migrant workers. The IOM was established in 1951 as the Intergovernmental Commission for European Migration (ICEM) to assist in the resettlement of people displaced by World War II and became a United Nations agency in 2016. In addition, according to interviews with the UNHCR Costa Rica, amidst the rapid increase in mixed migration in the Central American region, cooperation with UNHCR is considered important to provide the support that meets the needs of migrants and refugees.

The IOM Assistance Policy for North America, Central America, and the Caribbean (2020-2024)<sup>154</sup> articulates a framework based on three pillars: 1) addressing the negative impacts of migration by strengthening resilience; 2) promote safe, regular, and orderly migration; and 3) act as a trusted partner to migrants, member states, regional organizations, processes and initiatives, other UN agencies, civil

<sup>154</sup>Central America, North America, and the Caribbean Regional strategy 2020-2024

society, academia, the private sector, the media, among others.

The efforts of IOM have also been implemented in areas as enumerated in Table 15-27.

**Table 15-27 Areas of IOM Initiatives in North America/Central America/Caribbean**

No.	Field
1	Disaster prevention
2	Post-crisis transition and recovery
3	Resettlement of refugees
4	Migration, environment, climate change
5	Protection and assistance for vulnerable migrants
6	Safe and dignified voluntary repatriation and support for sustainable reintegration
7	Migration health, including mental health and psychosocial support
8	Labor migration and human development
9	Anti-trafficking measures
10	Migration and border control

Source: IOM

The IOM is involved in several regional processes and initiatives to conduct discussions on migration issues. Table 15-28 shows IOM's efforts in the Central America region.

**Table 15-28 IOM Initiatives in Central America**

Attempt	Overview
Pilot project for socioeconomic integration of vulnerable people in migration situations	In collaboration with the Government of Mexico, the United Nations High Commissioner for Refugees (UNHCR), and the International Organization for Migration (IOM) will support the stabilization and eventual integration of the Haitian people in Mexico and address their humanitarian needs through a pilot project (March 2022) <sup>155</sup> The IOM and UNHCR will continue to strengthen the asylum system and provide new response legislation to address mixed migration flows, while implementing migration regularization for people with different needs and profiles.
Information Management Initiative for Human Movements in the Central American Northern Triangle (NTMI) <sup>156</sup>	To strengthen the capacity of governments to collect, analyze, and share information on human migration to support humanitarian efforts and protect vulnerable populations in three countries: El Salvador, Guatemala, and Honduras. This will be carried out with the support of USAID.

Source: Prepared by the JICA Study Team based on IOM information

It also collects and shares data and insights from their field experiences through research, website Regional Knowledge Hub on Migration, and social networks. Table 15-29 shows the regional frameworks supported by IOM.

**Table 15-29 Regional Framework Supported by IOM**

No.	Framework
1	Regional United Nations Network on Migration for Latin America and the Caribbean
2	Regional Conference on Migration (RCM) (“Puebla Process”)
3	Caribbean Migration Consultations (CMC)
4	Central American Commission of Migration Directors (OCAM)
5	Regional Inter-Agency Coordination Platform for Venezuelan Refugees and Migrants (R4V)
6	Action Plan for the Comprehensive Management of Migration in the Countries of the Central American Integration System (PAIM-SICA)
7	Comprehensive Development Plan for El Salvador, Guatemala, Honduras and Mexico (CPD)
8	Issue-based Coalition on Human Mobility
9	Joint Initiative on Health and Migration (INCOSAMI)

Source: IOM

<sup>155</sup>Proyecto piloto para la inserción socio económica de población vulnerable en situación de movilidad implementado bajo la comisión intersecretarial de atención integral en materia migratoria (CIAIMM)

<sup>156</sup>Iniciativa de Gestión de Información de Movilidad Humana en el Triángulo Norte de Centroamérica

**(2) U.S.**

**1) U.S. Government**

Under the Biden administration, the U.S. developed a Root Causes Strategy for Migration in Central America in 2021. This strategy argues that 1) addressing the root causes of migration is essential, 2) providing aid alone will not stop migration, 3) the root causes will persist if they aren't tackled, and 4) the U.S. alone will not be able to solve these causes. On this last point, the U.S. has already announced that it has received commitments from the governments of South Korea, Japan, Mexico, and the United Nations to join and assist the U.S.

The U.S. strategy is based on the five pillars as shown in Table 15-30.

**Table 15-30 Five Pillars of the U.S. “Root Causes Strategy”**

Pillar	Strategy
I	Addressing economic insecurity and inequality
II	Fighting corruption, strengthening democratic governance, and promoting the rule of law
III	Promoting respect for human rights, labor rights, and press freedom
IV	Addressing and preventing violence, extortion, and other crimes committed by criminal gangs, human trafficking networks, and other organized crime groups
V	Fighting sexual, gender-based, and domestic violence

Source: U.S. Strategy for Addressing the Root Causes of Migration in Central America, July 2021 (National Security Council)

In July 2021, a “Collaborative Migration Management Strategy” was formulated. The migration strategy strengthens and prioritizes collaborative efforts to manage safe, orderly, and humane migration in North and Central America in line with U.S. values, while the Root Causes Strategy addresses the underlying factors that lead to migration. Both strategies are based on the U.S. government's belief that everyone should be safe, secure, and able to live a stable and dignified life in their own countries. The migration strategy addresses urgent humanitarian needs in the Northern Triangle, facilitates access to protection, improves safe and humane border controls, assists returnees, and access legal channels for migration. The “Collaborative Migration Management Strategy” is based on the eight policies shown in Table 15-31.<sup>157</sup>

**Table 15-31 Eight Policies of the U.S. “Collaborative Migration Management Strategy”**

Pillar	Policy	Initiatives
1	Stabilization of Population with Acute Needs	<ul style="list-style-type: none"> <li>Increased U.S. support</li> <li>Multilateral efforts</li> </ul>
2	Expanding Access to International Protection	<ul style="list-style-type: none"> <li>Building and improving national asylum systems</li> <li>Establishment of Migration Resource Center (MRC)</li> <li>Strengthening efforts toward regional integration of refugees</li> <li>Asylum seekers and refugees support assistance</li> <li>Expanding protection efforts for high-risk groups</li> <li>Stepping up efforts to resettle refugees from the region</li> </ul>
3	Expanding Access to Protection in Countries of Origin	<ul style="list-style-type: none"> <li>Improving protection for internally displaced persons</li> <li>Supporting humanitarian aid and integration for internally displaced persons</li> <li>Participation of internally displaced persons and affected communities in development programs</li> </ul>
4	Expanding Third Country Labor Migration Programs While Improving Worker Protection	<ul style="list-style-type: none"> <li>Expanding access to labor migration programs to third countries with worker protection</li> <li>Expanding support for migrant worker protections, including ethical recruitment practices</li> </ul>
5	Assist and Reintegrate Returned Persons	<ul style="list-style-type: none"> <li>Expansion of acceptance centers</li> <li>Build a reintegration service</li> </ul>

<sup>157</sup>Collaborative migration management strategy

Pillar	Policy	Initiatives
		<ul style="list-style-type: none"> <li>Support policies and frameworks for reintegration</li> <li>Support for voluntary repatriation</li> </ul>
6	Foster secure and humane management of borders	Support institutional capacity building, training, technical assistance, and equipment needs for migration authorities in the region. Support for border infrastructure and technology Strengthening investigation and prosecution of migrant smuggling and human trafficking Promoting a joint approach to migration and border control Strengthening information sharing with regional partners
7	Strengthening Regional Public Messaging on Migration	<ul style="list-style-type: none"> <li>Supporting local message campaigns</li> </ul>
8	Expanding Access to Lawful Pathways for Protection and Opportunity in the United States	<ul style="list-style-type: none"> <li>Promotion of the United States Refugee Recognition Program (USRAP) for persons from the Northern Triangle of Central America</li> <li>Issuance of visa</li> </ul>

Source: US Collaborative Migration Management Strategy, July 2021 (National Security Council)

## 2) USAID

The United States Agency for International Development (USAID) addresses the economic, security, environmental, and governance issues driving irregular migration to the U.S. from El Salvador, Guatemala, and Honduras. The USAID works in El Salvador, Guatemala, and Honduras to help build the peace, prosperity, and stability that people deserve by focusing on the root causes that undermine people's hopes for the future. The USAID promotes increased government accountability and works with the private sector to promote economic and educational opportunities for potential migrants. They also help combat rampant crime and violence, tackle corruption and impunity, and mitigate the impacts of climate change.

On May 4, 2021, USAID's Northern Triangle Task Force was officially launched. The task force, led by Executive Director Michael Camilleri, is to deploy a coordinated, unified, and creative approach to addressing the causes of irregular migration, as directed by President Biden's executive order. According to interviews with USAID, the task force is an internal unit that was set up temporarily to jump-start efforts in the Central American Northern Triangle after the inauguration of the Biden administration.<sup>158</sup>

The USAID's efforts in Guatemala, El Salvador, and Honduras are divided into the three pillars of "Prosperity, Safety, and Governance" and the efforts shown in Table 15-32 are listed.

**Table 15-32 USAID Assistance Policy in the Central American Northern Triangle**

Big Goal	Pillar	Attempt	Field
Making life safe, prosperous, and fulfilling in Guatemala, El Salvador, and Honduras	Prosperity	Partnering with governments and the private sector to increase economic prosperity, inclusion, and stability	Value chain development Infrastructure investment Sustainable land use Small business development Improvement of business environment
	Safety	Partnering with governments to improve justice and security by strengthening community resilience, combating corruption, and improving transparency and accountability	Judicial services Fight against human trafficking Transparency and fairness Environmental protection Community resilience
	Governance	Collaborate with CSOs, governments and the private sector to strengthen governance,	Promotion of public participation Tax revenue and proper management Distribution of public services

<sup>158</sup>Executive Order on Creating a Comprehensive Regional Framework to Address the Causes of Migration, to Manage Migration Throughout North and Central America, and to Provide Safe and Orderly Processing of Asylum Seekers at the United States Border

Big Goal	Pillar	Attempt	Field
		improve public service delivery and improve citizen participation in government	

Source: Created by the JICA Study Team based on the USAID website

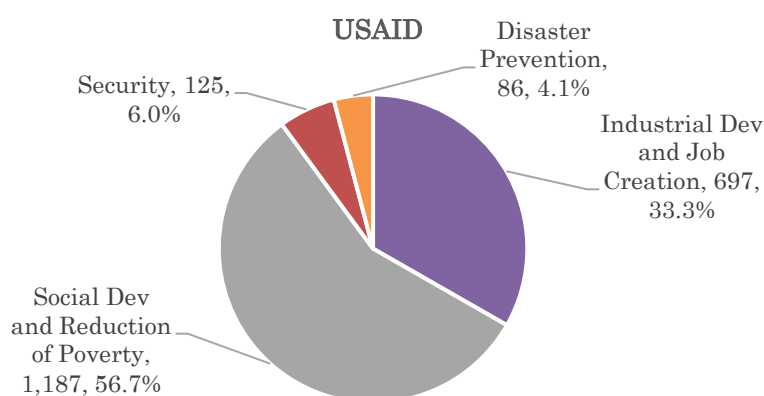
The USAID has also formulated the Regional Development Cooperation Strategy (RDCS) 2022-2027, with the goal of reducing irregular migration from a more prosperous, safer, and resilient Central America. This shall be achieved through regional programs addressing regional challenges related to economic prosperity, governance and security, environment, and health. According to the Country Development Cooperation Strategy (CDCS) for the Northern Triangle of Central America, priority areas are listed in Table 15-33.<sup>159</sup>

**Table 15-33 Priority Areas in the Central American Northern Triangle Country Development Policy**

Country	Focus Area
El Salvador	Work to improve community security for those at risk of involuntary migration, increase jobs and incomes for those at risk of migration, and improve government responsiveness, accountability, and transparency. <sup>160</sup>
Guatemala	Promote prosperity, security and improved governance across Guatemala and prioritize access to opportunities for indigenous peoples, women, and youth to maintain dignified livelihoods in their home communities. <sup>161</sup>
Honduras	Improve socioeconomic opportunities to reduce irregular migration, strengthen democratic governance to meet the needs of citizens, and improve justice and security. <sup>162</sup>

Source: Created by the JICA Study Team based on the USAID website

Looking at the number of migration-related projects in the Central American Northern Triangle of USAID over the past ten years divided into (1) industrial development/job creation, (2) social development/poverty reduction, (3) security improvement, and (4) disaster prevention, Social development/poverty reduction (56.7%) is the most common initiative, followed by industrial development/job creation (33.3%) (see Figure 15-40).



Source: Prepared by the JICA Study Team based on the List of USAID Projects

**Figure 15-40 USAID Initiatives**

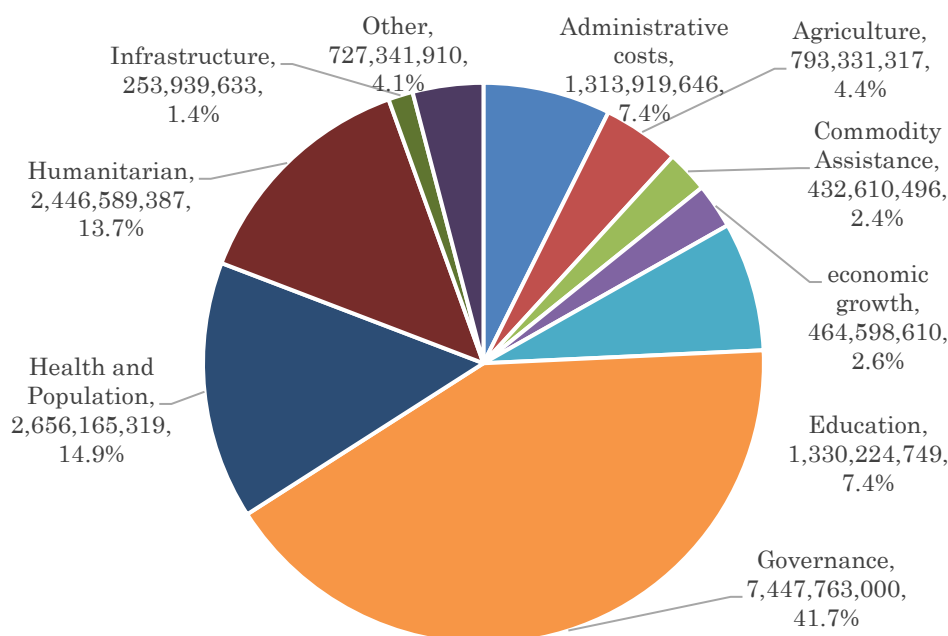
<sup>159</sup>2022-2027 Regional Development Cooperation Strategy (RDCS) of USAID/El Salvador - Central America and Mexico (E-CAM) Regional Mission

<sup>160</sup>El Salvador - Country Development Cooperation Strategy

<sup>161</sup>Guatemala - Country Development Cooperation Strategy

<sup>162</sup>Honduras - Country Development Cooperation Strategy

According to interviews with USAID, governance, and public safety support are USAID's priority areas. Looking at Figure 15-40 by area of efforts by amount, governance support (including security) accounts for the largest proportion at just under 42%. In terms of industrial development and job creation, there was a comment that cooperation with JICA would have an impact because the budget is relatively small. In particular, capacity building, investment by private companies, collaboration with the private sector, education, and vocational training are areas where USAID would have less budget, so a collaboration with JICA could be interesting. In terms of social development and poverty reduction, the Government of Honduras has given priority to the rehabilitation of schools, and it is possible to consider future assistance.<sup>163</sup>



Source: Prepared by the JICA Study Team based on the list of USAID projects

**Figure 15-41 USAID Budget**

## 15.5.2 Other International and Regional Organizations

### (1) Inter-American Development Bank (IDB)

Established in 1959, the IDB is a major source of long-term financing for economic, social, and institutional development in Latin America and the Caribbean. The IDB also conducts cutting-edge research projects and provides policy advice, technical assistance, and training to the public and private sectors across the region. The IDB prioritizes social inclusion and equity, productivity and innovation, and regional economic integration in its development activities in Latin America and the Caribbean. In doing so, it also addresses cross-cutting issues such as gender equality and diversity, climate change and environmental sustainability, institutional capacity, and the rule of law.

In 2018, the IDB deepened its understanding of migration flows and policies in the region, facilitated dialogue on relevant policies in this area, and strengthened technical and financial support for managing

<sup>163</sup>Interview held on December 15, 2022

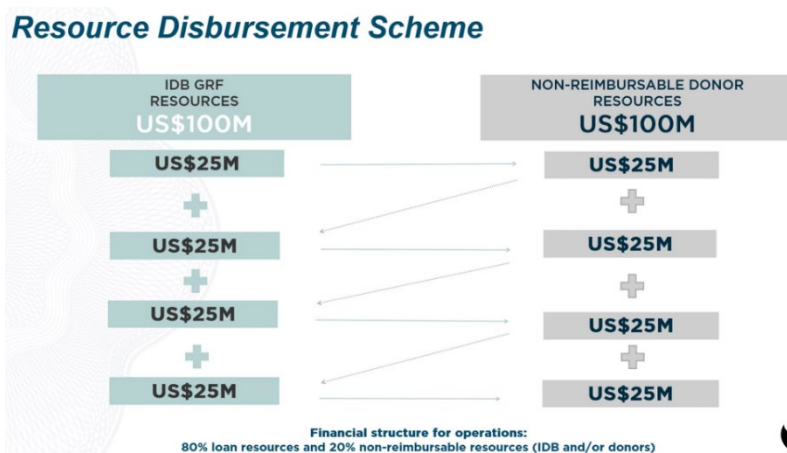
sudden and large-scale migration flows. To this end, the IDB Migration Unit was created. The Migration Unit was established to implement a comprehensive agenda to turn migration challenges into development opportunities for Latin America and the Caribbean. Table 15-34 shows the activities of the IDB Migration Unit.

**Table 15-34 Activities of IDB Migration Unit**

Country	Activity
Uruguay	Protection against gender-based violence
Chile	Housing
Columbia	Sustaining numerous initiatives such as job creation, economic and social integration, and health care
Ecuador	Access to social services
Panama	Access to education for migrants
Belize	Access to education for migrants

Source: IDB material at the October 19, 2022 Meeting

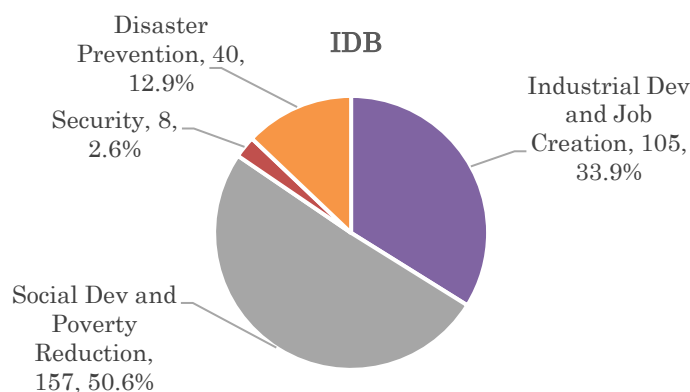
In 2019, the IDB launched a Grant Facility (GRF) to help countries with a 0.5% increase in the number of migrants to their total population over the past three years to address large and sudden migration flows. By combining grant aid and economic and social development loans, it will be possible to support the strengthening and improvement of health, education, housing, security, and other services in migration-receiving countries. With this, the IDB would provide USD 100 million from the GRF and expect additional resources from the donor community, using a scheme of 80% loan aid and 20% grant aid. (See Figure 15-42). The GRF covers ten countries, including Belize, Costa Rica, El Salvador, Honduras, Guatemala, and Panama in the Central America region.



Source: IDB material at the October 19, 2022 meeting

**Figure 15-42 IDB Resource Disbursement Scheme**

Looking at the number of migration-related projects in the Central American Northern Triangle over the past ten years in a graph divided into (1) industrial development/job creation, (2) social development/poverty reduction, (3) security improvement, and (4) disaster prevention, social development and poverty reduction (50.6%) are the most common initiatives, followed by industrial development and job creation (33.9%). Security improvement (2.6%) and disaster prevention (12.9%) accounted for 15.5% of the total, indicating that the number of IDB initiatives is relatively small (see Figure 15-43).



Source: Prepared by the JICA Study Team based on the IDB project list

**Figure 15-43 Number of IDB Initiatives in the Central American Northern Triangle (Last Ten Years)**

## (2) Efforts of SICA

Within the Central American integration system, there is a democratic security department that deals with the specific issue of migration in terms of people's security in the process of migration (see Figure 15-44).<sup>164</sup>



Source: SICA, material de entrevista realizada el 12 de agosto de 2022

**Figure 15-44 List of SICA Subordinate Organizations**

Projects to reduce the root causes of migration include work from SICA's social development

<sup>164</sup>According to an interview with SICA Seguridad Democrática conducted on August 23, 2022



approach and COMISCA's research on migrant health problems during transit. All migration-related projects have been financed by GIZ and are listed in Table 15-35.<sup>165</sup>

**Table 15-35 SICA Efforts to Address Root Causes of Migration**

Project Title	Overview
ALTERNATIVAS	Strengthen family, social, school, and occupational integration for returned or at-risk young people and children of irregular migrants.
CaPAZ (2020-2022)	The purpose of CaPAZ is to improve the social resilience and employability of young people to prevent violence in selected municipalities of the Northern Triangle region of Central America, where the incidence of violence is high. The program builds on the experiences and outcomes of the regional project "Prevention of Youth Violence" (PREVENIR) implemented by GIZ from 2009 to 2019. In addition, CaPAZ facilitates access to employment for young people by matching the provision of training and professional qualifications to labor market needs and reducing access barriers for young people from areas with high rates of violence. In addition, the project will strengthen career guidance and placement services, in-service training, and mentoring approaches to promote labor market integration and successful employment.
Resiliencia Urbana	Improve the resilience of metropolitan areas in the SICA region and strengthen regional support structures for future urban disaster risk management (DRM). At the local level, it strengthened the capacity of the San Salvador and Tegucigalpa municipalities, planning offices, and civil society actors in the field of DRM. There is also a regional component, which enables the transfer and exchange of experience and knowledge to the eight countries of the SICA region.
PERSPECTIVAS	In 2023, with the support of the Federal Development Bank of Germany KfW, SICA will implement the political dialogue component of the PERSPECTIVAS project for four years, with the aim of increasing the social inclusion of people at risk of returning migrants and irregular migrants.

Source: COMISCA

As shown in Table 15-36, there are other ongoing migration-related projects with OCAM and SIECA as implementing agencies.

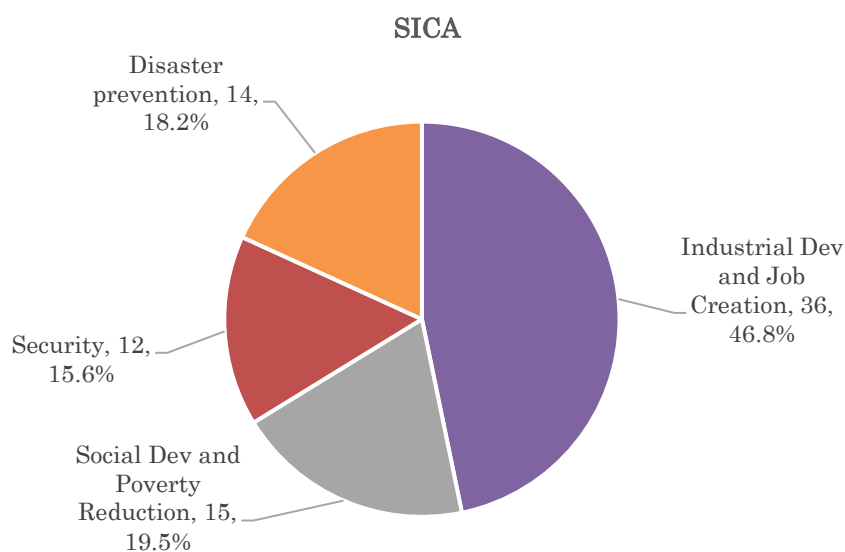
**Table 15-36 Migration-related Projects in SICA**

Project Title	Target Country	Executing Agency	Aid Agency
Operation of the Technical Secretariat of the Migration Service Committee of SICA Member States	El Salvador, Belize, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Dominican Republic	SICA - OCAM	IOMs
Strengthening Coordinated Border Management (CBM) - Component 3: Assistance in Procurement of Equipment for Border Crossing	El Salvador, Guatemala, Honduras, Nicaragua, Costa Rica, Panama	SIECA	IDB
Trade Facilitation and Border Control Project	El Salvador, Belize, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Dominican Republic	SIECA	USA ID

Source: SICA Website

Although not directly related to migration, the number of SICA projects over the past ten years in regions including the Northern Triangle of Central America is divided into (1) industrial development/job creation, (2) social development/poverty reduction, (3) security improvement, and (4) disaster prevention. Looking at it, the initiative with the largest number is industrial development and job creation (46.8%). Social development/poverty reduction (19.5%), disaster prevention (18.2%), and security improvement (15.6%) account for about the same percentage, and industrial development is the area where SICA puts the most effort (see Figure 15-45).

<sup>165</sup>[https://www.sica.int/noticias/el-sica-y-la-migracion-que-se-esta-haciendo\\_1\\_119094.html](https://www.sica.int/noticias/el-sica-y-la-migracion-que-se-esta-haciendo_1_119094.html)



Source: Prepared by the JICA Study Team based on the SICA Project List

**Figure15-45 SICA Initiatives**

## 15.6 Japan's Country Development Policy and Assistance Trends

### 15.6.1 On the Humanitarian, Development, and Peace Linkage

"Humanitarian (H) - Development (D) - Peace (P) collaboration" is called "Triple Nexus". Given the current situation in which the large-scale influx of refugees places a burden on the countries that accept them, this has been discussed since the time of the World Humanitarian Summit in 2016, when humanitarian crises were expanding, prolonged, and becoming more serious. In addition to the "humanitarian and development nexus" that has been established, it is a concept that was launched as a result of discussions centered on the United Nations and others that it is necessary to cooperate on "peace" activities. For the long-term refugees, not only continued humanitarian assistance but also cooperation from the perspective of medium/long-term development is required.<sup>166</sup>

The JICA Global Agenda (Cooperation Strategies per Issues) for Peacebuilding states the following: "Conflict prevention and building resilient nations and societies through human security approaches" and three cooperation policies based on the "promotion of the humanitarian-development-peace nexus" (see Figure 15-46). As for the latter, Japan will cooperate with peace operation actors such as humanitarian agencies and diplomatic and security actors to respond to the crisis of refugees and displaced persons. Japan will provide support for improving the living conditions of refugees and displaced persons, support for voluntary repatriation and settlement, and support for host communities.<sup>167</sup>

<sup>166</sup>World Humanitarian Summit (Results)

<sup>167</sup>JICA Global Agenda/Towards a peaceful and just society without fear and violence



Source: JICA Global Agenda

**Figure 15-46 Humanitarian-Development-Peace Nexus**

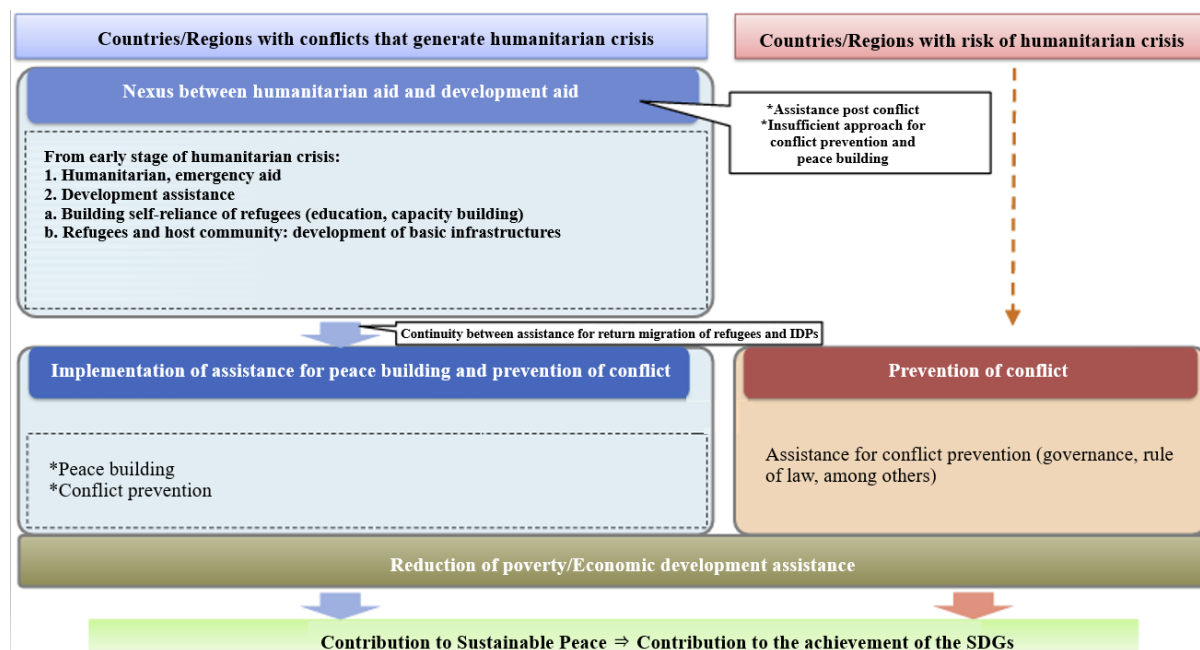
The following are listed as the policy priorities of the Japanese government:

The Japanese government has positioned human security as a pillar of its foreign policy. Two of the policies, including the promotion of human security, are closely related to peacebuilding, which states that Japan will provide “continuous peacebuilding assistance ranging from post-conflict emergency humanitarian assistance to recovery and reconstruction/development assistance”. Regarding refugee issues in particular, the Japanese government has presented at the Global Refugee Forum (December 2019) the promotion of an HDP nexus based on human security as its major contribution.<sup>168</sup>

Based on the above, the Ministry of Foreign Affairs of the Japanese government has formulated the concept of efforts in the “linkage of humanitarian, development, and peace” as shown in Figure 15-47.<sup>169</sup>

<sup>168</sup>JICA Global Agenda (Business Strategies by Issue) 11. peacebuilding

<sup>169</sup>MOFA Humanitarian, Development and Peace Linkage



Source: MOFA, translated by JICA Study Team

**Figure 15-47 Linkage of Humanitarian, Development and Peace**

"Humanitarian assistance" refers to the provision of emergency shelter, water, food, medical care, etc., that are necessary when refugees and internally displaced persons appear. At the same time, Japan is emphasizing the implementation of "development cooperation" in basic infrastructure (supply, health and medical care, waste disposal, roads, among others), and support to improve the capacity of government and local government responsible for its management. In addition, in order to contribute to nation-building and social stability during normal times, Japan will provide support to prevent the occurrence and recurrence of conflicts, as well as support for poverty reduction and economic development. This includes disarmament, demobilization, and reintegration (DDR) assistance, legal and judicial system development, and governance assistance in areas such as public safety.

### 15.6.2 Japan's Country Development Policy in the Central American Northern Triangle

According to the latest version of the Ministry of Foreign Affairs of Japan's Country Development Cooperation Policy (formerly Country Assistance Policy), Table 15-37 shows the content related to the root causes of migration in the Central American Northern Triangle.

**Table 15-37 Country-by-country Development Policy in the Central American Northern Triangle (Issues Related to Migration Root Causes)**

Country	Field of Support	Country Development Policy (Basic ODA Policy (Grand Goal))
El Salvador	<ul style="list-style-type: none"> <li>Economic revitalization</li> <li>Employment expansion</li> <li>Disaster prevention and environmental conservation</li> <li>Popularization of basic education</li> <li>Human resource development in the health field</li> <li>Dissemination and promotion of the regional police system</li> </ul>	<p>[Promotion of self-reliant and sustainable development]</p> <p>Among the important development issues that the Government of El Salvador is addressing, Japan will provide support centered on economic revitalization and employment expansion in order to promote self-reliant and sustainable development of the country.</p>

Country	Field of Support	Country Development Policy (Basic ODA Policy (Grand Goal))
Guatemala	<ul style="list-style-type: none"> <li>• Social and economic development of impoverished areas</li> <li>• Environment and disaster prevention field</li> <li>• Social development (health and hygiene, education, etc.)</li> <li>• Economic development (transport infrastructure, small and medium enterprises, rural development, etc.)</li> <li>• Security</li> </ul>	<p>[Support for sustainable social and economic development]</p> <p>(1) Contribute to the promotion of sustainable growth with a focus on social and economic development in poor areas to be comprehensive.</p> <p>(2) In addition, in order to deal with vulnerability to natural disasters, Japan will utilize Japanese technology and knowledge to provide assistance in the fields of environment and disaster prevention.</p>
Honduras	<p>Poverty reduction Improving a fragile industrial structure Disaster prevention Revitalize the local economy Health care and primary education Infrastructure development</p>	<p>[Support for sustainable socio-economic development centered on regional revitalization measures]</p> <p>The Government of Honduras' "National Vision 2010-2038" has 22 points, including "poverty reduction", "job creation", "industrial modernization, efficiency and competitiveness enhancement", and "sustainable and environmentally friendly development". While promoting the participation of local governments and local residents, it emphasizes more effective development that meets local needs. Japan will provide assistance with emphasis on poverty reduction, improvement of a fragile industrial structure, and disaster prevention in the country, which is frequently hit by natural disasters.</p>

Source: Prepared by the JICA Study Team based on the Latest Country Development Policy

According to the JICA Country Analysis Paper for the Republic of Guatemala (April 2021), “the root causes of migration in the three northern Central American countries are: (1) employment problems and lack of employment, (2) security problems, and (3) vulnerability to disasters. It states that JICA plans and implements cooperation in the fields of (1) industrial development and job creation, (2) social development and poverty reduction, (3) security improvement, and (4) disaster risk reduction.

### 15.6.3 Japan's Initiatives

#### (1) Ministry of Foreign Affairs Grant Aid

An Exchange of Notes was signed between Japan and IOM in February 2020, and assistance was provided to potential migrants and returnees through Grant Assistance for International Partnerships. In December 2020, Japan has provided to Mexico migration shelters with hygiene products such as masks and alcohol, as well as cleaning products such as detergents and mops, as a countermeasure against the new coronavirus. Training on hygiene education, protection of personal information, protection from sexual exploitation and abuse, protection from fraud damage, disaster countermeasures, among others, for facility staff were conducted.

Table 15-38 shows the grant aid for international organization collaboration through IOM by the Japanese government.

**Table 15-38 Grant Aid for International Organizational Partnerships by the Government of Japan**

Country	Project Title	Overview
El Salvador	Reintegration Assistance Program (IOM Partnership) Focusing on Training and Entrepreneurship for Young Potential and Returning Migrants in the Eastern Region of El Salvador <sup>170</sup>	<p>[Target area] Four eastern departments: Morazan, Usulután, San Miguel, and La Unión</p> <p>[Amount] JPY 500 million</p> <p>[Contents] Vocational training for migrant communities and returnees and reintegration support plan for companies<sup>171</sup></p>

<sup>170</sup>Exchange of Notes on Grant Aid to Support Immigration in El Salvador

<sup>171</sup>Social and Economic Reintegration El Salvador

Country	Project Title	Overview
Guatemala	Economic Reintegration Assistance Program for Young Potential Migrants and Returning Migrants (Collaboration with IOM)	[Target area] Solola, Quiche, Huehuetenango, Santa Maria Visitation, Solola, Joyabaj, Quiche, Maracatacancito, Huehuetenango [Amount] JPY 483 million [Details] Assistance to the Centro Quedate, the Migration Reception Center in the Capital Airport, and the Regional Migrant Support Center located in the border area with Mexico. Donate personal computers, printers, cooking utensils for cooking classes, desks and other educational materials and equipment. <sup>172</sup>
Mexico	The Project for Strengthening the Capacity of Shelters and Government Migration Facilities in the Southern Border Region of Mexico (Cooperation with IOM)	[Target area] <ul style="list-style-type: none"> <li>Government Migration Facility: State of Tabasco (Villahermosa)</li> <li>Private migration facilities: Tabasco (Tenosique, Villahermosa), Veracruz (Coatzacoarcos), Chiapas (Las Margaritas, Tapachula)</li> </ul> [Amount] JPY 201 million [Details] 11 migrant protection facilities where migrants from Central America (mainly Honduras, Guatemala, El Salvador, etc.) stay and have been significantly improved <sup>173</sup>

Source: Created by the JICA Study Team based on the MOFA website

## (2) JICA's Initiatives

Over the past ten years, JICA has been conducting studies and projects in a wide range of fields, as shown in the table below. This is also apparent in areas related to the root causes of migration (see development policy above) targeting the Northern Triangle region of Central America (see Table 15-39 only closed cases starting from 2011 are shown).

**Table 15-39 Studies/Projects Implemented by JICA (Past 10 Years)** <sup>174</sup>

Support that Contributes to Addressing the Root Causes of Migration	Field	El Salvador	Guatemala	Honduras
(1) Industrial Development and Job Creation	Private Sector Development	14	6	7
	Agricultural Development/Rural Development	18	8	7
	Urban/Regional Development	9	2	3
(2) Social Development and Poverty Reduction	Education	10	16	14
	Poverty Reduction	-	3	7
	Health Care	16	19	29
	Governance	8	10	20
	Social Security	-	-	3
(3) Security Improvement	Gender and Development	3	-	6
	Peacebuilding	1	1	5
(4) Disaster Risk Reduction	Climate Change Countermeasures, Environmental Management, Natural Environment Conservation	7	3	21
	Water Resources/Disaster Risk Reduction	15	6	8

Source: JICA Study Team based on JICA materials

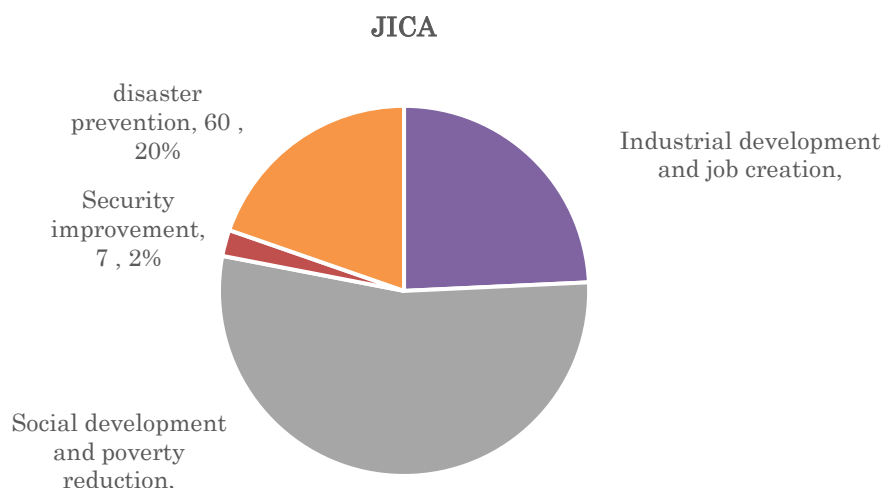
Looking at the number of JICA projects in the Northern Triangle of Central America over the past ten years divided into (1) industrial development/job creation, (2) social development/poverty reduction,

<sup>172</sup>Handover Ceremony for Teaching Materials and Equipment to be Used at Kedate Center in Huehuetenango Province

<sup>173</sup>Grant Aid to Mexico to Support Migrants in Central America through IOM (International Organization for Migration) Renovation of migrant protection facilities started (May 13, 2022)

<sup>174</sup> The number of JICA projects shown in this table is based on information available on JICA's website and represents approximate numbers by field.

(3) security improvement, and (4) disaster prevention, the largest number of initiatives went to social development and poverty reduction (54%), followed by industrial development and job creation (24%), and disaster prevention (20%). Security improvement accounts for 2% of the total and is the area with the least efforts (see Figure15-48).



Source: Prepared by the JICA Study Team based on the JICA Project List

**Figure15-48 JICA Initiatives in the Northern Triangle**

As shown in the table below, JICA's efforts that contribute to countermeasures against the root causes of migration in El Salvador, Guatemala, and Honduras will continue to be implemented under a wide range of schemes (based on the updated "Project Rollout Plan", see Table 15-40, Table 15-41, Table 15-42).

**Table 15-40 JICA Project Rollout Plan Contributing to Addressing Root Causes of Migration in El Salvador**

Support that Contributes to Addressing the Root Causes of Migration	Positioning in the Business Development Plan	Project Title	Scheme
(1) Industrial Development and Job Creation	Priority area 1 (Mid-term Goal) Revitalization of the economy and expansion of employment Development Issue (Minor Goal) Industrial infrastructure development and productivity improvement for regional development	Sesame Value Chain Strengthening Project by Small Farmers in Eastern Region	Technical assistance
		One Village One Product (OVOP) Movement Regional Advisor	Individual expert
		Management, Quality, and Productivity Improvement Project for Small and Medium Enterprises	Technical assistance
		Project for Strengthening Rural Development Capacity in Eastern Region Based on Livelihood Improvement Approach	Technical assistance
		Supporting Improvement of Women's Economic Power through Small-scale Sales Business	Multi
(2) Social Development and Poverty Reduction	Priority Goal 3 (Medium Goal) Promotion of inclusive development Development issues (Minor Goal) Social development	Primary and Secondary Education Mathematics/Mathematics Teaching Skills Improvement Project	Technical assistance
		Learning Improvement Project Based on Academic Performance Evaluation in Elementary and Secondary Mathematics Education	Technical assistance
		Helping Promote Social Inclusion and Equal Opportunity for Young People in Impoverished Areas	Multi

Support that Contributes to Addressing the Root Causes of Migration	Positioning in the Business Development Plan	Project Title	Scheme
(3) Security Improvement	Priority Goal 3 (Mid-term Goal) Promotion of inclusive development Development issue (Minor Goal) Ensuring the safety of citizens	Psychological Trauma Financial Support for Victims of Violence	Multi
		A Project to Strengthen the Implementation of a New Police Model Based on Community Policing Activities	Technical assistance
(4) Disaster Risk Reduction Field	Priority Goal 2 (Mid-term Goal) Disaster risk reduction and environmental conservation for sustainable development Development issues (Minor Goal) Response to climate change and the environment	Support for Strengthening Disaster Risk Management	Multi
		Central America Regional Disaster Risk Reduction Capacity Development Project Phase 2	Technical assistance
		Climate Change and Risk Management Strategy Office Project Phase 2 to Strengthen Public Infrastructure	Technical assistance
		Capacity Building Project for Seismic Evaluation and Reinforcement of Buildings in the Tokyo Metropolitan Area	Technical assistance

Source: JICA Study Team based on JICA's "Development Cooperation Plan"

**Table 15-41 JICA Project Rollout Plan Contributing to Countermeasures for Root Causes of Migration in Guatemala**

Support that Contributes to Addressing the Root Causes of Migration	Positioning in the Business Development Plan	Project Title	Scheme
(1) Industrial Development and Job Creation	Priority area 1 (Medium Goal) Social and economic development of impoverished areas Development issue 1-2 (Small Goal) Regional revitalization	Phase 2 of the Project to Improve the Capacity of Facilitators to Improve the Quality and Productivity of SMEs	Technical assistance
		Central America Regional Logistics Development Master Plan Support Project for Sustainable Economic Development and Regional Integration	Development plan
		Human Resource Development and Organization Support Project for Tourism Corridor to Tikal National Park	Grassroots technical cooperation
		Issue-specific Training in the Field of Regional Revitalization, Youth Training	Issue-specific training, etc.
(2) Social Development and Poverty Reduction	Priority area 1 (Medium Goal) Socio-economic development of impoverished areas Development issue 1-1 (Small Goal) Improving the lives of the poor	Project for Improving the Quality of Lower Secondary Mathematics Education	Technical assistance
		Maternal and Child Health and Nutrition Improvement Project	Technical assistance
		Issue-specific Training in the Field of Poverty Alleviation	Issue-specific training, etc.
		SICA Gender Policy Formulation/Implementation Monitoring/Evaluation Capacity Building Advisor	Individual expert
(3) Security Improvement	Other individual projects	Police Human Resource Development Project through Dissemination of Community Police	Technical assistance project (Triangular Cooperation (JBPP))
(4) Disaster Risk Reduction Field	Priority Area 2 (Medium Goal) Environment/Disaster Risk Reduction	Central America Regional Disaster Management Capacity Development Project Phase 2	Technical assistance (regional)
		Issue-specific Training in the Field of Environment and Disaster Risk Reduction	Issue-specific training, etc.
		Capacity Building Project for Integrated Management and Conservation of Biodiversity in the SICA Region	Technical assistance

Source: JICA Study Team based on JICA's "Development Cooperation Plan"



**Table 15-42 JICA Project Rollout Plan Contributing to Addressing Root Causes of Migration in Honduras**

Support that Contributes to Addressing the Root Causes of Migration	Positioning in the Business Development Plan	Project Title	Scheme
(1) Industrial Development and Job Creation	Priority area 1 (Medium Goal) Regional development Development issue 1-1 (Small Goal) Strengthening of social and economic infrastructure	Poverty Reduction Project through Promoting Community-based Financial Inclusion	Technical assistance
		Central America Regional Logistics Development Master Plan Support Project for Sustainable Economic Development and Regional Integration	Development plan
		Facilitator Training Related to Quality and Productivity Improvement Support for SMEs	Expert from third country
		One Village One Product Campaign Regional Advisor	Individual expert
		Local Government Project Implementation/Monitoring System Development and Capacity Development Project Contributing to SDGs/Honduras National Agenda 2030	Technical assistance
		Miskito Livelihood Improvement Project in La Mosquitia	Multi
(2) Social Development and Poverty Reduction	Priority area 1 (Medium Goal) Regional development Development issue 1-2 (Small Goal) Dissemination of high-quality social services	Participatory Local Administration (FY2020)	Country-specific training
		SICA Gender Policy Formulation/Implementation Monitoring/Evaluation Capacity Building Advisor	Individual expert
		Supporting the Promotion of Local Police Activities through the Participation of Local Residents	Individual expert
		The Project for Improving the Quality of Maternal and Child Health Services in Lempira and El Paraiso Provinces	Grant aid
		Project for Strengthening Health Service Delivery through Health Service Network (RISS)	Technical assistant
(3) Security Improvement		Issue-specific Training on Security Measures and Justice	Issue-specific training, etc.
(4) Disaster Risk Reduction Field	Priority area 2 (Mid-term Goal) Disaster Risk Reduction and environment/climate change countermeasures Development issue 2-1 (Small Goal) Natural disaster countermeasures	Central America Regional Disaster Risk Reduction Capacity Development Project Phase 2	Technical assistance
		Metropolitan Area Slope Disaster Management Project	Technical assistance
		Dissemination, Demonstration, and Commercialization Project Related to Slope Disaster Detection Equipment in Honduras	Dissemination/ Demonstration/ Commercialization Project
		National Route 6 Landslide Prevention Plan	Grant aid
	Priority area 2 (Medium Goal) Disaster Risk Reduction and environment/climate change countermeasures Development issue 2-2 (Small Goal) Environmental conservation/climate change risk	La Union Biological Corridor Project	Technical assistance
		Capacity Building Project for Integrated Management and Conservation of Biodiversity in the SICA Region	Technical assistance
		Issue-specific Training on Climate Change Countermeasures	Issue-specific training, etc.
	Project for Improving Livelihoods Resilience for Food Security to Prevent Migration and Reintegrate Returnees in the Dry Corridor (WFP Collaboration)	Grant aid	

Source: JICA Study Team based on JICA's "Development Cooperation Plan"

At the Japan-U.S. Summit Meeting in April 2021, it was agreed that efforts would be made to resolve the root causes of migration from the three Northern Central American countries (Guatemala, El Salvador, and Honduras)<sup>175</sup>. The JICA and USAID are discussing joint initiatives such as collaborative projects. In line with this, the JICA collaboration with USAID are considered for projects such as Guatemala's "Financial Inclusion Promotion Advisor through Remittance of Migrants" (Technical Cooperation Project) and Mexico's "Introduction of Non-Traditional Tropical Fruit Tree Cultivation Systems in Central American Northern Triangle Countries" (Training in Third Country).<sup>176</sup>

Furthermore, from the perspective of the nexus of humanitarian assistance and development cooperation, JICA's Refugee-related Assistance in the Middle East and Africa are shown in Table 15-43.

**Table 15-43 Examples of JICA's Refugee-related Assistance in the Middle East and Africa-2**

Country	Case	Overview
Jordan	Project for Improving Services at Village Health Centers in Rural Areas Hosting Syrian Refugees (Technical Cooperation) <sup>177</sup>	<p>(1) Purpose of the project Supporting reproductive health, family planning services and capacity building of rural health centers to provide basic health services in Syrian refugee host communities. More Jordanians and Syrian refugees living in the target area will be able to access quality health services provided by village health centers.</p> <p>(2) Beneficiary Direct beneficiaries: 14 priority VHC health staff Indirect beneficiaries: Project site Jordanian residents and Syrian refugees</p> <p>(3) Relevant government agencies/organizations Ministry of Health, Irbid District Health Office, Mafraq District Health Office, Derara District Health Office in Barqa District</p> <p>(4) Implementation period April 2016 - April 2018</p>
	Japanese Initiative for the future of Syrian Refugees (JISR)	<p>(1) Project Outline This is one of the measures to support the Middle East as announced by the Japanese government in May 2016. It provides educational opportunities for Syrian youth who have been deprived of the opportunity to attend school due to the Syrian crisis. Signed MOC with UNHCR in November 2016. For five years from 2017 to 2021, JICA will accept refugees who have fled to Lebanon and Jordan as international students. The MOC will be revised and signed in May 2022 for the continuation of acceptance from 2022 onwards. As a consideration for refugees, in addition to providing support for accepting families and providing family allowances, Japanese language learning opportunities will be provided with a view to future careers after graduation, company exchange meetings and internship opportunities, and individual escort-type career counseling.</p> <p>(2) Purpose of the project The aim is to support Syrian refugees who have the potential to contribute to the reconstruction of Syria in the future. This program provides young Syrian refugees with the opportunity to study at a graduate school in order to obtain a master's degree at a Japanese university. The purpose of this program is to develop capable Syrians</p>

<sup>175</sup> U.S.-Japan Competitiveness and Resilience (CoRe) Partnership (April 2021)

<sup>176</sup> "FY2021 (Reiwa 3rd year) work performance report" JICA (June 2022)

<sup>177</sup> Project for Improving Services of Rural Health Centers in Rural Areas Hosting Syrian Refugees

Country	Case	Overview
		<p>who will play a leading role in reconstruction and peacebuilding in Syria, to deepen understanding of Japanese people, society, and systems, and to strengthen mutual friendly relations between Syria and Japan.</p> <p>(3) Beneficiary Syrian refugees known to UNHCR who are currently residing in Jordan or Lebanon and who are expected to play a leading role in reconstruction and peacebuilding in Syria in the future in the private sector, government, educational institutions, etc.</p> <p>(4) Relevant government agencies/organizations</p> <p>(5) Implementation period May 2016 – November 2027</p>
	The Project for Urgent Improvement of the Water Sector in Northern Syrian Refugee Host Communities (Grant Aid) <sup>178</sup>	<p>(1) Purpose of the project In Irbid Province in the northern part of the country, where population growth is remarkable due to the influx of Syrian refugees, the improvement and renovation of existing water supply and sewerage facilities (transmission and distribution pipe network and pumps) will be supported to improve water supply and sewerage services for residents in target areas.</p> <p>(2) Grant amount JPY 2.51 billion</p> <p>(3) Gift Agreement (G/A) March 2014</p>
	The Project for Improvement of Waste Treatment Equipment for Northern Syrian Refugee Host Area (Grant Aid) <sup>179</sup>	<p>(1) Purpose of the project This project will contribute to the improvement of sanitation and living environment in the area that accepts Syrian refugees in the northern part of Jordan by providing necessary equipment for waste transfer stations and final disposal sites.</p> <p>(2) Grant amount JPY 1.631 billion</p> <p>(3) Gift Agreement (G/A) May 2018</p>
Uganda	West Nile Refugee Host Area Resilience Enhancement Project (Technical Cooperation) <sup>180</sup>	<p>(1) Purpose of the project Implemented as a humanitarian-development nexus in refugee-hosting areas. In the 12 districts of the West Nile region of Uganda, by establishing a mechanism for responding to emergencies and formulating an “integrated” development plan that includes refugees, aim to improve the capacity of local governments, contribute to the promotion of emergency response and integrated development planning in the affected provinces.</p> <p>(2) Beneficiary Direct Beneficiaries: Government officials of the 12 West Nile districts of Uganda Ultimate Beneficiaries: Residents, Refugees and Voluntary Settlers of the 12 West Nile districts of Uganda</p> <p>(3) Relevant government agencies/organizations Implementing Agencies: Ministry of Local Government (MOLG), All districts in West Nile Sub-region Related Agencies: Office of the Prime Minister (OPM), National Planning Authority (NPA)</p> <p>(4) Implementation period November 2021 to October 2026</p>

Source: JICA Study Team based on JICA website

<sup>178</sup>The Project for Urgent Improvement of the Water Sector in Northern Areas Hosting Communities for Syrian Refugees

<sup>179</sup>The Project for Improvement of Waste Treatment Equipment in Northern Syrian Refugee Host Area

<sup>180</sup>West Nile Refugee Host Area Resilience Enhancement Project

In addition, the initiatives shown in Table 15-44 are listed.

**Table 15-44 Other JICA Assistance Related to Refugees<sup>3</sup>**

Country	Matter
Uganda	JICA and UNHCR signed a memorandum of understanding in 2014 for the purpose of cooperation related to the "Rice Promotion Project". As part of the activities of the "Rice Promotion Project (Phases 1 and 2)" (Cooperation period: November 2011 to March 2024), rice cultivation training for refugees and host communities has been implemented since 2014.
	"National Road Rehabilitation Project for Refugee Host Areas in the West Nile Region" (February 11, 2021)
	Dispatch of Refugee Assistance Advisors to the Office of Prime Minister (March 2021-February 2023)
	Technical Cooperation Project "West Nile Refugee Host Area Resilience Enhancement Project" (November 2021-October 2026)
	Fundamental Study on Refugee-Related Business and Social Investment (Uganda, Jordan) (2021, completed)
	Information gathering and confirmation survey on sustainable forest and natural resource management in the West Nile refugee host area (April-October 2021)
	Technical cooperation project "Green Growth Promotion Project through West Nile Agroforestry and Sustainable Forest and Natural Resource Management" (scheduled to start in 2025)
Zambia	<p>In 2014, the Zambian government launched the Strategic Framework for the Local Integration of Former Refugee in Zambia. Through the following projects, JICA supports the resettlement of former refugees (relocation from refugee camps to resettlement areas (Meheba and Mayukwayukwa)).</p> <ul style="list-style-type: none"> <li>Development study-type technical cooperation project "Local Integration Support Project for Former Refugees" (February 2020-January 2024: Extension under consideration)</li> <li>Dispatch of Individual Experts (Resettlement Bureau, Vice President's Office) "Former Refugee Local Integration Support Advisor" (May 2017-May 2020, October 2021-October 2024)</li> </ul>

Source: JICA Study Team based on information from JICA

### (3) Differentiation from Other Development Partners

As JICA provides assistance, it is important to segregate itself from its development partners in the same field to maximize the effectiveness of its assistance. Comparing the country-specific development policies of USAID and IDB in the Northern Triangle of Central America, which are actively implementing regional development, with those of JICA, divided into (1) industrial development and job creation, (2) social development and poverty reduction, (3) security improvement, (4) disaster reduction, and (5) governance, similarities can be found in Table 15-45.

**Table 15-45 JICA, USAID, and IDB Country-specific Policy Review**

Assistance Pillars	Country-specific policy review								
	El Salvador			Guatemala			Honduras		
	JICA	USAID	IDB	JICA	USAID	IDB	JICA	USAID	IDB
Industrial development and job creation	○	○	○	○	○	○	○	○	○
Social development and poverty reduction	○		○	○		○	○		○
Security improvement	○	○	○	○	○			○	○
Disaster reduction	○		○	○		○	○		○
Governance		○	○		○	○		○	○

Source: Based on JICA, USAID, IDB's country-specific policy<sup>181</sup>

Based on the assistance policies by development partners noted in Section 15.5 of this study, as well as migration-related initiatives and interviews in the Northern Triangle of Central America, the

<sup>181</sup> 【JICA】 Strategic plan per country 【USAID】 Country Development Cooperation Strategy, CDCS

【IDB】 El Salvador Estrategia de País del Grupo BID 2021-2024\_VP\_ES、Guatemala - Estrategia del Grupo BID para 2021-2024、ESTRATEGIA DEL GRUPO BID CON HONDURAS (2019-2022)

following Table 15-46 summarizes the segmentation and collaboration to streamline and maximize the assistance impact.

**Table 15-46 Possible Collaboration with Development Partners**


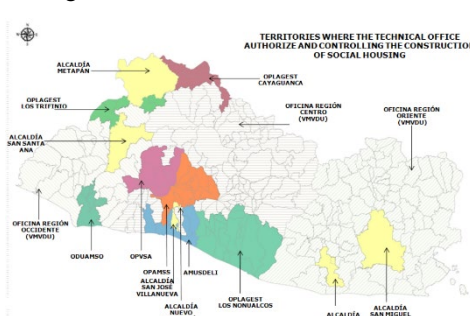
Development Partners	Segmentation and Collaboration Significance	Possible Collaboration According to the Interviews
USAID	<p>Mutual recognition and commitment to the importance of countermeasures against the root causes of migration are shared, and a policy for cooperation is established (core partnership). The objectives and experiences are common except for security and disaster prevention. Find areas that USAID acknowledges the importance but lack experience, or where JICA can supplement and create synergies. Coordination framework exists</p>	<p>Governance and security are the top priority areas of USAID, and since it has many initiatives, it is necessary to differentiate rather than cooperate in providing assistance. For example, JICA's approach to public security is focused on the metropolitan area, while the United States has been focusing on areas and themes such as anti-narcotics measures.</p> <p>There is no initiative for disaster prevention.</p> <p>Industrial development/job creation: There are many initiatives, but the budget is small. In particular USAID has a relatively small budget for capacity building, investment by private companies, private partnerships, education, and vocational training.</p> <p>Social development and poverty reduction: Rebuilding schools is a priority for the Honduran government.</p>
IDB	<ul style="list-style-type: none"> <li>• IDB and JICA have common interests and goals.</li> <li>• There are similar experiences in development assistance that can contribute to addressing root causes of migration.</li> <li>• IDB has a lot of experience and ability to interact with the government.</li> <li>• IDB is actively involved in creating local public goods.</li> <li>• Being a reliable partner on migration issues, joint management of JICA-IDB can be carried out with mutual complementarity.</li> <li>• IDB's funding mechanism has the advantage of maximizing project funding with limited donor resources, leading to maximization the impact.</li> </ul>	<p>Honduras is a priority country and there is potential for cooperation between JICA and IDB in job creation etc. (currently actively cooperating with IDB through co-financing).</p> <p>In Costa Rica as well, there is a demand for projects to improve public security (undocumented Nicaraguan victims are increasing).</p>
SICA	<ul style="list-style-type: none"> <li>• Able to plan, implement and evaluate assistance within the framework of JICA/SICA's five-year plan.</li> <li>• Efforts can be implemented in multiple countries as a common regional issue.</li> <li>• Distrust of beneficiaries toward the government can be avoided because the project is conducted through a regional organization.</li> <li>• It is possible to avoid the risk of project continuation due to the replacement of the person in charge of the executing agency due to the change of government.</li> </ul>	<p>Assistance can be implemented within the framework of regional cooperation.</p> <p>SISCA comments: would like to include the theme of migration in five-year plan with Japan. In particular, social integration, social protection, social infrastructure (health care, education, employment, nursing care support).</p> <p>SITCA expressed its hopes for Japan's assistance in addressing issues related to forced migrants, including efforts to recruit returnees in the field of tourism.</p>
IOM	<ul style="list-style-type: none"> <li>• Key actors in migrant humanitarian assistance.</li> <li>• Exchange of Notes has been signed between Japan and IOM, assistance has been provided to potential migrants and returnees through Grant Assistance for International Partnerships, and Japan's presence in humanitarian assistance has been established.</li> </ul>	<p>From the perspective of "humanitarian aid," it is possible to provide emergency shelters, water, food, medical care, etc., that are necessary when refugees and internally displaced persons arise, through grant aid to IOM and UNHCR. At the interview with IOM Honduras, expectations were expressed for Japan's cooperation in emergency response.</p>
UNHCR	<ul style="list-style-type: none"> <li>• Key actors in humanitarian assistance to refugees.</li> <li>• JICA is aligned with UNHCR's commitment to development, and it can be said that Japan's strengths can be leveraged in terms of the importance of strengthening climate change resilience and collaboration with</li> </ul>	<ul style="list-style-type: none"> <li>• Participation in the "Mexico Regional Integration Program" is highly significant in terms of maximizing impact by utilizing the UNHCR platform. JICA can consider a JOCV frame UNV system and can consider synergies with JETRO and JBIC by incorporating cooperation with private companies.</li> <li>• The UNHCR Panama Office is currently considering</li> </ul>

Development Partners	Segmentation and Collaboration Significance	Possible Collaboration According to the Interviews
	<p>private companies.</p> <ul style="list-style-type: none"> <li>As an advantage of Japan's participation in the collaboration platform of MIRPS, which is a regional framework, it can be said that it will be possible to have a forum for sharing information on the efforts of Mexico and related countries from the regional framework and increase Japan's political presence.</li> </ul>	<p>and approaching the Darien Gap environmental conservation, waste management, and host community job creation program involving the governments of Panama and Colombia, and is willing to collaborate with experienced development partners.</p>

Source: JICA Study Team Analysis of Projects that Might Contribute to the Efforts

Table 15-47 confirms whether the ongoing projects that are related to the concept of migration in the Northern Triangle of Central America can contribute to addressing the root causes of migration from the following three perspectives, (A) target area, (B) target potential immigrants, and (C) contribute to solving problems that could be the root causes of migration.

**Table 15-47 Contribution as Root Cause Countermeasures for Ongoing JICA Project**

Country	Case	Overview	Contribution as a Measure Against Root Causes of Migration
El Salvador	TAISHIN Project	<p>(1) Background of the project In El Salvador, about 270,000 houses or 20% of the total number of houses in the country, were completely destroyed or partially damaged by the earthquake in 2001. Under these circumstances, the Government of El Salvador requested technical cooperation from the Japanese government. In response to this, JICA launched the "Project for Improving Construction Technology for Popular Earthquake-Resistant Housing (2003-2008)" and "Project for Improving Construction Technology and Dissemination System for Earthquake-Resistant Housing for Low- and Middle-Income People (2009-2012)." (collectively: TAISHIN Project). Building Research Institute, JICA, and El Salvador, whose technical level has improved through the TAISHIN project, collaborated to establish a new human resource development program (training) in 2014 (two-month short-term course, language used is Spanish).</p> <p>(2) Expected results Earthquake-Resistant Popular Housing Construction Technology Improvement Project (2003-2008) Project for improving construction technology and dissemination system for earthquake-resistant housing for low- and middle-income households (2009-2012) Contribute to mitigating damage in the event of an earthquake in the Central</p>	<p>[Area of contribution] Strengthening disaster prevention (A) Target area Earthquake-resistant model house construction site:</p>  <p>Training area:</p>  <p>(B) Target Through triangular cooperation with Mexico, it was decided to deal with the "vulnerability of communities to disasters" in El Salvador, and improvements were made to the building technology and dissemination system for earthquake-resistant housing targeting low- and middle-income earners.</p>

Country	Case	Overview	Contribution as a Measure Against Root Causes of Migration
		<p>and South American region by disseminating earthquake-resistant buildings and cultivating earthquake-resistant building engineers.</p> <p>(3) Relevant government agencies/ organizations Housing and Urban Development Agency, Ministry of Public Works, University of Central America, University of El Salvador, El Salvador Development and Popular Housing Foundation</p> <p>(4) Implementation period Late March 2021 to early April 2023</p>	<p>© Contribution to addressing the root causes of migration Due to the two major earthquakes that occurred in 2001, many poor residents lost their lives due to the collapse of their houses.</p>
Guatemala	Financial inclusion advisory through migration remittances	<p>(1) Purpose of the project Improving the livelihoods of migrant remittance recipients through financial and non-financial services provided by Guatemalan cooperatives. The capacity of the National Cooperatives Agency staff and cooperatives in the pilot sites to provide financial and non-financial services is strengthened.</p> <p>(2) Expected results The capacity of the staff of the National Cooperatives Agency to guide the dissemination of financial education for cooperatives will be strengthened. Accounting and accounting management capacity of cooperatives in pilot sites is strengthened. Operation and investment plans for cooperatives in pilot sites are formulated. A training program for cooperatives will be formulated by the National Cooperatives Agency based on the above results. Knowledge is developed on the provision of financial and non-financial services by cooperatives.</p> <p>(3) Relevant government agencies/ organizations National Cooperative Agency (<i>Instituto Nacional de Cooperativas</i> (INACOP))</p> <p>(4) Implementation period March 2022 to March 2025</p>	<p>[Areas of contribution] Poverty reduction and job creation (A) Target area Pilot areas are currently being identified, but current criteria for selection will include credit union clusters, relationships with the U.S. community, and areas of extreme poverty.</p> <p>© Contribution to addressing the root causes of migration Aim to continuously improve the economic capacity of credit union members and others through the strategic use of migrant remittances, and the four steps to this end are as follows: 1) Remittance receiving services in areas where migrant remittances are received, and cooperation with U.S. communities. 2) Credit accounts and financial education for practical savings. 3) Business fund deposits, business loans, business education, and business matching to strengthen micro businesses.</p> <p>4) Sustainable livelihood improvement through financial inclusion plan. In addition, capacity development support for cooperating institutional financial institutions will be implemented. Based on the above, this project, which targets migrant remittances, can contribute to poverty reduction, job creation, and regional development.</p>
	Local police project <sup>182</sup>	<p>(1) Purpose of the project In the province of Guatemala, by improving the implementation system for the regional police, strengthening the police training curriculum, strengthening the capacity of the</p>	<p>[Area of contribution] Security improvement (A) Target area Currently, more than half of the crimes in the country are in the metropolitan area, and 13 out of 17 cities in Guatemala Prefecture are targeted for the purpose of reducing the number of crimes and</p>

<sup>182</sup> The hearing also included a regional police case in Honduras, where it was noted that in that country, the root cause of migration is indirect, with security being the most significant factor, as well as economic factors.

Country	Case	Overview	Contribution as a Measure Against Root Causes of Migration
		<p>police, and strengthening public relations activities, will work to spread and establish regional police activities in the national civilian police. Those that contribute to the improvement of public safety.</p> <p>(2) Expected results</p> <ul style="list-style-type: none"> <li>- An implementation system for dissemination of regional police services will be established.</li> <li>- The education curriculum of the Sub-Directorate of Research and Training will be strengthened.</li> <li>- The capacity of local police officers in the project site will be strengthened.</li> <li>- Activities by PNC to improve residents' image of the police and awareness of the police will be strengthened.</li> </ul> <p>(3) Relevant government agencies/ organizations National Civilian Police (PNC)</p> <p>(4) Implementation period Scheduled from February 2021 to February 2026 (five years)</p>	<p>homicides. Outside the metropolitan area, security tends to be stable (it is organized by indigenous groups).</p> <p>ⓑ Target Targeting the Guatemalan metropolitan area, where security is poor, efforts will be made to strengthen the capabilities of local police.</p> <p>ⓒ Contribution to addressing the root causes of migration Security in Guatemala has been gradually improving since 2014, and it is believed that the improvement in the capacity of the police is related to this (2018 baseline and end-line studies confirmed improved services). In Guatemala, migration factors are not limited to security issues, but are often related to economic factors. Since the improvement of security problems is one of the root causes of migration, it can be said that improving security with a regional approach contributes to addressing the root causes of migration.</p>
Honduras	Poverty reduction project through promoting community-based financial inclusion	<p>(1) Purpose of the project Prior to this project, the Project for Improving Livelihoods and Livelihoods of CCT Recipient Households through Financial Inclusion were implemented from 2015 to 2020. Efforts have expanded. There is a background that an annual income positive effect of about JPY 45,000 per poor household was observed. Partly due to the change of government, continuous activities were limited, so initiatives through credit unions were formulated.<sup>183</sup> Through financial inclusion and financial education, customers' livelihood improvement capabilities and means will be strengthened in the target area of this project and other areas.</p> <p>(2) Expected results</p> <ul style="list-style-type: none"> <li>- Appropriate regulation and supervision of credit unions will be strengthened to promote financial inclusion.</li> <li>- A pilot project will be implemented to improve the business strategies and services of credit unions with the aim of developing guidelines for livelihood improvement approaches through financial inclusion.</li> <li>- Livelihood Improvement Approach</li> </ul>	<p>[Areas of contribution] Poverty reduction and job creation</p> <p>(A) Target area</p> <ul style="list-style-type: none"> <li>• Nationwide (first period, concretely determined around May 2023)</li> <li>• Planning to select 7 to 10 pilot projects to be implemented with credit unions.</li> <li>• In rural areas and areas with high poverty levels, credit unions have a relatively large presence. Whether or not this project directly involves migration and remittances will depend on the needs of customers and credit unions. (Indirectly related)</li> </ul> <p>ⓑ Target</p> <ul style="list-style-type: none"> <li>• Aims to reduce poverty, but targets not only the poor but also the low-income class.</li> <li>• There are many migrants from urban areas, the Caribbean Seaside, and this area.</li> <li>• Credit unions and credit union federations are also highly interested in issues related to migration.</li> <li>• Awareness of response to three phases related to migration.</li> </ul> <p>(1) Financial and economic inclusion that contributes to restraining migration. (2) Financial and economic inclusion during migration (financial inclusion at migration destinations, financial inclusion at recipients of</p>

<sup>183</sup>Interview of the project leader of "Prospects through the Poverty Reduction Project through Promotion of Community-Based Financial Inclusion" in Honduras on November 25, 2022



Country	Case	Overview	Contribution as a Measure Against Root Causes of Migration
		<p>Guidelines and Dissemination Plan is approved.</p> <p>Establishment of dissemination system for livelihood improvement approach.</p> <p>(3) Relevant government agencies/ organizations</p> <p>National Cooperative Supervisory Commission (CONSUCOOP: <i>Consejo Nacional Supervisor de Cooperativas</i>), Honduran Federation of Credit Unions (FACACH: <i>Federación de Cooperativas de Ahorro y Crédito de Honduras</i>, and FEHCACREL: <i>Federación Hondureña de Cooperativas de Ahorro y Crédito, Limitada</i>)</p> <p>(4) Implementation period</p> <p>Phase 1: October 2022 to October 2023</p> <p>Phase 2: November 2023 to October 2025</p> <p>(5) Phase 3: November 2025 to November 2027</p>	<p>remittances).</p> <p>(3) Financial and economic inclusion of returning migrants.</p> <p>⇒ In areas with high poverty rates, credit unions are active, or in areas where many migrants are coming, so there is a possibility that the perspective of how to integrate into society will be included in the pilot project, even if it is not explicitly referred to as migration measures.</p> <p>© Contribution to addressing the root causes of migration</p> <p>By making effective use of the large amount of remittances that already exist from overseas, if the poor are educated about household finances, etc., the systematic use of remittance funds and conversion to savings will progress, contributing to poverty reduction and regional development. As a long-term measure, financial inclusion can contribute to increasing the willingness of forced migrants to remain in their home countries.</p>

Source: Prepared by the JICA Study Team based on JICA materials

Efforts of JICA in the regional development contribute to avoiding a situation in which the socially vulnerable cannot live without migration and improve the economic factors that are the root cause of migration through job creation through industrial development. Agriculture and livestock industries are highly effective in creating jobs in the Northern Triangle of Central America, thus Smallholder Horticulture Empowerment and Promotion (SHEP) and One Village One Product (OVOP) are project types that draw out decision/making skills and motivation. Not only agriculture but also initiatives that draw on the advantage of having a young population and the importance of remittances such as the support for Fintech initiatives can be meaningful. In addition, the financial inclusion project in the Central American Northern Triangle, where migrant remittances account for nearly 20% of GDP, is a concept that contributes to employment, social development, and poverty reduction, and will continue to be one of the pillars of JICA's countermeasures against the root causes of migration. In terms of job creation support, migrant families and women left behind can also be considered.

On the other hand, support for education and health care in the social development sector is also an indirect cause of migration, so it is important to continue this support. In terms of security, it is not necessarily the most important factor, but in this region where violence and crime rates are extremely high, Japan has already implemented measures for social peace and stability, and regional police have greatly contributed to the improvement of security. Continuing the project will contribute to the prevention of migration. In addition, floods and droughts caused by hurricanes that have occurred frequently in recent years in the Northern Central American Triangle, are factors that hinder economic stability and Japan has significant strength in disaster prevention projects. These projects would lead to a reduction in the number of internally displaced persons and victims. It is highly significant to implement the Triangular Cooperation in Honduras, El Salvador, and Guatemala with Mexico, which already has experience in earthquake resistance projects, as a cooperating country.

In terms of government support, Honduras' FOCAL process projects are substantial, and FOCAL 4

(2022-2027) is currently being implemented. Such efforts contribute to regional development and poverty reduction.<sup>184</sup>

Japan has already been developing projects in the areas of industrial development, job creation, social development, poverty reduction, strengthening disaster prevention, and improving public safety in areas where many migrants have originated. However, since the project does not include the element of migration, its effect in addressing the root causes of migration has not been consciously maximized. In order to increase the contribution of JICA's activities to addressing the root causes of migration, the JICA Study Team proposes to include root causes of migration as cross-cutting issues likewise gender and environmental protection in project design, implementation, and evaluation.

## 15.7 Direction of Cooperation in Addressing Root Causes of Migration

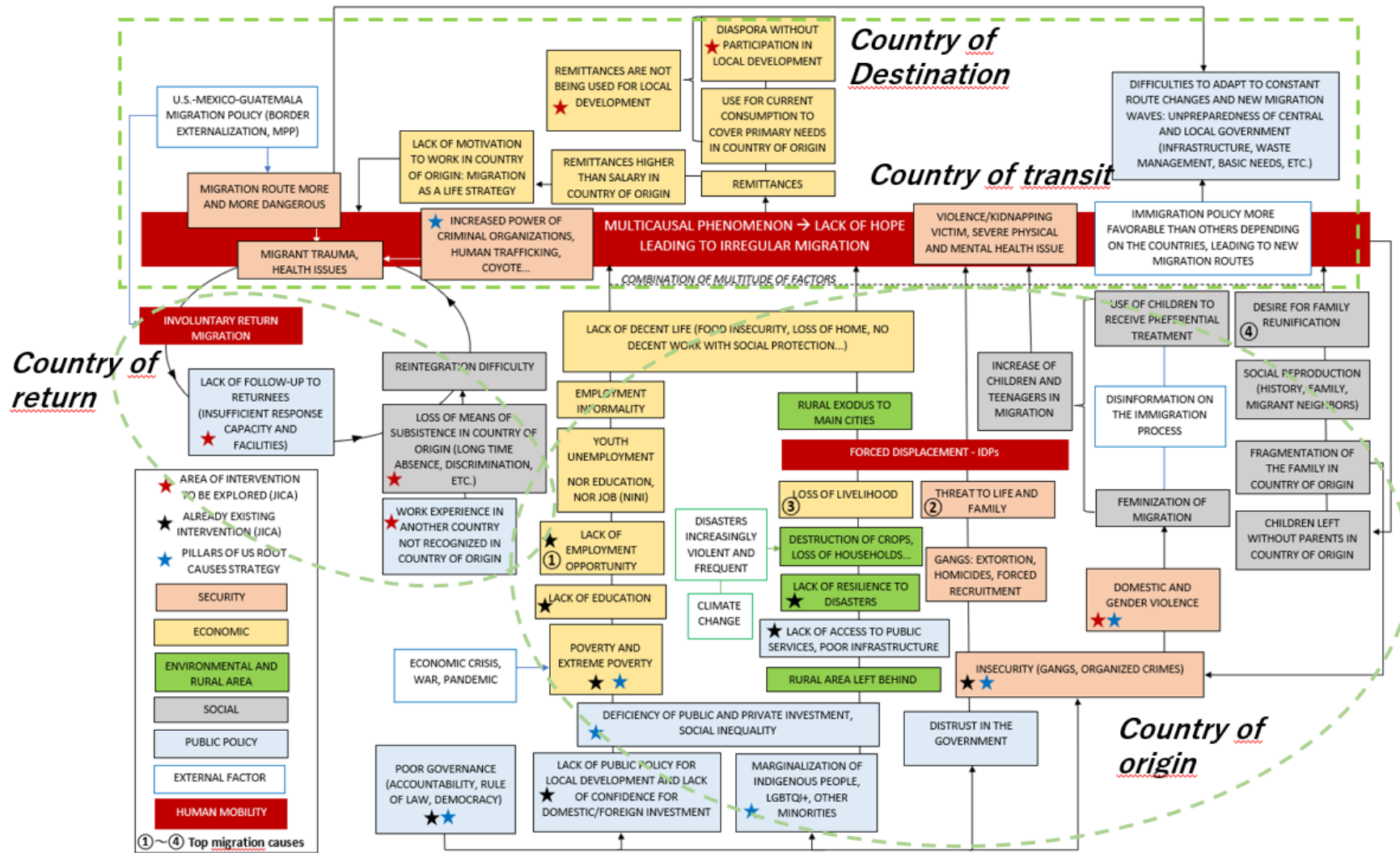
### 15.7.1 Summary of Migration Root Causes and Challenges

Figure 15-49 shows the Migration Root Cause Issue Tree, which reflect the various factors involved in making a decision to become a migrant, and can be broadly divided into four categories: "country of origin, country of transit, country of destination, and country of return."

In the country of origin of migrants, multiple factors are involved, and migration out of "despair" is the only way to survive. As shown in Figure 15-50, aid is complicated by the "mixed movement" of migrants and refugees in transit and destination countries.

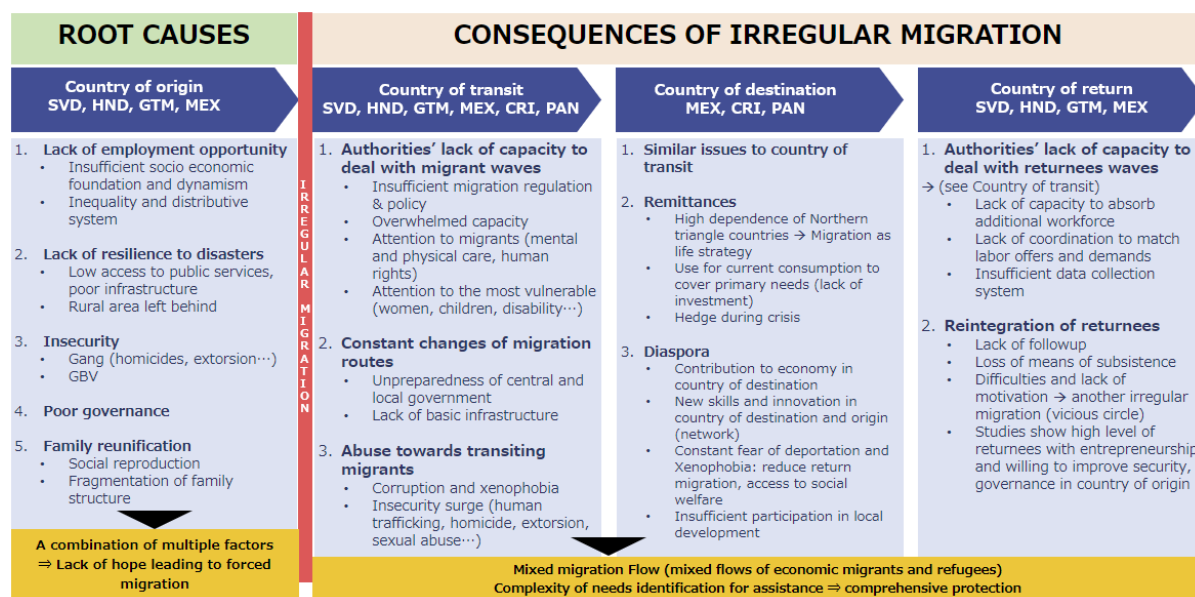
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<sup>184</sup>Decentralization in Honduras has been promoted based on the "Local Government Law" enacted in October 1990. There is a problem that the authority and funds transferred from the central government along with progress are not fully utilized for regional development. In response to this situation, JICA has so far implemented the Project for Strengthening Western Regions and Development Capacity (FOCAL1) (2006-11) and the Project for Strengthening Local Government Capacity for Regional Development (FOCAL2) (2011-2016). ) and the Dispatch of Local Governance Capability Strengthening Advisors (FOCAL3) (2017-19), a planning method (FOCAL process) to smoothly implement the provision of administrative services that meet the needs of local residents has been implemented on a trial basis with local governments.



Source: JICA Study Team

Figure 15-49 Migration Root Cause Issue Tree



Source: JICA Study Team

**Figure15-50 Migration Root Causes and Consequences**

**(1) Country of Origin and Country of Return (El Salvador, Guatemala, and Honduras)**

This section examines the threats encountered during migration from the perspective of involuntary migration. In the background of migration, economic factors are fundamentally strong, followed by factors such as poor security and family reunification, according to questionnaire surveys. Insufficient social infrastructure and lack of resilience to climate change have also been implicated. These factors are often mixed, and the migration decision-making process is said to be complex and multi-causal. As made clear in the previous study, El Salvador, Guatemala, and Honduras are among the most vulnerable countries in terms of governance among the Central American and Caribbean regions, and the root cause of migration mentioned above is the overall lack of governance.

Migration, especially related to family reunification, will continue because family reunification cannot be prevented. It is also believed that human smuggling by coyotes will continue to be profitable and show no signs of slowing down during the migration process.

Lack of productive opportunities and limited national responses in countries of origin continue to push migrants to leave. To tackle those issues, JICA needs to create quality jobs and expand social protection systems to improve the quality of life for people at their home country. Although 100,000 young people enter the region's labor market each year, the economy of the Northern Triangle of Central America lacks the dynamism to absorb many of these people.

Less violence means more incentives to stay in the country of origin. Better security improves people's quality of life and increases economic opportunities. It is also important to strengthen resilience to disasters, especially in the housing sector, to avoid forced migration.

The Northern Triangle of Central America will benefit from the successful reintegration of returning migrants. Follow-up of returning migrants, psychological support, and promotion of their reintegration

into the productive sector are also important to prevent the recurrence of irregular migrants. Also, migrant families who are left to care for the children left behind bear a heavy burden, and programs to support this vulnerable group are also important to mitigate social risks.

Finally, the migrant community "diaspora" living abroad has potentials that can greatly contribute to the regional development of their home countries, but in the Northern Triangle region of Central America, the actual policy efforts are insufficient, and it is necessary to foster community participation, cooperation with local governments, and strengthen the diaspora organizational structure.

## **(2) Transit Countries (El Salvador, Guatemala, Honduras, Costa Rica, Mexico, and Panama)**

Migrants passing through non-destination transit countries often face severe transportation and security problems. They are also at risk of abuse and exploitation by smugglers and sometimes by migration authorities.

A specific issue related to transit migration becomes apparent when a large number of migrants flow into a transit country in a short period of time. Such migrants intend to reside temporarily in a transit country and then move on to a final destination country. The first issue is human trafficking and migration smuggling associated with organized crime networks. Most of the victims of smugglers are vulnerable persons such as women, family members, and unaccompanied children. Women and children are often vulnerable when they are cut off from their families and community support systems while on the move. Such challenges can be exacerbated by corruption and mismanagement of border officials and other authorities.

Host communities, through which migrants transit, are often located in the poorest areas of transit countries, and indigenous peoples, NGOs, and CSOs are often involved in humanitarian assistance. Along with the rapid increase in the flow of migrants, the demand for basic infrastructure development is increasing, and the construction and repair of waste disposal, water supply and sewage treatment, roads, and bridges, cannot keep up. Environmental destruction has also become a major problem, and in the Darien Gap, discarded rain boots and rucksacks are piled up in the nature. Besides urgent humanitarian assistance, efforts for peaceful coexistence with host communities are also emphasized.

Due to some migration measures adopted by the destination countries, many migrants and refugees don't have other choice than to stay in Mexico and wait for a long period of time even if it is only a transit point. Costa Rica and Panama are also transit countries, but they have established a "control flow" for migrants and refugees to pass through as quickly as possible. El Salvador, Guatemala, and Honduras are also transit countries for migrants and refugees coming from the south, but in most cases, the purpose is to move north, so even if the issues are the same, efforts for regional integration are not considered applicable.<sup>185</sup>

## **(3) Destination Country (Costa Rica, Mexico, and Panama)**

Efforts to enable migrants to become economically integrated into their destination countries are important, but integration into social services such as education, health, water and sanitation, electricity,

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<sup>185</sup>From the interview with the UNHCR Panama office (conducted on December 5, 2022)

and housing is also essential.

In education, burgeoning migration flows can put pressure on the educational systems of destination countries. In many countries, education is primarily funded by federal and local governments. Countries that accept large numbers of migrants will need to strengthen their education systems.

Migration flows can also overwhelm existing basic service networks. Adequate access to basic services such as water and sanitation is also important for practicing the recommended frequent hygiene practices to limit the spread and outbreak of diseases like COVID-19. Governments need to strengthen existing basic service networks such as clean water, sanitation, electricity, and waste management.

Migrants can also put pressure on the demand for housing services. If the increased demand cannot be met satisfactorily, it could lead to the occupation of public space and the development of informal settlements in high-risk areas. Many migrants live in overcrowded conditions that foster respiratory diseases such as COVID-19.

Finally, prejudice and potential stigma are key barriers to the social inclusion of migrants. The IDB research reports that prejudice against migrants is widespread in many countries around the world. One of the concerns of citizens is the potential for increased crime and violence. However, contrary to some public opinion, there is no evidence that migration has a significant impact on crime and violence. This is an area that is still under-researched to better understand what drives exclusionary attitudes towards migrants and what interventions and programs are most effective in reducing stigma and discrimination against migrants. Further study would be needed to fully understand this issue.<sup>186</sup>

## **15.7.2 Recommendations**

### **(1) Significance of Cooperation**

The IDB research and others show that migration is a positive force for development, but sudden large-scale migration flows could be detrimental to some countries concerned and some groups of migrants. Migration is a multifaceted and complex social phenomenon that affects, at individual and collective levels, not only those who migrate, but also the inhabitants of host countries and those left behind in their countries of origin. It can also affect the values and identities of individuals and groups. Policy responses to migration challenges must therefore be multidimensional and cross-sectoral. In parallel with this, international cooperation also needs to clarify its response policy, and the international community has promoted a number of frameworks toward a comprehensive approach to improve cooperation on migration. An example is the 2018 Global Compact for Safe, Orderly, and Regular Migration, although it is not legally binding.

In order for Japan to strengthen its support policy for addressing the root causes of migration, it is first necessary to clarify the significance of cooperation. The contents are summarized in Table 15-48.

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<sup>186</sup>El impacto de la migración en América Latina y el Caribe: Un análisis de la evidencia reciente

**Table 15-48 Significance of Japanese Cooperation in Migration Issues**

Item	Significance of cooperation
Assistance needs and development policy	Importance of addressing the challenges posed by forced migration to countries of origin, transit, and destination.
	Challenges posed by forced migration hinder countries' sustainable development and threaten national harmony
Commitment of Japanese government	Agenda 2030
	Global compact for refugees
	Global compact for safe, orderly, and regular migration
	Joint Declaration with the United States (Core Partnership)
Consistency with JICA's assistance policy	In the peacebuilding of the global agenda, "Conflict prevention and building resilient nations and societies through a human security approach", "Capacity building of local governments in fragile areas, formation of resilient societies and trust" as well as "the promotion of humanitarian, development and peacebuilding nexus" policies have been advocated
Japanese assets	Development cooperation assistance for poverty reduction and socio-economic development contributes to peacebuilding and achievement of SDGs
	Cooperation that has been implemented in accordance with the development policy has contributed to addressing the root causes of migration, and knowledge and networks obtained on the ground are extremely useful.
Japanese presence	Development partners and countries recognize the importance of existing assets, and the beneficiary countries appreciate the implementation of effective assistance.
	Japan is increasingly recognized as an important player amid requests from development partners, governments, and others to cooperate in migration issues. The roles that Japan can play are recognized and sought after by other countries and development partners.
	By coordinating and collaborating with other development partners, Japan can improve its presence in the field and maximize impact.

Source: JICA Study Team

## (2) Development Issues/Strategies

This section examines initiatives based on the Japanese government's promotion of the "Humanitarian-Development-Peace Nexus." As shown in the figure below, the flow of migrants across Central America is a mixed movement, with irregular migrants and refugees from Venezuela, Haiti, and Cuba going north through the Darien Gap and crossing Panama and Costa Rica. Guatemala, Honduras, and El Salvador in the Northern Triangle of Central America are not only migrants' departure countries, but also migrants' transit and return countries. In addition, it faces the challenge of a humanitarian crisis. Mexico is a transit country and a destination country for migrants and is affected by migration policies in destination countries and faces the challenges of humanitarian assistance needs of refugees and economic integration. In light of this complex situation, the JICA Study Team proposes to promote a "humanitarian, development, and peace nexus" at the regional level that matches the current situation of each country.<sup>187</sup>

In the Central American Northern Triangle, which is considered to be the country of origin of migrants, the biggest root cause of irregular migration is the lack of economic opportunities. There are also social problems, insecurity, and a lack of resilience to climate change, all of which are rooted in poor governance in general. Migration is the only way to survive due to a complex mix of factors, and "creating a community of hope" can alleviate the root cause of migration and lead to involuntary migration.

JICA has already implemented a number of aids that contribute to alleviating the root causes of migration in the Central American Northern Triangle. At the Japan-U.S. Summit Meeting held in April 2021, Japan announced that it would promote initiatives related to (1) industrial development/job

<sup>187</sup>Mexico also has issues of origin and return of immigrants, but this survey does not address them.

creation, (2) social development, (3) security improvement, and (4) disaster prevention, in order to curb the root causes of migration. The direction has been clarified, and these four pillars for "creating a community with hope" are related to the promotion of support for the socially vulnerable people.

Based on the above situation, the following development goals and objectives were set.

**Development Goal:** Sustainable Socio-economic Development in the Central American Northern Triangle for “Creating Hopeful Communities”

**Purpose:** To address the root causes of involuntary migration from the region, human security, community development, and poverty reduction, for sustainable socio-economic development in the Central American Northern Triangle.

**Targets:** Areas and ethnic groups at risk of being left behind in development, areas vulnerable to disasters, families receiving migrant remittances, returnees, etc.

Four strategies shown in Table 15-49 are proposed in order to achieve the development goals mentioned above.

**Table 15-49 Strategies for Addressing Root Causes of Migrants in the Central American Northern Triangle**

Strategy	Strategy Overview
Industrial development and job creation	Under this strategy, job creation will be revitalized by strengthening the industrial base, promoting the development of local industries, and developing the human resources necessary for this. The sectors that are expected to have the greatest impact on employment are agriculture/livestock/forestry/fishery, retail/commerce, manufacturing, and construction, in that order. In agriculture, it is necessary to make efforts to increase added value due to low income and will also focus on initiatives targeting the remaining migrant families and women.
Social development and poverty reduction	Disparities between regions are factors that cause political and social instability, and as a result, they are factors that impede economic growth. Under this strategy, in areas where many poor people and indigenous people live, economic development is aimed at social development (health, sanitation, education, etc.) targeting basic needs, food security, and maintaining and improving livelihoods. Through this, it contributes to rectifying disparities with urban areas and promote sustainable and inclusive growth.
Security improvement	Crime by violent juvenile crime groups (Maras) has become a serious problem in the region, and securing the safety of citizens' lives is one of the most important issues for the government in the country, and it is a hindrance to development. Under this strategy, it will ensure the safety of citizens and contribute to human security by strengthening crime prevention.
Strengthening resilience through disaster prevention	Vulnerability to natural disasters still exists in the region, stifling self-reliant and sustainable economic growth. Under this strategy, vulnerability to natural disasters will be addressed by strengthening disaster risk reduction capacity.

Source: JICA Study Team

Moreover, in Guatemala (1960-1996) and El Salvador (1980-1992), which experienced long-term civil wars, and Honduras, which has never experienced a civil war, inequality is a factor leading to the destabilization of political and social conditions, and lack of governance. Assistance can mitigate potential risks of humanitarian crises and can contribute to 'conflict prevention' assistance.<sup>188</sup>

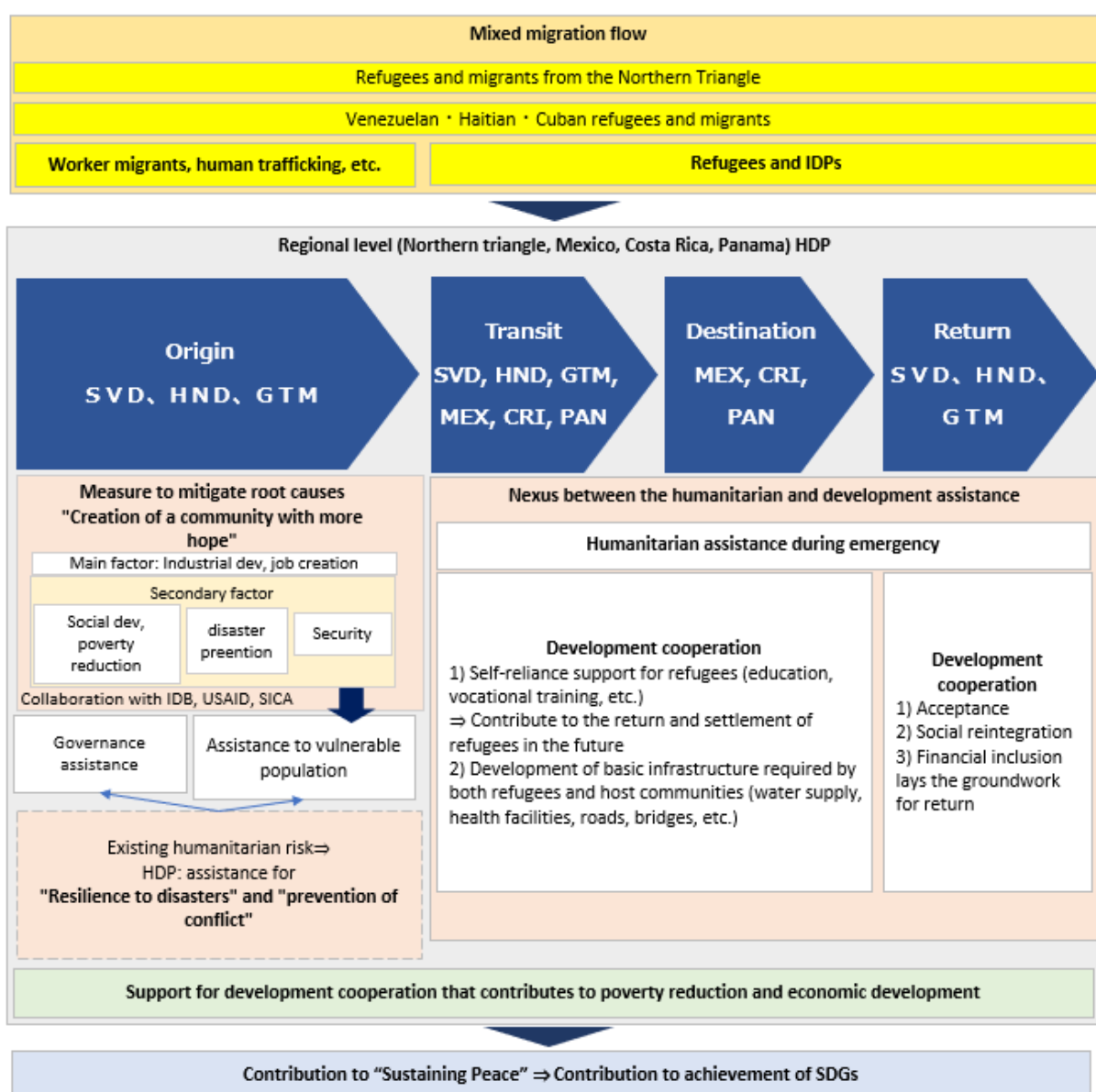
In Costa Rica, Mexico, and Panama, which are transit countries and destination countries for migrants, the "humanitarian, development, and peace nexus" could be implemented, and JICA is already working

<sup>188</sup>In the previous survey, Honduras, Guatemala, and El Salvador were all listed as the most important countries in the vulnerability analysis of the governance and security sectors in the Central America and Caribbean region.



with UNHCR and IOM to target refugees, displaced people, and host communities. The JICA Study Team proposes humanitarian assistance (such as Japanese grant aid), support for the self-reliance of refugees with a view to medium/long-term development, and assistance for the development of basic infrastructure required by both refugees and host communities. In addition, since the Central American Northern Triangle is also a transit country for migrants, it is possible to consider the aforementioned efforts as necessary.

Through the nexus of humanitarian, development, and peace, JICA can support development cooperation that contributes to poverty reduction and economic development in the target area, and contribute to the achievement of the SDGs by contributing to "sustaining peace" (see Figure 15-51).



Source: JICA Study Team

Figure 15-51 Strategy Proposal

### (3) Countermeasures

Table 15-50 describes the countermeasures corresponding to the above strategies.

**Table 15-50 Countermeasures to be considered**

Target	Concept	Field Support of	Strategy
Country of origin	Development cooperation in addressing root causes of migration	General	<p>Strengthen JICA's existing efforts and include elements of countermeasures against the root causes of migration in the project formulation process for planning, implementation, and evaluation.</p> <p>[Collaboration with development partners] IDB and JICA have common interests and goals, and similar experiences in development assistance that can contribute to addressing the root causes of migration. The IDB has extensive experience and the ability to communicate with governments and is a reliable partner on migration issues. In addition, IDB's funding mechanism has the advantage of maximizing project funding through donor collaboration, which leads to maximizing impact.</p> <p>USAID collaboration: Capacity building, investment by private companies, collaboration with the private sector, education, and vocational training</p>
		Industrial development and job creation	<p>Contribute to poverty reduction and job creation through support for financial inclusion. It will be implemented as one of the pillars of countermeasures against the root causes of migration.</p> <p>Regional Cooperation: SICA has expressed expectations for Japan's assistance in addressing issues related to involuntary migration and other initiatives.</p>
	Vulnerable support "Creating a Hopeful Community"	Social development and poverty reduction	<p>Triangular Cooperation: It is conceivable that Japan, within the framework of a partnership program with Mexico, dispatch experts to a third country after confirming the needs and requests of stakeholders. In addition, it was confirmed in consultations with AMEXCID that migration-related efforts are prioritized.<sup>189</sup></p> <p>IDB Cooperation: Honduras is a priority country, and there is a possibility of cooperation between JICA and IDB in job creation, among others (JICA is already actively cooperating with IDB through joint financing).</p> <p>Cooperation with USAID: Regarding social development and poverty reduction, the Government of Honduras has given priority to the rehabilitation of schools and considers future support.</p> <p>Considering communication channels for people who tend to become migrants (efforts to exclude coyote information transmitted from TikTok, Facebook, etc.), support for the Migration Department to release videos as a reliable source of information. (Interviews with UNHCR Panama claim that migrants crossing the Darien Gap would not have attempted it had they known in advance of its dangers).</p>

<sup>189</sup>Japan's Country Development Policy states the following in the case of Mexico: "Utilizing the Japan-Mexico Partnership Program (JMPP), the Central and South American region including the three Northern Central American countries (Guatemala, Honduras, and El Salvador) Triangular Cooperation to solve common development challenges."

Target	Concept	Field Support of	Strategy
		Strengthen disaster prevention	Regional Cooperation: dissemination of know-how related to disaster prevention such as earthquake resistance in Japan through SICA (such as regional seminars.)
		Security improvement	Coordination with IDB: Costa Rica has potential for cooperation projects in citizen security. Undocumented Nicaraguans are highly vulnerable to violence and have high rates of being victims of violence.
	Conflict prevention assistance at potential risks of humanitarian crises	Governance <sup>190</sup>	Improving administrative functions: In terms of governance support, Honduras' FOCAL process projects are substantial, and FOCAL 4 (2022-2027) is currently being implemented. Such efforts contribute to regional development and contribute to poverty reduction.  Strengthening the rule of law: Improving dispute resolution systems such as judicial procedures and mediation systems, improving laws and procedures that form the basis of economic activities, training legal professionals, and developing support for the digitalization of judicial services.
Transit country/destination country/return country	Development and humanitarian nexus	General	Due to the inadequate acceptance of economic migrants and refugees, who are rapidly increasing in mixed migration, and the development of basic infrastructure, based on project examples implemented in Jordan and Uganda, water supply systems, health facility improvement projects, and refugee-hosting community resilience projects can be considered.  From the perspective of "humanitarian assistance", it is possible to provide emergency shelter, water, food, medical care, etc., that are necessary when refugees and internally displaced persons appear through grant aid to IOM and UNHCR. At the interview held at IOM Honduras, expectations were expressed for Japan's cooperation in this humanitarian assistance.  Consideration of equipment and capacity-building support for returnee reception facilities and migration offices.
	Humanitarian and development assistance as countries of transit and return of migrants	Northern Central American Triangle	Humanitarian assistance to returnees and irregular migrants passing through the Central American Northern Triangle could include assistance to government agencies and NGOs that deal with returnees. As confirmed, there are almost no undocumented migrants intending to stay in the Central American Northern Triangle.  It is also important to provide capacity development assistance that can respond to the domestic labor market so that returnees will not go north again.  It is necessary to introduce a system that matches job offers and needs according to the work histories and careers of returnees.
	Humanitarian and development assistance as destination and transit countries	Costa Rica	In the northern part of Costa Rica on the border with Nicaragua, although the area is underdeveloped, it is an area where the influx from Nicaragua and the flow of migrants and refugees from the south are mixed, and the serious situation continues. In particular, the country's readiness to accept migrants and refugees is inadequate, and the demand for cooperation in the development of basic and social infrastructure such as roads, schools, and medical facilities is extremely high.
		Panama	The Darien Gap environmental conservation, waste

<sup>190</sup>Refer to the recommendations for governance assistance in the previous study.

Target	Concept	Field Support of	Strategy
			<p>disposal, and host community job creation programs involving the governments of Panama and Colombia are currently being considered and approached by the UNHCR Panama Office, with the aim of collaborating with experienced development partners. Participation of JICA in such efforts is believed to lead to maximizing the impact of assistance that meets the needs of migration transit and destination countries.</p>
		Mexico	<p>[Collaboration with UNHCR]                      JICA is aligned with UNHCR's commitment to development, and it can be said that Japan's strengths can be leveraged in terms of the importance of strengthening climate change resilience and collaborating with private companies.</p> <p>Participation in the "Mexico Regional Integration Program" is highly significant in terms of maximizing impact by utilizing the UNHCR platform. JICA can consider a JOCV frame UNV system and can consider synergies with JETRO and JBIC by incorporating cooperation with private companies.</p> <p>The advantage of Japan's participation in the collaboration platform of MIRPS, which is a regional framework, is that it can provide a forum for sharing information on the efforts of Mexico and related countries within the regional framework and enhance Japan's political presence.</p>

Source: JICA Study Team

## **16. South-South, Triangular, and Regional Cooperation**

### **16.1 Outline of the Study**

#### **16.1.1 Introduction**

Among the 23 countries targeted for South-South, Triangular, and Regional Cooperation, Mexico, which has concluded a Partnership Program (PP) with the Japanese government, as well as El Salvador, Costa Rica, and Panama, which have shown a policy of actively engaging in South-South cooperation, are the countries covered by the study. In addition, the Central American Integration System (SICA) and the Caribbean Community (CARICOM) will be targeted in investigating regional efforts. In carrying out the literature study, the Japan International Cooperation Agency (JICA) Study Team will also summarize the cooperation between Spanish-speaking countries and cooperation between Small Island Developing States (SIDS). In this study, to grasp the overall picture of South-South, Triangular, and Regional Cooperation, the JICA Study Team has analyzed the characteristics of this sector based on reports from *Secretaría General Iberoamericana* (SEGIB), United Nations Office for South-South Cooperation (UNOSSC), SICA, CARICOM, among others. Consultations were made with JICA officials in El Salvador and Mexico offices regarding the scope of the study.

A field study was carried out from August 15 to September 9, and interviews were held with relevant organizations in the South-South and Triangular Cooperation in El Salvador. Three regular meeting sessions were held with JICA on October 25, November 16, and December 27, 2022. After agreeing on the progress and objectives of the study, this Final Report was created, in addition to the interviews that were held online with Costa Rica and Panama officers in charge of the South-South and Triangular Cooperation. Based on the above study results, the JICA Study Team summarized the overall situation of South-South, Triangular, and Regional Cooperation, and analyzed the trends in each country. The study has made recommendations regarding the strategies to be followed with regard to Japan's cooperation in this field.

#### **16.1.2 Study Scope**

The scope of work of this sector is shown in Table 16-1.

**Table 16-1 Scope of Work per Sector (South-South, Triangular, and Regional Cooperation)**

No.	Item	Subsector	Scope of Work
1	Sector Targets		Analyze how South-South, Triangular, and Regional Cooperation can be activated in the Latin American region in the with/post COVID-19 era, that apply Japan's strengths, and summarize the strategy and recommendations for cooperation.
2	Scope	Triangular Cooperation	The following types of Triangular Cooperation will be investigated: SICA Cooperation; CARICOM Cooperation; Spanish-speaking countries Cooperation; Cooperation among SIDS; and * Triangular Cooperation is included in the concept of South-South Cooperation.
		Regional Cooperation	Research on SICA and CARICOM.
3	Literature Review		In conducting a trend analysis of South-South Cooperation and Regional Cooperation in the Central American and the Caribbean regions, the following information will be collected: Political trends behind global South-South and Regional Cooperation; Background and international framework of global South-South, Triangular, and Regional Cooperation Understanding the definition and purpose of South-South, Triangular, and Regional Cooperation Significance of South-South, Triangular, and Regional Cooperation in Central America and the Caribbean
			The following information will be collected to grasp the specific types of South-South Cooperation and Regional Cooperation in the Central American and the Caribbean regions. Examples of Triangular Cooperation projects SICA Regional Cooperation projects Examples of CARICOM Regional Cooperation projects Examples of Spanish-speaking countries Cooperation projects Examples of cooperation projects between SIDS countries
			Collect information on the efforts of priority countries and regional organizations as follows: Grasping efforts for South-South, Triangular, and Regional Cooperation in Central America and the Caribbean Understanding support policies and trends of development partners (including interviews) Understanding best practices and challenges Japan country development policy, policy positioning, priority, significance of cooperation Confirmation of JICA assets and list of project achievements by Japan Japan's comparative advantages in South-South, Triangular, and Regional Cooperation
4	Field Study	Field study (1)	In the South-South, Triangular, and Regional Cooperation sector, field studies will not be conducted in the Caribbean region, but information will be collected based on online interviews. In addition, in the Central American region, the countries to be visited for countermeasures against the root causes of migration are SICA member countries, so local interviews can be conducted with regional organizations and government agencies.
		Field study (2) and (3)	Conduct interviews to obtain supplemental information online.
5	[Task 4]		Pilot projects are not expected to be implemented in the South-South Triangle and Regional Cooperation sectors. When selecting and implementing pilot projects in other sectors, the study team will support on items related to South-South, Triangular, and Regional Cooperation.
6	[Task 5]		
7	[Task 6]		
8	[Task 8] Proposal		Based on the feedback obtained from JICA, finalize the strategies and recommendations to be followed for development cooperation.

Source: JICA Study Team

## 16.2 Overview of South-South, Triangular, and Regional Cooperation in Central America and the Caribbean

### 16.2.1 Background and Definition

#### (1) South-South and Triangular Cooperation

##### 1) Background (1) World

The concept of the South-South Cooperation was born in the 1970s as a Technical Cooperation among Developing Countries (TCDC)<sup>1</sup> and has expanded since the 1990s. In Latin America and the Caribbean, the South-South Cooperation is recognized as an expression of solidarity between the peoples and countries of the south aimed at contributing to the achievement of their development goals. It is based on principles such as complementarity, mutual benefit, fairness, transparency and accountability. The South-South Cooperation has been going on in the region for at least 40 years and has greatly developed since that time.<sup>2</sup>

Table 16-2 shows the milestones of South-South and Triangular Cooperation.

**Table 16-2 Milestones of South-South and Triangular Cooperation**

Year	Meeting
1955	Bandung Africa-Asia Conference (Indonesia)
1974	Establishment of the United Nations Office for South-South Cooperation
1978	Conference on Technical Cooperation among Developing Countries Supported by the United Nations: Adoption of the Buenos Aires Plan of Action
1980	Establishment of the Independent Commission on International Development Issues led by Willy Brandt (Convening of the First High-level TCDC Committee of the UN General Assembly)
1995	UN General Assembly adopts new direction for TCDC
2009	UN High-Level Meeting on South-South Cooperation held in Nairobi, Kenya
2015	Rio+20 Summit
2019	Second United Nations High-Level Conference on South-South Cooperation (BAPA+40)

Source: JICA Study Team

Since the 1978 conference held in Buenos Aires, several South-South and Triangular Cooperation forums have been promoted. Most of these high-level forums emphasize that development must be in accordance with national sovereignty and based on national needs. The South-South and Triangular Cooperation currently accounts for a significant share of Official Development Assistance (ODA), reaching USD 2 billion in 2013, according to the Organization for Economic Cooperation and Development (OECD) data cited by the United Nations in 2016. In recent decades, the framework of international cooperation has undergone important changes, including the expanding role of the South-South and Triangular Cooperation. Among international cooperation for development, the South-South and Triangular Cooperation have become important modalities in providing flexible and adaptive solutions to development challenges. To achieve the 2030 Agenda, it is important to contribute to international cooperation in various fields through collaboration with the public and private sectors, civil society, and NGOs.<sup>3</sup>

<sup>1</sup> TCDC : Technical cooperation among developing countries is a form of cooperation in which developing countries learn and share each other's good practices and technologies.

<sup>2</sup>[https://www.gub.uy/agencia-uruguay-cooperacion-internacional/sites/agencia-uruguay-cooperacion-internacional/files/documentos/publicaciones/S2100361\\_es.pdf](https://www.gub.uy/agencia-uruguay-cooperacion-internacional/sites/agencia-uruguay-cooperacion-internacional/files/documentos/publicaciones/S2100361_es.pdf)

<sup>3</sup><https://www.fao.org/director-general/former-dg/director-general/my-articles/detail/es/c/1151095/>

Japan joined the Colombo Plan in 1954 and began providing assistance as a donor. At that time, Japan was also a recipient of aid, and is said to have been one of the pioneers of the South-South and Triangular Cooperation. After that, in 1975, the first Triangular Cooperation was implemented with Thailand in the form of third country training, and many initiatives have been carried out to date. In the former Medium-term Official Development Assistance (ODA) Policy formulated in 1999, it became clear that the policy would be to actively promote assistance through South-South Cooperation. "Promotion to Support South-South Cooperation" (that is to say Triangular Cooperation) presents the benefits of effectiveness and efficiency of South-South Cooperation. In addition, the Development Cooperation Charter revised in 2015 states the following: "When implementing development cooperation, JICA will effectively utilize the know-how, human resources, and human resources networks that have been accumulated in partner countries through its many years of cooperation. Triangular Cooperation in collaboration with emerging countries and others has been highly praised by the international community as a cooperation that makes effective use of these, and will continue this effort". In addition, the ODA development cooperation priority policy for FY2019 lists the promotion of Triangular Cooperation as a priority issue for assistance to Central America, and South-South and Triangular Cooperation will continue to play an important role in Japan's assistance policy. Furthermore, the Japanese government has concluded partnership programs with the governments of developing countries to jointly support the development efforts of other developing countries/regions.<sup>4,5,6,7</sup>

## 2) Background (2) Latin America and the Caribbean

Countries of Latin America and the Caribbean region have commonalities in terms of history, culture, religion, language, geographical proximity, and social complementarity.<sup>8</sup>

In this context, in the first decades of the 21st century, the Peruvian Agency for International Cooperation (APCI) in 2002, the Ecuadorian Agency for International Cooperation (AGECI) in 2007, the Colombian Presidential Agency for Cooperation (APC) in 2011, the International Development Cooperation Agency (AMEXCID) of Mexico in 2011, the Uruguay International Cooperation Agency (AUCI) in 2011 and, more recently, the El Salvador International Cooperation Agency (ESCO) in 2020 were established.

In Latin America and the Caribbean, development cooperation policies are strengthened through offices or departments within government ministries. Accordingly, the institutional and regulatory frameworks for South-South Cooperation in Latin America are diverse and take on the following forms (see Table 16-3):<sup>9 10</sup>

- A country coordinating and managing South-South and Triangular Cooperation from the Ministry of Foreign Affairs, as it is closely related to the country's foreign policy;
- A country with a specially established International Cooperation Agency to manage its efforts as a provider or receiver of North-South or South-South/Triangular Cooperation; and
- A country in which various government agencies share control on South-South and Triangular

<sup>4</sup><https://www.jica.go.jp/aboutoda/basic/01.html>

<sup>5</sup>[https://www.mofa.go.jp/mofaj/gaiko/oda/seisaku/taikou\\_201502.html](https://www.mofa.go.jp/mofaj/gaiko/oda/seisaku/taikou_201502.html)

<sup>6</sup>[https://www.mofa.go.jp/mofaj/gaiko/oda/about/seisaku/page25\\_000132.html](https://www.mofa.go.jp/mofaj/gaiko/oda/about/seisaku/page25_000132.html)

<sup>7</sup><https://www.jica.go.jp/activities/schemes/ssc/index.html>

<sup>8</sup>Evaluation South-South cooperation in six Latin American and Caribbean countries (CEPAL, 2021)

<sup>9</sup>Evaluation South-South cooperation in six Latin American and Caribbean countries (CEPAL, 2021)

<sup>10</sup>La cooperación sur sur en américa latina y el caribe balance de una década (2008-2018)



Cooperation.

**Table 16-3 Structure of Development Cooperation in Latin America and the Caribbean (33 Countries)**

Institution				
Area	Cooperation Agencies	Ministry of Foreign Affairs		
		Solely within the Ministry of Foreign Affairs	Within the Ministry of Foreign Affairs and Another Ministry or Department	Within Another Ministry or Government Department
Latin America	Argentina, Brazil, Chile, Colombia, Ecuador, El Salvador, Mexico, Peru, and Uruguay <sup>11</sup>	Costa Rica, Honduras, Panama, Paraguay, and Venezuela	Guatemala and Nicaragua	Bolivia and Cuba
Caribbean		Antigua and Barbuda, Bahamas, Belize, Dominica, Grenada, Guyana, Saint Kitts and Nevis, Santa Lucia, Suriname, Trinidad, and Tobago	Barbados, Dominican Republic, Jamaica, Haiti, Saint Vincent, and the Grenadines	

Source: Created based on Evaluation South-South Cooperation in six Latin American and Caribbean countries (CEPAL, 2021)

Although the flow of ODA declined in the first decade of the 2000s, middle-income countries in Latin America entered a period of economic growth and contributed to the activation of the cooperation and financing modality of South-South Cooperation. There are various funding mechanisms for South-South Cooperation, including the following methods:

- Regional Development Banks (e.g., Inter-American Development Bank (IDB), Central American Bank for Economic Integration (CABEI), Bank of the Andes (CAF), Brazilian Development Bank (BNDES), and ALBA-TCP Bank)
- Bilateral, regional and multilateral special funds (e.g., Argentina Fund for South-South and Triangular Cooperation (FOAR), Colombia Fund for International and Assistance (FOCAI), China-Venezuela Joint Cooperation Fund, Chile-Mexico Fund, Mercosur Structural Convergence (FOCEM), Albacaribe Foundation, ALBA-Alimentos Foundation, Perez Guerrero Trust Fund, United Nations Fund for Social Development (UNFSSC), Organization of Petroleum Exporting Countries International Development Fund (OFID), etc.)
- Loan funding from certain countries (e.g., China, India, Russia, Turkey, South Africa, Brazil, etc.)

The funding mechanism in South-South and Triangular Cooperation has been adapted to the evolution of economic and political trends, and has the following characteristics:

- Mostly public funds, but in recent years there has been an increase in private-sector mixed-fund projects.
- It is common to establish specific funds to raise for South-South and Triangular Cooperation, which can be domestic, bilateral, trilateral, subregional, regional, multilateral, or global.
- Funding sources come from the south, regional, and international organizations, and Triangular Cooperation includes efforts by the OECD and the EU (EUROSOCIAL and ADELANTE).<sup>12,13</sup>
- Since 2015, the trend has been for direct lending to Latin American countries to decrease and for more multilateral lending to take place. This includes the 2014 regional economic recession, the

<sup>11</sup><https://www.cancilleria.gob.ar/es/politica-externior/agencia-argentina-de-cooperacion-internacional-y-asistencia-humanitaria-cascos> (Agencia Argentina de The establishment of the Cooperación Internacional y Asistencia Humanitaria was announced.)

<sup>12</sup><https://eurosocial.eu/>

<sup>13</sup><https://www.adelante-i.eu/>

3rd International Conference on Financing for Development (Addis Ababa Action Agenda), the 2030 Agenda for Sustainable Development (2015), and the Second UN High-Level Conference on South-South Cooperation (2019). These were thought to have had an impact.

### 3) Definition

Efforts have been made to reach a common understanding on the definition of Triangular Cooperation, but there is currently no agreed definition. It is said that this is to intentionally not restrict discussion while there are various stakeholders. The UNOSSC definition of Triangular Cooperation states that "developed donor countries and international organizations promote South-South Cooperation initiatives through the provision of funding, training, management, technical systems, and other forms of support". The Global Partnership Initiative (GPI) states that "Triangular Cooperation represents at least three roles, each of which may have multiple actors"<sup>14</sup> (see Table 16-4).

**Table 16-4 Three Roles in Triangular Cooperation by GPI**

Role	Overview
First cooperating country (Pivotal Partner) <sup>15</sup>	Often have proven experience and share their resources, knowledge, and expertise through Triangular Cooperation
Second cooperating country (Facilitating Partners)	Connect countries and organizations, help form triangular partnerships, and provide funding, and technical support for collaborative work
Beneficiary country (Beneficiary Partner)	Seek help to address specific development challenges in line with their country's development priorities and needs

Source: Prepared by the JICA Study Team based on the GPI website

The definitions of South-South, Triangular, and Intra-regional South-South Cooperation by *Secretaría General Iberoamericana* (SEGIB) are given in Table 16-5.

**Table 16-5 SEGIB Definitions of South-South, Triangular, and Regional South-South Cooperation**

Type	Overview
Bilateral South-South Cooperation	This is a modality that allows two developing countries to share resources and experiences and to have a dialogue on an unconditional and equal footing. Costs are assumed on a shared basis, although not necessarily on an equal basis, with each country sharing the roles of so-called cooperating countries (mainly those providing funds, technology, and human resources) and those of beneficiary countries. Occasionally, they are cooperating countries and beneficiary countries at the same time.
Triangular Cooperation	As part of South-South Cooperation, modalities that share the following three roles among participating countries: primary cooperating countries (indicating developing donor countries, Chile, Mexico, Brazil, etc.), beneficiary countries (one or more developing countries and recipients of assistance) and secondary cooperating countries (indicating donors such as developing countries, developed countries, and regional organizations). The role differentiation of the first cooperating country is that it is the country providing capacity building.
Intra-regional South-South Cooperation	A modality of cooperation aimed at regional development and integration, viewed as part of South-South Cooperation. Implement programs and projects under regional institutions. Indicates South-South Cooperation implemented in the region.

Source: Prepared by the JICA Study Team based on the SEGIB report

The JICA website defines South-South and Triangular Cooperation as follows:

Among the developing countries, a country that has advanced in a certain field supports the development of another developing country. This is mutual cooperation for self-reliant development.

<sup>14</sup>From "COMPARATIVE ANALYSIS OF NORTHERN DONORS ON TRIANGULAR COOPERATION: THE UNITED KINGDOM, GERMANY, AND JAPAN" (Young Leaders Program (School of Government) National Graduate Institute for Policy Studies Tokyo, Japan, September 2022)

<sup>15</sup> Also referred to it as "Resource Countries" in this report

Triangular Cooperation refers to support by developed countries and international organizations for South-South Cooperation by developing countries to other developing countries in terms of funds, technology, and management methods.<sup>16</sup>

Source: From JICA website

In this sector, the JICA Study Team conducted the study on South-South and Triangular Cooperation in accordance with JICA's definitions and examined the roles of each stakeholder from the perspective of the three roles presented by the GPI. Also, when using SEGIB data, an understanding of the definitions is important (see Table 16-5).

## (2) Regional Cooperation

Regional Cooperation in Latin America and the Caribbean has been activated with the creation of various regional organizations. Latin American and Caribbean Community (CELAC), South American Common Market (MERCOSUR), Central American Integrated System (SICA), Caribbean Community (CARICOM), Pacific Alliance (PACIFIC ALLIANCE), and the Bolivarian Alliance (ALBA-TCP), to name a few.<sup>17</sup>

Focusing on cooperation between SICA and CARICOM, this study distinguishes the concept of "Regional Cooperation (with each national organization)" from "Regional Cooperation (with regional organization)" based on the following definitions (see Table 16-6).

**Table 16-6 Distinction between “regional cooperation (with several governmental organizations)” and “Regional Cooperation (through regional organization)”**

Item	Regional Cooperation (with several governmental organizations)	Regional Cooperation (through regional organization)
Definition	Cooperation targeting multiple countries	Mutual cooperation among countries within a region. Targeting the framework of regional cooperation, support for the purpose and promotion of the framework and cooperation in addressing common regional issues.
Characteristics of development issues	Issues occur and exist within one country (basically, do not cross national borders), but similar problems occur in other countries	Cross-border issues (a problem that transcends borders). Joint development issues agreed upon by the governments of each country in the region (development across national borders in order to strengthen relations between countries in the region).
Understanding needs and project formation	Countries with similar issues are grouped together, but needs are identified at the national level, and projects are formulated through a dialogue mechanism with the governments of each country on the premise of bilateral cooperation. Contribution by aligning with policy systems such as national development plans of the governments of each country.	Understanding needs, cooperative dialogue, and project formulation through existing regional mechanisms (regional integration frameworks) and not project formulation and dialogue mechanisms based on conventional bilateral cooperation. Contribution by aligning with the government system of regional sector policies and development strategies formulated by regional mechanisms, etc.

Source: Prepared by the JICA Study Team based on JICA and MOFA Past Studies

In the Latin American region, JICA uses the term "Regional Cooperation" broadly in its work without differentiating whether it refers to cooperation with the government or regional organizations in itself,

<sup>16</sup><https://www.jica.go.jp/activities/schemes/ssc/index.html>

<sup>17</sup>Evaluation South-South cooperation in six Latin American and Caribbean countries (CEPAL, 2021)

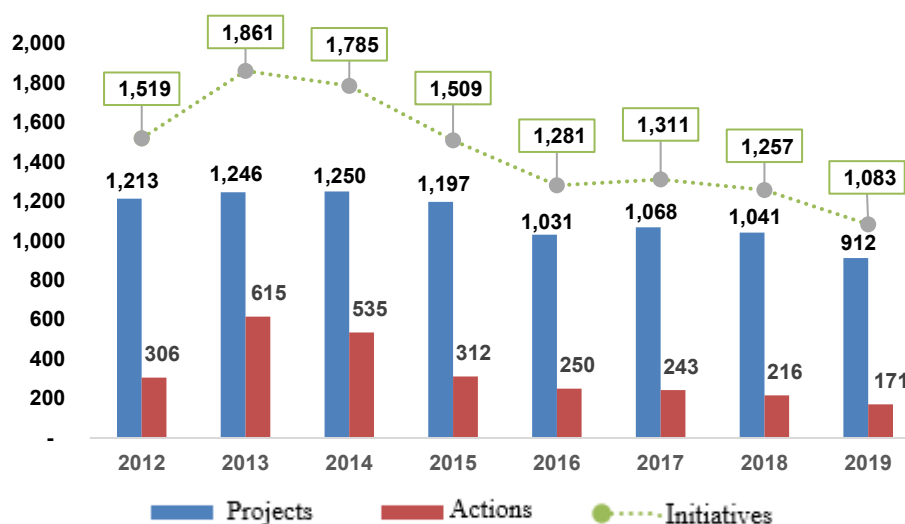
thus this study will do the same, including both concepts in the sole term “Regional Cooperation”.

## 16.2.2 Trends in South-South, Triangular, and Regional Cooperation in Spanish-speaking Countries

### (1) South-South Cooperation

#### 1) Overview

According to the 2020 Report on South-South and Triangular Cooperation in Ibero-America conducted by SEGIB, the number of bilateral South-South Cooperation projects between 2012 and 2019 (see Figure 16-1) peaked at just under 1,500 in 2013, reaching 822. However, when looking at the graph by distinguishing between actual projects and temporary actions (initiatives, training, etc.), the number of projects remains at a constant level.<sup>18</sup>

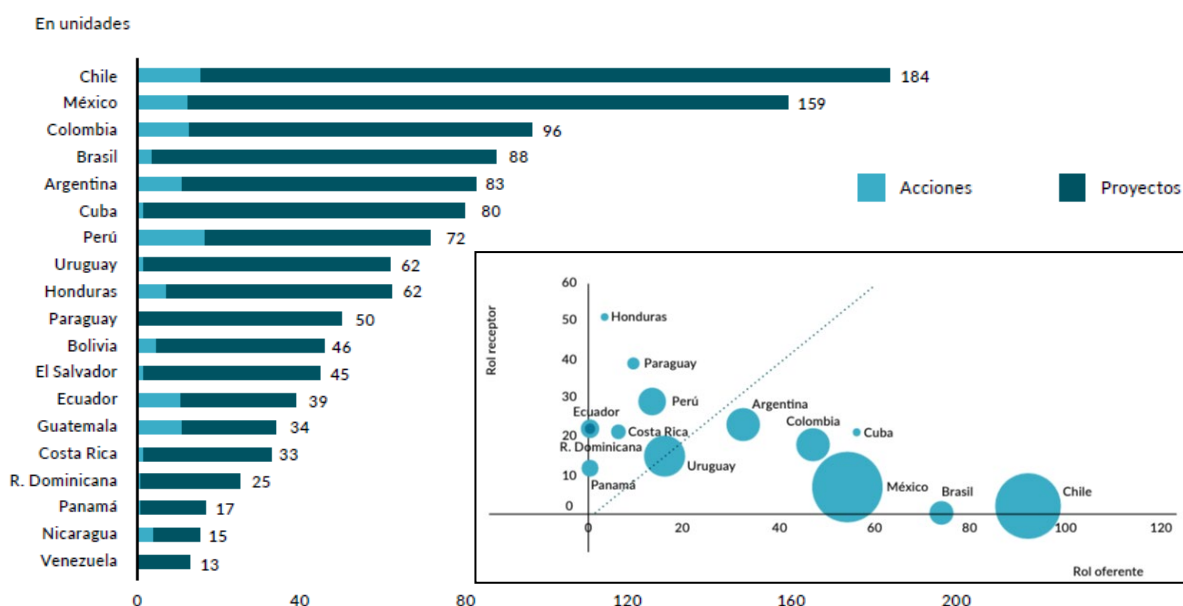


Source: Prepared by the JICA Study Team based on SEGIB data

**Figure 16-1 Number of Bilateral South-South Cooperation Projects Between 2012 and 2019**

Chile (185 cases) and Mexico (160 cases) stand out for the number of bilateral South-South Cooperation projects in 2019. In addition, relations between countries have become active, and the number of countries with which JICA interacted has expanded and diversified (see Figure 16-2).

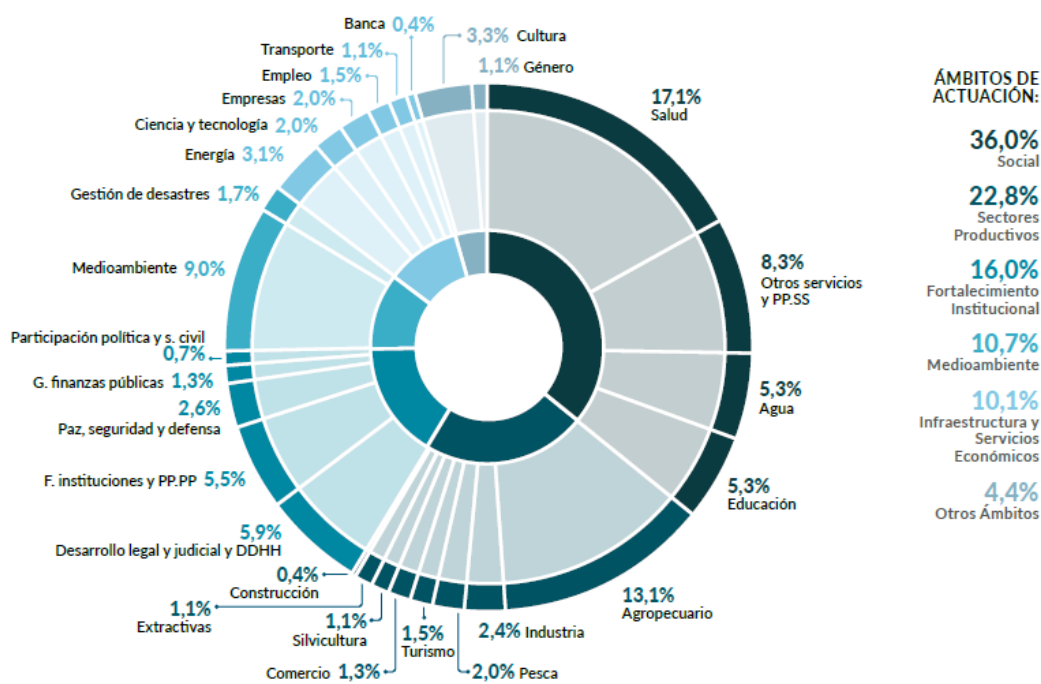
<sup>18</sup><https://www.segib.org/?document=informe-de-la-cooperacion-sur-sur-y-triangular-en-iberoamerica-2020>



Source: "La Cooperación Sur-Sur y triangular en Iberoamérica 2020" from SEGIB

**Figure16-2 Number of Bilateral South-South Cooperation Projects in 2019**

The area in which bilateral South-South Cooperation is most visible is in social initiatives (accounting for more than one-third of the total), with the greatest achievements in health care (17% of the total). Similarly, cooperation aimed at environmental conservation is expanding. Among the bilateral initiatives in 2019, it accounts for 10.7% of the total (see Figure16-3).



Source: "La Cooperación Sur-Sur y triangular en Iberoamérica 2020" from SEGIB

**Figure16-3 Bilateral South-South Cooperation per Sector**

## 2) South-South Cooperation by Partnership Program (PP) Countries

In Central and South America, JICA has signed a partnership program for Triangular Cooperation (hereinafter referred to as “PP”) with Argentina, Brazil, Chile, and Mexico. (See 23.4.2(1) of this section). Each country's policy for South-South Cooperation is given in Table 16-7).

**Table 16-7 Policies for South-South and Triangular Cooperation in Countries Concluded Partnership Programs with Japan**

Country	Jurisdiction	Policy on South-South Cooperation	Purpose/Policy
Argentina	A Directorate or Undersecretary within the Ministry of Foreign Affairs, Directorate General for International Cooperation (DGCIN), Ministry of Foreign Affairs, Ministry of International Trade On August 16, 2022, the Minister of Foreign Affairs announced the establishment of " <i>Agencia Argentina de Cooperación Internacional y Asistencia Humanitaria</i> ".	Administrative Decree No. 1146/2016 Guidelines for South-South Cooperation (2013-2015) (not in force) Signed PP with Japan in 2001. Conducting third-country training, among others, mainly in the field of agriculture	Proposing the design of development assistance policies provided by Argentina through technical cooperation and when linked with technical cooperation, through financial assistance.
Brazil	Ministry of Foreign Affairs Brazilian Cooperation Agency (ABC), established in 1987	Strategy document of the Brazilian Cooperation Agency (ABC)", Guidelines for the Development of Multilateral and Bilateral International Technical Cooperation, ABC, 2016 General Guidelines for the Conceptualization, Coordination and Supervision of Trilateral Technical Cooperation Initiatives, ABC, 2018 Signed PP with Japan in 2000. Priority areas are Portuguese-speaking African countries (Angola, Mozambique, etc.) and South American countries	Consistency with national priorities, national/regional/local impact, potential for knowledge dissemination, sustainability of outcomes, capacity building, etc.
Chile	Agency within the Ministry of Foreign Affairs 1990, Chilean Agency for International Development Cooperation (AGCID)	2015-2018 Chilean International Development Cooperation Policy and Strategy Started PP with Japan in 1999. Third-country group training, dispatch of third-country experts, international seminars, project-type projects, etc., targeting the Latin American region	Pursue inclusive and sustainable development, strengthen partnerships for shared development, and integrate national systems for international development cooperation
Mexico	Agency within the Ministry of Foreign Affairs Mexican Agency for International Development and Cooperation (AMEXCID) established in 2011	International Development Cooperation Act, 2011 2014–2018 International Development Cooperation Program Signed PP (JMPP) with Japan in October 2003. Implementation of third-country group training, dispatch of third-country experts, and joint projects targeting the Central and South American region	Strengthening international cooperation for development to achieve better management; expanding and promoting cooperation with strategic countries and regions; building strategic relationships with cooperation providers to attract resources and capabilities; Increased presence in the world by promoting Mexico's strengths and opportunities in tourism and culture

Source: JICA Study Team

Below is a description of each country's efforts in South-South and Triangular Cooperation.

### a) **Argentina**

On August 16, 2022, the Minister of Foreign Affairs announced the establishment of the "*Agencia Argentina de Cooperación Internacional y Asistencia Humanitaria*" (international, trilateral, and multilateral), defining political direction and action guidelines, and addressing the implementation of programs, projects, and cooperative activities and financing alternatives for their implementation. Based on this, it manages the Argentine Fund for South-South and Triangular Cooperation (FO-AR), created in 1992.

Argentina's Fund for South-South and Triangular Cooperation (FO-AR) <sup>19</sup> is a foreign policy instrument for the Argentine Republic to implement joint technical cooperation projects with other countries through federation, cooperation, and mutual assistance mechanisms. From 1992 to 2016, FO-AR has implemented more than 9,500 technical cooperation requests on themes such as agriculture, livestock, food security, health, education, labor, productive development, administration, governance and human rights, and sent/received more than 6,500 experts<sup>20</sup>. In addition, it is possible to procure the necessary funds for the transportation of technicians by paying air tickets, daily allowances, and medical insurance. FO-AR is funded by the Argentine Prime Minister's Office. The International Organization for Migration (IOM) and Organization of American States (OAS) are involved in its implementation.

The purpose of FO-AR is to:

- Engage all stakeholders and establish and integrate development partnerships with other countries in accordance with their national strategies and priorities;
- Create and support the strengthening of areas and mechanisms that facilitate the sharing of knowledge, technology, and best practices between Argentina and international organizations, and permanently aim to strengthen their development capacity; and
- Develop methodologies and instruments that enable streamlining of technical assistance processes to maximize the use of human and financial resources.

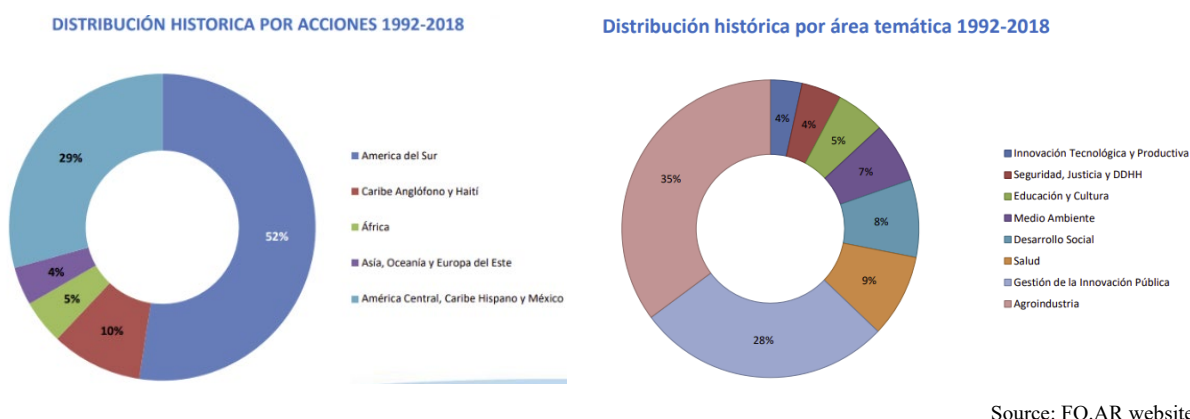
The South-South Cooperation implemented by FO-AR is as follows:

- Dispatch Argentinian experts to support and cooperate with overseas organizations' development strategies for engineers;
- Inviting foreign experts to Argentine institutions to share processes, practices, or concrete experiences that may be useful for the institutions to which they belong; and
- Support the holding of seminars.

Figure 16-4 shows the performance of FO-AR from 1992 to 2018. According to this, efforts in South America accounted for 52% of the total, and efforts in Central America and Mexico accounted for 29%. As for sectors, 35% are engaged in the agricultural industry, followed by the field of public innovation.

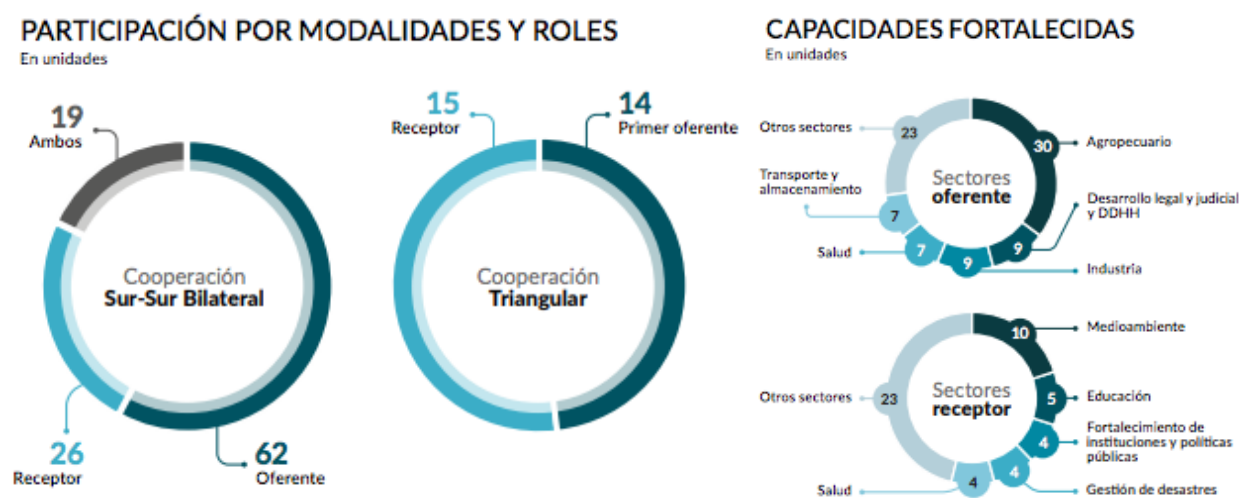
<sup>19</sup><https://www.educacionsuperior.gob.ec/foar-fondo-argentino-de-cooperacion-sur-sur-y-triangular/>

<sup>20</sup> [https://eurug.cancilleria.gob.ar/userfiles/triptico\\_foar%20copia.30.08%20copia.pdf](https://eurug.cancilleria.gob.ar/userfiles/triptico_foar%20copia.30.08%20copia.pdf)



**Figure 16-4 Performance of FO-AR from 1992 to 2018**

According to the SEGIB report, in 2019 Argentina had more than 200 successful projects and programs in South-South and Triangular Cooperation, the majority of which were bilateral South-South Cooperation (53.5%). Triangular Cooperation efforts accounted for 14.5%. In South-South Cooperation, there were 62 cooperating countries and 26 beneficiary countries (see Figure 16-5).



Source: "La Cooperación Sur-Sur y triangular en Iberoamérica 2020" from SEGIB

**Figure 16-5 2019 Argentina Initiatives**

Sectors in which Argentina has provided capacity as a partner are agriculture and fisheries, the judicial system, industry, health care, and transport. Beneficiary countries include environmental conservation, education, public policy, and disaster prevention. Its main cooperation partners are Chile, Brazil, Paraguay, and Uruguay.

**b) Brazil**

The Brazilian Cooperation Agency (ABC) of the Ministry of Foreign Affairs, established in 1987, is a program of humanitarian and technical cooperation in all areas of development, from country to country, in bilateral, trilateral, and multilateral form. This includes planning, coordinating, negotiating, approving, implementing, supervising, and evaluating projects and activities at the national level.

From 2003, Brazil's agenda for South-South Cooperation was strengthened and expanded, particularly



reflecting Brazil's international rise. In the background, in addition to Brazil's capabilities in various fields such as industry, energy, and aviation, and the size of the domestic market, it is an emerging country with a high growth rate and strong investment attraction. This is due to its institutional stability, leadership in South America, and commitment to multilateralism.

Brazil's strategic goal in South-South Cooperation is to promote cooperation among the countries of the South based on the principle of horizontality. Efforts to do so include ensuring the transfer and exchange of national knowledge and technology for international development and establishing long-term partnerships focused on socioeconomic development.<sup>21</sup>

Also, according to the ABC website, the fields of technical cooperation include agriculture (including agricultural production and food security), vocational training, education, justice, sports, health, environment, information technology, occupational accident prevention, urban development, biofuels, air transport, and tourism.

In 2019, Brazil had a track record of 184 projects and programs in South-South and Triangular Cooperation, the majority of which were bilateral South-South Cooperation (51%). In addition, efforts that were under a Triangular Cooperation accounted for 17%. In South-South Cooperation, 77 cases were cooperating countries, while in six cases were as beneficiary countries (see Figure 16-6).



Source: "La Cooperación Sur-Sur y triangular en Iberoamérica 2020" from SEGIB

**Figure 16-6 2019 Brazil Initiatives**

Sectors in which Brazil has provided capacity as a partner include health care, environmental protection, water supply and wastewater treatment, and agriculture and fisheries. Beneficiary countries include environmental conservation, public policy, disaster prevention, and education. The main cooperation partners are the countries of Argentina, Paraguay, Uruguay, and Peru.

### c) Chile

The Chilean Agency for International Development Cooperation (AGCID), established in 1990, is a Chilean public agency that is functionally decentralized, has a legal personality and its own budget. Today, AGCID promotes development cooperation as an essential pillar of its foreign policy. The Guidelines for International Cooperation for Development Policy are based on a concept of cooperation

<sup>21</sup>"DIAGNOSTICO DE LOS MARCOS NORMATIVOS E INSTITUCIONALES Para la gestión de la Cooperación Sur-Sur en los países de Iberoamérica" (PIFCSS Report, 2014 edition)

that is strongly linked to a human rights-based approach, taking into account deep inequalities between and within the region and addressing the greatest challenges and public priorities that are oriented towards a more inclusive and sustainable development.

For AGCID, Triangular Cooperation is understood from the principles of horizontality, consensus, fairness, and mutual benefit. To realize this, a method for forming partnerships with various countries and international organizations was conducted (see Table 16-8).

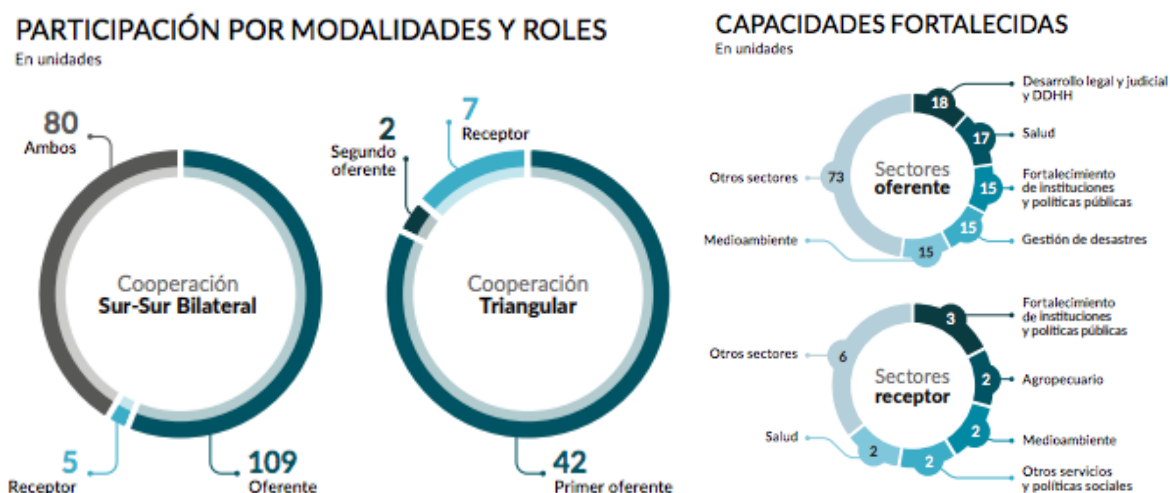
**Table 16-8 List of Partners in Triangular Cooperation of AGCID**

Country	Overview
Germany	Relations between Chile and Germany have a history of nearly 30 years in terms of international cooperation for development. This relationship has strengthened over time and is reflected in the bilateral cooperation. Chile has received over the years in the form of technical and financial cooperation in development priority areas such as natural resource management. Chile and Germany have also shared experiences and knowledge with third countries through Triangular Cooperation.
Spain	Chile participates in Triangular Cooperation with Spain, promoted through the Chile-Spain Mixed Cooperation Fund, established in 2009 when the two countries signed a memorandum of understanding laying the foundations for the mechanism for the implementation of this form of cooperation. The Fund began its activities in May 2011 following the approval of the Triangular Cooperation Program, which aims to strengthen technical cooperation between Chile and Spain and to facilitate the development of joint actions in third countries.
Japan	Signed in 1999 and implemented by AGCID and JICA since 2000, the Chile-Japan Partnership Program (JCPP) manages and implements Triangular Cooperation involving all stakeholders in the development. Through this program, international courses for third countries, dispatch of experts, and implementation of projects, it becomes possible to reproduce the technical, professional, and academic strengths of each country within the region, thereby reducing cost sharing. This is a successful example of Triangular Cooperation. In February 2018, Japan made a strong commitment to create and promote innovative mechanisms to enable the achievement of development goals, aiming to scale up the Japan-Chile Triangular Cooperation Strategy for Latin America and the Caribbean. <sup>22</sup> Action agendas include cooperation on food security and sustainable agriculture, renewable energy, resilient communities, climate change, and environmental protection, among others.
Mexico	The Strategic Association Agreement concluded by the United Mexican States and the Republic of Chile in 2006 is intended to establish a South-South Cooperation mechanism for the benefit of both countries and international cooperation for the development of third countries. Since 2012, 10% of the Fund's financial resources have been devoted to developing Triangular Cooperation projects to assist Latin America and the Caribbean.
EU	Chile seeks to promote horizontal ties between Latin America, the Caribbean, and Europe to promote knowledge sharing and to leverage the capabilities of all partners to provide solutions aimed at the sustainable development of the region. It participates in Triangular Cooperation with the European Union (EU) through the ADELANTE program. This program was developed to support the formulation and application of public policy through Triangular Cooperation and the peer-to-peer learning it facilitates among Latin American and Caribbean countries. This approach provides an opportunity for these countries to work together, drawing on the experience gained in the transition to higher levels of development.

Source: AECID website

In 2019, Chile had a track record of 294 projects and programs in South-South and Triangular Cooperation, two-thirds of which were bilateral South-South Cooperation. In addition, efforts as under the Triangular Cooperation accounted for 17%. In the case of South-South Cooperation, 109 cases were of the role of a cooperating country, but only five cases were of a beneficiary country. As a country, there were seven cases (see Figure 16-7).

<sup>22</sup> <https://www.chile.gob.cl/japon/relacion-bilateral/cooperacion-internacional/cooperacion-internacional>



Source: "La Cooperación Sur-Sur y triangular en Iberoamérica 2020" from SEGIB

**Figure 16-7 2019 Chile Initiatives**

Sectors in which Chile provided capacity as a partner include the judicial system, health care, public policy, disaster risk reduction, and environmental protection. Beneficiary countries include public policy, agriculture and fisheries, and environmental conservation. The main cooperation partners are the countries of Mexico, Argentina, and Peru.

**d) Mexico**

The organizational structure of international cooperation in Mexico is given in Table 16-9.

**Table 16-9 Organizational Structure of International Cooperation in Mexico**

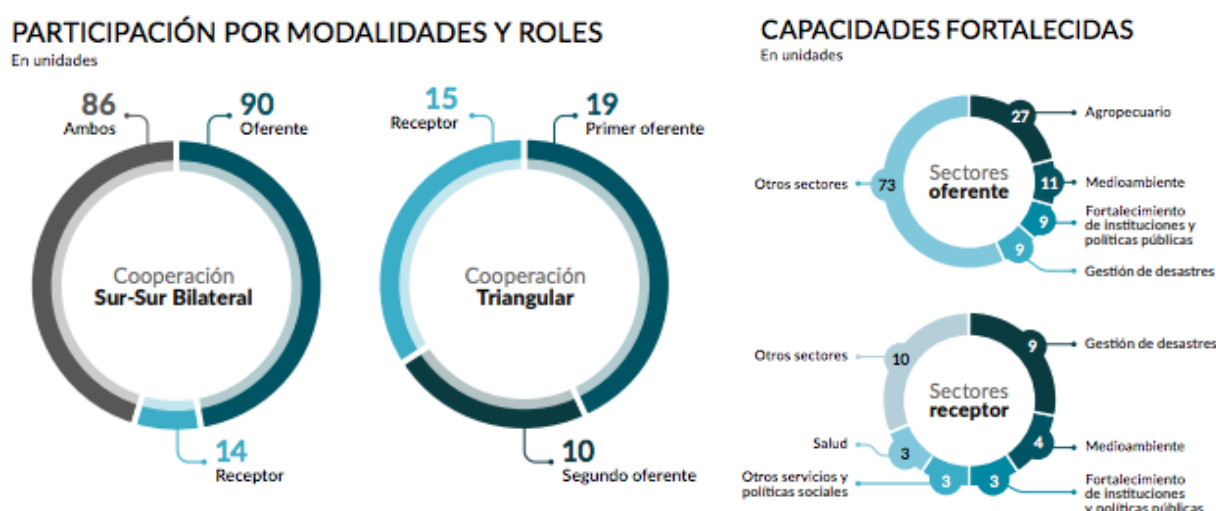
Period	Matter
Agencia Mexicana de Cooperación Internacional para el Desarrollo (AMEXCID)	In 2011, the International Development Cooperation Law was promulgated and the Mexican Agency for International Development Cooperation, AMEXCID, was established. In 2021, the organization of AMEXCID was supposed to start, but according to the hearing, it has not been completed yet. It is the pillar of institutions and administrations empowered to coordinate, plan, promote, implement, and evaluate Mexico's actions and international cooperation programs as an offeror or recipient of cooperation. It is a decentralized body of the Ministry of Foreign Affairs and has technical and managerial autonomy.
Fondo Nacional de Cooperación Internacional para el Desarrollo (FONCID)	A financial pillar managed through a trust fund by a technical and administrative committee composed of the Ministry of Foreign Affairs, AMEXCID, and the Ministry of Finance and Credit.
Programa de Cooperación Internacional para el Desarrollo (PROCID)	A cross-program pillar that establishes a foundation for planning and executing cooperative activities.
Registro Nacional (RENCID)	It is a statistical pillar that informs the System for International Development Cooperation Information (SICID) and facilitates quantification and accountability in terms of the supply and receipt of international cooperation.

Source: AMEXCID

According to interviews with AMEXCID, Mexico is regarded as a middle-income country in the arena of international cooperation, and while receiving aid from developed countries and international organizations, it is actively implementing initiatives as a cooperating country in the Latin American region. At the Tuxtla Summit in 1991, a cooperation fund was established to enable Mexico to provide

South-South Cooperation in the Central American region.<sup>23,24,25</sup>

Mexico's performance in South-South and Triangular Cooperation in 2019 was 292 projects and programs, 65% of which were bilateral South-South Cooperation. Triangular Cooperation efforts accounted for 15%. In South-South Cooperation, 90 cases were as a cooperating country, while 86 cases were as a beneficiary country. As for Triangular Cooperation, Mexico was a cooperating country in 19 cases and a beneficiary in 15 cases (see Figure 16-8).



Source: "La Cooperación Sur-Sur y triangular en Iberoamérica 2020" from SEGIB

**Figure 16-8 Mexico Initiatives (2019)**

Sectors in which Mexico provided capacity as a partner include agriculture and fisheries, health care, public policy, and disaster prevention. Beneficiary countries include disaster prevention, environmental conservation, public policy, and health care. The main cooperation partners are Chile, Colombia, Costa Rica, and Honduras.

The South-South Cooperation Fund in Mexico has the following initiatives (see Table 16-10).

**Table 16-10 Mexican South-South Cooperation Fund**

<sup>23</sup>Implemented on December 13, 2022

<sup>24</sup>Fondo Mexicano para la Cooperación con Centroamérica

<sup>25</sup>Plan desarrollo integral (ECLAC 2018)

Fund	Overview	Case Example
Mexico-Chile South-South Cooperation Fund <sup>26</sup>	<p>Signed on January 26, 2006 and established in 2008.</p> <p>The Chile-Mexico Joint Cooperation Fund is an instrument of international cooperation and is part of the Strategic Association Agreement signed by the United States of Mexico and the Republic of Chile on January 26, 2006.</p> <p>This fund will finance the implementation of bilateral and trilateral development cooperation programs, projects, and actions that promote cooperation between Chile and Mexico and between the two countries towards the third developing countries.</p> <p>The annual budget is USD 2 million, with equal contributions from both countries.</p> <p>Coordination and implementation of the fund is handled by a cooperative committee made up of representatives from AMEXCID, the Mexican Ministry of Foreign Affairs and AGCID.</p>	<p>[Project] Strengthening Care and Protection Mechanisms for Returnees, Victims of Human Trafficking, and Smuggled Migrants in the Countries of the Northern Central American Triangle</p> <p><b>【Goal】</b> Support the initiatives the governments of El Salvador, Honduras, and Guatemala in implementing to combat the impact of COVID 19, with a focus on their migrant populations.</p> <p>[Implementation system]</p> <p>Chilean embassies in El Salvador, Honduras, and Guatemala Mexican embassies in El Salvador, Honduras, and Guatemala Ministry of Foreign Affairs of Guatemala Secretary of Foreign Affairs and International Cooperation of Honduras National Council for the Protection and Development of Migrants and Their Families of El Salvador (CONMIGRANTES)</p>
		<p>[Project] Earthquake Risk Management Capability Improvement Project SICA/Chile/Mexico Horizontal Cooperation</p> <p><b>【Goal】</b> To strengthen capacity through two courses co-taught by Chile and Mexico (“Construction Regulations and Standards, Relationship between Seismic Risk Mitigation and DRM” and “DRM in Public Investment Planning and Implementation”).</p> <p>[Implementation system]</p> <p>Chilean Ministry of the Interior National Emergency Management Agency (ONEMI) National Disaster Management Center (CENAPRED) Central American and Dominican Republic Coordinating Center for Disaster Prevention (CEPREDENAC) of the Central American Integration System (SICA)</p>
Mexico-Uruguay Foundation <sup>27</sup>	<p>Established on August 14, 2009.</p> <p>Coordination and implementation of the Fund is handled by a Cooperation Committee made up of representatives from AMEXCID and the Uruguay Agency for International Cooperation (AUCI).</p> <p>Projects to be financed by the Joint Fund are selected through biennial solicitations for public agencies, states and municipalities.</p> <p>The Joint Cooperation Fund has an annual budget of USD 500,000, which is contributed equally by both countries.</p>	<p>[Project] Strengthening the Capacity of Public Institutions in Managing Climate Change Adaptation and Mitigation Measures</p> <p><b>【Goal】</b> Strengthen institutional capacities in managing climate change adaptation and mitigation strategies through capacity building. Learn about different ecosystem conservation strategies through public participation and community empowerment. Develop action plans tailored to the needs of each country, with a focus on combating climate change.</p> <p>[Implementation system]</p> <p>General Directorate of Forestry, Ministry of Livestock, Agriculture and Fisheries (MGAP), Uruguay</p>
		<p>[Project] Learning Communities for Sustainability in Rural and Urban Contexts of Chiapas and Montevideo</p> <p><b>【Goal】</b> Transfer of knowledge, technology and experience in areas such as environmental protection, sound management of household waste and food sovereignty for the sustainable improvement of neighborhoods, communities and rural schools in both regions.</p> <p>[Implementation system]</p> <p>Faculty of Agriculture, Southern Border University - University of the Republic of Uruguay (UdelaR)</p>

Source: Prepared by the JICA Study Team based on the websites of each fund

According to an interview with AMEXCID, the South-South Cooperation Fund was concluded with a country at the same level of development as Mexico and that there is an advantage in being able to promote the capacities of each country.

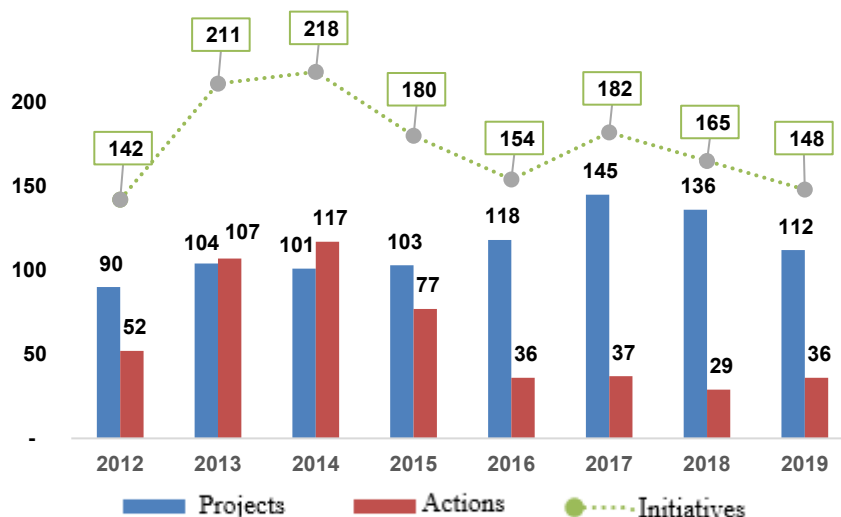
<sup>26</sup><https://www.agci.cl/fondo-chile-mexico-menu>

<sup>27</sup><https://www.gob.mx/amexcid/acciones-y-programas/fondo-conjunto-de-cooperacion-mexico-uruguay>

## (2) Triangular Cooperation

### 1) Overview

According to the 2020 Report on South-South and Triangular Cooperation in Ibero-America conducted by SEGIB, the number of participating cooperation projects decreased from a peak of 218 in 2014 to 148 between 2012 and 2019 (see Figure 16-9). However, when looking at the graph by distinguishing between actual projects and temporary actions (initiatives and trainings), the number of projects remains constant, as in bilateral South-South Cooperation.<sup>28</sup>

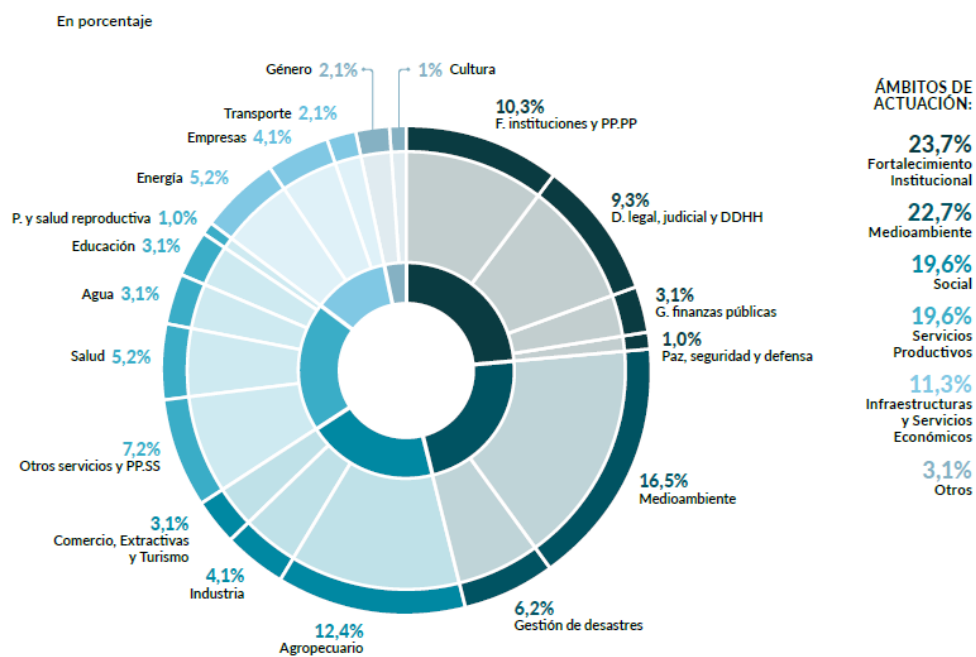


Source: Prepared by the JICA Study Team based on SEGIB data

**Figure 16-9 Number of Triangular Cooperation Projects**

With regard to capacities strengthened through Triangular Cooperation, there was a change in the trend of regional sectoral priorities from 2010 to 2019, with “contribution to environmental conservation” (16.5% of initiatives) increasing. Half of the cooperation is related to SDG 16 (Peace, Justice, and Strong Institutions), SDG 2 (Zero Hunger), SDG 11 (Sustainable Cities and Communities), and SDG 13 (Climate Change) (see Figure 16-10 and Figure 16-11).

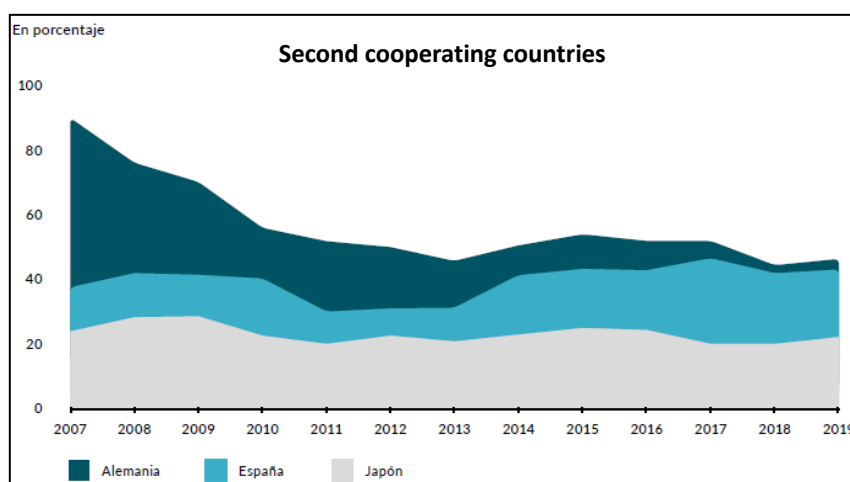
<sup>28</sup><https://www.segib.org/?document=informe-de-la-cooperacion-sur-sur-y-triangular-en-iberoamerica-2020>



Source: "La Cooperación Sur-Sur y triangular en Iberoamérica 2020" from SEGIB

**Figure 16-10 Triangular Cooperation Sectors**

In addition, Germany, Spain, and Japan have a large presence in that order as second cooperating countries that provide support for forming partnerships for Triangular Cooperation and provide financial and technical support. The Section 16.3.2 of this paper shows the trend.



Source: "La Cooperación Sur-Sur y triangular en Iberoamérica 2020" from SEGIB

**Figure 16-11 Contributors to Triangular Cooperation (per project number)**

**2) Emerging Country Donor**

In addition to countries such as Argentina, Brazil, Chile, and Mexico, which have abundant achievements in South-South and Triangular Cooperation as cooperating countries, there are several other countries that have announced their policies to actively engage in such cooperation in the future (see Table 16-11).

**Table 16-11 Emerging Country Donor Policies for South-South and Triangular Cooperation**

Country	Jurisdiction	Policy on South-South Cooperation	Purpose/Policy
Costa Rica	<p>Ministerio de Planificación Nacional y Política Económica (MIDEPLAN): Responsible for project formulation, negotiation, coordination, approval and evaluation in technical cooperation.</p> <p>Ministerio de Relaciones Exteriores y Culto General Directorate/Secretary General of the Ministry of Foreign Affairs (Ministry of Foreign Affairs' International Cooperation Bureau): Receives a project from MIDEPLAN, evaluates its relevance with national policies, and coordinates with the government and international organizations.</p> <p>Ministerio de Hacienda for Loan Aid</p>	<p>Plan Nacional de Desarrollo (PND) 2018-2022 Costa Rica 2014–2022</p> <p>International Cooperation Policy POLÍTICA NACIONAL DE COOPERACIÓN 2020 2022.</p> <p>Lineamientos de Cooperación Internacional</p>	<p>Citizen security, environment/regional planning, risk management, competitiveness/innovation, and social welfare<sup>29</sup></p>
El Salvador	<p>Establishment of El Salvador International Cooperation Agency (ESCO) (June 2020)</p>	<p>Marco de Desempeño de la Cooperación Sur-Sur y Triangular (2015)</p>	<p>Optimize opportunities and potential for international cooperation and strengthen international cooperation for the economic and social development of El Salvador</p>
Panama	<p>Ministry of Foreign Affairs MIRE</p> <p>Dirección de Cooperación Internacional</p> <p>Departamento de Cooperación Bilateral y Multilateral</p>	<p>Plan Nacional de Cooperación de la República de Panamá (PNC) “Panamá Cooperación 2030” (2017)</p>	<p>Panama's overseas expansion as a cooperating country in South-South Cooperation. Areas of Panama's success include canal management (multifaceted such as freight and transport logistics and large-scale infrastructure management), banking systems, and civil services</p>

Source: Prepared by the JICA Study Team

### a) Costa Rica

According to an interview with the Ministry of Foreign Affairs of Costa Rica, although Costa Rica is an upper middle-income country in terms of the level of international cooperation, it still faces the issue of inequality and needs development assistance in order to achieve substantial development. On the other hand, Costa Rica has technological strengths in a wide range of fields and is able to share learning and knowledge with other countries through South-South and Triangular Cooperation. It has become an important modality to play a role as a country. In this context, Costa Rica's international cooperation priorities are directed towards meeting its needs as a beneficiary of development cooperation and strengthening its role as a provider of technical cooperation. Costa Rica's foreign policy also establishes the importance of strengthening South-South Cooperation as a means of supporting development, stating that "in the process of mutual cooperation, each country is equally or relatively developed. It is a viable option for promoting progress based on the resources and experiences that can be shared with

<sup>29</sup>At the hearing held on December 6, 2022, it was confirmed that the change in priority areas due to the impact of COVID-19 was temporary and will not change at present.



other countries."<sup>30</sup>

Also, during the interviews, Costa Rica was implementing South-South Cooperation with the Dominican Republic (see Box 16-1) and other countries, and it was shown that they are actively working on it. Compared to Mexico and Brazil, which have budgets through implementing agencies, countries that do not try to implement South-South Cooperation are unable to implement projects smoothly due to budget constraints and lack of funds. Under these circumstances, it is important to be able to secure necessary funding sources through Triangular Cooperation.

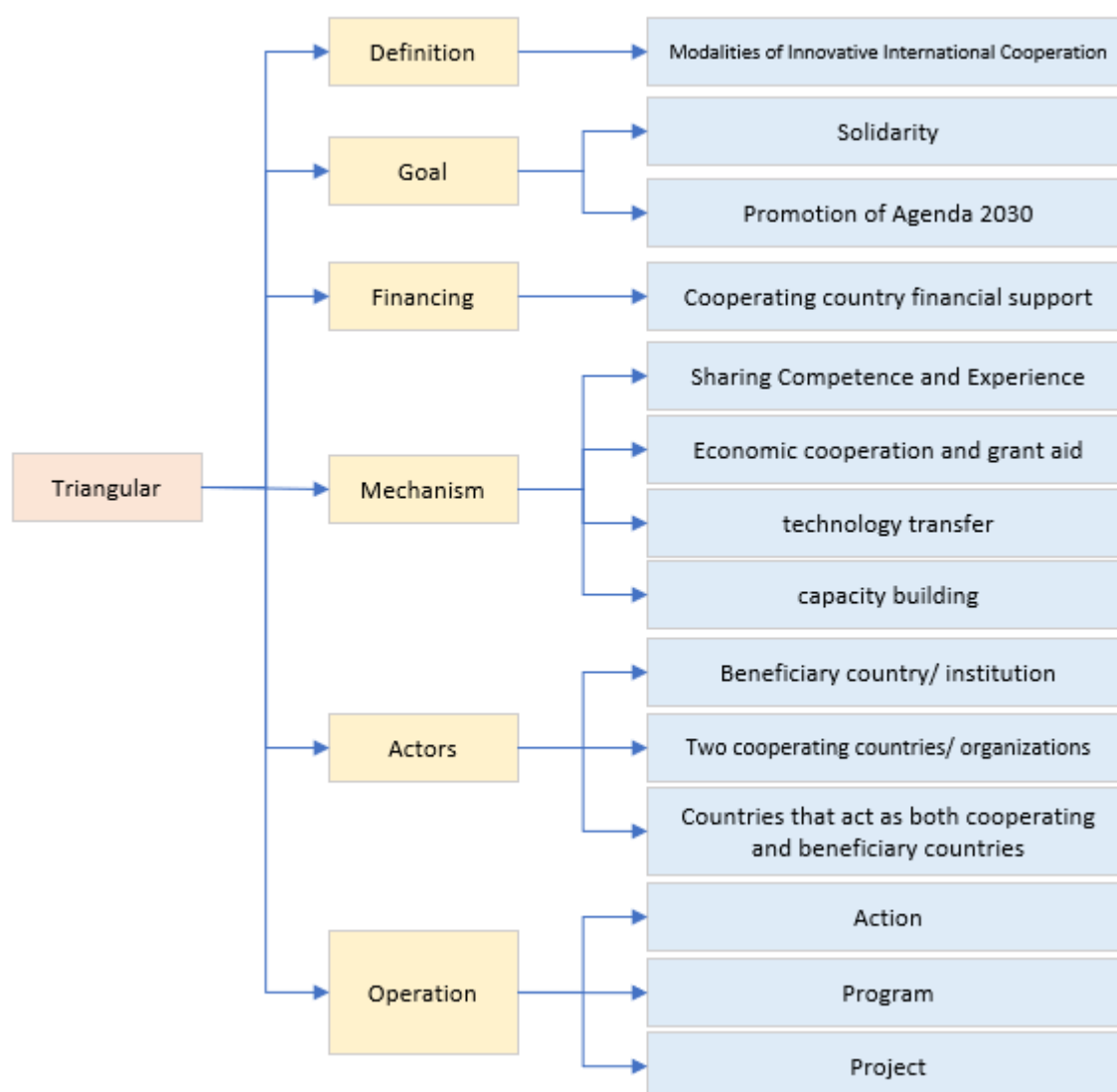
Costa Rica's definition of Triangular Cooperation is the "Financing Mechanism for Technical Cooperation among Developing Countries (TCDP), which combines traditional sources of funding (whether bilateral or multilateral) with horizontal cooperation. It consists of developing countries participating jointly in cooperative action on behalf of third countries."<sup>31</sup>

The framework of Triangular Cooperation by Costa Rica can be organized as follows (see Figure 16-12):

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<sup>30</sup>RREE Costa Rica Ejes de Acción.

<sup>31</sup>Executive decret 35056, 2009, art.2



Source: Prepared by the JICA Study Team based on FLACSO CR<sup>32</sup>

**Figure 16-12 Framework of Triangular Cooperation by Costa Rica**

The advantages of Triangular Cooperation by Costa Rica are stated as follows:<sup>33</sup>

- Diffusion of competencies developed by Costa Rica's institutional framework;
- Sharing experiences and creating a forum for feedback;
- Optimization of human and financial resources;
- Empowerment for the benefit of Costa Rican institutions (providers);
- Network expansion among cooperation partners;
- Strengthening political and cultural ties; and
- Utilization of SDGs.

In terms of Triangular Cooperation, Spain (see 16.3.2(2)2)), Germany, and most recently the EU, Costa Rica cooperates with El Salvador, Guatemala, Honduras, Nicaragua, Panama, and Dominica in

<sup>32</sup>"Evaluación del Programa de Cooperación Triangular Costa Rica – España – América Latina y el Caribe" (from the July 2022 Edition)

<sup>33</sup>Ibid

the Central America and Caribbean region. Programs are being implemented in republics and other countries. Although the amount of the project is relatively small compared with normal development cooperation, the JICA Study Team has confirmed through interviews with Costa Rica that meaningful activities are being carried out in terms of sharing capabilities and experiences with other countries.<sup>34</sup>

### **Box 16-1 Examples of South-South and Triangular Cooperation between Costa Rica, the Dominican Republic, and Germany**

The good practice between Costa Rica, the Dominican Republic and Germany from July 2017 to January 2021 is "Developing Innovative Financing Mechanisms for Coral Reef Conservation in the Dominican Republic". The outline is as follows:

- First collaborator: Costa Rica's MIDEPLAN, Ministry of Energy and Environment, Deputy Minister of Water, Sea, Coasts and Wetlands, and National System of Protected Areas (SINAC). There are also partnerships with the private sector, with the participation of the Central Volcanoes Development Foundation (FUNDECOR) and the *Association of Costa Rica por Siempre*. There was an input of USD 285,000 in technical assistance (including USD 60,000 from the private sector).
- Second cooperating country: German Agency for International Cooperation (GIZ) (Costa Rica and Dominican Republic branch). The project was implemented through the Development Program of the Mesoamerican Alliance for Biodiversity (DABio). This injected USD 285,000 and acted as coordinator for public-private partnerships.
- Beneficiary countries: Ministry of Environment, Ministry of Economic Development and Planning, and Ministry of International Cooperation of the Dominican Republic. The private sector also participated. USD 90,000 were invested in technical cooperation (USD 60,000 of which was from the private sector).
- Background: Coral reefs in Costa Rica and the Dominican Republic have been threatened with significant mortality in recent decades due to a variety of factors including unsustainable coastal development, pollution, sedimentation, overfishing, and global warming.
- Establishment of innovative financing mechanisms: Beneficiaries of ecosystem services provided by coral reefs (hotel operators) will pay or compensate for their use to develop activities for the maintenance and restoration of coral reefs. The results are as follows:
  - The Government of the Dominican Republic has a legally structured system to facilitate private sector support for the country's conservation efforts.
  - Local governments support financial mechanisms for coral reef conservation in coastal waters.
  - Private companies recognize the value of the environmental services that coral reefs provide.
  - Conservation status of coral reefs in the pilot area is improved.

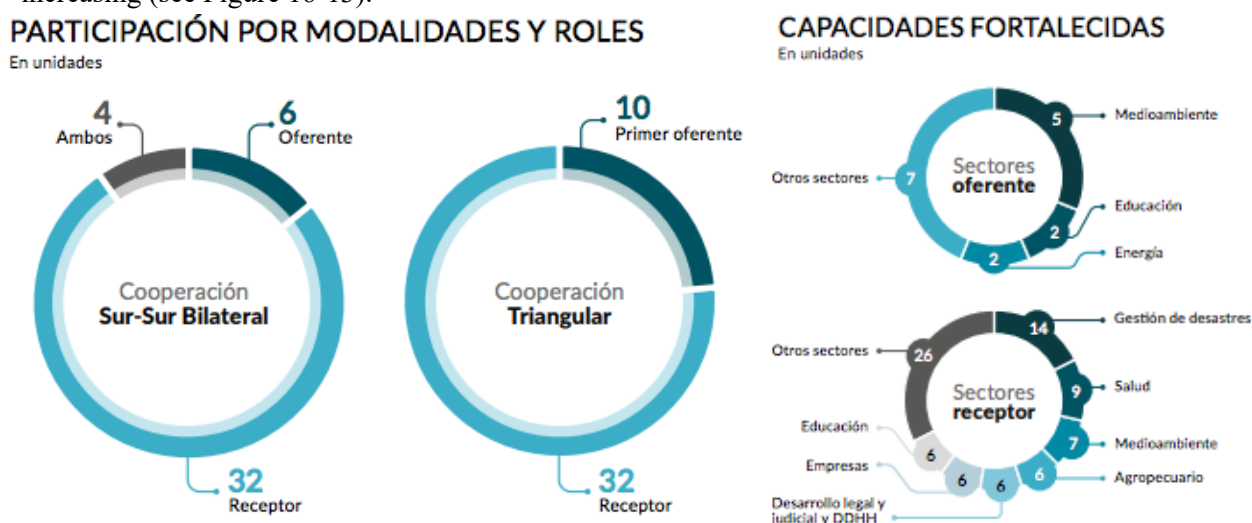
This project focuses on the tourism sector and explores its potential to contribute to the protection and restoration of coral reefs. Building on Costa Rica's experience in launching various projects involving the participation of the private sector in the application of financial mechanisms to recognize the value of the services provided by the ecosystem, an innovative mechanism has been implemented in the Dominican Republic.

Costa Rica advised and accompanied the development of innovative financial mechanisms. It

<sup>34</sup>Interview with Triangular Cooperation Implementing entity in Costa Rica on December 6, 2022

analyzed the legal and political context of the Dominican Republic and evaluated various payment, compensation and contract options. In addition, Costa Rica has built a monitoring and evaluation system, and was also responsible for knowledge management and systematization, as well as creating instruments and tools to facilitate replication of best practices.

According to the SEGIB report, Costa Rica's performance in South-South and Triangular Cooperation in 2019 was 149 projects and programs, of which 28% were bilateral South-South Cooperation. Similarly, 28% of the efforts were for Triangular Cooperation, and the remaining 44% were intra-regional South-South Cooperation. Efforts as a beneficiary country account for two-thirds of the total, but there is also a role as a cooperating country, and the presence of emerging country donors is increasing (see Figure 16-13).



Source: "La Cooperación Sur-Sur y triangular en Iberoamérica 2020" from SEGIB

**Figure 16-13 Costa Rica's Performance in South-South and Triangular Cooperation in 2019**

Sectors in which Costa Rica has provided capacity as a partner are environmental protection, education, and energy. Beneficiary countries include disaster prevention, environmental conservation, agriculture and fisheries, the judicial system, and education. The main cooperation partners are the countries of Guatemala, Panama, and El Salvador.

**b) El Salvador**

International cooperation in El Salvador was previously handled by the Ministry of Foreign Affairs' *Viceministerio de Cooperación para el Desarrollo* (VMCD), but this function was transferred to the El Salvador International Cooperation Agency (ESCO), which was established in June 2020. With this establishment, it will operate under the direction of the President as an administrative unit with functional autonomy within the Office of the President.<sup>35</sup>

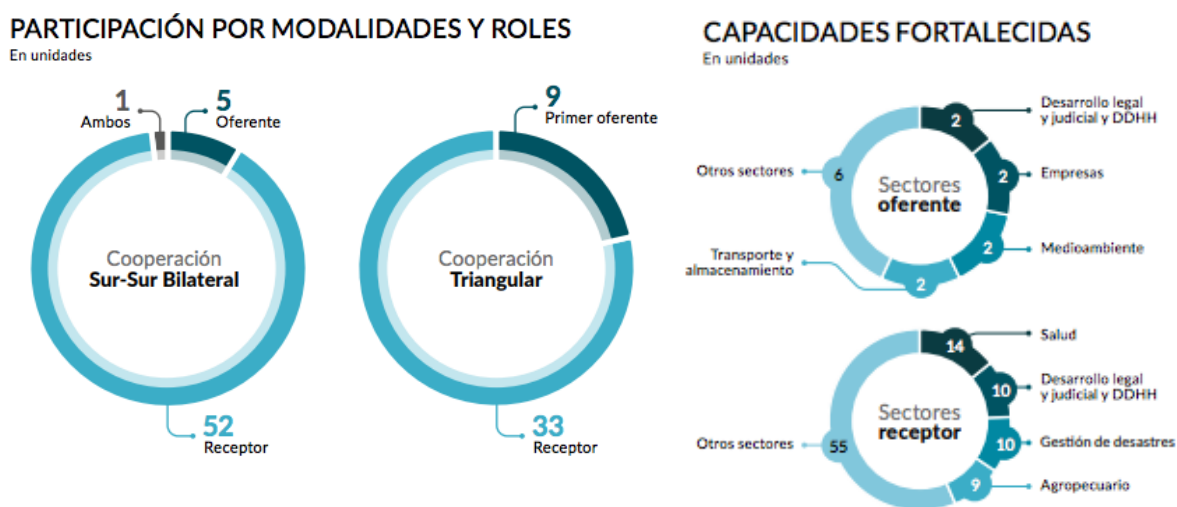
This institution aims to optimize the opportunities and possibilities of international cooperation for the economic and social development of El Salvador and works through new and efficient methods of international cooperation. Similarly, resources may be managed in various international cooperative

<sup>35</sup>ESCO marco institucional

bodies in accordance with the strategic priorities of the Presidential Decree on Cooperation, Technical Assistance, and Contributions of all kinds.

According to interviews with ESCO, in Central and South America, joint committees for South-South Cooperation are being held with Mexico, Brazil, Uruguay, Peru, and Costa Rica, and there is Triangular Cooperation with the Korea International Cooperation Agency (KOICA).

In 2019, El Salvador's performance in South-South and Triangular Cooperation was 149 projects and programs, 39% of which were bilateral South-South Cooperation. In addition, efforts under the Triangular Cooperation accounted for 28%. In South-South Cooperation, there were five cases where the role was as a cooperating country, while 52 cases were as a beneficiary country. Many of them participate as beneficiary countries, but they are also steadily increasing their achievements as cooperating countries (see Figure 16-14).



Source: "La Cooperación Sur-Sur y triangular en Iberoamérica 2020" from SEGIB

**Figure 16-14 El Salvador's Performance in South-South and Triangular Cooperation**

Sectors in which El Salvador provided capacity as a partner country include environmental conservation and transportation. Beneficiary countries include health and medical care, judicial systems, disaster prevention, and agriculture and fisheries. Main cooperation partners are the countries of Costa Rica, Honduras, and Guatemala.

### c) Panama

In Panama, the Department of International Cooperation of the Ministry of Foreign Affairs integrates, negotiates, and follows up on projects and programs. In bilateral and multilateral cooperation, it promotes and develops cooperation mechanisms through the development of international technical cooperation agreements, plans, and programs that correspond to the commitments made in the National Cooperation Plan of the Republic of Panama.<sup>36</sup>

In South-South Cooperation, Panama has indicated its intention not only as a beneficiary country but also as a cooperating country. Areas in which Panama has experienced success include canal management (freight and transport logistics, management of large infrastructures, etc.), banking

<sup>36</sup>Reglamento Interno Del Ministerio De Relaciones Exteriores. Pág. 37

systems, and civil services.

According to interviews with the Panamanian implementing agency, although they do not have much experience with Triangular Cooperation, they are implementing it through Spanish and German funds, and they prefer the ease of use of this funding mechanism and the speed of response. Another advantage is that the joint committee provides a forum for discussing the needs and offers of Panama's Triangular Cooperation. On the other hand, compared with Mexico, Brazil, and Chile, the lack of budget through the executing agency is a constraint in South-South and Triangular Cooperation. Some commented that COVID-19 made it difficult to implement the project as majority of the budget was allocated to domestic priorities. In terms of cooperation with Japan, there are needs for assistance in areas such as national organizational structure, environmental conservation, support for persons with disabilities, culture, ports, agriculture and fisheries, and disaster prevention.

Panama's performance in South-South and Triangular Cooperation in 2019 was 108 projects and programs, 26% of which were bilateral South-South Cooperation. Efforts for Triangular Cooperation accounted for 18%. In South-South Cooperation, there were four cases where the role was mutual as a cooperating country and a beneficiary country, while 24 cases were as a beneficiary country (see Figure 16-15).



Source: "La Cooperación Sur-Sur y triangular en Iberoamérica 2020" from SEGIB

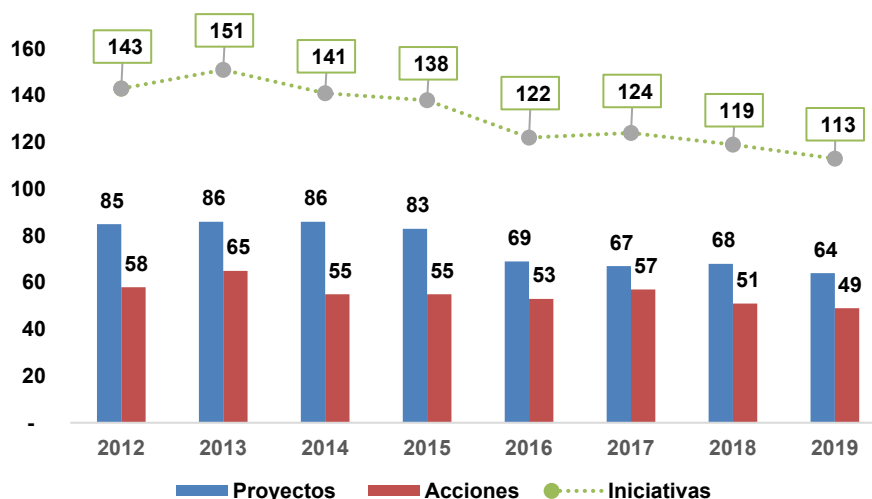
**Figure 16-15 Panama's Performance in South-South and Triangular Cooperation in 2019**

The sectors in which Panama has contributed as a partner are industry, environmental protection, and political participation. Beneficiary countries include disaster prevention, public policy, and corporate support. The main cooperation partners are Costa Rica, Honduras, and Guatemala.

### (3) Regional Cooperation

#### 1) Overview of Regional South-South Cooperation

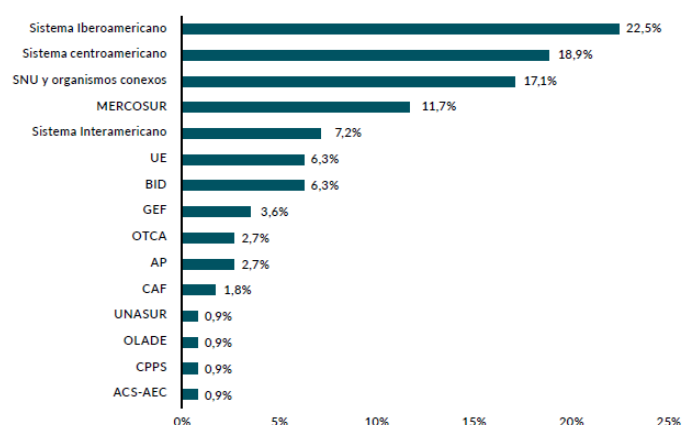
According to the 2020 Report on South-South and Triangular Cooperation in Ibero-America conducted by SEGIB, the number of regional South-South Cooperation projects (see Table 16-5) from 2012 to 2019 peaked at 151 in 2013, and decreased slightly to 113. However, it can be said that the overall trend is stable<sup>37</sup> (see Figure 16-16).



Source: Prepared by the JICA Study Team based on SEGIB data

**Figure 16-16 Number of Regional South-South Cooperation Projects from 2012 to 2019**

As for the regional organizations most involved in regional cooperation in FY2019, *Sistema Iberoamericano* (SEGIB) subordinate organizations, SICA, and UN organizations have the largest presence in that order (see Figure 16-17).

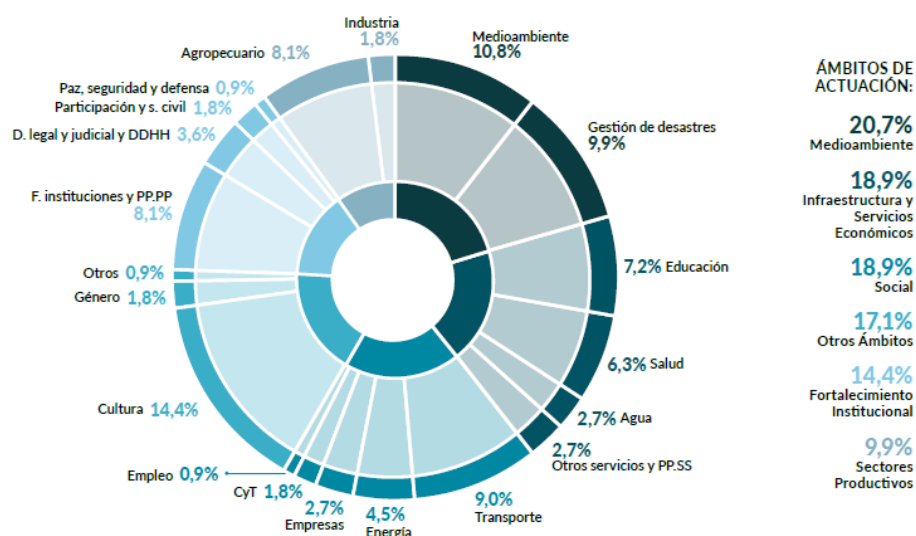


Source: "La Cooperación Sur-Sur y triangular en Iberoamérica 2020" from SEGIB

**Figure 16-17 Regional Organizations Most Involved in Regional South-South Cooperation in FY2019**

<sup>37</sup>SEGIB\_la Cooperación Sur-Sur y triangular en Iberoamérica 2020

In terms of the content of cooperation, the emphasis is on strengthening “culture” (14.4%) and “environment/disaster prevention” (20%) (see Figure 16-18).



Source: "La Cooperación Sur-Sur y triangular en Iberoamérica 2020" from SEGIB

**Figure 16-18 Regional South-South Cooperation Per Sector**

## 2) SICA

The Central American Integration System (SICA) is an institutional framework for Central American regional integration established by Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama. Belize joined as a full member in 2000, and the Dominican Republic in 2013. Its basic purpose is to achieve the integration of Central America and make it a region of peace, freedom, democracy, and development.

SICA was established on December 13, 1991 by signing the Protocol on the Charter of the Central American Organization (Tegucigalpa Protocol) amending the ODECA Charter signed in Panama in 1951. The Central American House, the secretariat of SICA, is headquartered in the Republic of El Salvador.

In 2010, a restructuring of SICA took place, identifying democratic security, climate change and inclusive risk management, social integration, an integrated economy, and institutional strengthening as priority pillars for the region.

SICA has a total of 72 associations, offices, and institutions. Since its establishment, the SICA Secretariat (SG-SICA) has strictly adhered to the Tegucigalpa Protocol and negotiated with countries, national groups, agencies, and other international organizations on the financial and technical cooperation necessary for the proper functioning of SICA (see Table 16-12).

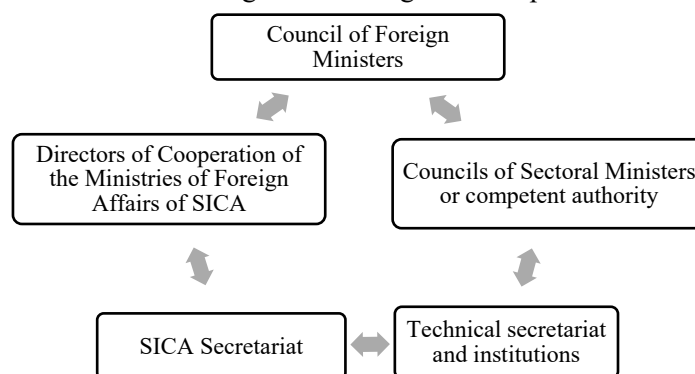


**Table 16-12 Regulatory Framework for Regional Cooperation**

No.	Regulatory Framework for Regional Cooperation
1	Mecanismo de Gestión, Coordinación e Información de la Cooperación Regional del SICA y su Guía Técnica Complementaria Mecanismo de Gestión, Coordinación e Información de la Cooperación Regional del SICA y su Guía Técnica Complementaria
2	SICA Foreign Ministers Council Resolution (Resoluciones del Consejo de Ministros de Relaciones Exteriores del SICA)
3	Mandatos de Jefes de Estado y de Gobierno del SICA, sobre cooperación regional
4	Tegucigalpa Protocol Art 7: For matters without prior guidance, a permanent system of “prior consultation procedures” will be established between member states. Art 8: Establish the functional autonomy of SICA institutions and bodies within the framework of necessary and coherent inter-sectoral coordination to ensure efficient implementation and constant monitoring of decisions emanating from the Presidential Conference. Art 26 literal e: Authorizes negotiations with states, groups of states, agencies and other international bodies on the financial and technical cooperation necessary for the proper functioning of SG-SICA.

Source: Prepared by the JICA Study Team based on SICA materials

Institutional actors involved in the management of Regional Cooperation are shown in Figure 16-19.



Source: SICA material

**Figure 16-19 The Management of Regional Cooperation**

Mechanisms and instruments for the management of regional cooperation are:

- Political Dialogue and Cooperation Forum
- Mixed committee
- Other relevant mechanisms



Source: SICA material

**Figure 16-20 Mechanisms and Instruments for the Management of Regional Cooperation**

The definition of regional cooperation in the SICA framework is given in Table 16-13.<sup>38</sup>

**Table 16-13 Definition of Regional Cooperation in SICA**

Type	Overview
Regional Cooperation <sup>39</sup>	Technical or financial cooperation aimed at enhancing the development and welfare of the countries of the region by supporting the integration process and the achievement of its objectives.
Intra-Regional Cooperation <sup>40</sup>	It corresponds to best practice sharing among SICA member countries, and includes Triangular Cooperation for its funding. The concept of South-South Cooperation is also included in the concept of "Intra-Regional Cooperation."

Source: Prepared by the JICA Study Team based on SICA materials

Table 16-14 and Figure 16-21 show major development partners of SICA. According to this, between 2014 and 2018, the largest amounts of financial cooperation were from Germany, Spain, the Netherlands, China, the United States, Switzerland, and Japan. In 2018, the EU had the highest percentage of direct aid, and Germany's share of indirect aid was very high at 75.56%.

**Table 16-14 Amount of Financial Cooperation by Development Partner Country, 2014**

Development Partner	Amount (USD)
Germany	216,918,853.00
Spain	28,812,174.97
Netherlands	18,565,938.90
China	14,500,000.00
United States	10,765,417.00
Switzerland	10,261,244.98
Japan	5,000,000.00
Luxembourg	1,772,000.00
Turkey	1,200,000.00
Italy	1,000,000.00
Mexico	60,040.00
Total	308,855,668.85

Source: SICA website

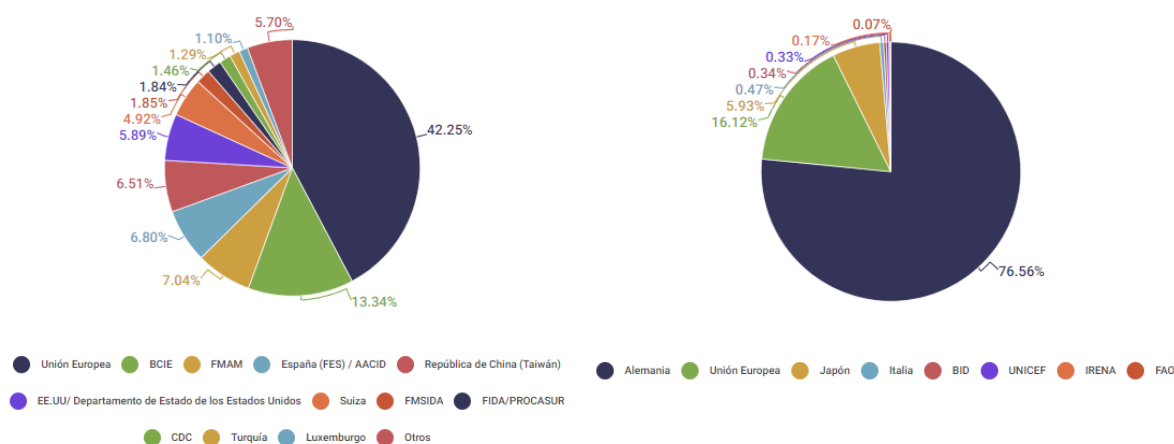
<sup>38</sup>Based on "SICA - MECANISMO DE GESTIÓN, COORDINACIÓN E INFORMACIÓN DE LA COOPERACIÓN REGIONAL" (December 2013).

<sup>39</sup>Corresponds to "Cooperación Regional" in Spanish.

<sup>40</sup>Corresponds to "Cooperación Intrarregional" in Spanish.

Cooperación directa de los mayores Socios para el Desarrollo del SICA en 2018 (US\$)

Cooperación indirecta de los mayores Socios para el Desarrollo del SICA en 2018 (US\$)



Source: SICA website

**Figure 16-21 Major Development Partners of SICA**

**Box 16-2 Details of the Interview regarding the Establishment of the SICA South-South Cooperation Fund**

The SICA South-South and Triangular Cooperation Fund is currently in the preparatory stage. According to the interview, it will be carried out in a participatory manner, with all actors that are part of SICA's cooperative ecosystem: member states, regional organizations, development partners, and civil society. This will go beyond the Fund itself and provide a platform to facilitate the ordering of South-South and Triangular Cooperation efforts already underway at the level of SICA Regional Cooperation, allowing the Fund to begin its operation.

According to interviews with the SICA Secretariat, South-South and Triangular Cooperation carried out at the bilateral level between SICA members is distinct from that carried out within the framework of SICA. It includes efforts aimed at deepening regional cooperation and integration. The 2017 “II High Level Forum on Effectiveness and Trends of Regional Cooperation” recognized declining cooperation from all middle-income and upper-middle-income countries, making access to North-South finance difficult, but development gaps still exist in these countries. At the time of BAPA+40, SICA member countries had a history of participating in a common position, and it can be said that an important step has been taken. In 2020, a feasibility study of the Fund was conducted and confirmed to be a viable and innovative tool as there are no funds of this kind originating from regional integration institutions. Donations from partner countries outside SICA will also be accepted to contribute to this fund and to finance the implementation of projects. In 2021, the planning phase of the Fund for regulatory and conceptual development began, but the absence of a Secretary-General for a year made it difficult to continue the process. It is currently in the research phase for approval by member states and creation of a fund. A platform for political dialogue on South-South Cooperation will be established to create a community of best practice sharing.<sup>41</sup>

During this semester, the initial plan is to conduct postgraduate courses on South-South and Triangular Cooperation, with the support of the EU, and to advance the preparatory stage on the

<sup>41</sup>Werner Vargas was appointed in August 2022.

theme of capacity building. Member states will set priorities on where to start work.

Through this fund, SICA hopes to position itself as a provider of South-South and Triangular Cooperation. Over the past 30 years, SICA has excelled in terms of regional platforms such as regional institutions, systematization, and knowledge management. Later, it is expected to cooperate not only with CARICOM, but also with Africa and Asia.

Chile expressed interest in SICA's South-South and Triangular Cooperation Fund. Informally, several countries have also expressed interest, including Germany, Spain, Luxembourg, the EU, Morocco, India, and Turkey. Support from Japan, as a strategic partner, is also expected. According to the interview, the creation of the fund could solve management issues of Triangular Cooperation and save time.

### 16.2.3 Trends in South-South, Triangular, and Regional Cooperation in the Caribbean Region

#### (1) SIDS

At the United Nations Conference on Environment and Development (UNCED, commonly known as the Earth Summit) held in Rio de Janeiro, Brazil in 1992, Small Island Developing States (SIDS) were recognized as a group of developing countries with particular social, economic, and environmental vulnerabilities.

The SIDS Group has 38 UN Member States and 20 non-UN member states or regional commission associate members. Table 16-15 shows SIDS UN member states by continent. According to this, CARICOM has a large presence in SIDS.

**Table 16-15 SIDS Member States by Continent**

Continent	SIDS member states
Asia	Singapore, Bahrain, East Timor, and Maldives
Oceania	Kiribati, Samoa, Solomon Islands, Tuvalu, Tonga, Nauru, Vanuatu, Papua New Guinea, Palau, Fiji, Marshall Islands, and Federated States of Micronesia
Latin America and Caribbean	Antigua and Barbuda, Cuba, Grenada, Jamaica, Saint Kitts and Nevis, Saint Vincent, Saint Lucia, Dominica, Dominican Republic, Trinidad and Tobago, Haiti, Bahamas, Barbados, Belize, Guyana, and Suriname
Africa	Cape Verde, Guinea-Bissau, Comoros, Sao Tome and Principe, Seychelles, and Mauritius

Source: JICA Study Team based on the SIDS report

A historic achievement of UNCED is the inclusion and recognition of SIDS as a special case of environment and sustainable development. Consistent with this result, Principle 6 of the Rio Declaration confirms the importance of prioritizing the special needs of the least developed countries and the most vulnerable countries in environmental matters.

SIDS, such as islands with small communities, are a special case in terms of both environment and development. These countries are often ecologically fragile and vulnerable. Their small size, limited resources, geographical dispersion, and market isolation are economically disadvantageous and prevent them from achieving economies of scale. For SIDS, the marine and coastal environment is of strategic importance and a valuable resource for development.

Since 1992, the Barbados Plan of Action for Sustainable Development of Small Island States (1994) and the Mauritius Strategy for Further Implementation of Program Actions for Sustainable

Development of Small Island States (2005) have been made and adopted for these countries. Both documents are considered guidelines for sustainable development.

In addition, according to the latest SIDS assessment of the most important areas of assistance, in addition to addressing environmental vulnerabilities and capacity building, efficient provision of assistance is advocated (see Table 16-16).<sup>42</sup>

**Table 16-16 Efforts to Improve Assistance Efficiency in SIDS1**

Efficient assistance	Initiatives
Improving national ownership	Alignment with national priorities Contextual scalability and process simplification Coordination/collaboration Use of each country's system Integrated aid
Focus on results	Use results-focused approaches SDG framework
Promoting inclusive partnerships	Leverage partnerships
Transparency and accountability	Information sharing Building transparency and accountability mechanisms

Source: Prepared by the JICA Study Team based on the SIDS report

One of the first projects to pilot inter-regional South-South Cooperation involving SIDS was the 2010 “South–South Cooperation Between Pacific and Caribbean SIDS (Small Island Developing States) on Climate Change Adaptation and Disaster Risk Management”. The project involved and coordinated regional agencies in both regions mandated by governments to address climate change and disaster risks, and was facilitated entirely by the UNDP Pacific Centre. It focused on climate risk and disaster management issues common to SIDS and shared good practices and methodologies for risk management that are working well in these island nations. Over the course of three years, the project is one of several successful examples of building important organizational relationships between the two regions, introducing key persons and expertise from both sides, and establishing the basis for several ongoing sustainable partnerships. Most of the project funding was provided by the UNDP-Japan Partnership Fund. The funding was given in recognition of Japan's deep understanding of SIDS risk issues, given its experience as a multi-island country that has been hit by disasters such as tsunamis and earthquakes.<sup>43</sup>

## (2) CARICOM

The Caribbean Community (CARICOM) is a political and economic union and intergovernmental organization of 15 countries (14 nation-states and 1 dependent state) throughout the Caribbean.

JICA's cooperation policy covers 14 CARICOM member countries, excluding Montserrat (British Territory). Table 16-16 shows the CARICOM member countries that are members of OECS and SIDS. It shows that all member states are members of SIDS.

<sup>42</sup>“Improving Development Impact in Small Island Developing States: Implementing Effectiveness Principles” (Joint Report by AOSIS, OECD, United Nations, etc. - 2022)

<sup>43</sup>Tackling Global Challenges Through Triangular Cooperation (JICA-RI, 2013)

**Table 16-17 CARICOM Member States Participating in OECS and SIDS**

CARICOM Member Countries	OECS	SIDS
Antigua and Barbuda	X	X
Guyana		X
Grenada	X	X
Jamaica		X
Suriname		X
Saint Vincent and the Grenadines	X	X
Saint Kitts and Nevis	X	X
Saint Lucia	X	X
Dominica	X	X
Trinidad and Tobago		X
Bahamas		X
Haiti		X
Barbados		X
Belize		X

Source: Created by the JICA Study Team based on the websites of each organization

The main objectives of CARICOM are to promote economic integration and cooperation among member countries, ensure equitable sharing of integration benefits, and coordinate foreign policy. It was established in 1973 with four founding members signing the Treaty of Chaguaramas. Its main activities are as follows:

- Coordination of economic policies and development plans;
- Devising and implementing special projects for the least developed countries within its jurisdiction;
- Operation as a regional single market for many member states (CARICOM single market); and
- Responding to regional trade disputes.

In 2001, government leaders revised the Chaguaramas Treaty to effect the transformation of Common Market CARICOM into a Caribbean Single Market Economic Zone.

CARICOM's decision-making process is guided by the Conference of the Heads of Government, which is held twice a year. The strategic planning and coordination are in areas such as foreign policy. Below that, there are ministerial-level councils by function, which deal with trade/economic development, human resources/social development, and finance/planning. The CARICOM Secretariat serves as the main coordinating subordinate body and is also responsible for coordination with donors. Foreign policies covered in CARICOM's 2020 Annual Report include Canada, Costa Rica, Cuba, Ireland, Norway, the U.S., the Association of Caribbean States (ACS), and the EU.

Under CARICOM, there are a total of 28 institutions of two types: Community Institutions and Associate Institutions. Table 16-17 shows the organizations that JICA has a relationship with, the organizations that JICA has interviewed in the past, the organizations with which JICA has discussed the formulation of proposals, and the organizations that may become C/Ps.

**Table 16-18 Organizations Affiliated with CARICOM having Relations with JICA**

Relationship with JICA	CARICOM Affiliated Agencies
Institutions involved in ongoing projects	Caribbean Regional Fisheries Mechanism (CRFM) Caribbean Disaster Emergency Management Agency (CDEMA) Caribbean Public Health Agency (CARPHA)
Institutions interviewed in the past or institutions with whom proposal formulation was discussed	University of the West Indies (UWI) Caribbean Community Climate Change Center (CCCCC) Caribbean Development Bank (CDB)
Potential C/P	Caribbean Center for Renewable Energy and Energy Efficiency (CCREEE) Caribbean Tourism Organization (CTO) CARICOM Development Fund (CDF) Caribbean Telecommunications Union (CTU) Caribbean Agricultural Health and Food Safety Agency (CAHFSA) Caribbean Agricultural Development Institute – CARDI

Source: Prepared by the JICA Study Team based on JICA materials

## 16.3 Support Policy by Development Partners

### 16.3.1 International Efforts in South-South and Triangular Cooperation

With the development of South-South and Triangular Cooperation, international fora have emerged to encourage this kind of effort. These are presented in Table 16-19.

**Table 16-19 International Forums on South-South and Triangular Cooperation**

Sovereign Authority	Forum Name
AGCED	Global Partnership Initiative on Effective Triangular Cooperation
Delhi Process	Research and Information System for Developing Countries (RIS)
ECLAC	Latin American and the Caribbean Economic Commission South-South Cooperation Commission Latin American and Caribbean Forum on Sustainable Development
FCD	Development Cooperation Forum
HLPF	High-level Political Forum on Sustainable Development
NeST	Network of Southern Think Tanks (NeST)
OECD	Development Cooperation Bureau
SEGIB	Ibero-American Secretariat Program for Strengthening South-South Cooperation (PIFCSS)
UN	<ul style="list-style-type: none"> <li>• UN High-Level Commission on South-South Cooperation</li> <li>• Economic and Social Council (ECOSOC)</li> <li>• Group: G20, G77+China, etc.</li> </ul>
UNOSSC	United Nations Office for South-South Cooperation

Source: JICA Study Team

In 2015, the international community adopted the 2030 Agenda for Sustainable Development, recognizing the important role of South-South Cooperation in achieving its goals and the Sustainable Development Goals (SDGs). The 2030 Agenda, together with key documents such as the Addis Ababa Action Agenda 8, the Paris Declaration, and the Sendai Framework for Disaster Risk Reduction 2015-2030, is designed to strengthen international cooperation for development through North-South, Triangular and Multilateral Cooperation. South-South Cooperation activities are being promoted as a complement to inter-regional cooperation.

This section lists major international frameworks for South-South and Triangular Cooperation.

#### (1) GPIs

The Global Partnership Initiative (GPI) on Effective Triangular Cooperation (AGCED) is a global multi-stakeholder platform launched at the Fourth High Level Forum on Aid Effectiveness held in Busan in 2011.

The multi-stakeholder partnership known as the “Global Partnership Initiative (GPI) on Effective Triangular Cooperation” led by Mexico, Canada, Islamic Development Bank, Japan, OECD, UNOSSC,

Ibero-American Program (PIFCSS), Chile, African Union Development Agency (AUDA-NEPAD), and Norway was launched with the aim of fostering and promoting discussions on Triangular Cooperation, especially in anticipation of the Buenos Aires Conference in 2019. More than 50 countries, international organizations, civil society organizations, private sector representatives, and research institutes are GPI members, and have experience in Triangular Cooperation and systematization of good practices, which defines the guiding principles of this modality. The aim is to build an operational framework.

As a GPI-led member, Japan can actively participate in strategic working groups (such as advocacy) and work to disseminate the principles, definitions, and methodologies that Japan adopts in South-South and Triangular Cooperation. Similarly, Japan's pioneering presence and experience in Triangular Cooperation can contribute to the improvement of issues in project implementation, management, and evaluation through the participation of JICA staff.

## **(2) OECD**

The work of the OECD Department of Development Cooperation (DCD) in the field of Triangular Cooperation began in 2009 with a series of events organized with DAC Member States and other partners to explore, define, and share Triangular Cooperation and its principles. It was launched to identify activities already being undertaken by countries within the framework.

In 2009, the Task Team on South-South Cooperation was launched under the framework of the DAC Working Group on Aid Effectiveness. The group aims to prepare input for the Busan High Level Forum (2011), stimulate discussion at the global level, and document experiences in South-South and Triangular Cooperation.

The OECD has made efforts to document and record its experience with Triangular Cooperation through regular surveys of a range of countries, not just the DAC, and through study papers on issues such as aid effectiveness. OECD has also built an online repository and contributed as a member of the GPI for Triangular Cooperation.

Japan can increase its presence in this kind of modality by actively participating in Triangular Cooperation forums. Disseminating information on Japan's efforts and sharing projects in an online repository will also contribute to cooperation with each development partner.

## **(3) SEGIB**

SEGIB's activities related to South-South and Triangular Cooperation are activities carried out within the framework of the Iberoamericano Program for Strengthening South-South Cooperation (*Programa Iberoamericano para el Fortalecimiento de la Cooperación Sur-Sur* - PIFCSS).

Activities are carried out at two levels. This first one is the political level through the Ibero-American Cooperation Officer and the second one is the technical level through teams of national cooperation agencies and departments. Forums for dialogue have been created, such as the Collaborators Meeting and the PIFCSS Intergovernmental Council.

The Ibero-American Integrated Data System on South-South and Triangular Cooperation (SIDICSS) is an online platform for countries to register all activities related to South-South and Triangular Cooperation, and is considered the world's largest database on South-South and Triangular Cooperation. It is the primary source of SEGIB's Ibero-American South-South Cooperation report.



SEGIB is actively working with SICA to promote South-South and Triangular Cooperation through PIFCSS. As a first approach, the SICA Secretariat is strengthened in its capacity in the fields of South-South and Triangular Cooperation, management and lessons learned on the implementation and management of the South-South Cooperation Fund, preparation of tools and methodologies for cooperation management, and implementation of both cooperation schemes. Several fora for exchange and technical cooperation have been identified on issues related to promoting multi-stakeholder alliances for development and South-South decentralized cooperation.<sup>44</sup>

#### **(4) UNOSSC**

In 1974, the United Nations General Assembly approved the establishment of a special unit within the UNDP to promote technical cooperation among developing countries. This was established to serve as a forum for sharing good practices and lessons learned in South-South and Triangular Cooperation.

Its main role is intergovernmental and policy support through supporting bodies such as the United Nations High-Level Commission on South-South Cooperation. It also acts to strengthen the effectiveness of the United Nations system in this area. Other efforts include the preparation of a report on the experience of South-South and Triangular Cooperation, the holding of the World South-South Development Expo, and the introduction of the experience of South-South and Triangular Cooperation through the Global Thinkers Initiative for South-South Cooperation.

In terms of operations, it plays a role in establishing and coordinating partnerships for South-South and Triangular Cooperation, and also manages trust funds for South-South Cooperation (IBSA Fund, UNFSSC, PGTF, and India-UN Development Partnership Fund). At the Sixth International Conference on Triangular Cooperation, held in October 2022 and hosted by the OECD and the Portuguese government, it was announced that UNOSSC would set up its first fund specializing in Triangular Cooperation. It is believed that a funding mechanism will be devised to revitalize Triangular Cooperation. Table 16-19 provides an overview of the funds managed by UNOSSC.

#### **Table 16-20 Overview of Funds Managed by UNOSSC**

<sup>44</sup><https://cooperacionsur.org/pifcss-y-sica-fortalecen-trabajo-conjunto-para-la-promocion-de-mecanismos-de-cooperacion-en-la-region/>

Funds Managed by UNOSSC	Overview
India-Brazil-South Africa Poverty and Hunger Alleviation Fund (IBSA Fund)	Started operation in 2006, it supports the response to demand-driven developing countries' development challenges. Through partnerships, the IBSA Foundation implements replicable and scalable projects that can be disseminated to interested developing countries, including best practices in fighting poverty and hunger.
United Nations Fund for South-South Cooperation (UNFSSC)	Established in 1996, it aims to promote, support and implement South-South Cooperation. It constitutes a central component of the United Nations system's support to member states in strategies to engage partners and mobilize resources for joint implementation of innovative and transformative South-South Cooperation activities. In recent years, 29 partners, mostly Member States, have contributed to UNFSSC through the UNOSSC Platform for South-South Cooperation and Dedicated facilities to support initiatives of particular relevance to the South.
India-UN Development Partnership Fund	The India-United Nations Development Partnership Fund (India-United Nations Fund), established in 2017, aims to innovatively implement South-South Cooperation. The Fund and its Commonwealth Window advance the 17 SDGs, provide resources for development cooperation at the multilateral level, and expand partnerships. Emphasis is placed on partnerships with small island states, LDCs, landlocked developing countries, and disaster-affected countries. The Indian government has pledged USD 150 million to the fund to support the project for ten years.
Pérez-Guerrero Trust Fund for South-South Cooperation (PGTF)	Established in 1983, it is operated by UNOSSC on behalf of the Group of 77 (G-77). The PGTF provides catalytic funding for cooperative projects implemented by three or more developing countries in the G-77.

Source: Prepared by the JICA Study Team based on the UNOSC website

Japan has been implementing the Third Country Training Program “Capacity Development for South-South and Triangular Cooperation Management”, which is being implemented by UNOSSC, the Ministry of Foreign Affairs of Brazil, and the JICA Brazil Office. For further development, JICA aims to expand the possibility of South-South and Triangular Cooperation by countries around the world. This is through conducting training on project management methods for implementing countries, beneficiary countries, and countries that have the initiative but have never cooperated before. By collaborating with UNOSSC, which has a wide network, it will be possible to enhance donor assistance in South-South and Triangular Cooperation for emerging and developing countries.<sup>45</sup>

### 16.3.2 Major Donors in South-South and Triangular Cooperation

Germany, Japan, Spain, the U.S., and Norway, in that order, have the largest number of Triangular Cooperation projects among the major players (global share) of the OECD countries. The presence of India and China can also be cited (see Table 16-20).

**Table 16-21 Major Donors for South-South and Triangular Cooperation in OECD Countries**

<sup>45</sup><https://www.jica.go.jp/brazil/office/information/event/20220902.html>

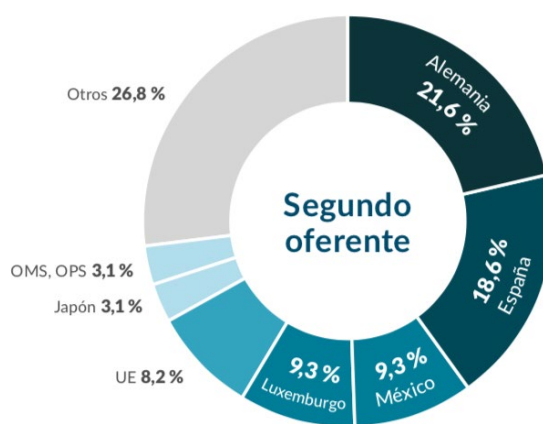
No. of TrC Projects	Actors
> 100	Germany, Chile, Mexico
Between 50 and 100	Japan, Guatemala, Spain, Brazil, Colombia, United States, Salvador, Costa Rica, Dominican Republic, Kenya, Peru, Bolivia, India, Norway, Honduras, Indonesia, Uganda
Between 40 and 49	Tanzania, Mozambique, Niger, Argentina, China (People's Republic of), Ethiopia, Paraguay
Between 30 and 39	Nicaragua, Guinea, Ecuador, Thailand, United Kingdom, Cambodia, Uruguay, South Africa, Nepal
Between 20 and 29	Ghana, Malawi, Panama, Sudan, Haiti, Bangladesh, Burkina Faso, Zambia, Cuba, Nigeria, Senegal, Myanmar, Morocco, Tunisia, Viet Nam, Benin
Between 10 and 19	Madagascar, Mali, Egypt, Lao PDR, Philippines, Italy, Malaysia, Rwanda, Switzerland, Turkey, Afghanistan, Canada, Zimbabwe, France, Israel, Timor-Leste, Belize, Burundi, Jordan, Gambia, Pakistan, Sri Lanka, Togo, Palestine, Yemen, Australia, Cameroon, Mauritania, Namibia, Czech Republic, Suriname
Between 5 and 10	Belgium, Guyana, Kazakhstan, Kyrgyzstan, Algeria, Djibouti, Jamaica, Lesotho, Saudi Arabia, Uzbekistan, Angola, Armenia, Austria, Azerbaijan, Botswana, Chad, Fiji, Gabon, Iraq, Kiribati, Liberia, Libya, Mongolia, Samoa, Somalia, South Sudan, Albania, Cote d'Ivoire, Netherlands, Russia, Sierra Leone, Singapore, Tobago, Bhutan, Cabo Verde, Central African, Georgia, Iran, Lebanon, New Zealand, Papua New Guinea, Qatar, Syrian Arab Republic, Venezuela
Between 1 and 4	Bahamas, Brunei, Comoros, Co-ok Islands, Oman, Portugal, Serbia, Seychelles, Sweden, Tajikistan, Tonga, Turkmenistan, Barbados, Democratic Republic of the Congo, Equatorial Guinea, Eritrea, Finland, Guinea-Bissau, Hungary, Maldives, Marshall Islands, Mauritius, Micronesia, Moldova, Sao Tome, Solomon Islands, United Arab Emirates, Vanuatu, Bosnia and Herzegovina, Anguilla, Bahrain, Croatia, Denmark, Kuwait, Nauru, Palau, Poland, Saint Lucia, Swaziland, Tuvalu, Ukraine, Antigua and Barbuda, Belarus, Republic of Congo, Estonia, Greece, Grenada, Latvia, Lithuania, Macedonia, Monaco, Montserrat, North Korea, St. Kitts and Nevis, Grenadines, Slovenia, Korea, Virgin Islands

Note: List according to number of triangular projects that each country is involved in. Based on data voluntarily reported to the OECD since 2012.

Source: OECD

Germany, Spain, Mexico, and the EU are among the second cooperating countries in Central and South America (see Figure 16-22).

Distribución de los proyectos de Cooperación Triangular en Iberoamérica, según segundo oferente. 2019  
En porcentaje



Source: SEGIB

Figure 16-22 Second Cooperating Countries in Central and South America

- (1) Germany
- 1) Cooperation Policy

Germany has been working on Triangular Cooperation since the 1990s and is said to be one of the

developed countries that is putting the most effort into it, along with Japan and Spain.

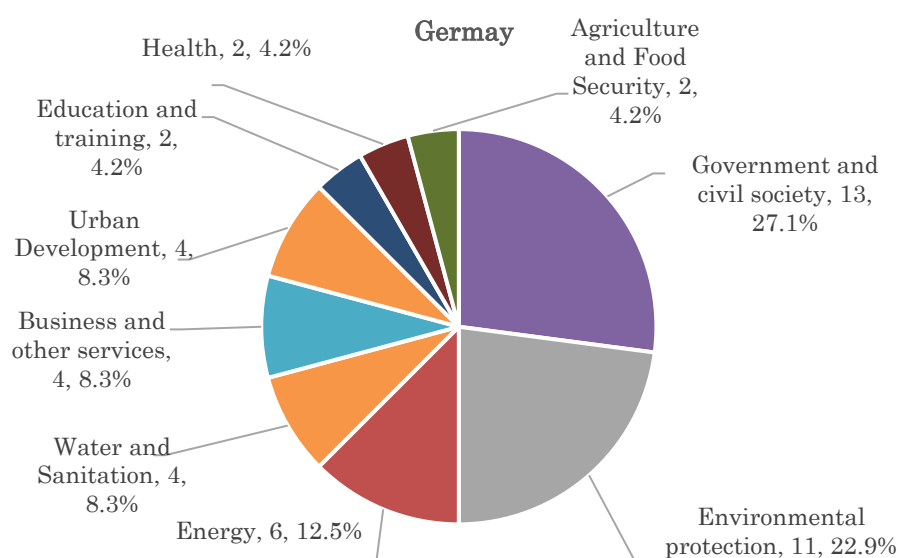
The German Federal Ministry for Economic Cooperation and Development (BMZ) has a cooperation policy on South-South and Triangular Cooperation that has been updated annually since 2013. At the international level, Germany participates in various multilateral forums on Triangular Cooperation, in particular the United Nations, the OECD, the Global Partnership Initiative (GPI) on Effective Triangular Cooperation, and the South-South Cooperation Enhancement Program by SEGIB.

Strategic cooperation with global partners in the BMZ2030 reform is a framework that enables more strategic utilization of development policies and funds, and includes Brazil, China, India, Indonesia, Mexico, Peru, South Africa, and Vietnam.

The German concept of Triangular Cooperation recognizes the existence of three partners (beneficiary partner, pivotal partner, and facilitating partner) according to a relationship model of being effective partners in the design and implementation of projects, rather than simply providing funding. It also builds global strategic partnerships for sustainable development based on mutual learning and aims to increase development effectiveness in recipient countries.

According to OECD data, 146 projects have been implemented since 2012, of which 103 (approximately 70%) are in Latin America.

Major sectors in Central and South America are governance, environmental conservation, energy, etc. Major cooperating countries include Chile, Argentina, Costa Rica, and Mexico (see Figure 16-23).



Source: Prepared by the JICA Study Team based on the OECD repository

**Figure 16-23 Germany Initiatives in Triangular Cooperation**

## 2) Triangular Cooperation Fund

Germany established the Triangular Cooperation Fund for Latin America to manage its technical cooperation in the region. As a competitive fund, this is intended to support projects of a certain scale, but the projects they support were originally small in scale.

- The foundation makes donations of between EUR 3 to 4 million annually. The donation includes both project funding, a training network, conferences on Triangular Cooperation.

- Directly manage funds (does not use government subsidies or transfer funds to cooperation partners).
- Countries make up their contributions in aid-in-kind. Germany contributes the same amount, but financially. This amount will finance the technical assistance that Germany will provide for the project.
- There is flexibility in the method of management and operation. It is not subject to annual budget execution, but is subject to the execution period of the project.
- In 2017, it contributed to eight projects. The project selection criteria are:
  - Presentation format and quality;
  - Contribution of counterparts;
  - Related institutions; and
  - Technical contribution, but not co-financing for South-South Cooperation.
- It is the cooperating organizations that make the project a reality. In the development of the project, it will be carried out in cooperation with ministries and technical agencies, but it will not be approved without the support of the cooperating agencies.
- Post-evaluation of each project is conducted by external consultants hired by GIZ.

In Latin America, Chile is the leading partner, followed by Argentina, Costa Rica, and Mexico. By sector, the focus is on the areas of tourism, environment, energy, and governance (see Table 16-21).

**Table 16-22 German South-South and Triangular Cooperation Fund Project List**

Period	Matter	Amount (EUR)	German Input (EUR)
2022 ~2024	Strengthening regulations to promote improved drinking water and sanitation services (cooperating country: Peru, beneficiary country: Honduras)	760,000	300,000
2022 ~2024	Lessons from the private sector on human rights protection in supply chains (collaborator: Mexico, beneficiary: Colombia)	750,000	300,000
2022 ~2024	Promotion of electric mobility in Honduras (cooperating country: Costa Rica, beneficiary country: Honduras)	1,282,923	300,000
2022 ~2024	Strengthening institutional capacity to promote electric mobility in the Dominican Republic (cooperating country: Costa Rica, beneficiary: Dominican Republic)	703,225	300,000
2021 ~2023	Application of the principles of access to genetic and biochemical resources derived from biodiversity and benefit sharing (ABS) (cooperating country: Costa Rica, beneficiary: Dominican Republic)	705,000	235,000
2021 ~2023	Strengthening the resilience of communities relying on nature tourism in the face of the Impact of the COVID-19 pandemic (partner: Mexico, beneficiary: Guatemala)	250,000	300,000
2020 ~2023	Strengthening public policy for sustainable housing in Guatemala (partner: Mexico, beneficiary: Guatemala)	700,000	250,000
2020 ~2022	Creation of institutional capacity for the development of renewable energy sources and energy efficiency programs, products and applications in Cuban industry	800,000	250,000

Source: Prepared by the JICA Study Team based on the German Foundation website

## (2) Spain

### 1) Cooperation Policy

Cooperation with Spain started its activities under a triangular scheme in 2005. Since 2009, this method has been reflected in the Spanish Cooperation Master Plan (Planes Directores), which is formulated every four years. II Plan Director (2005-2008) and III Plan Director (2009-2012) show the

importance of the South-South Cooperation.

The "*Memorandos de Entendimiento en CT*" provides a concrete and formal framework for the development of Triangular Cooperation and were signed with: Argentina (2009), Brazil (2011), Chile (2009), Uruguay (2011), and Mexico (2012).

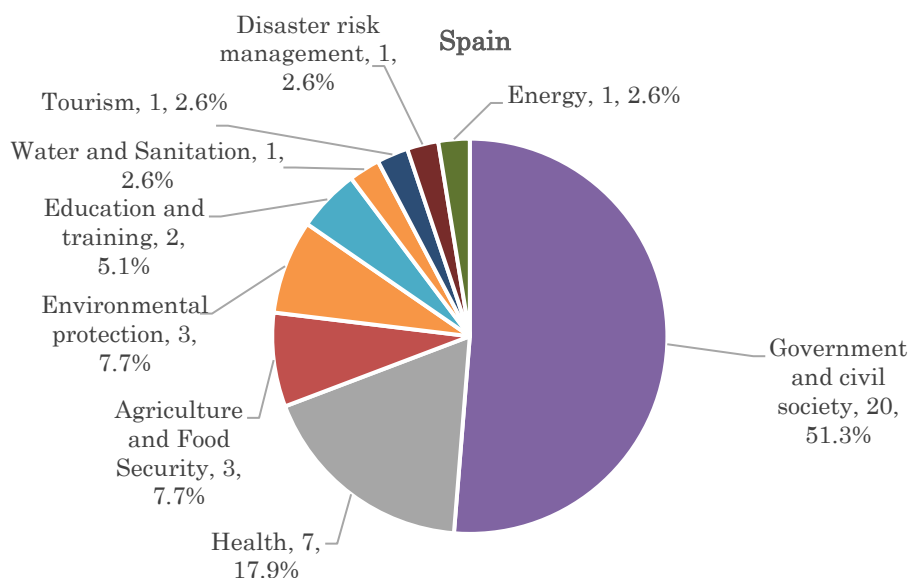
On the other hand, although it has not reached the Memorandum of Understanding (MoU) level, it has established a framework for a Triangular Cooperation program with the Dominican Republic, Panama, and El Salvador. In addition, the "*Acuerdos de Nueva Generación*" establishes a model for technical and scientific cooperation. In addition to bilateral cooperation, JICA has joint projects for third countries of equal or lesser relative development, with Chile, Uruguay, Argentina, and Brazil.

Triangular Cooperation is considered to be a form of cooperation suitable for relations between Spain and its middle-income partner countries, especially Latin American countries. Key elements for a common approach include positioning of technical elements, capacity transfer, horizontality, demand-driven approaches, and partnerships.

In addition, Spain's AECID characterizes Triangular Cooperation as follows:

- At least three partners, first cooperating country (developing country transferring capacities), second cooperating country (in this case Spain, possibly in partnership with other actors), beneficiary country (beneficiary of the implementation of the project), and developing countries are involved.
- Partners must be primarily government-affiliated and must be highly technical cooperation.
- Each vertex can have multiple partners.
- Triangular Cooperation is formalized with some kind of initial tripartite agreement defining roles, resources, coordination mechanisms, objectives, and expected outcomes.
- There is a sharing of skills, technology, or knowledge from at least one participating country to another participating country.
- Cooperation is based on the principles of horizontality, non-interference, unconditional, and mutual learning.

According to OECD data, 87 projects have been implemented since 2012, of which 83 (approximately 95%) are in Latin America. Major sectors in Central and South America are governance, health care, agriculture, environmental conservation, and education. Major cooperating countries in Central and South America are Mexico, Argentina, Brazil, Costa Rica, and Chile (see Figure 16-24).



Source: Prepared by the JICA Study Team based on the OECD repository

**Figure 16-24 Spain Initiatives in Triangular Cooperation**

## 2) Triangular Cooperation Fund

An important experience in Triangular Cooperation is the Triangular Cooperation Program between Costa Rica and Spain. Since 2010, Spain has strengthened its role as provider and recipient of Costa Rica's technical cooperation through the Costa Rica-Spain Triangular Cooperation Program. The purpose of this program is to promote Triangular Cooperation in Latin America and the Caribbean, especially from Costa Rica to other countries in regions with poor economic and social indicators. It is a means of assisting Costa Rican institutions and national bodies to share their techniques, methodologies, knowledge, and experience with various organizations and public bodies in third countries. This also applies to developing countries. It is primarily a platform for the selection, financing, and implementation of technical cooperation projects through Triangular Cooperation implemented by the Ministry of Foreign Affairs of Costa Rica with the participation of MIDEPLAN and the Technical Office for Cooperation in Costa Rica and Spain. The program initially targeted Central America, but was later expanded to include Latin America and the Caribbean. Spain has therefore made Costa Rica its main Triangular Cooperation partner and is rolling out the Costa Rica-Spain Triangular Cooperation Fund in three phases (see Table 16-22).

**Table 16-23 Costa Rica-Spain Triangular Cooperation Program (Phases 1-4)**

Phase	Content	Achievement
Phase I 2010-2011	AECID has awarded Costa Rica's Ministry of Foreign Affairs (MRREEC) a state grant of EUR 160,000 for the implementation of 22 cooperation projects with Central American countries.	22 cooperation projects with Central American countries have been implemented. Recruitment was conducted from April to June 2011. AECID Contribution: USD 187,381 Local C/P: USD 183,245
Phase II 2012-2014	MRREEC received a State Grant amounting to EUR 134,400 from AECID for "Supporting Triangular Cooperation between Costa Rica and Spain in Mesoamerica and the Caribbean". 11 cooperation projects implemented ⇒ Creation of new tools to promote Costa Rica as a supplier country and geographic expansion to Colombia, Mexico, and the Dominican Republic	A total of 11 cooperation projects were implemented, mainly for exchanges. A brochure was produced and used by Costa Rican and international embassies to promote the program. AECID Contribution: USD 177,592 Local C/P: USD 200,000
Phase III 2014-2019	Provided EUR 250,000 state grant to MRREEC in Costa Rica to "support a Triangular Cooperation program on the environment and climate change in Spain, Costa Rica, Latin America and the Caribbean," funding ten cooperative projects ⇒ Expand programs to Latin America and the Caribbean	This includes eight initiatives in which Costa Rica contributed knowledge, one bilateral learning with Uruguay, and one Chilean cooperation project in which Costa Rica was a beneficiary. Ten cooperative projects were funded. AECID Contribution: USD 286,150 Local C/P: USD 183,245
Phase IV 2021-2022	A subsidy of EUR 300,000 was paid to MRREEC. It plans to implement seven projects covering various fields such as human rights, gender equality, health, and disaster preparedness. ⇒ A catalog of Costa Rica's technology offerings on environment and climate change, children and adolescents, population and development, agriculture, and food is now available.	25 proposals were received from nine countries. A total of seven actions were selected in six countries (Argentina, Colombia, Peru, Ecuador, Paraguay, and the Dominican Republic), and the themes were expanded to include gender, risk management, justice, and sustainable fisheries. Actions in which Costa Rica is a beneficiary of another participating middle-income country (Peru) and projects complemented by technical knowledge from Spanish institutions such as the Dominican Republic are also included. AECID Contribution: USD 311,596 Local C/P: USD 199,500

Source: Created by the JICA Study Team based on Costa Rican government materials

The key achievements highlighted by Costa Rica at the level of Costa Rica's institutional strengthening are given below.

- The Costa Rica-Spain Triangular Cooperation Program will strengthen synergies within Costa Rican institutions and contribute to clearer and more effective coordination in the context of international cooperation provided outside the country.
- Costa Rican institutional engineers provide important intellectual capital in terms of information, knowledge, experience, and tools that form the basis of international cooperation projects.
- The Costa Rica Technology Supply Catalog provides tools to connect Costa Rican supply with demand from other countries.
- Technical and administrative controls overseeing project implementation and budget execution keep the program's technical teams up-to-date for proper coordination, oversight, and decision-making.
- There is institutional compatibility between both applicants and providers in terms of political, administrative, and technical aspects.
- Flexibility in planning and implementing project activities allows for change.

In addition to the above results, the Costa Rica International Cooperation Department conducted an interview. Some commented that it was better than the German fund, which does not have enough participation. There are important advantages such as horizontality of decision-making, flexibility of



execution, and shared responsibility. The most distinctive feature of Triangular Cooperation in Spain is the formation of mixed funds as a management model that appropriately reflects the added value of Triangular Cooperation, such as horizontality, mutual learning, and joint responsibility.

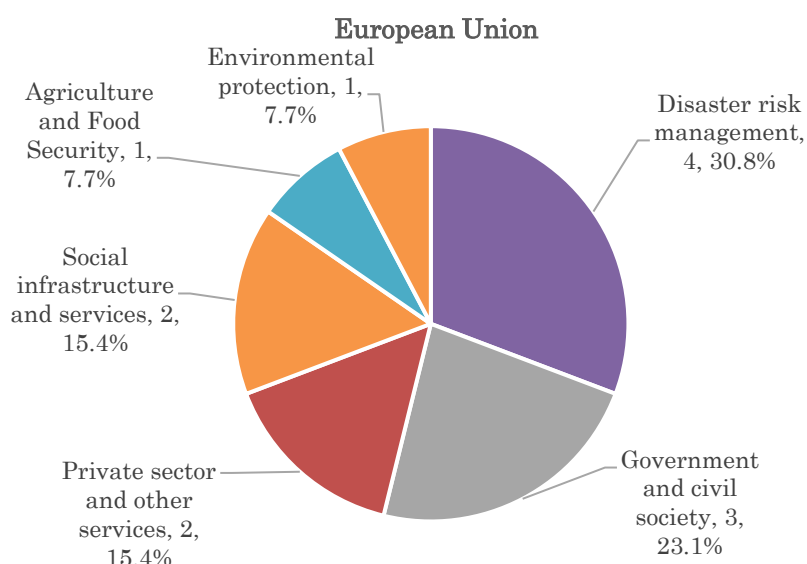
### (3) EU

#### 1) Cooperation Policy

Since 2017, JICA has established a policy on Triangular Cooperation, targeting middle-income countries and Latin America, in particular. Its objectives are to build dialogue and partnerships with developing countries to promote the principles of EU policy and the effectiveness of cooperation, and to mobilize resources from other partners for the implementation of the 2030 Agenda. Triangular Cooperation is being used as an innovative approach in development cooperation.

Examples include adopting Triangular Cooperation as an ad-hoc approach, conducting a call for proposals, and dispatching representatives to member countries and other partners.

According to OECD data, the main sectors in Latin America are disaster risk reduction, governance, private sector, and social infrastructure (see Figure 16-25).



Source: Prepared by the JICA Study Team based on the OECD repository

**Figure 16-25 European Union Initiatives in Triangular Cooperation**

#### 2) Triangular Cooperation Fund

Launched in 2015 with a budget of EUR 10 million, ADELANTE is a South-South and Triangular Cooperation fund between the EU and Latin America, aimed at promoting horizontal ties. In terms of Triangular Cooperation, it is a symbolic program of the EU. ADELANTE promotes horizontal ties between Latin America and the Caribbean and Europe, facilitates the exchange of knowledge and leverages the capabilities of all partners to provide solutions aimed at sustainable development of the region.

In 2016, the European Commission launched a call for grants, with eight projects involving 54 organizations from 18 countries in Latin America and the Caribbean, and co-funded by various

European institutions.

According to the interview, in Costa Rica this fund is being implemented based on the successful example of the Spanish Fund. According to the list of projects in Table 16-24, the proportion of input from EU funds is at an average of 76% (see Table 16-24).

**Table 16-24 List of Projects of the EU “ADELANTE South-South and Triangular Cooperation Fund”**

Period	Project Overview	The Amount (EUR)	EU Input (EUR)
January 2017 to May 2019	DIALOGAS - Inclusive Development in Latin America: Opportunities for Governments and Social Actors Incorporate cross-cutting and social-emotional skills to increase the effectiveness of education and poverty reduction programs, and increase opportunities for the most vulnerable.	635,580	504,014 (79%)
April 2017 to October 2019	Red Calle - Deploying care policies for the homeless Influencing institutions and educating civil society about the reality of homelessness in order to deliver more effective public policies aimed at improving the living conditions of the homeless.	592,376	473,842 (80%)
February 2017 to March 2019	Strengthening Restorative Justice Apply alternatives to imprisonment and increase opportunities for the most vulnerable to promote a more humane and fair justice system	1,029,182	722,692 (70%)
January 2017 to March 2020	Mirada Ciudadana - Good Governance in the Municipality of Mercosur Strengthen the institutional capacity and good governance of local governments to make their operations more efficient, and implement quality public policies focused on reducing inequalities	512,159	407,166 (79%)
January 2017 to October 2020	EVALÚA - Evaluating Public Policy in Latin America and the Caribbean Contribute to a more equitable and sustainable society by institutionalizing public policy evaluation and promoting informed and effective decision-making	1,552,629	1,242,103 (80%)
November 2016 to August 2021	EDEM - Mesoamerican Entrepreneurship and Business Development Supports entrepreneurs and SMEs to develop their business ideas and improve their innovation capacity	2,368,000	1,894,400 (80%)
January 2017 to December 2022	Proyecto SEDA - Sustainable Sericulture To provide capacities, tools, and appropriate techniques for sericulture to support the development of sustainable economic activities adapted to the most vulnerable	2,283,805	1,684,991 (74%)
February 2017 to February 2023	Contribution to the food security of the Cuban people To increase the availability of safe food of animal origin, improve animal health levels, and improve food security for the Cuban people	1,089,633	696,057 (64%)

Source: Created by the JICA Study Team based on the EU “Adelante Fund” website

## 16.4 Japan's Country Development Policy and Assistance Trends

### 16.4.1 Country Development Policy

Table 16-25 summarizes Japan's country development policies for the 23 target countries.

**Table 16-25 Priority Issues of Japan's Country Development Policy in the Study Area**

Country	Goal	Priority			
		1	2	3	4
Antigua and Barbuda	Overcoming vulnerability (common to CARICOM member countries)	Disaster prevention and environment	Fisheries		
Bahamas	Overcoming vulnerability (common to CARICOM member countries)	Disaster prevention and environment			

Country	Goal	Priority			
		1	2	3	4
	member countries)	environment			
Barbados	Overcoming vulnerability (common to CARICOM member countries)	Disaster prevention and environment			
Belize	Overcoming vulnerability (common to CARICOM member countries)	Disaster prevention and environment	Correction of disparities		
Costa Rica	Support for sustainable development centered on the environmental field	Environmental protection	Correction of disparities		
Cuba	Support for sustainable development	Agricultural development	Health care	Environmental protection	Development of socio-economic infrastructure
Dominica	Overcoming vulnerability (common to CARICOM member countries)	Disaster prevention and environment	Fisheries		
El Salvador	Promoting self-reliant and sustainable development	Economic revitalization and employment expansion	Disaster prevention and environmental conservation	Promoting inclusive development	
Grenada	Overcoming vulnerability (common to CARICOM member countries)	Disaster prevention and environment	Fisheries		
Guatemala	Support for sustainable society and economic development	Socio-economic policies in poor areas	Environment and disaster prevention		
Guyana	Overcoming vulnerability (common to CARICOM member countries)	Disaster prevention and environment			
Haiti	Strengthening social infrastructure by establishing basic social services	Improvement of health and sanitary environment	Education promotion	Strengthening agricultural promotion and food security assurance	Strengthening the economic foundation through disaster prevention and environmental conservation
Honduras	Support for sustainable socioeconomic development centered on regional revitalization measures	Rural development	Disaster prevention and environmental/ climate change countermeasures		
Jamaica	Overcoming vulnerability (common to CARICOM member countries)	Disaster prevention, environment	Correction of disparities		
Mexico	Support for sustainable social and economic development toward the realization of an inclusive nation	Social issues associated with economic growth	Triangular Cooperation		
Nicaragua	Promotion of socio-economic development and support for environment and disaster prevention	Laying the foundations for promoting economic development	Social development of the poor and communities	Environmental conservation and disaster prevention	
Panama	Support for sustainable socio-economic development	Development of eco-friendly economic infrastructure	Correction of disparities		
Dominican Republic	Realization of sustainable and balanced development	Sustainable economic development	Correction of disparities		
Saint Kitts	Overcoming vulnerability	Disaster	Fisheries		

Country	Goal	Priority			
		1	2	3	4
and Nevis	(common to CARICOM member countries)	prevention and environment			
Saint Lucia	Overcoming vulnerability (common to CARICOM member countries)	Disaster prevention and environment	Fisheries		
Saint Vincent and the Grenadines	Overcoming vulnerability (common to CARICOM member countries)	Disaster prevention and environment	Fisheries		
Suriname	Overcoming vulnerability (common to CARICOM member countries)	Disaster prevention and environment			
Trinidad and Tobago	Overcoming vulnerability (common to CARICOM member countries)	Disaster prevention and environment			

Source: Prepared by the JICA Study Team based on Japan's Country Development Policy

Table 16-26 shows the concepts of regional cooperation and South-South/Triangular Cooperation among countries other than CARICOM member countries such as Costa Rica, Panama, and Mexico.

**Table 16-26 Country-by-Country Development Policy for South-South, Triangular, and Regional Cooperation in SICA Member Countries, Cuba, and Mexico**

Country	Form of Support	Country Development Policy
Costa Rica	Regional Cooperation	<From the Country Development Policy> This can contribute to the promotion of regional economic integration by giving support to the country, which is relatively economically and socially stable in the Central American region and is in a leading position, and by promoting Triangular and Regional Cooperation.
	South-South and Triangular Cooperation	<From Country Development Policy> Costa Rica is a leader in Central America with experience in transferring its own technology to other countries in the region in various fields. It is expected that the transferred technology and knowledge will spread from the country to neighboring countries. Therefore, cooperation with Costa Rica has the potential to benefit the region as a whole, and is important for effectively improving Japan's presence in the region. Based on the above situation, it is desirable to actively promote not only bilateral cooperation but also Triangular and Regional Cooperation in the future.
Cuba	South-South and Triangular Cooperation	<From JCAP> [Health and Medical Care] In the future, the medium to long-term policy will be to strengthen the health care system in line with the JICA Global Health Initiative. JICA shall also work to improve health care technology and services related to NCDs and to address the aging population. In doing so, JICA will take into account Cuba's strengths, such as universal health insurance, a solid hospital reference system represented by excellent medical personnel and a family doctor system that support free health care services, and research and development of biopharmaceuticals. Consider Japan's assistance in the region, and if possible, consider private-sector partnerships, Triangular Cooperation, and South-South Cooperation.
El Salvador	Regional Cooperation	<From Country Development Policy> Efforts toward regional integration are underway in the Central American region, including El Salvador. The Central American Integration System (SICA) has its own secretariat. Japan will promote regional cooperation while keeping in mind the possibility of aid coordination with the IDB and other organizations that take into account the promotion of Central American integration.
Guatemala	Regional Cooperation	<From Country Development Policy> Guatemala has the secretariat of regional organizations such as the Central American Congress (PARLACEN), the Secretariat of the Central American Economic Integration Organization (SIECA), and the Central American Coordination Center for Disaster Risk Reduction (CEPRENAC), which is important for regional integration. Points to consider: (1) Regional Cooperation in the Central American region, including Guatemala, include efforts toward regional integration, and Japan will pay attention to the promotion of Central American integration and regional cooperation. (4) Support for Central American integration to promote cooperation with Guatemala through the Central American Integration System (SICA).

Country	Form of Support	Country Development Policy
	South-South and Triangular Cooperation	<From JCAP> [Security Improvement] Since 2005, Japan has been working on cooperation related to regional police activities, and has implemented third-country expert dispatch, third-country training, and training in Japan as a Triangular Cooperation project that invests and utilizes resources from Brazil. Phase 2 will start in FY 2020, and the team will continue to work on cooperation to improve security from the perspective of the safety of each citizen.
Honduras	Regional Cooperation	<From Country Development Policy> In addition to strengthening the traditionally friendly bilateral relationship, it is also significant from the perspective of promoting the stability and prosperity of Central America as a whole through regional integration.
		<From JCAP> [Efforts to Address Common Issues within the Region (SICA Regional Cooperation)] As Honduras is geographically located in the center of the Central American region, efforts to resolve issues involving the surrounding regions will become even more important in the future. 3) Conservation of ecosystems and wetlands contributes to the protection of biodiversity in the Central American region through the conservation of biodiversity corridors in Honduras.
Mexico	South-South and Triangular Cooperation	<From Country Development Policy> Priority Areas (Mid-Term Goals) (2) Strengthening Knowledge Connectivity within the Region (Triangular Cooperation) To strengthen connectivity, the Japan-Mexico Partnership Program (JMPP) will be utilized to conduct Triangular Cooperation to solve common development challenges in the Central and South American region, including the three northern Central American countries (Guatemala, Honduras, and El Salvador). In order to contribute to the common issues within the region, JICA aims to match the aid resources that Mexico can provide with the needs of third countries, develop the necessary technical cooperation personnel, and strengthen aid implementation capacity for the development issues facing the Latin American region.
Nicaragua	Regional Cooperation	<From Country Development Policy> The socio-economic stability of the country, which is located in the center of Central America and has the largest land area in Central America, has important implications for regional integration efforts centered on the Central American Integration System (SICA). Therefore, supporting the regional integration of Central America will also contribute to strengthening Japan's diplomatic power. Points to consider: Considering that the Central American region, including Nicaragua, has the framework of the Central American Integration System (SICA), attention will be paid to the promotion of Central American integration and regional cooperation when implementing bilateral projects.
Panama	Regional Cooperation	<From Country Development Policy> Pay attention to trends in regional cooperation through the Central American Integration System (SICA).
	South-South and Triangular Cooperation	<From Country Development Policy> In the national cooperation plan "Panama Cooper 2030" launched by the Panama government in 2017, sustainable economic growth and disparity correction are listed as priority areas to be addressed by the government in the future. There is also interest in promoting South-South and Triangular Cooperation toward becoming a donor country, and some efforts have already started. With the start of Regional Cooperation through the Central American Integration System (SICA), Japan's cooperation with the country is also significant from the perspective of spreading the results of Japan's cooperation to third countries. Points to Consider: Pay attention to the development plans of the Panamanian government. In particular, in light of the intentions of Panama, which is shifting from a recipient country to a donor country, Japan will implement cooperation that meets the needs of Panama, including Triangular Cooperation.
Dominican Republic	Regional Cooperation	<From Country Development Policy> The Dominican Republic is a SICA member country and Caribbean Community (CARICOM) observer country, and has the potential to play a leading role in regional integration in the future. JICA shall support Central American integration through promoting cooperation between the two countries.

Source: Prepared by the JICA Study Team based on Japan's Country Development Policy

## 16.4.2 Japan's Efforts in South-South and Triangular Cooperation

### (1) Support Scheme

JICA implemented its first Triangular Cooperation with Thailand in 1975. Triangular Cooperation

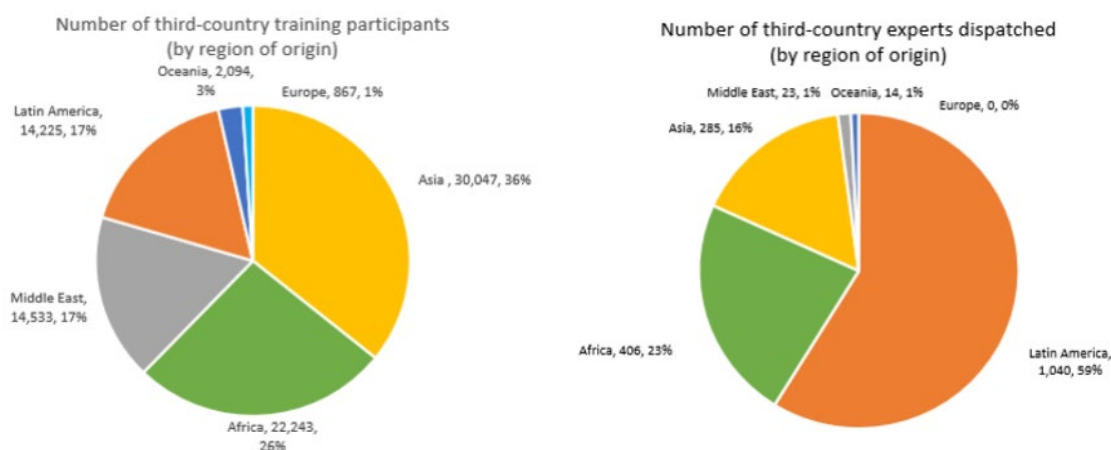
based on third-country group training, dispatch of third-country experts, and implementation of joint projects for capacity building of developing countries from the perspective of dissemination of adaptation technologies and cost-effectiveness (support for South-South Cooperation where applicable) is recognized as a useful approach to increase ownership of developing countries. In addition, JICA has concluded Partnership Programs (hereinafter referred to as “PP”) with 12 countries in the Triangular Cooperation Resource Countries, including Chile (1999), Brazil (2000), Argentina (2001), and Mexico (2003). Table 16-26 summarizes JICA's efforts in South-South and Triangular Cooperation.

**Table 16-27 Overview of South-South and Triangular Cooperation Efforts by JICA**

Attempt	Content
Third country training	Cooperation model introduced in 1975. A developing country accepts personnel from other developing countries and transfers and disseminates excellent development experience, knowledge, and technology with the support of donor countries and organizations.
Third country expert dispatch	Cooperation model introduced in 1975. A developing country accepts personnel from other developing countries and transfers and disseminates excellent development experience, knowledge, and technology with the support of donor countries and organizations.
Joint project	Japan and other donor countries (resource countries) jointly carry out projects in third countries by combining third country experts and third country training.
Partnership Program (PP)	A comprehensive framework agreed between the Government of Japan and the government of a developing country to jointly support the development efforts of other developing countries/regions. Under this framework, the country will dispatch and accept personnel and hold seminars, jointly with relevant organizations of PP partner countries.
Regional workshop (regional seminar)	Indicates a seminar or meeting jointly conducted by JICA, a development partner, or a regional organization.

Source: Prepared by the JICA Study Team based on JICA materials

Up to now, approximately 80,000 trainees have participated in third-country group training, and approximately 2,000 experts have been dispatched under the framework of third-country expert dispatch, of which nearly 60% are from Latin America (see Figure 16-26).



Source: Quoted from JICA document

**Figure 16-26 JICA Triangular Cooperation Initiatives**

Table 16-28 shows JICA's support policy for South-South and Triangular Cooperation.

**Table 16-28 JICA Support Policy for South-South and Triangular Cooperation**

Focus Area	Proposal
Promoting South-South and Triangular Cooperation through PP	Planning committee, joint projects with cost sharing, application of PDCA cycle Extensive experience, scale-up of projects, improvement of strategy through technical cooperation for capacity building and leadership through realization of South-South Cooperation Providing important resources for regional cooperation and setting win-win conditions Donor support: enhancement of management capacity for effective and efficient implementation of South-South Cooperation through the dispatch of planning surveyors and experts, acceptance of trainees, implementation of technical cooperation projects, and holding of seminars
South-South and Triangular Cooperation in collaboration with development partners	Dissemination of experience of technical cooperation with Japan and regional development Promoting the presence of development partners in emerging countries and strengthening relationships Orientation toward capacity building for international cooperation through individual action Support for new development partners

Source: JICA Study Team based on JICA materials

South-South and Triangular Cooperation projects that JICA is implementing in Latin America are shown in Table 16-29.

**Table 16-29 On-going Projects in Central and South America in South-South/Triangular Cooperation by JICA (TDC)**

Country	Project
Nicaragua	Strengthening Mercury Analysis Capabilities
Costa Rica	Empowerment of Persons with Disabilities and Strengthening Support for Independent Living
	Capacity Building for Geothermal Development
Mexico	Introduction of Non-Traditional Tropical Fruit Cultivation Systems in Central American Northern Triangle Countries
	Dissemination of Minimally Invasive medical Technology Focusing on the TRI Method
	Capacity Building on Regional Logistics for Central American Economic Integration
	Genetic Resource Management
Panama	Ecosystem-based Participatory Watershed Management

Source: Prepared by the JICA Study Team based on JICA materials

Table 16-30 shows the good practices of South-South and Triangular Cooperation projects implemented by JICA in Central America.

**Table 16-30 Good Practices of JICA's South-South and Triangular Cooperation Projects**

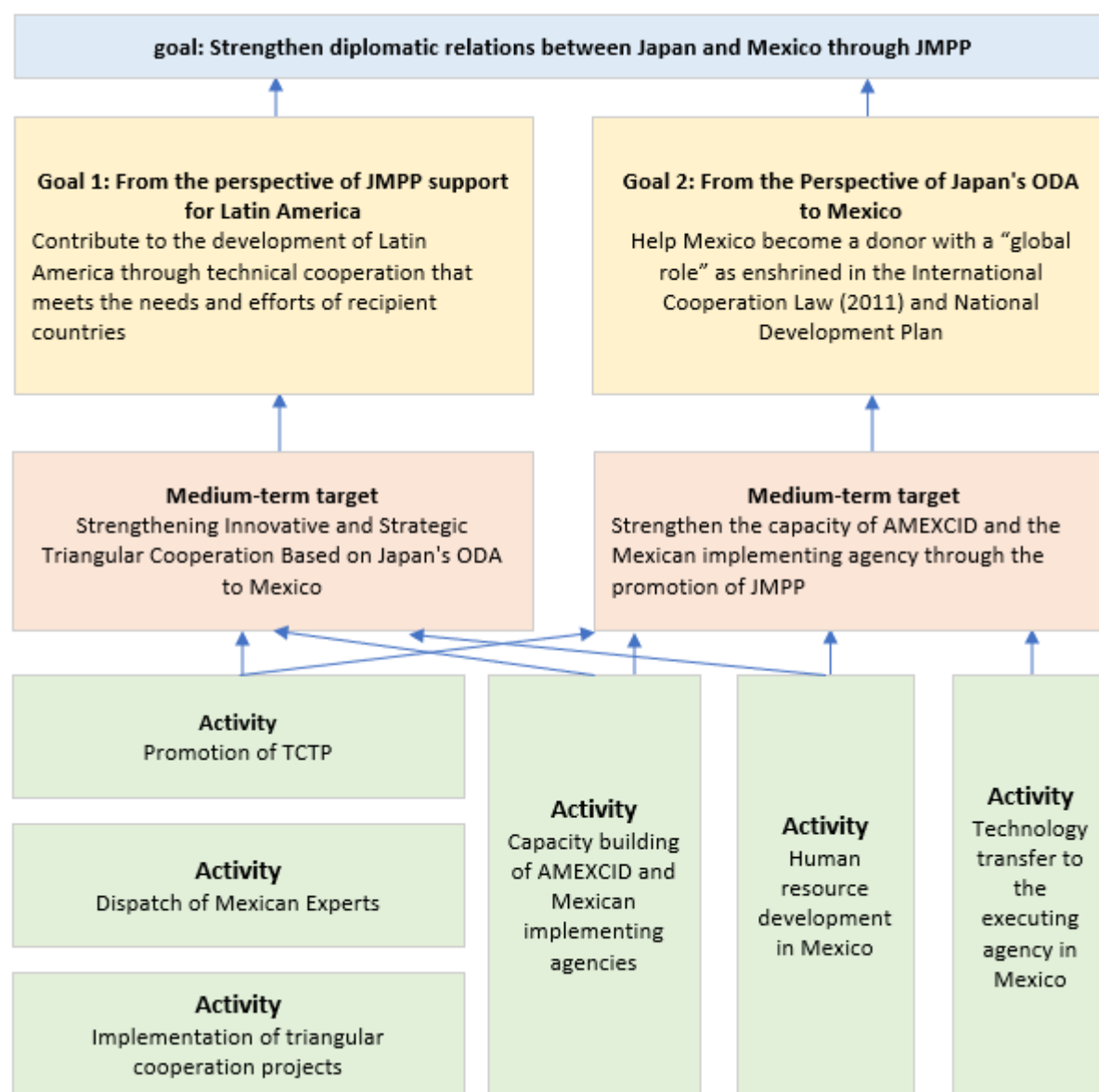
Country	Case	Attempt	Overview
Guatemala and Honduras	Regional Police (Brazil and Japan)	Joint project	(1) Responding to requests in Central America: implementation of Triangular Cooperation between CA, Brazil, and Japan. (2) Contribution to the improvement of public security through the concept of community police and capacity development through the implementation of Triangular Cooperation.
Honduras	Productivity of Small and Micro Enterprises (Costa Rica and Japan)	Joint project	(1) Capacity building of CECAPRO through the JICA project (2) Realization of the Triangular Cooperation with Capabilities Acquired by CECAPRO

Source: Prepared by the JICA Study Team based on JICA materials

**Box 16-3 Partnership Program Overview in Mexico**

The Japanese and Mexican governments signed the Japan-Mexico Joint Program (JMPP) in 2003. It aims to strengthen bilateral technical cooperation and jointly expand technical cooperation to other

developing countries. JMPP is cooperating with Mexico's South-South Cooperation in order to transfer the technical knowledge gained from Japan's past bilateral projects to other beneficiary countries and jointly promote effective development. JMPP consists of several modalities such as International Courses to Third Countries (TCTP), dispatch of Mexican experts, and Japan-China-Korea cooperation projects (see Figure 16-27).



Source: JMPP 2012-2018 Evaluation Survey

**Figure 16-27 JMPP Objectives**

Every year, the JMPP Joint Planning Committee is held, where representatives from both countries confirm the results of the program and agree on future strategic action plans. At the 13th meeting of the JMPP Planning Committee held in July 2018, the two countries expressed their interest in strengthening the strategic relationship between Mexico and Japan and maintaining and improving the achievements of the JMPP over the past 15 years. The importance of JMPP was demonstrated once again.

Statistical data by modality of JMPP activities from October 2003 to September 2018 are as follows:



- TCTP: Conducted 19 international courses and provided thematic training to 937 experts from Latin American regional governments.
- Dispatch of Mexican experts to third countries: Over the past decade, a total of 193 Mexican experts have been dispatched by government agencies, mainly to Central American countries.
- Triangular Cooperation Projects: Seven projects have been implemented under JMPP.

## (2) Japan's Strengths and Challenges

The following factors can be cited as Japan's strengths and challenges in South-South and Triangular Cooperation.

### 1) Strength

#### Japanese presence

Japan is a pioneer in South-South and Triangular Cooperation and has been actively disseminating technology to developing and neighboring countries with similar needs by utilizing the results of bilateral cooperation that it has implemented. In scaling up bilateral cooperation to Triangular Cooperation, Japan has long established its presence through various schemes such as third-country training, dispatch of third-country experts, joint projects, and regional seminars.

Japan has particularly valuable resources in Triangular Cooperation because of its extensive experience in providing development assistance to Latin American countries. One of these is an extensive network of local offices, through which relationships of trust with local institutions have already been built and the ability to directly develop political and policy dialogue have been acquired. This network also enables JICA to have direct management capabilities on the ground, making Japan's contribution particularly beneficial. The presence of Japan as a donor that can contribute funds is also an important factor, as Latin American partners face significant constraints on fund procurement.

#### Diffusion of Japanese management know-how

Japan's significant history as a donor stems from JICA's accumulated expertise, as well as its ability to create superior capabilities in the management and execution of development programs and projects. This knowledge is particularly useful for Latin American countries, which are clearly beginning the process of transitioning from recipients to providers of cooperation. Japan will be able to support the implementing agencies of Latin American cooperation, accompany the implementation process of the activities, strengthen the participation of cooperation agencies, and ensure their sustainability and success. Based on its long history of cooperation, JICA has put into practice the know-how of the PDCA cycle related to project management.

#### Support for improving ownership

While there are various partner countries, JICA is not limited to Costa Rica and Panama, which have already implemented Triangular Cooperation, but is also conducting third-country training in Honduras, Guatemala, Nicaragua, and Bolivia, where development has not progressed. Even countries with little experience as cooperating countries or donors can deepen their ownership and experience by implementing Triangular Cooperation while identifying countries with potential in South-South and Triangular Cooperation. Working side by side with these countries to formulate projects creates value that is different from that of other developed country donors that implement fund-type cooperation. One of the strengths of Japan is its support for donor development, in which the contact organizations and

research institutes in each country become players and create a sense of ownership while creating regional references until they can lead international conferences. In addition, in a long-term project, sustainability can be created and added value can be developed in the form of ex-post evaluation.

## 2) Challenges

In South-South and Triangular Cooperation, Japan has many strengths, but the following issues also exist.

### **Momentum and impact of South-South and Triangular Cooperation**

According to interviews with JICA offices, the momentum of the South-South and Triangular Cooperation with JICA in high-income developing countries, such as PP countries, is gaining momentum. For example, in Mexico, the department responsible for JMPP in AMEXCID has not yet been defined at the time of this study due to organization restructuring, and efforts toward South-South and Triangular Cooperation have stalled a little bit. In the future, it will be necessary for JICA to further deepen the PP and reconsider the ideal relationship with developing country donors who are showing proactive attitude toward South-South and Triangular Cooperation.

In recent years, the South-South and Triangular Cooperation schemes implemented by JICA have focused mainly on third-country training and the dispatch of third-country experts. It can be seen that there are relatively few initiatives that maximize the impact of Japan's accumulated bilateral cooperation results.

### **Assistance that makes it difficult to see Japan's presence**

In the case of South-South and Triangular Cooperation, it is sometimes said that compared with bilateral cooperation, Japan's presence is not sufficiently visible. When visiting for the purpose of this study a third-country training program implemented in Mexico for Cuba, there were many claims that each implementing agency was satisfied with Japan's efforts in Triangular Cooperation. As the JICA office staff is actively involved in projects, Japan's cooperation seems to be fully recognized as Japanese cooperation projects. However, unlike bilateral cooperation in which Japanese experts are dispatched, it is inevitable that Japan's presence is less visible due to the nature of South-South and Triangular Cooperation.

### **Process complexity**

In the first place, the use of common forms of bilateral cooperation may unnecessarily complicate the formulation and management of Triangular Cooperation projects. For example, compared with bilateral cooperation where JICA and only one beneficiary country is involved, there are many parties involved due to the additional resource countries (PP countries and emerging country donors) and the number of beneficiary countries. As a result, the process of project formulation requires effort to identify the needs of the recipient country and identify organizations of cooperating countries that can respond to them with synergy (implementing organizations and experts of resource countries). At the JICA office level, the amount of work linked to Triangular Cooperation increases due to more operation transactions, which ultimately leads to an increase in transaction costs and decrease in ownership of the partner country. Therefore, the project identification, implementation, and management with the three parties involved in Triangular Cooperation should use and coordinate more agile forms and procedures, as well

as reduce the steps required for their implementation. Efforts to update Triangular Cooperation operating protocols, identify avoidable steps, and simplify management as much as possible will be key elements in ensuring the necessary flexibility (see Box 16-4).

Another challenge is the lack of ownership by recipient country partners. This is particularly noticeable in countries where South-South and Triangular Cooperation is still limited, and may arise from insufficient coordination and management systems. In order to avoid this issue, it is necessary to clarify in advance the communication channels and the level of involvement with each related organization.

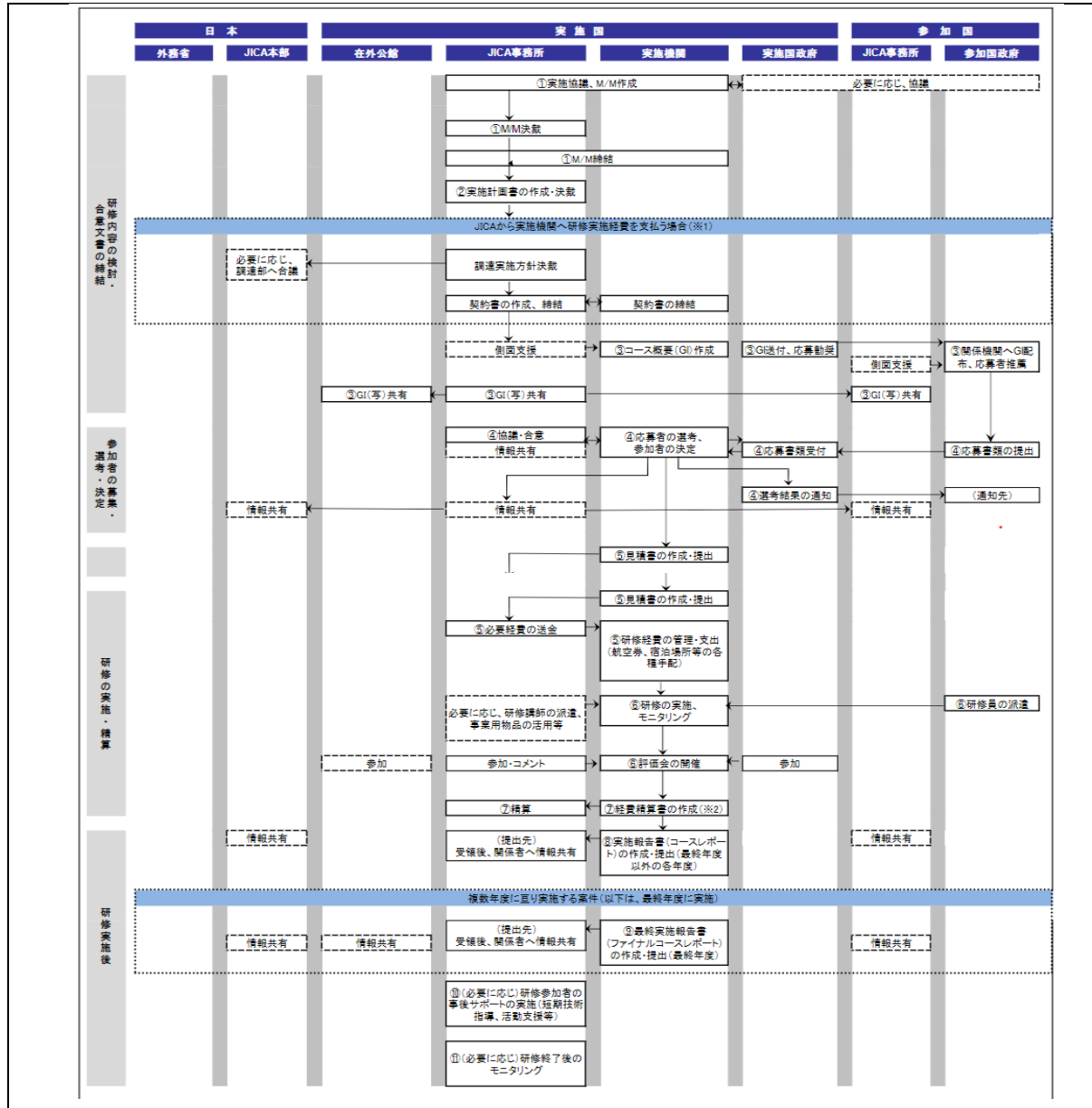
#### **Box 16-4 Challenges in JICA's Operation of South-South and Triangular Cooperation**

According to the interviews to overseas offices, JICA has to deal with some challenges in the process of implementing South-South and Triangular Cooperation.

JICA is restricted by the Japan International Cooperation Agency Act, which does not allow cash grants. In addition, since cooperation cannot be achieved without international agreements, formal requests through the Exchange of Notes (E/N) will become necessary. Due to this situation, in order to start the procedure for third country training, a request form shall be attached so to implement the project. Adjustments will be made at the timing of training, but the time required for this procedure will depend on how well the recipient government is accustomed to the procedure. It shall also depend on solutions on how to bear the costs and what to do with the target country. If not, it may take time to coordinate the implementation, and depending on the situation, timely support may not be possible. The complexity can be seen from the procedure flow showed in Figure 16-28.<sup>46</sup>

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<sup>46</sup>Japan International Cooperation Agency Law



Source: JICA materials

Figure 16-28 JICA Procedure for Third Country Expert Application<sup>47</sup>

Due to the restriction that cash grants cannot be made, JICA overseas offices will have to bear the burden of procedures related to logistics. By doing so, if the recipient government is not accustomed to this kind of response, JICA will be responsible for everything from arranging air tickets to detailed work, which will increase transaction costs and make it difficult to improve the ownership of the recipient country. Dispatching to a third country is complicated, and the method of requesting dispatch from the partner country differs, making it more difficult to implement while there are multiple actors involved. In addition, since each project is implemented within the budget, it is difficult to plan future initiatives.

<sup>47</sup> This flowchart is not translated from Japanese to English as it only intends to show the process complexity and not its content.

### **(3) Significance of Cooperation**

#### **Establishing synergies and efficiencies**

First, South-South and Triangular Cooperation has the advantage of being able to provide efficient assistance to countries with common languages, cultures, and geographical conditions and challenges. In addition to facilitating smooth communication due to the commonality of language and culture, the sharing of unique regional situations facilitates a quicker understanding of problems and enables the transfer of appropriate technology suited to the characteristics of each region.

South-South and Triangular Cooperation also provides an opportunity to support mutual learning processes, horizontality, and knowledge sharing to facilitate the sharing of resources for development among different partners. This also allows sharing of costs with providers who intervene first, potentially achieving greater resource mobilization. Also, because it is an intergovernmental cooperation around technology sharing, it does not usually require the mobilization of large amounts of money. Its efficiency is marked and it may be an appropriate way of allocating risks and responsibilities in the development field.

It can be a means of supporting the development process even in fields that are not necessarily of high priority or where Japan is not technically superior. It also provides a way for countries such as Mexico, Chile, and Argentina to operate in new countries without forging formal bilateral ties, such as in the English-speaking Caribbean. It will lead to the promotion of cooperation within the English speaking Caribbean region.

In addition, in the case of Triangular Cooperation in terms of operations, it is possible to ride on a scheme that has already been implemented between two countries, so there are advantages such as fewer procedures and fewer restrictions on various procedures when implementing projects. For example, when conducting training in Japan, it is necessary to go through a bidding process, but when conducting training in a third country, it is not always necessary to go through these procedures, and each country or office can select personnel according to its own method.

#### **Enhancing Japan's presence**

Through South-South and Triangular Cooperation, JICA could continue to maintain close ties with middle-income countries that tend to graduate from ODA. In the future, in countries where the feasibility of bilateral cooperation is decreasing, cooperation within the framework of South-South and Triangular Cooperation will be further activated by utilizing and promoting framework such as partnership programs.

In addition, promoting partnerships with middle-income countries in Latin America is a timely initiative even in the context of promoting the 2030 Agenda. In particular, SDGs17 raises the need to rethink traditional donors' roles to achieve the SDGs, draw on multiple and horizontal relationships, and work in partnership. South-South and Triangular Cooperation fits well into this scheme, and can provide an appropriate and timely embodiment of Japan's intention to work cooperatively within the framework of the 2030 Agenda.

### 16.4.3 Japan's Efforts in Regional Cooperation

#### (1) Significance of Cooperation

Regional Cooperation is defined as "a form of cooperation in which multiple countries address common development issues faced by several countries" (see Table 16-6) and is considered to have the following advantages.<sup>48</sup>

1. It can more effectively and efficiently deal with regional development challenges that are difficult to solve through unilateral efforts or normal bilateral cooperation.
2. It will encourage the sharing of information and knowledge on common issues among multiple countries in the region. There is also a possibility that joint initiatives and new cooperative relationships for solving problems will be created.
3. By providing assistance to strengthen the functions and capabilities of regional integration bodies, it is expected that the establishment of cooperation and coordination systems among countries in the region and the expansion of human and organizational networks will be promoted.

In formulating regional cooperation projects with such advantages, JICA takes into consideration the requests received from Central American countries through the "Japan-Central America Cooperation with Forum." This has been actively promoting the exchange of opinions with local communities. Since February 2001, individual experts have been dispatched to the SICA Secretariat (International Cooperation Department) for the purposes of establishing a planning and coordination mechanism for regional cooperation, identifying regional issues, and strengthening the SICA Secretariat (International Cooperation Department). Preparations are also underway to dispatch aid coordination experts to the CARICOM Secretariat for the same purpose.<sup>49</sup>

#### (2) Three Types of Regional Cooperation

Most of the regional cooperation projects implemented by JICA fall into one of the following three types.<sup>50</sup>

Type A = Direct support for "Regional Cooperation" institutions

Example: Dispatch of experts to SICA secretariat

Type B = A method of cooperating with multiple countries as a single package with a "Regional Cooperation" agency as the contact point.

Example: A regional technical cooperation project implemented with the Central American Disaster Prevention Center under SICA as the contact point

Type C = Assistance to multiple countries in the region, as agreed upon with regional institutions. A method in which multiple countries individually cooperate with regard to common issues, while a "regional cooperation" organization supports the cooperation through policies.

Examples: Regional technical cooperation projects

<sup>48</sup>Quoted from the "Regional Cooperation Formation and Implementation Handbook".

<sup>49</sup>Information during the preparation of this survey: Dispatch to the secretariat in Guyana is scheduled for January 2023. In addition, dispatch to specialized organizations such as CDEMA has already been implemented.

<sup>50</sup>Quoted from the "Regional Cooperation Formation and Implementation Handbook".

### (3) Support Scheme for SICA Regional Cooperation

JICA started a cooperative relationship with the Central American Integration System (SICA) in 2000, and from 2000 to 2021, dispatched several experts to the SICA Secretariat (SG-SICA) to promote regional integration. A close relationship between the two institutions has been established through the formulation of regional cooperation projects aimed at contributing. The formulation of a five-year regional cooperation project plan from 2015 to 2020 is an important milestone, and was formally determined by the aid agreement meeting between SG-SICA and JICA in 2015. This new system has enabled both agencies to focus resources on priority issues and improve planning with the involvement of various SICA technical offices and agencies.

The SICA-JICA Project plan for 2015-2021 consists of the following five priority areas: 1) mobility and logistics, 2) infrastructure adaptation to climate change, 3) ecosystems and wetland conservation, 4) gender equality and equity, and 5) territorial rural development. The projects that have been implemented through this framework are given in Table 16-31.

**Table 16-31 Implementation Projects in SICA-JICA Project Plan (2015-2021)**

Focus Area	SICA Counterpart (CP)	Project Title
Mobility and logistics	Secretaría de Integración Económica Centroamericana (SIECA)	Study for Collecting Information and Data on Mobility and Logistics in Central America
		Capacity Building Project for Formulation of Regional Master Plan for Mobility and Logistics for Sustainable Regional Economic Development in the Framework of Central American Economic Integration
		A Regional Course for Capacity Building in Logistics and Transport Management for Economic Integration in Central America.
Infrastructure adaptation to climate change	SIECA	"Hydro-Hyrotechnical Consideration Manual for Central American Road Infrastructure", "Geo-Seismological Consideration Manual with Risk Management Approach for Central American Road Infrastructure, Topics: Slopes", "Adaptation to Climate Change" Planning and Design Guideline Manual for Bridges and Crossings Focusing on Risk Management and Follow-up of the Project for Strengthening the Capacity of the Department of Climate Change Adaptation and Strategic Risk Management for Public Infrastructure
Ecosystem and wetland conservation	Comisión Centroamericana de Ambiente y Desarrollo (CCAD)	Research to Collect Information on Ecosystem and Wetland Conservation in Central America
		Capacity Building Project for Integrated Biodiversity Management and Conservation at the Regional Level in the SICA Region
Gender equality and fairness	Secretaría Técnica del Consejo de Ministras de la Mujer de Centroamérica (STM-COMMCA)	Research on Women's Economic Autonomy in Central America and the Dominican Republic
		Course on Women's Economic Empowerment through Business
		Study for Collecting Gender Data and Information (SICA)
Territorial rural development	Secretaría Ejecutiva del Consejo de Ministros de Agricultura del SICA (SE-CAC)	FAO-JICA Joint Research Report on Rural Area Development in Central America and the Dominican Republic

Source: Prepared by the JICA Study Team based on JICA internal materials

The SICA-JICA Project Plan (2021-2025) updated in August this year is based on the following recommendations (see Table 16-32).

**Table 16-32 Recommendations in the SICA-JICA Project Plan (2021-2025)**

Focus Area	Proposal
Overall policy	Summarize the results of each current project. Analyze the possibility of incorporating new elements such as renewable energy, disasters, and tourism with a focus on MSMEs. Consider the results of the "Data Collection Survey on Development Cooperation With/Post

Focus Area	Proposal
	<p>COVID-19 Society in Central America and the Caribbean Region”, the first report of which was issued in March 2022.</p> <p>Implement human resource development that incorporates South-South and Triangular Cooperation by utilizing JICA's existing partnership programs (Mexico, Argentina, Brazil, and Chile) and JICA's regional bilateral cooperation assets.</p>
Logistics and logistics	<p>Finalize the draft of the current regional master plan.</p> <p>Support the implementation and monitoring of regional master plans through the dispatch of experts, training, and other means.</p>
Environment/climate change	<p>Completing biodiversity projects and supporting the dissemination of models established in projects through the provision of advisors and/or other means.</p> <p>Promote the exchange of knowledge and good practices on natural disaster management based on the achievements of JICA projects in the region.</p> <p>Conduct research on renewable energy and energy efficiency to identify the need and potential for cooperation.</p>
Women's economic independence support	<p>Continue to provide the “Training Course on Women's Economic Empowerment through Business” for the SICA region.</p> <p>To work closely with STM-COMMCA, the responsible body of PRIEG/SICA, and SIECA, the leader of the first axis of PRIEG/SICA, and continuously support the establishment of a monitoring and evaluation system for PRIEG/SICA.</p>
Sustainable tourism development	<p>Conduct a study on the tourism MSME sector in the region and analyze the possibility of assisting this sector by dispatching experts.</p> <p>Conduct a study on the status of local seaweed pollution 'sargassum' to promote sustainable tourism.</p>
Agriculture and rural development	<p>Regional advisors will continue to support SE-CAC and identify regional human resource development needs.</p> <p>Collaboratively design and implement training programs for the region.</p>
Promoting South-South and Triangular Cooperation	<p>Cooperate with various institutions of SICA and promote the exchange of knowledge and good practices on various issues with partners within and outside the region.</p>

Source: Prepared by the JICA Study Team based on JICA internal materials

The SICA project plan is presented in Figure 16-29.



Action plan for Regional cooperation SICA - JICA 2021 - 2025									
Note: "Action Plan for Regional Cooperation" is one of the materials to study about the medium term development projects, with which the following projects will be implemented									
Goal	Through collaboration between SICA and JICA, efforts to tackle regional challenges will be promoted in common development topics for the region								
Current situation and issues: 1. In SICA region, small sized countries are located in geographically small area, having challenges of development both individual and common to the region, and those countries share many things and conditions that are similar with regard to the language, historic-cultural backgrounds, small population, etc. 2. SICA was established in 1991 aiming at economic and social integration of the Central American region. SICA works to solve common issues and challenges that go over the borders, through the creation of "Regional public goods" for several countries at the same time, with the consensed desire of the 8 member countries of SICA. 3. SICA is executing cooperation projects with different cooperating countries for the development of the region. What is specific to SICA is that there are cross-border issues that cannot be tackled by one country alone due to its geographical location. COVID-19 has revealed vulnerabilities in this region and the necessity to establish a development model resilient to risks and pandemics. 4. Japan, as SICA overver country, intends to contribute to the efforts of SICA for its integration through technical cooperation, taking advantage of its accumulated bilateral cooperation assets in the region for a long time, and complement countries efforts.			Guideline to tackle regional development issues: 1. In the consultation meeting between SICA and JICA in 2015 and 2016, the regional cooperation SICA-JICA was planned to focus on 5 priority areas: 1) Logistics and mobility 2) Infrastructure adaptation to climate change 3) Conservation of biodiversity and wetlands 4) Gender equality and equity 5) Territorial rural development. In 2021, the progress was reviewed and as its outcome, 6 priority areas were proposed for the period of 2021-2025. 2. Regional cooperation will be strengthened to tackle cross-border issues through political and strategic alliances of SICA in different sectors and cooperation with partners. 3. Regional public goods are promoted taking advantage of regional platform of SICA and South South triangular cooperation for synergy and sustainable development.						
Themes	Guidelines	Project names	Modality	2021 AFJ	2022 AFJ	2023 AFJ	2024 AFJ	2025 AFJ	Notes
Movility and Logistics	In order to support the implementation of the "Regional framework policy for movility and logistics", support the elaboration of the Indicative Regional Master Plan for Movility and Logistics, strengthening the regional institutional capacity and regional information platform creation, supporting in this way the execution of the Master Plan and strengthening capacities for movility and logistics development. Counterpart from SICA: SIECA	Project to strengthen the capacities of elaboration of indicative regional master plan for movility and logistis for the sustainable regional economic development in the framework of the Central American economic integration	Study for development	-----	-----	-----	-----	-----	Started in October 2019 and finishes in July 2023
		Courses for capacity building of logistics and transportation management for the Central American economic integration	Triangular cooperation	-----	-----	-----	-----	-----	Executed in the framework of PP between Japan-Mexico
		Courses for capacity strengthening in logistics and transportation management for the Central American economic integration	Special course for SICA	-----	-----	-----	-----	-----	Necessary to send a form request to Japan before August 15, 2022
Environment and climate change	The SICA region is one of the "Hot Spot" of biodiversity in the world, so the establishment of a sustainable regional development through conservation and sustainable management of the ecosystem and biodiversity in the region will be supported. Furthermore, taking advantage of the results of bilateral cooperation in disaster management in the region, regional cooperation in these themes will be promoted. Finally, mitigation of climate change will be supported through the introduction of Japanese technology in renewable and efficient energy. Counterpart from SICA: CCAD, CEPREDENAC, UCE	Development project for capacity management and integral conservation of biodiversity in the region	Projects	-----	-----	-----	-----	-----	Started in March 2019 and finished in March 2024
		Regional consultant in environment and ecosystem	Experts	-----	-----	-----	-----	-----	-----
		Capacity building through information and experience sharing in disaster management	Regional Seminars	-----	-----	-----	-----	-----	-----
		Information collection study regarding renewable and efficient energy in SICA region	Study	-----	-----	-----	-----	-----	-----
		Regional course for SICA regarding renewable and efficient energy	Special course for SICA	-----	-----	-----	-----	-----	-----
Economic Self-reliance of women	Based on the Axis 1 of Regional policy for Gender equality and equity of SICA (PRIEG/SICA), named "Economic Self-Reliance", through the support of the establishment of monitoring system of the projects and capacity building of Human Resources, in order to contribute to the economic self-reliance of women in SICA. Counterpart from SICA: STM.COMMCA/SIECA	Course for economic empowerment of women through businesses	Special Course for SICA	-----	-----	-----	-----	-----	-----
		Consultancy in capacity strengthening for formulation and implementation of monitoring and evaluation systems of Regional Policy for Gender Equality and Equity (PRIEG/SICA)	Experts	-----	-----	-----	-----	-----	-----
Sustainable tourism development	Tourism is one of the most affected sectors by the COVID-19 pandemic, and specially the segment of SMEs has revealed vulnerabilities. Therefore, a data collection survey will be carried out in the tourism sector for SMEs, in order to support this segment in the framework of Sustainable Tourism Development Strategic Plan 2021-2025, promoting the SICA region as touristic destination and strengthening SMEs capacities to increase resilience and create a regional network. With regard to maritime contamination named Sargassum that affect tourism sector in the Caribbean sea, a study will be carried out. Counterparts from SICA: SITCA/CENFROMYPE/CATA	Data collection study regarding SMEs in the tourism sector in Central America	Study	-----	-----	-----	-----	-----	-----
		Support project to SMEs in tourism sector in Central America	Experts	-----	-----	-----	-----	-----	Necessary to send formal request to Japan before August 15, 2022
		Study regarding sea contamination by Sargassum and its use	Study	-----	-----	-----	-----	-----	-----
Regional Rural development	Through the introduction of JICA tools such as "Improve life" and "One Village One Product (OVOP)" for the Regional agricultural policy and Territorial Rural Development of Central America, socio-economic development in rural zone will be promoted in SICA. Counterpart from SICA: SE-CAC	Regional Consultant in agricultural and rural development	Experts	-----	-----	-----	-----	-----	-----
		Course regarding agricultural and rural development for SICA region	Special Course for SICA	-----	-----	-----	-----	-----	-----
South South and Triangular cooperation	SICA region is interested to promote South South and Triangular cooperation with its partners both intraregional and extraregional. This modality will be promoted through the synergy of accumulated outcomes of bilateral cooperation supported by JICA in the region since long time, and strengthen sustainable mecanism to develop capacities in the SICA region, taking advantage of regional platforms of SICA. Counterparts from SICA: SG-SICA and several instances of SICA	Capacity building through South South and Triangular Cooperation	International Courses, etc.	-----	-----	-----	-----	-----	-----

Source: JICA

Figure 16-29 SICA Project Plan

Issues in formulation and implementation management of Regional Cooperation projects are that there are multiple target countries and that Japan's ODA mainly consists of bilateral cooperation. Procedures are time-consuming and labor-intensive, and cooperation with regional organizations is not carried out smoothly. In the case of SICA, a five-year plan has been formulated, and substantial efforts have been implemented in cooperation with partners.

#### (4) CARICOM Regional Cooperation Support Scheme

In Japan and the Caribbean region, fisheries and disaster prevention projects have been implemented since the 1990s.<sup>51</sup>

For the Caribbean Community (CARICOM), according to JICA's Country Analysis Paper (JCAP), "in addition to the limited ODA budget for CARICOM countries, the size of each country is small and it is often difficult to formulate bilateral cooperation projects." Regarding common issues, JICA could consider responding to the development needs of each country and effectively share knowledge within the region through regional cooperation in collaboration with international and CARICOM affiliated organizations. Similarly, maintaining a good relationship with CARICOM, a major power of 14 countries in the Caribbean region, is also considered important in the international arena. For example, it is indicated that the implementation of cooperation in the fields of environment and disaster prevention, which are issues common to the CARICOM countries, is highly significant.

At the "1st Japan-CARICOM Summit Meeting" (held in July 2014), former Prime Minister Abe presented "Japan's policy toward CARICOM" consisting of the following three points: (1) the cooperation of Small Island Developing States toward sustainable development, including overcoming unique vulnerabilities; (2) expanding and deepening ties of exchange and friendship; and (3) cooperation in tackling various issues facing the international community.

The projects that JICA is implementing in CARICOM member countries are shown in Table 16-32.

**Table 16-33 List of On-going Projects in CARICOM Member Country Areas**

Project in progress	Modality	Target Countries	Period
CARICOM Energy Efficiency Development Project (Regional)	Technical cooperation (Project)	Jamaica, Saint Kitts and Nevis, Barbados, (Trinidad and Tobago)	May 2019 to May 2022
Training project in management and conservation of maritime resources in conjunction with fishermen and public entities	Technical cooperation (Project)	Antigua and Barbuda, Grenada, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Saint Lucia, Dominica	October 2020 to September 2024
Health development project in the Caribbean region through CARPHA	Technical cooperation (Project)	14 CARICOM countries (equipment donation by Trinidad and Tobago)	April 2021 to March 2023
Disaster management consultant for regional integration in the Caribbean	Technical cooperation (Expert dispatch)	14 CARICOM countries (sent by Barbados)	September 2021 to September 2023
Consultant for measures against plastic in the Caribbean Sea	Technical cooperation (Expert dispatch)	Jamaica, Antigua and Barbuda, Guyana, Grenada, Saint Lucia	March 2022 to March 2024
CARICOM Consultant	Technical cooperation (Expert dispatch)	14 CARICOM countries (via Guyana)	Start in 2022
Technical consultant at the Ministry of Health and Population	Technical cooperation (Expert dispatch)	Haiti	March 2022 to March 2024
Training project for technical farmers for the development of support for farmers	Technical cooperation (individual expert)	Haiti	May 2022 to April 2026
Plan of new bridge and Croix de Mission bridge	Grant aid	Haiti	September 2015 to June 2022
Primary and secondary school construction plan in the central department and Artibonite	Grant aid	Haiti	May 2017 to April 2022
Equipment installation and construction plan for fishing in Roseau and Marigot	Grant aid	Dominica	October 2019 to February 2023
Renewable energy integration plan and electrical system improvement	Grant aid	guyana	June 2018 to May 2023
Cul de Sac Bridge substitution Plan	Grant aid	St. Lucia	August 2017 to December 2022
Choiseul Fishing Port Improvement Plan	Grant aid	St. Lucia	Ongoing study

Source: Quoted and translated from "Latest Development Agenda between JICA and CARICOM Member States" (July 2022)

<sup>51</sup><https://www.mofa.go.jp/mofaj/area/latinamerica/kan/caricom/gaiyo.html>

CARICOM's JCAP, which was created in March 2022, will focus on aid priority areas, development issues, and cooperation to address the challenges that have become more apparent than ever in CARICOM member countries due to the impact of COVID-19 in 2020. The three-layer structure of the program was revised (see Figure 16-30). According to this, the common priority areas of the 14 CARICOM countries are divided into three areas: "building resilient societies," "economic development that can be accelerated," and "vulnerabilities unique to small islands." The development issue in building a resilient society is building resilient social infrastructure and the associated cooperation programs are the "Climate Change Countermeasure Program," "Health and Satellite Improvement Program," and "Education Sector Strengthening Program." The development issue in "sustainable economic development" is "industrial promotion and human resource development", and the accompanying cooperation programs are "agriculture and fisheries development program" and "private sector development program". Finally, the development task in the "vulnerabilities specific to small islands" is the "promotion of regional integration and inter-regional cooperation", and the cooperation program is called "CARICOM Development and Cooperation Promotion Program". This takes into account efforts to promote collaboration and cooperation among CARICOM participating agencies, member states, and SIDS. In addition, it is said that gender perspectives will be incorporated across all programs (see Figure 16-30).

Current version

13 CARICOM countries (without Haiti)		
Priority area	Development challenges	Cooperation program
Disaster Management/Environment	Improved disaster management, environmental problems	Disaster Management and Environment Improvement Program
Fishing (only the 6 OECS countries)	Support for sustainable fishery	Program to assist the development of the industry and fishing communities
Reduction of inequalities (Jamaica only)	Job creation, Human Resources training	SMEs and productivity reinforcement program

Haiti		
Priority area	Development challenges	Cooperation program
Improvement of the health and hygiene sector	Improving access to basic social services	Health and Hygiene Improvement Program
Education promotion	Human resource training and education	Education and training program
Promotion of agriculture and strengthening of food security	Promotion of agriculture and improvement of food security	Food Safety Program
Disaster/environmental management through strengthening economic foundations	Strengthening management in the face of natural disasters and environmental protection	Program to strengthen the foundations for more resilience



Updated version

14 CARICOM countries		
Priority area	Development challenges	Cooperation program
Building a resilient society	Establishment of resilient social foundations	Program of measures against climate change
		Health and Hygiene Improvement Program
		Program to strengthen the educational sector
Sustainable economic development	Industrial development and human resources training	Agriculture and Fisheries Development Program
		Private Sector Development Program
Specific vulnerability of Small Island States	Regional integration and strengthening of intraregional cooperation	Program to promote development and cooperation with CARICOM

Source: Quoted from JICA country analysis paper (March 2022)

### Figure 16-30 CARICOM Development and Cooperation Promotion Program

In addition, the following policies are indicated as priority countries for future cooperation.

**Table 16-34 Priority Countries for JICA Cooperation**

Country	Modality	Content/Policy
Belize	Technical cooperation (individual/regional)	The only country in Central America. JICA has been building relationships through volunteer schemes, and has a good example of a JICA chair leading to bilateral cooperation. As the only country belonging to both SICA and CARICOM, and one of the few countries approved by Taiwan, Policy Dialogue will be strengthened in the future.
Guyana, Trinidad, and Tobago	Technical cooperation (regional) Loan aid	The technical cooperation will be included in the target countries of the CARICOM regional project, not by bilateral, but in the future will aim to form a loan project.
Haiti	Technical cooperation (individual) Grant aid	If the security situation improves, the country will increase the scale of inputs, including bilateral technical cooperation and grant aid.
Jamaica	Technical cooperation (individual/regional)	It is the only country that has implemented a certain amount of bilateral projects and incorporated them into the CARICOM regional projects. It is the

Country	Modality	Content/Policy
	Loan aid	only country that has already implemented loan-based projects, and will continue to develop projects in the future.
Other countries	Technical cooperation (regional)	Volunteers will continue to be dispatched to regional projects and training projects, and to countries where dispatch is possible. Japan will make use of past grant aid programs for fisheries while keeping in mind cooperation in the field of fisheries.

Source: Quoted from JICA Country Analysis Paper (March 2022)

## 16.5 List of South-South, Triangular, and Regional Cooperation Projects in This Study (Summary of All Sectors)

Table 16-35 shows the projects related to South-South, Triangular, and Regional Cooperation among the projects proposed in this study.

**Table 16-35 List of South-South, Triangular, and Regional Cooperation Projects in this Study (Summary of All Sectors) (1/2)**

Sector	Cooperation type	Modality	Project Title	Project Outline	Overview of modalities
Economic infrastructure development (transportation)	Regional cooperation	Technical assistance	Bridge Maintenance Management Capacity Development Project	Improve the skills of staff on bridge maintenance management (inspection, diagnosis, formulation of repair plans, repair/renewal), and support the formulation of stone management plans.	Develop common manuals, etc. among countries with common issues such as island countries and small budgets.
		Training/ Technical assistance	Project for promoting the mainstreaming of disaster prevention in the infrastructure field	Strengthen the capacity of staff involved in prior investment in disaster prevention.	Develop common manuals, etc. among countries with common issues such as island countries and small budgets. Regional organizations will coordinate and support each country's coordination.
Social infrastructure development (education)	Regional cooperation	N/A	Support for St. Lucia mathematics education considering the benefits to OECS	Provide technical advice and support for country-by-country application of the curriculum developed by OECS in cooperation with member countries. Program linked with JOCV For St. Lucia, the establishment of the curriculum and the resulting improvement in education, and for OECS, the appropriate use of the curriculum, which is the initiative of the regional organization, will lead to the raison d'etre of OECS.	By positioning OECS as a cornerstone of CP, we will share our business in St. Lucia with OECS member countries, and at the same time create points of contact to share good practices and challenges in other member countries.
Social Infrastructure Development (Healthcare)	Triangular cooperation	N/A	No proposals for this project	N/A	*Although this study does not propose triangular cooperation, since both Saint Lucia and Guyana, which are the target countries of the study, have deep medical ties with Cuba, we will consider incorporating Cuba's cooperation when implementing the following wide-area cooperation.
	Regional cooperation	Training/ Technical assistance	Project for Strengthening NCDs Countermeasures through OECS Regional Collaboration	In the Eastern Caribbean countries, which are island nations with small populations and economies, the medical resources that can be covered by each country are limited. use medical resources effectively.	With the OECS as a counterpart, support will be provided for (1) sharing experiences/learned lessons and strengthening cooperation in countermeasures against NCDs, (2) cooperation in medical supplies/medical information systems, and (3) effective utilization of human resources and capacity building through cooperation in health human resources. *There are notes above
Disaster prevention (*common with economic infrastructure development (transportation))	Regional cooperation	Infrastructure for disaster prevention	Strengthen the capacity of staff involved in prior investment in disaster prevention.	Develop common manuals, etc. among countries with common issues such as island countries and small budgets. Regional organizations will coordinate and support each country's coordination.	N/A

Source: JICA Study Team

**Table 16-36 List of South-South, Triangular, and Regional Cooperation Projects in this Study (Summary of All Sectors) (2/2)**

Sector	Cooperation type	Modality	Project Title	Project Outline	Overview of modalities
Decarbonized society/energy saving/renewable energy	Triangular cooperation	Training/ Technical assistance	Promotion of renewable energy and energy saving/hydrogen technology training	Promote decarbonization in Central American countries through renewable energy training in Costa Rica, which has achieved almost 100% renewable energy in electricity, and energy saving and hydrogen energy training in Japan, which has accumulated know-how on energy saving.	Cooperation Program in SICA-JICA2021-2025
Regional economic and social development (regional branding)	Regional cooperation	Dispatch of experts	OCOP Campaign Support Area Advisor	After supporting the OCOP movement in Saint Lucia, it would be desirable for the knowledge to be shared and put into practice within the OECS region, and for the region to work on OCOP. Similar to Saint Lucia, the OECS countries face problems such as dependence on the tourism industry, and because they are all small island countries, there is a limit to the scale of diversification and differentiation within a single country. In this project, by supporting the OCOP movement, each country will rediscover its uniqueness and differentiate itself from the stereotypical image of Caribbean beach resorts as represented by Sun, sand & sea. support the promotion of branding.	With OECS as a counterpart, support for the OCOP movement scheduled to be implemented in Saint Lucia will be extended to the eastern Caribbean region.
	Regional cooperation	Study	Survey on Tourism Sector Micro-SMEs	* Excerpt from “Project Plan Work Paper”	Survey on Tourism Sector Micro-SMEs
	Regional cooperation	Technical assistance	Tourism Sector Small and Medium Enterprise Support Project	* Excerpt from “Project Plan Work Paper”	Tourism Sector Small and Medium Enterprise Support Project
	Regional cooperation	Study	Basic information collection survey on marine pollution by Sargassum and its utilization	* Excerpt from “Project Plan Work Paper”	Basic information collection survey on marine pollution by Sargassum and its utilization
	Regional cooperation	Dispatch of experts	SICA Agriculture and Rural Development Advisor	* Excerpt from “Project Plan Work Paper”	SICA Agriculture and Rural Development Advisor
	Regional cooperation	Training	Agricultural and Rural Development Thematic Training for SICA Member Countries	* Excerpt from “Project Plan Work Paper”	Agricultural and Rural Development Thematic Training for SICA Member Countries
	Regional cooperation	Dispatch of experts	SICA Wide Area OVOP Advisor	Extend the regional OVOP advisory services implemented in El Salvador, Guatemala and Honduras to the SICA region.	SICA Wide Area OVOP Advisor*
Climate change countermeasures	Triangular cooperation	Training	Building an Appropriate Waste Management System to Promote the 3Rs	Deploy projects implemented in the Dominican Republic, Mexico and El Salvador to the SICA region.	Technical cooperation, training, etc.
	Regional cooperation	Training	Improving waste management capacity	Establishment of a wide-area cooperation network in the waste sector and implementation of issue-specific training	SICA regional advisor, dispatch of experts to base countries, training in Japan, third country training

Source: JICA Study Team

## 16.6 Recommendations Contributing to Cooperation Policy

### 16.6.1 South-South and Triangular Cooperation

The South-South and Triangular Cooperation is now gaining interest and prevalence worldwide. With this, the following changes can be seen in Latin America.

- As ODA is declining, countries becoming upper middle-income countries are actively promoting South-South and Triangular Cooperation efforts as emerging country donors to fill their own development gaps. In addition, as Japan's total spending for international cooperation is on the decline, there is a need for further streamlining of projects.
- Developing countries that have achieved economic development and have accumulated know-how and experience in bilateral cooperation are expanding their capabilities and willingness as South-South and Triangular Cooperation donors. Among them, Costa Rica and Panama have steadily increased their experience in South-South and Triangular Cooperation, but they have not yet established an international cooperation agency. El Salvador has established its own international cooperation agency. In addition, there are few developing countries that show potential for South-South and Triangular Cooperation, such as Nicaragua, Honduras, and Guatemala.
- There is a growing interest in South-South and Triangular Cooperation among international organizations and developed country donors. While definitions and methodologies for measuring them have not yet been unified, the international community is actively making efforts to have a common understanding of each country.

Under these circumstances, it is necessary to consider Japan's future South-South and Triangular Cooperation, and the JICA Study Team proposes the following:

#### (1) Strategic Positioning of South-South and Triangular Cooperation

It is necessary to narrow down JICA's support strengths and the needs and priority issues for South-South Cooperation support in the region, acknowledging that it can represent opportunities for Japan to increase its presence in terms of South-South and Triangular Cooperation in Central America and the Caribbean region and scale up Japan's bilateral cooperation in the form of Triangular Cooperation (refer to Section 16.4.2(3)). On that basis, the results, effectiveness, and relevance shall be evaluated, to promote the use of local resources in the formulation of future projects, continue to support countries implementing South-South Cooperation as donors, and further deepen the PP scheme. It is necessary to reconsider how JICA should be involved in improving regional ownership through the shift from burden of costs to knowledge support. In addition, the direction of assistance should be further clarified in the future, not only for countries that have signed the PP, but also for countries in the region that have graduated from aid or are approaching that level.

The Thematic Guidelines for South-South and Triangular Cooperation have not been updated since 2005<sup>52</sup>, and it is necessary to evaluate the extent to which they have been put into practice. In addition, based on lessons learned from the evaluation, it is possible to update the system in line with the trend of South-South and Triangular Cooperation in the region.

On the other hand, the country development policy states that the implementation of the South-South and Triangular Cooperation is "desirable," and there is no policy to utilize it as a means of mainstream

<sup>52</sup> JICA "Guidelines for South-South Cooperation" (January, 2005)



aid modalities (refer to Table 16-27). Since the South-South and Triangular Cooperation is not positioned as the main method, it shall be stipulated as one of the implementation methods of country-specific assistance policies, stating that "if the fields and conditions of XX are met, South-South and Triangular Cooperation will be implemented." As a future policy, it is also possible to write in a way that is proactive for the implementation of South-South and Triangular Cooperation. By doing so, it is expected to enhance further acknowledgement as an aid method and the actual utilization will be promoted and mainstreamed. In addition, the above fields and conditions not only shall be the development needs of the beneficiary country, but also fields and projects that can demonstrate comparative advantage and significance for Japan, as shown in the following:

- Fields and projects in which resource countries have sufficient technological capabilities.
- Significant fields/projects for Japan: Fields/projects where Japanese technology, its application, and know-how can be disseminated, and the transfer and diffusion of systems that are unique and superior to Japan.
- For requests from countries other than resource countries that are willing to work as donors in the future, support for donor conversion will be provided based on the relationship with the involved country.
- Sectors/projects where the conditions for scaling up bilateral cooperation to Triangular Cooperation are in place.
- Consideration of diplomatic effects and consideration of efforts in the event that a Nikkei community are present and active.

The assets and strengths of Japan's South-South and Triangular Cooperation are its rich experience in the region, and the dissemination of management know-how and the improvement of ownership by working closely with developing countries to build relationships of trust with partner countries. Therefore, although it is necessary to amend international cooperation laws and systems in order to be able to contribute to funds that have become mainstream in recent years, JICA will not lose sight of its strengths that differentiate it from others, simply by increasing the number of projects. In addition, continuing to implement cooperation that is more effective and improves ownership is a form of cooperation that is appreciated by the partner country, and is of great significance.

## **(2) Improving Japan's Presence**

### **1) How Japan should position itself within the international community**

Looking at the trends in international cooperation, it is noticeable that South-South and Triangular Cooperation is becoming a mainstream cooperation scheme. Under these circumstances, South-South and Triangular Cooperation should be prioritized as an appropriate and timely means of cooperation in line with global trends. This means linking South-South and Triangular Cooperation to the general process of adaptation to Japan's development agenda, as well as endorsing it as an essential instrument for implementing the 2030 Agenda to achieve the SDGs. There is no mention of South-South and Triangular Cooperation in the 2022 JICA Global Agenda. It is considered desirable to include it with consideration to how South-South and Triangular Cooperation can play important role within the Global Agenda.

In addition, Japan's participation in various international cooperation forums will enable it to pursue the following objectives:

- Enable the visualization and positioning of Japan's Triangular Cooperation at the regional and international levels. This is done through quantitative and qualitative presentations of projects already implemented on this issue.
- Follow up forums to establish methodologies, concepts, criteria, and principles for South-South and Triangular Cooperation.
- The provision of human resources to assign Japanese staff to high-level posts within UN organizations such as UNOSSC is effective in strategically publicizing Japan's South-South and Triangular Cooperation.

## 2) Efforts for project formulation

In South-South and Triangular Cooperation, often times the beneficiary country hasn't the perception of Japan cooperating in the project, but rather considers that the developing country (pivot country) which interacts with the beneficiary country and implements the project together is cooperating. In this case, the following approaches can be considered as methods of showing further Japanese presence:

- It is possible to apply mechanisms used in Japan, such as maternal and child health handbooks, to beneficiary countries and use mechanisms that bring out the uniqueness of Japan. In the case of community police projects, the KOBAN system is applied. Instilling the Japanese system in developing countries and teaching it to other countries will be an effort to give it a Japanese touch.
- In order to make the above possible, efforts will be made to strengthen the capacity of the implementing agencies that provide aid on behalf of JICA.
- Under the supervision or cooperation of Japanese specialists, implementing agencies of South-South and Triangular Cooperation of the pivot countries may aid together with Japanese specialists (Japan dispatches experts to aid implementing agencies, Japanese experts give advice on the content of assistance provided by pivot countries to recipient countries). Through this cascading type of know-how sharing, it is thought that it will be possible to realize donor assistance while strengthening Japan's influence. This can be done by supporting the capacity building and assistance programming of implementing agencies, or by dispatching them as sector-specific advisors.

The true value of South-South and Triangular Cooperation is not limited to third-country training and the dispatch of third country experts, but is also believed to lie in joint projects and cooperation entrusted to the partner country. It can be said that Japan's presence will come to the fore by revitalizing the implementation of joint projects while incorporating the above ideas.

## 3) Learning from achievements and good practices

A solid track record of Triangular Cooperation is also important for decision-making, knowledge management, management of Triangular Cooperation, lessons learned from experience and dissemination of good practices, and increased visibility. With better data on Japan's Triangular Cooperation, it would be possible to report these data to the OECD, minimizing the risk of information loss and maximizing Japan's potential for Triangular Cooperation materials produced by these organizations.

In addition, extracting the lessons learned from the projects currently being implemented will serve as material for consideration in increasing the number of projects that are in good practice in terms of making the policy of the South-South and Triangular Cooperation concrete. It is also important to build a framework for matching the fields in which Japan excels, the fields in which partner countries want

to support, and the support needs of recipient countries. It is necessary to establish a process based on lessons learned and good practices so far on how JICA can identify the needs of final beneficiary countries and how to efficiently select countries that can provide support that matches them.

### **(3) Improved Process Flexibility**

#### **1) Review of JICA's process**

In terms of capacity building in South-South and Triangular Cooperation countries, there are cases in which, even if there is a strong willingness to provide support, the ownership and capacity for project implementation are still insufficient. To deal with such problems, while firmly adhering to Japan's aid policy, it is necessary to respect the aid policies and intentions of the implementing countries, and fully understand the constraints on aid implementation, such as budget shortages and inadequate aid modalities. It is necessary to formulate and implement projects through close consultation with implementing countries so that development results can be realized in recipient countries.

JICA's systems and procedures have already been established and manualized for project formulation and implementation, but it is necessary to confirm details and make decisions from the perspective of accountability, which creates a certain amount of administrative burden.

Compared to the South-South/Triangular Cooperation Fund (refer to 16.3.2(2)2)) which has been actively discussed in recent years, there can be impressions that triangular cooperation with JICA is time-consuming because it cannot be operated flexibly. In order for Japan to implement triangular cooperation more flexibly, it is necessary to consider simplification of the process. Regarding the South-South/Triangular Cooperation Fund, it is necessary to consider the fund itself and manage the funds for strengthening overseas projects. In addition, with regard to efforts to avoid problems due to complicated procedures and to improve ownership, it is thought that one breakthrough will be to reorganize the scope of projects that can be implemented through the framework of the PP. For example, treat the PP itself as an individual project, so to secure a certain amount of budget over multiple years. In addition to making it easier to implement all activities, increasing the number of projects such as expert dispatch, training, and international seminars will lead to a strengthened PP. In addition, in deepening the PP framework, it is important to actively disseminate information externally, and raise awareness regarding the PP framework towards cooperating countries and beneficiary countries.

In addition, regarding trilateral agreements that some countries have adopted in joint projects of South-South and triangular cooperation (for example, Japan, Brazil and Honduras signing and concluding the same project agreement for a given triangular cooperation project), although there are pros and cons, it is useful in terms of having a common understanding of project goals, results, and activities, and clarifying the division of roles among the three countries and shall be considered as reference for three-party agreement.

#### **2) Cooperation with development partners**

Coordination with other donors and organizations would be particularly effective in promoting South-South and Triangular Cooperation projects. For example, cooperation with Spain, which already operates the South-South and Triangular Cooperation Fund, has potential in areas such as disaster prevention. Similarly, partnerships with international organizations such as UNOSSC, FAO for

agricultural development, and UNESCO for education and culture, which can make valuable contributions in specific fields, are also very effective. It would also be useful to collaborate with PP countries to hold regional seminars on donor assistance and solutions to regional development issues through SICA. As a modality of SICA/JICA Regional Cooperation, the potential of South-South and Triangular Cooperation needs to be broadly understood, such as contributing to the SDGs and promoting regional integration.

## 16.6.2 Regional Cooperation

### (1) Cooperation through SICA

In regional cooperation in collaboration with SICA, experiences are actively shared among member countries in each sector using SICA specialized agencies as a platform. In particular, many regional seminar initiatives have been implemented (refer to Table 16-37).

**Table 16-37 Achievements of Regional Seminars at SICA**

Country	Content of Regional Seminars
El Salvador	March 2022, Math Education (8 countries)
Dominican Republic	July 2022, Community Tourism
El Salvador	August 2022, Humanized Childbirth (Dominican Republic, Guatemala, Honduras, etc.)

Source: JICA Study Team

In the future, several regional seminars would be held on various themes to introduce and disseminate JICA's good practices to achieve the SDGs, which will lead to an increase in Japan's presence in SICA member countries. Through these seminars, the needs would be identified, and a demand-driven approach can be promoted and strengthened. For example, Costa Rica's good practice of renewable energy can be treated as the theme of regional seminars in the future from the perspective of human resource development.

### (2) Cooperation with SIDS

While CARICOM has a large presence in SIDS and is influential, JICA's long-term achievements in CARICOM and strengthening of SIDS cooperation will provide opportunities for information sharing and mutual learning between the Caribbean and Oceania regions. Efforts to prevent disasters have become important.

### (3) Diffusion of SICA as a Best Practice for Cooperation with Regional Organizations

Japan has been building close ties between the two institutions through the dispatch of several experts and the formulation of regional cooperation projects aimed at contributing to regional integration. The formulation of the five-year cooperation project plan and the five-year regional cooperation project plan for 2021-2025 is an important milestone. The new system will allow both agencies to focus resources on priority issues and improve planning with the involvement of various SICA technical offices and agencies. This initiative can be disseminated as a best practice of JICA regional cooperation and can be used in other regions such as CARICOM. Also, a mechanism for SG-SICA to consolidate requests for regional cooperation and submit them will be a good practice for other regions.

In order to make the internal processes of regional cooperation more efficient, it is necessary to clarify the leadership of each office, so JICA's overseas offices will be selected as bases for regional cooperation and established as regional offices (SICA and CARICOM). As the number of advisors for regional cooperation is increasing, there is a need for a local contact point that can provide comprehensive budget management and operational support.

Finally, it shall be necessary to promote the implementation of surveys to evaluate the achievements, effectiveness, and relevance of regional cooperation to date, targeting not only regional organizations in Central America and the Caribbean, but also regional organizations in South America, Asia, and Africa.

## **17. Cooperation with Local Governments and Co-creational Relationship for Local Revitalization**

### **17.1 Outline of the Study**

The experience of local governments in Japan to provide services for local residents can be a useful model for developing countries. The areas of such services include water supply and sewerage, waste disposal, health and hygiene, maternal and child health, social welfare, agricultural extension, primary and secondary education, vocational training, environmental conservation, and public transportation, where a wealth of know-how and human resources are accumulated. Furthermore, there is the experience of local autonomy itself.

Against this background, Japan International Cooperation Agency (JICA) is promoting cooperation and collaboration with local governments of Japan to work with cities and governments internationally. Since 1996, human resources with international cooperation know-how have been assigned to local government agencies as "international cooperation promoters" to serve as a conduit for promoting collaboration with local governments and local Non-government Organizations (NGOs) to strengthen ties with local communities. In addition, JICA is working on education support, publicity and enlightenment activities for citizens' understanding of international cooperation, such as "International Cooperation Campaign", "International Cooperation Citizen Lecture", "International Cooperation Visiting Lecture", etc.

Direct assistance to developing countries through local governments has included the dispatch of local government officials as Japan Overseas Cooperation Volunteers (JOCV) and grassroots technical cooperation projects. In the JOCV program, local government employees are dispatched overseas for two years, in principle, while maintaining their status at their place of employment. In grassroots technical cooperation projects, Japanese NGOs/Civil Society Organizations (CSOs), local governments, universities, private companies, and other organizations that are willing to participate in international cooperation proposes projects to JICA based on the knowledge and experience accumulated through past activities by themselves. Work will be outsourced to the proposing organization and implemented under the cooperative relationship between JICA and the organization.

The Central America and the Caribbean region, the Central American region, where the disparity between urban and rural areas is conspicuous, and the Caribbean region, which is highly dependent on the tourism industry, share common challenges with Japan's rural areas. For such issues, there is the possibility of not only utilizing the knowledge of local governments in Japan, but also co-creative problem-solving through two-way efforts. With the 2021 Tokyo Olympics as an opportunity, it has been observed that cooperation between the two countries have started and been strengthened despite the difficult situation during the COVID-19 pandemic. In this study, the study team investigates efforts between Japanese local governments and Central American and Caribbean countries and local governments and verifies the possibility of collaboration with local governments as one of the modalities of cooperation as well as building co-creative relationships that also contribute to local revitalization in Japan.

### **17.2 Overview of Cooperation of Local Governments with Central America and the**

## Caribbean Region and Regional Revitalization

### 17.2.1 Existing Cases of Cooperation of Local Governments in Central America and the Caribbean Region

To select Japanese municipalities to be studied further as targets of Cooperation with Japanese local authorities and co-creation for regional revitalization, examples of existing collaboration are collected.

#### (1) Sister City

Information on sister city partners of Japanese local governments is collected and published by the Council of Local Authorities for International Relations (CLAIR). Sister city partnerships with Central America and the Caribbean region were extracted from the list posted on the CLAIR website, and the actual status of the initiatives were studied on each municipality's website, etc. Based on the information obtained, the status of efforts was categorized into four levels (0: no recent exchanges confirmed; 1: cultural exchanges are taking place at milestones; 2: cultural exchanges are taking place regularly; and 3: technological and economic exchanges are taking place) to narrow down the specific study targets. Also, the partnership agreement between Constanza City and Matsudo City is added. The results are shown in Table 17-1.

**Table 17-1 List of Sister Cities**

Foreign country	Overseas city	Domestic Prefecture	Domestic Autonomy	Contents of Effort	Level of Effort*
Jamaica	Westmoreland	Tottori Prefecture	Tottori Prefecture	<ul style="list-style-type: none"> <li>Youth exchange: Mutual dispatch of high school students from both regions</li> <li>Marathon exchange: Mutual dispatch of top finishers in marathons of both countries</li> <li>Staff dispatch: Mutual dispatch of staff from Tottori and Westmoreland</li> <li>Technical exchange: Tottori Prefecture will provide assistance in areas that have been a challenge in Westmoreland, using its technological capabilities. Agricultural technology, water supply technology, etc.</li> </ul>	3
Costa Rica	Puntarenas	Miyagi Prefecture	Kesennuma City	No specific exchanges in recent years	0
	San Jose City	Okayama Prefecture	Okayama City	Cultural exchange was held in 2019 which is the 50 <sup>th</sup> anniversary	1
Panama	Panama City	Ehime Prefecture	Imabari City	<ul style="list-style-type: none"> <li>Cultural exchange: Panamanian food served at school lunches. Panama City elementary and junior high school students participate in towel design exhibition.</li> </ul>	2
Dominican Republic	Constanza City	Chiba	Matsudo City	<ul style="list-style-type: none"> <li>Agreement on cooperation in five areas (agriculture, sports, education, culture and environment)</li> <li>Pear cultivation cooperation (agriculture) and donation and training of fire engine have been realized</li> </ul>	3
Mexico	Acapulco	Miyagi Prefecture	Sendai City	<ul style="list-style-type: none"> <li>Cultural exchange: participation in marathons, photo exhibitions, etc.</li> </ul>	1
	State of Mexico	Saitama Prefecture	Saitama Prefecture	<ul style="list-style-type: none"> <li>Administrative exchange: Conference, etc.</li> <li>Educational exchange: Visiting high school students, etc.</li> <li>Other exchanges: Technical cooperation in fireworks</li> </ul>	3
	Toluca	Saitama Prefecture	Saitama City	<ul style="list-style-type: none"> <li>Mutual dispatch of youth soccer teams</li> </ul>	2
	Cuernavaca	Chiba Prefecture	Otaki Town	<ul style="list-style-type: none"> <li>Visit to the National Nikkei Convention in Cuernavaca</li> </ul>	1
	Acapulco	Chiba Prefecture	Onjuku Town	<ul style="list-style-type: none"> <li>The "House of Violin and Japan-Mexico Friendship" continues its exchange with Mexico</li> </ul>	2
	Tecamachalco	Chiba Prefecture	Onjuku Town	<ul style="list-style-type: none"> <li>The agreement was signed as recently as 2013</li> <li>The "House of Violin and Japan-Mexico Friendship" continues its exchange with Mexico</li> </ul>	2

Mexico City	Aichi Prefecture	Nagoya City	<ul style="list-style-type: none"> <li>• Ongoing multiple exchange programs each year</li> <li>• Conducted training and dispatched personnel for water supply in Japan under the JICA Grassroots Technical Cooperation Project</li> </ul>	3
Guadalajara	Kyoto Prefecture	Kyoto City	<ul style="list-style-type: none"> <li>• Ongoing meetings, visits, concerts, invitations to high school students, and other exchanges</li> </ul>	2
Cuernavaca	Osaka Prefecture	Minoh City	<ul style="list-style-type: none"> <li>• Continuously accept Japanese language trainees</li> </ul>	2
State of Sinaloa	Wakayama Prefecture	Wakayama Prefecture	<ul style="list-style-type: none"> <li>• Prior to 2007, there was continuous interaction, but since then, only the anniversary events can be confirmed</li> </ul>	1
State of Guanajuato	Hiroshima Prefecture	Hiroshima Prefecture	<ul style="list-style-type: none"> <li>• Twenty-one companies related to or associated with the prefecture, mainly in the automotive industry, such as Mazda Motor Corporation, have established operations in the State of Guanajuato.</li> </ul>	3

\*The following classifications were made based on publicly available information.

0: No recent interactions have been confirmed. 1: Cultural exchanges are conducted at milestones. 2: Cultural exchanges are conducted on a regular basis. 3: Technical and economic exchanges are conducted.

Source: JICA Study Team based on publicly available information

The study identified a total of 16 sister city partnerships and partnership agreement. Of these, one was in the Caribbean, 11 in Mexico, and four in other Central American countries (including the Dominican Republic), indicating that most of the sister city ties are with Mexico. The five cases rated at Level 3 were Constanza City (Dominican Republic) – Matsudo City, Westmoreland Parish (Jamaica) - Tottori Pref. (technical assistance for agricultural technology and water supply technology), State of Mexico - Saitama Pref. (technical assistance for fireworks), Mexico City - Nagoya City (technical assistance for water supply), and Guanajuato State (Mexico) - Hiroshima Pref. (expansion of automobile-related industries) (Light green in table). These are considered successful cases of cooperation with local governments with potential for further development. A total of six projects (one in Panama and five in Mexico) were evaluated as Level 2 (light blue in the table), and since cultural exchange has been ongoing in these projects, the development of future cooperation in technological and economic exchange is expected.

## (2) Host Town (2020 Tokyo Olympics)

Host towns were selected in conjunction with the 2020 Tokyo Olympics to promote mutual exchange between local governments throughout Japan and the countries and regions participating in the Games, as well as to promote regional revitalization and other activities. Plans are being made not only for acceptance before and during the Games, but also for post-Grand Prix exchanges, with the expectation that inter-municipal cooperation will continue to develop. Table 17-2 summarizes the host towns and plans for each country in Central America and the Caribbean region.

Most of the exchange plans are sports- and food-themed exchanges and exchanges of athletes and children, but some are related to industrial development, technological exchange, and regional development. A list of host towns with plans with such characteristics and a summary of their plans are shown in Table 17-3.

**Table 17-2 List of Host Towns of Countries in Central America and the Caribbean Region for the 2020 Tokyo Olympics**

No.	Host Municipality	Partner Country/Region
1	Eniwa City, Hokkaido	Guatemala
2	Kuromatsunai Town, Hokkaido	Suriname
3	Sendai City/Tagajo City, Miyagi	Cuba



No.	Host Municipality	Partner Country/Region
4	Nanyo City, Yamagata	Barbados
5	Ryugasaki City, Ibaraki	Cuba
6	Kanra Town, Gunma	Nicaragua
7	Katashina village, Gunma	Honduras
8	Higashi-matsuyama City, Saiyama	Cuba
9	Matsudo City, Chiba	Dominican Republic
10	Yokoshibahikari Town, Chiba	Belize
11	Toshima ward, Tokyo	Saint Lucia
12	Fujisawa City, Kanagawa	El Salvador
13	Matsukawa Town, Nagano	Costa Rica
14	Kota Town, Aichi	Haiti
15	Tanbasayama City, Hyogo	Bahamas
16	Tawaramoto Town, Nara	Guatemala
17	Tottori City, Tottori	Jamaica
18	23 cities and towns in Hiroshima Pref.	Mexico
19	Hiroshima City, Hiroshima	Cuba
20	Kitahiroshima Town, Hiroshima	Dominican Republic
21	Imabari City, Ehime	Panama
22	Nakatosa Town, Kochi	Trinidad and Tobago
23	Osaki Town, Kagoshima	Trinidad and Tobago
24	Tokunoshima Town, Kagoshima	Saint Vincent and the Grenadines
25	Amagi Town, Kagoshima	Saint Christopher and Nevis
26	Wadamari Town, Kagoshima	Dominican Republic
27	China Town, Kagoshima	Grenada
28	Yoron Town, Kagoshima	Antigua and Barbuda

Source: JICA Study Team based on the Prime Minister's Office website (Information as of July 3, 2021)

**Table 17-3 Distinctive Plans for the Host town in the 2020 Tokyo Olympics**

Partner Country	Host Municipality	Features of the Plan	Plans After Olympic Games
Suriname	Kuromatsunai Town, Hokkaido	Suriname, where more than 80% of the land is surrounded by lush tropical rainforests and wood carving is a traditional craft, and Kuromatsunai Town, which has a gymnasium made of beech wood and is located at the northern limit of beech trees, have completely different climates, but they share a common goal of protecting and making sustainable use of their rich natural resources. During the Games, Surinamese athletes will be invited to visit the town after the competition and engage in a wide range of cultural exchanges with the town's residents. <b>Building a friendly relationship that will also lead to the development of each other's industries</b> in 2021 and beyond.	<ul style="list-style-type: none"> <li>• Exchange between Surinamese athletes and local residents after the competition</li> <li>• Cultural experiences of our city (food, manufacturing, tourism, sports, etc.)</li> <li>• Interaction with Japanese Olympians and others (planned)</li> </ul>
Barbados	Nanyo City, Yamagata	The Embassy of Japan in Barbados has a staff member from Yamagata Prefecture, and this has led to the invitation of advance training camps for track and field, swimming, shooting, triathlon, and judo.	<ul style="list-style-type: none"> <li>• Sports and cultural exchange between students of both countries, private sector, etc.</li> <li>• <b>Exchange of information about the agricultural industry and mutual traffic of related parties</b></li> <li>• Publicity for Nanyo City's specialties, etc.</li> </ul>
Dominican Republic	Matsudo City, Chiba	This city began exchanges with Dominica following a tour of the region by the Ministry of Foreign Affairs. In 2016, a memorandum of understanding was signed with the Softball Federation for a pre-camp. In 2018, the city signed a memorandum of understanding with the softball, volleyball, and taekwondo federations for a pre-camp, and deepened friendship through <b>pear exchanges</b> , an exchange meeting with students in the city, and a "Tokyo Olympics Ondo - 2020 -" performance.	<ul style="list-style-type: none"> <li>• Work with stakeholders with a view to concluding a sister city agreement</li> <li>• <b>Continue to promote pears produced in the Dominican Republic, and to export them as the Matsudo brand to other countries through agricultural exchange, with a focus on pears (Presently JICA Grassroots Technical Cooperation Project is ongoing)</b></li> </ul>

Partner Country	Host Municipality	Features of the Plan	Plans After Olympic Games
Costa Rica	Matsukawa Town, Nagano	As a JICA training site, this town have accepted many trainees from Costa Rica, and the JICA Study Team are planning an international exchange program. Promote mutual exchange and encourage townspeople to support Costa Rica by inviting Costa Rican judo players and piano players to exchange events and by sending high school students on a Costa Rican study tour. Plans are underway with the Embassy of Costa Rica in Tokyo and the Embassy of Japan in Costa Rica for exchange with the athletes after the competition.	<ul style="list-style-type: none"> <li>• Interaction with Olympians and Paralympians</li> <li>• Interaction with Costa Rican athletes and others</li> <li>• Exchange program with the Republic of Costa Rica</li> <li>• Related projects for exchange (<b>Grassroots Technical Cooperation Project</b>, International Exchange Delivery Lectures with the cooperation of JICA Komagane, Support for Costa Rica Country)</li> </ul>
Jamaica	Tottori City, Tottori	In the past, the city hosted a Jamaican track and field team for a pre-world athletics training camp, which led to a sister city affiliation with the Westmoreland of Jamaica. Taking advantage of these ties, the city plans to invite the 2020 Games to hold a training camp prior to the Games to further enhance exchanges. In addition, taking the opportunity of the decision to hold a pre-camp for athletes competing in the Paralympics, Tottori Prefecture. and Tottori City will deepen their cooperation and promote universal design as well as deepening exchange with Jamaica.	<ul style="list-style-type: none"> <li>• Various exchange programs with Westmoreland (mutual dispatch of visiting delegations for cultural exchange, acceptance of youth from Westmoreland at schools in the Prefecture, <b>study on how to support environmental improvement of fishing ports in Westmoreland</b>)</li> <li>• Athletics exchange program with the Jamaica Association of Athletics Federations</li> <li>• <b>Hosted Westmoreland staff through the Local Government Officials Training Program (LGOTP)</b></li> <li>• Increased hiring of Assistant Language Teachers (ALTs) from Jamaica through the JET program</li> <li>• Invitation and various exchanges with Jamaican track and field team athletes, etc.</li> <li>• Sending high school students (related to athletics) to schools in Jamaica</li> <li>• Organizing various events to enjoy Jamaican culture and deepen familiarity</li> </ul>
Trinidad and Tobago	Nakatosa Town, Kochi	The town planned a mutual cultural exchange program on the occasion of the Tokyo Games, starting with a resident-led musical event related to Trinidad and Tobago in 2018. The town plans to invite athletes or related persons to the 2020 Tokyo Olympics as a post-event exchange, and to conduct cultural exchange through music and festivals, such as a performance of steelpan, a musical instrument originated in Trinidad and Tobago, by children from Nakatosa Town, a welcome to the above-mentioned event with Yosakoi, and food culture exchange using local products, such as bonito and turkey. Cultural and food exchanges will continue after 2021.	<ul style="list-style-type: none"> <li>• Invitation to a convention held in the region</li> <li>• Invitation to the event, participation in the Yosakoi Festival, etc.</li> <li>• Organizing SOCAFITNESS and human resources development</li> <li>• Participation in Yosakoi World Games from Trinidad and Tobago</li> <li>• Invitation of partner country to Manga Koshien</li> <li>• <b>Expand tourism and economic exchange</b></li> <li>• Participation in Yosakoi World Tournament from partner country</li> <li>• Nakatosa Town Event at the Trinidad and Tobago Embassy in Japan</li> </ul>
Dominican Republic	Wadamari Town, Kagoshima	After the 2020 Tokyo Games, the town will invite Olympic athletes from Dominica and conduct various exchanges with the residents of the town to increase the number of visitors, as well as to develop human resources for tourism and volunteer interpreters. Through exchanges with Dominica, <b>the city will also exchange opinions on the "marine litter problem," a common issue, and work toward solving the problem.</b>	<ul style="list-style-type: none"> <li>• Invite Dominican delegation</li> <li>• Continued exchange through <b>environmental protection</b> and traditional performing arts</li> </ul>
Grenada	China Town, Kagoshima	After the 2020 Tokyo Games, this town will invite Olympic and Paralympic athletes from Grenada and provide sports classes and opportunities to learn about the culture of Grenada to foster independence and diversity among children. This town will also invite Grenada's Olympic and Paralympic athletes and related people to visit Grenada and promote the town's tourism resources	<ul style="list-style-type: none"> <li>• Invite Grenada delegation</li> <li>• Continue exchange through traditional arts and <b>agriculture</b></li> </ul>

Partner Country	Host Municipality	Features of the Plan	Plans After Olympic Games
		such as Shoryu-do Cave, Cape Tamaki, Yashimo Beach, and subtropical flowers, which are blessed with rich history and nature, in order to <b>increase the number of visitors.</b>	
Antigua and Barbuda	Yoron Town, Kagoshima	The town will plan and implement various exchange programs, including sports classes, led by the generation that will be responsible for the future of this town, in preparation for the invitation of Olympic athletes from Antigua and Barbuda after the 2020 Tokyo Games. Through exchanges with Antigua and Barbuda, <b>this town will also exchange views on the common issue of coral reef bleaching and work toward solving the problem.</b>	<ul style="list-style-type: none"> <li>• Organizing sports classes for children</li> <li>• Organizing exchange events</li> <li>• Hospitality with traditional culture of Yoron Town, etc.</li> <li>• <b>Information sharing and exchange of opinions on coral reef bleaching issues</b></li> </ul>

\* Red indicates distinctive plan contents related to industrial development, technological exchange, and regional development.

Source: JICA Study Team based on the Prime Minister's Office website (Information as of July 3, 2021)

### (3) Local Government International Cooperation Promotion Project (CLAIR)

In order to encourage local governments to upgrade their international policies from exchange to cooperation, CLAIR actively recognizes and financially supports projects that play a pioneering role among international cooperation projects undertaken by local governments and others and promotes international cooperation efforts by local governments by introducing these activities widely. The program also promotes the efforts of local governments in international cooperation by introducing these activities to the public. Of the 125 projects listed on the CLAIR website for fiscal years 2014 through 2022, the three projects listed in Table 17-4 targeted the Central American and Caribbean region.

**Table 17-4 Achievements of the Local Government International Cooperation Promotion Project**

No.	FY	Japanese Municipalities	Name of Project
1	2018	Saitama Prefecture.	Fireworks technical cooperation project for the State of Mexico
2	2018	Matsudo City, Chiba Prefecture.	Pear cultivation project in the Dominican Republic
3	2016	Tottori	Preliminary study of support for revitalizing the local economy in Westmoreland, Jamaica

Source: CLAIR website

### (4) Local Government Officials Training Program in Japan (CLAIR)

Since FY 1996, the Ministry of Internal Affairs and Communications and CLAIR have been implementing the "Local Government Officials Training Program in Japan" to promote international cooperation by utilizing the know-how and technology accumulated by local governments as comprehensive regional management entities, and to provide financial and practical support for receiving employees from overseas local governments and other organizations to Japanese local governments. The total number of participants dispatched from FY 1996 to FY 2019 listed on the CLAIR website was 1,190 from 38 countries and regions, of which 12 were from Central America and the Caribbean region, including 10 from Mexico and two from Jamaica. Table 17-5 shows a list of training summaries since 2010 that the study team were able to confirm.

**Table 17-5 Local Government Staff Cooperation Exchange Project**

No.	Year	Country of Dispatch	Host Municipality	Contents
1	2010	Mexico	Saitama Prefecture	Elementary, middle and high school education
2	2010	Mexico	Saitama Prefecture	Elementary, middle and high school education
3	2016	Westmoreland, Jamaica	Tottori Prefecture	Urban planning administration
4	2017	Westmoreland, Jamaica	Tottori Prefecture	International exchange, etc.

Source: CLAIR website

### (5) Grassroots Technical Cooperation Project (JICA)

The Grassroots Technical Cooperation Project is a joint project in which JICA and organizations with a desire for international cooperation, such as Japanese NGOs/CSOs, local governments, universities, and private companies, propose international cooperation activities based on the knowledge and experience they have accumulated through their past activities, and JICA subcontracts the work to the proposing organization to be implemented under a cooperative relationship between JICA and the organization. It is provided by JICA as part of its Official Development Assistance (ODA) and is intended to contribute to the economic and social development or reconstruction of the local population in developing countries. It provides detailed cooperation at the grassroots level to meet the diversifying needs of developing countries. In recent years, in addition to the contributions to developing countries, the experience gained through the implementation of grassroots technical cooperation projects is expected to help solve problems faced by local communities in Japan and revitalize local communities.

Grassroots technical cooperation projects are broadly classified into three types: grassroots cooperation support type, grassroots partner type, and community revitalization type. From the viewpoint of cooperation with local governments, Table 17-6 below summarizes the results of the regional revitalization type, which is a type of project proposed and implemented primarily by local governments. There were 19 cases conducted throughout Central America and the Caribbean region, with three in El Salvador, one in Guatemala, two in Jamaica, one in the Dominican Republic, two in Nicaragua, and 12 in Mexico.

**Table 17-6 Achievements of Grassroots Technical Cooperation Project for Community Revitalization**

Countries of Cooperation	Year	Project Name	Proposing Municipality	Name of the Organization
El Salvador	2004	Technical Training from Indigo Cultivation to Dyeing	Kamiita Town, Tokushima Pref.	Kamiita Town
	2003			Waza No Yakata (Facilities for experiencing traditional crafts)
	2002			Asan corporation (Joint public-private venture)
Guatemala	2007	Nurturing Youth Through Teaching Traditional Okinawan Karate and Kobujutsu	Cultural Promotion Division, Civic and Cultural Affairs Department, Naha City	Naha Culture Association
Jamaica	2005	Human and Community Development Through the Utilization of Local Resources for Self-reliance on the Islands	Ojika Town, Nagasaki Pref.	Nagasaki Wesleyan University
	2002	One Village One Product Movement Seminar	Oita Prefecture	Oita Prefecture
Dominican Republic	2020	Cultivation Guidance Project to Make Japanese Pear a Specialty of La Caleta District	Matsudo City, Chiba Prefecture	-
Nicaragua	2005	Improvement of Infection Control Techniques	Gunma Prefecture	Faculty of medicine school of Health sciences, Gunma University

Countries of Cooperation	Year	Project Name	Proposing Municipality	Name of the Organization
	2003	Local Self-government	Ashikita Town, Ashikita County, Kumamoto Prefecture	Ashikita Town, Ashikita County, Kumamoto Prefecture
Mexico	2018	Project for Strengthening Water and Sewerage Earthquake Preparedness in Mexico City	Nagoya City, Aichi Prefecture	Nagoya City, Aichi Prefecture
	2013	Sewage Treatment Improvement Project in Mexico City	Nagoya City Waterworks and Sewerage Bureau	Nagoya City Waterworks and Sewerage Bureau
	2010	Sewerage Utility Improvements in Mexico City	Nagoya City	Nagoya City Waterworks and Sewerage Bureau
	2007	Water Quality Control for Water Supply project II in Mexico City	Nagoya City Waterworks and Sewerage Bureau	Nagoya City Waterworks and Sewerage Bureau
	2005	Training on Stroke Prevention Strategies Best Suited for the Mexican Healthcare System	Akita Prefecture	Akita Prefectural Cerebrovascular Research Center
	2005	Fisheries Nation Support Plan for the Future	Wakayama Prefecture Culture and International Affairs Division	Wakayama Prefecture Culture and International Affairs Division
	2004	Water Quality Control in Water Supply	Nagoya City Waterworks and Sewerage Bureau	Nagoya City Waterworks and Sewerage Bureau
	2003	Water Quality Control in Water Supply	Nagoya City, Aichi Prefecture	Nagoya City Waterworks and Sewerage Bureau Water Purification Division Water Purification Department, General Affairs Department Staff Training Institute
	2002	Environmental Improvement of Lake Zumpango	Saitama Prefecture	Center for Environmental Science in Saitama (CESS)
	2002	Technology Transfer for Noise Criterion Measurement and Evaluation	Chiba Prefecture	Environmental Research Center, Chiba Prefecture
	2002	The Role of Education in Community Revitalization	Hachioji city, Tokyo Prefecture	Hachioji City Hall, Hachioji City Board of Education
	2002	Water Quality Control in Water Supply (continued)	Nagoya City, Aichi Prefecture	Nagoya City Waterworks and Sewerage Bureau Water Purification Division Water Purification Department, General Affairs Department Staff Training Institute

Source: JICA website

## (6) International Cooperation Promoter (JICA)

JICA assigns international cooperation promoters as "local JICA contact points" to local internationalization associations and other international cooperation activities conducted by local governments in Japan. Mainly, it provides support for projects implemented by JICA, promotes public relations and awareness-raising activities, and promotes cooperation with international cooperation projects carried out by local governments and other organizations. Since the presence of international cooperation promoters with experience in Central America and the Caribbean region can be a strong accelerating factor for municipal cooperation, the table below summarizes such personnel based on publicly available information.

**Table 17-7 International Cooperation Promoters with Experience in Central America and the Caribbean Region**

JICA Desk	International Cooperation Promoters	Experienced Country	Field
Aomori	Shota Abe	Nicaragua	Baseball coaching
Saitama	Kensuke Yatabe	Nicaragua	Elementary education
Toyama	Yuko Matsuyama	Mexico	Support for street children
Shimane	Saichi Masumoto	Honduras	Mathematics education
Okayama	Asa Kitawaki	Jamaica	Household and Lifestyle improvement

Source: JICA website

## (7) Other Distinctive Efforts

In addition to the above efforts, there were other unique examples of cooperation with local governments, which also include, in addition to local governments, some universities, which can be a cooperation subject in the scheme of grassroots technical cooperation project. These are summarized in Table 17-8.

**Table 17-8 Other Distinctive Examples of Municipal Collaboration Efforts**

Partner Countries/Regions	Actors in Japan	Contents
Nicaragua, etc.	Gunma Prefecture Kanra County	<ul style="list-style-type: none"> <li>Shizenjuku Terakoya is accepting agricultural trainees from developing countries, which has resulted in an increase in migration.</li> <li>Kanra County served as Nicaragua's host town for the 2020 Tokyo Olympics.</li> </ul>
Honduras	Gunma Prefecture Katashina Village	<ul style="list-style-type: none"> <li>Katashina Village served as the host town for Honduras at the 2020 Tokyo Olympics.</li> <li>In January 2020, JICA is sending a study team to Katashina Village in Honduras as part of its collaboration with local governments, and future collaboration is expected.</li> <li>The company promotes and sells Honduran coffee at roadside stations and could establish economic cooperation.</li> </ul>
El Salvador	Kanagawa Prefecture Fujisawa City	<ul style="list-style-type: none"> <li>Fujisawa City served as the host town for El Salvador at the 2021 Tokyo Olympics.</li> <li>The relationship was fostered through eight years of international understanding and cooperation activities by the Ambassador of El Salvador to Japan and the free transfer of a fire truck from Fujisawa City in 2014.</li> <li>After the Olympics, the plan is to continue to disseminate information on El Salvador's culture, education, food, sports, etc., implement exchanges, and promote Fujisawa City in cooperation with the Embassy of Japan in El Salvador.</li> </ul>
Honduras and Guatemala	Wazuka Town, Kyoto Prefecture	<ul style="list-style-type: none"> <li>Wazuka Town is exploring the formation of new initiatives in the framework of "regional revitalization x international cooperation" with JICA, local revitalization center, local producers and JICA supported countries.</li> </ul>
Guatemala	Yokoze Town, Saitama Prefecture and Ama Town, Shimane Prefecture	<ul style="list-style-type: none"> <li>Both towns are a good example of regional revitalization in Japan. A training program on local government capacity building is planned to receive trainees from Guatemala.</li> </ul>
Belize	Yokoshibahikari Town, Chiba Prefecture	<ul style="list-style-type: none"> <li>Yokoshibahikari Town was the host town of Belize at the 2021 Tokyo Olympics. Stamps commemorating the host town were sold.</li> <li>Masks were donated from the town to Belize during the COVID-19 pandemic.</li> </ul>
Dominican Republic	Kitahiroshima Town, Hiroshima Prefecture	<ul style="list-style-type: none"> <li>Kitahiroshima Town was the host town of Dominican Republic at the 2021 Tokyo Olympics.</li> <li>The first academy in the history of Japanese baseball is located in the Dominican Republic, which was built by Hiroshima Toyo Carp in 1990.</li> <li>Hiroshima University provided technical support for class reform of School of Education, Santo Domingo Autonomous University.</li> </ul>
Caribbean Region	Sophia University	<ul style="list-style-type: none"> <li>The university established the Island Sustainability Unit, which is engaged in human resource development, policy planning, and joint research centered on the environment.</li> <li>In 2015, as part of the Japan-Caribbean Friendship and Cooperation Project promoted by the Association for Promotion of International Cooperation (APIC), the university signed a memorandum of understanding regarding</li> </ul>

Partner Countries/Regions	Actors in Japan	Contents
		academic exchange with the University of the West Indies.
Chapingo Autonomous University, Mexico	Tokyo University of Agriculture	<ul style="list-style-type: none"> <li>The university signed a sister school agreement in 2001, and since 2002 has implemented a short-term agricultural training program, sending nearly 10 students every year. International Bio-Business Studies accepts 1 or 2 special international students each year.</li> <li>Acceptance of trainees in the Japan-Mexico Strategic Global Partnership Training Program.</li> </ul>
Guatemala	Kanazawa University	<ul style="list-style-type: none"> <li>On June 2011, the Kanazawa University and the Vice Ministry of Cultural and Natural Heritage of the Ministry of Culture and Sports of Guatemala signed an exchange agreement on the Tikal Ruins, and a grassroots technical cooperation project is currently underway.</li> </ul>

Source: JICA Study Team

## 17.2.2 Target Cooperation of this Study

Based on the above collaboration cases, the cases to be investigated in this study and the scope of the study were decided after consultation with JICA as shown in Table 17-9.

**Table 17-9 Target Cooperation Cases in this Study**

No	Partner Country	Actors in Japan	Reason for Selection
1	Westmore Land, Jamaica	Tottori Prefecture	<ul style="list-style-type: none"> <li>There are sister city/host town relationships, and technical exchanges have already been realized.</li> <li>In the future, efforts such as research on how to support the environmental improvement of fishing ports in Westmoreland Prefecture are planned. Efficient research and synergistic effects are expected with local branding study in Jamaica.</li> </ul>
2	Dominican Republic	Matsudo City, Chiba Prefecture	<ul style="list-style-type: none"> <li>The city was the host town.</li> <li>They are engaged in technical exchanges in the cultivation of pears, and there are plans to spread pears produced in the Dominican Republic locally and export them to other countries.</li> </ul>
3	Costa Rica	Matsukawa Town, Nagano Prefecture	<ul style="list-style-type: none"> <li>A grassroots technical cooperation project is being planned.</li> <li>A collaborative relationship is in place, because future exchanges are planned with the Costa Rican Embassy in Tokyo and the Japanese Embassy in Costa Rica.</li> </ul>
4	OECS (Dominica, Grenada, and Antigua and Barbuda)	Wadamari Town, China Town and Yoron Town, Kagoshima Prefecture	<ul style="list-style-type: none"> <li>There are host town relationships between the local governments of the remote islands of Kagoshima and the small island nations of the East Caribbean. There is a possibility of developing such relation regionally.</li> <li>Efforts to solve problems are planned as plans after the Olympics (Wadamari-Dominica: marine litter problem, China-Grenada: expansion of non-resident population, Yoron-Antigua and Barbuda: coral reef bleaching problem)</li> <li>Efficient research and synergistic effects are expected with local branding study in Saint Lucia and OECS.</li> </ul>
5	Nicaragua, etc.	Kanra Country, Gumma Prefecture	<ul style="list-style-type: none"> <li>Shizenjuku Terakoya accepts agricultural trainees from developing countries, leading to an increase in immigrants.</li> <li>The county was a host town for Nicaragua at the 2020 Tokyo Olympics.</li> </ul>
6	El Salvador	Fujisawa City, Kanagawa Prefecture	<ul style="list-style-type: none"> <li>The city was a host town for El Salvador at the 2021 Tokyo Olympics.</li> <li>A long-term cooperative relationship has been established.</li> <li>A collaborative relationship has been established with the Embassy of Japan in El Salvador.</li> </ul>
7	Honduras and Guatemala	Wazuka Town, Kyoto Prefecture	<ul style="list-style-type: none"> <li>Wazuka Town is exploring the formation of new initiatives in the framework of “regional revitalization x international cooperation” with JICA, local revitalization center, local producers and JICA supported countries.</li> </ul>
8	Belize	Yokoshibahikari Town, Chiba Prefecture	<ul style="list-style-type: none"> <li>The town was a host town for Belize at the 2021 Tokyo Olympics. Stamps commemorating the host town were sold.</li> <li>Masks were donated from the town to Belize during the COVID-19 pandemic.</li> <li>A former JOCV led the collaboration.</li> </ul>
9	Mexico City	Nagoya City	<ul style="list-style-type: none"> <li>They continuously implement exchange projects every year as a sister city.</li> <li>Water supply-related training in Japan and dispatched personnel were implemented under JICA grassroots technical cooperation projects (Six projects).</li> </ul>
10	State of Guanajuato, Mexico	Hiroshima	<ul style="list-style-type: none"> <li>They have strong economic relation. Twenty-one companies related to the prefecture, mainly automobile-related industries such as Mazda Motor Corporation, have entered the state of Guanajuato.</li> </ul>
11	Dominican	Hiroshima	<ul style="list-style-type: none"> <li>The prefecture was a host town for the Dominican Republic at the 2021 Tokyo</li> </ul>

No	Partner Country	Actors in Japan	Reason for Selection
	Republic		Olympics. <ul style="list-style-type: none"> <li>• The first academy in the history of Japanese baseball is located in the Dominican Republic, which was built by Hiroshima Toyo Carp in 1990.</li> <li>• Hiroshima University provided technical support for class reform of School of Education, Santo Domingo Autonomous University.</li> </ul>
12	Caribbean Region	Sophia University	<ul style="list-style-type: none"> <li>• The university established the Island Sustainability Unit, which is engaged in human resource development, policy planning, and joint research centered on the environment.</li> <li>• In 2015, as part of the Japan-Caribbean Friendship and Cooperation Project promoted by the Association for Promotion of International Cooperation (APIC), the university signed a memorandum of understanding regarding academic exchange with the University of the West Indies.</li> </ul>
13	Chapingo Autonomous University, Mexico	Tokyo University of Agriculture	<ul style="list-style-type: none"> <li>• The university signed a sister school agreement in 2001, and since 2002 has implemented a short-term agricultural training program, sending nearly 10 students every year. International Bio-Business Studies accepts one or two special international students each year.</li> <li>• Acceptance of trainees in the Japan-Mexico Strategic Global Partnership Training Program.</li> </ul>

Source: JICA Study Team

### 17.2.3 Outline of Regional Revitalization in Japan

In response to problems experienced by Japan, such as a declining population in rural areas due to the declining birthrate and aging population and the concentration of population in the Tokyo metropolitan area, the national government and local governments are working on regional development under the name of "regional revitalization." Here, the current situation from the historical background leading up to regional revitalization is outlined.

In the past, the national government basically positioned regional development in the national land planning from the perspective of industrial relocation from metropolitan areas. In 1962, the National Comprehensive Development Plan aimed at industrial relocation through the base development method by the designation of new industrial cities and industrial development areas. The subsequent New Comprehensive National Development Plan of 1969 sought to correct regional disparities and decentralize industries by promoting large-scale projects. Both are regional developments from the perspective of industrialization and industrial relocation. There are problems pointed out such as: urbanization due to industrialization has intensified the outflow of population from rural areas to cities; the industries that have moved to rural areas had weak connections with local industries, resulting in limited ripple effect to regional economies; also caused environmental destruction and pollution. As a result, they failed to rectify regional disparities and promote regional development, but rather accelerated overcrowding and depopulation, resulting in the loss of region's endogenous development.

Starting with the 3rd National Comprehensive Development Plan in 1977, the focus gradually shifted to regions. This plan advocated a settlement concept and aimed to develop a comprehensive environment for human habitation. The 4th Comprehensive National Development Plan of 1987 aimed at multipolar distributed national land formation based on the exchange network concept. However, at the time of these plans, since the projects that were actually carried out were large-scale civil engineering projects using subsidies and promotion of private-sector resort development, external industrial relocation continued.

On the other hand, it was also during this period that regional development led by the region was developed. Examples are: Oita One Village One Product Movement in 1979; Hokkaido One Village



One Product Movement, Furusato One Product Movement (Hiroshima Prefecture), New Himuka Development Movement (Miyazaki Prefecture), and Jige Revitalization Movement (Tottori Prefecture) in 1983; Kumamoto Japan's No. 1 Development, Fukushima Furusato Industry Revitalization Movement, and Furusato Product Development (Kyoto Prefecture) in 1984; and green tourism, eco-museums, local production for local consumption, farmers' markets, and roadside stations in the 1990s.

In addition, from 1988 to 1989, the Furusato Creation Project was implemented as a "local development project, in which the local thinks for itself and does it by itself". A uniform amount of 100 million yen per municipality was added to the standard financial requirements of the local allocation tax, wherein various regional development projects were developed in each region. This project can be seen as a turning point from the method of supporting municipalities working on national plans to the thinking and execution of local governments themselves.

Since the 1990s, there have been trends such as the introduction of private sector vitality, deregulation, and decentralization of power. A special merger law of local government was enacted in 1995, and many municipalities were merged from 2005 to 2006. At the same time, in 2005, the Regional Revitalization Law was enacted to comprehensively and effectively promote the revitalization of regional vitality, including the revitalization of regional economies and the creation of local employment opportunities. It states that local governments will voluntarily work on the formulation of regional revitalization plan, the implementation of projects based on the plan, the creation of regional revitalization land use plan, and the designation of regional revitalization promotion corporations. However, although regional development policies and local branding were originally sought through mergers, much effort was expended in the merger itself.

In this way, from the 1990s to the 2000s, efforts were made to revitalize local communities. However, issues remained and have been emphasized on the development of public works projects, dependence on government subsidies and local allocation taxes, and development of buildings without residents' participation.

In 2014, the Town, People, and Job Revitalization Act was promulgated as a bill related to regional revitalization. The purpose is to respond to the declining birthrate and aging population, correct the excessive concentration of population in the Tokyo area, and maintain a vibrant society into the future. In the same year, the "Long-term Vision for Revitalizing Towns, People, and Jobs" and the "Comprehensive Strategy for Revitalizing Towns, People, and Jobs" were approved by the Cabinet. From 2015 to 2022, the policy and strategy have been revised each year. In 2019, the long-term vision was revised. Rather than the conventional nationally led uniform strategy, the comprehensive strategy determined to respect the originality and ingenuity of each region as well as voluntary and autonomous efforts based on the choices and responsibilities of each region, making the most of its characteristics. In line with the above policies, in FY 2015 each local government was assigned to formulate a comprehensive strategy that incorporates its own policies and numerical targets.

In this way, under the name of regional revitalization, the current trend of national and local governments in tackling issues such as creating jobs in rural areas and creating a flow of people to rural areas was determined. Roughly speaking, in the 1960s and 1970s, extrinsic development was aimed through industrial relocation. From the 1980s to the 1990s, although the focus shifted to endogenous development, the trend of industrial relocation remained, on the other hand, independent regional revitalization began to develop in

rural areas. Since the 2000s, regional revitalization efforts have been made in earnest by local governments. In other words, in recent years, each local government is required to break away from the traditional national government-led policy and develop its own unique regional development. The abovementioned cooperation with local governments can be positioned as one of its unique characteristics. In other words, it is not a one-way support for developing countries, but it has the potential to be developed into an initiative that contributes to regional revitalization of Japanese local governments.

### **17.3 Overview of Each Case of Collaboration**

#### **17.3.1 Westmoreland Parish, Jamaica – Tottori Prefecture**

##### **(1) History**

Westmoreland Parish, Jamaica, and Tottori Prefecture have been carrying out various exchange projects as sister cities. The collaboration began in 2007 when Tottori Prefecture hosted a pre-training camp for the Jamaican track and field team participating in the 11<sup>th</sup> IAAF World Championships in Athletics in Osaka. Fuse Athletics Stadium was built in Tottori City in 1985, and the track uses rubber made by Italy's Mondo, which was advanced at the time, and is said to be easy to achieve fast times. With such facilities, in 2007, when the Tottori Athletics Association wanted to invite competing nations to a training camp, the Jamaica Athletics Federation showed interest. The 15<sup>th</sup> Beijing Games in 2015 also accepted pre-Games training camps, and in the same year, Westmoreland Parish proposed to Tottori Prefecture a sister city partnership.

Due to this background, exchange through athletics has become one of the pillars. An example is the mutual dispatch of the top runners of the Reggae Marathon held in Westmoreland Prefecture and the Tottori Marathon. Recently, Tottori Prefecture was selected as the host town for the 2020 Tokyo Olympics. In addition, following the decision to host the 2025 Athletics World Championships in Tokyo, Tottori Prefecture, Tottori City, and the Tottori Athletics Association plan to exchange a memorandum of understanding with the Jamaica Olympic Association and the Jamaica Paralympic Association to promote further exchanges (as of August 2022).

There have been exchanges such as youth exchange through mutual dispatch of high school students from both regions, dispatch of local government officials as overseas cooperation volunteers, and technical cooperation in the fields of civil engineering and agriculture. Also, 2022 is the 60<sup>th</sup> anniversary of Jamaica's independence. The governor of Tottori Prefecture attended and a video of the brass band club of Iwami High School playing reggae and jazz was played in the commemorative ceremony held in Tokyo in September.



Source: Website of Tottori Prefecture

**Figure 17-1 Pre-training Camp in 2015**

**Table 17-10 Exchange History Between Westmoreland Parish and Tottori Prefecture**

Time	Exchanges
Aug, 2007	Tottori Prefecture hosted a pre-training camp for the Jamaican track and field team participating in the 11 <sup>th</sup> IAAF World Championships in Athletics in Osaka. Public practice, autograph sessions and exchanges with young people through track and field were held.
Aug, 2015	Tottori Prefecture hosted a pre-training camp for the Jamaican track and field team participating in the 15 <sup>th</sup> IAAF World Championships in Athletics Beijing. Public practice, autograph sessions, and exchanges with young people through track and field were held.
Aug, 2015	Westmoreland Parish proposed a sister city partnership with Tottori Prefecture. The background is that Tottori Prefecture was selected as the pre-training camp for the Jamaican track and field team, and that, like Westmoreland Prefecture, it has a rich historical and cultural heritage, beautiful seas and fresh seafood.
Oct, 2015	Tottori Prefecture dispatched an exchange council headed by the vice governor and confirmed to proceed with specific adjustments for a sister city affiliation.
Mar, 2016	The governor of Westmoreland Parish visited Tottori Prefecture and concluded a sisterhood relationship.
2016	<ul style="list-style-type: none"> <li>oGovernor of Tottori Prefecture visited Westmoreland Parish.</li> <li>[Staff Dispatch] Tottori Prefecture accepted one Westmoreland Parish employee for one year and provided training on urban development, etc.</li> <li>[Technical exchange] A technical exchange group of four from Westmoreland visited the prefecture and inspected infrastructure facilities related to roads and the environment.</li> <li>[Technical Exchange] Five engineers from Westmoreland Parish visited the prefecture and inspected agricultural facilities.</li> <li>[Marathon Exchange] Dispatch one man and one woman from the top Tottori marathon to the reggae marathon</li> </ul>
2017	<ul style="list-style-type: none"> <li>[Dispatch of staff] Dispatching a staff member from Tottori Prefecture to Westmoreland Prefecture through JICA</li> <li>[Marathon exchange] One reggae marathon participant participated in the Tottori marathon, experiencing ground golf as well.</li> <li>[Staff Dispatch] Accepted a staff member from Westmoreland County for about 10 months and provided training on the local autonomy system, etc.</li> <li>[Technical exchange] Two engineers from Westmoreland Prefecture visit the prefecture and inspect agricultural facilities.</li> <li>[Youth Exchange] Dispatched 10 students from Yazu High School and others. They conducted calligraphy performances, introduced Tottori Prefecture, and interacted with local high school students.</li> <li>[Technical exchange] Four water engineers from Westmoreland visited the prefecture and inspected facilities related to water facilities.</li> <li>[Marathon Exchange] Dispatch one man and one woman from the top Tottori marathon to the reggae marathon.</li> <li>[Host Town] Tottori Prefecture was selected as a host town for the Tokyo Olympics.</li> </ul>
2018	<ul style="list-style-type: none"> <li>[Marathon exchange] One reggae marathon participant participated in the Tottori marathon</li> <li>[Youth Exchange] Five members of Yonago High School Dance Club and five members of Tottori Koryo High School Cooking Club were dispatched to exchange with local high school students through dance and cooking.</li> <li>[Marathon Exchange] Dispatch one man and one woman from the top Tottori marathon to the reggae marathon.</li> </ul>
2019	[Dispatch of staff] Dispatching a staff member from Tottori Prefecture to Westmoreland Prefecture through JICA.

Time	Exchanges
	[Marathon exchange] One reggae marathon participant participated in the Tottori marathon. [Youth Exchange] Nine youths aged 10 to 19 who attend schools in Westmoreland Prefecture visited the prefecture. Cultural exchange with Tottori Koryo High School (cooking, poetry), homestay experience, etc. [Marathon Exchange] One male and one female runner from the top Tottori marathon will be sent to the reggae marathon. Holding a marathon class at a local high school. oGovernor of Tottori met with Jamaican Prime Minister Andrew Michael Holness.
2020	[Youth Exchange] Tottori Chuo Ikuei High School Calligraphy Club and Yonago Minami High School Send Video Messages to High School Students in Westmoreland Parish. [Marathon exchange] Participated in the reggae marathon, which was held remotely, as a Tottori team. Send a video letter from a team member.

Source: JICA Study Team based on the website of Tottori Prefecture

## (2) Human Resource and Organization

Tottori Prefecture has been dispatching officers of the prefecture to Jamaica via the JICA volunteer program and receiving officers of the local government of Jamaica via the Local Government Officials Training Program in Japan of CLAIR. Those who have been dispatched are in charge of the exchanges in the relevant departments in Tottori Prefecture, so this is a case of external program for continuous exchanges.

## (3) Area of Cooperation

Since historically the exchanges started for track and field, the main exchange is on track and field such as receiving Jamaican team. Although some technical exchanges were realized in the past, presently no technical exchange is on-going.

### 17.3.2 Dominican Republic and Matsudo City, Chiba Prefecture

As an international exchange project with the Dominican Republic, Matsudo City is carrying out the "Producing Region Formation Project to Make Japanese Pears a Specialty Product of the La Culata District". In this project, Matsudo City aims to raise awareness and brand power of Matsudo City and Matsudo Pear through support for the cultivation of Matsudo Pear in the Dominican Republic<sup>1</sup>. On the other hand, for the Dominican Republic, the purpose is to contribute to the country's industrial development through cultivation of pears, and eventually for it to be able to export pears mainly to North America and Europe<sup>2</sup>.

## (1) History

In September 2015, the Ministry of Foreign Affairs and Matsudo City jointly held a "Tour of Diplomatic Corps in Japan" to introduce sightseeing spots in Matsudo City to ambassadors in Tokyo. Matsudo City is the origin of 20th century pear, which is a local resource in agriculture and tourism. Minister Pereira of the Dominican Republic, who participated in the event, enjoyed the taste of Japanese pears for the first time and reported it to Ambassador Dominguez of the embassy. After that, in December of the same year, Ambassador Dominguez requested the mayor of Matsudo City, Mr. Hongoya, to support the cultivation of Japanese pears in the Dominican Republic.

While the city was positive about popularizing its specialty product, it needed to confirm whether

<sup>1</sup> Website of Matsudo City ([https://www.city.matsudo.chiba.jp/InternationalPortal/en/DomRep/Pear\\_project.html](https://www.city.matsudo.chiba.jp/InternationalPortal/en/DomRep/Pear_project.html))

<sup>2</sup> Report of Local Government International Cooperation Promotion Project in FY2018 "Dominican Republic pear cultivation project" (Made by Matsudo City, published by CLAIR)

Japanese pears could actually be cultivated. Therefore, in June 2016, the city dispatched a study team headed by Deputy Mayor Obara, partly because it received an invitation to an export fair held in the Dominican Republic. When they visited the city of Constanza in La Vega Prefecture, which is located at an altitude of about 1,200 m, a pear farmer who accompanied as a member of the team found a western pear tree, suggesting that Japanese pears could be cultivated at high altitudes.

In November of the same year, the mayor of Matsudo City and the commissioner of the Dominican Agriculture Institute formally negotiated a memorandum of understanding on the exchange of pears. The content of the agreement was that "Matsudo City would provide technical guidance regarding the cultivation of pear seedlings by dispatching experts and accepting trainees, and in return, the Dominican Agricultural Institute would strive to cultivate and research under this guidance. The results of the research will be published, and based on the results of the research, the two sides will separately discuss future policies."<sup>3</sup>

Based on the memorandum, the project started in 2017. In January 2018, 25 pear seedlings and seeds were planted on the farm of the Dominican Agriculture Institute in the city of Constanza, and trial cultivation began. From June of the same year to February of the following year, utilizing CLAIR's "Local Government International Cooperation Promotion Project" scheme, Matsudo City dispatched pear experts to the Dominican Republic twice and accepted trainees from the Dominican Republic to Matsudo City once. During the dispatch to the Dominican Republic, activities such as confirmation of the growth status of seedlings planted in the previous year, technical guidance, coordination for grassroots technical cooperation, consideration and inspection of future growth sites, and implementation of pear cultivation seminars were carried out. At the acceptance of trainees, a tour and practical training at a tourist pear orchard, a lecture by a Faculty of Horticulture professor of the Chiba University, and a workshop on planning future projects were held.

In March 2021, JICA's grassroots technical cooperation project, "Cultivation Guidance Project to Make Japanese Pears a Specialty of the La Culata District", was adopted and has been implemented since April 2022. In this project, with the goal of cultivating Japanese pears as a local specialty in the La Culata area, the following activities have been carried out: formulation of pear cultivation dissemination plan, preparation of teaching materials for cultivation instruction, instruction of pear cultivation methods onsite by pear experts, selection of local farmers to grow pears, guidance on planting seedlings to the selected farmers, and public relations activities for pears to markets and general consumers.

In parallel with the pear cultivation guidance mentioned above, exchanges under the host town agreement were promoted. Matsudo City became a host town in 2016, and in 2017, a concert by a Dominican Republic violinist was held. Furthermore, in response to a request from the city of Constanza to donate a fire engine, the city of Matsudo acted as an intermediary, and this was realized in 2022. In December, two firefighters were dispatched from Matsudo City to conduct training for the donated fire engine.<sup>4</sup>

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<sup>3</sup> Same as above

<sup>4</sup> Tokyo Shimbun and The Society for Promotion of Japanese Diplomacy

**Table 17-11 Exchange History Between Dominican Republic and Matsudo City**

Time	Exchanges
September 2015	The Minister of the Embassy of the Dominican Republic in Japan, who visited Matsudo City on the "Tour of the Diplomatic Corps in Japan" co-sponsored by the Ministry of Foreign Affairs and Matsudo City, was interested in the pears of Matsudo City and approached it to deepen exchanges.
December 2015	Ambassador Dominguez of the Dominican Republic asked the mayor of Matsudo City, Mr. Hongoya, for assistance in cultivating Japanese pears in the Dominican Republic.
June 2016	Upon invitation to the export fair held in the Dominican Republic, a delegation including the deputy mayor from Matsudo visited the Dominican Republic.
2016	Matsudo City became a host town for the Dominican Republic.
November 2016	The director general of the Dominican Agricultural Institute visited Matsudo City and signed a memorandum of understanding regarding the exchange of pears.
2017	Project commenced based on the above memorandum.
27th July 2017	Held "the Dominican Republic and Matsudo City Host Town Exchange Aisha Siedo Violin Concert".
January 2018	25 pear seedlings and seeds were planted on a farm of the Dominican Agricultural Institute in the city of Constanza at an altitude of 1,200 m, and trial cultivation began.
June 2018 - February 2019	2018 local government international cooperation promotion project "Dominican Republic Pear Cultivation Project" implementation.
June 2019 – October 2021	Continue to dispatch pear experts, accept trainees, and dispatch delegations.
March 2020 -	Conducted online cultivation guidance.
March 2021	Selected for JICA grassroots technical cooperation project.
April 2022 – for three years	As a JICA grassroots technical cooperation project, the "Cultivation Guidance Project for Making Japanese Pears a Specialty of the La Culata District" was implemented.
2022	A fire engine was donated to the city of Constanza in the Dominican Republic through the Grant Assistance for Grassroots Human Security Projects of the Embassy of Japan in the Dominican Republic.
3rd – 12th December 2022	The Matsudo City Fire Department dispatched two firefighters for training on the donated fire engine.

Source: Prepared by the JICA Study Team based on public information

## (2) Considerations

Since this exchange project is still in progress, it is not possible to evaluate its results at this time. However, it is expected to contribute to the branding of pears in Matsudo City, so it has the potential to become a successful example of local government cooperation and regional revitalization in Japan. The features of this project are as follows:

### 1) Speediness until Project Implementation

In this project, a tour was implemented in September 2015, and three months later, the embassy made a request, and half a year later, a delegation was dispatched. Since then, the project has been continuously developed and implemented, and trial cultivation started in 2018. Considering that the Japanese pear is a new crop for the Dominican Republic, where the suitability of growing conditions such as climate and soil is unknown, the speed of this project formation is outstanding.

### 2) Human Resources

Matsudo City not only utilizes the local resource of pears, but also utilizes various human resources in the project formation and implementation. In April 2017, five months after the memorandum of understanding was concluded, a former project formulation advisor at JICA Dominican Republic office was hired as an employee of the Matsudo City Tourism Association and was tasked to carry out coordination works. In addition, the city enlisted the cooperation of Mr. Shigeru Tanaka, who breeds pears in Shiroy City, which is located near Matsudo City, and provides cultivation guidance both in Japan and overseas. Furthermore, the Faculty of Horticulture of Chiba University cooperates with the implementation of cultivation training. In this way, the city established a human resource network of

experts in international cooperation and the Dominican Republic and Latin America region, and experts in pear cultivation.

### 3) Organization of Dominican Republic

The Dominican Republic side has been actively approaching the project from the formation stage: issuance of a request in November 2015 by Ambassador Dominguez, an invitation to an export fair that encouraged the dispatch of a study team before the memorandum was signed, the visit of the Dominican Agricultural Institute commissioner to Matsudo City when the memorandum was signed in 2016, and the use of the Dominican Agricultural Institute's farm. Also, according to the embassy, there was a strong initiative by Ambassador Takata in formulating the grassroots technical cooperation project. It is thought that the participation of two parties, namely the embassy in Japan as the contact point, and the Dominican Republic government as the key to the actual implementation of the project, was important.



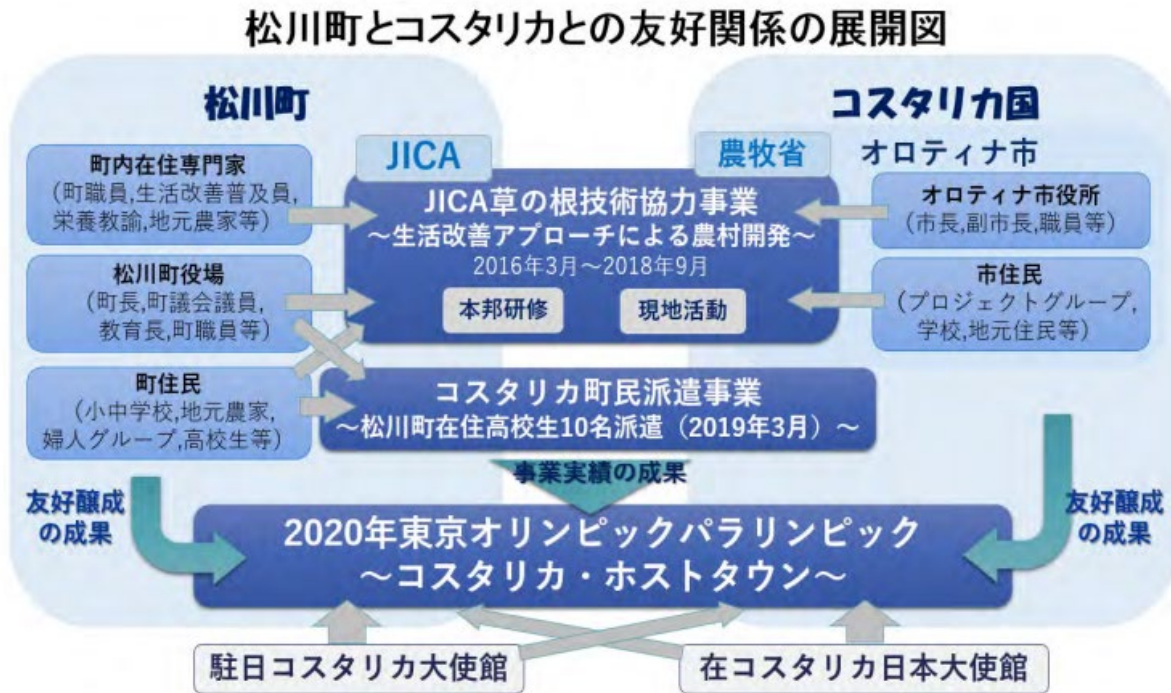
Source: Matsudo City

**Figure 17-2 Scenery of Instruction of Pear Cultivation in Dominican Republic**

#### 17.3.3 Costa Rica and Matsukawa Town, Nagano Prefecture

##### (1) History

Exchanges between Matsukawa Town and Costa Rica began in 2012 with a training project conducted with JICA. Since 2016, the project "Rural Development through a Livelihood Improvement Approach" implemented by the NPO International Farmer Participatory Technology Network has accepted trainees from Costa Rica and dispatched experts from the town. After such exchanges, in December 2016, it became a host town for Costa Rica at the Tokyo Olympics.



Source: FY2018 Ministry of Foreign Affairs ODA Evaluation Costa Rica and Nicaragua Country Evaluation (Third-Party Evaluation) Report (March 2019)

**Figure 17-3 Development of Relationship between Matsukawa Town and Costa Rica**

Since becoming a host town, Matsukawa has carried out many exchange activities despite being relatively small, with a population of about 12,000. In terms of events held in Japan alone, lectures were held by the Costa Rican Ambassador to Japan and officials from the Japanese Embassy in Costa Rica, a Spanish language course was held, and a movie viewing event was held by citizen volunteers.

Mutual personnel dispatch between Matsukawa Town and Costa Rica continued as well. Matsukawa Town officials were dispatched to Costa Rica through the "Rural Development through a Livelihood Improvement Approach" project implemented as grassroots technical cooperation, and trainees were also accepted from Costa Rica. Also, utilizing the town's own budget, a study tour was held to send high school students living in the town to Costa Rica. Costa Ricans residing in Japan, including embassy officials in Japan and Costa Rican students, were invited to the town for lectures and cultural exchange events.

Even after the spread of COVID-19, online exchanges continued, such as holding a total of four Costa Rica online tours. While many local governments have given up on direct visits to host the Olympics, post-event exchanges were held with the athletes.

After the Olympics, on June 29, 2022, the Japanese Ambassador to Costa Rica, Mr. Komatsu, visited Matsukawa Town. A letter from the Costa Rican Olympic Committee and others was handed over to Mayor Miyashita and others, and opinions were exchanged on future exchanges. The mayor said that he would like to continue to have opportunities for exchanges after the Olympics<sup>5</sup>. Also, at the 2022

<sup>5</sup> Minamishinshu.jp, "Matsukawa Town: The ambassador of Costa Rica in Japan visited Matsukawa Town to hand a thank you letter for the host town of Tokyo Olympics", 30 June 2022



Soccer World Cup, a public viewing of the match between the Japanese national team and the Costa Rica national team was held.



Source: JICA

Source: Matsukawa Town

Source: Matsukawa Town

**Figure 17-4 Scenery of Exchanges with Costa Rica in Matsukawa Town**

**Table 17-12 Exchange History Between Costa Rica and Matsukawa Town, Nagano Prefecture**

Time	Exchanges
2012	Exchange between Matsukawa Town and Costa Rica began as a result of JICA's training program.
2016 – 2019	Matsukawa Town accepted trainees from Costa Rica and dispatched experts from the town as part of the "Rural Development through Livelihood Improvement Approach" project implemented by the NPO International Farmer Participatory Technology Network.
December 2016	Matsukawa Town was selected as a host town for Costa Rica.
9 <sup>th</sup> April 2017	Cheering for the women's soccer team of Costa Rica vs. Japan. After that, the town cheered the Costa Rica national team in judo competitions and other events.
23 <sup>th</sup> August – 4 <sup>th</sup> October 2017	Held a Spanish conversation class. After that, it was held in April-August 2018, October 2018-March 2019, April-July 2019, October-December 2019, May-July 2020, September-December 2020, and April-July 2021.
28 <sup>th</sup> – 29 <sup>th</sup> September 2017	Costa Rican trainees of the grassroots technical cooperation project came to Japan. Opinions were exchanged on improving living conditions.
30 <sup>th</sup> September 2017	Costa Rica seminar by Ms. Laura, Ambassador of Costa Rica to Japan.
10 <sup>th</sup> October 2017	Implemented school lunch project using Costa Rican cuisine at elementary and junior high schools in the town.
31 <sup>th</sup> October – 13 <sup>th</sup> November 2017	Dispatched townspeople to Costa Rica through grassroots technical cooperation, and implemented local support activities by former life improvement extension workers and nutrition teachers.
14 <sup>th</sup> November 2017	At Tokai University, the mayor met with Komoto, First Secretary of the Embassy of Costa Rica and a judo exchange student.
10 <sup>th</sup> December 2017	The city exhibited the Costa Rican booth at the Iida International Exchange Evening. After that, it set up a Costa Rican booth in collaboration with students and Costa Ricans at various events, providing Costa Rican cuisine and exhibiting handicrafts.
12 <sup>th</sup> – 13 <sup>th</sup> December 2017	Ambassador of Japan to Costa Rica, Mr. Ito, visited the town. He had a discussion for cultural and sports exchanges with Costa Rica.
19 <sup>th</sup> December 2017	Held a class about Costa Rica at Matsukawa High School.
23 <sup>th</sup> December 2017	Held a Central America exchange party for interaction with three people from Costa Rica, Mexico, and El Salvador who were visiting Japan for Japanese language training.
24 <sup>th</sup> February 2018	At the Matsukawa Town Furusato Aji Matsuri Festival, Gallo Pinto, a Costa Rican dish, was served in collaboration with three Costa Ricans.
5 <sup>th</sup> – 19 <sup>th</sup> March 2018	Two local apple farmers were dispatched to Costa Rica through grassroots technical cooperation to provide support on site.
23 <sup>th</sup> – 24 <sup>th</sup> March 2018	Two Costa Rican students studying judo at Tokai University were invited to the town, and a judo exchange meeting, a cooking exchange meeting, an overall exchange meeting, a private lodging experience, and a farm visit were held.
23 <sup>th</sup> June 2018	Held a screening event for the movie "Miracle in Costa Rica". An alumnus of the Japan Overseas Cooperation Volunteers introduced Costa Rica and provided Costa Rican coffee.
June – July 2018	Dispatched the Chief of the Industrial Tourism Division to Costa Rica as a grassroots technical cooperation.
22 <sup>nd</sup> – 25 <sup>th</sup> August 2018	Five trainees from Costa Rica visited the town through grassroots technical cooperation. Held study tours and exchange meetings with townspeople.

Time	Exchanges
15 <sup>th</sup> September 2018	Exhibited Costa Rica and provided tortillas at Seiryu Enshu Matsuri Rakuen 2018. At the same event the following year, a tortilla handmade experience was held (June 2019).
22 <sup>nd</sup> – 23 <sup>rd</sup> September 2018	In collaboration with Maruyama Coffee, 13 Costa Rican coffee producers visited the town. They visited an apple farm and interacted through cultural experiences.
24 <sup>th</sup> September 2018	Performance by Costa Rican music students at the Matsukawa Town Music Festival.
25 <sup>th</sup> December 2018	Mr. Yamaguchi, a former employee of the Costa Rican Embassy, held a lecture and exchange event.
22 <sup>nd</sup> – 23 <sup>rd</sup> February 2019	At the Host Town Summit, Mr. Shirai (Local Vitalization Cooperator) received the "Host Town Leader Award".
February 2019	Dispatched townspeople to Costa Rica through grassroots technical cooperation.
23 <sup>rd</sup> – 29 <sup>th</sup> March 2019	Implemented a Costa Rica study tour and sent 10 high school students to Costa Rica. School exchanges, homestays, exchanges with JICA volunteers, etc. were realized.
1 <sup>st</sup> August 2019	Held workshops and lectures on the environment and food by Costa Rican environmental activist Mr. Jeffrey.
17 <sup>th</sup> August 2019	"¡PURA VIDA! Costa Rica Festival" was held. It offered dance and music performances, cooking classes, and traditional costume experiences.
24 <sup>th</sup> August 2019	The Costa Rica Olympic Committee Chairman and Director and the Japanese Ambassador to Costa Rica visited Japan, presented cheering flags, discussed host town exchanges, and visited farms and facilities in the town.
22 <sup>nd</sup> – 24 <sup>th</sup> November 2019	A cheering bus tour for Costa Rica players at the Judo Grand Slam Osaka 2019.
18 <sup>th</sup> December 2019	Lecture on "Japanese Culture and Sports Exchange in Costa Rica" was conducted by Mr. Komoto, First Secretary of the Embassy of Japan in Costa Rica.
15 <sup>th</sup> January – 13 <sup>th</sup> March 2020	Accepted JICA Overseas Cooperation Volunteer trainees on "Regional Practice". Under the theme of "promoting international exchange and globalization of the town through host towns", trainees from Komagane Training Center of JICA entered the community to work on issues together.
January – February 2020	Elementary and junior high schools in the town wrote letters to support Costa Rica.
1 <sup>st</sup> February 2020	A Costa Rican art experience class was held by inviting a designer from Costa Rica.
9 <sup>th</sup> February 2020	Provide school lunches of Costa Rican cuisine such as Olla de Carne and Picadillo at elementary and junior high schools in the town.
20 <sup>th</sup> – 28 <sup>th</sup> March 2020	A Costa Rica study tour was planned, but was canceled due to the spread of the new coronavirus infection. The plan was to send seven high school students and three staff members from the town to Costa Rica for school exchanges, homestays, activities with environmental conservation groups, and tours of living improvement areas.
13 <sup>th</sup> June and 8 <sup>th</sup> August 2020	Held a virtual Japan-Costa Rica exchange meeting between six Costa Rican Japanese language learners and six high school students participating in the study tour.
15 <sup>th</sup> September 2020	Virtual participation in the "Japan-SICA Friendship Commemorative Ceremony".
31 <sup>st</sup> October 2020	Held a virtual marimba concert.
1 <sup>st</sup> – 3 <sup>rd</sup> November 2020	Invited the Costa Rican ambassador to Japan and his wife to the town, and held a virtual exchange with elementary school students, exchanges with high school students participating in the study tour, and a lecture by the ambassador.
10 <sup>th</sup> February 2021	High school students participating in the study tour and others created a thousand paper cranes for Costa Rican medical personnel.
20 <sup>th</sup> February 2021	Received the "Online Exchange Award / Special Award" as a municipality that conducted particularly energetic online exchange with the partner country at the Host Town Summit.
April – October 2021	A total of 4 Costa Rica virtual tours were held. 1st: "Cityscape of San Jose", 2nd: "Costa Rica Dining Table", 3rd: "Nature and Creatures", 4th: "Plants and Ecotourism".
15 <sup>th</sup> May 2021	Held a virtual tour of Matsukawa for Japanese language learners in Costa Rica.
June 2021 -	Filming a cheering video for the Costa Rica team.
30 <sup>th</sup> June 2021	Held a virtual send-off party for the Costa Rica team for the Olympics and Paralympic Games.
3 <sup>rd</sup> – 5 <sup>th</sup> August 2021	Hosted the Costa Rican Olympic team and held post-event exchanges. The Costa Rican ambassador to Japan and his wife also visited the town.
6 <sup>th</sup> – 8 <sup>th</sup> September 2021	Hosted the Costa Rica Paralympics team and held post-event exchanges.
29 <sup>th</sup> June 2022	The Japanese ambassador to Costa Rica, Komatsu, visited the town and handed the mayor a letter from the Olympic Committee.
27 <sup>th</sup> November 2022	Held a public viewing of the men's World Cup soccer match between Japan and Costa Rica.

Source: Prepared from the website of Matsukawa Town (extracted)

## (2) Human Resource and Organization

### 1) Matsukawa Town

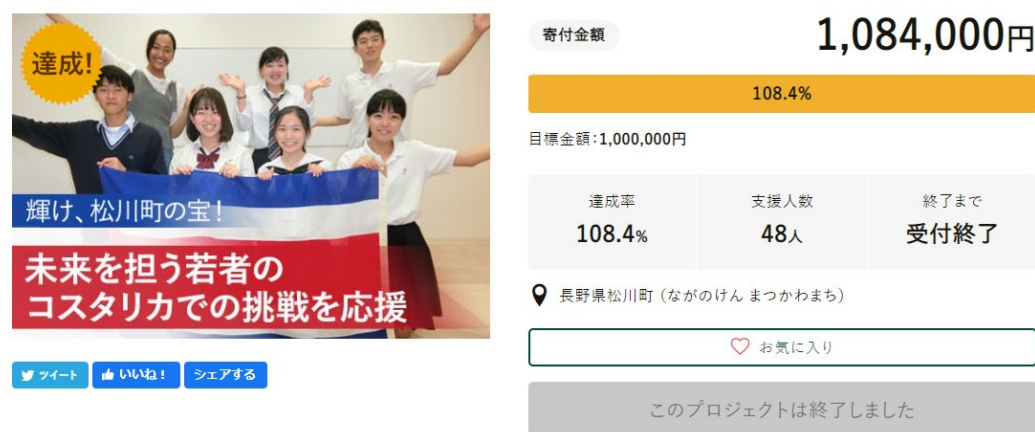
Matsukawa is a small town with a population of about 12,000, and the human and economic resources available for interaction were limited. Despite such a situation, Ms. Shirai, who had experience in Costa Rica as a Japan Overseas Cooperation Volunteer, actively promoted exchange projects. Ms. Shirai was involved in Japanese language education in Costa Rica as a Japan Overseas Cooperation Volunteer from 2015 to 2017. After returning to Japan, she was hired by Matsukawa Town's "Local Vitalization Cooperator (host town promoter)" and promoted exchange projects.

First of all, she launched many projects to introduce Costa Rica and cultivated the awareness of the townspeople for host town exchanges. Although it was unable to attract a pre-training camp, she used her own connections to invite Costa Rican students studying in Japan to Matsukawa Town, creating a flow of interaction with the townspeople. As a legacy for 2020, she also worked to develop the next generation with global mind, such as planning events where local high school students and Costa Ricans can interact directly. Not only Ms. Shirai but also the townspeople volunteered to launch the 'Costa Rica Club', which held screenings of the movie 'The Miracle of Costa Rica'<sup>6</sup>. At the "Host Town Summit 2019" sponsored by the Tokyo Olympic and Paralympic Promotion Headquarters, Ms. Shirai was commended as "Host Town Leader" out of about 300 municipalities.

In addition, although it was canceled due to the COVID-19 disaster, when sending high school students to Costa Rica in 2020, the town used a crowdfunding donation system that utilizes the hometown tax system, and achieved the target amount of 1 million yen. It was a new system introduced in 2013, with which local governments presented specific methods of utilization to collect donations.

輝け、松川町の宝! 新たな挑戦を通じ、町の未来を担う若者を応援～コスタリカとの交流事業～

カテゴリ: まちづくり



Source: furusato-tax.jp

Figure 17-5 Crowdfunding Raised by Matsukawa Town

<sup>6</sup> Source: Website of the Ministry of Foreign Affairs of Japan ([https://www.mofa.go.jp/mofaj/gaiko/local/page24\\_001625.html](https://www.mofa.go.jp/mofaj/gaiko/local/page24_001625.html))

## 2) Embassy of Costa Rica in Japan and Embassy of Japan in Costa Rica

It is considered that both embassies provided strong support for the host town exchange. From 2017 to 2022, Costa Rican Embassy officials have visited Matsukawa three times, and Japanese Embassy officials have visited Matsukawa three times.

### (3) Area of Cooperation

Exchange activities that are positioned as cultural exchanges and sports exchanges account for the majority. Among them, cooperation with local students and citizen volunteer groups, and direct human exchange with Costa Ricans living in Japan are common. In terms of cultural exchange, it is worth noting that seminars related to the natural environment and ecotourism were held using the Costa Rican brand. In grassroots technical cooperation, the town worked on "rural development through a livelihood improvement approach." A former livelihood extension worker, a nutrition teacher, and a section manager of the tourism division were dispatched to Costa Rica, and trainees from Costa Rica visited apple farmers. In this way, agriculture and rural development and the natural environment are the main themes of exchange and cooperation.

#### 17.3.4 OECS and Kagoshima Prefecture

##### (1) History

From Kagoshima Prefecture, in addition to Wadamari-cho, China-cho, and Yoron-cho mentioned in Section 17.2, Tokunoshima-cho and Amagi-cho were registered as host towns for the five eastern Caribbean island nations. The five towns are remote islands south of Amami Oshima, and although their scales are different, they have common issues with small island nations, so that cooperation on common issues and branding is expected.

**Table 17-13 Host Town Project Plan of 5 Towns of Kagoshima Prefecture**

Local Government of Japan	Invited Country	Host Town Project Plan
Wadamari Town	Dominica	<ul style="list-style-type: none"> <li>After the 2020 Tokyo Olympics, the town will invite Dominican Olympic athletes, carry out various exchanges with the townspeople, increase the exchange population, and develop human resources for sightseeing and interpreting volunteers.</li> <li>Through exchanges with Dominica, the town will also exchange opinions on the common issue of the "marine litter problem" and work toward solving the problem.</li> </ul>
China Town	Grenada	<ul style="list-style-type: none"> <li>After the 2020 Tokyo Olympics, the town will invite Olympic and Paralympic athletes from Grenada to provide sports classes and opportunities to learn about the country's culture, thereby nurturing children's independence and diversity.</li> <li>Invite Grenada Olympic and Paralympic athletes and related parties to promote tourism resources such as Shoryudo Cave, Cape Tamina, Yagomo Coast, and subtropical flowers, which are blessed with the history and rich nature of the town, to increase the number of visitors.</li> </ul>
Yoron Town	Antigua and Barbuda	<ul style="list-style-type: none"> <li>After the 2020 Tokyo Olympics, the town will plan and execute various exchange projects to invite Olympic athletes from Antigua and Barbuda such as sports classes, with the generation that will lead the future of the town playing a central role.</li> <li>Through exchanges with Antigua and Barbuda, exchange opinions on the common issue of coral reef bleaching and work towards solving the problem.</li> </ul>
Tokunoshima Town	Saint Vincent and the Grenadines	<ul style="list-style-type: none"> <li>In order to build momentum for the Tokyo Olympics and revitalize the region, the town will hold workshops and concerts for children using the steelpan, an instrument that represents Saint Vincent's music, and invite paralympic athletes to hold exchange events with residents.</li> </ul>

Amagi Town	Saint Christopher and Nevis	<ul style="list-style-type: none"> <li>After the 2020 Tokyo Olympics, the town will invite Olympic athletes and carry out various exchanges with the townspeople to increase the visitors.</li> <li>From 2021 onwards, the town will use virtual meetings, video letters, letters, etc. to promote continuous exchanges between children of the two countries, thereby increasing their interest in and knowledge of international exchange, and enabling them to play an active role globally.</li> </ul>
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Source: jimotele.com

The five towns have implemented the "Host Town 5 Town Collaboration Project" to work together on the host town projects. On September 15, 2021, school lunches that enabled students to experience the food culture of the Caribbean region were provided to all elementary and junior high schools in the five towns. On September 30, a virtual exchange was held connecting elementary schools in the five countries and five towns. In addition, in the virtual exchange through the "Juntos!! Program for Promoting Understanding of Japan in Latin America" held on March 17, 2021, six towns and six countries participated, adding Osaki Town in Kagoshima Prefecture and Trinidad and Tobago. In this exchange, young diplomats and government officials from CARICOM countries visited six host towns through a virtual tour. Traditional folk songs and dances, nature, sugar cane and potatoes, and coastal cleaning activities were introduced.

In addition, more exchanges were carried out through cooperation between the towns: in August 2019, a symposium was held jointly by the three towns of Wadamari, China, and Yoron; and officials from Antigua and Barbuda and Saint Vincent and the Grenadines visited Yoron and Tokunoshima.

**Table 17-14 Exchange History Between OECS and Towns of Kagoshima Prefecture**

Time	Exchange
28 <sup>th</sup> February – 3 <sup>rd</sup> March 2019	Three people involved from Saint Vincent and the Grenadines, including athletes, visited Tokunoshima. Music exchanges and sports classes were held.
4 <sup>th</sup> June 2019	Four musicians from Grenada were invited to China Town and cultural exchanges were held through food and music.
26 <sup>th</sup> August 2019	Held a joint symposium and exchange event for Wadamari, China, Yoron and the Caribbean countries. Music workshops were also held. Participants noticed commonalities such as sugar cane and rum.
27 <sup>th</sup> August 2019	An environmental conference was held by Wadamari, China and the two Caribbean countries. Policies aimed at reducing plastic waste were introduced.
November 2019	A total of six people from Antigua and Barbuda and Saint Vincent and the Grenadines visited Yoron Town and Tokunoshima Town. While doing a homestay at a local family, they visited schools and other facilities in the town and exchanged music such as steelpan performances.
9 <sup>th</sup> and 10 <sup>th</sup> February 2020	Ambassadors from Saint Kitts and Nevis were invited to Amagi Town, where exchanges such as wrestling classes and school visits were carried out.
March 2020	Tokunoshima High School Art Club created a collaborative work for the Art Mile Project.
17 <sup>th</sup> March 2021	Virtual exchange was carried out through the "Juntos!! Program for Promoting Understanding of Japan in Latin America".
15 <sup>th</sup> September 2021	Caribbean-style cuisine was served at elementary and junior high schools in the five towns.
30 <sup>th</sup> September 2021	A virtual exchange was held connecting elementary schools in the five countries and five towns.

Source: Prepared by the JICA Study Team based on public information



Source: Amami-Shimbun

**Figure 17-6 Work Created by Tokunoshima High School Art Club**

## **(2) Human Resource and Organization**

All five towns are small municipalities, and the partner countries of OECS are also small countries, but online exchanges and visits by related parties were realized by the five towns working together to engage in exchanges.

In addition, China Town promoted exchanges by commissioning an international student from Grenada to the Waseda University graduate school as advisor during the host town project.

### **17.3.5 Nicaragua – Kanra Town, Gunma Prefecture**

#### **(1) History**

Discussions on host town exchanges between Kanra and Nicaragua began, because a volunteer dispatched to Nicaragua as Japan Overseas Cooperation Volunteer received pre-departure training at the NPO Shizenjuku Terakoya based in Kanra Town, and Nicaraguan trainees of JICA received agricultural training under farmers in Kanra Town. Ambassador Rodrigo Coronel visited the town on April 15, 2019. After that, the registration was officially decided on June 28, 2019.

After being registered as a host town, various exchanges took place. In September 2019, a lecture titled "Nicaragua You'll Fall in Love With" was held by Director Nai of the JICA Nicaragua Office, and was attended by about 100 town officials. Ambassador Extraordinary and Plenipotentiary of Japan to Nicaragua Suzuki gave a lecture entitled "Culture and Economy of Nicaragua", which was attended by 330 Kanra Junior High School students and related parties. Ambassador Extraordinary and Plenipotentiary to Japan, Rodrigo Coronel, also visited the town for this lecture. After the lecture, a tasting party for Nicaraguan school food was held, where Ambassador Suzuki and Ambassador Rodrigo Coronel were also present.

In the same month, a Nicaraguan baseball team also came to the town. After receiving a report that the 27 members of the Nicaraguan team that participated in the U-18 Baseball World Cup held in South

Korea were stranded at Narita Airport due to the effects of a typhoon, the town hurriedly accepted them, realizing exchanges. The team stayed in town for three days, and exchanged with the Kanra Junior High School baseball team.

From February 2 to 16, 2020, five people from Kanra Town, including Deputy Mayor Morihira, and JICA staff visited Nicaragua as part of a JICA study team, with the aim of promoting host town exchanges and popularizing judo locally. In addition to visiting the Nicaraguan Institute of Sports and meeting with officials from the baseball federation and judo federation, they also visited elementary and junior high schools and the Central American University, which is working to spread the Japanese language and culture, and exchanged opinions on exchanges among children. They also participated in the Japan Festival held in Managua and introduced the Tokyo Olympics and Kanra Town.

Even after the Tokyo Olympics, Kanra Town is working on continuous exchanges with Nicaragua, such as sending videos of junior high school brass band performances. On July 29, 2022, Mr. Sandy Davila, the temporary ambassador to Nicaragua, who took up his post in March 2022, visited the town for the first time, and visited the Nicaragua coffee corner at Michi-no-Eki Kanra and inspected the fire engine scheduled to be donated to Nicaragua.

**Table 17-15 Exchange History Between Nicaragua and Kanra Town, Gunma Prefecture**

Time	Exchange
2001	Shizenjuku Terakoya was founded.
15 <sup>th</sup> April 2019	Ambassador Rodrigo Coronel visited Kanra Town to register as a host town.
28 <sup>th</sup> June 2019	Host town registration was decided.
2 <sup>nd</sup> September 2019	Held a lecture on "Nicaragua You'll Fall in Love With" by Mr. Nai, director of the JICA Nicaragua office. About 100 people participated in the seminar.
10 <sup>th</sup> – 12 <sup>th</sup> September 2019	Since the 27 members of the Nicaraguan team that participated in the U-18 Baseball World Cup held in South Korea were stranded at Narita Airport due to the effects of the typhoon, the town invited them to have exchange activities.
20 <sup>th</sup> September 2019	A lecture on "Culture and Economy of Nicaragua" was held at Kanra Junior High School. The lecturer was Mr. Suzuki, Ambassador Extraordinary and Plenipotentiary of Japan to Nicaragua.
3 <sup>rd</sup> November 2019	Ambassador Rodrigo Coronel visited the Nicaragua booth at the Kanra Town Industrial Culture Festival. JICA Tokyo and former Nicaragua Overseas Cooperation Volunteers also cooperated.
2 <sup>nd</sup> – 16 <sup>th</sup> February 2020	Kanra Town officials including the deputy mayor visited Nicaragua as part of a JICA study team.
15 <sup>th</sup> September 2020	To commemorate the 15th anniversary of SICA-Japan friendship, SICA member countries donated coffee to medical workers in each host town municipality.
8 <sup>th</sup> June 2021	Due to the influence of the COVID-19, it was decided to cancel the acceptance of the athletes.
3 <sup>rd</sup> September 2021	A performance video of a brass band was filmed and sent to Nicaragua.
29 <sup>th</sup> July 2022	Chargé d'Affaires Sandy Davila visited the town for the first time.

Source: Prepared by the JICA Study Team based on public information

## (2) Human Resource and Organization

The cooperation between Kanra Town and Nicaragua has been backboned with strong initiatives of the town, Shizenjuku Terakoya, Nicaraguan Embassy in Japan, and JICA.

### 1) Town

When Mr. Yajima, the founder of Shizenjuku Terakoya, proposed to local governments in Gunma Prefecture the "town development centered on agriculture and international cooperation activities", the

only town that showed interest was Kanra Town<sup>7</sup>. As more trainees from overseas were accepted, the understanding of the town as a whole was nurtured. Also, when the baseball team from Nicaragua was stranded at Narita Airport in September 2019, the city showed its promptness and ability despite the unexpected situation, quickly accepting the team into the town.



Source: Kanra Town

**Figure 17-7 Exchange between Nicaraguan Baseball Team and Kanra Junior High School Baseball Team**

## 2) Shizenjuku Terakoya

Shizenjuku Terakoya is an NPO established in 1999 by Mr. Ryoichi Yajima, who was dispatched to Panama as a JICA volunteer. Under the slogan of "cultivating the future of the world from farming villages", as a project commissioned by the Ministry of Agriculture, Forestry and Fisheries, JICA, town governments, etc., it provides supplementary technical training for JOCVs, pre-training for Japanese going overseas related to agriculture, training for agricultural trainees from overseas, communication and translation services, and supports for foreign engineers. It carries out activities while getting the understanding of local farmers and contributing to fostering the understanding of the townspeople towards international cooperation and acceptance of foreigners. Host town exchanges were realized through the development of connections with Nicaraguan trainees who visited Shizenjuku Terakoya for training. It also worked to improve the momentum by providing Nicaraguan local food and coffee at the cafe it operates.

## 3) Nicaraguan Embassy in Japan

Ambassador Rodrigo Coronel visited the town before and after the registration as a host town. In November 2020, the Ambassador and Minister-Counselor Ricardo Vivas sent a message to the townspeople when he retired, showing positive involvement. In July 2022, after the Olympics, Interim Ambassador Sandy Davila visited the town for the first time, meaning that the relationship has been continuing for future exchange and cooperation.

## 4) JICA

JICA also actively worked toward cooperation with Nicaragua. On September 2, 2019, a lecture by

<sup>7</sup> Website of JICA Overseas Cooperation Volunteers

[https://www.jica.go.jp/volunteer/outline/publication/pamphlet/crossroad/202110/pickup\\_10\\_07/index.html](https://www.jica.go.jp/volunteer/outline/publication/pamphlet/crossroad/202110/pickup_10_07/index.html)



the director of JICA Nicaragua was held, and JICA Tokyo and former Nicaragua Overseas Cooperation Volunteers cooperated in the Nicaragua booth set up at the Kanra Town Industrial Culture Festival in November 2019. The visit by officials from Kanra Town as part of a JICA study team was realized in February 2020. In addition, the JICA Nicaragua office provided materials for Kanra Town's public relations magazine, Kouhou Kanra, to Kanra Town on a regular basis.

### (3) Area of Cooperation

Cultural exchange activities such as lectures and exchanges at junior high schools are the main contents of the exchanges that are led by the towns as host town exchanges. On the other hand, Shizenjuku Terakoya accepts agricultural trainees from various countries, including Nicaragua, and agriculture can be said to be one of the fields of cooperation. In addition, a donation of a fire engine is currently planned.

#### 17.3.6 El Salvador – Fujisawa City, Kanagawa Prefecture

##### (1) History

The start of exchanges between El Salvador and Fujisawa City was due to the connection that Former Ambassador Marta Lydia Celayandia Cisneros, lived in Fujisawa City. The ambassador was engaged in international education in primary schools in Fujisawa City from 2001 to 2009. Later, since she served as ambassador from 2011 to September 2020, a series of cooperation was realized.

In 2014, the city of Fujisawa donated fire engines and ambulances used by the city's fire department to El Salvador, which had a chronic shortage of fire engines.

In addition, Fujisawa City served as a host town for El Salvador at the 2020 Tokyo Olympics and conducted exchange projects. Although direct interaction with citizens was not possible due to the COVID-19 pandemic, a pre-game training camp was held for a total of eight track and field and boxing athletes and staffs from El Salvador. Online exchanges through videos, the donation of coffee from the Embassy of El Salvador to medical workers, and the provision of school lunches associated with El Salvador were realized. Based on this account, Fujisawa City intends to promote exchanges and cooperation that can give back to citizens even after the Olympics.

**Table 17-16 Exchange History Between El Salvador and Fujisawa City**

Time	Exchanges
2001-2009	Current Ambassador Selayandya was involved in international understanding education at an elementary school in Fujisawa City.
2011	Ambassador Celayandia, who had a connection with Fujisawa City, assumed the post of ambassador.
September-October 2011	A training session was held with the Fujisawa City Tourism Association as part of the training in Japan for the "Eastern El Salvador Tourism Development Capacity Development Project".
August-October 2014	Fujisawa City donated one ambulance and one fire engine to El Salvador.
August 2019	El Salvador's Olympic team leader visited Fujisawa City.
December 2019	Fujisawa City was registered as a host town for El Salvador at the 2020 Tokyo Olympics.
28 January 2020	Fujisawa City and Kanagawa Prefecture have signed an agreement on pre-game training camps with the Olympic Committee of El Salvador.
24 September 2020	Ambassador Zelayandia of El Salvador visited Fujisawa City Hall and handed Mayor Suzuki about 1,000 servings of coffee produced in El Salvador.
December 2020	The Embassy of Japan in El Salvador created and released a video of "Chamba Dance" for the Olympic Games.
March 2021	Mr. Diego Alejandro Dalton Rosales became Ambassador of El Salvador in Japan.
April 2021	Ambassador Diego Dalton visited the mayor of Fujisawa City, Mr. Tsuneo Suzuki, and the Director of Sports Committee of Kanagawa Prefecture, Mr. Yoshinori Hirata, to continue preparation for the

Time	Exchanges
	Olympic Games, exchange activities with the El Salvador Olympic Team, and promote future exchanges regarding surf and art.
July 2021	The El Salvador National Team for the Tokyo Olympics held a preliminary training camp in Fujisawa City.
July 2021	Ambassador Diego Dalton visits Fujisawa City and the Olympic Training Camp with El Salvador Olympic Delegation. El Salvador Team presented once again Coffee of El Salvador to the Fujisawa City officers and volunteers, as a friendship gesture.
March 2022	On the official website of Fujisawa City, a Yuru-chara online illustration exhibition, “Púchica El Salvador in Fujisawa”, was held by Kobe Design University graduate students from El Salvador. (It was originally planned to be a public event with in person participants. However due to COVID-19 pandemic restrictions, it was adjusted as an online art exhibition only.)
March 2022	Fujisawa Municipality donated a set of Tokyo 2020 Sports Accessories to the Embassy of El Salvador in Japan, which have been shared with El Salvador residents and scholars in Japan to promote the friendship and the memory of the Olympic Games between the Salvadorean community and Japanese people.

Source: JICA Study Team based on public information and information offered by the Embassy of El Salvador

## (2) Human Resource and Organization

In the case of El Salvador, the embassy in Japan is actively working to collaborate with local governments and has built a long-standing partnership with Fujisawa City in particular. The relationship between El Salvador and Fujisawa City is derived from the friendship of former ambassadors, and even after the change of seat to Ambassador Diego Dalton, the embassy shows active initiatives to develop the relationship, including building up connections with other actors such as NSA, SCAJ, and JATA.

In Fujisawa City, the International Division for Human Rights, Gender Equality, and Peace serves as a contact point for exchanges. If it is English, there will be no problem in communicating with the El Salvadoran people. On the other hand, the lack of a network of people with connections to El Salvador is an issue, so it is hoped that JICA will introduce former JICA Overseas Cooperation Volunteers, or that the embassy will introduce foreign students.

## (3) Area of Cooperation

The Embassy of El Salvador lists coffee, art, and surfing as themes of exchange with Fujisawa City. It is also considering establishing a sister city relationship.

Coffee is a specialty of El Salvador. Coffee cultivation spread in El Salvador in the 1930s and 1940s, and in the 1970s it became the fifth largest producer in the world. However, the civil war turned coffee farms into battlefields and left them neglected for more than a decade, leading to the decline of the coffee industry. Since 2000, it has been promoting the revival of the coffee industry, and in 2020 it created the country's own brand “Café de El Salvador” and is working on branding<sup>8</sup>.

As for surfing, El Salvador is the host of the 2021 Surf City El Salvador ISA World Surfing Games, the final qualifier for the Tokyo Olympics. Since President Bukele took office in 2019, surfing branding has been promoted through infrastructure development and construction of tourist facilities. In particular, the coastline of La Libertad, located southeast of the capital San Salvador, is known as a surf spot. Surfing is also popular in Fujisawa City, so that it can be a common interest of the two parties. Fujisawa City and El Salvador's surf spots, such as Surf City, also have in common that they are located on the outskirts of the capital. In addition, Fujisawa City has experience in town and community development with emphasis on the sea, such as the acquisition of Blue Flag certification, so it is

<sup>8</sup> Café de El Salvador

expected that surfing will be the starting point for the exchange of knowledge not only from the perspective of sports, but also from the perspective of town and community development and regional development.

In order to promote cooperation in these fields, the Embassy of El Salvador is working on cooperation with related organizations such as the Specialty Coffee Association of Japan (SCAJ), the Nippon Surfing Association (NSA), and the Japan Association of Travel Agents (JATA), with which they have organized joint events.

#### **(4) Others**

The embassy is also working in cooperation with Kobe City. This is because Kobe University has many international students from El Salvador. According to the embassy, 11 students graduated from 2010 to 2022. Another reason is the presence of a Salvadoran community in the Kansai region. In terms of fields, the embassy lists agriculture, medical care, and disaster risk reduction. In these fields, the presence of international students is expected to contribute to academic and human resource development. In the area of medical care, the city of Kobe is promoting the formation of clusters through international collaboration and industry-government-academia collaboration to form the Kobe Biomedical Industry Cluster, in which the embassy shows interests. In the area of disaster risk reduction, the city has received the visit of over 25 Salvadoreans technicians to learn about the lessons of Hanshin Awaji Earthquake and to improve BOSAI culture in El Salvador.

It also intends to work in cooperation with Osaka City, which is also in the Kansai area. As mentioned above, there is a Salvadoran community in the Kansai area. Osaka has been selected as a "global hub city" in the "World-Class Startup Ecosystem Base Formation Strategy" promoted by the Cabinet Office of Japan and is working to build a startup ecosystem including the life science field. In April 2022, the Embassy of Colombia and the Osaka Innovation Hub held a pitch event in collaboration, which could be an example for the Embassy of El Salvador.

In addition, El Salvador has confirmed its participation in the OSAKA EXPO 2025. The year 2025 will be the 90th anniversary of El Salvador - Japan diplomatic relations, and it is with special interest for El Salvador to learn and organize exchanges that are modern and innovative with Japanese cities, as a goal for 2025. Kobe City and Osaka City, with above-mentioned initiatives, could be such cities, as well as Fujisawa Sustainable Smart Town, which could be a theme of exchange with Fujisawa City.

### **17.3.7 Wazuka Town, Kyoto Prefecture**

#### **(1) History**

Wazuka Town is a small municipality in Kyoto famous for tea production. It has accepted JICA trainees on the theme of tea cultivation, etc., building a relationship with JICA Headquarters and JICA Kansai. On the other hand, the town faced an issue of regional development, resulting in a rapid population decline and necessity of regional revitalization.

At the same time, JICA has been given a new mission to utilize its overseas knowledge and experience in Japan and to build a more mutually beneficial relationship with countries with which JICA has been in cooperation, including developing countries, in addition to implementing the conventional one-way assistance from Japan to developing countries. Based on this situation, Wazuka Town and JICA's

Central America and the Caribbean Division are working on building a co-creation model with the Central America region, which has common challenges in regional revitalization.

Based on the proposal of the division, efforts toward regional revitalization with Wazuka Town have started in 2021. JICA officials visited Wazuka Town from summer to autumn of the same year, and after conducting hearings and confirming the needs of various stakeholders in the town, it was decided to work on this as a new business idea of JICA. Activities are roughly divided into (1) fragrance project, (2) support of education for international cooperation and understanding, (3) acceptance of JICA long-term trainees, (4) restoration of old folk houses, and (5) exchange meetings with Central America.

In the fragrance project, the focus is on the "fragrance of the town", including forest resources as a new branding element other than tea, which is the main industry of Wazuka Town. JICA outsourced a perfumer to create the fragrance of the town, using Wazuka Town's resources such as cedar, cypress and herbs. In 2022, three distillations were carried out to produce prototypes, which were presented to the town mayor. It was decided to hold a preview event in March 2023 to showcase the produced fragrance, using the town's supplementary budget, and its commercialization is in consideration. Also, introducing the "fragrance of Wazuka" to the Embassies of Dominican Republic and Guatemala in Japan, they showed interest in the creation of the "fragrance of the town" utilizing natural plants and trees. In addition, positive opinions were observed in terms of utilization of "fragrance business" targeting the nostalgic market for the emigrants who moved to big cities, including by collaborating with products developed in Japanese countryside. In the future, it is expected that the town will take the lead in commercializing the fragrance industry, and that through JICA's network, the experiences will be expanded to develop specialty products in Central America and the Caribbean region targeting the nostalgic market.

Starting in 2022, the support for international cooperation and understanding education has been implemented during the integrated study classes for 4th and 5th grade students at Wazuka Elementary School, led by international cooperation promoters at the Kyoto desk of JICA Kansai. Utilizing JICA's network of former JOCVs, on-site lectures by people with experience in various occupations in various countries, not limited to Central America and the Caribbean were held. Those who were involved in the town's educational institutions hope that such activities will continue to nurture "attachment to hometown" and to promote "globalization" in a town facing a declining birth rate and aging population.

As for the acceptance of JICA long-term trainees, among the international students accepted in Kansai by JICA, 20 applicants had a tea picking experience to learn the history of the Japanese tea industry and traditional Japanese culture in November 2022. The Development Studies Program Division of JICA Kansai was in charge of the implementation of this program, and the Wazuka Town Revitalization Center hosted the international student training. Since the satisfaction of participants was high, the training is expected to be held in the next fiscal year and beyond.

In the restoration of old folk houses, the Latin America and the Caribbean Department of JICA introduced Professor Munemoto of Ritsumeikan University, a first-class architect, to the people involved in Wazuka. In FY2022, he and university students measured the abandoned traditional restaurant which local people hope to be utilized. A competition on its utilization was held with students, and it is planned to hold a preview of the gold prize winning work at an event in the town in March 2023.

At the exchange meetings with Central America, Mr. Uchikawa, an expert who is working to spread the One Village One Product (OVOP) Movement in Honduras and Guatemala, has organized virtual meetings with local OVOP activists and producers. From Wazuka Town, the Employment Promotion Council, Wazuka Town Revitalization Center, and producers participated. From Honduras, FUNAZUCAR (sugar industry fund), and from Guatemala, the Ministry of Economy and producers involved in OVOP in both countries participated. At the five exchange meetings held so far, the common strengths of Wazuka Town and Central America (the abundance and diversity of local resources, the attachment of local residents to the area, and the desire for regional development and the promotion of local industries attitudes) and issues (OEM supply to well-known brands in other regions, market and transportation access to large cities, dependence on monoculture economy, tendency to brand only monoculture products, lack of successors to local industries and youth population outflow, lack of local youth's understanding and identity of the area, response to DX and external transmission of the area's appeal) were confirmed. In the future, it is proposed that the same expert will hold the onpaku (Decentralized Hands-on Program Exhibition) originating in Oita Prefecture, which is popularized and practiced in Central America, at educational institutions in Wazuka Town, and continue to hold an online exchange with towns of Central America.

In December 2022, the “Report of the Advisory Panel on Revision of the Development Cooperation Charter” announced that one of the three directions for future development cooperation would be “to create an environment where Japan and the world cooperate, co-create for development and prosperity”. It is written that the relationship with developing countries will be developed into a partnership that aims to create new value through cooperation and co-creation in order to solve Japan's social issues. The efforts of Wazuka Town and JICA are expected to be continued as a leading example to become one of the co-creation models.

**Table 17-17 Exchange History between Honduras and Guatemala and Wazuka Town, Kyoto Prefecture**

Time	Exchange
<b>Before Current Cooperation</b>	
November 2007	As part of a JICA project, trainees from Turkey visited tea making, which is not mass production.
October 2012	Accepted government officials from two Cambodian provinces for JICA training. With regard to the cultivation and processing of tea, which is the main industry of the region, there was a high interest in how to protect and develop the main industry in the face of the declining birthrate, aging population, and depopulation.
2015	Accepted trainees for "Construction and Design of Information and Communication Infrastructure in Rural Areas" to observe the introduction and utilization of networks in depopulated areas in Japan. In Wazuka Town, TVs in homes are connected to the local government via the internet, making it possible for residents who do not have computers or smartphones to view administrative information on TV, helping to raise public awareness of administrative information and improve services for residents.
June 2021	A discussion was held between Wazuka Town and Central America and the Caribbean Division of JICA on a possible collaboration to build a co-creative relationship.
<b>(1) Fragrance Project</b>	
March 2022	Mr. Ikenaga, a local branding practitioner, and Ms. Haruna, a perfumer, visited Wazuka Town with the introduction of JICA. They proposed to create the fragrance of Wazuka Town as a new branding other than tea.
June 2022	The first distillation was carried out at the Wazuka Revitalization Center to create a prototype.
August 2022	The second distillation was carried out to create a prototype.
October 2022	The prototypes were presented to the mayor. He suggested adding the scent of cedar, which is the town's tree.
December 2022	The third distillation was carried out to create a prototype.
December 2022	It was decided that the town would work on the fragrance project with its own financial resource with the supplementary budget.

Time	Exchange
<b>(2) Education for International Understandings</b>	
October 2021	A JICA Kansai staff and Mr. Uchikawa, an OVOP expert, visited Wazuka Town to have discussion about cooperation with JICA with a school principal and others.
March 2022	Staffs of JICA Kansai and Latin America and the Caribbean Department visited Wazuka Elementary School to discuss cooperation with JICA toward its realization.
May 2022	A JICA Kansai staff accompanied Wazuka Elementary School 3 <sup>rd</sup> graders on a tea-picking experience and introduced resources of JICA to teachers.
August 2022	A JICA Kansai staff visited Wazuka Elementary School and examined a specific class implementation schedule during the integrated study classes.
September 2022	A class on the theme of “nature” was held for fourth graders of Wazuka Elementary School. Ms. Matsumoto, a former JICA volunteer in Bolivia, and Mr. Hironaka, a former JICA volunteer in Kyrgyztan took the stage.
October 2022	A class on the theme of “rice” was held for the fifth graders of Wazuka Elementary School. Mr. Hironaka, a former JICA volunteer in Kyrgyztan, Mr. Nakagawa, a former JICA volunteer in Uganda, and Mr. Egusa, a former JICA volunteer in Samoa, took the stage.
<b>(3) Acceptance of Trainees</b>	
November 2022	Tea picking experience for 20 international students accepted by JICA Kansai. They were accepted by the Wazuka Town Revitalization Center.
<b>(4) Restoration of Old Folk Houses</b>	
June 2022	Professor Munemoto of Ritsumeikan University visited Wazuka Town with an introduction from JICA.
August 2022	Professor Munemoto and 10 students visited Wazuka Town. They measured the building of a former Japanese restaurant that the townspeople desired utilization.
September 2022	Professor Munemoto and six students visited Wazuka Town to discuss about utilization of the building.
October 2022	Students proposed a renovation of the restaurant, which was evaluated by the town mayor and others.
<b>(5) Exchange Meetings with Central America</b>	
29 September 2021	The first exchange meeting was held (Wazuka-cho – Honduras).
26 October 2021	The second exchange meeting was held (Wazuka-cho – Honduras).
26 November 2021	The third exchange meeting was held (Wazuka Town – Honduras and Guatemala).
25 August 2022	The fourth exchange meeting was held (Wazuka Town – Honduras and Guatemala).
30 September 2022	The fifth exchange meeting was held (Wazuka Town – Honduras and Guatemala).

Source: JICA Study Team

## (2) Human Resource and Organization

JICA's main role in this case is to provide know-how and the human resource network. In the field of international cooperation, JICA not only provides funds and human resources, but also develops local human resources and structures based on the keywords of "development of human, products and experiences", so that the effects of projects will continue even after the end of assistance. Considering that the dependence on temporary subsidies is one of the challenges of regional revitalization, JICA's know-how is expected to be utilized. In addition, in order to work on the new branding of Wazuka Town, various external human resources are involved in this initiative through JICA's introduction. In particular, JICA experts who have experience in disseminating OVOP cooperation projects in Central America and former Japan Overseas Cooperation Volunteers are part of JICA's unique human resource network.

On the other hand, “business continuity” is one of the challenges. Through the introduction of JICA, various human resources have come to bring new opinions and knowledge to regional revitalization of Wazuka Town, but it cannot be considered as a success unless it leads to continuous involvement and practice in Wazuka Town. In this regard, it can be evaluated that the expenditure of Wazuka Town's own financial resources for the fragrance project and the “Wazuka Town Development EXPO” held by Wazuka Town and supported by JICA, in which the activities realized in the town with JICA will be

presented and their continuity and expansion will be discussed, can be evaluated as a case of enhancing the town's autonomy. It is desirable to continue working on this issue by utilizing JICA's know-how.

### **(3) Future Exchanges and Cooperation**

#### **1) Cooperation between Wazuka Town and JICA**

JICA plans to continue this initiative while considering the modality. It is hoped that the initiative with Wazuka Town will serve as a model case for building a co-creative relationship as indicated in the above-mentioned "Report of the Advisory Panel on Revision of the Development Cooperation Charter."

Among the activities of this initiative, (2) education for international understandings has been highly evaluated by people involved in education in Wazuka Town, and it is considered that the strength of JICA's human resource network is most likely to be manifested and implemented. On the other hand, the completely new initiative for JICA, regional revitalization, needs to lead to continuous practices by stakeholders other than JICA, so it is not easy to achieve the results expected by Wazuka Town.

Understanding that the most important result for regional revitalization in Wazuka Town is business success, it is desirable that the "fragrance project" will develop into profitable business and that other businesses will be born from other activities such as exchanges with Central America. Alternatively, the increase in related population, which has been frequently addressed in recent years in regional revitalization, can also be one of the outcomes. The continuous involvement of the human resources involved in Wazuka Town through this initiative and the transmission of information that contributes to regional branding efforts will also contribute to regional revitalization that will generate repeaters in Wazuka Town.

#### **2) Further Development**

According to JICA's plan, the efforts in Wazuka Town are expected to develop into JICA's international cooperation and efforts with other local governments, and in the future, the "future co-creation town development platform" will be formed. This platform will be a place for accumulating and sharing regional branding efforts in rural areas in Japan and overseas. As a shareable example, the idea is to implement the "fragrance project" that is being worked on in Wazuka Town in Central America and develop a nostalgic market targeting the immigrant market from the Northern Triangle.

It is desirable that the efforts in Wazuka Town achieve the above-mentioned results, and that the experience is shared domestically and internationally. On the other hand, in expanding JICA's efforts for regional revitalization in Japan, it is also important to try various activities and to learn lessons from them. The challenge of regional revitalization is the creation of private business, and it is necessary to proceed with a number of initiatives on the premise that it is impossible to always succeed. Therefore, it is expected that JICA and various related actors will take on the challenge of creating diverse businesses, and of working on comprehensive regional revitalization of other local governments.

#### **17.3.8 Belize and Yokoshibahikari Town, Chiba Prefecture**

Yokoshibahikari Town served as the host town for Belize at the Tokyo Olympics, and carried out various cultural exchange projects such as inviting a steelpan band, the Art Mile Project, and selling commemorative stamps. It is a small town with a population of just over 20,000, and while there were

no exchanges before the host town, the exchange program was actively developed.

## (1) History

There was no exchange relationship between Yokoshibahikari Town and Belize before exchanges aimed at host towns began. The host town was proposed by Chairman Abiru of Abiru Co. Ltd, a construction company in the town. He has a connection with Mr. Inaba, Honorary Consul General of Belize, and serves as a director of the Japan-Belize Friendship Association. In June 2016, the town was proposed to become a host town for Belize by Chairman Abiru, and since the town agreed with the desire to promote internationalization, a basic agreement on pre-camps was concluded in January 2018. In the following month, Yokoshibahikari Town was officially registered as a host town for Belize.

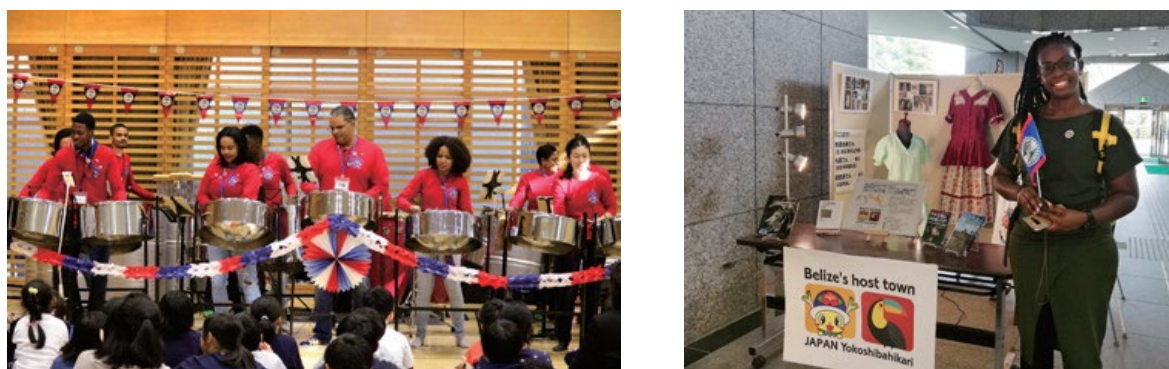
After that, many exchange projects were carried out before the Tokyo Olympics were held. In July 2019, an international student from Belize held a visiting lecture for elementary and junior high school students in the town. In November of the same year, a steelpan band from Belize came to Japan and performed in various places in the town. In February 2020, Kamisakai Elementary School participated in the “Art Mile International Collaborative Study Project” and collaborated with San Marcos Elementary School in Belize to create a picture. In November 2020, the town launched a project to support athletes in Belize by sending masks as a “Mask Bank Project”. As a result of appeals to the townspeople, a total of 5,774 masks, consisting of 548 cloth masks including handmade masks and 5226 non-woven masks, were collected. Although the acceptance of the team’s pre-training camp was canceled due to the lack of convergence of COVID-19, exchanges such as virtual exchanges and the sale of “Yokoshibahikari Town x Belize Host Town Frame” stamps continued.

**Table 17-18 Exchange History between Belize and Yokoshibahikari Town, Chiba Prefecture**

Time	Exchange
January 2018	The town concluded a basic agreement with the Belize Olympic Association regarding “pre-games training camp”.
February 2018	The town was registered as a “host town” of Belize. The ambassador of Belize visited the town office.
July 2019	Elementary and junior high school students interacted with an international student from Belize at a visiting lecture.
November 2019	A steelpan band from Belize came to Yokoshibahikari Town.
February 2020	Kamisakai Elementary School participated in the “Art Mile International Collaborative Learning Project” and created a picture jointly with San Marcos Elementary School in Belize.
November 2020	“Mask Bank Project” was implemented.
April 2021	Due to the spread of COVID-19 in Japan, it was decided to cancel the acceptance of the pre-games training camp for the Belize team for the Tokyo Olympics.
June 2021	A virtual meeting was held by the president of the Belize Olympic Association and the town mayor. It was a collaborative information dissemination project in the Caribbean Community (CARICOM).
July 2021	Released videos of local children cheering for Belize. Released “Yokoshibahikari Town x Belize Host Town Frame” stamps.
August 2021	A souvenir (polo shirt) was sent by the Belize team.

Source: Prepared by the JICA Study Team based on public information





Source: JICA

**Figure 17-8 Steelpan Band (Left) and Student from Belize (Right) in Yokoshibahikari Town**

## (2) Human Resource and Organization

Yokoshibahikari Town is a municipality with a population of just over 20,000 people, so that the capacity of the town office related to international exchange is limited. In spite of this, the variety of exchange projects described above was realized, largely due to the contribution of Ms. Murata, who was hired as a fixed-term employee in charge of the host town project.

Ms. Murata had the experience of being dispatched to Belize as a Japan Overseas Cooperation Volunteer. She met the needs of Yokoshibahikari Town, which had been publicly recruiting people with ties to Belize, so she was decided to be hired. Various projects were carried out to convey the attractiveness of Belize, such as cultural introduction events, visiting lectures by international student, and food introductions at school lunches. In particular, she put a lot of effort into inviting a steelpan band, which she planned together with her fellow volunteers who belonged to the band.

The presence of the JICA Belize office was also important as a channel with Belize. Although Belize had an embassy in Japan at the time, there was no resident ambassador, and the ambassador to Taiwan was in charge of Japan. Currently, there is no embassy, so Japan is still in contact with the embassy in Taiwan. Therefore, there was a problem of the absence of a point of contact between Japan and Belize, but the JICA Belize office played the role of a channel with Belize.

## (3) Future Exchanges and Cooperation

As the interest of Yokoshibahikari Town in international education for elementary and junior high school students is high, it is desirable to continue exchanges mainly in the field of education. Exchange projects could include continuing exchanges with elementary and junior high schools in Belize through the Art Mile Project realized through the host town exchanges, and English education and cultural experiences through Assistant Language Teachers (ALTs) and international students. In addition, it is a low hanging fruit to hold lectures to deepen students' understanding of overseas cultures and international cooperation by inviting experienced personnel who have been dispatched to Belize as JICA Overseas Cooperation Volunteers through JICA.

In several years, it is proposed to dispatch JICA Overseas Cooperation Volunteers to Belize. In the Ministry of Foreign Affairs of Japan's Country Assistance Policy Rolling Plan for Belize, the

development of an educational environment for the poor in rural areas, where economic and social development is lagging behind, is identified as an issue. Against this issue, it is planned to provide grassroots technical assistance project, dispatch JICA volunteers, and provide training. Therefore, the intention of Yokoshibahikari Town, which wants to promote educational exchange and cooperation, matches with Japan's policy and Belize's needs. In addition to cooperation with Belize, the dispatched staff are expected to play an active role as a point of contact on the local side for exchange projects during their dispatch, and as the core of international education in the town office after returning to town.

Further development of education-related exchanges includes the invitation of the steelpan band and the acceptance of Belizean local government officials through CLAIR's "Cooperation and Exchange Project for Local Government Officials". Inviting the steelpan band is expected to lead to continuous steelpan performances in Yokoshibahikari Town, such as by holding workshops at junior high schools in the town.

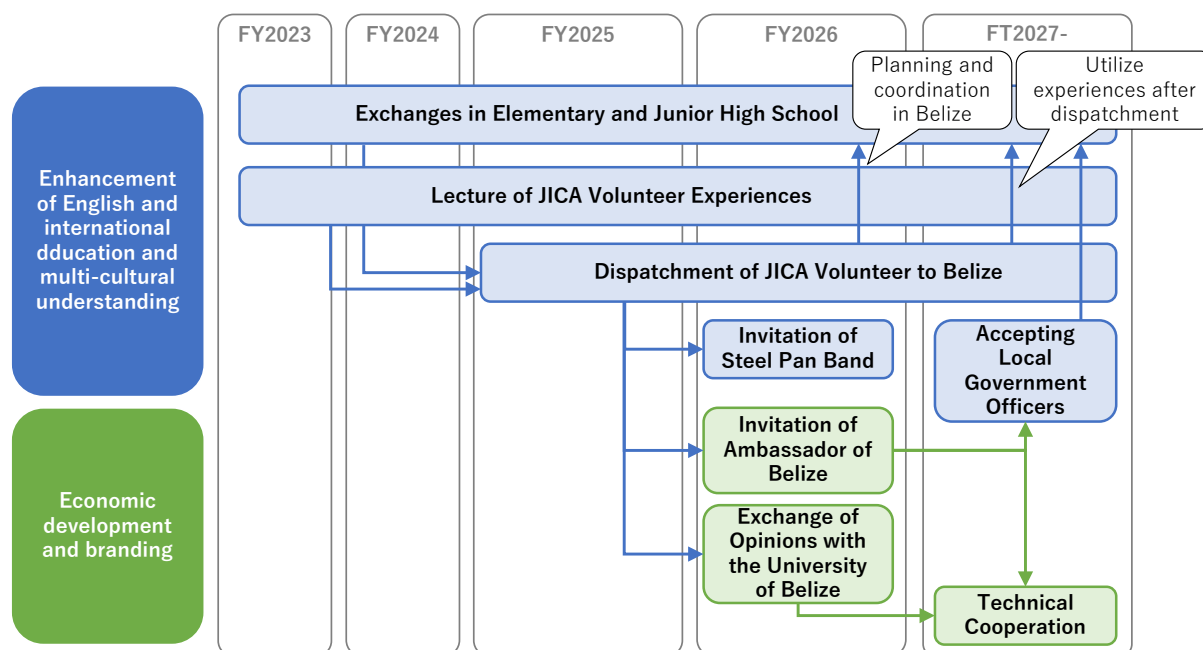
The realization of technical cooperation is expected as a development after continuing these education-related exchanges. Fields include the livestock industry, which is a characteristic industry of Yokoshibahikari Town, and infrastructure related to coastal disaster prevention. Regarding the livestock industry, Yokoshibahikari Town has the Toyo Meat Center, which has the second largest processing capability in the prefecture. In April 2021, Ambassador Iryu and JICA Belize Branch Director Hashiguchi were invited to visit the animal husbandry-related facilities of the University of Belize, so that this theme is considered to be in line with Belize's interest. As for coastal disaster prevention, it is expected to contribute to solving the problems of storm surges and floods associated with hurricanes in Belize.

Exchange of opinions and coordination with the Belizean side are indispensable for the realization of such cooperation. The first step would be to invite the ambassador of Belize and other related parties to introduce local resources, as was done by Matsudo City in Chiba Prefecture. It is also possible to exchange opinions virtually with the University of Belize, which has a connection with JICA.

**Table 17-19 Proposed Exchange and Cooperation Projects between Belize and Yokoshibahikari Town**

Direction	Project	Content
Enhancement of English and international education and multi-cultural understanding	Exchanges in elementary and junior high school	To carry out English education and cultural experience programs via ALT and foreign students and to continue exchanges with schools in Belize through the Art Mile Project.
	Lecture on JICA volunteer's experiences	To deepen understanding of overseas culture and international cooperation by inviting those dispatched to Belize as JICA volunteer.
	Dispatch of JICA volunteers to Belize	To dispatch education professionals to Belize in order to contribute to the improvement of education in rural areas of Belize and develop human resources to be the core of international education and cooperation with Belize.
	Invitation of steelpan band	To invite a steelpan band to hold concerts and workshops in junior high school.
	Accepting local government officers	To accept local government officers from Belize via CLAIR's "Cooperation and Exchange Project for Local Government Officials".
Economic development and branding	Invitation of ambassador of Belize	To introduce local resources of Yokoshibahikari Town, such as livestock industry, green onion, and coastal protection for future cooperation and exchange.
	Exchange of opinions with the University of Belize	To discuss about future cooperation and exchange in the field of livestock.
	Technical cooperation	To conduct trainings and/or grassroots technical assistance project in the field of livestock and/or disaster prevention, if above actions succeed.

Source: JICA Study Team



Source: JICA Study Team

**Figure 17-9 Proposed Roadmap of Exchange and Cooperation between Belize and Yokoshibahikari Town**

In promoting the exchanges and cooperation mentioned above, it is important to continue small-scale efforts that are feasible, as there is a limit to the number of people in the department in charge of Yokoshibahikari Town. Ms. Murata, who played an active role in the host town exchange program, has retired, but fortunately, there is little language barrier as a staff has experience studying in the United States. On the other hand, since Belize does not have a permanent ambassador in Japan, the problem is that there is no point of contact. Therefore, for the time being, it is expected that the JICA Belize office will act as a point of contact with Belize.

### 17.3.9 Mexico City and Nagoya City

#### (1) History

The beginning of the sister city partnership between Mexico City and Nagoya City was largely due to the initiative of the private sector. The trigger was the Nagoya Japan-Mexico Association. The association was founded in 1974 and sent a mission to Mexico the following year. At that time, the Los Angeles Nagoya Sister City Committee of Los Angeles, where the mission stopped by on the way, recommended that Nagoya establish a sister city relationship with Mexico City. When the mission visited Mexico City, it proposed a sister city partnership to the mayor at the time, and received a reply that they wished a formal offer. After returning to Japan, adjustments were made with various places in Nagoya City. Also, at that time, the Mexican Embassy in Japan was at a standstill in establishing a sister city relationship between Mexico City and Tokyo, both of which are capitals. In 1977, the ambassador visited the mayor of Nagoya and proposed a sister city relationship with Mexico City. Based on these proposals, a sister city agreement was signed in 1978.

Since the establishment of their sister city relationship, the two cities have continued to carry out exchange projects. Major activities include dispatching delegations, students, and music groups from

both sides, holding cultural and art exhibition events, and donating goods and souvenirs. In terms of technical exchange and cooperation, training dispatches have been conducted in the fields of agriculture, environmental conservation, water supply, and disaster prevention.

Since FY2005, Nagoya City has continued to implement cooperation projects in the water supply sector with Mexico City as grassroots technical cooperation projects. The implemented projects were the Project for Water Quality Management in Waterworks in Mexico from FY2005 to 2010, the Project for Sewerage Improvement from FY2011 to 2013, and the Project for Improving Sewerage Business in Mexico City from FY2014 to 2016. In the project from FY2020, which started after the earthquake that hit Mexico City in 2017, they are working on earthquake disaster countermeasures for water supply and sewerage. Through these projects, Nagoya City has continued to accept and dispatch staff.

**Table 17-20 Exchange History between Mexico City and Nagoya City**

Time	Exchange
1975	Nagoya received a proposal from the Los Angeles Nagoya Sister City Committee to establish a sister city relationship between Nagoya and Mexico City, because Mexico City and Los Angeles are sister cities. Nagoya proposed it to Mexico City.
15 <sup>th</sup> February 1978	A sister city partnership agreement was signed between Nagoya City and Mexico City.
August 1980	"Nagoya Junior High School" was established in Mexico City to commemorate the friendship between Nagoya City and Mexico City.
September 1993	Nagoya dispatched a nursery teacher to the Japan Institute of Mexico. After that, it continued the dispatch for a three-year term.
4 <sup>th</sup> – 17 <sup>th</sup> October 1993	As an overseas trainee, a firefighter from Nagoya visited Mexico City and other places to investigate the fire and disaster prevention system.
8 <sup>th</sup> – 12 <sup>th</sup> October 1994	A Nagoya City official visited Mexico City to investigate food hygiene administration as overseas staff dispatch trainee.
January – March 1995	Nagoya accepted an environmental conservation technology trainee from Mexico City.
8 <sup>th</sup> – 12 <sup>th</sup> October 1995	Nagoya City officials visited Mexico City as overseas dispatch trainees to investigate disaster prevention measures in the sewage system.
12 <sup>th</sup> – 26 <sup>th</sup> November 1999	A staff member of the Mexico City Planning and Environment Department came to Japan as a JICA overseas trainee.
June 2000 – 2002	A researcher from the Nagoya City Environment Bureau was dispatched to the National Environmental Training Center of Mexico.
31 <sup>st</sup> July – 30 <sup>th</sup> August 2000	A trainee for the analysis of pesticides was dispatched from Mexico City to the Nagoya City Environmental Science Research Institute.
11 <sup>th</sup> – 15 <sup>th</sup> June 2001	Nagoya accepted two people from Mexico City for the JICA training on "Urban Public Transportation Colloquium".
23 <sup>rd</sup> – 27 <sup>th</sup> July 2001	The Director of Air Monitoring at the Mexican Environmental Research and Training Center visited Nagoya City as a JICA trainee.
26 <sup>th</sup> August – 23 <sup>rd</sup> September 2002	Nagoya accepted two Mexican water quality management trainees as JICA trainees.
FY2005 - FY2010	Nagoya implemented the grassroots technical cooperation project "Water Quality Management Project for Waterworks in Mexico".
16 <sup>th</sup> - 23 <sup>rd</sup> November 2010	Two members of the Nagoya City Fire Department visited Mexico City and exchanged opinions on disaster prevention cooperation between Nagoya City and Mexico City.
FY2011 – FR2013	Nagoya implemented a grassroots technical cooperation project, "The Project for Improving Sewerage Systems in Mexico City."
FY2014 – FY2016	Nagoya implemented another grassroots technical cooperation project, "Sewage Treatment Improvement Project in Mexico City".
3 <sup>rd</sup> – 9 <sup>th</sup> December 2017	JICA dispatched the Chief of the Crisis Countermeasures Office of the Crisis Countermeasures Bureau from Nagoya City to the Mexico Reconstruction Seminar held in Mexico City. He introduced disaster prevention efforts in Nagoya City, and conducted site visits and discussions.
February 2020 – September 2022	Nagoya implemented a grassroots technical cooperation project, "The Project for Strengthening Earthquake Disaster Countermeasures for Water Supply and Sewerage in Mexico City."

\*Among others, especially collaborative relationship building and cooperation projects are extracted. Other exchanges such as cultural exchanges can be found in the "History of 40 years of ties of friendship between Nagoya and CDMX"

Source: Prepared by the JICA Study Team based on public information

## (2) Human Resource and Organization

Many exchange projects and technical cooperation have been carried out between Nagoya City and Mexico City. The fact that both cities are large-scale municipalities, and that they have many human and economic resources can be considered as a common background.

There are more than 76,000 people of Japanese descent in Mexico<sup>9</sup>, including immigrants whose ancestors are from Aichi<sup>10</sup>. Due to the issuance of the Japan-Mexico EPA and NAFTA/USMCA, many Japanese companies, mainly automobile manufacturers, have entered the country. There are 1,299 Japanese companies, the biggest number in Latin America, and 12,600 Japanese residents in Mexico (as of 2019)<sup>11</sup>. Such historical and economic backgrounds are also thought to facilitate exchanges. On the other hand, not many Mexicans actually live in Nagoya. Only 61 out of 84,018 foreign residents in Nagoya City are from Mexico (2020). For example, compared to 4,190 Brazilians and 862 Peruvians in Latin America, there are not many Mexicans<sup>12</sup>.

## (3) Area of Cooperation

Since 2005, grassroots technical cooperation projects in the field of water supply and sewerage have been continuously implemented. In addition, perhaps due to the impact of the earthquake that hit Mexico City in 2017, some trainees have been dispatched in the field of disaster prevention, and they are working on a grassroots technical cooperation project in the area of countermeasures against earthquake on water and sewage. In recent years, there has been a lot of work on water supply and sewerage, but because there is an exchange of personnel related to air quality as well, it seems that so-called urban problems are being widely dealt with as a field.

In terms of cultural exchanges, events and concerts are being held that make use of various cultural assets such as art, music, and food in Mexico. Such rich cultural assets of the national or local governments are also a great strength in conducting exchanges.



Source: Website of Nagoya City Waterworks & Sewerage Bureau

**Figure 17-10 Scenery of Technical Instruction for Sewerage in Mexico**

<sup>9</sup> Website of Ministry of Foreign Affairs of Japan

<sup>10</sup> <http://www.discovernikkei.org/ja/journal/2019/4/2/julio-mizzumi-1/>

<sup>11</sup> Website of Ministry of Foreign Affairs of Japan

<sup>12</sup> 2020 Statistics of Foreign Residents in Nagoya City

### 17.3.10 State of Guanajuato, Mexico and Hiroshima Prefecture

#### (1) History

Between the state of Guanajuato in Mexico and Hiroshima Prefecture, exchanges in a wide range of fields such as academics, culture, and economy have been realized. The impetus for building this relationship was the establishment of a plant in the state of Guanajuato by Mazda Motor Corporation, a major automobile manufacturer based in Hiroshima Prefecture. The plant received a warm welcome from the locals, represented by the attendance of the President of Mexico in the opening ceremony in February 2014. In response to this, in November 2014, Hiroshima Prefecture and the state of Guanajuato concluded a friendly partnership to promote exchanges in areas such as economy, culture, tourism, and education. In the following year, the Hiroshima Guanajuato Friendship Association was established with the aim of building a close friendship.

Due to Mazda's operation, many Japanese companies, mainly automobile-related companies, have entered the state of Guanajuato. As of 2015, 452 companies and 3,570 Japanese residents are in the Bajío Central Plateau region, which includes the state of Guanajuato<sup>13</sup>. In addition to these thriving economic exchanges, Mazda is also involved in the development of local industries, contributions to communities, and cultural exchanges between Hiroshima and Guanajuato<sup>14</sup>. So, the private sector also contributes to international cooperation and exchanges.

Academic exchanges have also been established. In February 2013, Hiroshima University's Faculty of Engineering and Guanajuato University's Faculty of Engineering concluded an exchange agreement, and in 2015, the agreement expanded to an agreement between the universities. In March 2017, the Hiroshima University Guanajuato Center was opened within the University of Guanajuato. This is Hiroshima University's 13th base, with the aim of (1) constant exchange of researcher and student with universities in Latin America (Spanish-speaking countries), (2) to develop human resources of Japanese and local companies in Mexico and lead to joint research through seminars, etc., and (3) to improve the reputation of Hiroshima University internationally. In December 2020, a partnership agreement was signed between Hiroshima University and the Guanajuato State Educational Information Fund (EDUCAFIN) for sending international students to Eikei University. In January 2021, a partnership agreement was also signed between the Hiroshima Prefectural Board of Education and EDUCAFIN regarding the dispatch of international students from Guanajuato State to Hiroshima Eichi Gakuen.

In terms of cultural exchanges, aside from various exhibitions and events, exchanges with host towns for the Tokyo Olympics were also realized. Not only Hiroshima Prefecture, but also 22 municipalities in the prefecture and sports-related organizations collaborated extensively to invite pre-games training camps for soccer, baseball, and track and field. In July 2021, pre-games training camps were held for soccer in Hiroshima, cycling in Mihara, softball in Onomichi, swimming and rowing in Fukuyama, and baseball in Miyoshi.

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<sup>13</sup> Report of 44<sup>th</sup> Japan-Mexico Strategic Global Partnership Plan

<sup>14</sup> [https://www.mexi-town.com/post/mazda\\_mexico](https://www.mexi-town.com/post/mazda_mexico)



Source: Website of Mazda Motor Corporation

**Figure 17-11 Plant of Mazda in Mexico**

**Table 17-21 Exchange History between State of Guanajuato, Mexico and Hiroshima**

Time	Exchange
September 2011	Mazda and Sumitomo Corporation established a joint venture in Mexico.
February 2013	Faculty of Engineering, Hiroshima University and Faculty of Engineering, University of Guanajuato signed an exchange agreement.
Early 2014	Mazda's Mexico plant started operations in Guanajuato.
February 2014	The opening ceremony of Mazda's Mexican plant was held, where the president of Mexico attended.
November 2014	Hiroshima Prefecture and the State of Guanajuato signed a friendship agreement to promote exchanges in the fields of economy, culture, tourism, and education.
February 2015	Hiroshima University and the University of Guanajuato signed an exchange agreement.
August 2015	The Hiroshima Guanajuato Friendship Association was established.
January 2015	An exhibition introducing the state of Guanajuato was held at the Hiroshima Prefectural Museum of Art.
1 <sup>st</sup> March 2017	Hiroshima University opened the Hiroshima University Guanajuato Center within the University of Guanajuato.
July 2017	Hiroshima Prefecture and 22 municipalities in the prefecture were registered as host towns of Mexico.
July 2019	Hiroshima Governor Yuzaki visited Guanajuato to commemorate the 5th anniversary of the local government friendship partnership.
17 <sup>th</sup> December 2020	At the Guanajuato State Cultural Forum, Hiroshima Prefecture and the Hiroshima Guanajuato Friendship Association handed over virus protective glasses (10,000 pieces) to the Guanajuato State government to combat COVID-19.
December 2020	A partnership agreement was signed between Hiroshima University and EDUCAFIN to send international students to Eikei University.
January 2021	A partnership agreement was signed between the Hiroshima Prefectural Board of Education and the Guanajuato State Educational Information Fund (EDUCAFIN) to send international students from the state of Guanajuato to Hiroshima Eichi Gakuen.
May 2021	Hiroshima City has been registered as a host town for a symbiotic society of Mexico.
July 2021	Pre-games training camps for the Tokyo Olympics were held in cities in Hiroshima Prefecture.

Source: Prepared by the JICA Study Team based on public information

## (2) Human Resource and Organization

Between Hiroshima Prefecture and the state of Guanajuato, economic cooperation by private companies, led by Mazda Motor Corporation, is progressing, and academic and cultural exchanges seem to be strengthening accordingly. Such initiative can only be realized when sufficient economic resources and business environments are established on both sides. Although it cannot be widely imitated, it is one of the most advanced municipal collaborations with Central America and the Caribbean. In addition, a wide range of exchanges are established not only by private companies but also through the cooperation of multiple entities such as public-private partnerships and cooperation between local

governments in the prefecture.

### 17.3.11 Dominican Republic and Hiroshima

#### (1) History

Various actors are involved in exchanges and cooperation between Hiroshima and the Dominican Republic. In 1990, the Hiroshima Toyo Carp established the "Hiroshima Toyo Carp Academy of Baseball" in the Dominican Republic. This was the first baseball academy of Japan, and the second in the Dominican Republic, where every major league team of USA now has an academy. In 1994, pitcher Carlos Rivera became the first player from the Carp Academy to participate in an official game, and later, Geronimo Franzua and Roberto Corniel followed him. In this way, the academy contributes to the promotion of relations between countries. In 2020, the Hiroshima Toyo Carp was awarded the Foreign Minister's Commendation in recognition of its achievements in youth development activities in the Dominican Republic.

Hiroshima University also has strong ties with the Dominican Republic. From 2010 to 2012, as far as confirmed from public information, the university conducted interdisciplinary practical research, "Central America and the Caribbean Project", in the fields of engineering, environment, education, and agriculture in the Dominican Republic and other Central American and Caribbean countries. In March 2010, it signed an academic exchange agreement with the Dominican Republic's Ministry of Higher Education, Science and Technology and the Autonomous University of Santo Domingo, and from April of the same year, it began joint research with the Autonomous University of Santo Domingo in the fields of engineering, environment, education, and the environment. The Ambassador of the Dominican Republic to Japan attended the debriefing sessions held at Hiroshima University in February and November 2014. In the field of education, for five years from 2010, technical support for class reform at the Autonomous University of Santo Domingo's Faculty of Education was implemented in the Dominican Republic and at Hiroshima University.

With regard to the Tokyo Olympics, negotiations were started in 2016 with the mediation of the Hiroshima Toyo Carp to invite the Dominican Republic to have a training camp. After a visit to the Dominican Republic by the commission of Kitahiroshima Town and an inspection tour by the Dominican Ambassador to Japan, a host town agreement for athletics and judo was concluded in March 2018. The exchange activities were supported by Coca-Cola Bottlers Japan Co., Ltd. and Meiji Co., Ltd. Especially in 2018 and 2019, pre-games training camps were held. During their stay, the Dominican Republic national judo team practiced and exchanged activities in Kitahiroshima.

**Table 17-22 Exchange History between Dominican Republic and Hiroshima**

Time	Actor	Exchange
1990	Hiroshima Toyo Carp	"Hiroshima Toyo Carp Academy of Baseball" was established in the Dominican Republic.
1994	Hiroshima Toyo Carp	Pitcher Carlos Rivera participated in an official game as the first pitcher from the Carp Academy.
FY2010 – FY2012	Hiroshima University	The "Central America and Caribbean Project" was implemented, which conducts interdisciplinary practical research in the fields of engineering, environment, education, and agriculture in the Dominican Republic and other Central American and Caribbean countries.
2010- (for 5 years)	Hiroshima University	Technical support for class reform at the Faculty of Education, Autonomous University of Santo Domingo was implemented by Hiroshima University.
FY2016	Hiroshima Toyo Carp	Through the mediation of the Hiroshima Toyo Carp, negotiations were started between Kitahiroshima Town and the Dominican Republic to invite the pre-games



Time	Actor	Exchange
		training camp.
March 2018	Kitahiroshima Town	A host town agreement was concluded.
10 <sup>th</sup> – 22 <sup>nd</sup> November 2018	Kitahiroshima Town	A training camp for the Dominican Republic athletes was held at the sports facilities and lodging facilities in the town.
22 <sup>nd</sup> July 2018	Kitahiroshima Town	Exhibited a PR booth for the Dominican Republic at "Kitahiro Family Festa 2019" held in Kitahiroshima.
13 <sup>th</sup> April 2019	Kitahiroshima Town	Promoted Dominican Republic at "Mexico Team Pre-games Camp & Urban Sports Festa from Hiroshima".
14 <sup>th</sup> April 2019	Kitahiroshima Town	Exhibited an outside PR booth at the professional baseball Western League official game.
2 <sup>nd</sup> June 2019	Kitahiroshima Town	Exhibited a PR booth for the Dominican Republic at "Mibu Hanataue".
28 <sup>th</sup> July 2019	Kitahiroshima Town	Set up a PR booth for the Dominican Republic at the "Romantic Travelogue of Food 2019 Donguri Natsu no Jin" held at the roadside station in Kitahiroshima Town.
6 <sup>th</sup> October 2019	Kitahiroshima Town	Exhibited a PR booth for the Dominican Republic at "Kitahiro Family Festa 2019" held in Kitahiroshima.
11 <sup>th</sup> – 16 <sup>th</sup> November 2019	Kitahiroshima Town	A training camp for the Dominican Republic athletes was held at the sports facilities and lodging facilities in the town.
5 <sup>th</sup> August 2020	Hiroshima Toyo Carp	The Foreign Minister's Commendation Ceremony was held for the Hiroshima Toyo Carp Academy of Baseball.
28 <sup>th</sup> July 2021	Kitahiroshima Town	Created hand flags of the Dominican Republic and Japan at a children's center in Kitahiroshima.
22 <sup>nd</sup> July – 5 <sup>th</sup> September 2021	Kitahiroshima Town	Three types of Dominican Republic cuisine were served at a restaurant at a roadside station in Kitahiroshima Town.
12 <sup>th</sup> October 2021	Kitahiroshima Town	Ambassador Robert of the Dominican Republic visited Kitahiroshima Town and interacted with children, such as presenting chocolate using cacao from the Dominican Republic.
11 <sup>th</sup> May 2022	Kitahiroshima Town	Japanese Ambassador to the Dominican Republic Takagi visited Kitahiroshima Town and discussed the continuation of exchanges between the Dominican Republic and Kitahiroshima Town after the host town.
August 2022	Kitahiroshima Town	The Ambassador attended the Hiroshima Peace Memorial Ceremony and met with officials from Kitahiroshima Town. Opinions were expressed for the strengthening of sports exchanges.

Source: Prepared by the JICA Study Team based on public information

## (2) Human Resource and Organization

The Hiroshima Toyo Carp plays an important role in the friendship between Hiroshima and the Dominican Republic. Although it was unable to confirm future exchange and cooperation plans and schedules of Hiroshima University and Kitahiroshima Town, the communication between Kitahiroshima Town and the embassy has continued. It is believed that exchanges centering on the Hiroshima Toyo Carp will continue in the future, with host town exchanges as a stepping stone.



Source: Project Design Online

**Figure 17-12 Pre-game Training Camp held in Kitahiroshima Town**

### 17.3.12 Caribbean Region and Sophia University

Sophia University signed an educational partnership agreement with APIC in 2014, and with the support of the "Japan-Caribbean Friendship Cooperation Project" implemented by APIC, academic exchange agreement with the University of West Indies was signed in 2015. Under this agreement, Sophia University has held "environmental seminars" in Jamaica, Trinidad and Tobago, and Barbados, with Professor Anne McDonald of the Graduate School of Global Environmental Studies as a lecturer.

In October 2018, the Sophia University Island Sustainability Unit (SISU) was established at Sophia University. Led by Professor Anne McDonald, this organization is based at Sophia University and works to develop the island nation and solve problems through research and educational activities. Furthermore, in July 2022, a research institute (Sophia Island Sustainability Institute) was established, with the aim to form partnerships with domestic and overseas island regions and overseas partner universities, and conduct research and related activities that support the sustainability of island regions in collaboration with international partners. The four goals of the activity are as follows:

1. Establish a hub for island sustainability research within Sophia University that is focused on both Japan's islands and overseas island territories, identifying valuable synergies and sharing learnings.
2. Develop an ongoing calendar of educational activities.
3. Create opportunities for educational exchange and research collaborations between Japan and other island nations and territories, and between Sophia University and other organizations and institutions.
4. Build a domestic and international network of colleagues and partners for research and project collaborations that includes academic institutions and other organizations engaged in island sustainability/related research.

Source: Website of Sophia University

In the Caribbean region, a number of common issues were identified in this study. For example, academic initiatives are expected in solving the Sargassum problem in the Caribbean region (Sargassum), strengthening tourism resilience with the Global Tourism Resilience and Crisis Management Center (GTRCMC) established at the University of the West Indies (regional branding), cultural differentiation in each country in the Caribbean region (regional branding), and transition to renewable energy (electric power).

### 17.3.13 Chapingo University and Tokyo University of Agriculture

Since the Tokyo University of Agriculture signed an academic partnership agreement in 2001 with Chapingo University in Mexico in the field of agricultural life sciences, they have continued the collaboration, including accepting international students for degree programs and dispatching short-term programs. In Latin America, the Tokyo University of Agriculture also has agreements with La Molina National Agricultural University in Peru, University of Sao Paulo in Brazil, and Agricultural University of Amazonia.

For five years from 2015, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) implemented a project to develop practical experts in the fields of food, agriculture, and environment in the Latin American region as part of the Project to Strengthen the Global Expansion of Universities. This project aimed to develop globally competitive human resources, by implementing a comprehensive practical education program by adding an agricultural internship to the exchange program already being implemented, while strengthening cooperation between the Tokyo University of Agriculture and agricultural universities in Latin America. In particular, students from partner universities can be accepted into venture companies of the Tokyo University of Agriculture to get cutting-edge food, agriculture, and environmental education, while the students from Japan can participate in internship programs in farmland and processing factory operated by alumni. Over the past five years, the Tokyo University of Agriculture has sent 29 students to Chapingo University and accepted 75 students.

The Tokyo University of Agriculture is also actively involved in international cooperation. In the Ministry of Foreign Affairs' exchange program "Japan-Mexico Strategic Global Partnership Training Plan", it is contracted to provide training on the long-term course of "Sustainable Agricultural Development". The university signed a memorandum of understanding with JICA in 2016, and is implementing a program to dispatch graduate school students in the master's course as members of the Japan Overseas Cooperation Volunteers and youth volunteers for Nikkei communities. As a university, it aims to solve problems in the field of agriculture in developing countries and to contribute to the development of human resources in the field of international cooperation. In 2019, one trainee from Cuba was accepted from Central America and the Caribbean.

## **17.4 Considerations and Recommendations**

The considerations and recommendations for the development of local government collaboration obtained from the case studies covered in this chapter are described below.

### **17.4.1 Considerations**

#### **(1) Stages of Cooperation and Scale of Municipalities**

Cooperation between local governments and partner countries is developed in stages, from small to large. Simplified based on the examples, it can be roughly divided into four stages. The first stage is the "interaction" stage. In this stage, local governments hold cultural exchange events such as exchanges between students, cultural exchanges for children, lectures by inviting relevant parties, booths and exhibitions. Exchanging small items such as gifts of special products and dispatch of people for exchanges are also included here. The next stage is the "training and provision of goods" stage. Acceptance of training such as JICA training and sporadic dispatch to partner countries for about one week to one month are carried out. Alternatively, large-scale goods such as fire engines may be donated. The third stage is the "staff dispatch" stage, where local governments dispatch and accept long-term technical personnel and office staff. This involves dispatching or accepting human resources for a long period of one year or longer, and systems such as JICA's Overseas Cooperation Volunteers and CLAIR's Local Government Staff Cooperation and Exchange Program can be utilized. The final stage is the "project" stage. To this end, it is necessary to clarify the outcome and path of the project, so that considerable preparation is required. It is generally implemented as a JICA grassroots technical

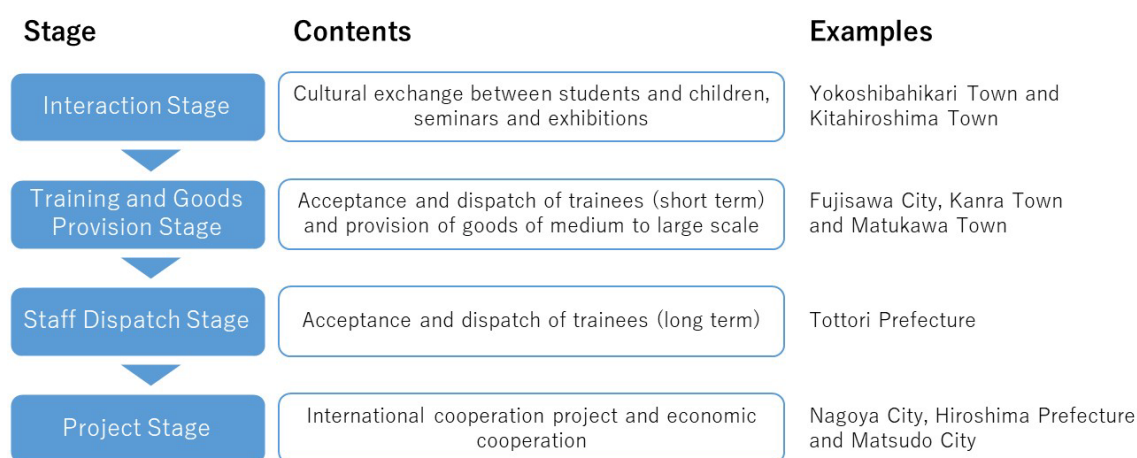
cooperation project. In addition, Hiroshima Prefecture, which has an economic partnership, is also included here.

Figure 17.13 shows the stages and examples taken up in this study. Also, Table 17-23 shows the population of each municipality. Basically, it can be seen that the population size tends to increase as the stage rises. It is possible to reach to an "interaction stage", even if the population is as small as several thousand people.

As for the training and goods provision stage, in addition to cities with several hundred thousand people like Fujisawa City, Kanra Town, and Matsukawa Town with only about 12,000 people have reached the stage. In order for small municipalities to reach this stage, the involvement of actors other than the municipalities is considered important. In the case of Kanra Town and Matsukawa Town, relationships between the towns and partner countries were built through NPOs conducting training and grassroots technical cooperation projects.

Tottori Prefecture, with a population of just over 500,000, is actively engaged in long-term staffing, while Nagoya City, with a population of over 2 million, continues to implement technical cooperation projects. Economic partnerships are progressing in Hiroshima Prefecture, such as the advance of private companies to Mexico. These municipality and prefectures are considered to be able to secure resources for their activities based on their scale. On the other hand, Matsudo City, being a medium-sized city with a population of about 500,000, is implementing technical cooperation. This is believed to have been made possible by the strength of Matsudo's pear brand and the strong interest and initiative of the Dominican Republic.

Of course, there are differences in the continuity, frequency, content, etc. in each stage, and there are many local governments that do not reach this level of cooperation because the cases with characteristics were taken up in this study, but a certain tendency can be extracted. In Central America and the Caribbean region, where geographical and psychological distances are relatively far apart, in order to promote cooperation with local governments, it is important to aim at a stage that matches the size of the local government and start with feasible activities, to develop step by step, and to learn from good examples of municipalities that are relatively small but are stepping up.



Source: JICA Study Team

**Figure 17-13 Stages of Cooperation of Local Government**

**Table 17-23 Stages of Cooperation of Local Government and Population**

Stage of Cooperation	Local Government	Population (2020)
Interaction Stage	Yokoshibahikari Town	22,075
	Kitahiroshima Town	17,763
	Sum of 5 towns	32,775
	Tokunoshima Town	10,147
	Amagi Town	5,517
	Wadomari Town	6,246
	China Town	5,750
	Yoron Town	5,115
Training and Provision of Goods Stage	Fujisawa City	436,905
	Kanra Town	12,491
	Matsukawa Town	12,530
Staff Dispatch Stage	Tottori Prefecture	553,407
Project Stage	Nagoya City	2,332,176
	Hiroshima Prefecture	2,799,702
	Matsudo City	498,232

Source: Statistics Dashboard, Statistics Bureau, Ministry of Internal Affairs and Communications

## (2) Process until Starting Exchanges

Through the case studies, it became clear that the establishment of a system of collaboration such as host towns and sister cities is effective to get to the interaction stage of the above-mentioned cooperation stages. Also, opinions were also heard that it would be easier to enable the support of embassies and JICA and to coordinate with the counterpart country.

The following is a summary of the events that triggered exchanges, including examples that led to collaboration without going through such a system:

### 1) Case (1) Purpose-driven Type

This is the case in Tottori Prefecture and Westmoreland Parish in Jamaica. In 2007, the Tottori Athletics Association wanted to invite a training camp from a strong country in track and field, because there is a fuse track and field stadium built in 1985 in Tottori City. The Jamaica Athletics Federation showed interest in this, and as the prefecture continued to accept training camps for track and field competitions, a sister city agreement was established between Tottori Prefecture and Westmoreland Parish. Since then, track and field-related exchanges have continued, and since the themes have been decided, there is the advantage to easily realize subsequent cooperation.

### 2) Case (2) Embassy-approach Type

This is the case with Fujisawa City and El Salvador. A series of collaborations was realized with the appointment of Ms. Zelayandía, who had a connection with Fujisawa City, as an ambassador. Also, in terms of collaboration between Matsudo City and the Dominican Republic, the Ministry of Foreign Affairs and Matsudo City co-sponsored the "Diplomatic Corps Tour to Japan", which introduced sightseeing spots in Matsudo City to the ambassadors in Tokyo. Just after the tour, a request for support was made by the Embassy of the Dominican Republic to Matsudo City. In this way, the embassy is the point of contact for each country in Japan, and this active involvement can build a collaborative system.

### 3) Case (3) Local Network Type

This is the most common case covered in this study. The activities of local private companies and NPOs often lead to collaboration between local governments and partner countries (or partner local

governments), rather than public organizations such as local governments and embassies that are directly responsible for local government cooperation. Examples are the cases of Kanra Town and Matsukawa Town, where NPOs conducted training, the cases of Nagoya City and Hiroshima Prefecture (both with the Dominican Republic and the state of Guanajuato, Mexico), where the activities of private companies took precedence, and the case of Yokoshibahikari Town, where personal friendships of local person developed.

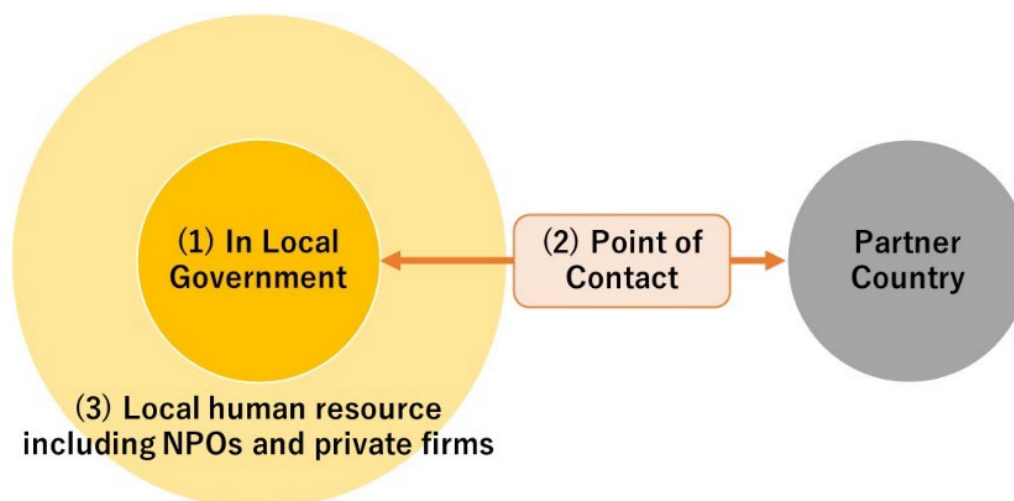
In the case of Nagoya City and Hiroshima Prefecture - Guanajuato State, it is necessary to assume that there is a large industry, and since the partner country is Mexico, where Japanese companies are actively expanding, it is not a case that many local governments can refer to. However, in all cases, solid cooperation, such as cooperative projects and economic partnerships, has been realized. Kanra Town, Matsukawa Town, and Yokoshibahikari Town are all small-scale municipalities called 'towns', but it is possible that their small scale has instead led to the utilization of local networks. Kanra Town and Matsukawa Town are also conducting training, both of which are in the field of agriculture and rural development. In this way, relationships can be built even in rural areas by utilizing local resources.

#### **4) Case (4) Externally Recommended Type**

This is a case where cooperation is initiated with the recommendation of the national government, rather than local governments, embassies, or local networks. In particular, there have been cases where the Cabinet Secretariat and others have made proposals for host town exchanges, when Japan needed to promote the popularization of the Olympics under the initiative of the national government. Five towns in Kagoshima Prefecture are examples of this. Many local governments originally participated in host town exchanges for the sole purpose of cultural exchange, and because the event was one-time, there is a drawback that it is difficult to lead to continuous exchanges after the Olympics. It is thought that there was also an impact that the pre-training camp was not realized due to the influence of COVID-19.

#### **(3) Establishment of Organizational System**

Since public information on the implementation system for collaboration is limited, the following three elements are extracted as important when summarizing the considerations based on cases in which sufficient information was gathered from public information and on cases that were clarified through interviews:



Source: JICA Study Team

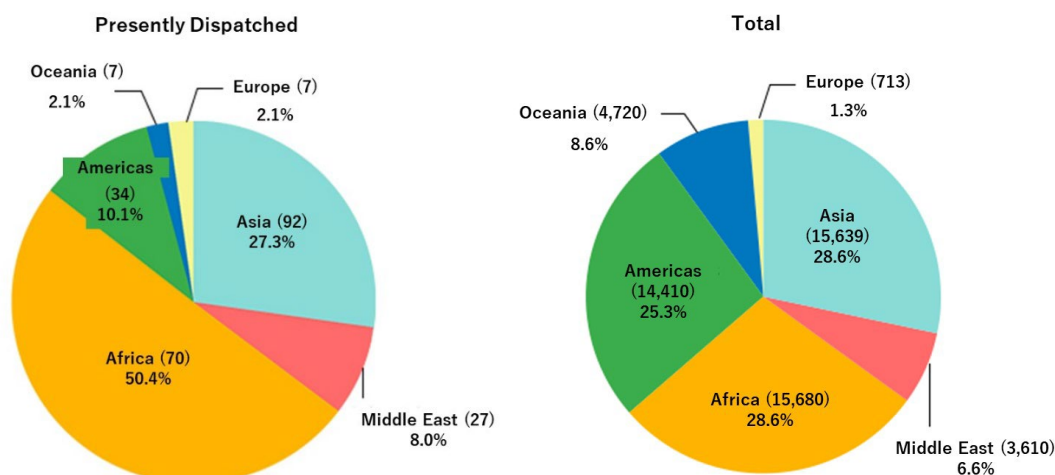
**Figure 17-14 Three Important Elements for Organizational System in Local Government Cooperation**

### 1) To Secure Human Resource in the Local Government Office

Securing human resources within local governments who can engage in international projects is important in conducting exchange and cooperation. In particular, there are few Japanese who are familiar with Central America and the Caribbean region, and languages other than English such as Spanish are required, so suitable human resources are considered to be even more limited. Some of the cases taken up in this study show some countermeasures against this issue.

One is the utilization of former JICA personnel such as former Japan Overseas Cooperation Volunteers. In Yokoshibahikari Town, personnel with experience of being dispatched to Belize was hired as a fixed-term employee in charge of the host town project and to promote host town exchanges. Matsudo City, after concluding the memorandum of cooperation, hired a person who had worked in the Dominican Republic as an investigator for JICA, as an employee of the Matsudo City Tourism Association to coordinate with the Dominican side. Many Japan Overseas Cooperation Volunteers have been dispatched to North America and Latin America, so that there is a possibility that this case of utilization of human resources will be expanded to other local governments.

In addition, Tottori Prefecture trains human resources by dispatching staff. As a member of the Japan Overseas Cooperation Volunteers, staff members are dispatched to local governments, and after returning to Japan, they become in charge of international cooperation.



Source: Website of JICA

**Figure 17-15 Number of Dispatched JICA Volunteers by Region (as of 31<sup>st</sup> March 2022)**

**2) Existence of Points of Contact between Municipalities and Partner Countries**

The existence of institutions that act as contact points for collaboration in Japan and partner countries can contribute to the establishment and continuation of collaboration. The "embassy-approach type" exchanges mentioned above are a prime example of this. In Kanra Town and Matsukawa Town, the ambassadors visited the towns and conducted activities, such as participating in exchange activities and lectures as well as discussing cooperation, showing the willingness of the partner country. In addition, in the cooperation project of Matsudo City, the embassy responded promptly by issuing a request, and after that, the Dominican Republic succeeded in building a system, such as using the land of the Dominican Agricultural Institute for the project.

On the other hand, there are cases where embassies are not established in Japan, such as for Caribbean small island states, or ambassadors are not stationed at all times. In such cases, JICA local offices can serve as contact points. In the host town exchange between Yokoshibahikari Town and Belize, it was difficult to coordinate with the Belize Embassy because the ambassador was not stationed in Japan. However, JICA Belize office functioned as the channel with Belize.

**3) Utilization of Local Human Resources**

As mentioned in the "local network type" above, the utilization of local human resources is important. As mentioned above, the trigger for building relationships is often the network of local human resources. In addition, Matsudo City utilizes local human resources to provide pear cultivation guidance. It also conducts lectures on technical cooperation in collaboration with Chiba University, so there is a possibility that universities can be utilized to develop the above-mentioned cooperation stage from the "interaction" stage to the "training and goods provision" stage.

**(4) Area of Cooperation**

The "interaction" stage of the cooperation is relatively easy to implement because it can be positioned as international education in elementary and junior high schools. On the other hand, it is not easy to



identify the fields when proceeding to the next “training and goods provision” stage.

Based on discussions with local government officials, education remains the easiest area to work on. It can be implemented in the context of international education seamlessly from the “interaction” stage, developing activities to, for example, sending trainees or dispatching officers for capacity development of local human resource for English and international education, or receiving trainees from the other countries.

There are many existing cases in which agriculture is the field of action such as the cases of Kanra Town, Matsudo City, and Matsukawa Town. This is a field that can be tackled in rural areas, and it is expected that it will lead to regional development, which Matsudo City is aiming for. Other common issues such as disaster prevention (earthquakes, floods, coastal disasters) and waste management, which is the responsibility of local governments rather than the national government, may also be possible, but such cases have not been confirmed in this study.

#### **17.4.2 Recommendations**

There are few international cooperation projects from Japan in the Central America and the Caribbean region compared to other regions such as Asia. On the other hand, in this study, some local government cooperation cases and the possibility of future development were confirmed. The following recommendations are to further promote cooperation with local governments and co-creational relationship in this region:

1. It is recommended to promote cooperation at a stage with high feasibility (such as the aforementioned “interaction” stage) to increase opportunities for cooperation and to grow the cooperation into the next stage (training and provision of goods - staff dispatch - project). In the case studies of this study, collaboration did not necessarily grow in this order<sup>15</sup>, but it can be seen from the relationship between the population scale and the stage of collaboration that it is easier to work on projects at a lower stage.
2. As mentioned above, there are four cases (purpose-driven type, embassy-approach type, local network type, and externally recommended type) for the start of exchanges. The purpose-driven type depends on the demands and offers of both sides, so it is difficult to intentionally set goals, while the externally recommended type makes it difficult to build a mechanism that ensures continuity. Therefore, the embassy-approach type and the local network type are considered to be effective in systematically supporting and promoting cooperation with local governments. It is recommended that JICA supports the cooperation with the embassy, and that local governments pay attention to the possibility of developing a network of local human resources.
3. To deepen the exchange stage, it is effective to utilize JICA-related resources. In particular, it is effective to utilize former Japan Overseas Cooperation Volunteers (JOCVs) as human resources for exchange within local governments. Although the number of JICA’s cooperation projects is small in the Latin American region, many JOCVs have been dispatched to the region, so that such human resources are abundant. Utilizing this resource, local governments can deepen exchanges

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<sup>15</sup> For example, the relation of Hiroshima Prefecture and State of Guanajuato developed from investment of private company into cultural exchanges, and the relation of Matsudo City and Dominican Republic started from technical cooperation project.

by inviting them as instructors for on-site classes and lectures, and by hiring them as personnel in charge of exchanges.

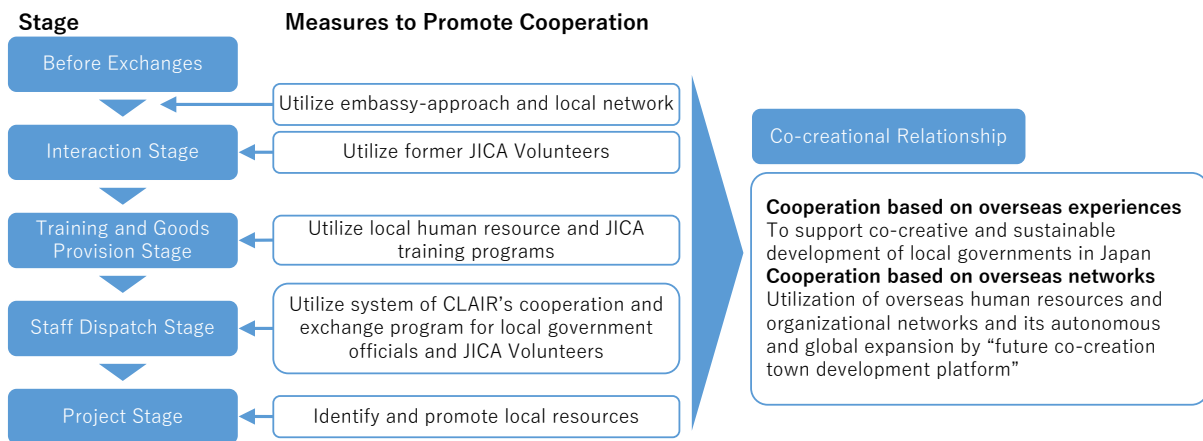
4. At the stage of training and provision of goods, it is important for local governments to utilize local human resources. It is possible to discover local resources by utilizing human resources and organizations related to the local industry, such as local NPOs, agricultural instructors, and universities. It is important for JICA, which conducts training in technical cooperation projects and training in Japan, to incorporate willing local governments into training recipient organizations from the perspective of supporting local governments that are trying to move from the interaction stage to the training and goods provision stage.
5. At the stage of staff dispatch, CLAIR's cooperation and exchange program for local government officials and JICA's system of overseas cooperation volunteers can be used. In both cases, dispatch is on a yearly basis, so it is necessary for local governments to work with a long-term vision.
6. It is desirable to continue and develop the collaboration until the project stage, but the degree of difficulty is high. If it is a large municipality, it is possible enough, but if not, it is necessary to identify and disseminate the unique resources of each municipality, like Matsudo City, in addition to identifying the issues through the cooperation stage up to that point.
7. In order to connect these local government collaborations to a more co-creative relationship, JICA is mainly expected to cooperate in the following two points, based on various local government collaboration cases and trial efforts in Wazuka Town:

(a) Cooperation based on overseas experiences

One of the challenges in the current regional revitalization is autonomous efforts by local governments. JICA has been implementing initiatives aimed at ensuring continuity even after the implementation of cooperation in developing countries. It is hoped that JICA will contribute to co-creative and sustainable development that contributes to new town development, making use of this experience to put into practice “human development, manufacturing development and experience development” for local governments in Japan.

(b) Cooperation based on overseas networks

JICA has a wide variety of overseas human resources and organizational networks, such as experts, Japan Overseas Cooperation Volunteers and embassies in Japan and overseas. In Wazuka Town, JICA tries to utilize the network. Since it is currently in the trial stage, it is largely due to the initiatives of Latin America and the Caribbean Department, Economic Development Department and Kansai Office of JICA. However, it is expected that the network will be utilized autonomously and globally by local governments by establishing the “future co-creation town development platform”.



Source: JICA Study Team

**Figure 17-16 Recommendations to Promote Local Government Cooperation in Each Stage and Co-creational Relationship**

## 18. Pilot Project

### 18.1 Overview of the Study

From May to December 2022, the study team conducted web meetings and field surveys to identify development issues in potential target countries and the resources needed to solve them, in preparation for the implementation of four pilot projects. Table 18-1 shows the work associated with the pilot project.

**Table 18-1 Scope of Work (Innovation/Pilot Project Management)**

No.	Task	Detail	Scope of Work
1	Target	Forming a pilot project and supervising the smooth implementation to study the effective development cooperation that contributes to the realization of a better reconstruction "BBB" for building a strong society under the With/Post COVID-19 pandemic.	
2	Scope Update	Based on discussions with JICA, select the countries to be studied, and confirm the study priorities, and update and agree on the work scope.	
3	Task 3 Field Survey	Conducting a field survey	<ul style="list-style-type: none"> <li>Examination and construction of project implementation structure</li> <li>Explanation and agreement with related parties regarding the start of the project</li> <li>On-site monitoring of the project (from 2<sup>nd</sup> field survey)</li> </ul>
4	Task 4	Selection of pilot project	<ul style="list-style-type: none"> <li>Create project outline format for the pilot project candidate</li> <li>Explanation of pilot project candidate</li> <li>Compilation of pilot project selection evaluation table</li> </ul>
5	Task 5	Pilot project plan preparation	<ul style="list-style-type: none"> <li>Confirmation of project plan (Japanese)</li> <li>Confirmation of project plan (Local language)</li> <li>Hold a brief session with related parties</li> <li>Support for the conclusion of agreement documents for implementation with relevant local agencies</li> <li>Finalize the project implementation plan</li> </ul>
6	Task 6	Implementation of pilot project	<ul style="list-style-type: none"> <li>Finalize consignment agreement</li> <li>Execution of consignment agreement</li> <li>Organize kick-off meeting</li> <li>Progress management through monthly progress meetings</li> <li>Holding local debriefing sessions</li> <li>Verify deliverables at the end of the project</li> </ul>
			<ul style="list-style-type: none"> <li>Preparation for seminars and sessions</li> <li>Proposal preparation</li> <li>Translation and modification of presentation materials</li> <li>Conduct seminars and sessions</li> <li>Summarization of seminar and session results</li> </ul>
7	Task 7	Compile monthly progress reports submitted by subcontractors and reflect in the progress report	
8	Task 9	Compile the result of the pilot project based on the monthly report and the project completion report, etc., and reflect in the final report.	

Source: JICA Study Team

### 18.2 Selection of Pilot Projects

#### 18.2.1 Pilot Project Candidate

Table 18-2 provides an overview of the five projects listed in the "Proposed Pilot Projects" handout of the Special Specifications for this study as candidates for pilot projects in this study.

Each pilot project is expected to be implemented by a private company (project implementer), with technical solutions. Hence that the implementer and the study team collaborated to prepare a draft project plan.

**Table 18-2 Summary of Pilot Project Candidates**

No.	Sector	Project Name (Abbreviation)	Target Countries	Summary
			Implementer	
1	Agriculture	Pilot Project to Improve Farming with CropScope [Agriculture DX]	Guatemala Mexico	<p>The agriculture sector in Central America, where small-scale producers play a central role, faces a lack of farming technology, inefficient production systems, and insufficient information related to the agricultural sector, has room to improve farm income. As a means of overcoming this, the challenge is to establish an agricultural production system based on a data-driven farming approach (data-driven farming) that contributes to increasing the agricultural income of small-scale producers. Some producers experienced a decrease in farm income during the COVID-19 pandemic due to their inability to sell the crops they produced or to receive agricultural support services.</p> <p>The pilot project will contribute to the realization of efficient and stable farming by producers through (1) visualization of the farm environment through satellite image analysis, weather forecasts, and disease and pest outbreak forecasts, and (2) farming activities based on information obtained by CropScope.</p>
			NEC Corporation + Study Team	
2	Disaster Risk Reduction	Demonstration Project for Formation of Satellite Utilization Business Focusing on Disaster Risk Reduction [Satellite Image Analysis]	Guatemala Honduras	<p>Strengthening disaster information monitoring and management capacity is an important element in the Latin American region, which has a high risk of natural disasters such as hurricanes, earthquakes, and landslides. One possible monitoring method is the use of satellite technology, but to date it has only been used temporarily after a disaster, and opportunities for continued use have been limited.</p> <p>In this project, a ground deformation monitoring system for landslides will be introduced on a trial basis, and the feasibility of data linkage with an existing wide-area disaster risk reduction platform will be confirmed. In addition, for the purpose of sustainability of satellite utilization services, the study team will also investigate collaboration with universities and private companies to promote the services in the region.</p>
			Synspective	
3	Security	Improving Public Security Through ICT Solutions to Support Patrol Operations Based on Crime Prediction [Security DX]	Honduras	<p>In 2011, Honduras ranked first in the world in homicides per 100,000 people, underscoring the importance of improving security. Although the number of homicides in Honduras has been decreasing in recent years due to JICA's "Regional Police Project," a technical cooperation project that began in 2009, the improvement of security is still considered an important development issue in Central American countries, including Honduras. The JICA technical cooperation project being undertaken in Honduras aims to promote community policing for the purpose of crime prevention, which is developed based on relationships with communities, but the COVID-19 pandemic has made it necessary to consider activities involving the local population. Therefore, there is a need to further improve the efficiency of police operations by considering new approaches that utilize ICT technology.</p> <p>This project will verify the effectiveness of the introduction of this service through a demonstration test of "Crime Nabi", a patrol operation efficiency improvement support service that uses crime prediction. In the future, the company also aims to activate and improve the efficiency of local crime prevention activities through synergy effects with JICA technical cooperation projects.</p>
			Singular Perturbations, Inc.	
4	Environment/ Agriculture	Evaluation and Inclusion of Sargassum in the Feed of Locally Grown Animals in Barbados [Sargassum Measures]	Barbados	<p>The amount of sargassum drifting ashore in the Caribbean coastal areas has been increasing year by year and has had a direct impact on the surrounding communities and tourists, including adverse effects on the coastal landscape and the generation of bad odors. The lack of oxygen and the toxic gases released due to the large amount of sargassum can also have a negative impact on marine life.</p> <p>Meanwhile, rising energy costs and global shortages of corn, soybeans, wheat, and other grains used as raw materials have driven up the price of livestock feed. This affects not only feed manufacturers, but also farmers and consumers in the supply chain, threatening food security in the Caribbean. The use of sargassum to supplement commercial livestock feeds could potentially reduce</p>
			Caribbean Agricultural	

			Research and Development Institute (CARDI)	livestock production costs. Against this background, this project aims to contribute to the livestock industry by reducing the amount of sargassum discarded and converting and effectively utilizing it as livestock feed. The project will add sargassum to commercial livestock feed and feed it to chickens to evaluate its impact on meat quality and safety and production costs.
5	Transportation	Project to Upgrade Road Traffic Management in Santo Domingo City Using Human Flow Big Data [Utilization of Human Flow Data]	Dominican Republic	In Santo Domingo, the capital of the Dominican Republic, traffic congestion due to an increase in the number of vehicles, air pollution, and traffic accidents have become urban issues. There is also concern that the release of stay-homes after the COVID-19 pandemic and the shift from public transportation to private vehicles are exaggerating these challenges. This pilot project will analyze human flow data (travel routes, travel time, staying time, etc.) for the city of Santo Domingo to understand the movements of citizens, congested areas, and excursion behavior to capture the actual situation and impact of traffic congestion from a broader perspective. The results of the analysis will be used for ongoing evaluation, by providing insight into the formulation and efficient implementation of future road traffic management upgrading projects (signal maintenance and signal control upgrading).
			LocationMind Inc.	

Source: JICA Study Team

### 18.2.2 Effectiveness Verification of Pilot Projects

The effectiveness of the proposed candidate pilot projects to be implemented in this study was verified as shown in the table below.

**Table 18-3 Selection Criteria and Evaluation of Pilot Projects**

No.	Evaluation Criteria	Evaluation Basis		Agriculture DX	Satellite Image Analysis	Security DX	Sargassum Measures	Traffic DX
		Required (10 Points Each)	Scores					
1	Local Needs		1-10	9	8	9	9	9
2	Project Implementer	Clarified		10	10	10	10	10
3	Project Period	Within the Study Period		10	10	10	10	10
4	Project Cost	JPY 10 million or Less		10	10	10	10	10
5	Continuity	Can be Assumed		10	10	10	10	10
6	Affinity or Synergy with Ongoing or Developing Projects		1-10	10	10	10	10	10
7	Resource Availability		1-10	9	9	9	9	9
8	Resilience Enhancement, Innovation, Versatility		1-20	17	17	19	15	17
		40	Total Max 50	85	84	87	83	85

Source: JICA Study Team

## 18.3 Project Plan and Results of Each Pilot Project

### 18.3.1 Overview

For the five candidate projects in Section 18.2, draft project plans were prepared, discussed, and finalized through presentations at the JICA headquarters, local offices, and relevant counterpart organizations. To implement the pilot projects, the following three documents had to be prepared, signed, and executed.

#### (1) Agreement Letter

Based on the draft project plan, the JICA Study Team consulted with the local JICA offices and local C/P to confirm the project and cooperation details, and then an agreement is reached between the JICA office and the C/P organization. As for the format of the agreement, there is a Letter of Exchange and Minutes.

#### (2) Record of Selection

After (1) is acquired, a record for project selection will be prepared between the JICA headquarters and the JICA Study Team. However, for the Honduran Security DX Pilot Project, this was prepared prior to (1) because of the need for the implementer to sign the Minutes.

#### (3) Contract Signing

After (2) is prepared, the contract shall be signed between the JICA Study Team (consultant: Nippon Koei Co., Ltd.) and the implementer, and the project shall start.

The documents prepared for the five projects reviewed are shown in Table 18-4.

**Table 18-4 Preparation of Necessary Documents for the Implementation**

No.	Project Name	Target Country	Project Plan	Necessary Documents			Implementation
				Agreement Letter	Record of Selection	Contract Signing	
1	Pilot Project to Improve Farming with CropScope	Guatemala Mexico	Prepared	Some organizations	-	-	Cancelled (Seminar)
2	Introduction of Satellite-based Landslide Mitigation into Disaster Risk Reduction Projects	Guatemala Honduras	Prepared	Acquired	-	-	Cancelled
3	Improving Public Security Through ICT Solutions to Support Patrol Operations Based on Crime Prediction	Honduras	Prepared	Acquired	Prepared	Signed	Implemented
4	Evaluation and Inclusion of Sargassum in the Feed of Locally Grown Animals in Barbados	Barbados	Prepared	Some organizations	-	-	Cancelled
5	Project to Upgrade Road Traffic Management in Santo Domingo City Using Human Flow Big Data	Dominican Republic	Prepared	-	-	-	Cancelled (Seminar)

-.: Not acquired, prepared, or signed; Seminar: Changed to seminar holding.

Source: JICA Study Team

As a result of the coordination among the relevant organizations based on the draft project plan, except

for No. 3 in Table 18-4, "Improving Public Security Through ICT Solutions to Support Patrol Operations Based on Crime Prediction", the project implementation was abandoned because the relevant parties could not reach a consensus within the deadline with a view to ensuring completion within this study period.

### 18.3.2 Pilot Project to Improve Farming with CropScope

#### (1) Preparation for Project Implementation

##### 1) Pilot Project Plan

This pilot project was planned as a demonstration project for the improvement of decision-making in farming operations using a smartphone application. Table 18-5 shows the outline of the pilot project prepared after the first field survey and subsequent discussions with counter partners and prospective implementer.

**Table 18-5 Summary of Agriculture DX Pilot Project**

<b>1. Project title (Program)</b>	Study on Human Resources and Infrastructure Development for Co-creation of Resilient Society under the With/Post-COVID-19
<b>2. Target country</b>	Mexico, Guatemala
<b>3. Sector</b>	Agriculture
<b>4. Name of the pilot project</b>	Pilot Project to Improve Farming with CropScope
<b>5. Background: Sector issues (Vulnerabilities)</b>	The agriculture sector in Central America, where small-scale farmers play a central role, faces a lack of farming technology, inefficient production systems, and insufficient information related to the agricultural sector, has room to increase income. The challenge is to establish an agricultural production system based on a data-driven farming approach to increase the income of small-scale producers.
<b>6. Background: Effects of COVID-19</b>	Some farmers experienced income decreases during the COVID-19 pandemic due to the following reasons attributable to movement restrictions: <ul style="list-style-type: none"> <li>• Producers were unable to access markets at the right time, resulting in harvest losses and reduced sales (including distributors).</li> <li>• Producers were unable to receive technical services at the right time from agricultural specialists and were unable to manage cultivation (application of fertilizers and pesticides), resulting in a decrease in production.</li> </ul>
<b>7. Project overview</b>	The pilot project will contribute to the realization of efficient and stable farming through the following activities: <ul style="list-style-type: none"> <li>• Visualization of the farm environment through satellite image analysis, weather forecasting, disease, and pest forecasting, etc.</li> <li>• Farming based on information obtained from CropScope</li> </ul>
<b>8. Implementation period</b>	August 2022 - January 2023
<b>9. Implementing agencies and organizations</b>	NEC
<b>10. Relevant government organizations</b>	Mexico: INIFAP ( <i>Instituto Nacional de Investigaciones Forestales Agrícolas y Pecuarias</i> : National Institute of Agroforestry) Guatemala: DIFOPROCO ( <i>Dirección de Fortalecimiento para la Organización Productiva y Comercialización</i> : Department for Strengthening Marketing of Production Organizations of the Ministry of Agriculture and Pasture)
<b>11. Solutions to be provided</b>	Visualization of farming-related information by CropScope
<b>12. Beneficiaries</b>	Agricultural union
<b>13. Overall goal</b>	Income of small farmers will increase due to the sustainable development of the agricultural sector.
<b>14. Project purpose</b>	The effectiveness of CropScope in establishing an agricultural production system based on a data-driven farming approach will be demonstrated.



<b>15. Outputs</b>	<ul style="list-style-type: none"> <li>Decision-making for farm management by farmers will become easier and faster.</li> <li>Ensure that farmers are farming in an appropriate and timely manner based on the farming-related information obtained from CropScope.</li> </ul>
<b>16. Examples of the project activities</b>	<ul style="list-style-type: none"> <li>Selection of agricultural union and farmers.</li> <li>Training of agents and farmers in the use of CropScope.</li> <li>Monitoring of farm operations and CropScope usage by farmers.</li> <li>Interviews on quantitative (yield, production costs, etc.) and qualitative (fertilizer application, pesticide application, harvest timing, irrigation frequency) changes before and after CropScope use.</li> <li>Interviews on the use of CropScope to facilitate farming decisions.</li> </ul>
<b>17. Expected activities after the project completion</b>	<ul style="list-style-type: none"> <li>Continued use of CropScope by target agricultural union.</li> <li>Dissemination of CropScope to Central American countries.</li> </ul>
<b>18. Efforts for COVID-19</b>	The introduction of CropScope will reduce the risk of infection spread by reducing the number of times agents must travel and provide face-to-face guidance.

Source: JICA Study Team

## 2) Coordination of Stakeholders for Implementation

During the first field survey, the Study Team held discussions with the *Cooperativa Agrícola Integral San Miguel Las Canoas R.L. Solola* (Agricultural cooperative), Department for Strengthening Marketing of Production Organizations of the Ministry of Agriculture and Pasture (DIFOPROCO), and DISAGRO (a major agricultural equipment sales company) in Guatemala, and asked for cooperation. However, it was unable to identify crops that could be monitored from planting to harvesting within the implementation period, the consideration was suspended after consulting with the JICA headquarters.

### (2) Summary of Project Implementation

Although the project was suspended, the interest in smart farming technology among the relevant organizations was high, so a seminar was held in lieu of the pilot project to introduce Crop Scope (a farming management application), which was planned to be used in the first place.

The seminars were held online for two countries, Guatemala and Mexico. The lecturer, from the project implementer in the pilot project plan, introduced the technology and opinions were exchanged with the relevant organizations on how to utilize the smartphone application. Details are provided in Chapter 11.

**Table 18-6 Agriculture DX Seminar-1**

Sector	Agriculture DX (Guatemala)	
<b>Seminar name</b>	CropScope Introduction	
<b>Lecturer</b>	Yusuke Goto, AgriTech Business Startup Office, NEC Corporation	
<b>Date</b>	2022/12/06 08:00~10:00 (GTM time 17:00~19:00 previous day)	
<b>Location</b>	MS Teams (with online interpretation)	
<b>Participating organizations and attendees</b>	Department for Strengthening Marketing of Production Organizations of the Ministry of Agriculture and Pasture (MAGA-DIFOPROCO)	20 people
<b>Outline</b>	<ol style="list-style-type: none"> <li>CropScope overview</li> <li>CropScope functions, usage, and examples</li> <li>Production status of CropScope candidate crop (broccoli) in Guatemala (Sr. Fernando de Leon, MAGA-DIFOPROCO)</li> </ol>	
<b>Results</b>	<p>Although it was not able to implement the pilot project as part of the study, the C/P emphasized that this seminar was an important opportunity for the Ministry of Agriculture and Pasture's technicians and farmers. In addition, an expert from the Ministry of Agriculture and Pasture made a presentation on the status of broccoli production in the country.</p> <p>During the Q&amp;A session, there were many questions regarding the types of crops that could be</p>	

Sector	Agriculture DX (Guatemala)
	monitored with the app, cultivation methods, and environmental conditions, and the possibility of using the app on small scale farmlands and cooperatives. Finally, the C/P hoped that farming with smart technology (using satellites) would be effective for the country and lead to new cooperation projects.

Source: JICA Study Team

**Table 18-7 Agriculture DX Seminar-2**

Sector	Agriculture DX (Mexico)	
<b>Seminar name</b>	CropScope Introduction	
<b>Lecturer</b>	Yusuke Goto, AgriTech Business Startup Office, NEC Corporation	
<b>Date</b>	2022/12/07 08:15~09:40 (MEX time 17:15~18:40 previous day)	
<b>Location</b>	MS Teams (with online interpretation)	
<b>Participating organizations and attendees</b>	National Institute of Agroforestry (INIFAP)	3 people
<b>Outline</b>	1. CropScope overview 2. CropScope functions, usage, and examples	
<b>Results</b>	At this session, participants showed great interest in CropScope, and there were many questions regarding its use, compatible crops and cultivation methods, and soil components that can be analyzed. The JICA Study Team also found that integrated smart farming technologies have not yet been introduced in Mexico, except for a single case of corn cultivation. Finally, there was a remark that although it is difficult to obtain data from satellite images because tomato cultivation in Mexico is mainly done in simple greenhouses, it would be good to conduct demonstration experiments in Guanajuato for coffee, wheat, garlic, and beans.	

Source: JICA Study Team

### (3) Evaluation of Project Preparation and Implementation

The Agriculture DX Pilot Project had to be scaled back because it took a time than expected to build a cooperative framework with local farmers. On the other hand, the local farmers and counter partners showed a high interest in the project, confirming the necessity of the project. Based on the experience gained from this study, lessons learned are shown in Table 18-8.

**Table 18-8 Necessity and Notes for Agriculture DX Pilot Project**

<b>Target country</b>	Guatemala, Mexico (Central American countries)
<b>Necessity of implementation</b>	In the Central American region, small farmers produce 50% of all crops, and their role in the agricultural sector is significant. One tool for improving agricultural income could be the establishment of a data-driven agricultural production system. Faced with recent challenges such as high prices of agricultural materials and pesticides, lack of organic fertilizers, climate change, and poor soils, this study revealed a strong interest in efficient farming activities using advanced technology. Although there are efforts by local private companies to develop smart farming technologies, it is limited to large-scale farmers.
<b>Project type</b>	Proof of Concept (POC) type
<b>Target organization</b>	<ul style="list-style-type: none"> <li>• Agricultural cooperative</li> <li>• Research institution</li> <li>• Private sector</li> </ul>
<b>Notes</b>	For implementation, it is necessary to understand in advance the various circumstances, including the type of crop, growing period, growing method, growing environment and farmers' equipment, and the availability of devices. It is also necessary to explore the possibility of intra-regional expansion through partnerships with local private companies that provide small farmers with seedlings, fertilizers, and technical guidance and buy their products.

Source: JICA Study Team

### 18.3.3 Introduction of Satellite-based Landslide Mitigation into Disaster Risk Reduction Projects

#### (1) Preparation for Project Implementation

##### 1) Pilot Project Plan

The Satellite Image Analysis Pilot Project was prepared to apply technical services for landslide mitigation in the preliminary study and to further develop and establish the findings. Table 18-9 shows the summary of this project.

**Table 18-9 Summary of Satellite Image Analysis Pilot Project**

<b>1. Project title (Program)</b>	Demonstration Project for Formation of Satellite Utilization Business Focusing on Disaster Prevention
<b>2. Target country</b>	Honduras
<b>3. Sector</b>	Environment and Disaster Risk Reduction, DX and Innovation, Infrastructure and Energy
<b>4. Name of the pilot project</b>	Introduction of Satellite-based Landslide Mitigation into Disaster Risk Reduction Projects
<b>5. Background: Sector issues (Vulnerabilities)</b>	(Environment and Disaster Risk Reduction) Disaster risk reduction project against landslide hazards in Latin America (DX and Innovation) Transient satellite utilization that ends with the provision of monitoring results in the previous satellite utilization projects.
<b>6. Background: Effects of COVID-19</b>	Fiscal challenge: Reduction of project cost by supplementing the budget from disaster risk reduction projects to COVID-19 countermeasure projects.
<b>7. Project overview</b>	<ul style="list-style-type: none"> <li>• Introduction of satellite utilization services for landslides</li> <li>• Data linkage with existing wide-area disaster risk reduction platforms</li> <li>• Survey on collaboration with universities and private sector for service upgrading</li> </ul>
<b>8. Implementation period</b>	September 2022 - December 2023
<b>9. Implementing agencies and organizations</b>	Synspective Inc.
<b>10. Relevant government organizations</b>	SICA (Central American Integration Agency): CEPREDENAC (Central American Disaster Risk Reduction Center)
<b>11. Solutions to be provided</b>	<ul style="list-style-type: none"> <li>• Provides landslide analysis results from satellite observation data</li> <li>• Satellite data utilization service dissemination feasibility study for other needs</li> </ul>
<b>12. Beneficiaries</b>	Government entities, asset holders, and residents
<b>13. Overall goal</b>	Digital transformation in wide-area disaster management
<b>14. Project purpose</b>	Understanding historical landslide and providing effective use of LDM (Land Displacement Monitoring)
<b>15. Outputs</b>	Introduction of a simplified system for efficient and effective identification of landslide hazardous areas and continuous use of satellite survey monitoring
<b>16. Examples of the project activities</b>	<ul style="list-style-type: none"> <li>• Procurement and analysis of satellite imagery, provision of LDM demonstration experience, and collection of interviews and questionnaire responses.</li> <li>• Research on the feasibility of reflecting data through LDM analysis results to the existing wide-area disaster risk reduction platform.</li> <li>• Investigation of possibilities for partnership collaboration through communication with local universities and companies.</li> </ul>
<b>17. Expected activities after the project completion</b>	<ul style="list-style-type: none"> <li>• The implementer will confirm the results of analysis by satellite and compare it with existing survey methods, appealing to the wide area and efficiency of satellites, and continue to contract for landslide monitoring and consider its use in disaster risk reduction planning and urban planning, etc.</li> </ul>

	<ul style="list-style-type: none"> <li>Strengthen the content of the existing wide-area disaster risk reduction platform. The addition of actual disaster information to the existing platform's earthquake and weather information will promote the centralization of disaster risk reduction information and strengthen the information provision platform.</li> <li>To study the feasibility of demonstrating a system for predicting landslide locations and sediment volumes using geological information from local universities. In addition, feasibility study on service collaboration using SAR satellites with international NGOs and major agricultural companies in relation to deforestation will be conducted, after conducting needs interviews and analyzing data to determine whether a demonstration is feasible.</li> </ul>
<p><b>18. Efforts for COVID-19</b></p>	<p>Follow guidelines such as information from the Embassy of Japan in Guatemala, the Ministry of Health of Guatemala, and “Travel Procedures and Safety Measurement” of JICA.</p>

Source: JICA Study Team

## 2) Coordination of Stakeholders for Implementation

The possibility of cooperation was discussed with the Institute of Engineering and Mathematical Sciences of the Universidad Mariano Galvez, Central American Disaster Risk Reduction Center (CEPREDENAC), and Rainforest Alliance (an international NGO) during the first field survey. In the beginning, to surpass the achievement of the preliminary study, the study team aimed to collaborate with the disaster risk reduction information platform (*Plataforma De Monitoreo De Amenazas*) operated by CEPREDENAC and examined various aspects such as the possibility of involving private companies and considering Mexico, a country with strong financial resources in Latin America, but all efforts ran into difficulties.

On the other hand, CEPREDENAC, the C/P organization that was expected to be involved in the pilot project, had already been provided real-time information on earthquakes and rainfall using meteorological and optical satellite in map format free of charge from other countries. The C/P expressed their intention to adopt the technology proposed in this project if it was superior to those technologies, and since the initial interest was not so high, it took time to reach a consensus. Although the JICA Study Team received an agreement letter from the CEPREDENAC as a necessary document for the implementation, the C/P became busy responding to the damage caused by Hurricane Julia that occurred in October, which delayed the acknowledgement of the letter. Hence, the project was suspended.

### (2) Summary of Project Implementation

As mentioned above, the Satellite Image Analysis Pilot Project was terminated due to the long time required to establish a cooperative framework with the C/P.

### (3) Evaluation of Project Preparation and Implementation

Although a certain level of effectiveness of the DX pilot project for disaster risk reduction was recognized in the preliminary study, it would be significant to verify the effectiveness of the project by changing the target countries and disaster types, considering the vulnerability of the Central American and Caribbean regions. In addition, disaster risk reduction-related systems are increasingly being developed by other countries, and the superiority of Japanese technology needs to be carefully assessed. Based on the experience gained from the study, lessons learned are summarized in Table 18-10.

**Table 18-10 Necessity and Notes for Satellite Image Analysis Pilot Project**

<b>Target country</b>	Guatemala, Honduras (Tegucigalpa City)
<b>Necessity of implementation</b>	The Latin American region is constantly at risk of landslides and other ground deformation disasters. Most of the informal urban area of Tegucigalpa is spread out on steep mountain slopes, and its vulnerability is very high due to the predominance of self-built houses. CEPREDENAC receives free equipment and data from other countries and donors, but its activities are reactive, and methods are needed to overcome vulnerabilities. See Chapter 14 of this report for details.
<b>Project type</b>	Training/POC type
<b>Target organization</b>	<ul style="list-style-type: none"> <li>• CEPREDENAC</li> <li>• Universities and research institutes</li> <li>• NGO</li> <li>• Private sector</li> </ul>
<b>Notes</b>	It is important that C/Ps understand the importance of vulnerability assessment and hazardous area identification. It is also necessary to develop a system to share the information and data obtained with disaster management agencies, universities, research institutes, and NGOs in each country in the region, and to coordinate their activities.

Source: JICA Study Team

### 18.3.4 Improving Public Security Through ICT Solutions to Support Patrol Operations Based on Crime Prediction

#### (1) Preparation for Project Implementation

##### 1) Pilot Project Plan

This project is aimed to improve the effectiveness and efficiency of public security activities by proposing optimal patrol routes based on crime prediction systems and crime prediction technology proven in Japan, Brazil, and other countries through a smartphone application. The summary is shown in Table 18-11.

**Table 18-11 Summary of Security DX Pilot Project**

<b>1. Project title (Program)</b>	Program to Strengthen Public Security Administration using ICT Technology
<b>2. Target country</b>	Honduras
<b>3. Sector</b>	Security
<b>4. Name of the pilot project</b>	Improving Public Security through ICT Solutions to Support Patrol Operations Based on Crime Prediction
<b>5. Background: Sector issues (Vulnerabilities)</b>	In 2011, Honduras ranked first in the world in homicides per 100,000 people, and the importance of improving public security was recognized. Although the number of homicides in Honduras has been decreasing in recent years due to JICA's Community Policing Project, a technical cooperation project that began in 2009, the improvement of public security is still regarded as an important development issue in Central American countries, including Honduras.
<b>6. Background: Effects of COVID-19</b>	The JICA technical cooperation project being undertaken in Honduras aims to promote community policing for the purpose of crime prevention, which is developed based on relationships with communities, but the COVID-19 pandemic has made it necessary to consider activities involving the residents. Therefore, there is a need to further improve the efficiency of police operations by considering new approaches that utilize ICT technology.
<b>7. Project overview</b>	Through a demonstration experiment of Crime Nabi, a patrol operation efficiency improvement support service that uses crime prediction, the effectiveness of the

	introduction of this service will be verified. In the future, the implementer also aims to activate and improve the efficiency of local crime prevention activities through synergy effects with the JICA technical cooperation projects.
<b>8. Implementation period</b>	September 2022 - December 2022
<b>9. Implementing agencies and organizations</b>	Singular Perturbations, Inc.
<b>10. Relevant government organizations</b>	National Police of Honduras (PNH)
<b>11. Solutions to be provided</b>	Crime Nabi, an ICT solution to support patrols based on crime prediction
<b>12. Beneficiaries</b>	National Police of Honduras and citizens of Tegucigalpa
<b>13. Overall goal</b>	Public security administration in Honduras will be strengthened using DX technology
<b>14. Project purpose</b>	Through the demonstration of this service, the effectiveness of the service will be confirmed, and issues related to its introduction will be sorted out.
<b>15. Outputs</b>	<ul style="list-style-type: none"> <li>• A demonstration experiment of the service will be designed and implemented, and the results of the verification will be compiled.</li> <li>• The results of the pilot project will be shared domestically and internationally.</li> </ul>
<b>16. Examples of the project activities</b>	<ul style="list-style-type: none"> <li>• Prepare for the demonstration of implementer's technology in Honduras (acquisition of necessary information and data, system development, design of the demonstration, and discussion and formulation of a detailed implementation plan).</li> <li>• Conduct sessions and training for technology implementation at the target sites.</li> <li>• Demonstration experiment will be conducted at the target sites.</li> <li>• Summarize the results of the demonstration experiment.</li> <li>• Conduct seminars to share results.</li> </ul>
<b>17. Expected activities after the project completion</b>	<ul style="list-style-type: none"> <li>• Sales promotion to government agencies via representative partner.</li> <li>• Use the results of this project as a model to deploy to police agencies and security companies in other countries, such as in Latin America.</li> </ul>
<b>18. Efforts for COVID-19</b>	Follow guidelines such as information from the Embassy of Japan in Honduras, and "Travel Procedures and Safety Measurement" of JICA.

Source: JICA Study Team

## 2) Coordination of Stakeholders for Implementation

The Study Team started discussions with the JICA Honduras Office, the National Police of Honduras, and the implementer early after the start of the study. In addition, the prospective implementer has traveled to the site at its own expense in July, before the contract was signed, to collect information and coordinate with the C/P. Through the subsequent continuous support by the JICA Honduras Office, it succeeded in establishing a cooperative framework with the C/P at an early stage. Therefore, at the time of the first field survey, the Study Team was able to focus on information collection and the preparation of an agreement document.

### (2) Summary of Project Implementation

#### 1) Background and Aims of the Pilot Project

The Security DX Pilot Project aims to reduce the number of face-to-face instructions for patrol activities and other similar tasks of the Honduran National Police affected by COVID-19 using ICT technology. In addition, the introduction of a crime prediction function based on historical data is expected to contribute to DX promotion and strengthen resilience through preventive effects and public security by increasing the efficiency of patrol activities.

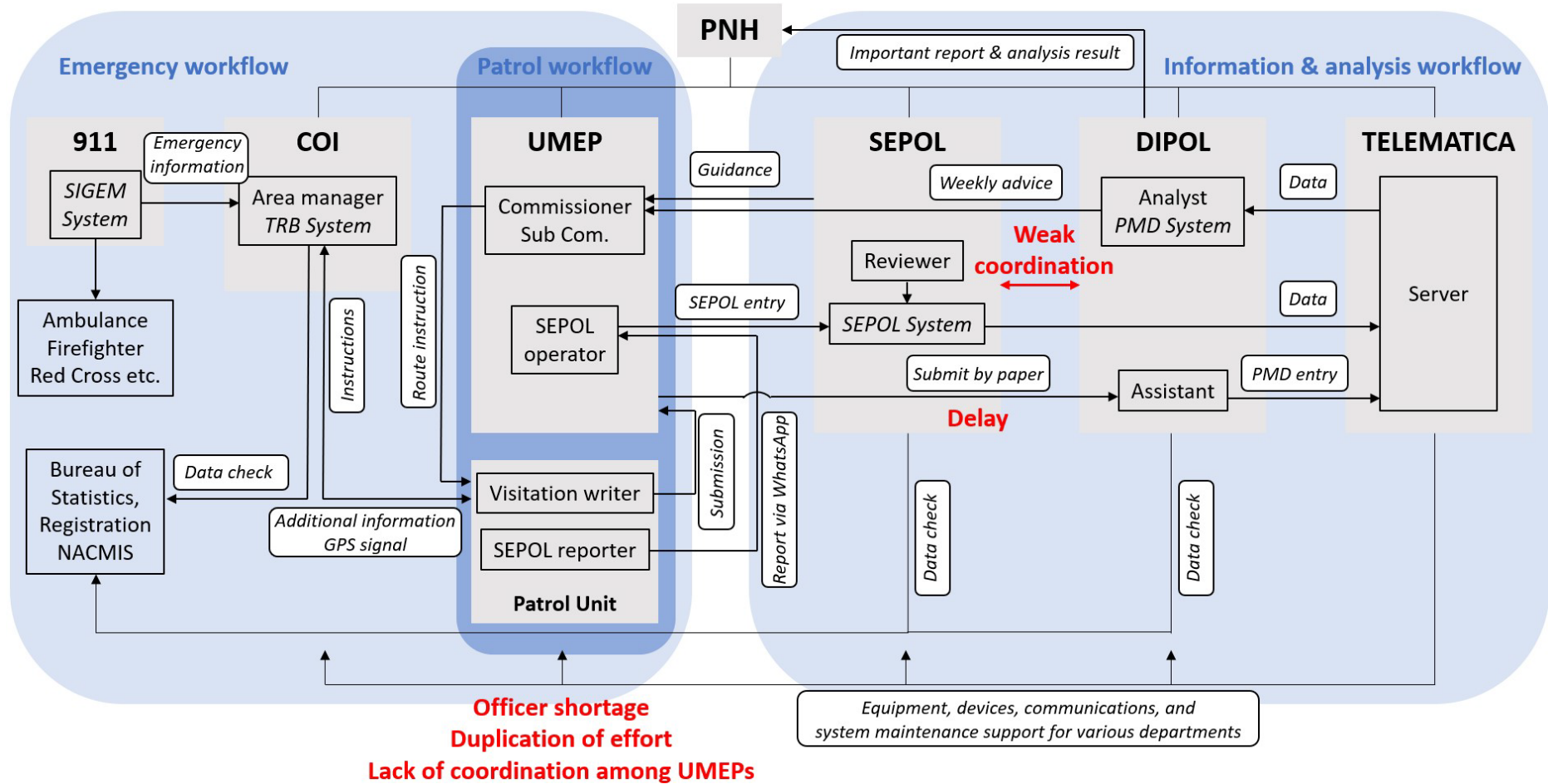
This pilot project was conducted in cooperation with the Police Statistics Department (SEPOL), which

manages the crime information database: the Bureau of Information and Communication (TELEMATICA), which manages the hardware for the SEPOL system; the Police Information and Analysis Bureau (DIPOL), which is responsible for crime analysis; and the Police Station (UMEP), which is responsible for patrol activities and information collection.

According to the interviews with UMEP4 conducted by the study team, each department of the PNH uses its own system in its workflow, which is not well coordinated due to the characteristics of a vertically organized police departments. This causes duplication of work for the short-staffed UMEPs. It was also highlighted that the problems such as the time required to request backup in an emergency (Figure 18-1) and confirmed that there is a strong awareness of the need to build a means of cooperation between UMEPs.

At the demonstration site, UMEP4, the chief or sub-commissioner supervises patrol activities and issues instructions. Officers execute patrol in accordance and submit information in the respective systems.

PNH: National Police of Honduras  
 TELEMATICA: Telecommunications Authority  
 NACMIS: Primary record management information system



From left to right: Emergency workflow, Patrol workflow, and Information collection and analysis workflow. Issues are indicated in red text.

Source: JICA Study Team

**Figure 18-1 Workflows of National Police of Honduras' Activities and Issues**



## 2) Project Implementation

Implementation tasks of the pilot project is shown in Table 18-12 in and Table 18-14 shows the progress chart.

**Table 18-12 Implementation of Pilot Project**

No.	Task	Contents
1	Explanation and consensus building with relevant local organizations (see 18.3.4(1))	<ul style="list-style-type: none"> <li>Translate the pilot project plan into local language.</li> <li>Hold a kickoff meeting to explain the project to local organizations (central and local governments of the target country, private companies, etc.). At the same meeting, the project plan shall be discussed and agreed upon, and necessary documents shall be prepared.</li> <li>Update the project plan based on the meeting results and confirm and agree on the conditions for starting the project.</li> </ul>
2	Implementation of pilot projects	<ul style="list-style-type: none"> <li>The project implementer will hold a kickoff meeting to start the project.</li> <li>Receive data from PNH and develop crime prediction system.</li> <li>Conduct CrimeNabi application training and PNH start using it.</li> <li>Monthly meetings via online will be held for each pilot project to check and monitor the progress, pending issues, and countermeasures.</li> <li>Pilot project information, progress, and results will be shared timely.</li> <li>If there is a significant deviation from the original project plan, the plan will be revised with the agreement of stakeholders after confirming the cause and the countermeasures.</li> </ul>
3	Briefing session (February 8 <sup>th</sup> )	<ul style="list-style-type: none"> <li>At the end of the pilot project, reporting of the activities and results of the pilot project to local stakeholders (partner country government, private companies, etc.) will be done.</li> <li>The method of the session, including confirmation of the contents of the presentation, shall be confirmed in consultation with the JICA staff in charge.</li> </ul>
4	Verification of effectiveness	<ul style="list-style-type: none"> <li>The effectiveness of the pilot project implemented will be verified based on the results of the field survey and will be presented in the project completion report.</li> <li>The results of the verification of the effectiveness of each project will be shared with relevant sectors and used as input for the overall report.</li> </ul>

Source: JICA Study Team

The Honduran National Police provided data for the city of Tegucigalpa from 2017 to 2021 and data during the demonstration period, as requested by the implementer based on the confidentiality document. A briefing session was held on February 8, after the completion of the demonstration. In the original agreement document, the interim report was positioned as a deliverable from the implementer, but due to repeated work delays, it was omitted in lieu of reports and discussions at the weekly meetings that were held in consultation with the study team.

The implementer, Singular Perturbations Inc., and its' subcontractor BBBR, conducted the training for the PNH during the second field survey (November 5<sup>th</sup> to the 20<sup>th</sup> of 2022). The training participants are shown in Table 18-13.

**Table 18-13 Attendees of Crime Nabi App Training**

Date	11/8 (Tue)	11/9 (Wed)	11/10 (Thu)
Number of attendees	15 (executives)	35 (officers)	33 (officers)
Organizations	SEPOL: 4 DIPOL: 1 TELEMATICA: 3 DNEP: 1 UMEP4: 6 from Kennedy District: 1 Suyapa District: 1 Villa Nueva area: 1	Kennedy District: 13 Suyapa District: 11 Villa Nueva District: 11	Kennedy District: 15 Suyapa District: 5 Villa Nueva District: 13

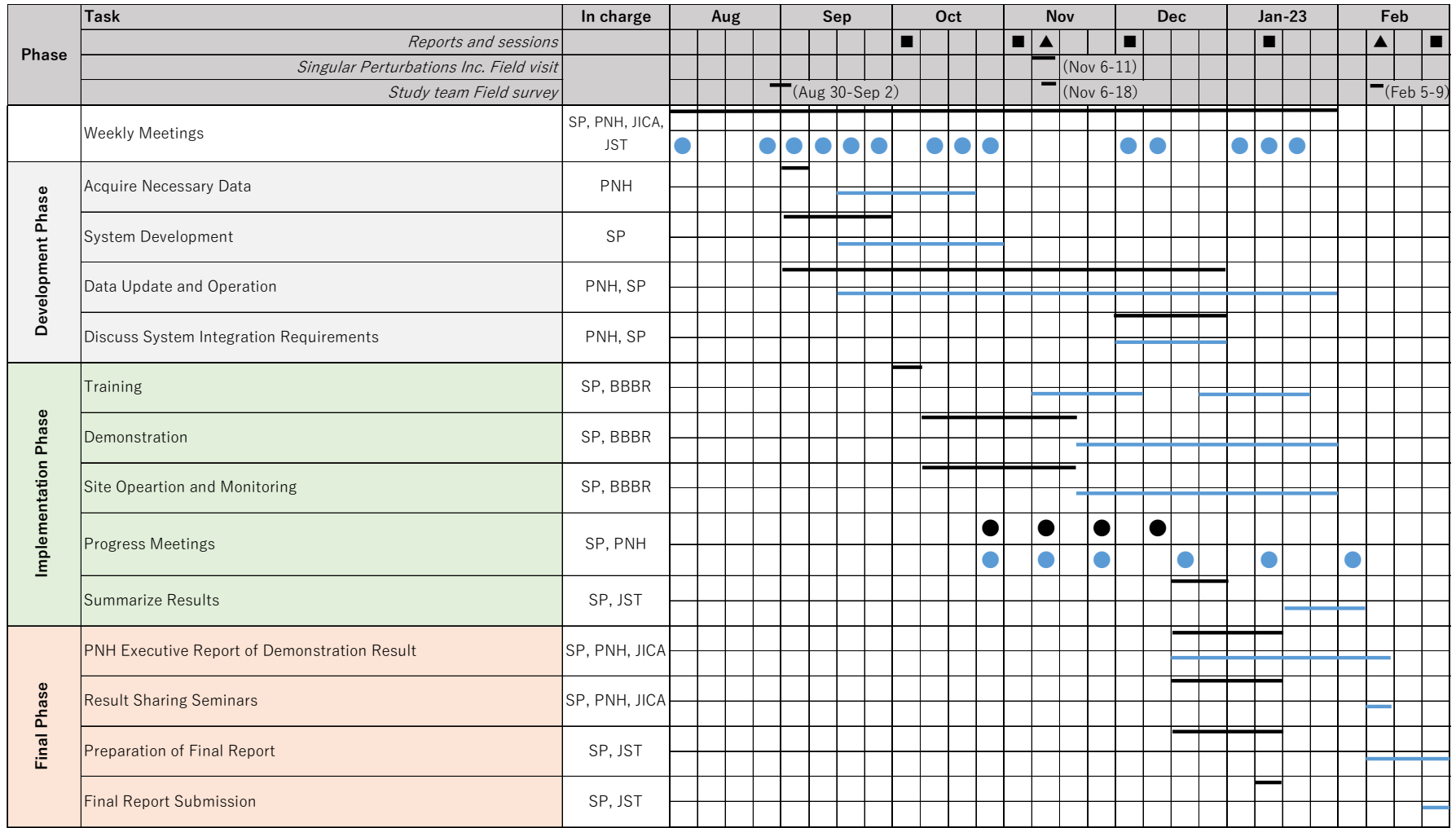
Source: JICA Study Team

The stakeholders communicated through online meetings on a weekly basis and Whatsapp group chats

involving all stakeholders. The PNH was interviewed about the request for CrimeNabi application optimization and the possibility of responding to it was reported by the implementer.

In the meantime, the study team interviewed National Emergency Call System and the Police 911 Liaison Division (COI) to grasp the workflow of emergency response and patrol activities throughout the police organization (see Figure 18-1 and Figure 18-2). The areas addressed in the pilot project and issues related to implementation were identified, and possible measures were shared with the implementer during the progress meetings.

**Table 18-14 Progress Chart of Security DX Pilot Project**



■: Monthly report, Final report  
 ▲: Seminar, training etc.

PNH: National Police of Honduras; SP: Singular Perturbations, Inc. JST; JICA Study Team

— Plan  
 — Actual

Source: JICA Study Team

### **3) Changes During the Implementation**

#### **a) Demonstration Period**

The project duration was cut in half, by 2 months, due to the longer time required to sign the confidentiality documents in the preparation stage. Furthermore, CrimeNabi was rarely used during the originally planned demonstration period because CrimeNabi's function of route generation based on crime prediction was not explained at the start of the demonstration, and the implementer did not communicate sufficiently with PNH, contrary to PNH's cooperative attitude. As a result, the period was extended by one month to the end of January to collect sufficient patrol data necessary to verify the effectiveness of the solution.

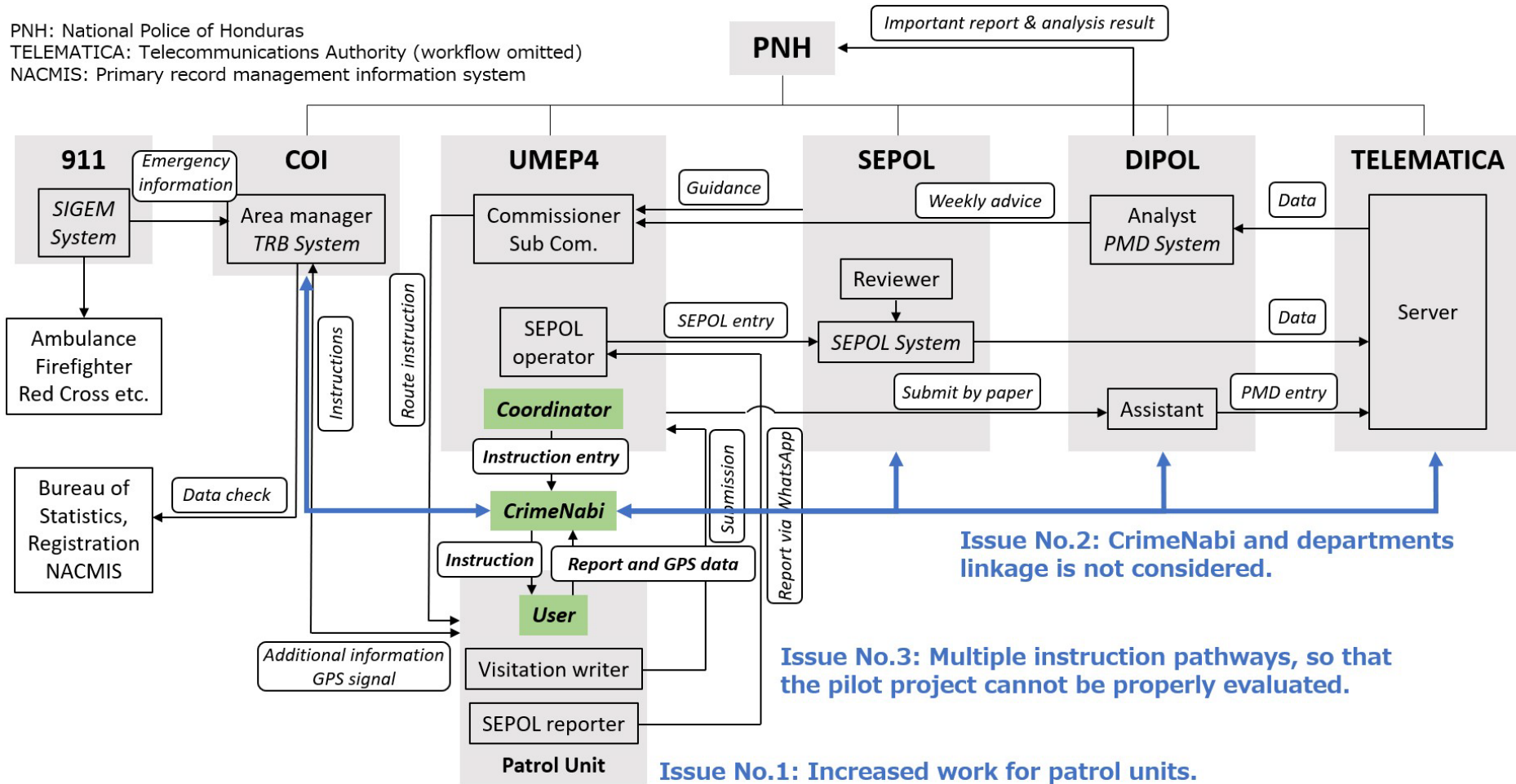
#### **b) Change of Implementation Method and System Optimization**

The system was developed based on the past crime data received prior to the start of the demonstration, and attempts were made to streamline the system in a way that would be more in line with the issues identified through the demonstration and the actual situation in PNH. The details are shown in Table 18-15. The system was modified to streamline several points raised at weekly meetings, such as the satellite image display of the base map of the application and the map rotation function.

The points that the application generates complex and long-distance routes compared to the shortest routes and the low accuracy of the base map due to its reliance on external open sources were not considered feasible to change the system in the short term and were addressed through operational modifications (route creation training for the sub-commissioner and coordinator was conducted in a hybrid format of online and onsite).

Figure 18-2 shows in blue the issues of the pilot project that were identified through the demonstration. The main issues are: (1) In addition to the existing SEPOL and DIPOL patrol form preparation, CrimeNabi operations were required, increasing the workload of the patrol units, (2) Multiple instruction pathways by the commissioner, sub-commissioner, and coordinator using Crime Nabi, (3) Lack of consideration to link various police department systems, but it was difficult to optimize the system during the demonstration period.

PNH: National Police of Honduras  
 TELEMATICA: Telecommunications Authority (workflow omitted)  
 NACMIS: Primary record management information system



Pilot project areas are indicated by green boxes, and issues are indicated in blue text.

Source: JICA Study Team

Figure 18-2 Pilot Project Area and Issues Related to the Implementation

### (3) Evaluation of Project Preparation and Implementation

#### 1) Evaluation Based on the Implementation Plan

Table 18-15 below shows the evaluation of the pilot project according to the project implementation plan.

**Table 18-15 Summary Table of Evaluation Results**

1. Project Overview			
Country: Honduras		Project name: Improving Public Security Through ICT Solutions to Support Patrol Operations Based on Crime Prediction	
Sector: Public Security		Type: Pilot project	
Department: Central America and Caribbean Division, Latin America Department		Project budget: JPY 10 million	
Project period	September - February 2022	Counter partner: National Police of Honduras (PNH)	
		Implementer: Singular Perturbations, Inc. (Japan) Subcontractor: BBBR, Inc. (Brazil), Comunicaciones Globales, Inc. (Honduras)	
1-1 Background and Overview			
<p>In 2011, Honduras ranked first in the world in homicides per 100,000 people, underscoring the importance of improving public security. Although the number of homicides in Honduras has been decreasing in recent years due to JICA's "Community Policing Project," a technical cooperation project that began in 2009, the improvement of public security is still regarded as an important development issue in Central American countries, including Honduras.</p> <p>Community policing efforts are a form of police work aimed at crime prevention that is developed based on relationships with the community, but during COVID-19, certain considerations must be given to activities that involve residents. In addition, restrictions on travel and gatherings require a different approach to how in-service education and training opportunities for police officers are provided. Improving public security in Honduras is positioned as an important issue, and consideration of the use of ICT in the security sector will contribute to further efficiency and expansion of police operations.</p>			
1-2 Content			
<p>Through a demonstration of Crime Nabi, a patrol operation efficiency improvement support service that uses crime prediction in this pilot project, the effectiveness of the introduction of this service will be verified. In the future, the implementer also aims to improve the efficiency of local crime prevention activities through synergy effects with JICA technical cooperation projects.</p>			
(1) Overall Goal			
Public security administration in Honduras will be strengthened using DX technology.			
(2) Project Purpose			
Through the demonstration of this service, the effectiveness of the service will be confirmed, and issues related to its introduction will be sorted out.			
(3) Results			
1) A demonstration will be designed and implemented, and the results of the verification will be compiled.			
2) Pilot project results will be shared locally and internationally.			
(4) Input			
Pilot project: JPY 10 million Implementer: Singular Perturbations, Inc.			
2. Overview of the Evaluation Study Team			
Evaluator	In charge	Name	Position
	Project Leader/Build Back Better	Ichizuru Ishimoto	Nippon Koei Co., Ltd.
	Infrastructure development for resilient society (1)	Taku Mihara	Nippon Koei Co., Ltd.
	Innovation/Pilot project management (1)	Hideki Katayama	Nippon Koei Co., Ltd.
	Innovation/Pilot project management (2)	Luvsanjants Ganzorig	Nippon Koei Co., Ltd.
Period	September – February 2022		Type: Complete evaluation
3. Summary of Evaluation Results			

### 3-1 Verification of Results

- (1) Project Purpose: Through the demonstration of this service, the effectiveness of the service will be confirmed, and issues related to its introduction will be sorted out.

Although evidence-based crime forecasting was a new initiative for PNH, and thus was expected to be superior, it was not tested for superiority over PNH's existing crime analysis methods.

It was also confirmed that route creation works under certain conditions, such as targeting districts with relatively well-developed map data and road infrastructure. However, it became clear that there are several issues that need to be resolved before full-scale introduction, such as the fact that there were many areas within the demonstration area that did not meet these conditions, and that the routes generated did not always lead to optimal resource use.
- (2) Outcome 1: The demonstration will be designed and implemented, and the results of the verification will be compiled.
  - 1) Verification 1: Measurement of crime deterrence effectiveness

Crime forecasting with higher accuracy than conventional AI forecasting methods could be successfully replicated in the city of Tegucigalpa. On the other hand, considering that a police officer of Tegucigalpa can predict to a considerable extent the areas of high risk of crime, it was crucial to show that the results of the application crime prediction exceeded the experience-based crime analysis that PNH has developed over the years. However, there was no verification of superiority in comparison with existing methods, and no results were obtained to indicate the degree of improvement in PNH efforts.

Regarding the actual number of crimes, a comparison of the data during the demonstration period with the data from the same period last year (2021) showed a decrease in the number of crimes. Nevertheless, since this is primarily due to external factors such as increased enforcement due to the declaration of a state of emergency issued by the government during the demonstration period, it was not possible to estimate CrimeNabi's crime prevention.

Therefore, the study team could not confirm sufficient results to expect substantial effects in crime prevention.
  - 2) Verification 2: Increased efficiency of police officers

Although the series of activities of this pilot project aimed to improve efficiency, the way the patrol activities (or the hypotheses) to be made more efficient through the CrimeNabi was conducted without sufficient consideration and coordination. Therefore, the project did not replace the police's traditional way of patrol but was implemented as an additional duty. As a result, as shown in Figure 18-2, it resulted in an increase in the workload of the patrol units, and the police officers who cooperated in the demonstration did not experience or expect an improvement in work efficiency (the user survey also rated it low, especially with regard to improving work efficiency). Furthermore, the patrol routes proposed by CrimeNabi tend to be complex and have many problems such as impassable routes (e.g., stairs) and lack of comfort in application operation, and even if sufficient training is provided, sufficient system improvements are essential to ensure improved work efficiency. As mentioned above, the pilot project did not demonstrate the effectiveness of crime prevention, and therefore could not demonstrate the improvement in efficiency, and the systemic problems resulted in a reduction in PNH work efficiency.

On the other hand, through this project, issues related to the efficiency and digital transformation of patrol activities were identified, and it was confirmed that there is potential to improve efficiency through application input of collected information by CrimeNabi (or similar solution) and synchronization of collected information with SEPOL and DIPOL.

Therefore, although the study team could not confirm the effect in the improvement of work efficiency expected in the project plan, it was able to understand the issues that suggest the future direction of initiatives.
  - 3) Verification 3: Increased information collection per police officer

The information traditionally collected by the police are the SEPOL collection categories and the DIPOL visitation form. The accuracy of the location information of these are limited to a representative point of the area. In contrast, in this project, specific location information of patrol routes and images taken from smartphones during patrols were collected as patrol reports, allowing accurate location information. In addition, it was able to demonstrate the possibility of efficient information collection by organizing and storing information entered during patrols in a way that allows it to be directly viewed.

On the other hand, the consistency between the information that must be collected in actual operations and the information that can be collected by the application could not be optimized, and the method of registering and utilizing the information collected with a high degree of accuracy could not be integrated. It was also rated low in the user survey.

Therefore, although the possibility of improving the volume of information collection expected in the project plan was demonstrated, issues such as the necessity of system linkage became clear for the system introduction.
  - 4) Verification 4: Standardization of information collection and improved accuracy of analysis

The collected information was standardized by obtaining crime types in advance from the police, fixing the collected information, and optimizing the application.

With respect to improving the accuracy of the analysis, it was able to draw up an evidence-based crime prediction heat map developed based on historical data. However, the PNH did not fully understand and utilize the service, despite additional explanations and explanations given during the demonstration period, because of insufficient explanation of the analysis functions (reporting function and prediction heat map).

Therefore, the expected improvement in analysis accuracy in the project plan could not be demonstrated.
  - 5) Verification 5: Obtain feedback from users

During the field survey and weekly meetings, the coordinators and police departments that participated in the project provided feedback on the app and asked for issues related to optimizing its functionality. Based on this, the following functions were added: expansion of facility information displayed on the map, switching of satellite images on the base map, map rotation, specification of distance when creating patrol routes, and display of estimated travel time for proposed patrol routes. Other requests were deemed difficult to optimize during the demonstration period.

Among the issues that were difficult to optimize, one that was particularly difficult for the traditional patrol to relate to was the creation of complex routes, such as routes proposed by the route creation function that repeatedly pass the same places or have a travel distance of 10 km or more. This issue was pointed out by the police from the beginning of the demonstration and became an obstacle to the actual implementation of patrols and was addressed by adding a function to specify the route distance (a function to specify the patrol distance, such as 5 km) and training in pin placement. However, the route generation function is also related to modifying the prediction algorithm, which is not easy, and it was determined that a fundamental solution during this demonstration project was difficult, and the complex patrol route generation was not completely resolved. It can be said that, due to the organizational characteristics of the police, strict patrols along designated routes are a basic principle. Considering the police operation, it must be said that the creation of complicated routes that would have made it difficult to carry out orders from superiors would have been fatal, a lesson worthy of note.

6) Verification 6: Prerequisites for running the application

For the application to work, the police officers conducting the patrols need to have an internet-accessible cell phone. Since the PNH currently restricts the use of personal cell phones for official use in the interest of crime control, it was decided to lend cell phones during the project period. The fact that internet must be used may be a bottleneck in terms of versatility in developing countries. In addition, based on the lesson learned from the change of provider during the project due to low connection quality, it is essential to confirm the internet access when assuming a nationwide deployment, where the connection is relatively well-developed. In addition, it should be noted that security software is required to be installed on official cell phones, which could cause conflicts (During the project, the conflict was resolved through system rationalization).

The proposed routes are largely dependent on the accuracy of the open-source database of maps that is used to design them. The app was used by the coordinators and patrol units of the three areas of UMEP4. In the Villa Nueva area, where most of the area is informal, many of the patrol routes created by the app were too narrow or too steeply inclined to be traveled. Inappropriate route suggestions were one of the biggest obstacles in this demonstration, since the map relied on open data and was not individually editable. As with the internet connection, if looking at nationwide deployment, it will be necessary to address areas with poorer conditions, and designing services that rely on open data is a major challenge for implementation.

(3) Outcome 2: Pilot project results will be shared nationally and internationally.

A briefing session for counter partner was held on February 8<sup>th</sup>. The Deputy Director was also briefed on the overview in a separate meeting. Sharing abroad will be accomplished through this report.

### 3-2 Summary of Evaluation

(1) Innovation: Slightly high

The new approach was that patrol units can report to managers through the CrimeNabi app multiple images of their patrol routes and their location, and managers can keep track of unit's activities. The heat map of crime prediction based on historical data was considered new for PNH, which is in an extremely limited human resources, because it eliminates the human work and provides an at-a-glance view of crime occurring possibility compared to the current system. While the theoretical innovation was well received at PNH, the superiority of the function could not be fully demonstrated due to inadequate operational aspects, despite the full cooperation of PNH.

(2) Resilience Enhancement: Unknown (may contribute)

SEPOL data shows that the number of crimes in the project sites decreased during the demonstration period. However, due to the short duration of the demonstration and the small sample size recorded, statistical significance could not be confirmed.

(3) Versatility: Low

The following issues were raised as challenges to deploy CrimeNabi: Ensuring the continuity of device usage by police officers, ensuring the accuracy of map data, and securing the internet access in the target areas, all of which can be solved if appropriate budget appropriations are made. On the other hand, especially from the perspective of improving police operational efficiency, the importance of linking the data collected from the application with the police database was pointed out by various parties from the start of the project, but these issues were not adequately addressed. Furthermore, versatility of the system is not high because the preconditions differ greatly from country to country, requiring the development of custom-made systems for each country. Therefore, based on the overall judgment of these factors, the versatility of the solution is evaluated as low.

### 3-3 Factors Contributed

(1) Regarding the plan

Without the significant cooperation of the JICA Honduras office in implementing this project, it would not have been possible to realize. The office was in close contact with PNH and supported the various activities of the pilot project and urged the counterparties, which resulted in a smooth communication. Another contributing factor was the



frequent scheduling of regular meetings with the counter partner and periodic progress review meetings on the Japanese side.

(2) Regarding the implementation process

It was able to optimize some of the functions within the demonstration period by listening to the counter partner's opinions and requests regarding the application specifications during the field survey. In addition, due to a change in the coordinator who was appointed at the time of the training due to the counter partner's availability, a hybrid format was used to provide demonstration training on pin placement necessary for patrol route design. Finally, during the extended demonstration period, the implementer hired an engineer from a local firm to serve as an on-site supporter, and it would have been even better if it had been able to take the same action from the beginning.

### 3-4 Problems and Causes

(1) Regarding the plan

- Since it took a long time to recognize the fact that app performance is highly dependent on given conditions, such as open data in maps, it was not able to obtain a sufficient sample. The target sites for the project should have been selected after confirming the operating conditions of the application, discrepancies between map data and actual road conditions, internet access, etc., prior to the start.
- Despite multiple meetings and field surveys, the pilot project was implemented in a manner that applied the existing format of the application without fully understanding the police operation. As a result of not designing a detailed plan for the implementation with a view to merging the solution with the existing SEPOL and DIPOL system, it must be evaluated that the content of the plan was insufficient to achieve the expected results.
- In the evaluation of crime prevention, it was assumed from the beginning of the project that it would be difficult to prove the effect during the limited demonstration period in view of the random nature of crime occurrence. In fact, the external factor such as the declaration of state emergency during this project period made it impossible, if not difficult, to assess a direct causal relationship between the number of crimes and application use.

(2) Regarding the implementation process

- Although training on the use of the application was conducted in the early stages of the project, CrimeNabi functions were not fully explained, and the demonstration was implemented without the relevant parties fully understanding the functions. As a result, the effectiveness of the proposed route was not understood by the collaborators, and CrimeNabi was not practically used from the start of the in early December until the re-training conducted in late January. Since the pilot project was implemented remotely, it was essential to provide sufficient explanations at the start of the project.
- It must be said that the fact that the implementer proceeded the project without sufficient local staff was a systemic deficiency. In addition, as mentioned above, the solution function was not fully explained at the time of the initiation, so it was essential to have a continuous on-site support.
- It took time to revise the confidentiality document, and more time than expected was required for the preliminary preparation such as selection of the target site, provision of data, and preparation of the documents related to the data. This delayed the start of system development and halved the demonstration period.
- The on-site training was conducted by the implementer without informing the counter partner of the authority and requirements of the staff who were to receive training at the start of the demonstration. The training participants did not include the final pilot project participants, and it became necessary to conduct the training again after the return of the implementer (handled by JICA Honduras office and study team).
- The JICA Honduras office and the study team frequently pointed out the inadequacies of the plan, which did not adequately consider the police operation, in the early stages of the demonstration project. However, the revision of the implementer's approach was made just before the end of the project, which failed to complete the project with sufficient results. The police departments of each country differ in their internal operations and departmental structure, even though they are all police organizations, and because of their emphasis on vertical functions, the jurisdiction of each department, inter-departmental cooperation, and information flow should have been fully understood in advance. So that suggestions on how to use the application in line with the organizational operations of the PNH, the selection of training participants, and the appointment of each department to each area of responsibility in the use of the application could have been more carefully considered. The work to confirm the preconditions indispensable for the functional demonstration was not sufficient, and it took time to understand the customer's (police) requirements, hindering the provision of the solution in a form suitable for the local condition.
- Since the government had declared a state of emergency and the target area of this pilot project was included in the scope, the departments of the PNH were busy responding to the situation, and there was a period when patrol activities could not be carried out as expected.

### 3-5 Conclusion

The content of the project was consistent with PNH's strategic plan and long-term strategy, and particularly confirmed that the willingness of PNH to promote the use of ICT and an interest in crime prediction.

The majority of the activities done in this pilot project did not produce results showing the superiority of the application. On the other hand, through the project, it was able to gain a concrete understanding of the issues faced by PNH. The innovativeness of this technology was expected to be high in terms of the ease with which anyone could propose a route, compared to current methods based on the extensive experience of police executives. However, custom-made project

management based on existing police activities was not implemented, and the results were not shared by all parties involved. Although the effects of the resilience enhancement (improvement of public security) could not be fully evaluated as initially assumed due to the short demonstration period and the high degree of influence of external factors, no negative possibility was identified. As for versatility, it was essential to understand the prerequisites for deploying nationwide or in the Central American region, linkage with existing systems used by police departments, and existing workflow, as well as to carefully explain this technology to the C/P and optimize its functions, but it was unable to provide an appropriate solution during the project.

As a result of the many problems that occurred during this pilot project, it can be said that the results were not as expected at the beginning. On the other hand, the fact that it was able to share the issues and needs of the PNH's public security activities from the same perspective through this project is showing the advantage of the pilot project method.

### 3-6 Recommendations

Recommendations are provided in 2) of this section and in 18.4.3(1).

### 3-7 Lessons Learned

The lessons learned was that although this pilot project is in the Digital Transformation field and thus remote support to the counter partner is possible, it is essential for smooth project implementation to have on-site staff who can provide constant support. In addition, the implementation of this type of projects is highly dependent on the type, accuracy, and quantity of data on which it is based, as well as on the internet connection in the target area. Therefore, it was found to be important to understand in advance the details of the data handled by the target C/P and the accuracy of the available open data, and to carefully check the conditions of the target area as well.

Based on discussions with the Deputy Director, one C/P from each department has assigned: the Information and Statistics Division (SEPOL), the Bureau of Information Collection and Analysis (DIPOL), the Information and Communication Bureau (TELEMATICA), and the Police Station 4 (UMEP4). In projects that aim to improve the efficiency of the entire organization, the role of the person in charge of the pilot project should be clearly explained to the C/P organization, and efforts should be focused on carefully explaining the objectives and methods of the project to the person in charge.

In addition, when implementing a project of any scheme by a start-up company in a developing country, it is necessary to conduct a thorough assessment of the implementer (and its local partner), assuming that it has low capacity to implement the project. Alternatively, the amount of consultant input could be increased for allowing flexible course correction through frequent progress checks.

Finally, from discussions with the Deputy Director, it was confirmed that the PNH has a clear intention to use ICT to strengthen the capacity per police officer and improve operational efficiency to compensate for the officer shortage. In addition, although there are some integration issues, PNH is unique in that it has developed and actually utilizes a variety of systems on its own. Organizational transformation and adaptation to actual operations through Digital Transformation will continue to take place in the future, and this is an area where there is room for continued consideration of support from a long-term perspective.

Source: JICA Study Team

## 2) Cooperation Scenario Proposal for the Security Sector in Honduras

In the process of implementing the pilot project, the study team were able to gain a detailed understanding of local needs and issues. The following is a summary of the proposal for future cooperation.

### a) Issues and Strategies

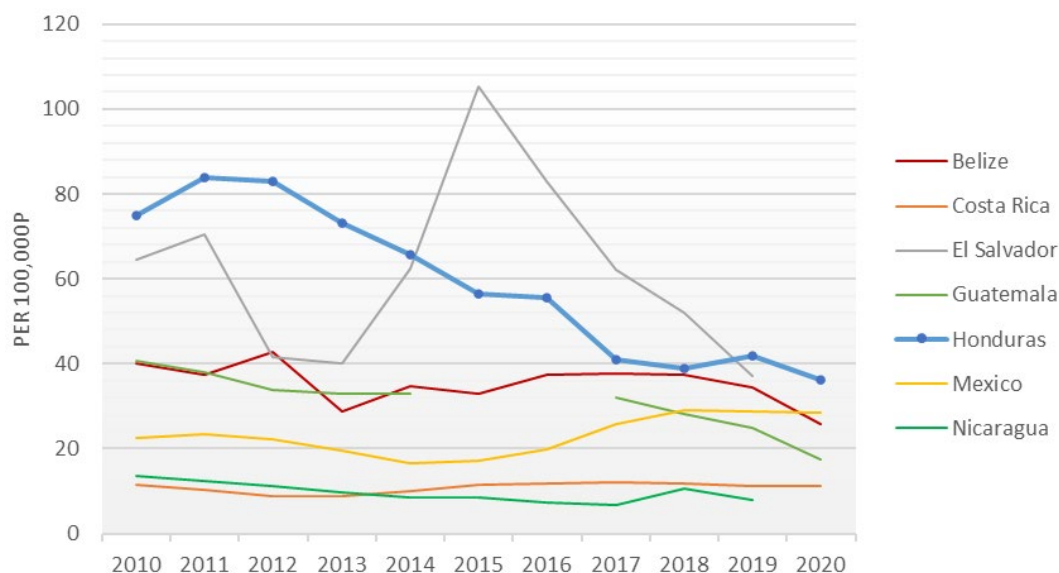
The number of homicides per 100,000 population (homicide rate) in Honduras has continued to rise since 2003, reaching the world's highest<sup>1</sup>. Since then, the number of cases has steadily declined due to numerous government and donor initiatives, but it is still far below the global average of about 6 cases per 100,000 people<sup>2</sup> and remains one of the highest in the region. Figure 18-3 shows the homicide rates in Central American countries over the 10 years since 2010.

As shown in the figure below, the homicide rate in Honduras has roughly been halved from its highest level. According to the IDB (Inter-American Development Bank), the decline was due to a series of measures, including full-scale organizational reform of the national police (stricter recruitment standards, dismissal of police involved in bribery and drug trafficking, introduction of community

<sup>1</sup> Data collection and confirmation study on community police cooperation in Brazil and Central American countries (JICA, 2013)

<sup>2</sup> World bank, <https://data.worldbank.org/indicator/VC.IHR.PSRC.P5?end=2020&start=2010>

policing, and adequate budgetary measures<sup>3</sup>), reform of the training and in-service education system, expansion of facilities and equipment for crime prevention activities, and significant improvements in the work environment. Efforts have resulted in a threefold increase in residents' trust in the police between 2015 and 2017<sup>4</sup>.



Source: Prepared by the JICA Study Team based on data from the United Nations Office on Drugs and Crime

**Figure 18-3 Homicide Rates in Central American Countries**

The JICA-supported "Latin American Regional Security Seminar" was implemented in 2007; the "Community Police Project" was implemented in 2009, and the "Individual Expert Project" began in 2021. The latter is an effort to establish community policing in Honduras, with the following results: the establishment of community policing in the 1<sup>st</sup> phase, the establishment of a community policing model in Honduras in the 2<sup>nd</sup> phase, and the strengthening of the information collection and analysis capacity of the National Police in the 3<sup>rd</sup> phase. The ongoing project goal is to strengthen the community policing model and promote its practical application with the participation of local governments and civil organizations<sup>5</sup>.

The Honduran National Police's strategic plan for 2018-2022 included: (1) Improving crime prevention and control capacity, (2) Reducing enforcement failures through effective information collection and investigation, (3) Improving traffic accident prevention capacity, and (4) Improving and modernizing the police education system<sup>6</sup>.

Currently under revision, the long-term strategy 2030 includes the following:

1. Reduce traffic accidents and prevent loss of life and property, injury, and disability.
2. Improve the professional skills of police academy graduates to ease staff shortages.

<sup>3</sup> Evaluating the Professionalization of the Civilian Police Force (UNAH, 2020)

<sup>4</sup> IDB, [https://www.iadb.org/en/improvinglives/how-did-honduras-cut-its-homicide-rate-half?fbclid=IwAR1tmE5guxueBZ4j5cYf-efxSINAesAYm\\_ViW0kNuFaOk0ABf113ZP1pZ4I](https://www.iadb.org/en/improvinglives/how-did-honduras-cut-its-homicide-rate-half?fbclid=IwAR1tmE5guxueBZ4j5cYf-efxSINAesAYm_ViW0kNuFaOk0ABf113ZP1pZ4I)

<sup>5</sup> Summary of Community policing project Phase 4 (JICA Honduras office, 2020)

<sup>6</sup> Plan Estrategico Institucional (Secreteria de Seguridad, 2018)

3. Strengthen police information systems to prevent, deter, and control crime and violence.
4. Increase the ability to respond to criminal investigations and reduce enforcement omissions.
5. Improve the security of civil society.
6. Institutionalize a comprehensive model of performance evaluation<sup>7</sup>.

The implementation of the Security DX Pilot Project in this study allowed the JICA Study Team to understand the challenges faced by the National Police. First, organizational reforms have improved the infrastructural aspect of the country and made it more financially well-funded, but as a result of mass layoffs of police officers, the country is facing an absolute shortage of police officers (the UN recommends 300 officers per 100,000 people, while Honduras has about 190 officers).

As shown in Figure 18-1, each department of the national police has developed its own system to improve operational efficiency, but the lack of coordination between organizations and systems increases the workload by placing duplicated tasks on police officers responding in the field. Furthermore, although a vertical command chain from each agency to the UMEP is in place, a means for cross-jurisdictional coordination linking the UMEPs is not in place. Although the aforementioned long-term strategic goal No. 3 for 2030 has been implemented, there is an urgent need to study solutions for the essential issue, namely, the shortage of officers.

## b) Cooperation Scenario

Based on the above issues and strategies, the theme of the cooperation scenario in the Honduran public security sector is defined as "Improving operational efficiency and optimizing resources through DX support to strengthen cross-sectoral cooperation". The Honduran National Police has developed various systems through its own budget but has not been able to maximize the effectiveness of these systems, so technical assistance is needed to promote DX throughout the police force. Table 18-16 provides an overview of the suggested programs and projects.

**Table 18-16 Programs and Projects Suggested in the Public Security Sector in Honduras**

Strategy	Programs and Projects	Term	C/P
1. System development	<b>1-1. Standardize, streamline, and accelerate information collection</b>	Short	UMEP, SEPOL, DIPOL
	1-2. Optimize the overall workflow of report, information collection, and analysis	Medium	UMEP, SEPOL, DIPOL, 911, COI, TELEMATICA
	1-3. Introduce prank call detection system to reduce needless work (case of Japan)	Short	911
	1-4. Provision of equipment for data backup	Short	DIPOL
2. Strengthen cross-sectoral cooperation (Department strengthening)	2-1. Coordination among departments through real-time sharing and expanded access to collected data	Short and Medium	COI, UMEP, SEPOL, DIPOL
	2-2. Share GPS data held by COI to visualize police activities	Short	COI, UMEP, SEPOL, DIPOL
3. Human resource development	<b>3-1. Enhance capacity for evidence-based crime prediction (criminal psychology, statistics)</b>	Short and Medium	DIPOL
	<b>3-2. Capacity building for optimal patrol planning based on crime prediction</b>	Short and Medium	UMEP, DIPOL

<sup>7</sup> Honduras Policia Nacional,

<https://policianacional.gob.hn/noticias/5252#:~:text=-%20El%20Plan%20Estrat%C3%A9gico%20Institucional%20permite%20mejorar%20el,seguros%20del%20%C3%A1rea%20Tegucigalpa%2C%2013%20de%20enero%2C%202019.->

Strategy	Programs and Projects	Term	C/P
	3-3. Strengthen human resource development systems at training and in-service educational institutions	Medium	Police academy

Source: JICA Study Team

The Security DX Pilot Project partially demonstrated the above 1-1, 3-1, and 3-2 at the UMEP4 by utilizing the Crime Nabi app. This kind of support using ICT technology should be continued to improve the operational efficiency of the patrol units by enabling them to input various formats for information collection and communication, such as SEPOL system items and DIPOL visitation sheets, from the same system, and to expand DX support to other departments (see Figure 18-2).

In addition, the community policing project that has taken root in the UMEP3 of Tegucigalpa City can be expanded to include patrol activities based on crime prediction and historical data. Furthermore, if police activities can be visualized by recording driving routes, smart technology can be used in the community policing project.

### 18.3.5 Evaluation and Inclusion of Sargassum in the Feed of Locally Grown Animals in Barbados

#### (1) Preparation for Project Implementation

##### 1) Pilot Project Plan

This project was planned as an attempt to achieve both processing and effective utilization of sargassum, a natural waste product, by converting it into livestock feed. Table 18-17 shows a summary of the prepared project plan after the first field survey and subsequent discussions with local agencies and prospective implementer.

**Table 18-17 Summary of Sargassum Measures Pilot Project**

<b>1. Project title (Program)</b>	Improving National Sargassum Management Capacities in the Caribbean
<b>2. Target country</b>	Barbados
<b>3. Sector</b>	Agriculture, Environment, Fisheries
<b>4. Name of the pilot project</b>	Evaluation and Inclusion of Sargassum in the Feed of Locally Grown Animals in Barbados
<b>5. Background: Sector issues (Vulnerabilities)</b>	<p>The amount of Sargassum washed ashore is increasing each year, adversely affecting the landscape of the Caribbean coastline and it gives a direct impact on the people living in coastal areas as well as those who encounter harmful odors when visiting affected beaches. The influx of the Sargassum also has a negative effect on marine life. Coral reefs can be suffocated and marine life such as turtles can be affected also. Upon landing, the oxygen content is reduced and the Sargassum releases toxic gases, which can lead to fish kills and loss of other marine biodiversity.</p> <p>On the other hand, rising energy costs and a global shortage of essential grains such as corn, soybeans, and wheat are driving production costs and animal feed prices. Rising commodity prices affect not only feed manufacturers, but also farmers and consumers. This is because price increases are impacted through the supply chain. As a result, this threatens the food security of the Caribbean population. The use of Sargassum to supplement commercial animal feeds may allow for a reduction in the cost of production of livestock.</p>
<b>6. Background: Effects of COVID-19</b>	COVID 19 has resulted in significant interruptions in the global supply chains causing food shortages and increases in the price of food and agricultural products including animal feeds.
<b>7. Project overview</b>	This pilot project aims to contribute to the livestock industry by reducing the amount of Sargassum waste and making effective use of it as livestock feed supplement. In this project, commercial livestock feed will be supplemented with Sargassum and fed to

	chickens to evaluate the effects on meat quality and cost of production. The safety of Sargassum for consumption by animals and that of the meat for human consumption will also be evaluated. If the addition of Sargassum to livestock feed is proven safe and beneficial, this project could be a solution to the increasing Sargassum problem.
<b>8. Implementation period</b>	October 2022 to January 2023
<b>9. Implementing agencies and organizations</b>	Caribbean Agricultural Research and Development Institute (CARDI)
<b>10. Relevant government organizations</b>	National Conservation Commission (NCC) Ministry of Environment and National Beautification, Green and Blue Economy (MENBGBE)
<b>11. Solutions to be provided</b>	<ul style="list-style-type: none"> <li>Reduction of Sargassum inundations along one target beach on the east coast of Barbados. (The specific site will be decided <u>based on testing during the early phases of the project</u> and with project partners)</li> <li>Reduction in the amount of Sargassum destined for the local landfill</li> <li>Generation of sustainable livelihoods.</li> </ul>
<b>12. Beneficiaries</b>	Fishermen, Farmers, Coastal Communities, Feed Manufacturers
<b>13. Overall goal</b>	To contribute to the reduction of Sargassum waste material in Barbados and utilize it for the development of communities and countries in the Caribbean.
<b>14. Project purpose</b>	<u>To evaluate the inclusion of Sargassum in commercial feed and convert an environmental nuisance into a by-product allowing for import substitution and possible cost reductions in commercial feed use for livestock farmers.</u>
<b>15. Outputs</b>	<ul style="list-style-type: none"> <li>The output of the project is shared through information dissemination workshop</li> <li><u>Experimental results on inclusion of Sargassum at two different rates in the feeding of poultry with commercial feeds</u></li> <li><u>Monthly Reports</u></li> <li><u>Final Reports</u></li> </ul>
<b>16. Examples of the project activities</b>	<ul style="list-style-type: none"> <li>Identify sites for Sargassum and conduct baseline measurements</li> <li><u>Trial to evaluate inclusion of Sargassum at two selected ratios in the diets of broilers [from three weeks to marketing]</u></li> <li>Cost Benefit Analysis</li> <li>Information Dissemination Workshop</li> </ul>
<b>17. Expected activities after the project completion</b>	<ul style="list-style-type: none"> <li><u>Test other Sargassum species under similar experiment set up</u></li> <li><u>Opportunities for scaling up the use of Sargassum seaweed to supplement animal feed through harvesting and storing Sargassum during peak periods of influxes</u></li> </ul>
<b>18. Efforts for COVID-19</b>	Follow the information provided by the government, Japanese Embassy in Barbados, and “Travel Procedures and Safety Measurement” of JICA.

Source: JICA Study Team

## 2) Coordination of Stakeholders for Implementation

The study team discussed with CARICOM: Caribbean Agricultural Research and Development Institute (CARDI) and National Conservation Commission (NCC) during the first field survey and a verbal agreement was reached. However, subsequent communication with CARDI, the prospective project implementer, was mainly conducted via e-mail and web meeting. As a result, there were significant delays in receiving replies from CARDI.

In addition, setting a meeting with the Ministry of Agriculture was delayed because of CARDI, and the ministry was unable to participate in the project due to lack of human resources. So additional time was required to review the project plan.

Furthermore, the project cost was reduced due to the depreciation of the yen during the six months of this study, resulting in a large decrease in the budget, which was another factor requiring additional time to adjust the plan. Due to these factors, this pilot project was canceled.

## (2) Summary of Project Implementation

As mentioned above, the Sargassum Measures Pilot Project was terminated due to the long time required to establish a cooperative framework with the C/P.

## (3) Evaluation of Project Preparation and Implementation

The Sargassum Measures Pilot Project is considered to be a meaningful initiative that contributes to the establishment of measures for the disposal and utilization of Sargassum, which is a common problem in the Caribbean region. While the project was based on local issues, there were challenges in terms of the superiority of Japanese technology, and it was decided to select a local prospective implementer as well. As a result, a lot of time was required to establish a local cooperative framework. Based on the experience gained from the study, the lessons learned and notes are summarized in Table 18-18.

**Table 18-18 Necessity and Notes for the Sargassum Measures Pilot Project**

<b>Target country</b>	Barbados (Caribbean countries)
<b>Necessity of implementation</b>	<p>In Barbados, an island nation where tourism is the main industry, the fight against Sargassum is an urgent issue. Although they are collected by a partially state-owned enterprises, it is not easy to secure land for disposal and they are often left untouched. Therefore, the development and establishment of utilization methods are required.</p> <p>On the other hand, synergies can be expected with the efforts being undertaken by the Japanese government and UNDP to contribute to the improvement of the collection of Sargassum.</p> <p>For more details, see Chapter 12.2 Sargassum.</p>
<b>Project type</b>	Survey type
<b>Target organization</b>	<ul style="list-style-type: none"> <li>• CARDI (CARICOM)</li> <li>• NCC</li> <li>• Hotel industry</li> <li>• Community</li> </ul>
<b>Notes</b>	<p>It is important to shape a utilization cycle to establish a sustainable solution to the Sargassum issue. First, it is necessary to establish a system to collect, manage, and monitor information on the outbreak and drift of Sargassum.</p> <p>Next, an efficient method of collection, cleaning, drying, and storage is required. A subsequent step is then necessary to analyze the contents and devise and develop products and commodities for utilization. The utilization cycle will not be completed without securing distribution and sales channels.</p> <p>Finally, it is important to coordinate with the various stakeholders, including the agencies, other donors, and communities that will be involved in each process.</p>

Source: JICA Study Team

### 18.3.6 Project to Upgrade Road Traffic Management in Santo Domingo City Using Human Flow Big Data

#### (1) Preparation for Project Implementation

##### 1) Pilot Project Plan

This pilot project was planned as a project to collect and analyze high-resolution human flow data to contribute to more effective urban traffic management. The proposed project plan is shown in Table 18-19.

**Table 18-19 Summary of Utilization of Human Flow Big Data Pilot Project**

<b>1. Project title (Program)</b>	Program for Upgrading Urban Transportation Management Using Big Data
<b>2. Target country</b>	Dominican Republic
<b>3. Sector</b>	Economic Infrastructure (Transportation Traffic: Road Traffic Control)
<b>4. Name of the pilot project</b>	Project to Upgrade Road Traffic Management in Santo Domingo City Using Human Flow Big Data
<b>5. Background: Sector issues (Vulnerabilities)</b>	In Santo Domingo, the capital of the Dominican Republic, traffic congestion is a serious social problem. The <i>Plan de Movilidad Urbana Sostenible</i> (PMUS), an urban transportation master plan, was developed in 2019 to improve the urban transportation situation in the Santo Domingo metropolitan area and promote sustainable growth. It can be said that the plan is currently in the implementation phase, and the efficient implementation of projects and monitoring and evaluation of each project are required.
<b>6. Background: Effects of COVID-19</b>	COVID-19 has restricted travel, and traffic congestion temporarily decreased but increased again with the lifting of the stay-home. There is also concern that citizens will shift their means of transportation from public to private vehicles to prevent infection, which will contribute to further traffic increase.
<b>7. Project overview</b>	By analyzing people flow data for the city of Santo Domingo and capturing the movement of people, the implementer will understand the reality and impact of traffic congestion from a broader perspective. The results of the analysis will be used to develop the project description of future road traffic management projects.
<b>8. Implementation period</b>	August 2022 - January 2023
<b>9. Implementing agencies and organizations</b>	INTRANT (Instituto Nacional de Tránsito y Transporte Terrestre: National Institute of Traffic and Land Transportation)
<b>10. Relevant government organizations</b>	MOPC (Ministerio de Obras Públicas y Comunicaciones: Ministry of Public Works and Communications) City of Santo Domingo
<b>11. Solutions to be provided</b>	Detailed understanding of actual traffic congestion and person trips through human flow data (e.g., people leave their homes very early in the morning considering traffic congestion and taking round trip or going for shopping in downtown after work is limited).
<b>12. Beneficiaries</b>	Road users, residents of Santo Domingo who live along the road
<b>13. Overall goal</b>	PMUS ( <i>Plan de Movilidad Urbana Sostenible del Gran Santo Domingo</i> : Urban Transportation Master Plan)
<b>14. Project purpose</b>	To gain insight of travel routes, travel times, and lengths of stay of citizens in Santo Domingo City to efficiently promote the project to upgrade road traffic control.
<b>15. Outputs</b>	<ul style="list-style-type: none"> <li>• Identification of congested areas</li> <li>• Identification of means of transportation, time, and route</li> <li>• Detailed understanding of people's excursion behavior</li> </ul>
<b>16. Examples of the project activities</b>	<ul style="list-style-type: none"> <li>• Analysis of human flow big data</li> <li>• Conducting workshops with relevant organizations regarding the analysis results</li> </ul>
<b>17. Expected activities after the project completion</b>	Implementation of the Advanced Road Traffic Management Project (advanced signal maintenance and signal control) in the city of Santo Domingo, and its use for ongoing evaluation.
<b>18. Efforts for COVID-19</b>	Follow the information provided by the Embassy of Japan in the Dominican Republic and “Travel Procedures and Safety Measurement” of JICA.

This pilot project was suspended during the inception report phase, so only a project summary form was prepared.

Source: JICA Study Team

## 2) Coordination of Stakeholders for Implementation

Although the pilot project was suspended, the Study Team explained to local officials the advantages of using DX technology in the transportation field as an important issue in the Dominican Republic.



The government officials expressed high level of interest, so an introduction seminar was held in lieu of the pilot project.

## (2) Summary of Project Implementation

A technical seminar on the use of human flow big data was held for the C/Ps in lieu of the proposed pilot project. The seminar was held in the formats of onsite face-to-face and online, with a total of 12 participants from the C/Ps.

The lecturer, Prof. Shibasaki, who also serves as a representative of the prospective implementer in the draft project plan, introduced technologies related to the pilot project and discussed with relevant organizations of the Dominican Republic. Details are provided in Chapter 5.

**Table 18-20 Seminar on Utilization of Human Flow Data**

Sector	Utilization of Human Flow Data (Dominican Republic)	
<b>Seminar name</b>	Mobile Big Data for Urban Transport (Big Data Móvil Para el Transporte Urbano)	
<b>Lecturer</b>	Prof. Ryosuke Shibasaki, Center for Spatial Information Science, The University of Tokyo	
<b>Date</b>	2022/11/18 22:00~23:30 (DOM time 09:00~10:30 same day)	
<b>Location</b>	Traffic Control Center conference room and MS Teams (with online interpretation)	
<b>Participating organizations and attendees</b>	Traffic Control Center (INTRANT)	7 people
	Viceministerio de Ordenamiento Territorial y Desarrollo Regional (VIOTDR)	1 people
	DX Office of the President (MINPRE: <i>Ministerio de Presidencia, Gabinete de Transformacion Digital</i> )	3 people
	Traffic Police (DIGESETT)	1 people
	Total	12 people
<b>Outline</b>	1. Introduction 2. Significant places with location labeling 3. Trip reconstruction 4. Route matching 5. Major types of mobile data 6. How to preserve privacy; Mozambique example	
<b>Results</b>	Participants asked questions about the availability of mobile big data in the Dominican Republic, its potential use in the field of traffic safety, and its linkage with the traffic signal control systems, indicating that there is a high interest in the use of human flow data utilization.	

Source: JICA Study Team

## (3) Evaluation of Project Preparation and Implementation

The project had to be cancelled due to the inability to procure an alternative prospective implementer because of the uniqueness of the technology. On the other hand, the authorities showed a high level of interest in the project, confirming the need for DX utilization in the transportation sector. Based on the experience gained from the study, the lessons learned, and notes are summarized in Table 18-21.

**Table 18-21 Necessity and Notes Utilization of Human Flow Big Data Pilot Project**

<b>Target country</b>	Dominican Republic
<b>Necessity of implementation</b>	<p>In Santo Domingo, the capital of the Dominican Republic, traffic congestion is a serious social problem. The PMUS, an urban transportation master plan, was developed in 2019 to improve the urban transportation situation in the Santo Domingo metropolitan area and promote sustainable growth. It can be said that the plan is currently in the implementation phase, and the efficient implementation of projects and monitoring and evaluation of each project are required.</p> <p>In addition, there is a high interest in utilizing mobile big data among the relevant government organizations.</p>
<b>Project type</b>	POC type

<b>Target organization</b>	<ul style="list-style-type: none"> <li>Traffic Control Center</li> <li>Planning and Development Department</li> </ul>
<b>Notes</b>	Cross-cutting collaboration is required to deepen the understanding and utilization of public agencies in charge of planning and formulating measures and policies based on the acquisition and analysis of sufficient data for the demonstration.

Source: JICA Study Team

## 18.4 Recommendation

### 18.4.1 Process Analysis of Pilot Project Formation

The pilot projects were developed with the goal of implementing a maximum of four projects, but, only one project was implemented. The main cause was the delay in obtaining a letter of agreement from the target country's C/P agency to start the project. The obstacles are analyzed in Table 18-22.

**Table 18-22 Obstacles in Forming Pilot Projects**

	Sargassum Measures	Satellite Image Analysis	Agriculture DX	Human Flow Big Data
<b>Technical Obstacles</b>	-	-	Took time to identify target areas and crops in multiple countries.	-
<b>Management Obstacles</b>	Communication with local implementers remotely took extra time.	Took time to collect information because the scope was not defined at the early stage. (Private sector involvement, possibility in Mexico)	Communication took time due to multiple parties involved.	Multiple prospective implementers could not be identified.
<b>Other Obstacles</b>	Ministry of Agriculture, turned out that it could not cooperate, which affected the project plan.	The interest of the C/P was not that great.	-	Cancelled due to internal reasons of the prospective implementer.
<b>External Risk</b>	Reduction of budget due to yen depreciation.	The agreement letter was delayed because the C/P needed to respond to the disaster that occurred at that time.	-	-

Source: JICA Study Team

### 18.4.2 Recommendation for Pilot Project Formation

#### (1) Use of Pilot Projects in the Formation of Development Cooperation Projects

Pilot projects have many advantages, such as clarifying the direction of development cooperation and specific issues to be addressed and promoting mutual understanding among the parties concerned by sharing the results of pilot projects in a tangible manner, even though they are small in scale. In addition, pilot projects that have small scale and short implementation period can flexibly adjust their implementation details according to the local conditions and objectives.

In the Security DX Pilot Project conducted in this study, the importance of effective utilization of the limited human resources of the Honduran National Police and the problems with the conventional personnel approach became clear, in addition to technical aspects such as the lack of crime predicting capability, and this information was very useful in the creation of cooperation scenarios. In addition, two seminars were held to identify C/P needs and to introduce Japanese technology.

**Table 18-23 Pilot Project Types and Verification Items**

No.	Type	Contents	Verification	Case
1	POC type	<ol style="list-style-type: none"> <li>1. Solution demonstration</li> <li>2. Questionnaire of satisfaction and effectiveness of the solution</li> </ol>	<ul style="list-style-type: none"> <li>• Effectiveness of the solution in the target area</li> <li>• Identify issues for further establishment</li> </ul>	<ul style="list-style-type: none"> <li>• Public Security DX</li> <li>• Disaster Risk Reduction DX (proposed)</li> <li>• Agriculture DX (proposed)</li> <li>• Traffic DX (proposed)</li> </ul> [Preliminary study] <ul style="list-style-type: none"> <li>• Dominican Republic Telemedic</li> <li>• Nicaragua EWBS</li> <li>• Guatemala Satellite Image Analysis</li> <li>• St. Lucia OVOP</li> </ul>
2	Seminar type	<ol style="list-style-type: none"> <li>1. Solutions introduction</li> <li>2. Questionnaire of local applicability, etc.</li> </ol>	<ul style="list-style-type: none"> <li>• Identify needs</li> <li>• Define problem</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture DX Seminar</li> <li>• Traffic DX Seminar</li> </ul> [Preliminary study] <ul style="list-style-type: none"> <li>• Panama Innovation Seminar</li> <li>• Guatemala Security ICT</li> </ul>
3	Training type	<ol style="list-style-type: none"> <li>1. Practical solutions by webinar or workshop</li> <li>2. Questionnaire of local applicability, etc.</li> </ol>	<ul style="list-style-type: none"> <li>• Identify usefulness and needs of the solutions by attendees</li> <li>• Technical training</li> </ul>	[Preliminary study] <ul style="list-style-type: none"> <li>• Wide-area DAISY Seminar</li> </ul>
4	Survey type	<ol style="list-style-type: none"> <li>1. Experiment and research for solutions</li> <li>2. Share results through seminars</li> </ol>	<ul style="list-style-type: none"> <li>• Concretize the solution method</li> <li>• Technology development</li> </ul>	<ul style="list-style-type: none"> <li>• Sargassum measures (proposed)</li> </ul> [Preliminary study] <ul style="list-style-type: none"> <li>• Jamaica Tourism Resilience</li> </ul>

Source: JICA Study Team

## (2) Notes for Consensus Building

Three out of the five projects in this study that were intended to implement had to change or be cancelled because of the lengthy time required for the preparation, especially for the consensus building process. Based on the lessons learned from this study, the notes for the future are summarized as follows:

### 1. Project Selection According to the Needs

In the process of project formation, it is necessary to propose a solution that can be provided by Japanese technology after interviewing the needs of the partner country or the target institution in advance. If the project proposal is seed-driven, it is highly likely that the counterpart C/P organization will be reluctant to respond and will not proactively carry out various activities related to consensus building.

### 2. Omission of Agreement Letter from the C/P

In two of the pilot projects, the C/P had verbally confirmed their willingness to cooperate, but there was a delay in getting the agreement letter, and the projects were cancelled. Regarding the Sargassum measures in Barbados, the ministry, which was originally expected to issue a letter of agreement, required parliamentary approval, a process that took one to two months to complete. On the other hand, the Agricultural DX and Human Flow Data projects were changed to seminar type because of the participation and other cooperation received from the stakeholders. Therefore, when the project period is short, like these pilot projects, it is necessary to create a project that minimizes the role of the C/P organization by omitting the agreement letter as a necessary document for the start of the project.

### 3. Involvement of the JICA Office in Communicating with the C/P

Various cooperation was obtained from the JICA offices in each country, from the formation of the pilot project to the issuance of the agreement letters to the C/Ps, regarding the implementation of the project. On the other hand, at the time of deciding whether to proceed with the project, direct negotiations were conducted by the JICA Study Team, and the local coordinator hired by the team with the C/P, and as a result, the letter could not be received within the deadline. Therefore, information should have been shared closely with the relevant JICA offices throughout the project period, and negotiations with the C/P should have been conducted with their support.

#### 4. Early Field Surveys for Consensus Building

The JICA Study Team began collecting information on the projects early on and worked to formulate the projects, but the field surveys were conducted four to five months after the start of the information collection, together with other members of the JICA Study Team. The field survey enabled frank discussions and better understanding of the current situation compared to the web meetings and e-mails. Therefore, regarding the formation of pilot projects, it is advisable to conduct field surveys as early as possible after collecting a certain amount of information, and to focus on building channels with the C/Ps and preparing the project plan.

#### 5. Flexible Budget

In this study, although the maximum project cost was set at JPY 10 million per case, there were cases in which the project cost had to be reconsidered repeatedly due to the unusual currency exchange fluctuations. Since some projects have shortfalls or surpluses in their estimated amounts depending on their activities, it is considered that the project formation period could have been shortened if budgets could be diverted among such projects during the budget planning.

### 18.4.3 Recommendations Based on Issues Identified Through the Pilot Project

#### (1) Recommendation for the Security Sector in Honduras

The Honduran National Police has established Brazilian know-how through years of community policing project, and it is a successful example of triangular cooperation by JICA. It is also undergoing a radical organizational reform and is focusing on introducing ICT technology and equipment, developing its own systems based on a long-term strategy but has not been able to demonstrate sufficient results.

Supporting the National Police's DX promotion will enhance their ability to collect and analyze criminal data and contribute to the fight against drug trafficking-related criminal organizations. If it can be linked to a community policing project, it would also be the first attempt at community policing using smart technology. Sharing and providing the knowledge and data obtained through a series of activities to other countries in the region that are facing similar social issues could lead to a broad-based improvement in security. Therefore, the JICA Study Team recommends DX support in security field and the deployment of its know-how in the region.

#### (2) Support for DX Promotion in Target Countries

All pilot projects considered in this study, except for the Sargassum measures, were for digital transformation (DX) using ICT technologies such as data, satellite imagery, and algorithms. Mainly due to time constraints, the JICA Study Team was not able to implement four projects, but in all of them,

the JICA Study Team found that the C/Ps were highly interested in the new technology and that there is a room for cooperation. The JICA Study Team recommends identifying priority areas for DX promotion of the target countries and promote development cooperation in collaboration with Japanese companies that possess advanced and smart technologies and know-how in this area.