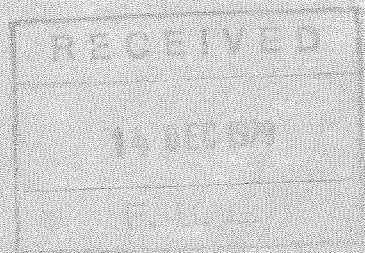


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REPORT ON MISSION TO SURINAME TO
EVALUATE A FISHERMEN'S TRAINING PROPOSAL



UNITED NATIONS DEVELOPMENT PROGRAMME



FOOD AND AGRICULTURE ORGANIZATION OF
THE UNITED NATIONS

Interregional Project for the Development of Fisheries
in the Western Central Atlantic

Report on Mission to Suriname to
Evaluate a Fishermen's Training Proposal

by

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DEVELOPMENT OF FISHERIES IN THE WESTERN CENTRAL ATLANTIC

The Interregional Project for the Development of Fisheries in the Western Central Atlantic (WECAF), which was initiated in March 1975, entered its second phase on 1 January 1977. Its objectives are to assist in ensuring the full rational utilization of the fishery resources in the Western Central Atlantic through the development of fisheries on under-exploited stocks and the promotion of appropriate management actions for stocks that are heavily exploited. Its activities are coordinated by the Western Central Atlantic Fishery Commission (WECAFC) established by FAO in 1973. The Project is supported by the United Nations Development Programme (UNDP) and the Food and Agriculture Organization of the United Nations as the Executing Agency.

As in the initial phase, two series of documents will be prepared during the second phase of the Project to provide information on activities and/or studies carried out. This document is the ninth of the series WECAF Reports. The other series of documents is entitled WECAF Studies.

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1. Conclusions and Recommendations

There is undoubtedly a need for a fishermen's training programme in Surinam. The nature of the present fishing industry is unique in that the sizable shrimp fleet is almost entirely operated by foreigners. This can be attributed to the lack of local fishermen trained or experienced in the operation of modern shrimp boats. Shrimp fishing is a very specialized operation and because boats are normally operated with small crews, fishermen must be highly skilled. It is, however, costly to employ foreign fishermen and although this has been economically possible in the past, there are indications that it will become increasingly difficult to continue this practice, particularly for that portion of the fleet which will be restricted to operate only in Surinam waters. There is, therefore, an urgent need to increase local participation in the industry, not only for the shrimp fleet but also for the production of foodfish which is expected to be developed in the near future. A practical training programme would be a first step towards preparing fishermen with the skills required to operate modern trawlers.

The organization of the proposed training programme correctly phases training from the lower to the higher levels. It is, however, a much too elaborate programme to establish at this stage. Starting such a programme with several courses conducted simultaneously requires a sizable staff and facility. More important, it requires appropriately motivated trainees who fully intend to prepare themselves to make fishing a career. It is felt that this is largely an unknown factor in Surinam. It was reported, for example, that the Navigation School formerly held two-year courses for training river pilots, but this course has since been reduced to one year because of the very high drop-out rate. Though this reduced period of study diminished the number of drop-outs, it still remains at about 50 per cent. At the present time there are very few local fishermen employed on shrimp boats, so trainees will be totally inexperienced in life at sea and it remains to be seen how many will continue the course after their first or second trip on the training vessel. The proposal assumes that most trainees will return after completing basic courses for second, third and even fourth higher level courses and has, therefore, provided for all necessary staff and facilities from the beginning. Rather than starting with such an elaborate programme, it would be advisable to initially establish a much more modest training programme limited only to basic and practical training of fishermen for the trawler fleet. Those completing the basic course should then be given the opportunity of working on a commercial trawler, perhaps as apprentice deckhands to gain practical experience. Then at a later stage, upgrading courses could be introduced as the demand warrants.

During the initial stages of the training programme, it would also be advisable to consider offering a basic engine operators course for trainees who may be inclined towards mechanics. The present proposal offers courses based on a system used in some countries where a shrimp boat captain also doubles as engineer. In Surinam, however, it would be more appropriate to split these responsibilities and train engineers separately. Including a basic engine operator's course along with a fisherman course would involve little additional cost as most training would be given at sea. Shore training would primarily involve

shopwork where trainees would learn to handle tools, disassemble and reassemble engines, make minor repairs, preventive maintenance, etc. As with the basic fisherman course, higher level training could be introduced at a later stage if there is sufficient demand.

The curricula of the various courses proposed appear to put too much emphasis on academic subjects. The Fisherman and Rigman Course quite rightly provides for half the training period spent at sea. Shore training, however, places too much emphasis on classroom work (see Proposed Classroom Subjects) (4.(g)). There is no mention for example, that workshops or net lofts will be available where trainees can be taught the basics of knot tying, rope and wire splicing, net making, cutting or mending, winch operation, etc. The Rigman/Motorist Course which is basically on introduction into marine engineering, has no provision for first learning the fundamentals which can then be applied during sea training. Practical work must predominate any fishermen's training programme, particularly at the beginning stages. After the basics have been learned and applied through experience at sea, there is then a need for more sophisticated training in Navigation, Rules of the Road, Safety at Sea, Weather Forecasting, Fishery Regulations, etc.

As shown in section 4 (c), the large training programme as proposed requires a sizable staff. A total of 26 shore staff and 6 seagoing staff (excluding the 6 Japanese technicians) are planned. The project site, however, consists of three classrooms which is far from adequate for such a large staff. Moreover, there is little area available for expanding facilities at this site, nor is there provision in the budget for any new construction. The proposed project site is located in the compound of the Harbour Department. The building which is available to the project is old and needs considerable renovation. Though the space available could be used for a smaller project, it is suggested that an alternative site be considered. The Harbour Department compound contains a good sized pier, but it appears to be fully occupied with light ships, pilot boats, patrol craft and tugs undergoing repairs. It, therefore, is unlikely that there would be space to moor the two project training vessels.

The most important and expensive items of equipment required for fishermen's training are, of course, vessels and fishing gear. These have already been provided by Japan at a cost of nearly US\$ 1 million. There is, however, need for other training equipment, primarily for workshop training. These should include hand and power tools, vises, cutting and welding torch, a used but operable engine, pumps, motors, a used trawl winch (which could be salvaged from one of the derelicts in the river), blocks and tackle, etc.

It is unfortunate that the training vessels and expertise provided to support the proposed training project have remained idle for the past year. Lying idle, much of the equipment on these vessels can be expected to deteriorate and result in costly repairs or replacement. The services of the foreign experts are not being used and they will be available for only one more year. Since there is apparently no clear indication as to when or if the Dutch Government will provide funds to establish the proposed training programme, it is recommended that the Surinam Government provide funds to start a small training programme for fishermen and engine operators. A very practical type training programme is suggested where basic training would be followed by an apprenticeship aboard commercial trawlers.

The first group to be enrolled would consist of 14 trainees, which is the number that can be accommodated on the training vessels. After spending the first month ashore learning fundamentals of the vessels, deck machinery and gear, they would spend a month at sea on 5 to 7 day trips. At the end of the first month when the first group of trainees go to sea, a second group could be enrolled to start shore training. These two groups could alternate between sea and shore training, and after six months when the first group completes the course, a third group could be enrolled. Before each group completes a course, arrangements should be made to place trainees aboard commercial shrimp trawlers as apprentice deckhands and engine operators. They should receive perhaps half the share generally paid to experienced crew. During this period when trainees are assigned to commercial vessels, project personnel can determine the need for introducing higher level courses. An outline of the training programme suggested is attached as Annex 1.

The training programme recommended would require only a small staff and modest shore facilities. Pending a possible large-scale training programme in the future, a temporary solution would be to use available space in the Fisheries Division compound for workshops and offices. This site is preferred over the Harbour Department compound as it appears to be the only place where the two training vessels can be moored. With regard to staffing, there are a number of well qualified fishing experts in Surinam who can serve as instructors for the training programme. The counterparts to the Japanese technicians all have considerable experience on commercial fishing boats. One counterpart skipper has over 20 years experience operating shrimp trawlers in a number of countries. Other counterparts have many years service with the Fisheries Division and have received training abroad in Barbados, Korea or Japan. There is, therefore, no immediate problem to staff the training project. Apart from the foreign and local staff now assigned to the training vessels, the project suggested would require a project director, responsible for the implementation of the project to the Director of Agriculture, Animal Husbandry and Fisheries; one fishing gear instructor; one marine engineer instructor; one administrative officer and a secretary.

To provide realistic training at sea, the training vessels should be operated on a quasi-commercial basis. In other words, fishing activities should be carried out as near as possible to commercial type operations. This would not only provide very practical type training, but could also be the source of income to the project to offset operating costs. In addition, detailed records of fishing operations would provide important information to the management of the new processing plant regarding catch rates, catch composition, fishing areas, season fluctuations, trawl design and efficiency, etc.

In addition to the monthly stipend of SF1.150 paid to trainees, it is recommended that they also receive a share of the fish sales. Perhaps 20 percent of the funds generated from the sale of the catch could be set aside and equally distributed among the trainees on a monthly basis.

2. Introduction

The relatively large number of shrimp trawlers based in Surinam are operated almost entirely by foreign skippers, engineers and deckhands. There are in fact, almost as many foreign fishermen as local traditional fishermen in the country. The Government, therefore, is keenly interested in establishing fishery training facilities as a means of training nationals for possible employment in the shrimp and fish catching industry.

In December 1974, a proposal for a Fishery Training Centre was prepared and submitted to the Japanese Government for possible funding under their bilateral aid programme. Though not funded in its entirety, the Japanese Government provided in June 1977, two modern training vessels, a supply of fishing and training equipment and the services for a two-year period of six Japanese fishery technicians.

As a follow-up, another training proposal was prepared in November 1977 and is currently being considered for financing by the Government of The Netherlands. The FAO Inter-Regional Project for the Development of Fisheries in the Western Central Atlantic (WECAF) was requested by Surinam to provide the services of a training consultant to review this proposal, with particular reference to the planned training programme, organization, courses and facilities. This report is, therefore, based on the observations of a consultant who visited Surinam from 3 to 19 May 1978.

3. Background Information

There are two distinct levels of fishing activities which comprise the fishing industry in Surinam. First, there is the modern largely owned shrimp fishing industry which exports over 3 000 t of shrimp annually. Until the recent trend towards extended territorial jurisdiction the shrimp fleet, presently comprised of about 200 vessels, operated not only off the coast of Surinam, but also off Brazil, French Guiana and Guyana. In contrast to this modern shrimp fishing industry, there is the local traditional fishery with some 1 100 fishermen who supply the domestic market. This fishing population consists primarily of Creoles, Hindustanis or Javanese. The present traditional fleet consists of about 500 small boats, most of which are powered by outboard engines. Fishing is done in rivers, estuaries, open natural swamps and inshore areas of the coast with such traditional gear as gillnets, beach seines, traps, set nets, and hook and line. Production from this traditional fishery in 1976 is reported at approximately 2 400 t^{1/}

The export-oriented shrimp industry in Surinam has developed over the past 20 years. Foreign owned companies have entered into joint venture agreements to harvest, process and export shrimp. These include the Surinam American Industries Ltd. (SAIL) of which 5 percent is owned by the Surinam Government and 95 percent by a U.S. corporation, and the Surinam Japanese Fisheries Co. (SUJAFI) with 85 percent owned by a Japanese firm and 15 percent by a local firm. Of the some 200 shrimp boats presently based in Paramaribo, 20 are owned jointly by the Government of Surinam (51 percent) and SAIL (49 percent). Other vessels are owned by Korean, Japanese or American interests contracted to deliver to SAIL or SUJAFI. The approximately 800 crewmembers who operate these vessels including captains, engineers and deckhands are mostly foreigners from Korea

1/ For further and more detailed information on traditional fisheries, see "An Inventory of the Surinam Fishing Industry (SF/CAR/REG/189 M 15) by Lars Vidæus, published by the UNDP/FAO Caribbean Fishery Development Project.

and Japan, and to a lesser extent from the U.S.A., Trinidad and Tobago, Barbados, St. Vincent, and other countries in the area. It is reported that perhaps not more than 3 percent of the shrimp fleet crew are Surinamese fishermen. Reasons for this low participation by local fishermen are not clear, but perhaps can be attributed to lack of training or experience in this type of fishing, and also local fishermen may not be inclined to accept the extended voyages required for an efficient and profitable shrimp boat operation. These boats operate with a small but highly skilled crew on trips ranging from 50 to 60 days. In some cases these boats are operated by a crew of three consisting of a captain who also doubles as engineer, and two deckhands, the most experienced of whom is designated as "Rigman" or "Deck boss". In other cases, notably those operated by Korean or Japanese crew, there is a captain, engineer and two or three deckhands.

The motivating factor which attracts these foreign fishermen to Surinam on two or three-year contracts is the potential high earnings that can be made in shrimp fishing. Until recently, the Surinam shrimp fleet operated freely on the extensive shrimp grounds off neighbouring countries and catches remained consistently high. Currently, however, these boats are restricted to fishing only off the coast of Surinam as the other countries have declared territorial jurisdiction to 200 miles offshore. This has resulted in a very sharp decline in catches. It was reported, for example, that shrimp boats previously averaging 50 000 to 60 000 lbs on a 55-day trip are now delivering only 10 000 lbs over the same period. The consequent reduction of earnings by vessel crews is already creating problems to the firms operating these boats, and it remains to be seen whether future potential earnings will be sufficient to continue attracting foreign fishermen. An agreement recently reached between SAIL and the Brazilian Government will permit a number of Surinam based boats to operate off Brazil. Initially 12 boats will be permitted to fish in Brazilian waters, followed by additional groups of 18 boats at various intervals up to a maximum of some 100 boats. The boats will be required to deliver one third of their catch to processing plants in Brazil, with the remainder delivered to the SAIL plant in Paramaribo. This agreement will partially alleviate the present depressed state of the shrimp fleet, but may also create other problems with respect to those crews working on boats which are restricted to trawl only off Surinam.

The Government is keenly interested in establishing a fishermen's training programme to increase participation by local fishermen in the shrimp industry. A proposal to establish a training centre was prepared in December 1974 and submitted to the Government of Japan for possible funding. The programme was designed to train trawler skippers over a 44-week period, with an expected output of 210 graduates over a five-year period. To establish the basic facilities and services, foreign aid to the amount of US\$ 2.37 million was requested to provide two training vessels, training materials and equipment, construction of classrooms, workshops, laboratory, offices, etc., technical expertise, fellowships and vessel operating costs. The Surinam Government contribution to the proposed project was estimated at SF1.5.43 million to cover costs for the training centre site, salaries of local instructors and supporting staff, utilities, maintenance and student allowances. Though the request was not funded in its entirety, Japan did provide two 73 ft fully equipped training vessels, one stern trawler and one double-rigged for shrimp trawling; and the services of six

Japanese technicians, two skippers, two engineers and two fishing gear specialists. The vessels and technicians arrived in Surinam in June 1977. Following up this first plan to start a fishermen's training programme, a second training proposal was formulated in November 1977 and submitted to the Government of The Netherlands for possible funding. This proposal is summarized in Section 4.

Though the traditional fishing sector produces the bulk of domestically consumed fish, over 700 t of fishery products are imported annually. Because of these relatively large imports and in view of potentially rich resources of fish available on the 40 000 km² continental shelf off Surinam, the Government is proceeding with a plan to harvest a sizable quantity of fish for processing into edible products and for reduction to fishmeal. It was reported that US\$ 2.5 million has been allocated by the Dutch Government which, together with funds provided by Surinam, will be used to establish a fish processing plant capable of processing 20 t of edible fish and 36 t of scrapfish for fishmeal per day. Fourteen 60 ft trawlers are expected to provide raw material to the plant.

4. Proposed Training Programme

(a) Organization of Training Programme

The proposed training programme is designed to provide various levels of training for trawling vessel personnel, as well as qualified netmakers and teachers. The programme, over a two-year period, includes the following courses:

(1) Fisherman - a six-month course leading to a designation as first class fisherman; available to candidates who have completed primary school, are at least 17 years of age with no prior fishing experience.

(2) Net Repairman - a six-month course for inexperienced candidates who have completed primary school and are at least 17 years of age.

(3) Rigman (also known as leading fisherman) - a six-month course leading to a designation as first class rigman for those who have completed the fisherman course.

(4) Rigman/Motorist - a 12-month course for those who have completed the course for Rigman.

(5) Chief Engineer - an eight-month course for graduates of the Navigation School who are at least 20 years of age.

(6) Netmaker - an 18-month course for experienced fishermen or those who have completed the Net Repairman course.

(7) Masterfisherman - a 16-month course for those who have qualified as Rigman/Motorist and Chief Engineer, and who are at least 21 years of age.

(8) Teacher - unspecified as to period of training, but will receive on-the-job training from the Japanese technicians. The course is intended for those who have appropriate education and experience.

The training programme is to be implemented in five stages and scheduled in such a way that all courses will be conducted simultaneously within the first 14 months of operation. Initially, four courses would be started. These include courses for Fishermen, Net Repairmen, Chief Engineers and Netmakers (the latter for experienced fishermen only). After six months new groups would be enrolled into courses for Fishermen and Net Repairmen, and the course for Rigmen would start. After eight months, new groups would be enrolled into courses for Chief Engineers and Netmakers. The training of teachers is scheduled to start about seven months after the training centre opens. A Masterfisherman course will open after 12 months, and the first course for Rigman/Motorist will be started after 14 months. At this stage all courses will be given concurrently on a continuing basis.

As indicated in the proposed budget of the training programme, the following number of students are to be enrolled during the first two-year period and will receive a monthly stipend of SF1. 150:

Fisherman - 30 trainees
Rigman - 30 trainees
Net Repairman - 12 trainees
Netmaker - 12 trainees
Chief Engineer - 20 trainees
Masterfisherman - 20 trainees
Rigman/Motorist - 30 trainees
Teachers - no indication on the number given

It was noted, however, that although the training programme scheduled courses on a continuing basis, the proposed budget makes provision for the above courses to be held for one time only during the first two-year period.

It is planned to recruit trainees through radio, newspaper and television advertisements. Trainees are expected to come primarily from traditional fishing areas, but for the basic courses, any young man 17 years of age with a primary school education can apply. A simple entrance examination will be given to determine their level of education and experience, and to ascertain their motivation for wanting to enrol.

(b) Course Contents

The course for Fishermen includes approximately three months' sea training and three months' training ashore. While at sea, they will receive on-the-job training in the fundamentals of seamanship, fishing gear, winch operation, net repairing, fishing operation, maintenance of vessel and gear, etc. They will alternate between the two vessels to learn both shrimp and fish trawling. Ashore, they will attend classes 24 h a week over a three and one half day period. The other day and one half will be spent working on the vessels. Classroom subjects ashore include 187 h of instruction on First Aid, English and Dutch languages, Swimming, Gymnastics and General Education.

The six-month course for Net Repairmen will be conducted ashore only. The course provides primarily for learning how to sew, repair, cut and hang nets. It also includes 78 classroom hours of General Education and 39 h of Swimming Instructions.

The six-month Rigman course provides for three months' sea training and three months' training ashore. This course is actually a higher level fishermen's course which places emphasis on learning to take charge of all deck operations including winch operation and care, gear handling, seamanship, knowledge of the sea, vessel maintenance, fish handling and knowledge of engines. There are included 78 h of classroom lectures in the English and Dutch languages, and General Education, and 52 h of Swimming and Gymnastics.

The eight-month Chief Engineer course includes six months of shore training of which three days a week will be spent working at a commercial shrimp or fish plant learning refrigeration. Two days a week during this period will be given to classroom lectures where a total of 325 lecture h are scheduled for Modern Mathematics, Physics, First Aid, Swimming and General Education. While at sea, trainees will be supervised by the Chief Engineer of the vessel in all aspects of work which is within his responsibility.

The 18-month course for Netmakers is a continuation of the Net Repairman course, but is also open to experienced fishermen who already are familiar with basic net mending, cutting, sewing, etc. The course is designed to provide highly trained gear technologists specialized in designing and constructing shrimp and fish trawls. Twenty h a week are devoted to cutting, sewing, mending and hanging nets; seven and one half h to net design; two h to costing, accounting and other related business subjects; and a total of 207 h to General Education.

The Rigman/Motorist course covers a 12-month period of which training at sea and ashore are about equally divided. While at sea, training focuses on safe boat operation, use of auxiliaries, refrigeration, main engine operation and maintenance, ship repair, electrical apparatus, seamanship and use of electronic equipment. During three months of shore training, students will spend three days a week working specifically on refrigeration machinery at a commercial fish plant. Two days a week totalling 278 lecture h will be spent in classroom lectures on Maritime Law, Physics, Arithmetic, Modern Mathematics, Net Designing, English and Dutch languages, and General Education.

The 16-month course for Masterfishermen is divided equally between sea and shore training. Subjects at sea and to some extent ashore include fish catching, use of fishing gear, net repair and construction, repair of fishing gear and equipment, fish handling, navigation and seamanship. A total of 501 lecture h include Biology, Geography, English, Organization of Cooperatives, Physics, Modern Mathematics and General Education. There is no indication in the proposal that a graduate from this course is eligible to take a licence examination as a fishing boat captain.

(c) Training Centre Personnel

The planned staff of the training programme include the following:

(1) Administrative and Support Personnel

Director
Administrative Officer
Secretary
Typist
Telephone Operator
Two assistants
Three labourers
Messenger
Driver
Four Watchmen
Two Cleaners

(2) Training Instructors (ashore)

Shore Captain
Shore Engineer
Two Netmakers
Four Assistant Instructors

(3) Training Instructors (at sea)

Two Captains
Two Engineers
Two Netmakers
Plus six Japanese technicians including two Captains, two Engineers
and two Masterfishermen

(4) Various part-time instructors will be employed to teach such subjects as Biology, Mathematics, Physics, Languages, Gymnastics, First Aid, Swimming, Geography and General Education

(d) Training Equipment

The Japanese Government has provided two fully equipped training vessels and fishing equipment. One 73 ft vessel is double rigged for shrimp trawling and the other for stern trawling. They have accommodation for a total of 14 trainees, 6 on one and 8 on the other. They are well equipped with radar, direction finder, gyro-compass, fish-finder and radio. Other equipment includes a wide variety of fishing gear, navigational items, laboratory apparatus and tools. The proposed project budget provides for no other training equipment, but does have provision for desks and office requirements.

(e) Shore Training Facilities

The proposed training programme makes no mention of the physical shore facilities required for the training centre, except for a budget figure of SF1. 40 000 to renovate classrooms that would be made available by the Harbour Department.

These are three rooms measuring approximately 6.5 x 7 m each in an old building in the Harbour Department compound. A fourth classroom in the building is used by the Navigation School. No other space is apparently available for offices, workshops or storerooms.

(f) Proposed Project Budget (two-year period)

(1) Vessel Operating Costs	<u>First year</u>	<u>Second year</u>
Fuel, lubricants, etc.	SF1. 70 000	SF1. 76 600
Fishing material	" 32 400	" 34 300
Maintenance of fishing gear	" 32 500	" 34 500
Maintenance of engines	" 64 000	" 72 900
Maintenance of vessels	" 80 000	" 87 700
Insurance (vessels)	" 34 400	" 34 400
Contingencies (5 percent)	<u>" 16 200</u>	<u>" 17 400</u>
Sub-total	SF1. 329 500	SF1. 357 800
(2) Personnel		
Director	SF1. 63 100	SF1. 64 900
Sea Instructors	" 65 100	" 66 900
Shore Instructors	" 66 500	" 68 500
Part-time Teachers	" 8 000	" 8 000
Trainee allowance	" 96 750	" 105 000
Contingencies	" 46 500	" 48 000
Insurance (staff/trainees)	" 35 000	" 35 000
Food at sea	" 24 000	" 24 000
Unexpected costs	<u>" 39 900</u>	<u>" 41 400</u>
Sub-total	SF1. 444 850	SF1. 461 700
(3) Maintenance of shore facilities	SF1. 12 500	SF1. 12 500
(4) Miscellaneous	<u>SF1. 20 000</u>	<u>SF1. 20 000</u>
Total operating costs	SF1. 806 850	SF1. 852 000
Cost of shore facilities	<u>" 110 000</u>	<u>-</u>
Total cost	SF1. 916 850	SF1. 852 000
Less expected fish sales	<u>" 91 000</u>	<u>" 91 000</u>
Total financial requirement	<u>SF1. 825 850</u>	<u>SF1. 761 000</u>

(g) Proposed Classroom Subjects

Fisherman's Course

First Aid	13 h
English	52 h
Dutch	13 h
Swimming	39 h
Gymnastics	13 h
General Education	67 h

Rigman Course

First Aid	13 h
English	52 h
Dutch	13 h
Gymnastics	13 h
General Education	39 h

Netmaker Course

Management	138 h
General Education	207 h

Masterfisherman Course

Biology	90 h
Geography	90 h
English	90 h
Organization of cooperatives	60 h
Physics	25.5 h
Modern Mathematics	56 h
General Education	90 h

Net Repairman Course

General Education	78 h
Swimming	39 h

Chief Engineer Course

Modern Mathematics	104 h
Science/Physics	52 h
First Aid	52 h
Swimming	39 h
General Education	78 h

Rigman/Motorist Course

Maritime Law	28 h
Science/Physics	27 h
Accounting	40 h
Modern Mathematics	40 h
Designing	41 h
Dutch	14 h
English	28 h
General Education	60 h

Outline of Proposed Training Project

1. Introduction

Pending the outcome of the Government's request for bilateral aid to establish a permanent training centre, and to make immediate use of training vessels, equipment and expertise now available to the country, it is suggested that the Government of Surinam initiate a modified training programme along the lines outlined below. This programme would enable the Government to evaluate the response of prospective trainees to this type of training and their performance during the training period and while aboard commercial vessels as a means to determine if an expanded training programme is warranted.

2. Organization of Training Programme

(a) Objectives

To provide a programme of training which would lead to greater participation of local fishermen in the shrimp and fish catching industry.

(b) Duration

Initially the project is designed for a period of 13 months which would provide a six-month course for four groups of trainees as follows:

Months Groups	Months													No. of trainees	
	1	2	3	4	5	6	7	8	9	10	11	12	13		
First Group	--	'''	--	'''	--	'''									14
Second Group			--	'''	--	'''	--	'''							14
Third Group								--	'''	--	''''	--	''''		14
Fourth Group									--	'''	--	''''	--	''''	14
														Total	56

----- Shore training
'''''''' Sea training

(c) Selection and Number of Trainees

Preferably trainees should be selected from the traditional fishing sector with or without previous fishing experience. However, the courses should be open to anyone, 17 years of age or older, wishing to find employment in the fishing fleet. Limited to the space available on the two training vessels, each group will consist of a total of 14 trainees, 10 of which will be trained as deckhands and 4 trained as assistant engine operators.

(d) Accommodation, Board and Allowances

No accommodation or catering shall be provided except during sea training. Throughout the period of training, a monthly stipend of SF1. 150 will be paid to each trainee. In addition, trainees shall receive an added incentive in the form of a bonus based on a percentage of the fish sold from each trip. It is

suggested that 20 percent of the funds generated from the sale of the catch be set aside and equally distributed among the trainees and counterpart crew on a monthly basis.

(e) Shore Facilities

Until a permanent site is selected and funds allocated to construct shore facilities, it is suggested that space be made available in the Fisheries Division compound, where the training vessels are moored and all fishing gear and training equipment are stored. Space required would include two small workshops and two offices. The fishing gear workshop need only be equipped with the necessary tools for rope and wire splicing, netmaking, etc. It is suggested that a trawl winch be salvaged from one of the derelict shrimp boats and mounted in the compound. The winch could be made operable with an electric motor so that trainees could be instructed in the fundamentals of winch operation. The engine workshop should be equipped with a used but operable diesel engine, tools, pumps, vises, welding and cutting torch and assorted used parts and accessories.

(f) Staff

In addition to the Japanese technicians and their counterparts already available, it will be necessary to include the following staff:

Training Director
Fishing Gear Instructor
Engine Instructor
Administrative Assistant
Secretary

3. Course Content

(a) Initially, courses will be limited to training deckhands and engine operator assistants. As all trainees are not expected to have any previous experience on fishing vessels, training will start with the very basics of fishing technology and engine operation, with particular reference to double-rig shrimp trawling and stern trawling.

(b) Deckhand Course

(1) Shore training will consist primarily of basic fishing gear technology and seamanship. These will include instruction and practice in knot tying, splicing (wire and rope), trawl nomenclature, net cutting and mending, rigging, trawl construction, safety precautions, winch operation, warp markings, etc.

(2) Sea training will be supervised by the foreign experts and their counterparts aboard the training vessels. Trainees should alternate between the two vessels in order to learn the methods and gear of both shrimp trawling and stern trawling. They will receive in-service type training by participating in all deck activities during fishing operations including setting and hauling gear, repairs, adjustments, vessel maintenance, steering, fishing handling, etc.

(c) Engine Operator Assistant Course

(1) Shore training will largely be confined to instruction in the fundamentals of marine diesel engines and other machinery normally used on the local shrimp trawlers. In the workshop provided, trainees will be instructed and given the opportunity to practice basic preventive maintenance procedures, trouble shooting, minor repairing, oil and filter changes, care and maintenance of batteries and electric motors, starting and stopping engine, use of cutting and welding torch, pump repairs, etc.

(2) During sea training, the trainees will be assigned to work with the vessel engineers and assist them in all activities connected with the operation and maintenance of engines and machinery. After some weeks of exposure to this work they will, under supervision, be given the opportunity of performing such tasks as starting and stopping engines, changing oil and filters, making adjustments and minor repairs, etc.

Following completion of the six-month course, trainees will be placed aboard commercial trawlers as apprentices for a minimum period of six months. Prior arrangements should be made with vessel operators to place trainees at an agreed percentage of the share normally paid to experienced crewmembers. Because of language barriers if assigned to vessels operated by Korean or Japanese nationals, it would be advisable to place trainees aboard vessels which are manned by local fishermen or by nationals of neighbouring countries.

4. Estimated Project Costs (annual)

(a) Personnel

Training Director	SF1.	18 200
Shore Instructor (deck)	"	10 100
Shore Instructor (engine)	"	9 600
Administrative Assistant	"	11 000
Secretary	"	6 600
Seagoing personnel		<u>on staff</u>

Component total SF1. 55 500

(b) Trainee Allowance

Stipend at SF1. 150/month x 56 trainees x 6 months	SF1.	50 400
Food allowance at SF1. 5.00/day/trainee at sea	"	<u>25 200</u>

Component total SF1. 75 600

(c) Equipment and Material

Workshop equipment and tools	SF1.	30 000
Office furniture, equipment, materials	"	20 000
Fishing materials	"	<u>25 000</u>

Component total SF1. 75 000

(d) Vessels Operation

Fuel and oil (210 days at sea) ^{1/}	SF1.	88 200
Vessel maintenance	"	80 000
Engine maintenance	"	64 000
Vessel insurance	"	34 400
Contingencies (5%)	"	<u>13 300</u>

Component total " 279 900

Grand total " 486 000

^{1/} 210 days at sea x 12 hours/day x 70 l/hour x SF1. 0.25/l x 2 vessels

WECAF Reports Already Published

1. Fishery Training Needs in the Western Central Atlantic by R.C. Cole. 1976 (Restricted distribution).
2. Review of Status of Fishery Statistics and Fishery Research Capabilities in the WECAF Project Area by L. Villegas. November 1978.
3. Shark Fishing in the Western Central Atlantic by S. Springer. March 1979.
4. Report of the First Session of the Executive Committee of the WECAF Project. 18-20 May 1978.
5. Aspectos Técnicos de la Pesca Artesanal en la República Dominicana y Recomendaciones para su Mejoramiento y Desarrollo por M. Giudicelli. Junio 1979.
6. Report on Fish Handling, Processing and Quality Control in Jamaica by C.A.M. Lima dos Santos. July 1979.
7. Programme of Fisheries Development and Diversification in Jamaica by M. Giudicelli. July 1979.
8. La Pesca Artesanal Marítima en la Costa Caribeña de Colombia: su Situación, sus Posibilidades y sus Necesidades para el Desarrollo por M. Giudicelli. Agosto 1979.

