

5.5. Field of Seafood Technology and Marketing

To upgrade CFTDI's training capability in the field of fish processing management; to collect and analyse data on seafood consumption; to introduce appropriate equipment at onshore fish handling facilities; to market various fish and fishery products and to develop new products.

5.6. Field of Fisheries Extension

To train Extension Officers of the Fisheries Division, to establish an appropriate Extension System, to provide a suitable information service to people involved in fisheries.

5.7. Regional Technical Cooperation Promotion Program (RTCPP)

In the Caribbean Region, Trinidad and Tobago has taken a leadership role in the fisheries sector. CFTDI is a recognised international organisation for training personnel involved in the region's fishery field. During Phase 1 of the Project, the RTCPP was implemented through the CFTDI since March 1998 with the Trinidad and Tobago Government's understanding and support. As Trinidad and Tobago shares similar fishery problems with other Caribbean countries, the RTCPP based in this country is considered effective and should therefore continue to be implemented during the second phase of this project.

6. PROJECT IMPLEMENTATION STRUCTURE

6.1. Capability of Counterpart Organisation

6.1.1. Suitability of Counterpart Organisation

The Ministry of Food Production and Marine Resources is fully responsible for policy making and implementation in the fields of agriculture and marine resources. The Ministry is responsible for translating the project's results into national policies.

Due to five (5) years working experience gained from Phase 1 of the "Regional Fisheries Training Project" which started in April 1996, the Ministry fully understands the workings of Japanese technical cooperation and established an appropriate mechanism for the project's operation. The Fisheries Division is the JICA counterpart organisation. It is responsible for management of resources and extension activities. It is considered suitable for continuing to be the counterpart agency.

Since its establishment in 1974, the CFTDI is the only fisheries training Institute in the Caribbean Region responsible for training fisheries personnel. Its training functions in the three fields of technology namely: fishing technology, marine engineering and fish processing technology have been much enhanced by the strengthening of its instructor staff, creation of textbooks, training manuals etc.

CFTDI will be re-organised in September 2001 as the Maritime Institute whose organisational structure and functions will be expanded. The former CFTDI was responsible to the Ministry of Food Production and Marine Resources, but the Maritime Institute will be under the jurisdiction of the Ministry of Transport. With the reorganisation of the Institute, a Board of Directors will be established comprising members of the Ministries concerned. As the Ministry of Food Production and Marine Resources will continue to be in charge of the Project, it is considered still suitable to be the counterpart organisation.

6.1.2. Budget Allocation

One of the contributory reasons for the success of the Project's first phase is that the Trinidad and Tobago Government met all its local costs. The most costly expenditure were the operational costs of the training vessel, cost of official trips overseas, costs of conducting training seminars etc. As funds were properly allocated to meet all these expenses, no budgetary problems were experienced.

Concerning the Project's Phase 2 budget, funding has already been secured with the Trinidad and Tobago Cabinet's approval. As such, no budgetary problems should arise in the near future.

Table 4: CFTDI's Finance Activity during the Regional Fisheries Training Project

Item	Unit:1,000TTS					
	1996	1997	1998	1999	2000	Total
Salary for employees	1,502	1,884	1,421	2,113	2,200	9,120
Training Vessel-1 (M.V. Provider)	404	253	240	516	426	1,839
Training Vessel-2 Provider II	-	88	94	168	137	487
Vehicles	57	64	53	55	60	289
Rent for Land	97	96	96	96	96	481
Expenses for telephone, water and electricity	138	202	423	638	205	1,606
Training Equipment	36	75	186	100	85	482
JICA Project	-	52	63	116	71	302
Total	2,234	2,714	2,576	3,802	3,280	14,606

6.1.3. Institutional Structure

The Fisheries Division is organised into four sections comprising; Administration, Extension, Research and Aquaculture.

The Research Section is responsible for collecting catch and effort and biological data on main commercial fish species in order to formulate fisheries resource assessment and fisheries management plans.

The Extension Section is responsible for effecting technology transfer, licensing and registration of fishing vessels, financial assistance for fisherfolk and assistance in the formation of fisherfolk organizations and cooperatives, resolution of conflicts and problems among fisherfolk, and maintenance of facilities at landing sites.

Under the governing body comprising representatives from various Ministries/Agencies, the Principal heads CFTDI with direct responsibility for the General Administration Department. The Deputy Principal is responsible for four departments, namely: Nautical, Fisheries, Engineering and Ports and Vessels.

The Fisheries Department is responsible for fishing technology and fish processing and marketing. The Engineering Department is responsible for the marine engine field. The staff of the four departments totals forty-eight (48) employees.

6.1.4. Operational Capability of Organisations

The Fisheries Division is well organised for the administrative activities of the project, budget management, personnel management, facilities and equipment management etc. The purpose of re-organising the CFTDI is to expand its organisation and functions into the Maritime Institute. It is expected to further strengthen its organisational operations such as budget management, personnel management, and facilities and equipment management.

6.1.5. Counterpart's Allocation

In addition to the seven persons from CFTDI trained under the Project's first phase, (two in capture fishery technology and fishing gear development, three for marine engineering and two in seafood technology and marketing) three or four persons on a part time basis are expected to be allocated as counterparts in the Marine Fisheries Resource Management field from the Fisheries Division.

After the CFTDI re-organisation, it is confirmed that the seven counterparts previously trained will not be affected but will still be retained. Furthermore, two (2) persons will be allocated from the Fisheries Division as counterparts (part time) in the extension field.

6.1.6. Past Achievements

The achievements accomplished over the past five (5) years of the Project's Phase 1 will be used in the training courses and seminars of Phase 2.

In other Caribbean islands where RTCPP were conducted, several technologies transferred have taken root through follow-up by the Fisheries Division of the various islands governments.

6.2. Availability of Human Resources

Regarding the dispatching of Japanese experts through the Japanese Ministry of Agriculture, Forestry and Fisheries and the Ministry of Education, Culture, Sports, Science and Technology, it is possible that assistance can be obtained from universities, experimental research institutes and from the private sector. As some of these experts have already been dispatched under Phase 1 of the Project and as these organisations already have such experts available, there should be no difficulty in securing their services for Phase 2.

6.3. Coordinating Arrangements

In Trinidad and Tobago the Ministry of Integrated Planning and Development through its Technical Cooperation Unit is the channel through which JICA's technical cooperation project is effected. The contents of the "Project for Promotion of Sustainable Marine Fisheries Resource Utilisation" corresponds mainly to resource management, fishing technology, marine engineering, fish processing and extension as proposed areas of activities. The Ministry of Food Production and Marine Resources through the Fisheries Division has been receiving assistance from a Global Project (GEF/FAO/UNEP) with its survey of the trawling impacts on marine resources and the environment. It is necessary to consider a mutual cooperative system with these international organisations. Furthermore, the cooperative and operational system for this project is set out in the attached chart.

6.4. Sustainability

Under this Project, the focus will not only be on the CFTDI as a regional training centre, but also the Fisheries Division which is responsible for the resource management and extension functions and also the counterpart agency. As the Trinidad and Tobago Government recognises the importance of the fishery fields, there is therefore a high possibility of obtaining appropriate funding in future. Ultimately, it is considered that Trinidad and Tobago will develop and become self-supporting in these fields.

6.5. Special Consideration

6.5.1 Gender Development

As the targeted fields under Phase 2 of the Project are mainly male dominated, it is to be noted that many women folk work in the marketing and fish processing areas. As such, the domestic role of female workers in the fishing industry is also great. Accordingly, consideration should be given to the principle of fairness with no discrimination against female workers.

7. PROJECT DESIGN

The overall goal is set out as "Fishing activities for sustainable utilization of fisheries resources should be practised by all fisherfolk in Trinidad and Tobago".

7.1 Objective, Outputs and Activities

7.1.1 Objective

The objective is set out as "Fisheries extension and training activities for sustainable utilisation of fisheries resources are to be practiced by the mutual cooperation of Fisheries Division and CFTDI"

7.2. Inputs

7.2.1 Japanese Inputs

7.2.1. 1 Long-term Experts

Five (5) long-term experts will be assigned in the following fields and activities:-

FIELD

Chief Advisor

Project Coordinator

Marine Fisheries Resource
Management

ACTIVITIES

Overall management and control of Project

Coordination and support Chief Advisor in the management of project implementation

- To conduct the training of observers for offshore fleets
- To conduct and advise the Collection of catch and effort and biological data
- To conduct and advise the CPUE analysis using catch/landings and effort data from the artisanal and offshore fleets
- To conduct and advise the collection of socio-economic data and information
- To conduct and advise the gear selectivity studies for fish pots and gill nets

- | | |
|---|---|
| Capture Fishery Technology and Fishing Gear Selectivity | <ul style="list-style-type: none"> - To conduct the experimental fishing operations for gear development - To evaluate the appropriateness of fishing gear being introduced |
| Seafood Technology and Marketing | <ul style="list-style-type: none"> - To conduct the collection and analysis of seafood consumption data for marketing - To advise the establishment of proto-type onshore fish handling facilities - To conduct the new fish product development - To investigate and advise the appropriate vending and marketing equipment of off-market operation - To advise and promote the good fish handling practice at the national level |

7.2.1.2 Short-term Experts

The Short-term experts will be dispatched in accordance with the needs for the effective implementation of the project. The field, number and term of assignment for the first year of the project will be consulted between Trinidad and Tobago authorities concerned and Japanese experts team after the project starts.

7.2.1.3 Provision of Equipment

The following equipment and tools are considered necessary to implement the project's basic operations and for the purposes stated:

<u>Equipment and Tools for the respective Fields</u>	<u>Purpose</u>
Marine Fisheries Resource Management	Data Collection and Analysis
Capture Fishery Technology and Fishing Gear Development	Training and evaluation of fishing gears
Seafood Technology and Marketing	Training and new product development

7.2.1.4 Training in Japan

Counterpart personnel will receive training in Japan to improve their skills. Some counterparts in CFTDI have already experienced overseas training during Phase I of the Project.

7.2.2 Trinidad and Tobago Inputs

7.2.2.1. Staff Allocation

The following counterpart staff will be allocated (from the agencies stated).

Table 5: Allocation of Counterparts

AG ENCY	NUMBER	FIELD
Fisheries Division	3-4	Fisheries Resource Management
Fisheries Division	2	Fisheries Extension
CFTDI	2	Capture Fishery Technology
CFTDI	3	Marine Engineering
CFTDI	2	Seafood Technology and Marketing

7.2.2.2. Facilities, Equipment etc.

The following items and budgetary allocations are already available to start the project:

Table 6: Counterpart Budget by Cost Item

ITEM	DETAILS	REMARKS and COSTS
Facilities and Land	Offices for Japanese experts, training facilities and storage space for equipment etc. at CFTDI	
Equipment and Tools	Training vessels, machinery, equipment, tools, vehicles, instruments, and other items necessary for the Project	Excluding equipment from Japan
Funding	Salaries of counterparts and office support staff	
	Counterpart Travelling Allowances	TT\$60,000
	Equipment Import Duties	TT\$90,000
	Tax (VAT) on equipment purchased locally	TT\$75,000
	Counterpart travel expenses for regional training	TT\$60,000
	Counterpart subsistence allowance for field training	TT\$18,000

7.3 Outputs

The outputs are set out as follows:

- ◆ Resource Management's capabilities of Fisheries Division are enhanced.
- ◆ Technical capabilities of CFTDI in capture fishery technology and fishing gear development, seafood technology and marketing and marine engineering are enhanced.
- ◆ Fisheries extension capabilities within the Fisheries Division and CFTDI are enhanced.

7.4 Activities

To achieve the above results, the following activities should be conducted:

- 7.4.1. Marine Fisheries Resource Management
 - ◆ Training of observers for offshore fleets
 - ◆ Collection of catch and effort and biological data
 - ◆ CPUE analysis using catch/landings and effort data from the artisanal and offshore fleets
 - ◆ Collection of socio-economic data and information
 - ◆ Gear selectivity studies for fish pots and gill nets
- 7.4.2. Capture Fishery Technology and Fishing Gear Development
 - ◆ Conduct experimental fishing operation for gear selectivity
 - ◆ Evaluation of appropriateness of fishing gear being introduced
- 7.4.3. Marine Engineering
 - ◆ Operation and maintenance of marine engines
 - ◆ Operation and maintenance of refrigeration system for proper fish preservation
 - ◆ Comparative evaluation of gasoline and diesel outboard motors
- 7.4.4. Seafood Technology and Marketing
 - ◆ Collection and analysis of seafood consumption data for marketing
 - ◆ Establishment of proto-type onshore fish handling facilities
 - ◆ New fish product development
 - ◆ Investigation of appropriate vending and marketing equipment of off-market operation
 - ◆ Promotion of good fish handling practice at the national level
- 7.4.5. Fisheries Extension
 - ◆ Training of CFTDI counterparts and Fisheries Division's Extension Officers in extension methods
 - ◆ Training extension officers in the above activities of the project.
 - ◆ Promoting stakeholders involvement in fisheries management through fisheries extension by the work group
 - ◆ Production of training and informational material by extension officers

8. NECESSITY AND JUSTIFICATION FOR PROJECT

8.1 Fairness and Public Benefit

Appropriate resource management of this Project is meant to involve all fisherfolk in the fishing industry. Accordingly, public perception of fairness and benefits to be derived from the Project are very important. This Project will give fair and equal training opportunities to artisanal fisherfolk, and will train extension personnel to conduct their work in an impartial manner. These activities do not have financial expectation benefits for the private sector. The Fisheries Division and the CFTDI, which are both governmental agencies responsible for the project implementation, will be the main beneficiaries.

8.2 Japan's superiority in Fishing Technology

As fishing has always been an important industry in Japan for obtaining animal protein since pre-historic times, Japan has attained a very high level of fishery technologies worldwide. Japan has been providing for many years superior and advanced technical assistance to developing countries. In recent years especially, technology has been developed for the sustainable use of limited fishing resources by appropriate management. In the light of this record of experiences and past achievements, it can be justifiably said that Japan's fishery technology holds a dominant position and advantage throughout the world. Accordingly, Japan is fully capable to implement plans for the enhancement of fishery technology, fish processing technology and marketing, resource management and marine engine technology.

9. PROJECT'S EXPECTED EFFECTS

9.1 Effect on development policies of Caribbean countries

The development of the fishery industry is a very important policy issue for all Eastern Caribbean countries. Controlling importation of fish products, promoting fish exports, securing food supplies by sustainable fish resources, increasing employment opportunities by fostering new land based industries – these are all common problems to Trinidad and Tobago and other Caribbean islands. As most of these issues fall within the scope of the Project, its successful implementation will greatly contribute towards the fulfillment of those countries developmental policies as well as to raise the region's resources management level. Furthermore, with the transfer and verification of the effectiveness of the resource management systems, there will be further promotion of mutual cooperation among Caribbean countries.

9.2 Effect on institutional framework

Experimental technologies would be attempted such as introducing the "Set net fishing method" for promoting a resource management fishing method, but it will possibly foster the growth of fishing cooperatives by getting fisherfolk together to manage their fishing operations. The Project will provide the best opportunity for establishing an official linkage between the Fisheries Division and the CFTDI that was previously inadequate. Furthermore, the Monitoring and Advisory Committee comprising representatives of other Governmental and Private sector fishery bodies will be able to exercise a more influential role. Additionally, the Project should further strengthen the resource management structure in the Eastern Caribbean region by establishing a working relationship between the two relevant organisations namely: CARICOM Fisheries Technical Unit to be established as the secretariat for the Caribbean Regional Fisheries Mechanism and the OECS Resource Management Unit (RMU). In so doing the ability of the OECS RMU to participate in the activities to be implemented under the CRFM would be enhanced.

9.3 Socio-economic effects

9.3.1 Characteristics of beneficiaries

This Project is designed to incorporate fishing policy emphasising the promotion of sustainable resource management methods. When Government's policy expectations for promoting fisheries resource management are realised through this Project, many different social groups in the country will benefit as set out in the following table.

Table 7: Characteristics of Beneficiaries

GROUP	BENEFICIARIES	BENEFIT and CHARACTERISTICS
Government	Trinidad and Tobago Fisheries Division CFTDI Regional islands Fisheries Divisions Fishery Public (Statutory) Corporations	Enhanced Resource Management Upgraded extension activities Establish fishing technologies Strengthened training systems Enhanced fishing technology
Fishing Industry	Trinidad and Tobago Fisherfolk Trinidad and Tobago fishery businesses Regional trainees	Enhanced fishing technology Increased awareness of resource management Promotion of fishery industries Enhanced fishery technology Promotion of Awareness of resource management
General Public	Trinidad and Tobago citizens Regional islanders	Constant (stable) food supply due to sustainable production of fishery products

9.4 Benefits description

This Project is resource management oriented. Appropriate management technology for marine fishery resources will be built into the Resource Management Section, Fisheries Division, which will be responsible for co-ordinating activities in the resource management field.

The fishing technology field will cover the proper use of existing fishing gear and at the same time introduce experimental "Set Net Fishing". These resource management fishing methods will drive forward the progress of the entire communities not only that of the fisherfolk. Undergoing this stage of technology transfer will also foster a consciousness of the importance of resource management. Such awareness will trigger the creation of fishermen's organisations with an expansion of Set Net fishing methods that will produce secondary beneficial results.

In the fish-processing field, new products will be developed using underutilized marine fisheries resources. There will also be improved marketing based on reliable fishery products consumption data. All these factors will contribute towards increasing local demand for fishery products thereby reducing imports and increasing exports.

9.5 Technical Effects

9.5.1 Number of trainees for technology transfer

During Phase 1 of the Project, 1,218 participants attended the seminars on the three fields of Fishing Technology, Marine Engine Technology and Fish Processing Technology held in Trinidad and Tobago. The seminars for community based training were restricted by the lack of equipment and facilities during the Project's first phase, so there is need for training in the coastal areas. As Phase 2 of the Project will be of five years duration, almost the same total number of participants is expected to attend the seminars to be scheduled.

On the other hand, it is expected that there will be an increase in the number of participants from the other islands for the Regional Technical Cooperation Promotion Programme. As for counterparts, in addition to the seven (7) persons already trained during the Project's Phase 1 namely two (2) for fishing technology, three (3) for marine engine technology and two (2) for fish processing technology, another three or four persons (part time) will be allocated for the resource management field. In addition, two (2) part-time counterparts will also be allocated for the extension component since extension personnel are occupied with many assignments in the Fisheries Division. Staff in Tobago may also be unable to attend to Project activities regularly, on a full time basis due to lengthy travel distances.

It is also necessary to consider actively the matter of the transfer of technology to those "learner/improvers" in the fish processing field who are learning from full time counterparts and who may later be promoted as counterparts in the future.

Table 8: Number of Counterparts/Trainees trained by the Regional Fisheries Training Project (1996- 2001)

COUNTRY	NO. OF PARTICIPANTS
Trinidad and Tobago	1,218
Antigua	54
Barbados	49
Commonwealth of Dominica	64
Grenada	121
St. Lucia	74
St. Vincent and the Grenadines	50
St. Christopher and Nevis	66
Total	1,696

9.5.2 Description of Technology Transfer

There will be technology transfer and extension activity in three fields, namely fishing technology, fish processing and marine engine maintenance with their refining and extending of these important subjects that were included in the first Project.

Regarding fishing technology, experimental fishing operations will continue to be conducted for gear selectivity based on the results of the first Project. This will be linked with "Set net fishing" in the resource management field involving entire fishing villages with suitable conditions.

The fish processing field will not only tackle the development of new products but will also extend these accumulated technologies and aim at developing commercial markets.

The Marine Engineering field will not only continue to have seminars on outboard engine maintenance which is still in high demand; but will also carry out transfer of technology on maintenance of refrigeration systems etc. as technicians require more training.

Resource management is a new field for transferring technology under Phase II involving collecting and analyzing catches and landing data and assessing the effectiveness of selected fishing gears. This component will mainly target researchers of the Fisheries Division (Marine Analysis Unit) and extension personnel. Strengthening resource management is a long outstanding subject will be greatly advanced by the implementation of this Project. Reliable and standardised information should be systematically collected and used for these reports which should be made available to the public.

9.5.3 Impact on Economy

This Project will establish technologies ranging from fishing technology to fish processing; improve marketing systems and extend sustainable and responsible resource management types of fishing. As such, it will be possible to provide value added marine products. Simultaneously, other expectations will include an increase in domestic fish consumption, increased income for artisanal fisherfolk, increased employment opportunities for fishing villagers etc. Especially in the fish processing field and the transfer of technology to the private sector, it is highly likely that fish products such as fish paste ("Satsuma") and fish sausages, which were introduced under the Project's Phase I utilising under-utilised fish, will now be commercialised. Furthermore under fishing technology, it is expected that there will be a large significant financial impact in those fishing communities where participation in "Set Net" fishing is conducted.

10. ANALYSIS OF EXTERNAL FACTORS AND EXTERNAL RISKS

10.1 No change in Government Policy

The statement of objectives in the GORTT's nine point plan includes: sustainable growth, more and better jobs, a better quality of life for all of our citizens and greater equity in our society. The overall goal of sustainable utilisation of fisheries resources directly relate to the achievement of these objectives.

The GORTT through its MTPF has an expressed commitment to the sustainability of marine fisheries resources and this is consistent to the overall goal of the project. The Sector Policy for Food and Marine Resources 2001- 2005 has identified sustainable management of the renewable marine resources as one of the main responsibilities of the MFPMR.

10.2 No Environmental Deterioration

There are extensive wetlands and mangrove swamps along Trinidad's West Coast facing the Gulf of Paria which are valuable breeding grounds for marine life and aquatic creatures.

However, there has been inappropriate disposal of petroleum waste from oil sector industries and oil drilling leakages. Furthermore, pollution is increasing due to inadequate water treatment plants for household waste and sewerage from a corresponding population increase in main city areas such as Port of Spain, San Fernando etc. There is accordingly growing public concern about the pollution impact on marine resources. This matter was reported by two (2) short-term JICA experts who in April 2000 investigated oil pollution. Unfortunately however, no substantial corrective measures have yet been enforced. As there is possible utilisation of contaminated fish caught by the new methods and the processing of such fish into fish products, it cannot be categorically stated that there is no effect/impact on the Project. However, it is necessary and urgent to have an official agency/organisation to be responsible for establishing and monitoring proper resource management systems as proposed under the Project's Phase I. There is need for further research into the impacts of pollution on the resources and it is therefore important to aim at establishing an environmental conservation and resource management structure.

11. PROJECT MONITORING AND EVALUATION

11.1 Monitoring

During the implementation of the project, the project team shall establish strict and proper methods to monitor the implementation of the project. The monitoring should be done together with both sides and the functional methods also shall be transferred to the counterparts for the future development. The matters raised through the monitoring shall be discussed by the Joint Coordinating Committee. In addition, the monitoring of the project at the technical level will be conducted by the Joint Technical Sub-committee which will be set up at the commencement of the project.

Monitoring activities will be conducted as set out in the following activity table:

Table 9: Monitoring Activities

TERM	CONDUCTOR	MONITORING
Once every six (6) months of Project's duration	Japanese experts and counterparts	Monitoring report; Progress report on each activity; Conditional restrictions; Changes in conditions; Achievements and results

11.2. Evaluation

For measurement of the effects of the project, evaluation shall be conducted periodically by both Trinidad and Tobago and Japanese side through the Joint Coordinating Committee. JICA will dispatch the evaluation team during the implementation of the project and also after the completion of the project. Evaluation will be carried out as set out as follows:

Table 10: Evaluation Activities

TERM	CONDUCTOR	MONITORING
Mid-term Evaluation (March 2003) Final Evaluation (March 2005)	Joint Evaluation Team	Evaluation Items (criteria)

12. REFERENCES

- Fisheries Division, Ministry of Food Production and Marine Resources - October 1994.
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