

1. Outline of the Project		
Country name: The Republic of Trinidad and Tobago (Other Caribbean Regional Technical Cooperation target countries :13 countries)	Project name: Project for Promotion of Sustainable Marine Fisheries Resource Utilization	
Fields: Fisheries development	Assistance type: Technical cooperation project	
Supervising office: Field Crop-Based Farming Area Team 1 Group II, Rural Development Department	Monetary amount of cooperation (at time of evaluation): 716 million yen	
Period of cooperation	R/D: August 16, 2001	Counterpart organizations: Fisheries Division, Ministry of Agriculture, Land and Marine Resources; Caribbean Fisheries Training & Development Institute (CFTDI); Department of Marine Resources and Fisheries, Tobago House of Assembly (THA)
	September 25, 2001, to September 24, 2006	Cooperating organization in Japan:.
		Other associated cooperation: The Technical cooperation project on “Regional Fisheries Training Project” (Phase I) (April 1, 1996, to March 31, 2001)
<p>1-1 Background and outline of the Project</p> <p>The Republic of Trinidad and Tobago (hereinafter referred to as “Trinidad and Tobago”) has been promoting maximum use of underutilized and unutilized resources and effective management of fisheries resources in order to achieve food security, promote employment, and obtain foreign currency. However, there is a shortage of human resources capable of taking the lead in these endeavors, and therefore the development of such human resources has become an important issue.</p> <p>In response, JICA implemented a technical cooperation project entitled the “Regional Fisheries Training Project” (April 1, 1996, to March 31, 2001; Phase I project) for the purpose improving the educational and training capacities of the Caribbean Fisheries</p>		

Training & Development Institute (CFTDI), a body set up by Trinidad and Tobago to develop human resources in the fisheries field for the Caribbean nations.

As a result of Phase I cooperation, training of CFTDI instructors and preparation of teaching materials were implemented in three fields: fishing technology, marine engineering, and seafood processing. However, extension of technologies to fishers and reinforcement of fishery resource management through collaboration between the Fisheries Division and CFTDI became urgent matters in efforts to promote and develop domestic fisheries in a sustainable manner. The government thus submitted a request to Japan for a technical cooperation project for the Fisheries Division and CFTDI to extend fishing technologies and reinforce training capacities for the sustainable use of fisheries resources. In response, JICA implemented the “Project for Promotion of Sustainable Marine Fisheries Resource Utilization in the Republic of Trinidad and Tobago” in September 2001 for a scheduled period of five years. Furthermore, it was decided that the Regional Technical Cooperation Promotion Program (RTCPP), which was started in Phase I to run simultaneously with and parallel to project activities, would be continued.

## 1-2 Description of cooperation

### Undertakings in Trinidad and Tobago

#### (1) Overall Goal

Fishing activities are conducted for sustainable utilization of fisheries resources practiced by local fishers in Trinidad and Tobago.

#### (2) Project Purpose

Fisheries extension and training activities for sustainable utilization of fisheries resources are to be practiced through mutual cooperation among the Fisheries Division, CFTDI, and Department of Marine Resources and Fisheries of THA.

#### (3) Outputs of the project

- 1) The resources management capabilities of the Fisheries Division and Department of Marine Resources and Fisheries of THA, are enhanced.
- 2) The technical capabilities of CFTDI in capture fishery technology and fishing gear development, seafood processing technology and marketing, and marine engineering are enhanced.

- 3) Fisheries extension capabilities within the Fisheries Division and Department of Marine Resources and Fisheries, THA, are enhanced.

(4) Targeted technical fields

- 1) Fishery resource management
- 2) Capture fishery technology/fishing gear development
- 3) Seafood processing technology/marketing
- 4) Fisheries extension
- 5) Marine Engineering

Outline of the Regional Technical Cooperation Promotion Program

(1) Project outline

In addition to the Project implemented in Trinidad and Tobago (described above), a human resources development project was implemented for the sustainable use of fisheries resources in Caribbean nations. Based in the CFTDI, this project targeted a total 13 countries in the Caribbean region. On five occasions from FY2001 to FY2005, experts and Trinidad and Tobago C/Ps were dispatched to the target countries, and personnel from the target countries were accepted for training in Trinidad and Tobago.

(2) Target countries (total of 13 countries)

Grenada, Dominica, Saint Lucia, Saint Vincent and the Grenadines, Antigua and Barbuda, the Dominican Republic, Barbados, Saint Christopher and Nevis, Jamaica, Haiti, Guyana, Surinam, and Belize.

(4) Inputs (at time of evaluation)

Japanese side

Dispatch of long-term experts:	6 experts
Dispatch of short-term experts:	16 experts
Training of C/Ps in Japan:	13 C/Ps
Provision of machinery and equipment:	94.8 million yen
Assumption of local costs:	171.5 million yen
Assumption of RTCPP local costs:	93.9 million yen

Trinidad and Tobago side

Allocation of C/Ps:	23 C/Ps
Assumption of local costs:	69.3 million yen (only for CFTDI)

Other inputs: Provision of land, offices, accommodations, meeting rooms, training facilities, electricity expenses, waterworks expenses, office supplies, etc.

## 2. Outline of the Evaluation Team

Members	(Field, name, occupational position)	
	Team leader:	Takashi Mori Senior Assistant to the Director General, Rural Development Department, Japan International Cooperation Agency (JICA)
	Fishery resources management:	Yoshihiro Inoue Professor, Faculty of Fisheries, Kagoshima University
	Evaluation and analysis: Planning evaluation:	Kazuo Udagawa Naoko Nishi Senior Consultant, IC Net Limited Project officer, Field Crop-Based Farming Area Team I, Group II, Rural Development Department, Japan International Cooperation Agency (JICA)
Evaluation period	Saturday, April 8, 2006, to Monday, May 1, 2006	Evaluation type: Final evaluation

## 3. Outline of Evaluation Results

### 3-1 Evaluation of the Project in Trinidad and Tobago

#### 3-1-1 Confirmation of achievements

##### (1) Achievement of the Project Purpose

It is expected that all indicators of the Project Purpose (“Fisheries extension and training activities for sustainable utilization of fisheries resources are to be practiced through mutual cooperation among the Fisheries Division, CFTDI, and Department of Marine Resources and Fisheries, THA”) will be achieved by the end of the Project. It is further believed that the Project Purpose will be achieved due to expectation that Outputs 1 to 3 will be achieved.

##### Achievement of the indicators

Indicator 1: “More than two plans, recommendations, or regulations on fisheries resources are produced by the completion of the Project.”

The formulation of a “recommendation on appropriate fishery management strategies

in Trinidad and Tobago” is scheduled pertaining to this indicator. Because this document will include a number of individual plans and recommendations (e.g., “recommendations for environment-friendly equipment for pot fishing”), it is expected that the indicator will be achieved by the end of the Project. It should be noted that the Fisheries Division of Trinidad and Tobago is preparing regulations on gill-net mesh size, pot fishing, and set-net fishing based on the Project’s activities.

Indicator 2: “Extension activities will be planned, implemented, and evaluated by Local Fisheries Extension Work Groups.”

Extension activities began on Tobago island and are expected to continue into the future. The reasons for this expectation are as follows: 1) A “Local Fisheries Extension Work Group” made up of residents and fishers representing 12 fishing regions on Tobago was formed in April 2003 under the direction of C/Ps from the DMRF, THA; this work group began holding regular meetings each month from (in) January 2006. 2) A bottoms-up movement is seen whereby meetings are used to present new technologies from extension workers and to discuss the problems of each region among fishers. 3) In the region selected as the model (Belle Garden), fishers took it upon themselves to organize and being the work of building fishing facilities as well as joint activities to benefit fishing throughout the entire region.

Indicator 3: “The number of workshops or training courses conducted based on the self reliance of the counterparts is maintained at four times every year with 20 participants.”

This indicator has already been sufficiently achieved at the present time. This is because training sessions for fishers were conducted in CFTDI in the fields of fishing technology, marine engineering, quality management and processing technology, and resources management, with C/Ps serving as instructors. Moreover, presentations of various technologies by C/Ps are part of regular regional fishery meetings that are held on Tobago island, and training sessions on quality management and processing technology are scheduled to begin for fishers in the Tobago fishing training center by the end of the Project.

The team has determined that the Fisheries Division, CFTDI, and DMRF, THA, have established a cooperative framework through a variety of collaborative activities that are centered on the dispatched experts and C/Ps. The team also believes the three organizations are building a cooperative framework at the management level as well, as

the establishment of a coordinating committee by the three organizations has been proposed.

(2) Evaluation of achievement of the Outputs

- 1) Output 1: The resources management capabilities of the Fisheries Division and Department of Marine Resources and Fisheries, THA, are enhanced.

It is expected that the indicators for Output 1 will be largely achieved. The capabilities of C/Ps in the fishery resource management field of the Fisheries Division have been sufficiently developed, and work to compile recommendations for fishery resource management is moving forward. On the other hand, C/P allocation by the DMRF, THA, was insufficient, and this situation resulted in limited manifestation of the Output.

- 2) Output 2: The technical capabilities of CFTDI in capture fishery technology and fishing gear development, seafood processing technology and marketing, and marine engineering technology are enhanced. As described below, the team has determined that the indicators for this Output have been sufficiently achieved. Benefiting from the results of Phase I (Regional Fisheries Training Project), the C/Ps achieved a level at which they can engage in technical transfer on their own, and they are active as instructors in the RTCPP and other undertakings.

- 3) Output 3: Fisheries extension capabilities within the Fisheries Division and Department of Marine Resources and Fisheries, THA, are enhanced.

Output 3 is expected to be largely achieved. A Local Fishery Extension Work Group was established on Tobago, and communication between fishers and the DMRF, THA, is being reinforced through the activities of this group. Community-level extension activities continue to be promoted through extension activities targeting the Belle Garden Fishermen Association. Meanwhile the extension capabilities of C/Ps are improving greatly. However, given the difficulty of regional social activity, extension activities were changed to focus on Tobago island as the model region at the time of the mid-term evaluation so as to clarify the result of these activities.

3-1-2 Outline of the Evaluation results

(1) Relevance

Overall relevance of the Project is quite high.

- The Project Purpose and the Overall Goal are consistent with the development policy of the government of Trinidad and Tobago (hereinafter referred to as “GORTT”) which addresses sustainable development of the fisheries sector. Furthermore, the Project was designed to contribute to resolution of a policy issue set by the GORTT in the fisheries sector, namely “to encourage and promote collaboration and consultation between public and private sector stakeholders to ensure sustainability of the fisheries resources of Trinidad and Tobago.”
- The Project’s strategy of reinforcing the capabilities of the three counterpart organizations as well as collaboration among the organizations proved effective in achieving the Project’s goal of strengthening the extension framework.
- From the standpoint of plan relevance, it is thought that measures should have been taken to position the RTCPP in the PDM at the earliest planning stage in order to clarify responsibilities, workloads, etc., between the Project in Trinidad and Tobago and RTCPP.

## (2) Effectiveness

The Project’s effectiveness is high.

- Effectiveness in achieving the Project Purpose was enhanced by greater cooperation among the CFTDI, Fisheries Division, and the DRMF, THA, in training and extension activity through the Project.
- The establishment of bottom-up extension models can be expected through the implementation of extension pilot projects on Tobago.
- Collaboration was reinforced among the capture fishery, fish processing, and resource management fields (linkage work), which contributed to achievement of the Project Purpose.
- A negative factor was concern on the part of the Fisheries Division regarding the impact of the introduction of new fishing gear on resources. This restricted the activities on the capture fishery and limited fishers’ participation in Project activities.

## (3) Efficiency

Inputs from both Japan and Trinidad and Tobago were sufficient, supplied in a timely manner, and utilized appropriately.

- Efficiency was high if it is considered that almost 30% of available human resources were used for RTCPP activities. However, there were instances in which experts’ knowledge and skills were not adequately utilized because some C/Ps were

burdened with duties outside their specialties that limited their time, thus preventing them from sufficiently participating in Project activities.

#### (4) Impact

Although some time may be required, it appears that the Overall Goal will be achieved gradually.

- Fishers are starting to use improved FADs that were introduced through the Project. This can be expected to promote catches of pelagic fishes and to reduce fishing pressure on demersal fish by diversifying targeted fish species.
- Technology on selectivity of gill nets has been transferred to C/Ps; this should lead to new mesh-size regulations' being adopted by the Fisheries Division. Furthermore, it is expected that research on "ghost fishing" based on pot fishing will lead to new approaches that include use of natural materials for some pot materials.
- Although there are no examples of processed foods that were developed through the Project being manufactured in the private sector at the present time, there is emerging interest in the manufacture and sales of fish sauce. Awareness of quality and quality assurance of fish and processed fish products is growing among producers and processors as a result of training courses implemented by CFTDI.

#### (5) Sustainability

The Project will have high sustainability after it is completed.

- The C/Ps in all fields have sufficiently acquired the technologies, and the Fisheries Division and CFTDI have the organizational capacity to continue the activities implemented by the Project on their own. As for the DMRF, THA, while it has some shortages in personnel and technical capacity, it can be expected to continue activities with cooperation from the Fisheries Division and CFTDI.
- In terms of financial aspects, it is anticipated that all three organizations will be able to secure the budgetary funding necessary to continue Project activities.
- And in terms of institutional aspects, it is anticipated that the new Fisheries Legislation and Regulations will be completed during 2006. It is expected that recommendations, etc., for resources management that were prepared by the Project will be utilized in the process of formulating this new law.

### 3-2 Evaluation of the RTCPP

#### 3-2-1 Confirmation of achievements

Although nine countries participated in the RTCPP when it was commenced, the



number of countries grew to 13 by 2006. Approximately 133 fisheries administrators, technicians, and fishers from these countries participated in training provided at CFTDI in Trinidad and Tobago. Moreover, a total of 29 long-term Japanese experts and C/Ps were dispatched to these countries from Trinidad and Tobago, and the number of participants in training held in each country when experts were dispatched reached 595. Activities were conducted in all five technical fields.

### 3-2-2 Evaluation results

#### (1) Relevance

The RTCPP has extremely high relevance.

- The RTCPP seeks to develop human resources in the fisheries sector of the Caribbean region. Thus, it responds to an important policy issue of the Caribbean nations and is in conformity with the cooperation policy of the Japanese government, which emphasizes regional cooperation in the Caribbean.

#### (2) Effectiveness

Training had very high effectiveness.

- The technologies that were developed through the RTCPP were effectively utilized. Many fisheries bureau employees and fishers from the 13 Caribbean countries participated in training and other activities and acquired the relevant technologies.
- In regions like the Caribbean, which is made up of countries having small populations, regional cooperation is efficient. Using group training for fisheries bureau staff members as an opportunity to share experiences and “trainer training,” developing key persons for implementation of training in each country, and holding of follow-up training that includes fisher participation proved to be effective approaches.

#### (3) Efficiency

The RTCPP had very high efficiency.

- Inputs from both Japan and Trinidad and Tobago were sufficient and used appropriately.
- Technologies developed in Trinidad and Tobago through Project activities as well as sources of human resources; machinery, equipment, and supplies; and facilities were effectively utilized in the RTCPP.

#### (4) Impact

- Some movement to incorporate the technologies that were transferred through the RTCPP into actual fishery activities in the target countries has been confirmed, and thus it can be expected that impacts on the target countries will appear.
- The C/Ps of Trinidad and Tobago that engaged in technical guidance as experts through RTCPP were able to enhance their own capabilities.

#### (5) Sustainability

The RTCPP has high sustainability from institutional, organizational, and technical standpoints.

- The RTCPP has developed human resources capable of leading fisheries in the Caribbean region, and therefore it can be expected to contribute to development of the region as a whole.
- Implementation of regional cooperation requires financial cooperation from external actors.
- Although CFTDI possesses the ability to operate regional training in terms of both facilities and human resources, GORTT must take the initiative in advancing regional cooperation.

#### 3-3 Factors contributing to emergence of effects

##### (1) Factors pertaining to planning content

Enhanced cooperation among the CFTDI, Fisheries Division, and the DRMF, THA, in training and extension activity through the Project was effective in achievement of the Project Purpose.

##### (2) Factors pertaining to the implementation process

The input of timely and appropriate resources by JICA, the high capability of the C/Ps, and strong project ownership by Trinidad and Tobago were important in the implementation process.

#### 3-4 Problem areas and factors leading to problems

##### (1) Factors pertaining to plan content

Several delays were apparent in Project activities. It appears a major reason for such delays was that the Fisheries Division had to move very carefully when fishers introduced new fishing gear because it does not have the legal power to control fishery activities.

## (2) Factors pertaining to the implementation process

Problem areas in the implementation process included the fact that there was insufficient collaboration among the technical fields at the Project's initial stage, the fact that C/Ps could not fully participate in Project activities because they had other duties to attend to, and the fact that sufficient fisher participation could not be gained in implementing a variety of activities.

## 3-5 Conclusion

The team expects that the Project Purpose will be achieved by the end of the Project. Therefore, the Project will be completed as planned in September 2006.

## 3-6 Recommendations

### 3-6-1 Actions to be taken before the completion of the Project

#### (1) The capture fishery technology and fishing gear development

- Regarding ghost fishing based on pot fishing, it is recommended that the capture fishery technology team start a trial that will produce technical solutions in consultation with the resource management team.
- Using the three net types tried thus far, it will be important to assess appropriate designs and sizes of set nets that match fishers' economic conditions and size of business based on consideration of gear cost and ease of use.

#### (2) Seafood processing and marketing

- It is recommended that, in collaboration with the fisheries extension team on Tobago, the seafood processing team should engage in training and extension activities pertaining to new processing technologies that were developed through the Project, targeting not only processors but also fishers. It is also suggested that promotion activities aimed at fishing families be implemented before beginning extension activities for commercial interests.
- It will be important to continue activities toward achievement of the Overall Goal. These activities should include training by CFTDI for not only processors but also fishers.
- Extension activities pertaining to seafood processing technology should be provided to processors and fishers on Tobago.
- The experts should provide support to help the Fish Processing Unit begin activities as soon as possible. This includes operation of refrigerators at the Tobago Fisheries Training Center.

- Because the Fish Consumption Survey Report is something that should be used in CFTDI operations, it should be completed without further delay.

(3) Fisheries extension

- It is recognized that there is a need for stronger information-sharing and communication between the DMRF and the THA on activities in the fisheries extension field. As part of the effort to meet this need, it is hoped that the five-year Tobago Fisheries Community Development Plan will be completed and receive THA approval.

(4) Marine fisheries resource management

- It is recommended that the Report on the Catch Effort Analysis of Flying Fish to be included in the “Tobago Project” be completed.
- It is recommended that the census that is planned under the name “Tobago Project” be commenced as soon as possible.

3-6-2 Measures to be taken after the completion of the Project

The following actions by the GORTT are believed to be necessary as steps to achieve the Overall Goal following the conclusion of the Project. It is hoped that proper consideration and planning will be pursued to ensure that the following steps can be implemented by the GORTT in post-Project activities.

(1) The capture fishery technology and fishing gear development

- The Fisheries Legislation and Regulations are currently being revised. Consequent upon this revision, it is recommended that the Fisheries Division consider formulating a year-round survey plan to verify the suitability of set nets for fishers.
- It will be necessary to further validate the design and size of set nets based on consideration for gear cost and ease of use.

(2) Seafood processing and marketing

- It shall be important to intend the achievement of overall goal through continuous implementation of the seafood processing training by CFTDI to the processor including the fishers.
- Moreover, to sustain the extension activities on the seafood processing to the target

society including fishers in Tobago shall be desirable.

(3) The establishment of Local Fisheries Extension Work Groups that promote bottom-up communication between fishers and the DMRF, THA, though efforts to promote fisheries extension activities on Tobago can be highly evaluated from the standpoint that these groups serve as the foundation for a system that extracts needs from the fisher level. On Tobago, efforts should be made to establish and reinforce the extension system by extending the model case to fishing villages other than Belle Garden.

- It is hoped that the case of Tobago will be used as a reference when studying the direction in which fisheries extension work should be pursued on Trinidad.

(4) Marine fisheries resource management

- Technology transfer to C/Ps is being undertaken satisfactorily. It will be important for C/Ps to utilize the technologies they have mastered and to conduct appropriate resource evaluations (assessment) using resource analysis methodologies as development moves forward.
- It is suggested that the document entitled "Recommendations on Fisheries Resource Management" that was produced during the Project be used when preparing legal frameworks and fishery regulations pertaining to fisheries resource management in Trinidad and Tobago.
- Furthermore, it is recommended that efforts be made to improve the accuracy of data used in resources evaluation and to use said data effectively. At the same time, the method for data sampling by the GORTT should be verified and established.

### 3-7 Lessons learned

The following items have been identified as lessons learned through Project implementation that should be used as references by other projects.

- (1) It is important to adequately consider the needs of fishers when planning activities for projects that seek to provide technical extension. In particular, the feasibility of adoption by fishers should be comprehensively evaluated from the standpoints of social background, technical difficulty, and profitability when drawing up activities plans or developing/introducing new technologies.
- (2) The relationship between the content of all anticipated activities and technical fields should be clarified at the planning stage. Activities should be planned based

on consideration for C/P allocation conditions and time limitations.

- (3) In nations made up of small islands, like those in the Caribbean, it is efficient to provide technical cooperation from a regional perspective. Here, the sharing of experiences at group-training sessions for fisheries bureau staff members and the holding of follow-up training that includes fisher participation in each country represent effective approaches.