



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
 ORGANISATION DES NATIONS UNIES POUR L'ALIMENTATION ET L'AGRICULTURE
 ORGANIZACION DE LAS NACIONES UNIDAS PARA LA AGRICULTURA Y LA ALIMENTACION

file 24 (B)

15

B.4

منظمة الأغذية والزراعة للأمم المتحدة

TECHNICAL COOPERATION PROGRAMME

PROGRAMME DE COOPERATION TECHNIQUE

PROGRAMA DE COOPERACION TECNICA

الجمهورية اللبنانية
 مكتب وزير الدولة لشؤون التنمية الإدارية
 مركز مشاريع ودراسات القطاع العام

برنامج التعاون الفني

Country: LEBANON

Project title: Preparatory Assistance for the Rehabilitation and Modernization of Marine Fisheries and Development in Lebanon

Project number: TCP/LEB/2203 (24f)

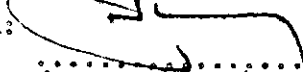
Starting date: 8.12.82


Completion date: 31.1.83

Government Ministry responsible for project execution: Ministry of Agriculture

FAO contribution: US\$5 500

Republic of Lebanon
 Office of the Minister of State for Administrative Reform
 Center for Public Sector Projects and Studies
 (C.P.S.P.S.)

Signed: 
 H. E. Pissu Ee Khoury
 Minister of Agriculture
 (on behalf of the Government)

Signed: 
 Edouard Sacuma
 Director-General
 (on behalf of FAO)

Date of signature: 31.12.82.

Date of signature: 31.12.82.

I. BACKGROUND AND JUSTIFICATION

Following a request from the Government of Lebanon, an FAO fisheries consultant was assigned during September/October 1982 to identify the replacement needs for fishing boats, equipment and gear lost during the hostilities, and also to assess the requirements for the modernization of the marine fisheries operations in southern areas of Lebanon. A draft project agreement for the Rehabilitation and Modernization of Marine Fisheries in southern Lebanon was prepared by the consultant and this document now requires to be reformulated to provide additional inputs and given a wider geographical coverage to include the northern region, before consideration for financing by the EEC. The purpose of this agreement is in compliance with the General Assembly Resolution A/C. 2/37 L.67 requesting the Secretary General of the UNO "to continue his intensive efforts to mobilize all possible assistance within the United Nations system to help the Government of Lebanon in its reconstruction and development efforts".

II. OBJECTIVE OF THE ASSISTANCE

The objective of the project is to prepare and finalize a project agreement for "Rehabilitation and Modernization of Marine Fisheries in Lebanon", for financing by the European Economic Community.

III. WORK PLAN

An FAO officer will travel to Cyprus and Lebanon to:

- (i) obtain a further input to the original project agreement from the former FAO consultant in Cyprus
- (ii) obtain endorsement from the Lebanese Government authorities on the contents of the project agreement.

An FAO officer will travel to Brussels to present, discuss and finalize with EEC officials the project agreement for EEC financing.

IV. INPUTS TO BE PROVIDED BY FAO

The project will cover the cost of travel of an FAO HQ Officer to the Near East and to Brussels.

V. REPORTING

In addition to the project agreement which will be submitted to the EEC for financing, the Consultant will prepare a brief report on his mission which will be submitted by FAO to the Government.

PROJECT BUDGET COVERING FAO CONTRIBUTION
(in US\$)

Country: - LEBANON

Project title: Preparatory Assistance for the Rehabilitation
and Modernization of Marine Fisheries and
Development in Lebanon

Project number: TCP/LEB/2203 (MF)

20. Duty travel	5 000
40. General operating expenses	500
Total	<u>5 500</u> =====

TECHNICAL COOPERATION PROGRAMME
PROJECT/BUDGET REVISION NO. 1

COUNTRY: LEBANON	Project Symbol: TCP/LEB/2203 (M)			
Project Objective: The objective of the project is to prepare and finalize a project agreement for Rehabilitation and Modernization of Marine Fisheries in Lebanon for financing by the European Economic Community	Project Title: Preparatory Assistance for the Rehabilitation and Modernization of the Marine Fisheries and Development in the Lebanon			
REVISION JUSTIFICATION:* Because of protracted negotiations with the Government and EEC, combined with prevailing political situation, it has not yet been possible to finalize the project agreement in Brussels question and the travel foreseen in this TCP project has not all been undertaken.	PROJECT SCHEDULE:			
	Planned	Revision No. 1	Revision No. 2	Revision No. 3
	Total months: 1.5	15		
From : Dec.82	January 83			
To : Jan.83	March 84			
Date Approved by Director-General:				
PROJECT BUDGET (in US\$)	Initial Allocation	Present*** Allocation (Rev.No)	Revised ** Allocation (Rev.No)	
10 Personnel	5.000	U N C H A N G E D		
20 Duty Travel				
30 Sub-contract Nat. Instn.				
40 Gen.Op.Exp.	500			
50 Supplies				
60 Equipment				
70 Premises				
80 Fellowships Group Trng.				
90 Support Costs				
TOTAL	54500			

INITIATING (OPERATING) UNIT: F10 R. Liesler N. Kojima CFO/POO/TO Date: 5/11/83	ENDORING DIVISION: G. de Lambilly C. Berlinger Coordinator, TCP Date: 7/10/83	DDF R. Lignon Director, DDF Date: 4/11/83	AUTHORIZING DEPT.: DD Assistant Director-General Date: 2/11/83
--	---	--	--

*Supporting documentation attached. (Additional relevant information may be added overleaf.)
 **To be completed only in cases of budgetary revisions (increases/decreases), along with the Financial statement set out overleaf.
 ***As per last budget revision if applicable.
 P6023

*concerning
for CEE
high fishermen.*

Artisanal Fisheries Rehabilitation Project

In brief, the revised project consists of the construction of three Community Fishing Centres - in Beirut, Saïda and Tyr - for the distribution of fishing gear and equipment; a 2 year technical assistance term consisting of a project manager, marketing/co-operative expert and master fisherman; a revolving credit fund; provision of nets, ice-making and training equipment; and a sum of money set aside to finance an evaluation of Phase I and preparation of Phase II.

The present breakdown of the project is as follows :

	<u>ECU</u>
<u>Equipment</u>	
Nets and fishing gear	650.000
Vehicles and insulated trucks for CFCs	85.000
Ice-making plants	150.000
Project management vehicles	39.000
Engine replacement + spare parts	100.000
<u>Training</u>	
Local training materials	25.000
<u>Revolving Credit Fund</u>	65.000
<u>Evaluation of Phase I + Consultancies for identification of Phase II</u>	75.000
<u>Production of equipment tender documents</u>	20.000
<u>Operational costs</u>	
Repairs and running costs of vehicles	50.000
<u>Technical Assistance</u>	600.000
<u>Contingencies</u>	41.000
	<u>1.900.000</u>

The 1.900.000 ECU is not final since there remain a few outstanding issues to be resolved :

- a) the size of the local contribution
- b) the possibility of having to introduce either new cold stores or additional technical assistance to repair existing cold stores
- c) the manning levels, construction and operating costs of the Community Fishing Centres

Artisanal Fisheries Rehabilitation Project

In brief, the revised project consists of the construction of three Community Fishing Centres - in Beirut, Saïda and Tyr - for the distribution of fishing gear and equipment; a 2 year technical assistance term consisting of a project manager, marketing/co-operative expert and master fisherman; a revolving credit fund; provision of nets, ice-making and training equipment; and a sum of money set aside to finance an evaluation of Phase I and preparation of Phase II.

The present breakdown of the project is as follows :

	<u>ECU</u>
<u>Equipment</u>	
Nets and fishing gear	650.000
Vehicles and insulated trucks for CFCs	85.000
Ice-making plants	150.000
Project management vehicles	39.000
Engine replacement + spare parts	100.000
<u>Training</u>	
Local training materials	25.000
<u>Revolving Credit Fund</u>	65.000
<u>Evaluation of Phase I + Consultancies for identification of Phase II</u>	75.000
<u>Production of equipment tender documents</u>	20.000
<u>Operational costs</u>	
Repairs and running costs of vehicles	50.000
<u>Technical Assistance</u>	600.000
<u>Contingencies</u>	41.000
	1.900.000

The 1.900.000 ECU is not final since there remain a few outstanding issues to be resolved :

- a) the size of the local contribution
- b) the possibility of having to introduce either new cold stores or additional technical assistance to repair existing cold stores
- c) the manning levels, construction and operating costs of the Community Fishing Centres

d) the desirability (or not) of the EEC covering some of the operational costs in Phase I (but not Phase II), and the size of the running costs.

The final size of the Community contribution however should not exceed 2.2 million ECU.

Possible future timetable

- | | | |
|------------------------------|---|--|
| July -
August | } | - Formulation by EEC of draft Financing Proposal |
| | | - Finalisation of Financing Proposal (acceptance by EEC/FAO of technical content) |
| | | - Agreement between FAO and EEC on content and format of future TA contract between the Lebanese Government and the FAO for execution of the project |
| | | - Translation of Financing Proposal |
| September -
October | } | - Possible joint FAO/EEC technical mission to Lebanon to ensure finalised document corresponds to political wishes of Lebanese authorities. |
| October -
November | | - Approval of Financing proposal by the EEC |
| end 1983 -
beginning 1984 | } | - Finalisation of TA contract with FAO between FAO and Lebanon (endorsed in addition by EEC) |
| | | - Implementation of Phase I |

Proposed administrative arrangements

It is proposed that the FAO should, for the purpose of this project, be treated as a normal consultant.

The FAO would be nominated by the EEC to undertake the Technical Assistance element of the project. All equipment procurement would have to correspond to EEC procedures.

It is also proposed that upon approval of the project, the FAO should be requested by the EEC to negotiate a TA contract between the FAO and the Lebanon for the execution of the project. The contract should conform as much as possible to a standard EEC contract format. No specific contract would be signed between the FAO and EEC, the EEC simply endorsing the FAO/Lebanon contract to commit funds. The total contract sum must come within the sum set aside in the Financing Agreement for TA - and naturally include any fees or other service charges.

I. BACKGROUND AND JUSTIFICATION

Following a request from the Government of Lebanon, an FAO fisheries consultant was assigned during September/October 1982 to identify the replacement needs for fishing boats, equipment and gear lost during theilities, and also to assess the requirements for the modernization of marine fisheries operations in southern areas of Lebanon. A draft project agreement for the Rehabilitation and Modernization of Marine Fisheries in southern Lebanon was prepared by the consultant and this document now requires to be reformulated to provide additional inputs and given a wider geographical coverage to include the northern region, before consideration for financing by the EEC. The purpose of this agreement is in compliance with the General Assembly Resolution A/C. 2/37 L.67 requesting the Secretary General of the UNO "to continue his intensive efforts to mobilize all possible assistance within the United Nations system to help the Government of Lebanon in its reconstruction and development efforts".

II. OBJECTIVE OF THE ASSISTANCE

The objective of the project is to prepare and finalize a project agreement for "Rehabilitation and Modernization of Marine Fisheries in Lebanon", for financing by the European Economic Community.

III. WORK PLAN

An FAO officer will travel to Cyprus and Lebanon to:

- (i) obtain a further input to the original project agreement from the former FAO consultant in Cyprus
- (ii) obtain endorsement from the Lebanese Government authorities on the contents of the project agreement.

An FAO officer will travel to Brussels to present, discuss and finalize with EEC officials the project agreement for EEC financing.

IV. INPUTS TO BE PROVIDED BY FAO

The project will cover the cost of travel of an FAO HQ Officer to the Near East and to Brussels.

V. REPORTING

In addition to the project agreement which will be submitted to the EEC for financing, the Consultant will prepare a brief report on his mission which will be submitted by FAO to the Government.

PROJECT BUDGET COVERING FAO CONTRIBUTION
(in US\$)

Country: LEBANON

Project title: Preparatory Assistance for the Rehabilitation
and Modernization of Marine Fisheries and
Development in Lebanon

Project number: TCP/LEB/2203 (Mf)

20. Duty travel	5 000
40. General operating expenses	500
Total	<u>5 500</u> =====



GENERAL PROVISIONS

1. The achievement of the objectives set by the project shall be the joint responsibility of the Government and FAO.
2. As part of its contribution to the project, the Government shall agree to make available the requisite number of qualified national personnel and the buildings, training facilities, equipment, transport and other local services necessary for the implementation of the project.
3. The Government shall assign authority for the project within the country to a Government agency, which shall constitute the focal point for cooperation with FAO in the execution of the project, and which shall exercise the Government's responsibilities in this regard.
4. Except for vehicles, project equipment, materials and supplies provided out of Technical Cooperation Programme funds shall normally become the property of the Government immediately upon their arrival in the country, unless otherwise specified in the agreement, however, vehicles remain the property of FAO, unless otherwise specified in the agreement. The Government shall ensure that such equipment, materials and supplies are at all times available for use of the project and that adequate provision is made for their safe custody, maintenance and insurance.
5. Subject to any security provisions in force, the Government shall furnish to FAO and to its personnel on the project, if any, such relevant reports, tapes, records and other data as may be required for the execution of the project.
6. The selection of FAO project personnel, of other persons performing services on behalf of FAO in connection with the project, and of trainees, shall be undertaken by FAO, after consultation with the Government. In the interest of rapid project implementation, the Government shall undertake to expedite to the maximum degree possible its procedures for the clearance of FAO personnel and other persons performing services on behalf of FAO and to dispense with, wherever possible, clearance for short-term FAO personnel.
7. The Government shall apply to FAO, its property, funds and assets, and to its staff, the provisions of the Convention on the Privileges and Immunities of the Specialized Agencies. Except as otherwise agreed by the Government and FAO in the Project Agreement,

the Government shall grant the same privileges and immunities contained in the Convention to all other persons performing services on behalf of FAO (except Government nationals employed locally) in connection with the execution of the project.

8. With a view to the rapid and efficient execution of the project, the Government shall grant to FAO, its staff, and to all other persons performing services on behalf of FAO, the necessary facilities including:

- (i) the prompt issuance, free of charge, of any visas or permits required;
- (ii) any permits necessary for the importation and, where appropriate, the subsequent exportation, of equipment, materials and supplies required for use in connection with the project and exemption from the payment of all customs duties or other levies or charges relating to such importation or exportation;
- (iii) exemption from the payment of any sales or other tax on local purchases of equipment, materials and supplies for use in connection with the project;
- (iv) payment of transport costs within the country, including handling, storage, insurance and all other related costs, with respect to equipment, materials or supplies for use in connection with the project;
- (v) the most favourable legal rate of exchange;
- (vi) assistance to FAO staff, to the extent possible, in obtaining suitable accommodation;
- (vii) any permits necessary for the importation of property belonging to and intended for the personal use of FAO staff or of other persons performing services on behalf of FAO, and for the subsequent exportation of such property;
- (viii) prompt customs clearance of the equipment, materials, supplies and property referred to in sub-paragraphs (ii) and (vii) above.

9. The Government shall deal with any claim which may be brought by third parties against FAO or its staff, or against any persons performing services on behalf of FAO, and shall hold them harmless in respect of any claim or liability arising in connection with the project, unless the Government and FAO should agree that the claim or liability arises from gross negligence or wilful misconduct on the part of the individuals mentioned above.

10. The persons performing services on behalf of FAO, referred to in paragraphs 6 to 9, shall include any organization, firm or other entity, which FAO may designate to take part in the execution of the project.

UNITED NATIONS DEVELOPMENT PROGRAMME

PROJECT OF THE GOVERNMENT
OF
LEBANON

PROJECT DOCUMENT

Title: Modernization and Development of Fisheries in South Lebanon

Number:

Primary function: direct support Duration: three years

Secondary functions: Training and transfer of technology

Sector
(Govt. Class) Agriculture, Forestry and Fisheries (05)

sub-sector: Fisheries (0530)

Government Implementing

Agency: Ministry of Agriculture, Marine Research Centre of NCSR
Ministry of Cooperatives and Housing

Executing Agency: Food and Agriculture Organization of the United Nations (FAO)

Estimated starting
Date:

Government Inputs: LL 1 691 550 UNDP inputs: US\$1,477,810

Signed: _____ Date: _____
on behalf of the Government

_____ Date: _____
on behalf of the Executing Agency

_____ Date: _____
on behalf of UNDP

PART I

A: LEGAL CONTENT

This project document shall be the instrument (therein referred to as the Plan of Operation) envisaged in Article I, paragraph 2, of the Agreement between the Government of the Republic of the Lebanon and the United Nations Development Programme concerning assistance under the Special Fund Sector of the United Nations Development Programme signed by the parties on 7 May 1960.

B: INSTITUTIONAL FRAMEWORK

Fisheries services in the Lebanon is the responsibility of the Forests and Natural Resources Department of the Ministry of Agriculture. District offices exist in the country where the employed personnel deals not only with fishery matters but with all aspects falling under the Department of Forest and Natural Resources. On the other hand, the post of the Director of Fisheries is rather administrative not having any other services (apart from those mentioned above) under his jurisdiction.

The Marine Research Centre (MRC) of the National Council for Scientific Research (NCSR) established in 1978, being autonomous with autonomous budget, already deals with fishery research and has a direct and concrete interest in extending its activities towards other fields such as experimental fishing research on fishing gear and stock assessment.

In view of the above and due to the complete lack of local fisheries extension services, as well as due to the lack of trained local staff or even due to lack of funds from the side of Ministry of Agriculture to appoint staff for the project, it is necessary to incorporate, and consolidate the structural resources available within the country, i.e. the Ministry of Agriculture, the Marine Research Centre of the NCSR and the Ministry of Cooperatives and Housing.

All activities described in "Project Activities" will be the responsibility of the Project Manager and the Co-manager and will be carried out by both international and national staff assigned to the project as follows:

The Ministry of agriculture will maintain general responsibility of the project with special contribution towards implementation and extension services, by providing also part of the local personnel needed and the housing of the project.

The MRC will be only involved in experimental or exploratory fishing, in matters related to modernization of fishing gear and statistical aspects also by providing part of the local staff needed as well as the relevant operation and maintenance expenses involved.

The Ministry of Cooperatives and Housing will contribute and assist in establishing and running of the two Community Fisheries Centres. .

Coordination of project activities will be accomplished by the technical committee composed of:

- Director of Forests and Natural Resources
- Director of Marine Research Centre
- Director of Cooperatives
- FAO Representative
- FAO Project Manager

The committee shall meet at least once every six months. Any member may request a meeting in the interim, but a meeting shall be considered invalid unless attended by each member or his designee. The Project Manager will serve as a Secretary to the Committee meetings.

BACKGROUND AND JUSTIFICATION

1. Lebanese Fisheries in General

Lebanon is an Eastern Mediterranean country, predominantly mountainous, having an area of 10 400 square miles and a population of around 3 000 000. The capital town in Beirut where almost half of the country's population is gathered.

Physical conditions in general are similar to those of other countries of the area.

The length of the coast line of Lebanon is 245 km, the land rising steeply from the coast in the north, and in the south from a very narrow coastal plain. Fresh water flow from the land is rather negligible as apart from the Litani river in the south the rest are torrents.

The continental shelf is narrow, especially in the south. Bottom grounds are mainly rough with extensive rocky patches good for stationary demersal gear.

The Lebanese fisheries are classified as artisanal and traditional, mainly based on bottom stationary gear (trammels and longlines), roundhaul nets (lampara) and beach seines. Trawling is not conducted properly due to lack of suitable grounds. Fishing operations, with the exception of longlines, are mostly carried out at depths of up to 50 m. As observed, extremely small mesh size is used, while extensive use of explosives for fishing is practiced daily, this catch also appearing in official statistics for 1974.

Fish culture: Trout is cultured in the inland (Bekaa valley) but to a small extent.

Statistical data on the field is mostly the subject of informed guesses, mainly being compiled in the office and therefore their credibility is doubtful. Even after 1975 no information is available.

The relevant services of the Ministry of Agriculture report (1975) that for the year 1974, total fish production was 3 200 t, divided as follows:

<u>1974 catch</u> <u>per fishing year</u>	<u>Tons</u>	<u>1974 catch</u> <u>per area</u>	<u>Tons</u>
Beach seines	275	Tyre	250
Trammels	650	Saida	178
Gill-nets	100	Beirut	928
Longlines	665	Jounieh	295
Traps	45	Byblos	118
Explosives	500	Batroun	555
Lampara	765	Tripoli	176
		Explosives	500
Freshwater	200	Freshwater	200
TOTAL	3 200	TOTAL	3 200

Total number of boats and fishermen for the same year were 863 and 1 840 respectively. In addition, about 500 Palestinians and Syrians should be added to the total number of fishermen.

On the other hand, W. Mouneimne (1980) reports that for the same year, 1974, fish production was around 6 200 t with an equal amount of imports. He also gives catch per unit effort, in fact this being the catch per boat per fishing day. Based on this as well as on present whole sale fish prices, and an estimated number of working days per year per boat the following figures can be drawn:

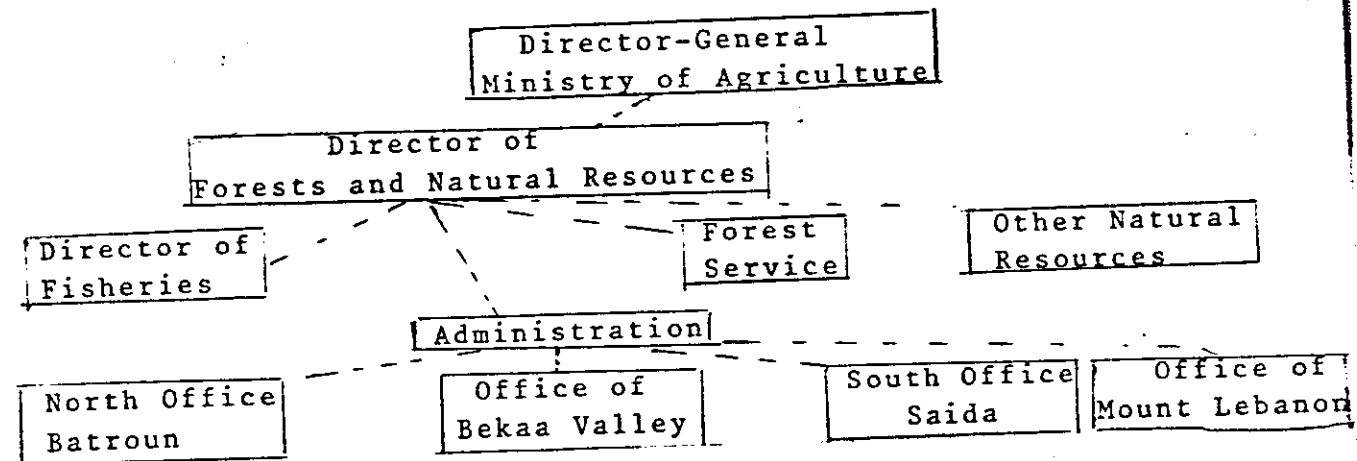
	Lampara	Trammels	Longlines
CPUE Kg/vessel/day	256	8.3	9.9
Estimated number of working days per year	100	200	200
Annual catch per boat tons	25.6	1.66	1.98
Average price of catch/kg	10	25	30
Annual income per boat/LL	256 000	41 500	59 400
Annual income per fisherman/LL	18 185	16 600	23 760
Average number of fishermen/boat	14	2.5	2.5

Obviously the CPUE given by Mouneimne is greatly over-estimated if the very small amount/boat of fishing gear is considered (for trammels about 600 m). Even the lampara production appears high if compared to purse seine production of other countries in the area as it was well established that the lampara is less efficient by 55 percent.

The political and military developments in the country greatly affected the field during the last eight years. As a result fish production dropped considerably to about 1 000 t/year (rough estimation), mainly due to loss of boats, gear and working days.

1.2 Administration of Fisheries

Fisheries in the Lebanon is the responsibility of the Ministry of Agriculture. Administration structure is as follows:



Each of the above district offices had in 1974, 5 employees and ten labourers carrying out work relevant to the Division of Forests and Natural Resources, the Director of Fisheries having indirect conduct with district offices.

Fishing licences are issued by the District Offices, while fishing boat's registration is the responsibility of the Ports and Marine Department of the Ministry of Transport and Public Works. Enforcement of fisheries laws and regulations is the duty of the Marine police of the same department.

Other bodies dealing with the field are the following laboratories dealing with marine sternee research.

- The National Council for Scientific Research (NCSR)
- The Lebanese University of Beirut (LUB)
- The American University of Beirut (AUB)
- The Ministry of Agriculture

Most important is the Marine Research Centre housed at Jounieh. The centre operates under the NCSR being autonomous with autonomous budget. Presently work is confined mainly to Oceanographic and biological research due to lack of specialized personnel in other fields of fisheries.

1.3 Regulations of fishing gear and methods

Little thought to the need of management has been given. Existing regulations for fishing are outdated as enforced in 1929, while those for sponge fishing in 1939. Main points to refer are:

- for beach seines minimum mesh in the bunt is 20 mm stretches the same gear being also prohibited from 15 May to 15 August;
- Lampara fishing should be conducted at a distance of not less than 2 km from the shore;
- the use of explosives is prohibited.

1.4 Financing

The only form of financial assistance given to fishermen prior to 1976, (in the form of subsidy), was the issue of fishing gear (trammel nets) purchased by the Fisheries Service and sold to fishermen with a 50 percent discount. As informed during 1976, 10 000 kg of netting was destroyed in stores.

1.5 Cooperative channels

Cooperative movement in Lebanon is the responsibility of the Director of the Department of Cooperatives. Furthermore, there are two semi-autonomous bodies regulating the establishment of cooperatives: The Lebanese Federation of Cooperatives where all cooperatives belong and the National Union for Cooperative Credit offering credit credit facilities to cooperatives.

In the past, few fishery cooperatives were established but failed due to unrest in the country.

2. Fisheries of South Lebanon

2.1 Situation and Status

All over the southern part of the country the status of the field as well as the boats and gear on use are identical.

Along the coast south of Beirut there are three main fishing centres; about 40 boats are scattered along the coast

near inhabited areas.

The total number of boats and fishermen in the area is 315 and 798 respectively. Fish production in the area is roughly estimated around 400 t annually for 1974.

For the above a survey was carried out by the FAO consultant in the area. The number of boats and fishermen per station per gear (according to main gear used as minor changes occurred according to season) is as follows:

Type of gear	Saida		JAZARAWA Type				Nagura		Scattered	
	Boats	Fishermen	B	F	B	F	B	F	B	F
Trammels	70	143	20	42	70	155	3	7	30	65
Lines	34	74	9	20	40	88	2	5	10	20
Lampara	3	39	-	-	4	52	-	-	-	-
Beach seines	2	20	-	-	2	20	-	-	-	-
Sponge fishing	-	-	9	27	7	21	-	-	-	-
Totals	109	276	38	89	123	336	5	12	40	95

2.1 Boat Ownership forms

Mostly the single ownership form is observed, the owner acting as masterfisherman on his boat employing also 1-2 fisherman, sons if possible. Co-ownership by 2-3 fishermen is also observed again mainly between relatives. In very few cases the owner of boat and gear is fish-dealer, ^{quite} common in the past. Even there are cases (mainly due to recent war destructions) where a fisherman supplies the boat and another the gear.

2.2 Social Structure and human factor:

The fisherman of the area is usually the head of large family (average 8.5 persons/family) the profession and skill as well as knowledge of fishing grounds past over from father to son. As a rule they are all full-time fishermen without any other income. They are skillful, hardworking, and have long tradition in handling their present gear. Finally their seamanship as far as deck work, maintenance and rigging of their boats is ^{concerning it can be stated to be} above ~~xxx~~ satisfactory level.

At every fishing station are simply organized into a syndicate having an elected president. Only about 20 percent can read or write the rest being illiterate. *In the past co-operatives were established but failed due to ~~unrest in~~ the area.*

2.3 Working Conditions

For the net/line fishery 33% goes to the boat owner, 33% to the fishing gear owner (if different) the rest being shared by the crew. For lampara and beach seines the owner of boat and gear get the 33% and the rest is shared by the crew.

2.4 Marketing of Catch

This is sold in wholesale prices to fish dealers, there are also cases where this is done by auction. Fish dealers have shops in the market area, equipped with running water and ice boxes. In addition fish as observed is sold in the streets by people handling few kilogrammes of fish, usually purchased from fish dealers.

There is always a great demand for fish, ~~as~~ which is mainly consumed at place of production. Only in the past catch was transferred by fish dealers from this area to Beirut.

Wholesale prices vary almost according to species and size, the cheapest ones being the small sardines (Bizri) and alleteratus species (Palamida) sold for LL. 5-8/kilo. On the other hand the most expensive is the red-mullet sold for LL 70/kilo. Present fish price is considered quite high due to unavailability.

2.5 Availability of Fishing Equipment:

All equipment is imported. In the area 4 small stores exist belonging to private sector poorly equipped, where mainly trammels, hooks and lines are sold to fishermen. As observed prices are very high, i.e. trammels at R 50 tax - R-75 tax, having a stretched length of 60 meters and 60 meshes deep (lint) are sold for LL 120 per piece.

It is stated that proper fishing equipment is not available, *not even in Beirut.*

2.6 Financing

There is a complete lack of loan schemes for the fishermen of the area, financing being a crucial problem.

2.7 Boats and Equipment

Wooden boats, semi-decked (deck at bow and stern), of round hull design without wheelhouse of 8-9 meters O.a.l. are used for all types of fishing. Tradition paid an important role as they are all similar in design: pointed at bow and stern rather rounded at deck height, which is 10-20 cms lower than gunwale.

They are all propelled by inboard diesel engines of 5-40 H.P. Fishing gear is handled mainly manually. On a small number (about 35 in the region) an insufficient mechanically driven hauler is installed next to the engine, on the side, just over gunwale. Otherwise no other equipment is used.

For Tyre the average and most common o.a.l. of boat used is 7 mtrs., while at Saida and Sarrafand this is 6 mtrs.

.../...

2.8 Boatbuilding

All boats used for fishing are constructed locally in the area, boat building being traditional and well advanced especially at Tyre.

Boatyards although small are equipped with basic electric woodwork machinery. Boats are built or repaired in the open outside the workshop of the boatbuilder.

Boats up to 13 or 14 meters o.a.l. can be constructed. There are 20 sides at Tyre and 2 at Saida where there are 3 and 2 specialized boatbuilders respectively. The Saida sides are less equipped. Good quality, locally available hard wood is used for stems, frames, and gunwhales while for the rest part of boat imported timber is used.

Cost of boats:

<u>Length (o.a.l.)</u>	<u>Cost L.L.</u>
6 m	17,000
7 m	20,000
8 m	25,000
9 m	30,000
10 m	50,000

2.9 Fishing Gear on use

2.9.1 Fine filament trammels (Local name: Battan)

This is the main and most important gear of the area as almost about 60 percent of the boats mainly work with it. It is made from fine PA netting of R 50 tex - R 75 tex, extremely small mesh size is used for the lint varying from 26-36 mm stretched, the netting being 100 m. long stretched. Mesh of armouring varies from 110 - 240 mm.

Double PA or PP framing lines are used (2-4 mm diam.), ^{with} ~~with~~ mainly rigged with plastic floats and lead tubes. All types of hanging ratios are used although a rather peculiar way is most common where E for lint is 0.6 and for armouring E is 0.4 - 0.5. Hanging depth of net varies from 0.80 - 1.25 mtss., while ^{hanging} ~~trammel~~ length is ~~60 m.~~ around 60 mtss.

Each boat operates with 10-15 such pieces i.e. 500 - 750 meters long, at depths rarely exceeding the 50 meters. Main catch Sparidare, Serranidae, Mullidae, Scgridae and Garangidae species.

2.9.2 High Trammels (local name : Bashlouli Battan)

Although every limited in number are used by very few fishermen - Mesh size of lint varies from 60 - 90 mm stretched made of PA R150 tex R 230 tex having a hanging length of 60 meters, their hanging depth varying from 2-4 meters are set at depths of up to 30 meters.

2.9.3 Gill nets (local name Bashlouli Zitta)

Again very limited in number. Mesh - size varies from 40-80 mm., made of PA of R150-230 tex. Hanging depth is up to 6 meters, they are set in shallow waters.

2.9.4 Bottom long-line (local name Sharak)

This gear is the second in importance as about 30 percent of existing boats operate with it due to the existence of extensive rocky grounds. This is also a cheap gear in construction. They are all made of monofilament, the branch lines being 0.5 - 1.5 m. in length, and attached on the main-line at intervals of 3-6 meters. The gear is couled in shallow baskets on which cork placed around, where the hooks are pinned. The number of hooks for each set varies from 150-200, Mainly there are three different types the stronger one being used at depths of up to 200 meters.

Types of long lines			
Mainline mm.	Snood mm.	Hooksize	No. of hooks
Mono: 0.6-0.7	0.5	No. 14	250
" 0.8-0.9	0.6	No. 10-12	200
" 1.2	0.9	No. 6-7	150

Each boat employs 2-3 sets. For bait sardines, Octopus, boops and palanida is used.

Catch: various species of serranidae sparidae and chorangidae.

2.9.5 Lampara (local name Addi Lucus)

This old type of roundhand net, replaced everywhere by purse seines still exist in Lebanon although established to be by 55% less efficient. This is similar to a short-winged ^{beach} seine, having a deep bunt, the leadline being much shorter than the floatline.

There are two types, one for light fishing having a total floatline length of 152 meters, 72 being taken in the bunt, the rest forming the wings. Is made of PA, the mesh presenting differences in the various parts on net, i.e. in the bunt stretched meshsize is 12 mm of R166 tex. Meshsize and twine size is increasing gradually towards wing-tips, where 50 mm netting is used of R 900 tex. The net has ^{at} its center a working depth of 12-14 meters. Each unit is operating with 2-3 light boats. Gas lights are used 2 x 500 - 1000 candles. Each boat has a crew of 2, while there are 7-8 persons on main boat.

Catch: Clupeidae, mainly small size (locally known as Bizri),
Scombridae, Trachurus sp., boops and sphyraenidae.

For daylight fishing another similar type of net is used the only difference being that this is totally made of 12 mm stretched PA netting of R100 tex, and also that its floatline length is 200 m. Working depth at its center is 10 meters. This is exclusively used for sardines and set when a school of fish is located visually.

2.9.6 Beach seines (local name Jaroufi)

It appears that this year in the past, was one of the most important, and that is declining probably due to large number of persons required (15-30) for the hauling operation as is sometimes set with up to 1200 m. long ropes. Even fishermen generally are against this gear. It is a bagless net, with a length of 320 mtrs, made of PA, the meshsize decreasing from 60 mm. in the wings to 28, 16 and 12 in the center (stretched mesh). It has a working depth of about 8 meters. Hauling ratios vary from 0.4 to 0.5

2.9.7 Trelling line (local name: Jerghiana)

This is a very important gear for the present time as night fishing operations are prohibited by the army. Otherwise is practised as supplementary fishing from and to fishing grounds. One line is towed, on which 10 anchor type hooks, covered with gull feathers attached at 2 m intervals. Main catch is Scomber species, *Enthirus alleteratus* and *Coryphaena hippurus*.

2.9.8 Sponge fishing

Sponge fishing has a long tradition in Lebanon mainly due to extensive rocky grounds and sponge beds. By the end of 1970 there were all over the country ^{about 50 vessels and 250} sponge fishing divers extending their activities also in neighbouring countries.

The outdated "Karghile" system is employed, whereas the boat is equipped with a compressor and an air tank ^{connected} ~~with~~ a hose ~~connected~~ to the boat and the diver, supplying air to the diver through aqualung regulator, who is also using ^{diving} suit, flippers and mask. Each boat has 2 ³ divers and a crew member.

Due to the fact that the system is outdated and also that training of divers not sufficient, the accidents average rate per year is quite high (20 per year with 6 deaths). Even there is no one decompression chamber to cure bends disease. In the south Sarrafand is a famous center.

2.9.8. Other Fishing Methods

Other methods of minor importance are Veranda nets rarely used by one or two fishermen in the area, as well as cast net (used sometimes to catch bait) and hand lining.

3. Present Fish Production

Present fish production in the area has dropped considerably during the last 8 years, roughly estimated to be 10 percent of that of 1974. This was a result of the unrest in the area, the loss of gear and boats as well as of working days. Furthermore night fishing operations are up to the moment prohibited by army ~~akt~~ authorities.

4. The fishing Centers

4.1 Saida

The town of Saida with a population of more than 60,000 inhabitants is located 45 kilometers south of Beirut. The ancient harbour offers protection to any weather to boats with a draught of up to 3 meters. Concrete ~~quays~~ ^{quays} exist around the harbour and a concrete slipway for small boats. There are also about 50 small stores where fishermen store their equipment. Finally a 2 ton capacity refrigerated store (donated by the Ministry of Agriculture) was installed during 1974 in the harbour, but presently is out of order.

Fishermen of Saida (276) are organized simply into a "Syndicate" having an elected president. The two existed small boatyards were completely destroyed during the war where a number of 30 boats were damaged, and 5 totally lost together with about 600 pieces of trammels and 70 sets of long-lines. Damages occurred also on the harbour.

4.2 Sarrafand

This is a small town located 19 kilometers further south of Saida, has a population of 10,000 inhabitants ^{belonging to} and famous sponge fishing center in the past. Apart from a concrete ~~hole~~ ^{pier}, even not offering any protection to the 38 mechanized boats, no other facilities exist. Four boats were damaged during the recent war, and 60 pieces of trammels destroyed.

4.3 TYRE

The ancient town of Tyre with 15,000 inhabitants is located 40 kilometers south of Saida, ~~and 55 km from Beirut~~. A rather large harbour offers excellent protection to any weather conditions to boats with

a draught of up to 4 m. Concrete quays are extended into the harbour which is equiped also with a slipway and hand crane. As in Saida, a 2 ton capacity refrigerated store is installed but out of order.

The two existing small boatyards are the most advanced and better equipped in the area.

War damages are: 51 boats damaged, 2 totally lost together with about 800 pieces of trammels and some long-lines. Damages also occurred in the harbour (quays and slipway).

5. Repair of boats damaged by war

Local authorities in the area received a total amount of US\$60 000 from the Secretary General's Turst Fund (30 000) as well as from the Middle East Council of Churches. It is stated that most of the damaged boats in the area were already repaired, work proceeding quite satisfactorily and fast.

List of damaged boats

Location	Number damaged	Number lost totally	Number repaired	Under repair
Saida	30	5	28	2
Tyre	51	2	40	11
Sarrafand	4	-	4	-
Total	85	7	72	13

Completion of work for the repair of the remaining 13 boats is expected to be completed by the end of October 1982.

6. Findings

6.1 Existing fishieries of the area are artisanal mainly based on demersal trammels and long-lines, lampara roundhaul net and beach seines.

6.2 The gear used can be described as destructive due to small mesh-size.

6.3 Extensive daily use of explosives for fishing is made, the fishing regulations not being followed.

6.4 Good manpower exists for development all being full time fishermen without any other income.

- 6.5 Boat building level is satisfactory.
- 6.6 Lack of capital is a crucial and chronic problem.
- 6.7 Lack of suitable fishing gear is observed.
- 6.8 The ^{fishery} is capable of substantial expansion and development beyond the 1974 level by improvement of existing gear and the introduction of new methods, *particularly for pelagic species*
- 6.9 Echo sounding survey needed to decide on feasibility of trawling, ~~which is doubtful.~~
- 6.10 Existing organization and structure of Government services dealing with fisheries are inadequate to cope with development programmes.
- 6.11 Assistance in expatriate experts is needed as well as training of local staff.
- 6.12 Work for the repair of boats damaged during the war is proceeding satisfactory.

pe

7. Commercial Species and Fish Prices

<u>Species</u>	<u>Local name</u>	<u>Prices wholesale LL.</u>
Sardina Pilchardus	Sardin	10
Sardinella Aurita	Sardin	10
Small Sardines	Bizri	5-8
Sphyraena Sphyraena	Sphyrna	15-20
Mugil Cephalus	Buri	20
Epinephelus Gigas	Erb Erbi	25
Epinephelus Aeneus	Lucus	60
" Alexandrinus	Kakar	40
Dentex dentex	Marrish	40
Dentex filusus	Turbiden	15-20
Sparus Auratus	Denis	30
Pagrus pagrus	Ajjer	30
Pagellus erythrinus	Turbiden	15.20
Pagellus Mourngrus	Mourmour	20-30
Diplodus sargus	Sargus	40
Diplodus vulgaris	Charant	40
Boops boops	Bobus	10-15
Boops Salpa	Sarb	25:30
Oblada melanura	Mannouri	15-25
Mullus barbatus	Sultan Ramli	30-40
Mullus surmuletus	Sultan Ibrahim	70-75
Trachupus species	Trullus	15-20

<u>Species</u>	<u>Local name</u>	<u>Prices wholesale LL.</u>
Garax species	Traihoun	15
Gerisla dumerili	Zarzour	15-20
Coryphoena hippunus	Horbei	10-20
Scarus cretensis	Zullek	10-15
Siganus rivulatus	Barjafix	10-15
Scomber colias	Skou tt	10-15
Scomber scombrus	"	10-15
Euthinus alleteratus	Palamida	5-8
Auxis thazard	"	5-8
Scorpoena Species	Ishtrok	5

PART II

A. DEVELOPMENT OBJECTIVES

1. Medium term objectives

The medium term objectives are to assist the fishermen of the area of South Lebanon as well as the Government, in:

- reaching the 1974 fish production level;
- increasing the amount of fishing gear/boat and consequently the C.P.U.E.;
- modernizing and improving existing gear and methods;
- extending fishing operations to deeper fishing grounds.

2. Long-term objectives

The long term objectives of the project are as follows:

- to increase fish production in the area by 25 percent (in relation to the 1974 production);
- to introduce modern gear as well as new fisheries in the area;
- to establish means for the issue of loan facilities to fishermen on a permanent basis;
- to establish in the area Government Fishery Services capable of dealing with extension services and development projects;
- to assist in improving management means.

B. IMMEDIATE OBJECTIVES

The immediate objectives are as follows:

1. to replenish lost fishing gear
2. to reactivate fishing operations
3. to find means to enforce fisheries regulations

C. SPECIAL CONSIDERATIONS

Both Saida and Tyre offer good chances for the establishment of Community Fisheries Centres, (CFC) one at each town under the General Directorate of Cooperatives of the Ministry of Cooperatives and Housing.

Prior to any action it should be clear that the revolving system will be followed. For this it will be necessary for any equipment to be provided by the project to be issued to fishermen through the CFC, to be subsidized by about 30 percent, the rest to be paid by instalment (or through handing over his catch) by the fishermen to the CFC thus providing the CFC with the necessary funds for further replacement of parts and gear.

In addition it should be clear that the project will have full responsibility for the CFC throughout the project.

D. OUTPUTS

The following should result from project activities:

1. Improvement and modernization of existing fishing boats, gear and methods.
2. Extension of fishing operations to deeper fishing grounds.
3. Replacement of outdated fishing gear with modern and more productive fishing gear.
4. Introduction of new fishing methods and equipment.
5. Provision of shore installations and facilities to fishermen of the area.
6. Establishment of financing channels to fishermen through Cooperative Community Fisheries Centres.
7. Establishment of Fishery Technology and Extension Unit, capable of dealing with development projects.
8. Establishment of a system for collection of statistical data.
9. Reactivation of the declining sponge fishery.
10. Report on possibilities for the introduction of trawl fishery.
11. Assist in improving management means.
12. Increase in fish production by 25 percent from the 1974 level.

E. PROJECT ACTIVITIES

1. Replenishment of fishing gear

Provision of suitable and more advanced fishing gear mostly not available locally together with the necessary rigging material in order to increase efficiency and amount of gear used/boat as well as to replenish gear lost during the war.

<u>Location</u>	<u>Proposed duration</u>
-----------------	--------------------------

Project Activities (Cont'd)

Location

Proposed
duration

2. Introduction of Echo-sounders

Provision of portable echo-sounders of the range of up to 300 m to be issued to fishermen in order to improve knowledge of fishing grounds

3. Mechanization of hauling operations

For hauling of demersal stationary gear by improving existing haulers and by providing advice and detailed plans for the construction of more efficient mechanical haulers. In addition to provide for the area 50 hydraulically driven net haulers.

4. Multi-purpose project vessel

Construct and equip locally a multi-purpose vessel of about 13 m o.a.l. to be used for experimental and demonstration fishing as well as for training of fishermen.

5. Experimental fishing

Carry out experimental fishing with modern gear and equipment (purse seine) in order to replace the outdated and less efficient lampara round-haul net.

6. Technical assistance

Provide technical assistance (gear and equipment only) and advice for the introduction of two such units in the area, mainly by modifying existing large boats.

Project activities

Location

Proposed duration

7. Experimental and exploratory fishing

To carry out experimental and exploratory fishing with different fishing gear and methods not known in the area in order to introduce new gear and new fisheries as follows:

a. Floating long-lines for swordfish

A well established fishery in the Eastern Mediterranean by other countries of the region in international waters (Xiphias gladius) Also by providing technical assistance (in gear) and advice to modify and equip 10 large vessels of the area.

b. Conduct experimental fishing with drift nets, in Lebanese waters for little tuna (Auxis thazard, Euthinus alleteratus)

c. Conduct experimental fishing with bottom set gill nets for boops boops.

d. Conduct experimental fishing with "Ganizzatti" system for dolphin fish. (Coryphaena, sp.)

8. Echo-sounding survey

Conduct echo-sounding survey for the location of trawling grounds in the area and furnish report on possibilities of introducing trawling in the area although J. Gaudillierre's reports (1958) ~~consider~~ that no such grounds exist.

9. Assist in improving lay-out (and design) of fishing boats

<u>Project activities</u>	<u>Location</u>	<u>Proposed duration</u>
10. <u>Modernizing and reactivating sponge fishing operations in the area</u>		
Introducing modern system providing also equipment and training as well as decompression chambers.		
11. <u>Train local personnel</u>		
12. Undertake ad-hoc training of fishermen on new gear and equipment.		
13. Assist in establishing a system for the collection of statistical information also in training of local staff.		
14. Assist and advise local authorities on organization and management matters.		
15. Prepare project's equipment.		
16. Construction of fishing shelter at Sarrafud in order to offer protection to boats of the area.		
17. Establishment of two Community Fisheries Centres to be organized under existing cooperative channels each to be provided with ice-making machine, refrigerated lorry for the transfer of fish and store for fishing equipment. The two existing refrigerated chambers to be incorporated in the CFC.		

F. INPUTS

1. Government inputs

1.1 Prerequisites - none

1.2.1 Assignment of National staff

The Government will assign the necessary scientific, technical and support staff before the project becomes operational.

1.2.2 The Co-manager will be appointed by the Ministry of Agriculture and will participate in all aspects of the project.

1.2.3 The Government will provide all necessary premises, supplies and equipment at Tyre.

1.2.4 The Government will supply or rent the necessary land in the harbours of Saida and Tyre for the housing of the CFC.

1.2.5 The Government will erect or rent the necessary premises for housing and installation of equipment of the CFC at Tyre and Saida.

1.2.6 Government will prepare the necessary study and plans for the construction of the fishing shelter at Sarrafaud, in consultation with the project authorities.

1.2.7 Local authorities will provide the amount of LL 143 750 necessary for miscellaneous and operational expenses of the project.

1.2.8 Government inputs are summarized in the budget covering its contribution (see part IV).

2. UNDP inputs

2.1 Assignment of International Staff

(a) Project Manager/Gear Technologist

<u>Location</u>	<u>Proposed duration</u>
Tyre	36 m/m

The Project Manager will: be responsible for supervising the work of FAO experts/consultants assigned to the project, co-ordinating their work with that of their counterparts and planning and implementing the project's work programme;

be responsible for the control of all UNDP/FAO inputs;

advise and assist in experimental and exploratory fishing,

supervise and advise for the planning and construction of the project vessel, equipment and installations;

advise and train and assist in the training of local staff;

Assignment of International staff

Location

Proposed
duration

direct and assist in training of local fishermen;

prepare progress and technical reports as required and the terminal report of the project;

organize and support the activities of short-term consultants.

Qualifications and experience

- Post graduate studies in Fishing Gear Technology;
- Minimum of 15 years experience in the field, preferably on Eastern Mediterranean gear.

(b) Masterfisherman

Standard terms of reference

Qualifications and Experience

- Experience in Mediterranean fishing methods is required.
- Specialization in purse-seining with lights.

(c) Boat Engineer

Standard terms of reference

(d) Consultants

- Cooperative establishments

1 m/m

Will advise on the establishment of Community Fisheries Centres at Saida and Tyre.

<u>Assignment of International staff</u>	<u>Location</u>	<u>Proposed duration</u>
- <u>Fishery Statistician</u>		2 m/m
To advise and assist in establishing system for the collection of statistical information in the area as well as to train local staff.		
- <u>Diving Instructor</u>		3 m/m
To train local sponge fishing divers to use modern and productive diving equipment (aqualung)		
(e) <u>United Nations Volunteer</u>		30 m/m

Some experience in fishing necessary

2.2 Provision of sub-contractual services

- a. Local construction of a demonstration boat also to be used for all experimental fishing of about 13 m o.a.l.
- b. Construction of three light fishing boats, about 5 m o.a.l.
- c. Construction of fishing shelter at Sarrafaud by extending the existing short mole in order to protect local fishing boats.

2.3 Training

- a. Local training course (1 month duration) for local staff to be assigned to the project in order to be capable to follow up and carry out project work.
- b. Training of fishermen to be carried out ad hoc throughout the project and in accordance with the equipment and methods to be issued or promotes as well as on the basis of the results of experimental fishing.
- c. One overseas fellowship for scientific personnel in Fishing Gear Technology.
- d. One overseas fellowship for technical staff - Masterfisherman

2.4 Equipment and Supplies

The necessary supplies and equipment for the project are listed in Attachment I.

G. PREPARATION OF WORK PLAN

A detailed work plan for the implementation of the project will be prepared by the Project Manager and the international staff assigned to the project, in consultation with the co-manager who is the leader of the national staff. This will be done at the start of the project and brought forward periodically. The agreed work plan will be attached to the project document as Annex I and will be considered as part of that document.

<u>Schedule of main project inputs</u>	<u>Duration</u>	<u>Starting date</u>
- Assignment of Project Manager (Gear Technologist)	36 m/m	July 1983
- Assignment of Masterfisherman	34 m/m	Sept. 83
- Assignment of Boat engineer	32 m/m	Nov. 83
- Consultant in Cooperatives CFC	1 m/m	Jan. 84
- Consultant in Fishery Statistics	2 m/m	Feb. 84
- Consultant in Diving	3 m/m	June 1984
- Assignment of UN Volunteer	30 m/m	Sept. 83
- Local training of project personnel (and throughout project)	1 m/m	Sept. 83
- Fellowship overseas in Fishing Gear Technology	10 m/m	Sept. 84
- Fellowship overseas - Masterfisherman	10 m/m	Sept. 85
- Training of fishermen	Throughout project	
- Provision of gear and equipment for the project and for local fishermen (overseas supply)		July 1983
- Construction of project multipurpose vessel (locally)		August 83
- Experimental fishing (purse seine)		May 1984
- Experimental fishing (floating longlines)		May 1984

<u>Schedule of main project inputs</u>	<u>Duration</u>	<u>Starting date</u>
- Experimental fishing (drift nets)	Throughout project	
- Echo sounding survey (for trawl grounds)		
- Construction of shelter (Sarrafaud)		May 1984

H. PREPARATION OF THE FRAMEWORK FOR EFFECTIVE PARTICIPATION OF NATIONAL AND INTERNATIONAL STAFF IN THE PROJECT

The activities necessary to produce the indicated outputs and achieve the project's immediate objectives will be carried out jointly by the national and international staff assigned to it. The respective roles of the national and international staff will be determined by the leaders, by mutual discussion and agreement, at the beginning of the project and set out in a Framework for Effective Participation of National and International Staff in the Project. The Framework which will be attached to the Project Document as an annex, will be reviewed from time to time. The respective roles of the national and international staff shall be in accordance with the established concept and specific purposes of technical cooperation.

I. FUTURE UNDP ASSISTANCE

As UNDP activities never covered the field of fisheries in the Lebanon, upon completion or even during the operation of the project, it can be anticipated that further UNDP assistance may be requested for the following main activities:-

1. To expand the project to cover all Lebanon as is the wish of local authorities.
2. To offer assistance for the reorganization of fisheries administrative structure.
3. To assist Marine Research Centre to extend applied research on all aspects of marine fisheries.
4. To assist and promote freshwater fish culture.

PART III

SCHEDULES OF MONITORING, EVALUATION AND REPORTS

A. TRIPARTITE MONITORING REVIEWS; TECHNICAL REVIEWS

The project will be subject to periodic review in accordance with the policies and procedures established by UNDP for project monitoring and programme implementation. The representatives from the Ministry of Agriculture, MRC, UNDP and FAO will participate in joint review meetings.

B. EVALUATION

The project will be subject to evaluation, in accordance with the policies and procedures established for this purpose by UNDP. The organization, terms of reference and timing of the evaluation will be decided by consultation between the Government, UNDP and FAO.

C. PROGRESS AND TERMINAL REPORTS

The Project Manager will submit periodical progress and terminal reports in accordance with the schedule as established for this purpose by UNDP/FAO.

PART IV

Project Budget covering UNDP contribution (in US dollars)

Country: Lebanon

Project No.

Title: Modernization and Development of Fisheries in South Lebanon

	Total		1983		1984		1985		1986	
	m/m	\$	m/m	\$	m/m	\$	m/m	\$	m/m	\$
10 PROJECT PERSONNEL										
11.01 Project Manager (gear technologist)	36	288 360	6	42 720	13	93 380	13	99 600	6	53 760
11.02 Masterfisherman	34	244 980	4	25 440	12	82 440	12	89 040	6	48 060
11.03 Boat Engineer	32	206 620	2	11 320	12	73 320	12	79 200	6	42 780
11.04 Consultants (3)	6	30 000	-	-	6	30 000	-	-	-	-
11.99 Sub-Total	108	769 960	12	79 480	42	278 040	36	267 840	18	144 600
13 Administrative										
support personnel		36 000		6 000		12 000		12 000		6 000
14 UN volunteer	30	31 000	6	8 000	12	11 000	12	12 000		-
15 Official Travel		3 000		500		1 000		1 000		500
Sub-total		70 000		14 500		24 000		25 000		6 500
20 Sub-contracts										
20.01 Vessel construction		20 000		20 000		-		-		-
20.02 Light boats construction (three)		4 500		4 500		-		-		-
20.03 Fishing shelter constr.		150 000		-		150 000		-		-
20.04 Ice plant installation		5 000		-		5 000		-		-
Component Total		1 019 460		118 480		457 040		292 840		151 100

Project budget covering JNDI contribution (in US dollars) (cont'd)

	Total	1983	1984	1985	1986
	\$	\$	\$	\$	\$
m/m	m/m	m/m	m/m	m/m	m/m
30 TRAINING					
31 Fellowships					
31.01 Fishing gear technology	20 000	-	-	20 000	-
31.02 Masterfishermen	20 000		20 000	-	-
33 In-service training	5 000	1 000	2 500	1 000	500
Sub-total	45 000	1 000	22 500	21 000	500
40 Equipment					
49 Equipment Total	549 600	213 100	333 200	2 000	1 000
50 Miscellaneous costs					
52 Report	28 750	2 500	10 500	10 500	5 250
53 Sundry	1 500	-	-	-	1 500
Sub-total	33 750	1 000	1 000	1 000	500
GRAND TOTAL	1 647 810	336 080	824 540	327 340	159 850

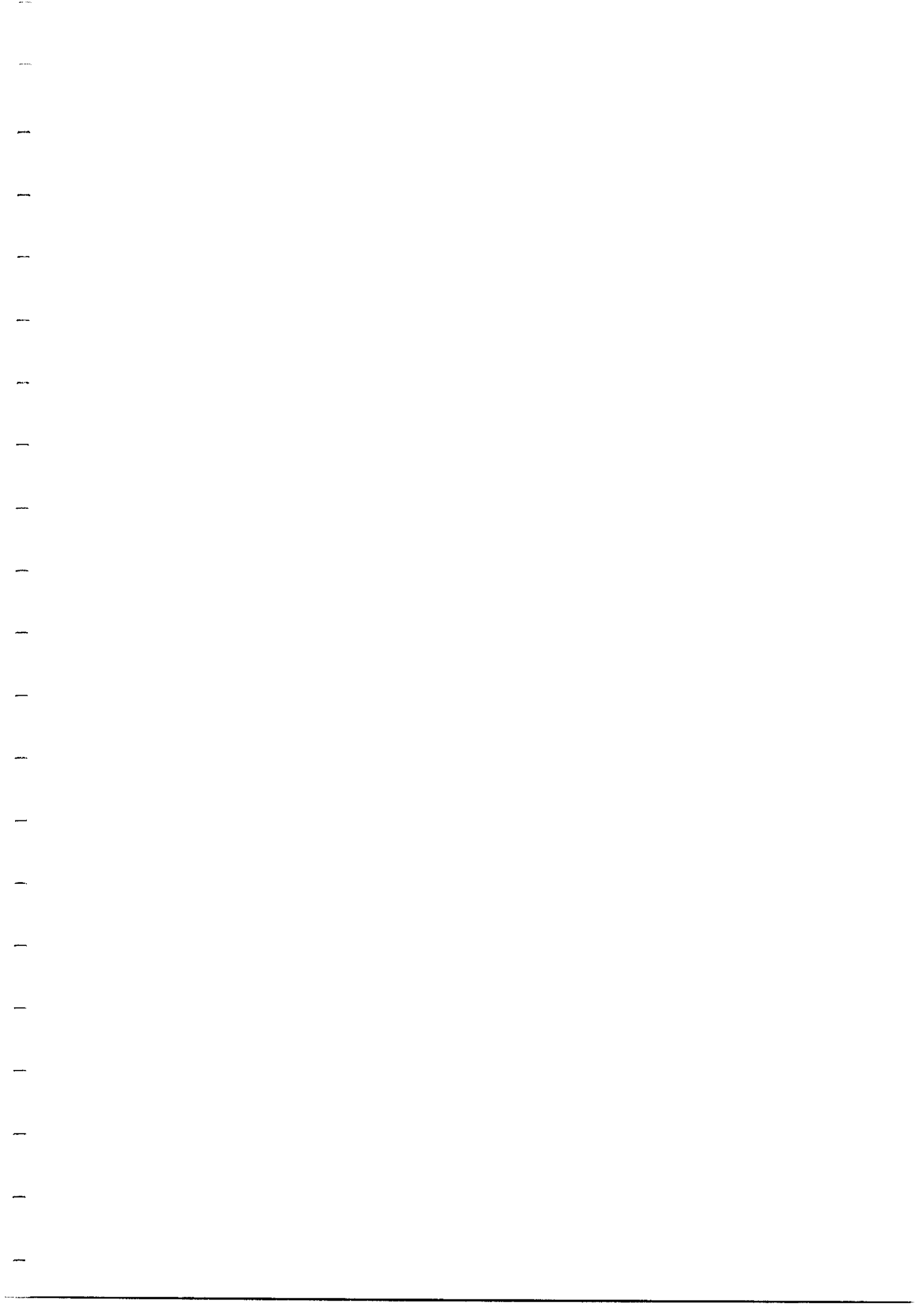
الجمهورية اللبنانية
 مكتب وزير الشؤون الاقتصادية الإدارية
 مركز مشروعات ودراسات القطاع العام

List of gear and equipment

<u>Item</u>	<u>Quantity</u>	<u>Description</u>	<u>Estimated price (US\$)</u>
1.1	3000 pieces	<u>Trammel nets</u> <u>Lint:</u> Stretched mesh 36 mm • PA twine R50 tex stretched • length 100 m Depth 60 meshes <u>Armouring</u> Stretched mesh 180 mm PA twine R75 tex stretched length 200 m Depth 7 meshes.	27 000
1.2	1200 pieces	<u>High trammels</u> <u>Eint</u> Stretched mesh 70 mm PA twine R230 tex stretched length 100 m Depth 60 meshes <u>Armouring</u> Stretched mesh 280 mm PA R300 tex, Stretched length 200 m Depth 10 meshes	18 000
1.3	60 pieces	<u>Mono gillnets</u> Stretched mesh 70 mm PA Mono 0.6 mm diam Stretched length 100 m Depth 100 meshes	24 000
1.4	40 pieces	<u>Bottom gillnet (boops)</u> Stretched mesh 40 mm PA twine R50 tex Stretched length 100 m Depth 100 meshes	400
1.5	460 000 pieces	Plastic floats (20 grams buoyancy)	9 200
1.6	270 000 pieces	Plastic floats (30 grams buoyancy)	9 000
1.7	183 000 mtrs	PP or PE lines 4 mm diam	6 100
1.8	110 000 mtrs	PP or PE lines 5 mm diam	4 500
1.9	183 000 mtrs	braided PP or PE with lead inside core tube lead 100 gr/mtr	18 300
1.10	110 000 mtrs	As above but lead 150 grams/mtr	13 000
1.11	100 kg	PA twine R230 tex	200

<u>Item</u>	<u>Quantity</u>	<u>Description</u>	<u>Estimated price (US\$)</u>
1.12	200 kg	PA twine R250 tex	400
1.13	200 kg	PA twine R600 tex	400
1.14	40 pieces	<u>Drift nets</u> Mesh stretched 80 mm Mono 0.6 mm diam Length stretched 100 mtrs Depth 120 meshes	2 000
1.15	40 pieces	<u>Drift nets</u> Mesh stretched 100 mm Mono 0.6 mm diam Length stretched 100 mtrs Depth 110 meshes	2 000
1.16	40 pieces	Mesh stretched 120 mm Mono 0.7 mm diam Stretched length 100 mtrs Depth 110 meshes	2 000
1.17	20 000 mtrs	Framing lines 6 mm diam braided pp PP or PE	2 000
1.18	10 000 pieces	Plastic floats 80 x 40 mm	<u>1 000</u>
		TOTAL COMPONENT	US\$ <u>138 500</u>
2.	120 pieces	Portable echo sounders	48 000
3	Multipurpose project vessel (13 moal) +		
3.1	1	wooden hull	12 000
3.2	1	engine diesel 80 hp	12 000
3.3	3 (1 + 2)	purse seine winch	12 000
3.4	3 (1 + 2)	power block	9 000
3.5	1	net-line hauler	1 400
3.6	1	echosounder fish finder	1 200
3.7	1	radar	3 000
3.8	1	radiotelephone VHC	500
3.9	1	insulated fish hold 2 000	
3.10	1	miscellaneous install. expenses	
		6 000	
		Total	<u>39 100</u>

<u>Item</u>	<u>Quantity</u>	<u>Description</u>	<u>Cost (estimated in US\$)</u>
4	Purse seining equipment		
4.1	3 pieces	Boats, 5 mtrs o.a.l. local construction	4 500
4.2	18 pieces (6 + 12)	3 000 candle surface and gas light and spare parts	9 000
4.3	3 pieces	ready sardine net hanging length 250 m depth 30 m	<u>60 000</u> <u>69 000</u>
5	Floating long-lines - Ganizzatti system		
5.1	220 x 1 000 m	Monofilament 1.6 mm diam	3 000
5.2	140 x 1 000 m	" 1.2 mm diam	1 600
5.3	50 x 100	Musted round bend hooks No. 1	1 000
5.4	Miscellaneous (buoys etc)		<u>2 000</u> <u>7 600</u>
6	Sponge fishery		
6.1	2 pieces	Decompression chambers (one man)	25 000
6.2	20 pieces	Aqualung units (twin cylinder type)	8 000
6.3	20 pieces	Masks	100
6.4	20 pair	Flippers	300
6.5	20 pieces	Diving suits	1 000
6.6	8 pieces	Air compressors. (to be installed on boats)	<u>24 000</u> <u>58 400</u>
<u>7. Community Fisheries Centre</u>			
7.1	2 units	Ice making machine each 1 ton capacity	50 000
7.2	2 pieces	Refrigerated lorries	40 000
7.3		(Sub-contractual 50 000)	
		Total	<u>90 000</u>
8	50 pieces	Hydraulic net-line haulers	85 000
9	2 pieces	Project vehicles	18 000
10	Equipment for repair/maintenance		6 000



1. GENERALITES

a. Le Liban est un pays essentiellement montagneux; il a une superficie de 27 000 km², et une population d'environ 3 000 000 d'habitants, dont près de la moitié vivant à Beyrouth.

Le Liban a 245 kilomètres de côtes. Dans le nord, le relief s'élève rapidement à partir de la côte tandis que le sud possède une plaine côtière très étroite. Le plateau continental est étroit, en particulier dans le sud. Les fonds de pêche sont généralement accidentés, avec de vastes zones rocheuses, propices à l'installation d'engins démersaux fixes.

Les pêches libanaises sont classées comme artisanales et traditionnelles; elles utilisent principalement des engins calés fixes (trémails et palangres), des filets tournants (lamparo) et des sennes de plage. Le chalutage n'est pas pratiqué en raison essentiellement de la rareté des fonds chalutables. Les opérations de pêche, à l'exception de la pêche à la palangre, s'effectuent le plus souvent à des profondeurs n'excédant pas cinquante mètres. Les maillages utilisés sont extrêmement fins et la pêche à l'explosif se pratique couramment. Le matériel de pêche est coûteux et ne se trouve qu'en quantités limitées. Les pêcheurs traditionnels n'ont guère accès au crédit institutionnel.

La trufficulture se pratique, dans une mesure restreinte, dans l'intérieur du pays (vallée de la Bekaa).

Les statistiques des pêches sont le plus souvent basées sur des hypothèses et ne sont guère fiables.

D'après un rapport (1975) des services compétents du Ministère de l'Agriculture, en 1974, la production halieutique totale a été de 3 200 tonnes, ventilées comme suit:

Captures de 1974 par engins/méthodes de pêche		Captures de 1974 par secteur	
	Tonnes		Tonnes
Sennes de plage	275	Tyr	250
Trémails	650	Saïda	178
Filets maillants	100	Beyrouth	928
Palangres	665	Djouniyé	295
Pièges	45	Byblos	118
Explosifs	500	Batroun	555
Lamparo	765	Tripoli	176
		Explosifs	500
Eaux douces	200	Eaux douces	200
TOTAL	3 200	TOTAL	3 200

PROJECT

I. BACKGROUND

Lebanon is a predominantly mountainous country, having an area of 10 400 square miles and a population of around 3 000 000. Almost half of the country's population live in Beirut.

The length of the coast line of Lebanon is 245 km, the land rising steeply from the coast in the north, and in the south from a very narrow coastal plain. The continental shelf is narrow, especially in the south. Bottom grounds are mainly rough with extensive rocky patches good for stationary demersal gear.

The Lebanese fisheries are classified as artisanal and traditional, mainly based on bottom stationary gear (trammels and longlines), roundhaul nets (lampara) and beach seines. Trawling is not conducted, mostly due to very limited trawling grounds, if any. Fishing operations, with the exception of longlines, are mostly carried out at depths of up to 50 m. Some of the fishing nets used have an excessively small mesh, and in addition, explosives are in common use. Fishing equipment is expensive and in short supply. The traditional fishermen have little access to institutional credit.

Trout culture is practised in the inland region (Bekaa valley) to a small extent.

The fisheries statistical data are mostly the subject of informed guesses, and are, therefore, unreliable.

The relevant services of the Ministry of Agriculture report (1975) that for the year 1974, total fish production was 3 200 t, distributed as follows:

<u>1974 catch</u> <u>per fishing gear/method</u>	<u>Tons</u>	<u>1974 catch</u> <u>per area</u>	<u>Tons</u>
Beach seines	275	Tyr	250
Trammels	650	Saida	178
Gill-nets	100	Beirut	928
Longlines	665	Jounie	295
Traps	45	Býblos	118
Explosives	500	Batroun	555
Lampara	765	Tripoli	176
Freshwater	200	Explosives	500
		Freshwater	200
TOTAL	3 200	TOTAL	3 200

Total number of boats and fishermen for the same year were 863 and 1 840, respectively. In addition, about 500 Palestinians and Syrians should be added to the total number of fishermen.

2. PURPOSE

a. The long-range Objectives are to:

- (i) bring the fishery in Lebanon back to its 1974 level;
- (ii) increase marine fish production by 25 percent (in relation to the 1974 production) through the introduction of new fisheries mainly by fishing operations in deeper and more distant fishing grounds;
- (iii) improve the efficiency of the fleet;
- (iv) enable fishermen to have equitable and permanent access to credits;
- (v) develop Government Fishery Extension and Development Services;
- (vi) assist in improving fishery management.

b. The immediate Objectives are to:

- (i) replenish lost fishing gear;
- (ii) reactivate fishing operations;
- (iii) establish ways and means for technical and institutional support to artisanal fishermen;
- (iv) establish ways and means to enforce fisheries regulations.

Since the main purposes of the project are to revive the fishery of Lebanon which suffered from the hostilities during the last seven years, and to improve the fishing technology of the Lebanese artisanal fishery, the major inputs are in the fields of capture technology and equipment supply.

Because of the importance of organising the supply of fishing gear and equipment through the establishment of a revolving fund and Community Fishery Centres as well as of channels of credit, expertise is also provided in the fields of marketing/cooperatives/credit. Other expertise in specialised fields will be provided through consultants.

The headquarters of the project will be located in Beirut where a Fisheries Technology and Extension Unit (hereinafter referred to as FTEU) will be established. In order to complete the work started in the south of the country by an FAO consultant in September/October, 1982, a survey will be made of the state of ^{the} marine fishery from Beirut to the Syrian border. This will include an inventory of manpower, gear and equipment. The project will then identify and organise the necessary number of Community Fishery Centres (CFC) in both the zones North and South of Beirut, although major equipment inputs from the Project will be limited to two CFCs only. A further step will be the establishment of revolving funds and the initiation of the supply of materials and equipment to the fishermen.

The FTEU will engage in experimental and exploratory fishing as specified in section 5, or according to the ideas and requests of the Lebanese fishermen themselves. This Unit will introduce to the fishermen, through extension activities, improved fishing methods and equipment. Particular emphasis will be given to extending the fishing operations over deeper and more distant fishing grounds so that fish stocks presently un-exploited by the Lebanese fishermen may contribute to an increase in total fish production.

There will be at least 2 - 4 Lebanese extension workers in the FTEU who will be trained on the job and who will actively participate in both the seagoing and service activities of the Project. In addition, one extension worker from the FTEU will be sent on a fellowship.

3. SPECIAL CONSIDERATIONS

Jounie,

The towns, Tripoli, Batroun, Jbail, Beirut, Saida and Tyr offer good possibilities for the establishment of Community Fishery Centres. A final decision where these centres should be based will be made together with the Fisheries Director and the General Director of Cooperatives of the Ministry of Cooperatives and Housing.

Revolving funds will be established for the supply of equipment and materials to replace that which was lost during the hostilities and will be provided by the Project through the CFCs. The equipment and materials should be issued to fishermen, free of tax or custom duties and/or subsidized by the Government to bring the final price down to 70 per cent of the market price. Fishermen will reimburse the CFCs by instalments in either cash or kind (catch), thus providing the Centres with the necessary funds for further supply of equipment and materials. The CFCs and the revolving funds will be planned and established with the full cooperation and participation of the fishermen involved, and other interested institutions and individuals.

The Project will have full responsibility for the Community Fishery Centres and, on completion of the Project, further technical/managerial support for their operation may be required.

4. OUTPUTS

The following should result from the project activities:

- (i) replacement of equipment lost due to hostilities;
- (ii) improvement and modernization of existing fishing boats, gear and methods;
- (iii) extension of fishing operations to deeper fishing grounds and consequent increase in fish production;
- (iv) replacement of outdated fishing gear with more efficient fishing gear;
- (v) introduction of new fishing methods and equipment;
- (vi) provision of shore installations and facilities to fishermen of the area and the creation of credit channels through Community Fishery Centres;
- (vii) a Fisheries Technology and Extension Unit capable of dealing with fisheries development and extension;
- (viii) a system for the collection of statistical data and for improvement and management of the marine fishery;
- (ix) reactivation of the declining sponge fishery;
- (x) report on possibilities for the introduction of a trawl fishery;
- (xi) a unit designed to enforce fisheries regulations.

5. ACTIVITIES

	<u>Location</u>	<u>Duration</u>
(i) <u>Survey of the Zone North of Beirut</u>		
A survey of the state of marine fishery from Beirut to the Syrian border will be made. This will include an inventory of manpower, gear and equipment.	Northern Zone	2 months
(ii) A Fisheries Technology and Extension Unit will be established in the Project Headquarters in Beirut.	Beirut	6 months
(iii) <u>Replenishment of fishing gear</u>		
Provision of suitable and more advanced fishing gear mostly not available locally together with the necessary rigging material in order to increase efficiency and amount of gear used/boat as well as to replenish gear lost during the war.	Tripoli Batroun Jbail Jounie Beirut Saida Tyr	2 1/2 years
(iv) <u>Introduction of Echo-sounders</u>		
Provision of portable echo-sounders of the range of up to 300-500 m to be issued to fishermen in order to improve knowledge of fishing grounds and locate fish.	as above	2 years

	<u>Location</u>	<u>Duration</u>
(v) <u>Mechanization of fishing operations</u>		
Improvement of hauling of demersal stationary gear, especially in deep water by improving existing haulers and by providing advice and detailed plans for the construction of more efficient mechanical haulers. Additional 50 hydraulically driven net haulers will be provided.	Tripoli Batroun Jbail Jounie Beirut Saida Tyr	2 years
(vi) <u>Multi-purpose project vessel</u>		
a. Construct and equip locally a multi-purpose vessel of about 13 m o.a.l. to be used for experimental and demonstration fishing as well as for training of fishermen.	Saida or Tyr	2 years
b. Provide technical assistance (gear and equipment only) and advice for the introduction of two or more such vessels mainly by modifying existing large boats.	Jounie / Batroun Saida / Tyr	1 year
(vii) <u>Experimental and exploratory fishing</u>		
Carry out experimental and exploratory fishing with different fishing gear and methods not known in the area in order to introduce new gear and new fisheries as follows:	all areas	
a. Floating long-lines for swordfish (<u>Xiphias gladius</u>)		
Promote participation of the Lebanese fishermen in this well established fishery in the Eastern Mediterranean conducted by other countries of the region in international waters, including provision of technical assistance (in gear) and advice to modify and equip up to 10 appropriate vessels.	out of Tripoli and Tyr	2 years
b. Conduct experimental fishing with drift nets, in Lebanese waters for little tuna (<u>Auxis thazard</u> , <u>Euthynnus alleteratus</u>).	all areas	2 years

	<u>Location</u>	<u>Duration</u>
c. Conduct experimental fishing with bottom set gill nets for <u>Boops boops</u> in deep waters.	out of Batroun and Saida	2 years
d. Conduct experimental fishing with Fish Attracting Devices (FAD "Canizzatti" system) for dolphin fish (<u>Coryphaena, sp.</u>)	out of Jounie	2 years
(viii) <u>Echo-sounding surveys</u>		
Conduct echo-sounding surveys for the location of trawling grounds to confirm or refute reports that no such grounds exist.	mainly in bays of Jounie and Beirut	1 month
(ix) <u>Assist in improving lay-out and design for fishing boats</u>	Saida Tyr	1 year
(x) <u>Modernizing and reactivating sponge fishing operations in the area</u>		
Introducing modern systems providing also equipment and training as well as decompression chambers.	Batroun Jbail Saida Tyr	6 months
(xi) <u>Training</u>		
a. On-the-job training of fishermen on new gear and equipment.	all areas	3 years
b. Assist in establishing systems for the collection of statistical information and the training of local staff in this activity.	all areas	3 years
(xii) <u>Assist and advise local authorities on organizational and management matters</u>	all areas	3 years
(xiii) <u>Prepare and maintain project equipment</u>	all areas	3 years
(xiv) <u>Construction of a fishing shelter at Sarrafand in order to offer protection to boats in the area</u>	Sarrafand	2 years

	<u>Location</u>	<u>Duration</u>
(xv) <u>Establishment of Community Fishery Centres (CFCs)</u>		
These will be organized under existing cooperative channels and will be supported by the Fisheries Technology and Extension Unit. Two CFCs will be provided with an ice-making machine, refrigerated truck for the transport of fish and a store for fishing equipment. Existing refrigerated chambers will be incorporated in the CFCs.	to be established	1 year
(xvi) Planning and establishment of a Fishery Inspection Unit in charge of Fishery Law enforcement.		
(xvii) <u>Follow-up Activities and Further Support</u>		
The project staff and consultants will make recommendations for follow-up activities and will identify areas in fisheries requiring additional assistance such as fishculture, fisheries management and harbour improvement. Project proposals will be formulated for international financing.		2 years
6. INPUTS		
(i) FAO will provide the following:		
a. Project Manager/Fishing Technologist	Beirut	36 m/m
The Project Manager will be responsible for supervising the work of FAO experts/consultants assigned to the project, co-ordinating their work with that of their counterparts and planning and implementing the project's work programme; advise on the selection and procurement of the fishing materials and equipment for the reactivation of the Lebanese fishery;		

Project Manager/Fishing
Technologist.....

Location

Duration

be responsible for the control of all EEC/FAO inputs; supervise the establishment of the FTEU; advise and assist in experimental and exploratory fishing; supervise and advise on the planning and construction of the project vessels, equipment and installations; advise and train counterpart staff; direct and assist in training of local fishermen.

Qualifications and Experience

Experienced in managing/administration and preparation of projects or institutes/extension units etc.

Minimum of 10 years experience in fishing technology and fisheries development.

b. Marketing/Cooperatives/Credit
Specialist

Beirut

34 m/m

Will supervise and advise on the organization of the CFCs and assist in their day-to-day operation including the supply and distribution of the fishing materials and equipment, marketing of catch and supply of ice; will also assist in and advise on the establishment of credit schemes giving the fishermen access to institutional credit and assist in their operation.

Qualifications and Experience

Experienced in managing cooperative or other small to medium size fishery business. Practical experience in fish marketing and in negotiating and managing and participating in the operation of credit schemes for small producers and other small-scale lenders, mutual funds, mutual guarantee groups and other similar institutions and organizations. Experience or active membership in fishermen's organizations, unions of boat-owners etc. desirable.

	<u>Location</u>	<u>Duration</u>
c. Masterfisherman (2)	To be determined	68 m/m
Will conduct exploratory/demonstration fishing in order to ascertain the best grounds and the appropriate gear to be used and the methods of use; will establish a primary demonstration unit in the FTEU; will train counterparts and fishermen in the various fishing communities in new techniques and demonstrate their increased efficiency in terms of fishermen's earnings.		

Qualifications and Experience

Experienced in organizing and carrying out echo-sounding surveys; ability to instruct counterparts and fishermen in the utilization and construction of fishing gear; experience in fish handling and conservation techniques; experience in utilization of diving equipment and diving techniques; experience in Mediterranean fishing methods preferably including purse seining with lights.

d. Consultants - in the fields of	To be determined	44 m/m
Harbour Engineering	Naval Architecture, Boatbuilding, Marine Engineering, Fish Processing, Fishery Statistics, Diving Instruction, Socio-Economics, Training/Extension, Stock Assessment/Fisheries Management, Fish Culture, Fisheries Legislation	

e. Provision of sub-contractual services

- (i.) Local construction of a multi-purpose project vessel of about 13 m o.a.l. will also be used for all experimental fishing.
- (ii.) Construction of three boats for light fishing about 5 m o.a.l.
- (iii.) Construction of fishing shelter at Sarrafand by extending the existing short mole in order to protect local fishing boats.
- (iv.) Charter of local fishing boats, under special agreements.

f. Training

- (i) Local training course (1 month duration) for counterpart staff to be assigned to the project in order to be capable to follow-up and carry out project work.
- (ii) Personnel will be given on-the-job training in the operation of the CFCs and the FTEU. This training will also cover equipment and methods introduced or promoted on the basis of the practical results of the exploratory/experimental fishing.
- (iii) Fellowships in fishing technology, fishing (masterfishermen) and fisheries extension.

g. Supplies and Materials

Stationery and office supplies, costs of document reproduction and library books.

h. Equipment

The necessary equipment for the project is listed overleaf.

<u>Item</u>	<u>Quantity</u>	<u>Description</u>	<u>Estimated price</u> <u>(US\$)</u>
1.1	3,000 pieces	<u>Trammel nets</u> Lint: Stretched mesh 36 mm PA twine R50 tex stretched length 100 m Depth 60 meshes <u>Armouring</u> Stretched mesh 180 mm PA twine R75 tex stretched length 200 m Depth 7 meshes	50,000
1.2	1,200 pieces	<u>High Trammels</u> Lint: Stretched mesh 70 mm PA twine R230 tex stretched length 100 m Depth 60 meshes <u>Armouring</u> Stretched mesh 280 mm PA R300 tex, Stretched length 200 m Depth 10 meshes	40,000
1.3	1,200 pieces	<u>Mono gillnets</u> Stretched mesh 70 mm PA Mono 0.6 mm diam Stretched length 100 m Depth 100 meshes	50,000
1.4	40 pieces	<u>Bottom gillnet (boops)</u> Stretched mesh 40 mm PA twine R50 tex Stretched length 100 m Depth 100 meshes	1,000
1.5	460,000 pieces	Plastic floats (20 grams buoyancy)	15,000
1.6	270,000 pieces	Plastic floats (30 grams buoyancy)	15,000
1.7	180,000 mtrs	PP or PE lines 4 mm diam	10,000
1.8	110,000 mtrs	PP or PE lines 5 mm diam	7,000
1.9	183,000 mtrs	braided PP or PE with lead inside lead core 100 gr/mtr	22,000
1.10	110,000 mtrs	as above but lead 150 grams/mtr	16,000
1.11	100 kg	PA twine R230 tex	500

<u>Item</u>	<u>Quantity</u>	<u>Description</u>	<u>Estimated Price</u> <u>(US\$)</u>
1.12	200 kg	PA twine R250 tex	1,000
1.13	200 kg	PA twine R600 tex	1,000
1.14	40 pieces	<u>Drift nets</u> Mesh stretched 80 mm Mono 0.6 mm diam Length stretched 100 mtrs Depth 120 meshes	3,500
1.15	40 pieces	<u>Drift nets</u> Mesh stretched 100 mm Multi-Mono 0.6 mm diam Length stretched 100 mtrs Depth 100 meshes	3,500
1.16	40 pieces	Mesh stretched 120 mm Multi-Mono 0.7 mm diam Stretched length 100 mtrs Depth 110 meshes	3,500
1.17	20,000 mtrs	Framing lines 6 mm diam twisted or braided PP or PE	2,500
1.18	10,000 pieces	Plastic floats 80 x 40 mm	2,000
TOTAL			US\$ 243,500
2.	120 pieces	Portable echo soundars	60,000
3.	Multi-purpose project vessel (13 ^m)		
3.1	1	wooden hull	15,000
3.2	1	engine diesel 80 hp	12,000
3.3	3	purse seine winch	10,000
3.4	3	power block	4,000
3.5	1	net-line hauler	2,000
3.6	1	echosounder fish finder	1,000
3.7	1	radar	3,000
3.8	1	radiotelephone VHF	500
3.9	1	miscellaneous install. expenses	6,000
TOTAL			US\$ 53,500

4.	Purse seining equipment		
4.1	3 units	Boats, 5 mtrs o.a.l. local construction	4,500
4.2	18 units	gas lamps for fishing with spare parts (3000 candles)	9,000
4.3	3 units	ready sardiné net hanging length 250 m depth 50 m	45,000
		Total	58,500
5.	Floating long-lines		
5.1	220 x 1 000 m	Monofilament 1.6 mm diam	3,000
5.2	140 x 1 000	" 1.2 mm diam	1,600
5.3	50 x 100	Mustad round bend hooks No.1	1,000
5.4	Miscellaneous (buoys etc)		2,000
		Total	7,600
6.	Sponge fishery		
6.1	2 units	Decompression chambers (one man)	25,000
6.2	20 units	Aqualung units (twin cylinder type)	8,000
6.3	20 units	Masks	100
6.4	20 pair	Flippers	300
6.5	20 units	Diving suits	1,000
6.6	8 units	Air compressors (to be installed on boats)	24,000
		Total	58,400
7.	<u>Community Fisheries Centre</u>		
7.1	2 units	Ice-making machine each 1 ton/day capacity	100,000
7.2	2 units	Refrigerated lorries	40,000
		Total	140,000
8.	50 units	Hydraulic net-line haulers	100,000
9.	4	Project vehicles	40,000
10.	Equipment for repair/maintenance		12,000
11.	<u>Fisheries Technology and Extension Unit</u> Miscellaneous equipment for the FTEU and smallboat engines and carpentry		50,000
12.	Additional fishing gear to be identified by the project during the first year		56 500
		GRAND TOTAL	880 000

(ii) Government:

- a. The Government will assign the necessary scientific, technical and support staff before the project becomes operational;
- b. The Co-manager will be appointed by the Ministry of Agriculture and will participate in all aspects of the Project;
- c. The Government will provide all necessary land, premises and office furniture for the project headquarters and the Community Fishery Centres such as offices and storage rooms;
- d. The Government will prepare the necessary study and plans for the construction of the fishing shelter at Sarrafand in consultation with the Project;
- e. The Government/local authorities will provide the amount of LL 143 750 necessary for miscellaneous and operational expenses of the Project;
- f. The Government inputs are given in the budget covering its contribution (Appendix 2).

7. PREPARATION OF WORK PLAN

A detailed work plan for the implementation of the project will be prepared by the Project Manager and the other international staff in consultation with the Co-manager and other counterparts and the EEC Country Delegate. This will be done at the start of the project and updated periodically.

8. INSTITUTIONAL FRAMEWORK

Fisheries services in Lebanon are the responsibility of the Forests and Natural Resources Department of the Ministry of Agriculture. District offices exist in the country where the personnel employed deal not only with fishery matters but with all aspects falling under the Department of Forest and Natural Resources. The post of the Director of Fisheries is mainly administrative.

The Marine Research Centre (MRC) of the National Council for Scientific Research (NCSR) established in 1978, is an autonomous body which deals with fishery research and has an interest in extending its activities towards other fields such as fishing gear research and stock assessment.

In view of the above and due to the complete lack of local fisheries extension services and the lack of trained local staff the resources of the Ministry of Agriculture, the Ministry of Cooperatives and Housing and the Marine Research Centre of the NCSR will be mobilized for joint action to implement the Project.

The Ministry of Agriculture will provide personnel for the extension services, part of the local personnel needed and the physical facilities required by the Project;

The Ministry of Cooperatives and Housing will assist in the establishment and operations of the two Community Fishery Centres.

The MRC will be involved in experimental/exploratory fishing and in matters related to modernization of fishing gear and fisheries statistics. It will provide part of the local staff needed as well as cover the relevant operation and maintenance expenses involved. It will cooperate closely with the Fisheries Technology Extension Unit.

Coordination of project activities will be accomplished by an Advisory Committee composed of:

Director-General of Agriculture
Director-General of Cooperatives
FAO Country Representative
EEC Country Delegate

The Committee shall meet at least once every three months. Any member may request a meeting in the interim, but a meeting shall be considered invalid unless attended by each member or his designate. The Project Manager will serve as a Secretary to the Committee.

9. PROGRESS AND TERMINAL REPORTS

The Project Manager will submit three-monthly progress reports and a terminal report.

10. MONITORING REVIEWS

The project will be periodically reviewed. A first review will be conducted about six months after commencement of operations.

PROJECT BUDGET COVERING EEC CONTRIBUTION (US \$)

	Total		1983		1984		1985		1986	
	m/m	US\$	m/m	US\$	m/m	US\$	m/m	US\$	m/m	US\$
10. <u>Personnel Services</u>										
Project Manager (Fishing Technologist)	36	261 000	9	65 250	12	87 000	12	87 000	3	21 750
Marketing/Cooperative/Credit Expert	34	221 000	7	45 500	12	78 000	12	78 000	3	19 500
Masterfisherman	34	221 000	7	45 500	12	78 000	12	78 000	3	19 500
Masterfisherman	34	221 000	7	45 500	12	78 000	12	78 000	3	19 500
Consultants	44	308 000	4	28 000	30	210 000	6	42 000	4	28 000
Administrative Support Personnel		36 000	-	6 000		12 000		12 000		6 000
Component Total	182	1 268 000	34	235 750	78	543 000	54	375 000	16	114 250
20. <u>Official Duty Travel</u>										
Duty Travel		60 000		15 000		20 000		18 000		7 000
30. <u>Contractual Services</u>										
Vessel construction		26 000		26 000		-		-		-
Construction of boats for light fishing (3)		6 000		6 000		-		-		-
Fishing shelter construction		150 000		-		150 000		-		-
Ice Plant Installation		7 000		-		7 000		-		-
Report		3 000		-		-		-		3 000
Component Total		192 000		32 000		157 000		-		3 000
40. <u>General Operating Expenses</u> (including maintenance of vehicles and equipment)		200 000		40 000		60 000		60 000		40 000
50. <u>Supplies and Materials</u>		20 000		5 000		5 000		5 000		5 000
60. <u>Equipment</u>		880 000		230 000		325 000		225 000		100 000
80. <u>Fellowships, Grants and Contributions</u>										
Fishing Gear Technologists	20	40 000		-		-	20	40 000		-
Masterfishermen	20	40 000		-		20	40 000			-
In-Service Training		10 000		2 000		5 000		2 000		1 000
Component Total		90 000		2 000		45 000		42 000		1 000
Sub-Total		2 710 000		559 750		1 155 000		725 000		270 250

	<u>Total</u> m/m	<u>1983</u> m/m	US\$	<u>1984</u> m/m	US\$	<u>1985</u> m/m	US\$	<u>1986</u> m/m	US\$
90. Support Costs (13%)	352 300		72 768	150 150	94 250		35 132		
TOTAL	3 062 300		632 518	1 305 150	819 250		305 382		
Special Factor (10% cumulative)	385 980		-	130 515	163 850		91 615		
GRAND TOTAL	3 448 280		632 518	1 435 665	983 100		396 997		

Project Budget covering Government contribution (in Lebanese pounds)

	1983		1984		1985		1986			
	m/m	LL ' m/m	LL ' m/m	LL ' m/m	LL ' m/m	LL ' m/m	LL ' m/m	LL		
10 PROJECT PERSONNEL										
10.01 Project										
Co-Manager	36	192 000	9	45 000	12	63 000	12	66 000	3	18 000
10.02 Biologists (2)	72	269 400	18	63 000	24	88 800	24	93 600	6	24 000
10.03 Technical staff	350	583 200	28	42 000	128	204 800	128	217 600	66	118 800
13 Admin. support	60	99 000	6	9 000	24	38 400	24	40 800	6	10 800
Component Total	518	1 143 600	61	159 000	188	395 000	188	418 000	81	171 600
43 Premises		340 000		150 000		75 000		75 000		40 000
44 Improvement in premises		300 000		150 000		75 000		75 000		
Component Total		640 000		300 000		150 000		150 000		40 000
50 Miscellaneous Operation and maintenance of equipment		143 750		12 500		52 500		52 500		26 250
GRAND TOTAL		1 927 350		471 500		597 500		620 500		237 850

الجمهورية اللبنانية
 مكتب وزير الدولة لشؤون التنمية الإدارية
 مركز مشاريع ونشاطات القطاع العام

Republic of Lebanon
 Office of the Minister of State for Administrative Reform
 Center for Public Sector Projects and Studies
 (C.P.S.P.S.)