

1. INTRODUCTION

1.1. Background to Request

The economy of the Republic of Trinidad and Tobago is dominated mainly by the oil and petrochemical industries including natural gas, light manufacturing and to a lesser extent sugar. The Government is presently pursuing a policy of diversification of the economy with a view to the creation employment opportunities. This policy is based on the experience of the economic contraction during the mid 1980s to mid 1990s caused by falling international price of oil. The policy objectives are to strengthen measures to lower unemployment and to reduce the poverty level throughout the nation. Furthermore, the Government *is* pursuing development of the tourism sector in order to avoid a drain of foreign exchange as well as increase foreign exchange earnings.

The Fisheries Sector contributes to the economy of Trinidad and Tobago in terms of foreign exchange earnings through the export of fish and fishery products and ornamentals, employment generation, provision of food and nutrition security and stability in rural coastal areas. In 1998, the Sector's contribution to the Gross Domestic Product (GDP) was 0.19% or 8.9% of Agriculture contribution to GDP. Exports amounted to 8,632 tonnes valued at TT\$92.5 million and imports amounted to 26,252 tonnes valued at TT\$45 million (Annual Report 1998-99).

The Sector comprises approximately 6,800 person (FAO estimate) or 8,000 fisherfolk (Fisheries Division estimates) directly employed in the local fishing industry. In addition an estimated 50,000 persons derive their livelihood indirectly from activities related to fishing. Coastal artisanal fisherfolk comprise the majority and they may be engaged full time in fishing or part time in farming and other types of skilled as well as unskilled activities in their communities. The average annual earnings of a fisherman is estimated at US\$800 - \$1700 (Policy Directions for Marine Fisheries 1994) equivalent to only 30% - 70% of US\$2400 (estimated) which is the national minimum annual income level.

The annual average catch from the artisanal sector is estimated at some 7,000 to 10,000 tonnes, 80% of which is landed from the gill net fishery and artisanal trawl fisheries. Total annual average landings from the domestic fisheries sector is estimated at 10,000 tonnes.

Landings data and information are available for semi- industrial shrimp trawlers but are limited for the industrial vessels and other offshore fishing vessels that include multigear vessels and longliners. A monitoring system for the collection of data from the offshore sector is being developed. High valued products such as shrimp, snappers and large pelagics such as tuna fish are exported, but most of the other fish species are consumed locally.

The consumption of fishery products per person is estimated at 14kg, yearly and this amount is on the gradual increase. However, fisheries resources have already started to diminish due to over-exploitation of coastal resources and the large quantities of by-catch and discards from shrimp trawlers estimated annually at several thousand tons. Additionally, half of the country's fish consumption requirements are imported

which impact on its foreign exchange reserves. To correct this import and export imbalance, self-sufficient measures must be taken.

The Government of the Republic of Trinidad and Tobago through the Ministry of Food Production and Marine Resources is promoting effective Fisheries Resource Management to achieve the goals of food and nutrition security; increasing employment in fishing communities; increasing foreign exchange earnings and maximization of under-utilized resources.

Due to the shortage of trained personnel in the fisheries field the Government of Trinidad and Tobago implemented the Regional Fisheries Training Project at the Caribbean Fisheries Training and Development Institute (CFTDI) through a Technical Cooperation Programme with the Government of Japan as the sponsoring agency. The Project successfully achieved its original target of upgrading and extending the training capability of CFTDI.

The original intent of the Project was technology transfer, however this has not been adequately effected in all areas for a number of reasons. Accordingly, it is a matter of concern as to whether the utilisation of fisheries resources is sustainable.

The Fisheries Division has overall responsibility for managing the living marine resources. Its resource assessment activities are limited in terms of the range of species on which analyses are conducted and these analyses are dependent on the collection of statistical data. Whilst it is expected that there would be close collaboration between the Division and CFTDI in the transfer of technologies, the level of consultation and collaboration between the two agencies has not facilitated technology transfer or monitoring of fishing activities based on the work of the project. It is accordingly difficult to state whether or not the achievement of strengthening CFTDI's training function has been effectively utilised by all the people involved in the fishing industry.

1.2 Previous action taken by Japanese Government and JICA

1.2.1 Regional Fisheries Training Project (April 1996 – March 2001)

For the purpose of achieving the following objectives the Regional Fisheries Training Project was implemented at under the Technical Cooperation Programme of the Government of Japan:

- ◆ To provide training and support facilities for strengthening standards of performance and institutional capacity of the CFTDI.
- ◆ To enhance the efficiency and effectiveness of key fisheries personnel in the Eastern Caribbean countries through training and technology transfer.

1.2.2 Regional Technical Cooperation Promotion Programme (RTCPP)

In order to effect 1.2.1. the programme was implemented in 1997, the second year of the Regional Fisheries Training Project. The CFTDI was the focal point of the RTCPP. Trinidad and Tobago nationals transferred the technologies that they gained from Japanese experts to fisherfolk of seven (7) Eastern Caribbean countries (Table 8), which contributed to an improved standard of living for Caribbean people. Thus, Trinidad and Tobago nationals also acquired the capability to provide leadership within the region.

1.2.3 First Preparatory Study (March 2001)

Discussions were held based on the background request to this program; after which the Project's purpose, the need for technical assistance as well as the suitability of the project were all confirmed. In addition, a Project Cycle Management Workshop was held with active participation of thirty (30) people from CFTDI, Fisheries Division, the Tobago House of Assembly and Institute of Marine Affairs to consider the basic plan.

1.2.4 Second Preparatory Study (June 2001)

Discussions were held about the proposed area of cooperation and an action plan was detailed for the Project. An additional study was made and discussions were held on an implementation program and its organisational framework. The JICA team also visited the various countries involved to explain the project and its procedures as well as to confirm their participation. This team also conducted on the spot studies of particular problematic fields requested.

1.2.5 Project Design Study (August 2001)

A proposal document has been prepared based on the findings of the two past preparatory studies. Final discussions on the implementation program and the desirable measures to be taken by both Governments for the successful implementation of the Project were held. The official signing of the Minutes of Discussions took place between the Permanent Secretary of the Ministry of Food Production and Marine Resources and the Leader of the Project Design Team, JICA. Both parties also agreed to the implementation of the Regional Technical Cooperation Promotion Programme in which the CFTDI would be the focal point for technology transfer to other select Caribbean islands.

1.3 Summary of the Project

The purpose of the Project is to provide fisheries extension and training activities for sustainable utilisation of fisheries resources to be practiced by mutual cooperation between Fisheries Division and CFTDI. To this end, it is hoped responsible fishing activities will be promoted.

As a fundamental approach, there should be upgrading of the CFTDI's capability in fishing technology, marine engine maintenance technology and technology development of fish processing products. The Fisheries Division's Resource Management capability should also be further upgraded with the training of

its researchers in the Marine Fisheries Analysis Unit and Fisheries Extension Unit who would spread their technical knowledge and experience to the local fisherfolk. In this way the functions of both the CFTDI and the Fisheries Division should be integrated to promote resource management.

Under the Regional Technical Cooperation Promotion Programme, a component of the Project, Japanese experts would be dispatched to provide training, equipment would be provided and under the Project, the CFTDI and participants from the other ten (10) Caribbean islands would receive training to promote fishing technology.

1.4 Suitability and Implementation

The Government of Trinidad and Tobago considers that the fisheries resource management system is critically important to the sector. It is therefore expected that budgetary provision will be made throughout the project's duration as well as in the future. The counterpart agency's (CFTDI) capability in efficiently managing this project in a self-supporting way will be recognised.

The five main advantages to be derived from the Project are as follows:

- ◆ Enhanced sustainability of fisheries resources in Trinidad and Tobago
- ◆ Enhanced technology transfer through consultation between the CFTDI and the Fisheries Division
- ◆ Promotion of the organisation of fisherfolk
- ◆ Recognition of the CFTDI by other Caribbean islands
- ◆ Strengthened collaboration in fisheries among CARICOM states.

All of these will benefit regional fishery agencies and all the people involved in fishing industries in the Caribbean. Additionally, from the viewpoint of securing constant food supplies of marine products, the project should benefit the people of Trinidad and Tobago and neighbouring Caribbean islands. The drive for Regional Technical Cooperation conforms with and is an important area of Japan's Caribbean Cooperation policy.

2. PROJECT BACKGROUND

2.1 National and Socio-Economic Context

Oil and petrochemicals including natural gas, as well as light manufacturing and sugar have dominated Trinidad and Tobago's economy. During the decade of the 1980's Trinidad and Tobago experienced an economic decline due to falling international oil prices. Although the Government embarked on an economic recovery program during 1983 – 1993, the unemployment rate increased which in turn caused an increase in national poverty levels. In 1990 the economy stabilised slightly so that in 1994 the country's GDP increased owing to no further decline in international oil prices. Since then and up to the present time macro-economic conditions have stabilised with a strengthening of the financial situation.

Trinidad and Tobago's current population is estimated at 1.3 million approximately comprising 41% of African origin, 41% of East Indian origin and the remainder mainly of mixed and other races.

The national labour force is approximately 600,000 or 46% of the total population. The distribution of the labour force by industries is 8% in agriculture, forestry and fisheries; 20% in mining and industrial and 56% in services. The unemployment rate is approximately 16% while the urban population is 3/4 of the total population. Both Central and Local Government authorities have taken community improvement measures to absorb surplus labour consisting of mainly temporary and seasonal workers.

Government is presently pursuing a policy to create a diversity of employment opportunities in order to lower the unemployment rate and to reduce poverty levels. One such area is in the tourism sector in order to avoid a drain of foreign exchange and to earn more hard currency.

To assist in achieving these policy goals, education and human resource development must be improved. Utilising the benefits derived from oil and gas exports, the Government is exploring ways and means to develop its human capital.

2.2. Government's Policy for the Fisheries Sector

At the macro-economic level Government's policy for the Fisheries Sector is articulated in the Medium Term Policy Framework (MTFP) 2001-03, the Agriculture Sector Plan 2001 and Policy Directions for Marine Fisheries in Trinidad and Tobago, the 1997 Draft Strategic Plan for the Fisheries Sector and Work Programmes etc.

The policy objectives are designed to:

- ◆ Increase employment opportunities
- ◆ Promote national food and nutrition security
- ◆ Facilitate an increase in foreign exchange earnings
- ◆ Maintain social stability in rural areas by promoting sustainable fisheries resources.

Japan's Medium Term Policy on Official Development Assistance with particular regard to Marine Fisheries Policy Guide is also to be given recognition.

The principle strategy identified for the fisheries sector is the optimum utilisation of fisheries resources based on sustainability and taking in consideration effective management, development and preservation. This goal will be achieved through the environmental protection of fisheries resources, maintenance of the stability of rural communities and the close partnership between the fisheries administration and other stakeholders including in the fishing industry and the fishing communities. All persons engaged in administration, fishing industry and related fields should participate in implementing this strategy, especially with regard to policy management, investment and environment protection.

At the regional level there are a number of initiatives being pursued including bilateral fishing negotiations between Trinidad and Tobago and neighbouring countries such as Venezuela, Guyana and Barbados. The Caribbean Regional Fisheries Mechanism the successor organization to CFRAMP is coming into effect in October, 2001 and this country expects to be a participant in this Mechanism aimed at sustainability of fisheries resources in particular, shared resources within the Caribbean. Through this Mechanism a number of other regional programmes are to be executed such as Cariforum, and a proposed Phase II of the EC funded Project to Strengthen Biodiversity and Fisheries Management in ACP countries.

Of particular significance to the Project is the Research Section of the Fisheries Division (Marine Fisheries Analysis Unit) which is responsible for the following; collection of catch and effort and biological data and information on the main commercial species, for analyses and stock assessment purposes, and the formulation of fisheries management plans and to inform the administration on technical matters.

The Extension Section is responsible for disseminating information on technologies as well as technical information from the Research Section. It is involved in maintenance of a licensing and registration system for fishing vessels; administering financial support to fisherfolk and their cooperatives; problem and conflict resolution and maintenance of physical infrastructure at landing sites.

2.4 Types of Fisheries and Management

2.4.1 Fisheries Environment

Trinidad and Tobago is an archipelagic state and has an ocean space of approximately 75,000 square kms of archipelagic waters, territorial waters and exclusive economic zone. Trinidad and Tobago lies on the South American continental shelf and is located 7 miles from the mainland of Venezuela at the nearest point. The fisheries resources are diverse in species composition and abundance due to the chemical, biological and physical influences of the riverine discharges from the Orinoco and Amazon Rivers of nearby South America. The fisheries are considered as being shared stocks closely related to the fisheries of the North East South America. Due to the warm oceanic North and South Equatorial Current, a more oceanic environment is created on the North and East Coasts and in the EEZ.

The important target species in the country's Exclusive Economic Zone may be categorized as follows: (Classification prepared by Fisheries Division)

Table 1: Important Fish Species in Trinidad and Tobago

CATEGORIES	TARGET SPECIES
Coastal demersal resources (soft bottom)	Shrimp, Ground fish (Croakers, Flounder Catfish, Jacks)
Coastal demersal resources (hard bottom/coralline)	Snappers, Groupers, Lobsters
Coastal pelagic resources	Flying fish, Carite, Jacks, Sharks, Bonito, Sharks, Dolphin fish
Oceanic pelagic resources (highly migratory)	Tuna, Swordfish, Kingfish, Sharks
Deep water demersal resources	Snappers, Groupers, Shrimp

2.4.2 Fisheries Sector

The fisheries sector is comprised of an artisanal fishery, semi-industrial and industrial sectors and it is estimated that some 2,090 vessels operate in all these sectors (Vessel Census 1998).

However, in the 1998 vessel census (Fisheries Division) there were an estimated 1,251 artisanal vessels comprising both registered and un-registered classes. An updated vessel census for Tobago is not available but according to a 1991 census, there were 275 vessels operation in the fishery.

80% of all the vessels in use are artisanal fishing pirogues. Currently, the industrial sector comprise twenty two (22) industrial (Gulf of Mexico Type) shrimp trawlers, ten (10) semi-industrial (single rigged) shrimp trawlers, forty one (41) multigear vessels and ten (10) longliners.

These artisanal vessels are made either of wood or FRP and are 7-9 meters in length. They are open decked and are equipped with gasolene outboard engines with a maximum of 150 HP, although the popular range is between 45 - 75 HP. Fishermen go out daily early in the morning and return in the evening. Most fisherfolk (62%) operate off the West Coast while only a minority (6%) operates in the East. The methods of fishing used include drifting gill net, bottom gill net, bottom long line, fish pot, trolling, a la vive and shrimp trawling.

There are 8,000 fisherfolk in the country estimated by the Fisheries Division. Most are coastal artisanal fishermen who also have part-time jobs in agriculture, forestry and other types of skilled and unskilled work. Their average age is high compared with other industries. Average annual earnings of a fisherman is estimated at US \$800 - \$1700 equivalent to only 30% - 70% of US \$2,400 which is the estimated national minimum annual income level. Employment opportunities must accordingly be increased in order to stabilize these fishing communities.

Table 2: Contribution of Fishery Sector to the National Economy (GDP)

Year	Value (million TT\$)		Ratio (%)	
	Fishery Sector	Agriculture Sector	Fishery/ Agriculture	Fishery/ GDP
1994	86	651	13.2	0.29
1995	82	733	11.2	0.26
1996	78	669	11.6	0.23
1997	66	865	7.67	0.18
1998	74	828	8.90	0.19
1999	74	891	8.32	0.18

2.4.3. Resource Assessment

In 1988, the Fisheries Division participated in acoustic and trawl surveys carried out by RV DR. Fridrjof Nansen from Suriname to Columbia which provided estimates of stock abundance on the continental shelf.

Further, a number of initiatives have been undertaken in resource assessments over the last ten years. Preliminary stock assessments have been undertaken of the major commercial species under a 1992 FAO/UNDP sponsored technical cooperation project 'Establishment of Data Collection Systems and Assessment of Renewable Resources' and draft management plans were prepared. From 1991 to 1998 the Trinidad and Tobago Government participated in the Caricom Fisheries Resources Assessment and Management Programme (CFRAMP) jointly sponsored by CIDA and CARICOM. The purpose of this program was to promote sustainable fisheries resource management and to accelerate the preservation of such resources among CARICOM countries. Stock assessment continued under this programme and support was obtained in the area of the provision of resources for data collection, formulation of management plans, establishing a licensing and registration system, providing education and training to fisherfolk and upgrading the human resource capability.

Trinidad and Tobago has participated on an on-going basis in the FAO Western Central Atlantic Fisheries Commission Ad Hoc Working Groups on Shrimp and Groundfish Resources on the Brazil/Guiana shelf and Flying fish of the Eastern Caribbean. With regard to the former, joint stock assessments and bio-economic analyses on the shared shrimp and ground fish resources have been undertaken with Venezuela.

Currently, the Division is participating in a Global Project (GEF/FAO/UNEP) to Reduce the impacts of tropical shrimp trawling on fisheries resources and the environment by the adoption of environmental friendly technologies. The Division has also in the past pursued a number of internationally funded technical cooperation research projects.

Under CARICOM, matters of inter-governmental cooperation and marine resource assessment of migratory species such as tuna, marlin, swordfish, shark, dolphin etc. must be urgently considered with respect to improve the fisheries management structure for shared resources and to upgrade fishing technology.

In this regard monitoring systems, including logbook systems and observer programmes have to be instituted for the offshore fishing sector. A data collection system for this sector is still to be developed.

On a localised nature, one area of interest is in respect of juvenile commercial fish by-catch from shrimp trawl that are hardly utilized as the fish die shortly after landing and the size of fish are too small with no market value. The quantity of discards is estimated at about 1425 tonnes annually (FAO 1999).

2.4. 4. Marketing of Fishery Products

Local fishermen do not generally carry ice on board their artisanal vessels, although they are encouraged to do so to preserve their catches. Buyers come to the beaches to purchase fish that are placed into ice packed coolers for transport to markets, processing plants etc. As the transport distance is relatively short, the freshness of the fish is preserved with no deterioration in quality.

The fish marketing business is quite competitive. Anyone can become a middle-man without a special license. "Middle-men" will purchase and transport fish in ice storage boxes to restaurants, hotels, markets, as well as to supply fish exporters. Fish can be retailed at markets and super-markets, but fishermen themselves at times operate from a roadside stall and sell their catch directly to the public.

2.4. 5. Processing of Fishery Products

The fish processing industries are not well developed, as there are no canning or secondary processing factories. Only primary processing (dressed or filleted) factories now exist. Salt processing is popular as it can be done on a small scale in fishing villages in several parts of the country. Trinidad has approximately six (6) factories processing frozen fish while in Tobago there are four (4) flying fish processing factories. During the 1970s Trinidad and Tobago had access to the shrimp resources in Brazil and Guyana and trawling was more profitable as well as a processing plant existed at the National Fisheries Company in Sea Lots in Port of Spain. However, only 2-3 plants now operate due to decreasing shrimping grounds and lower profitability.

2.4. 6. Demand and Supply of Fishery Products

The consumption of fishery products is approximately 14kgs per person per year and this amount is gradually increasing over recent years. The country's increase in population as well as international demand for fish and fishery products and the high rate of exchange has been accompanied by an increased demand for fish supplies.

The volume of fish exports has shown an increasing trend over the last five years. According to data obtained from the Central Statistical Office (CSO), the quantity of fish and fishery products exported in 1998 amounted to 8,632 tonnes and showed a slight decline over the 1997 figures. Fish exports were valued at TT\$92.5 million, showing an increase of 30% over 1997. Imported fishery products have stabilized around 3,000 tonnes valued at TT\$35 million and imported fishery products are the traditional salted, dried and smoked fish and canned products. Frozen shrimps represented 40% of total export earnings.

Table 3: Export and Import of Marine Products

Unit: Weight (tonnes, Amount (million TT\$))

Year	Import		Export	
	Weight	Amount	Weight	Amount
1994	2,586	30.7	4,590	54.9
1995	3,055	31.6	4,945	60.4
1996	3,128	35.2	5,740	72.6
1997	3,078	38.3	10,305	63.9
1998	26,253	44.9	8,633	92.4

2.4.7. Trade in Fishery Products

The main species of chilled fresh fin fish exported to Canada and USA are yellow fin tuna, marlin and sword fish, snapper, grouper and dolphin fish. These species are also exported to neighbouring Caribbean islands, especially to St. Lucia. Trinidad is basically the export center of the Caribbean region. Frozen fish is becoming more acceptable to the local consumer, but consumer preference is for fresh fish. Tobago's flying fish is shipped vacuum packed whole or filleted to other Caribbean islands.

2.4.8. Aquaculture

The Fisheries Division promotes the development of aquaculture and in June 1999 initiated two (2) projects targeting rural communities and unemployed youths. This was initiated in the South West of Trinidad for fishermen who were no longer employed in shrimp trawling due to the withdrawal of shrimping access to the Orinoco Delta for local fishermen under the Trinidad and Tobago/Venezuela Fishing Agreement. Two fish farms were established in inland villages in Trinidad as pilot projects. The University of the West Indies, St Augustine in Trinidad, gave technical support for training in semi-intensive aquaculture practices for the *Tilapia niloticus*.

3. DEVELOPMENTAL PROBLEMS AND PRESENT CONDITION

The Fisheries Administration of Trinidad and Tobago recognises the need to strengthen its capability to monitor and effectively manage its fisheries sector. The infrastructure and facilities at domestic markets and at landing sites need upgrading. In Trinidad and Tobago, there are sixty five (65) landing sites for which physical facilities have been provided at twenty four (24) sites. In Tobago, there are thirty-two (32) landing sites. Furthermore, there is inadequate quality control in conformity with international standards, and increasing consumer concern about quality standards of fish products. Interest towards fishery resources sustainability and the preservation of the coastal environment is now engaging the attention of the Government and local NGOs.

The Fisheries Division recognised these problems to be rectified as follows:-

- ◆ Quality control of the management system based on international standards should be established;
- ◆ Consumers interest in quality standards of fishery products should be further promoted;
- ◆ Increased public awareness for the sustainability of fisheries resources and protection of the coastal environment should be promoted.

At the three (3) day workshop conducted during the First Preparatory Study in March, 2001, thirty (30) staff members of the Fisheries Division, Institute of Marine Affairs, Tobago House of Assembly and CFTDI participated. The main topic was "Inappropriate fishery activities practiced by Trinidad and Tobago fisherfolk". Problems were identified and analysed with the results set out in the following paragraphs.

3.1. Problems in Fisheries Administration

◆ *Subject 1. Policy*

A Draft 1997 Strategy Plan for the Fisheries Sector as well as a Commodity Action Plan were both prepared. However, neither received wide publication and circulation among people in the fishing industry

◆ *Subject 2. Legal and Regulatory Framework*

The legal and regulatory framework governing the fishery sector is outdated and a Draft Fisheries Management Act has been prepared. A number of consultations on the Draft Act have been held with the fishing industry in Trinidad and Tobago. Currently there is inadequate information dissemination to the general public on the contents of Government Ordinances and Regulations. Furthermore, there is limited enforcement capability of these regulations among fishery stakeholders.

◆ *Subject 3. Support System*

Both financial and technical resources within the administration are inadequate to effect the technology transfer to more appropriate fishing gear and materials. Further, fisherfolk do not all take advantage of incentive programmes due to inadequate extension services.

3.2. Problems in Fishery Sector

◆ *Subject 1. Resource Management*

There are marked gaps and inadequacies in the collection of data and information from the point of landing to marketing of fish and fishery products. Data collection has focussed on landings and fishing effort and biological data for the artisanal sector. Currently there is a limited data collection system for the offshore sector. Fisheries statistical information is available through the CSO and is accessible to the public.

◆ *Subject 2. Fishing Technology*

Many fishers including shrimp trawler owners and gill net fishermen using unsuitable fishing gear have practiced unsustainable fishing methods. As such, there are already signs of over-exploitation of fisheries resources. A vicious circle is gradually developing between greater fishing effort and declining fish resources.

Owing to the lack of financial resources and training opportunities, fisherfolk find difficulty in purchasing suitable fishing gear and materials. There is also some reluctance on their part owing to economic reasons to adopt responsible fishing practices that hinders the practice of new methods.

◆ *Subject 3. Utilisation and Processing*

Landing sites are not adequately provided with ice for storage boxes and refrigeration facilities. This limits the quality of catch to be transported to Port of Spain and San Fernando that are large consumer centres of fish products. Post harvests losses are still high due to traditional methods of retailing. Other avenues such as salting and smoking need to be explored, in particular, in coastal communities where ice availability may pose a problem.

◆ *Subject 4. Marine Engineering*

There is a deficiency of skills in the field of refrigeration system and its maintenance. In addition, the training of technicians who responsible for the cold storage facilities donated under the Japanese Grant Aid is also required at the regional level. Lack of opportunities for training and technical transfers on marine engine maintenance to self-employed fishermen in remote district caused the increase of disaster at sea.

3.3. Problems in Promoting Technical Training and Extension

◆ *Subject 1. Technical Training*

Many fishermen realize the importance of participating in training sessions. However, many of them cannot avail themselves of the training opportunities due to the nature of their work and the need to meet their financial commitments. Many fisherfolks are accordingly not exposed to technical training and they continue to use traditional and inappropriate and unsustainable methods of fishing.

◆ *Subject 2. Public Information and Extension*

Owing to the limited number of well-trained technical staff, appropriate fishing techniques and gear cannot be adequately introduced to fisherfolk. Accordingly, there is low awareness of environmental impact and many fishermen continue to operate inappropriate methods that diminish marine resources.

◆ *Subject 3. Organisation*

There are no systems established within fishing communities to propagate those techniques gained by training and extension. There is also no mutual aid system to introduce the new technology to fisherfolk.

4. OBJECTIVES OF JAPAN'S ASSISTANCE STRATEGY

The expected outcomes of this project are the upgrading of appropriate technologies in capture fishery, fishing gear development, seafood technology and marketing as well as the upgrading of the resource management and extension capability of the Fisheries Division. Furthermore, the implementation of the Regional Technical Cooperation Promotion Programme through the CFTDI will lead to the upgrading of fishing techniques in Caribbean States and the strengthening of regional solidarity.

These above-mentioned objectives conform to:

- ◆ Support for conservation of the natural environment in view of the increased environmental burden caused by economic growth.
- ◆ Support for basic education, health and medical services, agriculture, development of farming communities, improvement of basic infrastructure to rectify imbalances in different areas and to relieve poverty.

These correspond to some of the stated main assistance clauses of the Caribbean Assistance Program (ODA Midterm Policy dated August 1999).

It is also stated in this report that there is need for wider assistance to be provided to the other small Caribbean islands for which the Regional Technical Cooperation Promotion Programme being implemented through the CFTDI is the appropriate project.

Strengthening the already strong ties with Caribbean Island States in the international arenas at the UN etc. is the amplification of the Japanese Government's assistance to the Caribbean countries. Since 1993 with the establishment of Japan/CARICOM consultation, Japan is working towards strengthening of relationships and providing wider assistance to other Caribbean islands.

5. PROJECT STRATEGY

5.1 Fundamental Idea

To upgrade the functioning of the Fisheries Division which is responsible for managing marine resources; to upgrade the training capability of CFTDI in various fields of fishing technology, marine engineering and seafood processing techniques. Also to upgrade the capability of training of Fisheries Extension Officers by CFTDI so that fisherfolk can obtain the necessary information.

By doing the above, the CFTDI and the Fisheries Division organisational ability will be strengthened to enable fisherfolk to use appropriate fishing techniques. Furthermore through the Regional Technical Cooperation Promotion Programme, it will be possible to promote all the above to other Caribbean islands.

5.2 Field of Marine Fisheries Resource Management

To upgrade the Fisheries Division's functions relating to marine resource management; to undertake CPUE analysis using landing and effort data from the artisanal and offshore fleets; to collect catch and effort and biological data and information; to collect socio-economic data and information; to train observers for offshore fleets and evaluate information to select fishing gears. A final advisory report on marine resources will be later prepared.

5.3 Field of Capture Fishery Technology and Fishing Gear Development

To upgrade CFTDI's training capability in the field of fishing technology; to conduct experimental fishing operations to select appropriate fishing gears and how to evaluate this equipment.

5.4 Field of Marine Engine Maintenance

To upgrade CFTDI's training capability in the field of marine engines; to introduce maintenance management of marine engines and appropriate equipment for on-board fishing processing.