IOP/TECH/76/8

INDIAN OCEAN PROGRAMME

establishment of an agricultural and fisheries development authority in the united arab emirates

UNITED NATIONS DEVELOPMENT PROGRAMME

FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS

The Establishment of a Fisheries and Agricultural Development Authority in the United Arab Emirates

by

N. Gustafsson
and
G.K.F. Moore

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
UNITED NATIONS DEVELOPMENT PROGRAMME
Rome, February 1976

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

TABLE OF CONTENTS

TABLE OF CONTENTS

1. INTRODUCTION

The Government of the United Arab Emirates (UAE) and its Ministry of Agriculture and Fisheries is currently considering the establishment of a Fisheries Development Corporation in the UAE. The purpose of the Corporation would be to act as the executing agency for Government assistance to fishermen and for Government involvement in commercial activities in the public sector, and in particular in fish marketing, hopefully as a precursor to cooperative activity in these activities. Accordingly, the Ministry of Agriculture and Fisheries (M.A.F.) requested the assistance of a technical and a legal/institutional consultant to assist in the preparation of a detailed proposal concerning the establishment of the proposed Fisheries Development Corporation, and to advise on matters relating to the organization of fish marketing and the promotion of cooperatives. The technical consultant, Dr. N. Gustafsson, visited the UAE from 21 September 1975 to 17 October 1975, and the Legal/Institutional Consultant, Mr. G. Moore, from 2 to 17 October 1975.

The terms of reference of the consultants were:

> "To assist the Government of the United Arab Emirates in the drafting of a detailed proposal for the creation of a Fisheries Development Corporation and to advise generally on legal matters relating to fishermen's cooperatives; and
>
> To advise the Government on strategy for the eventual development of fishermen's cooperatives in the United Arab Emirates, and for Government intervention in fish marketing."

During the course of their visit to the UAE, the consultants held discussions with the Ministry of Agriculture and Fisheries in Dubai, and with other interested Ministries and organizations in Abu Dhabi, and visited fishing communities in other areas of the country.

The present report of the consultants attempts to analyse the existing framework of policy, laws and institutions to evaluate the need for a new institution or institutions in light of the functions of existing institutions, and to investigate the type of institution required and the allocation of functions between it and existing institutions. The report then describes the suggested structure and functions of the new institution proposed, and looks at suggested ways in which that institution could best implement its functions from the point of view of marketing and the promotion of cooperatives.

FAO wishes to express its appreciation for the assistance afforded to the consultants during their Mission by the Minister for Agriculture and Fisheries, H.E. Said Salman, the Fisheries Adviser, Dr. Rifat Ali, the staff of the Ministry of Agriculture and Fisheries, Mr. Mahmoud Safwat, Director of the Development Bank of the UAE, Dr. S. Murad, Adviser to the Ministry of Economy and Commerce, Dr. Awad Al-Murr, Adviser to the Ministry of Justice, and officers of other Ministries and institutions with whom valuable discussions were held.

During their Mission, the consultants coordinated their work closely with that of the FAO Consultant on Agricultural Marketing, Mr. J. Coudert, whose terms of reference included advising on the establishment of an Agricultural Development Corporation. Views and opinions were exchanged and discussed, and complete agreement was reached on the broad lines of approach to the establishment of an Agriculture and Fisheries Development Authority for the UAE and other general recommendations made in the report of Mr. Coudert, and in the present report.

This report was prepared prior to the Mission of M.K. El Far on problems of credit. The report should therefore be read subject to the recommendations of that Mission.

2. POLICY DIRECTIONS

As a national policy, the Government is anxious to diversify the economy of the country, now based primarily on oil. As far as fisheries are concerned, which represent the second

most important natural resource industry, the national policy objective is to stimulate development of the sector as a means of economic diversification, to provide a local source of reasonably priced food, and as a source of employment. To achieve these policy objectives, the Fisheries Department of the Ministry of Agriculture and Fisheries (M.A.F.) has initiated action to assist the development of the fisheries industry by means of a comparatively large-scale scheme of subsidies and credits for the purchase of engines, supplemented by a free repair service. It is proposed to expand this scheme to cover the purchase of fishing boats and gear during the forthcoming year, with a proposed budget of 20 million Dirhams, amounting to almost 10 000 Dirhams per fishing boat. A second basis of Government action is the improvement of infrastructure facilities, including the construction of harbour and landing facilities, cold stores and ice plants. A comprehensive survey of requirements for new harbours and landing facilities is planned for 1976.

One of the aims of the Ministry's policy is to develop processing industries based on fisheries, and in this connection the decision has already been taken to establish two fishmeal plants in the UAE financed by the UAE Development Bank with a total capacity of 600 tons per day. To develop other land-based industries and offshore production operations, the Government may look to joint venture arrangements with foreign or local capital and expertise.

Aside from promoting local production and processing capabilities, the Government plans to take action to improve marketing and distribution channels and facilities in order to reduce the cost to the consumer while protecting the income of the fishermen. It is planned to achieve this improvement, at least in part, by direct Government intervention in commercial marketing with the aims of stimulating competition and avoiding monopolistic or cartel practices, and of introducing improved techniques and technology through a "model" public sector operation.

As an ultimate aim, the Government plans to promote the development of cooperative movements in the fisheries sector, and envisage, for example, the eventual handing over of public sector commercial operations to such cooperatives or, failing that, to other private sector interests.

To support these policy objectives, the Government aims to improve its capabilities with respect to research and statistics in order to improve resource monitoring, and regulation and enforcement to guard against over-exploitation of resources. Although further efforts will be required in extension work, particularly in connection with the subsidy and credit schemes and the promotion of cooperatives, a good deal of assistance on more advanced training can be expected from the Sub-regional Fisheries Training Centre in Kuwait.

3. CONSTITUTIONAL AND LEGAL STRUCTURE

3.1 The Constitution

A Provisional Constitution was adopted for the UAE on 18 July 1971 and entered into force on 2 December 1971. The Provisional Constitution provides that the Islamic Shari'a is a main source of legislation in the Union (Art. 7) and lays down the division of powers and responsibilities as between the Union and the Emirate Governments. Basically, the Union has exclusive legislative and executive jurisdiction over all matters that are concerned with the strengthening of the Federation, including such matters as foreign affairs, defence, security, finance, education, etc.

Fisheries are not specifically mentioned in the Articles of the Provisional Constitution dealing with the distribution of powers. However, it would seem that fisheries would be included under the general heading of "the protection of agricultural and animal wealth" for which exclusive legislative jurisdiction only is assigned to the Union (Article 121). Matters of "civil and commercial transactions and company law" and "delimitation of territorial waters and regulation of navigation on the high seas" are similarly assigned to the

exclusive legislative jurisdiction of the Union under Article 121. The individual Emirates, for their part, are to retain jurisdiction in all matters not assigned to the exclusive jurisdiction of the Union (Article 122).

A permanent Union Constitution has been under preparation at the Ministry of Justice since June 1974, and is expected to enter into force at the end of 1976, the date set for the expiry of the Provisional Constitution under Article 144.

3.2 Laws Directly Affecting Fisheries

At the present moment there are no Union or Emirate laws directly regulating fisheries in the UAE.

3.3 Laws Indirectly Affecting Fisheries

3.3.1 Territorial sea and fishing limits

On 5 April 1970 the Ruler of Sharjah issued a Supplementary Decree concerning the Territorial Sea of the Emirate of Sharjah and its Dependencies, which established territorial sea limits of 12 nautical miles from the base lines on the coasts of the mainland and of the Islands of the Emirate (Art. 1). No other Emirate decrees or Union legislation have yet been promulgated on the matter, which under the Provisional Constitution now lies within the exclusive legislative jurisdiction of the Union Government. As a result, territorial sea and fishing limits for the UAE, with the exception of Sharjah, remain undefined.

3.3.2 Merchant shipping

No Union or Emirate legislation regulating navigation and merchant shipping exists in the UAE, with the exception of a single decree of the Ruler of Sharjah. Under the Provisional Constitution exclusive legislative jurisdiction over the regulation of navigation on the high seas is assigned to the Union Government and work is in progress on the preparation of a Union Law on Merchant Shipping. The present draft, prepared with the assistance of Egyptian consultants, would not cover fishing vessels.

3.3.3 Marketing

No laws or regulations governing marketing operations exist at present either at the Union or the Emirate level. In practice, the municipalities do exercise some control over the fish markets and in particular over the allocation of retail stalls, but there is, as yet, no legislative basis for these controls.

3.3.4 Processing industries and health controls

No legal controls over the establishment and operation of processing industries and related health aspects exist at present at either the Union or Emirate levels. Under the Provisional Constitution matters of public health and medical services are within the exclusive legislative and executive jurisdiction of the Union.

3.3.5 Customs laws

There is at present no Union law on customs, although the Provisional Constitution assigns questions of Union taxes, duties and fees to the exclusive legislative and executive jurisdiction of the Union. An Emirate customs law exists in Dubai, but the amount of duty charged on imports is very low, and does not apparently in practive have any great effect on the fisheries sector.

3.3.6 Labour and social security laws

Matters of labour relations and social security are assigned under the Provisional Constitution to the exclusive legislative jurisdiction of the Union. At the present moment no legislation is in existence, although a draft Union law is now before the Union National Assembly. The draft law would, inter alia, introduce the concept of the eight hour working day. Exceptions would be made for various sectors of activity where the conditions of work would make the regulation of working hours unacceptable, or in some way contrary to the national interest. The agriculture sector is specifically listed as one exception, but no direct mention is made of fisheries. In view of the difficulties which the introduction of standard working hours regulation could cause for fishing activities, it is suggested that the scope of this exception should be clarified as including fishing activities. At a later date separate working hours regulations could be introduced that are more fitted to the particular exigencies of the fishing industry.

3.3.7 Commercial law

A decree governing commercial transactions is presently in force in the Emirate of Abu Dhabi. Under the Provisional Constitution of 1971, however, matters of commercial transactions and company law are allotted to the exclusive legislative jurisdiction of the Union. While there is no Union law yet in force, a draft Companies Law based on the English Companies Act is now in an advanced stage of preparation.

3.4 Recommendations

As the Government is planning to make substantial investments in the future development of the fisheries industry in the UAE, it is recommended that a basic Union law on fisheries should be prepared as soon as possible. As far as detailed regulations designed to protect the resource against overfishing are concerned, their formulation may need to wait upon the results of the surveys being undertaken by the Gulfs project and the outcome of monitoring work undertaken by the Government itself. But a framework for future controls can be provided now.

4. INSTITUTIONAL AND ADMINISTRATIVE STRUCTURE

4.1 Institutions Dealing Directly with Fisheries

4.1.1 The Union Ministry of Agriculture and Fisheries

The main responsibilities for all fisheries matters are presently located with the Union Ministry of Agriculture and Fisheries (M.A.F.). The Ministry (see attached organigram at Annex A) includes six Departments dealing with Planning, Fisheries, Animal Wealth, Agriculture, Administration and Finance. General research, including fisheries research, is allocated to the Planning Department. The Fisheries Department itself is composed of three sections dealing with Fisheries Services, Fisheries Production and Industry, and Ice and Cold Storage respectively, under the general direction of a Fisheries Adviser and a Director of Fisheries. Altogether the staff of the Department amounts to some 140 persons, including ten officers.

4.1.2 Emirate institutions

While coordinated closely with the Union M.A.F., the Abu Dhabi Department of Agriculture and Municipalities has in practice a good deal of autonomy and an independent budget. In the fisheries sector, the Department has been operating a scheme of fixed guaranteed prices for fishermen, as well as a public sector marketing scheme for fresh vegetable and fruit produce in al'Ain. As far as fisheries matters generally are concerned, however, the major initiative lies with the M.A.F.

4.2 Institutions Dealing Indirectly with Fisheries

4.2.1 The Ministry of Planning

While initial planning originates in the substantive Ministries, the plans are subject to examination and coordination on the basis of national policy priorities and budget availability by the Union Ministry of Planning. At the moment, however, there is no section or officer specializing particularly in agriculture or fisheries matters.

4.2.2 The Ministry of Finance and Industry

All credits and subsidies offered by the M.A.F. under its development scheme are subject to approval and realising of funds by the Ministry of Finance. In practice approval appears to be a formality within the limits of the financial budget.

4.2.3 The Development Bank of the United Arab Emirates

At the moment there is a limit of 44 000 Dirhams on credits offered by the M.A.F. Loans over this limit are forwarded to the Development Bank, which charges 4 percent interest on its loans to fishermen and takes a lien over the engines, boat or gear that are the subject matter of the loan and does not require collateral security. As it expands its programme of subsidies and credits into fishing boats and gear, the M.A.F. plans to increase the limit on its loans.

4.2.4 The Ministry of the Interior

The Ministry of the Interior, through the Union Coastguard, is responsible for the protection of local fishermen and enforcement of any applicable regulations.

4.2.5 The Municipalities

The Emirates and Municipalities have until recently undertaken the construction of harbours and landing facilities for fishermen on their own initiative. Although a comprehensive programme for construction of such facilities is now planned by the M.A.F., the Emirates and Municipalities still have a power of approval over individual projects in so far as the necessary land must first be released for the project.

Although not supported by any legal requirement, the M.A.F. have encouraged voluntary free registration of fishing boats with the Municipalities or Customs offices, by fishermen receiving subsidies and credits. Evidence of registration is required before such subsidies or credits are granted.

4.2.6 The Ministry of Public Works

While the initial decision on the need for and the siting of harbour and landing facilities, cold stores, ice plants, etc., is a matter for the M.A.F., responsibility for construction and arrangements for tender work is now undertaken in cooperation with the Ministry of Public Works. Once constructed, though, responsibility for operation and maintenance of the facilities rests with the M.A.F.

4.2.7 The Ministry of Economy and Commerce

The Ministry of Economy and Commerce is responsible for overall supervision of the UAE Trading Company, which is a joint venture enterprise between public and local private capital involved in the import and marketing of a certain number of staple items, including some non-perishable foodstuffs such as rice and flour. Plans are now being discussed for the formation of a further corporation under the Ministry but including representation of other Ministries including the M.A.F., that would handle retail marketing of a wider range of goods, including fresh fruit, vegetables and fish, and which would be open to all consumers whether UAE citizens and residents or not.

4.3 Summary of Public Institutions Involved in Fisheries, by Function

I.	Planning	M.A.F. Ministry of Planning
II.	Development and Promotion	
	2.1 Credit and subsidies	M.A.F. Ministry of Finance Development Bank
	2.2 Infrastructure facilities	M.A.F. Ministry of Public Works Emirates
	2.3 Processing	M.A.F. Emirates Development Bank
	2.4 Marketing	M.A.F. Ministry of Economy and Commerce Emirates UAE Trading Company
	2.5 Training and extension	M.A.F. Sub-regional Fisheries Training Centre
III.	Research and Statistics	
	3.1 Research and survey	M.A.F. UNDP/FAO Gulf Survey
	3.2 Statistics	M.A.F.
IV.	Regulation	
	4.1 Resource protection	[M.A.F.]
	4.2 Fishermen	[M.A.F.]
	4.3 Fishing boats	[M.A.F.] [Emirates]
	4.4 Marketing	[M.A.F.]
	4.5 Processing	[M.A.F.]
V.	Enforcement	[M.A.F.] [Ministry of Interior]

5. INSTITUTIONAL AND ADMINISTRATIVE CONSTRAINTS TO FISHERIES DEVELOPMENT AND THE NEED FOR NEW INSTITUTIONS

5.1 Operation of the Subsidy and Credit Scheme

Although there may be several institutions involved in the granting of subsidies and loans to fishermen (M.A.F.; Ministry of Finance; Development Bank), the average speed with which applications are dealt with (two to four weeks from time of application to payment) seems commendable. The administration of the scheme by the M.A.F. does, however, suffer from one major administrative difficulty, namely that subsidies and credits can only be

paid out during the period between approval of the budget (approximately June each year) and the end of the financial year (31 December). During the remaining six month period no loans or subsidies can be granted. In addition, under the present staffing of the M.A.F., the operation of the comparatively large-scale scheme places an excessively heavy burden on the Fisheries Department, to the detriment of other planning, development and control functions. The dearth of adequate trained staff also raises the danger of insufficient controls over the selection of applicants, although this danger is to some extent masked by the sheer magnitude of the funds available for the scheme.

Some of these constraints could be removed by increasing the number of trained staff in the Fisheries Department. The financial budget restrictions are a wider problem that could be solved only by a general revision of budgetary practices in the Government administration, or alternatively by transferring the operation of the credit and subsidy scheme to a public development body attached to the Government administration, but with a measure of financial autonomy.

5.2 The Operation of Commercial Enterprises

If the Government is to enter into public sector commercial activities as a means of spearheading fisheries development and providing the stimulus of competition for the private commercial sector, then these activities must be carried out on a sound and efficient commercial basis if they are to fulfil their objectives. Such commercial activities cannot be carried out effectively within the administrative structure of a Government Department, which does not allow for the flexibility in staffing, decision-making and financial matters essential for commercial dealings. At the moment, the Government has taken the decision to enter into the fishmeal industry and is planning to enter into commercial fish marketing. As presently envisaged, the fishmeal operations would be undertaken by a separate company formed on a joint management basis with foreign expertise and with the Government equity held by the Development Bank. Technical advice and supervision would be provided by the M.A.F. as far as possible.

Given the policy trend towards Government intervention in public sector commercial activities, including not only fishmeal and marketing but also the possiblity of expansion into other processing activities and joint venture arrangements for fish catching, the ad hoc arrangement envisaged for the fishmeal enterprise would seem not wholly satisfactory. While preferable to direct involvement of the M.A.F. in commercial activities, it does not allow for the building up of commercial management experience and its application to other public sector activities. As far as commercial marketing is concerned, similar considerations would apply, and while a separate commercial operating unit would be called for, a management linkage with the Development Bank with the technical advice of the M.A.F. would not appear appropriate or commercially viable.

5.3 Conclusions

The above analysis of some of the institutional and administrative constraints to fisheries development would suggest the need for some restructuring of functions and the creation of a new public organization or organizations with a degree of financial and administrative independence to undertake public sector commercial functions and possibly credit and subsidy functions. In the following section various possible approaches to a solution to these problems will be examined.

6. POSSIBLE APPROACHES

6.1 General Considerations

Any satisfactory approach should provide as far as possible for the following:

(a) freedom from governmental financial procedure restrictions on credit and subsidy activities;

(b) flexibility in staffing, decision-making and financial operations for public sector commercial operations;

(c) a continuing focal point for public sector investment in fisheries;

(d) flexibility in turning over individual commercial operations or units of those operations to cooperative or private management and ownership.

It should, at the same time, avoid the creation of large unwieldy organizations with diversified objectives and functions, and in particular the intermingling of social and commercial functions within the same operational units.

6.2 Creation of a Fisheries Development Corporation Responsible for all Public Sector Commercial Activities in Fisheries while Retaining Credit and Subsidies with the M.A.F.

This approach would allow for the necessary flexibility for commercial operations. To ensure that individual activities are run economically (e.g. fishmeal and marketing) and can, when necessary, be turned over easily to cooperative or private ownership, these individual activities would need to be run as separate commercial units with their own budgets and commercial accountability. This approach would not, however, solve the problem of financial procedure restrictions on the payment of subsidies and credits, which would require general changes in these governmental procedures.

6.3 Creation of a Fisheries Development Corporation Responsible for all Public Sector Commercial Activities in Fisheries, while Transferring Credit and Subsidies from the M.A.F. to the Development Bank

This approach would allow for both commercial and financial procedure flexibility. However, control over the selection of applicants for the credit and subsidy schemes would need to be retained by the M.A.F. if it is to retain control over an important part of the implementation of its general policy of fisheries development. In addition, the Bank's procedures would not allow for the granting of subsidies and, as appropriate, interest free credit.

6.4 Creation of a Fisheries Development Corporation with Responsibility for all Public Sector Commercial Activities in Fisheries, and with Responsibility for the Operation of the Subsidy and Credit Scheme

This possible approach presents initial attractions. Problems of commercial and financial flexibility can be overcome and, at first sight, the Corporation could arrange for credit repayments to be made at the time and point of purchase of fish through its marketing operations. However, the approach does also present some dangers. In the first place social development activities, which are not expected to operate on a commercial basis, must be kept separate and distinct from commercial functions, and must be budgeted separately, if the commercial operations are to function effectively and efficiently. Secondly, the type of management required for each type of activity is different. Social development activities require management reflecting, primarily governmental and social interests, while commercial activities require management based primarily on business experience and expertise. Thirdly, if the public sector commercial marketing operations are intented, at least in part, to stimulate competition, it will be difficult to tie credit and subsidy availability to use of the Government marketing channels. Such a tie would tend towards the creation of a Government monopoly, or, at the least, towards unfair competition with the private marketing sector, discouraging the growth of that sector and at the same time encouraging inefficient operation of the public sector activities. It would thus seem that credit and subsidy operations, which should be directed to all fishermen whatever their marketing preference, should be kept distinct from commercial marketing functions, which should be aimed at attracting only a proportion of the fishermen to its marketing channels in competition with the private sector.

Finally, by intermingling social and commercial functions, this possible approach, without modification, would risk creating the very type of unwieldy "monster" organization that should be avoided at all costs. It would also create difficulties in transferring commercially operating units over to cooperative or private ownership.

6.5 Creation of a Fisheries Development Corporation or Authority with Responsibility for Credit and Subsidy Programmes and Generally for Public Sector Investment in Fisheries Development and with the Power to Create Commercial Operating Subsidiaries

Under this possible approach, responsibility for the operation of the subsidy and credit programme would be vested with a Fisheries Development Corporation or Authority as part only of general public investment in fisheries development. The management of the new body, which would reflect primarily Government interests with commercial and economic advice, would be responsible not only for operating the existing programmes, but also for actively seeking out new areas for public investment. Actual commercial operations, however, would be carried out, not by the Corporation directly, but by individual subsidiary companies under commercial management and with separate budgets for each investment undertaking. Such subsidiaries, which would be accountable for their results to the parent Corporation, could be wholly owned or joint venture arrangements with foreign or local private or cooperative interests, as may be appropriate in each case. This possible approach would make it easier to transfer individual commercial operations to private or cooperative management and ownership, either directly or gradually through increasing equity participation in the subsidiary.

The above approach presents a workable method of operating by creating small and easily manageable commercial units while retaining a public sector focal point for policy direction. In this respect, it also follows recent trends in corporate organizations in many private sector commercial concerns. One further aspect of this approach, however, must be seriously considered, namely the possible danger of an unwarranted proliferation of organizations in one sector of what is, in fact, a small country, and the consequent danger of overloading comparatively small operations with excessively high management costs. To a certain extent this danger is more apparent than real. Some of the proposed activities, namely those in which there is to be joint equity participation between the public sector and local or foreign partners, as for example joint venture activities in offshore fishing, will need in any case to be operated by separate commercial companies in order to allow for the joint ownership and management control. In other cases, it may be strongly advisable to create separate commercial companies to operate particular activities, expecially where eventual transfer to cooperative control is envisaged. In this way an opportunity can be given to cooperatives, or cooperative members, to acquire shares in the company, and management experience through representation on its Board of Directors. In every case, day to day management decisions in such disparate activities such as the running of fishmeal plants, fish marketing, and the operation of a fishing fleet, cannot be entrusted to one person but would need to be delegated to individual managers for each activity, whether or not separate companies were formed.

While to a certain extent the dangers of over-proliferation of organizations are thus more apparent than real, two things should nevertheless be done to minimize the dangers. In the first place, any proposal to create a subsidiary should be judged against the criteria that the activities to be undertaken must be small and similar enough to be easily manageable as a commercial unit, and that they must be large enough to make that unit commercially viable. Secondly, every effort should be made to minimize wasteful usage of management and staff at both the level of the subsidiary companies and at the level of the parent development corporation or authority. In this latter connection, a final possible approach of creating a single development corporation or authority to cover agricultural development as well as fisheries development should also be considered.

6.6 Creation of an Agriculture and Fisheries Development Corporation or Authority with Responsibility for Credit and Subsidy Programmes and Generally for Public Sector Investment in Agriculture and Fisheries Development and with the Power to Create Commercial Operating Subsidiaries

The Government is currently considering the establishment of a parallel development body in the agricultural sector that would be responsible for channelling credit and other forms of financial assistance to the farming community, investing in and undertaking public sector commercial activities in such areas as marketing, packing, exporting and perhaps processing of agricultural produce, and for promoting the establishment of cooperative movements among farmers. It is believed that essentially the same considerations as analysed above in connection with fisheries are applicable also to the agricultural sector; a belief that is also shared by the FAO/UNDP Consultant on Agricultural Marketing, M.J. Coudert. It is therefore suggested that the same basic approach should be adopted for agriculture as for fisheries, namely the creation of a development corporation or authority responsible for credit and general investment in agricultural development, with actual commercial operations carried out by commercially based subsidiary companies. In view of the essential similarity of functions, considerable advantages could be obtained by merging the two initiatives into a single Agriculture and Fisheries Development Corporation or Authority. In the first place, a more rational and economical use of the available resources could be achieved by utilizing the same management, project and investment analysis staff and accounting controls for both agriculture and fisheries projects. Such economies will be desirable, not only from the point of view of reducing the management overhead costs for the commercially operating subsidiaries, but also from the point of view of easing the difficult task of finding sufficient experienced and competent staff. In the second place, such a merger of the two initiatives would ensure the coordination of development policies for the two related fields, with particular regard to credit, price support and stabilization schemes for foodstuffs and the promotion of cooperatives.

As far as the practicalities of such a merger are concerned, few problems would arise. Basically the same interests would need to be represented on the Board of Directors, with the particl exception of the private sector interests, and the management expertise required, being primarily concerned with commercial investment, would not be essentially different. Technical commercial expertise would be provided at the level of the commercial operations, which would, of course, remain as separate subsidiary units.

6.7 Conclusions

From the above analysis of possible approaches, it is submitted that the creation of an Agriculture and Fisheries Development Corporation or Authority with responsibility for credit and subsidy programmes and generally for public sector investment in agricultural and fisheries development and with the power to create commercial operating subsidiaries, presents the most suitable approach to meet the needs of the UAE. The following sections will examine in more detail the possible structure of such a corporation or authority.

7. STRUCTURE AND FUNCTIONS OF THE PROPOSED AGRICULTURE AND FISHERIES DEVELOPMENT CORPORATION OR AUTHORITY

7.1 General

There is no particular magical connotation in the nomenclature of the proposed new body as a "Corporation" or an "Authority", and either name could well be used. In general, however, the name "Corporation" tends to imply some direct involvement in actual commercial undertakings, while the term "Authority" implies more that the body is to be used for the promotion of and channelling of assistance to commercial activities, rather than directly undertaking those activities itself. For this reason the description "Authority" ("Mu'assasa") is perhaps to be preferred.

7.2 Structure

The structure of the proposed development authority should follow the classical form for such bodies, namely:

- independent corporate structure and legal personality;
- a degree of financial autonomy;
- overall control by the Minister of Agriculture and Fisheries in such matters as the appointment of the Chairman of the Board and certain major policy decisions;
- general management direction by a Board of Directors representing governmental interests but including representation of private sector interests;
- day to day management in the hands of a Managing Director;
- an independent Development Fund made up of contributions from the Government budget, profits or dividends from its operating subsidiaries as appropriate, and loans contracted directly by the Authority.

The Board of Directors should preferably be kept as small as possible to avoid being unwieldy, and should consist of no more than a Chairman, a Managing Director, representatives nominated by the two departments of the Ministry of Agriculture and Fisheries directly involved, a member nominated by the Ministry of Economy and Commerce in view of its interests in trade in general and marketing in particular, two representatives of the private sector of fisheries including fishermen's cooperatives when they come into existence, and two representatives of the private sector of agriculture, including farmers' cooperatives when they too come into existence. Provision might also be made for the appointment at a later date of no more than two other members by the Minister, should this become necessary, to ensure the representation of other interested groups or bodies, such as a cooperative development group.

The Chairman of the Board should preferably be an independent person of some standing with, perhaps, a political background, whose functions would be to represent the Authority in matters of a ceremonial or political nature and to preside at meetings of the Board of Directors. An important part of the Chairman's functions would be to canvass political opinions and reactions to the policy and work of the Authority with particular respect to the individual Emirates, and to explain its activities at these levels. He should not be concerned with problems or decisions relating to the day to day management of the operations of the Authority or its subsidiaries.

The task of the Managing Director, on the other hand, will be to oversee the general day to day management of the operations of the Authority and to oversee the management of the operations of its subsidiaries through their boards. In most, if not all, cases it will be desirable for the Managing Director to act as the Chairman of the Board of Directors of each of the subsidiary companies to ensure coordination of their activities. The Managing Director should be a person with considerable commercial management experience and competence.

As for the staffing of the Development Authority, the number of staff should be kept strictly limited with emphasis on personnel to run credit and subsidy schemes, project and investment evaluation economists, and accounting staff.

Each of the subsidiary companies would have its own small Board of Directors, which could include outside persons with commercial experience and, perhaps, an economist or other staff members of the Authority. The subsidiaries would be run on a commercial basis by their own Managing Directors.

As far as relations with the Ministry of Agriculture and Fisheries are concerned, the Authority would be, in effect, the executory arm of the Ministry in matters relating to financial assistance programmes and to public sector investment in commercial activities, though with a good deal of operating autonomy. The essential links with the Ministry would be threefold:

- the appointment of the Chairman and the Managing Director by the Minister. Other members would be appointed by the Minister formally but on the nomination, wherever possible, of the Ministry or other groups represented. In the case of the representatives of the Fisheries and Agricultural Department, this would, of course, also be on the nomination of the Ministry of Agriculture and Fisheries;

- a power of the Minister to issue general policy directions to the Authority;

- the power of the Minister to approve certain major policy decisions such as expansion into a new area of activity, entry into a joint venture and the budget. An annual statement of accounts and an annual report on the activities of the Authority would also be submitted to the Minister.

A suggested Draft Bill for the formation of the Authority is attached as Annex B to this report and a suggested organigram is attached as Annex C.

7.3 Functions and Powers

The functions of the new Development Authority should include the following:

(a) to promote the development of agriculture and fisheries and related industries through public investment in those sectors;

(b) to provide and supervise credit facilities and, as appropriate, subsidy arrangements for agriculture and fish production, and to establish and operate such price support and stabilization schemes as may be required;

(c) to promote efficient marketing of agricultural produce and fish both for domestic and export markets, and to engage, through its subsidiaries, in commercial marketing;

(d) to promote and invest in the establishment of fruit and vegetable collecting centres, fishing terminals, processing plants and other shore-based facilities, and to engage, through its subsidiaries, in the operation of such centres, terminals, plants and other facilities;

(e) to promote the development of cooperatives among farmers and fishermen and to transfer to such cooperatives management and ownership control over such of its commercial activities as may be appropriate.

The powers of the proposed Authority should include the usual powers to acquire, own and dispose of movable and immovable property, to sue and be sued in its own name, and to do generally all things necessary for the fulfilment of its functions, etc. Most importantly, they should also include the power to establish subsidiary companies to carry out commercial activities within the area of its competence, and the power to enter into equity participation (whether with a majority or a minority holding) in any agricultural, fishing or fisheries industry. Until such time as there is a Union commercial law in existence, the Authority will need to be empowered to establish the necessary statutes and operating procedures for any of the subsidiaries it creates.

Regulatory functions and powers, whether over marketing, processing or handling, etc., should not be entrusted to the Authority. Such functions and powers are essentially governmental in nature and should be exercised by the Government Ministries alone. To

entrust such functions and powers to a body that is itself involved in commercial activities in these fields, albeit indirectly through its subsidiaries or equity holdings, can only lead to conflicts of interest within the Authority and distrust on the part of its private sector competitors.

7.4 Projected Activities

Although it is not possible or desirable to establish any definite programme or time schedule of projected activities for the proposed Development Authority once it is established, the following broad projection may serve as an indication of the activities that could be undertaken by the Authority in the fisheries sector.

(a) Immediate activities

(i) undertaking of the credit and subsidy programme currently run by the Ministry;

(ii) taking over of the Government investment in the fishmeal plants already established;

(iii) creation of a marketing subsidiary and commencement of pilot marketing operations;

(iv) commencement of survey and feasibility studies for investment in processing industries.

(b) Medium-term activities

(i) extension of marketing activities;

(ii) creation of a processing subsidiary and investment in the processing industry;

(iii) undertaking surveys and feasibility studies for possible joint ventures in offshore fishing;

(iv) negotiation of and equity participation in offshore joint ventures.

(c) Long-term activities

(i) gradual transfer of marketing, fishmeal, etc., activities to cooperative management and ownership;

(ii) investment in other activities and taking over of fishing terminals, etc.

8. MARKETING

8.1 Description of the Present Marketing System

There are at present some eight major fish markets in the UAE, including two in Dubai-Deira, and in each of the other Emirates. In the markets visited in Dubai and Deira, and in Abu Dhabi, the markets are located alongside the fresh fruit and vegetable markets and, in some cases, the fresh meat markets. The markets themselves are open plan and fish is displayed and sold on raised and tiled permanent stalls. Although the premises are maintained reasonably clean, a considerable number of flies are attracted by the end of the morning sales, which commence at about 06.00 and end at about 09.30. In Dubai a proportion of the total fish passing through the market (estimated at approximately 65 per-cent) is landed by larger vessels at the wharf adjoining the market, and apparently sold directly to retailers. Fish on these vessels is kept in insulated iceboxes (normally old refrigerators) and, on the occasions observed, appeared well iced and of good quality. The

fish is, however, sometimes landed directly onto the dusty concrete wharf(on other occasions clean cloth sheeting was spread on the wharf) and is washed with sea water from the harbour. Although no reliable figures on prices are available, on one occasion in the Dubai market, a shipload of mixed snapper, tuna and small shark estimated at some 220 kg was seen to be sold to a retailer for about 1 500 Dirhams. Later in the same market snapper was seen to be sold retail for some 10 to 15 Dirhams per fish (c.1 kg) and sardine and small tuna for about twice that amount.

Other fish is delivered to the market by middlemen in iceboxes (frequently delapidated and dirty) in the pick-up trucks or the trunks of cars, from collecting stations along the coast. The quality of this fish appeared generally bad. No firm information is known of the prices paid to the fishermen along the coast by the middlemen.

Apart from the markets, it is understood that a certain amount of fish is sold directly to householders by street merchants, although no confirmation has been made of this. No fish appears to be sold in shops or supermarkets in either a fresh or frozen state, with the exception of imported frozen fish, of which a good deal is found in supermarkets.

Although no firm figures are available, estimates based on average per capita consumption and population figures would place the daily landing of fish for local consumption at about 30 to 40 tons.

8.2 Possible Methods of Improving the Existing Marketing

The Government has evinced general concern over the state of fish marketing in the country, alleging excessively high prices to consumers, or rather excessively inflating prices, poor prices paid by the middlemen to fishermen, and poor quality, and is seeking ways to improve that system. Although not enough firm information is available to allow one to judge objectively these allegations, it does appear from limited observations that certain improvements can be made through Government intervention in the marketing system.

(a) Advice and assistance

Some improvement could probably be achieved in the sanitary conditions in the markets, at least in Dubai, and in the quality of fish by installing some form of fly screens or deterrent and by encouraging the use of fresh clean water for the washing of fish at the wharf. The quality of fish collected by the middlemen would also be improved if the latter were encouraged to clean out the transport iceboxes after use and in most cases to replace them with less dilapidated boxes.

(b) Direct commercial involvement

(i) Expansion of retail outlets

There appear to be several possible directions in which the present limited retail outlets could usefully be expanded.

In the first place it may be useful to establish a fresh fish shop in the immediate vicinity of the fish market enclosed and air-conditioned to sell fish on a day long basis, in the same way as some butchers' shops have already been established. It is suggested that a small pilot shop could be established in Dubai to test consumer reaction to such new, more hygenic methods of retailing.

In the second place, it is suggested that a spearheading effort could usefully be made to introduce local fish into the supermarket system. This introduction would be effected in three separate ways:

- at a fresh fish manually serviced counter;

- in a prepackaged form in refrigerated self service display cases;

- as frozen fish to compete with the imported products.

It may be desirable to test run each type of product to determine consumer preference. Where necessary to overcome any reluctance on the part of the supermarket proprietor to introduce new products, sales areas could be rented for an initial period to establish the viability of the product.

In addition to opening private sector supermarket retail outlets, the subsidiary would need to sell directly to the cooperative shopping centres to be set up by the Government in each of the eight municipalities.

(ii) Distribution and collection

Some involvement of the marketing subsidiary in the collecting and distribution of fish from fishing communities along the coast may be required to introduce improved methods of handling and distribution, and an element of competition for middlemen. It is suggested that a test village be selected initially, a factual survey carried out to determine the methods of collection and distribution of fish and payment to the fishermen utilized by the middleman, and a suitable system of collection and distribution devised on the basis of that survey and discussions with the fishermen as to how, if at all, the existing system can be improved. A village that is already served by a fisheries department repair shop should be chosen for the test, and the repair shop used as the focal point for the discussions with the fishermen, in order to connect these services in the minds of the fishermen. The test system of collection and distribution should then be operated for a period of time in order to ascertain its effectiveness or drawbacks, and to clarify the potential economics of any larger scheme. It may well prove necessary to carry out more test operations before launching any full-scale operation. While it is not possible at this time to make any concrete recommendations as to the eventual form of the system to be adopted, the following factors should be considered:

- the test village will need to be linked with a larger collection centre where fish can be stored and eventually frozen. At the initial stages at least, this collection centre, which will service retail outlets or a processing plant, will need to be fed by larger scale landings at a major fishing port and perhaps even by purchases from middlemen;

- unattended iceboxes in which fish are left by the fishermen would be most economically attractive, but will present difficulties in operation;

- consideration must be given to finding methods of payment that are speedy and reliable and give due weight to the quality of the fish purchased;

- the possibility of contracting for the transport for fish collection instead of operating a fully owned transport fleet, at least initially, should be investigated as a means of reducing overhead capital costs.

8.3 Fishermen's Cooperatives

The type of cooperatives to be promoted and eventually initiated by the Authority are the producers cooperatives working for the benefit of the producers. The consumers cooperatives are to be initiated by another body in the society.

The fundamental task, and the first step in the initiation of a cooperative, is to transfer the idea and philosophy to each presumptive member.

In a country where a large number of people still are illiterate, the transfer of information should preferably be by personal contact. A focal point is needed where it is possible to discuss with the fishermen under relaxed and friendly terms. Audio-visual means may be used at a later stage.

A cooperative must always be well adapted to the local conditions and traditions, and it is therefore vital that all the circumstances be carefully studied before the statutes for a cooperative are drafted. The most attractive type of cooperative is the type "one man, one vote" which in theory gives the same power to strong as well as weak members.

The existing engine repair workshops are places where good relations already have been established with the fishermen, and the fishermen are already accustomed to receiving assistance and advice. The main function of a producers cooperative is of a commercial nature in marketing the produce and to supply essential components for the production. In the case of fish producers cooperatives, the fish marketing includes transportation and the supply of ice which are very vital.

The fishermen do not have the skill or education to run a cooperative and lack business knowledge. It is not sufficient merely to group together and organize members in a cooperative. A training programme for the members must be organized: one solution is to train them by practical demonstrations in an actual commercial undertaking by setting up a commercial marketing company, with the understanding that this may later be taken over by a cooperative. This way qualified staff could be recruited for the practical operation and the presumptive members of a cooperative will have an opportunity to see how to run a commercial fish marketing company. From the very start this marketing company should treat the presumptive members of a cooperative as real members with the exception that they will not have a real voting right and they will not need to put in stakes. Once it has been confirmed that the members have a real interest in the operation and that the ideas and suggestions the presumptive members have put forward at the meetings are relevant to the operation, a decision could be taken to transfer the company over to a cooperative.

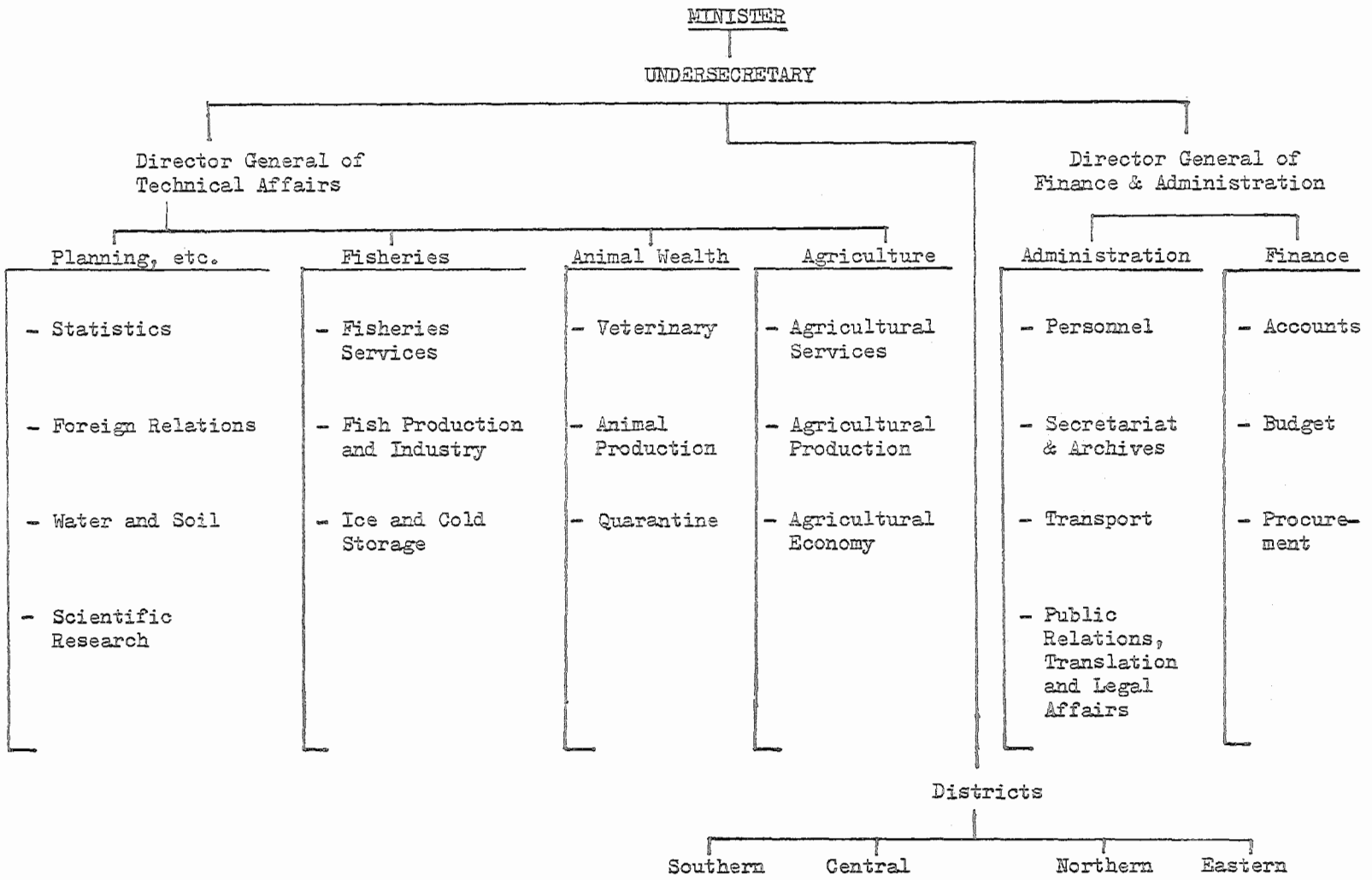
Consideration should be given to the size of the basic unit of the cooperative, which could, for example, be small units at each fish landing place, or wider groups.

Consideration must also be given at some stage to determining what kind of person will be eligible for membership in the cooperative. Should the cooperative be limited to fishermen (and if so what is the definition of a fisherman) or should it include or be restricted to boatowners or should also middlemen be eligible to join?

Eventually, a fisheries cooperative law will be required, and once sufficient knowledge is acquired about the society and its workings to answer these basic questions, the actual drafting of the new law should not present major problems.

ANNEX A

MINISTRY OF AGRICULTURE AND FISHERIES



ANNEX B

A BILL

TO PROVIDE FOR THE ESTABLISHMENT OF THE AGRICULTURE AND FISHERIES DEVELOPMENT AUTHORITY AND MATTERS RELATING THERETO

We, Zayed Ben Sultan Al Nahayan, President of the United Arab Emirates, after having perused the provisions of the Interim Constitution, the Law No. (1) of 1972, regarding the responsibilities of the Ministries, jurisdictions of the Ministers and Laws amending it and, in accordance with the proposal of the Minister of Agriculture and Fisheries approved by the Council of Ministers and sanctioned by the Supreme Council of the Union,

We promulgated the following Law:

Short title and commencement

1. This Law may be cited as the Agriculture and Fisheries Development Authority Law, 197 , and shall come into force on such date as the Minister may appoint by notification in the Official Gazette.

Interpretation

2. In this Law, unless the context otherwise requires:

"Authority" means the Agriculture and Fisheries Development Authority;

"Board" means the Board of Directors of the Authority;

"Chairman" means the Chairman of the Board;

"Fund" means the Agriculture and Fisheries Development Fund established under Section 10;

"Minister" means the Minister of Agriculture and Fisheries or such other Minister as may from time to time be charged with responsibility for agriculture and fisheries in the United Arab Emirates.

Establishment of the Authority

3. There is hereby established a body corporate which shall be known as the Agriculture and Fisheries Development Authority, having perpetual succession, and which may sue or be sued in its own name.

The Board

4. (1) The operations of the Authority shall be controlled by a Board consisting of the following members, who shall be appointed by the Minister and whose appointment shall be published in the Offioial Gazette:

(a) a Chairman;

(b) one member nominated by the Fisheries Department of the Ministry of Agriculture and Fisheries;

(c) one member nominated by the Agriculture Department of the Ministry of Agriculture and Fisheries;

(d) one member nominated by the Ministry of Economy and Commerce;

(e) not more than two members representing the private sector of fisheries, including fishermen's cooperatives;

(f) not more than two members representing the private sector of agriculture, including farmer's cooperatives;

(g) a Managing Director who shall be a person having considerable commercial experience and competence.

(2) The Minister may, should the need arise, appoint not more than two additional members to the Board to represent the interests of of other Ministries, bodies or other groups of persons concerned with or affected by the activities of the Authority.

(3) The Board may invite any person not a member of the Board to attend any of its meetings without a vote to assist the Board in its deliberations.

(4) The Chairman or another member of the Board shall, unless he sooner resigns or his appointment is revoked, hold office for such term as may be specified in the instrument of appointment, and shall be eligible for reappointment.

(5) The Minister shall determine the amount of the salaries, remuneration or allowances if any, to be paid to the Chairman or any other member of the Board or any class of members of the Board.

(6) Where the Chairman or any other member of the Board is temporarily incapacitated from performing his functions as such by reason of illness or his temporary absence from the United Arab Emirates or for any other cause, the Minister may appoint a person temporarily to be Chairman or another member of the Board during such period of incapacity, and during such period such person shall be deemed to be Chairman or any other member of the Board for all purposes to the exclusion of the Chairman or any other member of the Board so temporarily incapacitated.

Meetings of the Board

5. (1) The Board shall meet at such times and places as the Chairman may from time to time determine or on the request of at least one-third of the members of the Board.

(2) The Chairman shall give at least seven days' notice of a meeting of the Board.

(3) The Chairman and four other members of the Board shall form a quorum.

(4) The decisions of the Board shall be by majority vote and, in addition to an original vote, in any case in which the voting is equal, the Chairman shall have a casting vote.

(5) Subject to the provisions of this section, the Board shall adopt its own rules of procedure.

The Functions of the Authority

6. (1) The functions of the Authority shall be:

(a) to promote the development of agriculture and fisheries and related industries through public investment in these sectors;

(b) to provide and supervise credit facilities and, as appropriate, subsidy arrangements for agriculture and fish production, and to establish and operate such price support and stabilization schemes as may be required;

(c) to promote efficient marketing of agricultural produce and fish both for domestic and export markets, and to engage, through its subsidiaries, in commercial marketing;

(d) to promote and invest in the establishment of fruit and vegetable collecting centres, fishing terminals, processing plants and other shore-based facilities, and to engage, through its subsidiaries, in the operation of such centres, terminals, plants and other facilities;

(e) to promote the development of cooperatives among farmers and fishermen and to transfer to such cooperatives management and ownership control over such of its commercial activities as may be appropriate.

(2) In the discharge of its functions, the Authority shall act in accordance with such general policy instructions as may be given to it from time to time by the Minister.

Powers of the Authority

7. The Authority shall have the power generally to do all things reasonably necessary for or incidental to the discharge of its functions under the last preceding section and shall, in particular, have the power:

(a) to give subsidies and make loans to fishermen and farmers or groups of fishermen or farmers on such terms and conditions as may be appropriate;

(b) to establish with the approval of the Minister and operate subsidiary companies on a commercial basis to engage in any commercial activities in the agriculture and fisheries sectors, including in particular:

(i) farming and agricultural and horticultural production;

(ii) fishing and aquaculture;

(iii) the establishment and operation of fishing terminals, landing facilities, cold stores, ice plants, and related facilities;

(iv) the transport, marketing and distribution of agricultural produce and fish;

(v) the establishment and operation of processing plants for agricultural produce and fish, including packing, freezing, canning, and fishmeal production;

(vi) the manufacture or supply of equipment and supplies for agriculture and fisheries production, marketing and processing;

(c) to establish statutes and operating procedures for any subsidiary companies established under the last preceding subsection;

(d) with the approval of the Minister, to enter into equity participation, whether with a majority or minority equity holding, in any commercial enterprise in the agriculture or fisheries sectors;

(e) to sell or otherwise transfer ownership of all or any of its subsidiary companies or any part or share thereof to any person, company, cooperative or other group of persons, companies or cooperatives, on such terms and conditions as may be appropriate;

(f) to acquire, hold, sell, transfer, dispose of or otherwise deal with any real or personal property;

(g) to enter into any contract;

(h) to borrow money for the purpose of fulfilling any ot its functions.

The Chairman

8. The Chairman shall preside at all meetings of the Board, and shall represent the Authority on ceremonial occasions and in its dealing with political authorities.

Managing Director, Officers, and Servants of the Authority

9. (1) The Managing Director shall be responsible for the day to day administration and management of the affairs of the Authority.

(2) The Managing Director may, subject to budgetary approval by the Board, appoint such officers and servants as he may consider necessary for the efficient conduct of the affairs of the Authority upon such terms and conditions of sercice as he may think fit.

The Agriculture and Fisheries Development Fund

10. (1) There is hereby established an Agriculture and Fisheries Development Fund to be administered and controlled by the Authority.

(2) There shall be paid into the Fund:

(a) the sum of _____ Dirhams, which shall be paid into the Fund by the Government of the United Arab Emirates in _____ instalments of _____ Dirhams, the first at the commencement of this Law, and the second on the _____ day of _____ 197__;

(b) such other sums as may be provided from time to time by the Government of the United Arab Emirates;

(c) monies earned by the Authority in the discharge of its functions under or pursuant to the provisions of this Law;

(d) monies earned or arising from any investments made by the Authority in accordance with the provisions of Section 11;

(e) sums borrowed by the Authority in accordance with the provisions of Section 7 (h);

(f) any proceeds arising from any sale or transfer under Section 7 (e);

(g) all other sums or properties whether movable or immovable which may in any manner become payable to or vested with the Authority.

(3) There shall be paid out of the Fund:

(a) all expenditures (including capital expenditures) incurred by the Authority in carrying out its functions and powers; and

(b) monies for the repayment of any loan made to the Authority pursuant to its powers under Section 7 (h).

Investment

11. The assets of the Fund shall, in so far as they are not required to be expended by the Authority under this Act, be invested in such manner as the Board may decide.

/Budget of the Authority/

/12. The Authority shall, on or before _____ of each year submit to the Minister for his approval an estimate of the expenditure of the Authority for the following year./

or alternatively

/Financial Year and Budget of the Authority/

/12. (1) The financial year of the Authority shall begin on 1 January and shall end on 31 December, with the exception of the first year, which shall begin on the date of coming into force of this Law and shall end on 31 December of the following year.

(2) The budget of the Authority shall be submitted to the Board for approval at least three months before the beginning of the financial year./

Accounts and Audit

13. (1) The Authority shall keep proper accounts and other records in respect of its operations and shall prepare statements of accounts in respect of each financial year.

(2) The accounts of the Authority shall be audited by the Auditor General or such other auditors as may be appointed by the Board with the approval of the Minister.

(3) After the end of each financial year and as soon as the accounts of the Authority have been audited, the Board shall transmit to the Minister a copy of the statement of accounts of the Authority in such form as the Minister may require, together with a copy of any observations thereon by the Auditor General or such other auditors as may have been appointed under the last preceding subsection.

Annual Report

14. The Authority shall, not later than the 30th day of June of each year, prepare and transmit to the Minister a report dealing with the activities of the Authority, including the operations of any of its subsidiary companies or other companies in which it has equity participation, during the preceding year, and containing such information relating to the operations and policy of the Authority as the Minister may from time to time require.

Establishment and Operation of Subsidiary Companies under Union Commercial Law

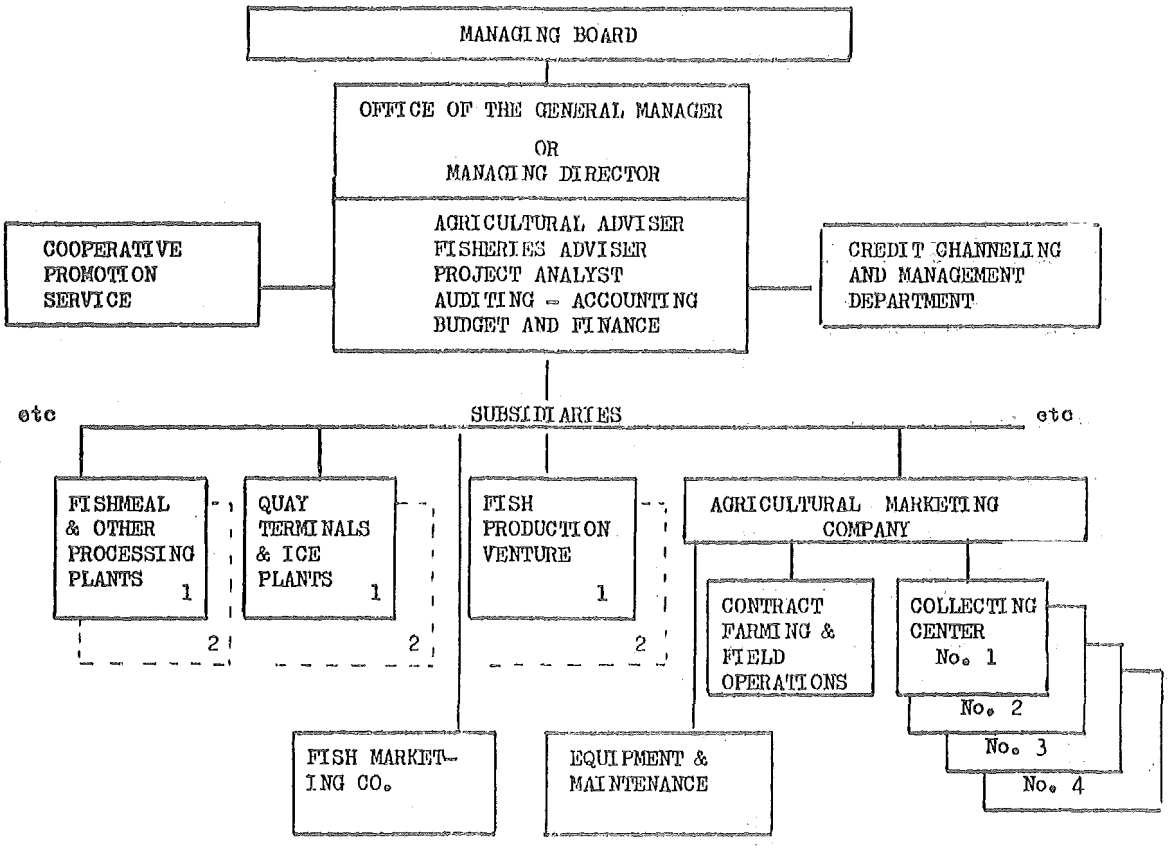
15. At such time as a law governing the formation of companies and commercial transactions throughout the territory of the United Arab Emirates shall come into force, such subsidiary companies as may from time to time be established and operated under Section 7 (b) and (c) shall be established and operated under and in accordance with the provisions of that law.

Publication in the Official Gazette

16. This Law shall be published in the Official Gazette.

ANNEX C

AGRICULTURE AND FISHERIES DEVELOPMENT AUTHORITY



ANNEX D

CARETAKING OF THE FISH CATCH ABOARD THE FISHING VESSELS

Night fishing of short duration

The fish is just stored on the deck without ice. This may have to be accepted also in the near future as the landed fish usually is of a high quality. The fish is exposed to the air only for some few hours; the night temperatures are considerably lower than the day temperatures. Besides the low night temperature, the space radiation can keep the fish at a lower temperature than the ambient air temperature. During night hours heat is radiated from the earth into space and on cloud-free nights all non-shaded surfaces will receive a lower temperature than a shaded surface, due to space radiation. A fish located on top of the deck will therefore be better protected from spoilage than a fish stored in a box or in the ship hold. Depending on the relative humidity, the fish surface could either tend to dry out or become wet and usually in the UAE the latter is the case. The heat radiated into space has then cooled the fish to a temperature below the dew point and moisture from the air has condensed on the fish surface which gives the fish a nice appearance.

Day Fishing or Fishing for Several Days

The fish is stored at a lower temperature, usually by using iceboxes located on the deck of the fishing vessel. These iceboxes are either homemade insulated chests with a wooden structure and a galvanized iron innerlining or simply second-hand chest freezers where the damaged condensing unit has been removed. Both types do fulfil their intended function from the thermal point of view and very little could be improved. The icing procedure is usually correctly done by first having a bottom layer of ice in the box and then mixing fish and ice in layers, with a final ice layer on the top. The sanitary aspects are, however, doubtful and the handling procedures could be rationalized. Most likely it would be more efficient to have a lifting device to carry the whole icebox with its content ashore, where the icebox could be quickly emptied and cleaned in an efficient manner before being transferred back to the fishing vessel with new and fresh ice.

The basic principle of having iceboxes on these small and medium size fishing vessels is excellent and should also be used in the future.

A refrigerated fish-hold cannot replace the need for ice, it could only reduce the ice consumption.

Fish could be stored in ice for up to about ten days, although this depends upon the type of fish which is being stored.

Landing the Fish

The present procedure is that some fish is landed straight at a public fish market. The fish is taken one by one out of the icebox and carried ashore in fish baskets and then the fish is put straight on the ground on the quay from where the fishmonger takes over. The ice is carefully washed off with the use of water from the harbour brought up by a bucket. Fish from distant fish landing place is taken care of by middlemen who sometimes use iceboxes for collection and transport.

TRANSPORT AND DISTRIBUTION OF FRESH FISH

Correctly iced fish in iceboxes is almost the ideal way of transport and distribution. A refrigerated truck will not entirely replace the need for ice. Ice not only chills the fish, it also keeps the fish surface wet and clean. The ratio of ice to fish in a country

like UAE will be about 1 to 1 but, if the fish is already chilled and the time for transport is short, 1 kg of ice for 2 kg of fish may be sufficient. The cost of ice is low compared to the price for the fish. In the UAE the ice price is about U.S.$ 50/ton, which makes about 20 fils/kg, and the average market price for fish appears to be about 500 fils/kg. As the ice is about the only vital factor in retarding the spoilage of fish, there are no reasons for economizing in the use of ice. A vital cost factor is the additional weight the ice carries and this will make the transportation costs higher. Roughly half the transportation cost is for transporting the ice and the other half for transporting the fish. For very long transports it is sometimes considered good economy to use refrigerated transport in order to cut the weight for ice. There are cases where frozen fish can be transported cheaper than iced fish.

The ideal fish box has yet to be designed. In many countries uninsulated boxes are used and the development has been from wood boxes to metal or plastic boxes. The determining factor has usually been the mechanical strength and the ease of cleaning the boxes. The ice consumption will be high if these types of boxes are used in a tropical country and it may require a refrigerated transport system. Baskets are used in some tropical areas where a plastic bag is used inside the basket to hold the fish and ice. The fish are put in the basket with the heads down and ice is spread around them with a top layer of ice and then the plastic bag is closed on the top. This has proven to be a rather good system for long distance distribution, as the ice will last for a rather long period of time, since it is protected from air draughts and moisture condensation and the melted water remains in the bag.

A well designed insulated icebox equipped with devices for easy material handling is to be preferred. The box must be sturdy. Insulated boxes made of only expanded polystyrene without mechanical strength do not last and are usually only expected to be used once. In earlier days a fish box could not be made larger than one man could easily carry. This made the boxes small and large fish had to be cut in pieces, which gives a higher rate of spoilage. In modern times a box does not necessarily have to be carried by one man, more economical sizes can be chosen and the size should be related to what is suitable for the retailer. Lifting and internal transport devices will most likely be needed both at the dispatch point as well as at each reception unit (retail store). On delivery, the fish should be left in the icebox and the previous box should be taken back for cleaning and reuse. The transport of prepackaged fresh fish has a preference for refrigerated transport over distribution in iceboxes.

FISHMARKETING

Public Fish Markets

The existing low price markets are of very simple nature, but the time when the fish is exposed for sale is very short, usually only from 6 to 9 a.m. There are no means of refrigeration; the area is only sheltered to protect it from sunshine and rain but the fish is exposed to the high air temperature. The sales counters are tiled so that they can be cleaned fairly easily. Although these markets leave much to be desired, they are simple and seem to operate very efficiently. Any improvement will burden the fish with higher cost. An air-conditioned area equipped with refrigerated display cases will change the whole structure of the market into something that may not be needed in the near future. One of the meat markets is gradually being altered and a test could be carried out in the adjacent fish market in order to find out whether the consumers are willing to pay extra for an improved standard. It must be kept in mind that these low price markets are in operation only for some few hours a day.

A low cost improvement would be to install fly screens to the existing public markets and perhaps to also install some fly killers inside. There is now on the market some excellent electric fly killers using an invisible light beam to attract the flies and lead them to a chamber where they are electrocuted.

Already the fish dealers now use iceboxes, although they are located just outside the market. This way they can keep under reasonable control that the fish are not exposed to warm air for any length of time. It would certainly be more convenient for them to have these iceboxes inside the market but the area seems to have limited space.

Supermarkets and Hypermarkets

Supermarkets have gained popularity also in the UAE; there is a large number of them already and the number of them will most likely increase very rapidly. A few of them already have fresh fruits and vegetables but none seems to have fresh fish or meat. Frozen food is sold in freezer cabinets with other imported items. Large hypermarkets are expected to be introduced fairly soon.

These super- and hypermarkets will be excellent outlets for fish to the consumers. Fish could be sold in three different ways in these markets, together with other types of food:

1. With the installation of a manual service section, separated from the self-service section. This separated section could have fresh food such as fish, meat, fruit and vegetables probably sold in subsections. The reason for having the fresh food in a separate section is to avoid odour problems (it is not only fish that smells but also soap, etc., and there are many reasons for not mixing them). The easiest way to solve this may be to build up partition walls, preferably made of glass, and to have the sections interconnected by using doors. By having a lower airpressure in the manual section, fish smell could be kept under control. The two areas could also be designed for different sanitary standards, as the fresh food section may require other types of cleaning procedures. The main disadvantage of having partition walls separating the sales areas is the consumers' reaction. Anything between the consumers and the merchandise will distract their attention and result in reduced sales.

Another solution for separating the areas is to install a more sophisticated ventilation system that can keep the air in each area separated from the other, thus preventing odour from one area entering the other. This way the consumers will get a good overall view of the whole store, which will stimulate them into new purchases. A minor disadvantage is that a breakdown of a part of the ventilation system will give a temporary air mixup.

Having a manual fresh food section will require very strict and firm sanitary procedures and control in order to not cause any human health hazard. It may also need a sizable period of time until it will be entirely accepted by the consumers, although the consumers will have the opportunity to buy in quantities and pieces put forward by themselves. They can buy fresh fish in conveniently located stores where all the daily purchases could be done at the same time.

Fish sales in this manner will surely be more costly than sales in a primitive public fish market.

In a manual section in these stores the fish will be stored in refrigerated counters, partly iced, and the stored fish will be kept in iceboxes (or in a chill room).

2. Introduction of prepackaged fresh fish to be sold in self-service sections in refrigerated display cases. As there will be a large number of supermarkets where a manual fish section could not easily be fitted in, fish could be sold like other perishable products in self-service style refrigerated display cases. Here the fish must be delivered in consumer packs, wherein the fish is protected from human touch and the store is protected from fish smell. The packaging must be carried out centrally as this procedure requires that

it be done under extremely secure hygienic conditions. The packages must be of consumer size and may not be cut or divided in the store. The packages must be clearly marked with content, weight, latest recommended day of consumption if correctly stored under refrigeration and preferably also an indication of the retail price. This way any supermarket now selling dairy products could also add fish sales by simply expanding the number of refrigerated display cases. This system will, nevertheless, need more instruction and information than the system with a manual fresh food section. It will require good discipline in the supermarket in order to avoid selling an over-aged product. During the introduction period it could be expected that a large number of over-aged packages will need to be sorted out and rejected.

3. Frozen fish in consumer packs. Already now most of the supermarkets do have frozen fish that has been imported. Frozen fish is an almost ideal product for a supermarket to have. The stability of a frozen fish package is so good that losses due to over age are almost nil if the store is correctly operated and inspected. The modern frozen food display cases are nowadays very reliable and usually fully automatically operated and defrosted. Frozen food could be distributed to the supermarkets either in refrigerated transport or simply by the use of suitable insulated containers.

Locally frozen fish could easily be introduced to this market system in existance and the consumption of frozen fish could be expected to increase rapidly. The local product must have at least as good a quality as the imported product.

Canned Fish in Supermarkets and Other Retail Stores

Canned fish may be the easiest product to handle in the retail market and almost any type of store could have it for sale. There is a noticeable import of canned fish to UAE and a large part of this easily be replaced by local produce, if available.

FISH PROCESSING

Industrial processing of fish and fish products will need to be introduced in the UAE. Most likely places like Duabi and Abu Dhabi are less suitable to house such an industry, although the main consumption is in these two areas. Fish processing is a labour intensive operation where the workers need to be trained for a rather long period of time. Once he has the skill, it is important that he remains in the profession. Remote fishing villages are to be preferred when the places are to be selected. In a small country like UAE, it may be sufficient to have one plant on the east coast and one on the west coast.

The fish supply to these plants will be by direct landings at the site and by fish collected from other nearby fishing villages and transported to the plant. At the reception area there must be a station where the fish is weighed and sorted before being transferred to a chill room. Some of the supply will be redistributed, iced straight to the markets in the various places in the country but the major part will be taken for processing.

A. Fresh prepackaged fish for self-service stores

This section must be kept in almost aseptic clean condition. The fish must first be gutted and carefully washed and then transferred to the preparation section, where the fish is cut into consumer-sized pieces or filleted. This working area must be kept at very low temperature, preferably not at a higher temperature than 8 to 10°C. (It will take time until the workers get used to working in such a cool area, properly dressed.) These pieces of fish are then taken to a weighing section, using a printing scale for the labels to be attached to the packages. Either vacuum-sealing machines or shrink-foil equipment should be used. A brief heat radiation will increase the lifespan of the product. Some products like shrimps and crabs will need a full pasteurization procedure, which is immersion in

65 to 70°C water for almost 20 minutes. After this preparation, the final product is chilled in a chill tunnel where the product is expected to reach a temperature of about -1 to 0°C and thereafter is stored in a chill room until being dispatched to the market. It is essential that the packaging date or latest date for consumption is clearly marked on the packages.

B. Freezing fish in consumer packs

It is essential that suitable sizes of consumer packs are used as it is not easy or desirable to cut a frozen product in the retail store. The packages should also protect the product from dessication (freezer burn). Previously it was assumed that a frozen product must be frozen in compact packages in order to econimise with the space required in the retail market. The packages were more or less standardized to about 16 x 8 x 4 cm^3 or 8 x 8 x 4 cm^3 and the product had to be shaped or cut to fit into these packages. A package of frozen fish fillets consists then of a number of pieces of various sizes. This caused some inconveniences in the preparation of the food. The tendency is now changing over in favour of whole pieces of the produot, individually quick frozen (IQF) and packed so that the whole package does not need to be thawed at the same time. The wider use of home freezers also gives the consumers an opportunity to buy larger packages, and then it is favourable to have the content separated in smaller portions.

At the time when fixed size packages were popular, contact freezers were the most suitable freezers for consumer packs but, nowadays, when IQF is rapidly gaining popularity, a blast freezer is to be preferred as this is the most universal freezing method in which about any type of product could be frozen. Some products like shrimps should preferably be frozen in a "blow through" airblast which easily could be adapted to a blast freezer. (Shrimps are not well suited for freezing in contact freezers.)

Freezing food will require about 200 kWh/ton of product and the investment in the freezer alone is about U.S.$ 800 per ton a day. To this cost is added also the investment for cold storage and transport. Altogether the freezing cost will be about $ 40/ton and storage cost about $ 15/ton each month. Material handling cost will be about $ 10/ton and transportation cost about $ 50 to 75/ton. With an average storage time of four months, the total costs are about $ 160/ton.

Preparation of the Raw Material Prior to Freezing

This whole operation must be carried out in good hygienic condition in a chill room or an airconditioned area. Freezing is not a sterilization method and any impurities will remain in the product also after freezing. Freezing also really preserves the microbes. Most of the fish will be filleted and this will most likely have to be done by hand as there are so many varieties of fish. Hand filleting does usually give a higher yield than machine filleting. An average yield based on raw material with head on and ungutted is usually less than 35 percent by weight. It will be difficult to find filleting instructors with experience in outting fish species common in UAE waters. The waste from filleting should be used as animal feed, either in the wet state, dried by sun or in a fishmeal plant.

Consumer packages for frozen products are usually very expensive, carrying prices up to $ 10 per package, with an average price of $ 5 per package. Plastic bags and shrink foils are less expensive. A costly component is the print on the package.

Canning Fish

This is also an excellent preservation method that enables the product to be easily distributed to the market. Basically the processing method is simple but great care must be taken, as a simple mistake can have disastrous effects. It is about the most labour

intensive processing method for fish and fish products. The can usually carries the highest cost and then comes the content. The cans are most commonly made of tin-coated iron but aluminium cans are rapidly gaining popularity. Corrosion is a problem in tropical countries and corrosion may be a reason for giving a preference for aluminium cans. The price difference between the two types is currently very small when all factors have been considered. Aluminium cans are, however, not yet well suited for larger cans. A cannery has to sterilize the product and, in order to do this in a secure way, the whole processing must be carried out at a high sanitary standard. The sterilization procedure (retorting) must be recorded and the cans must be marked. A cannery should have more than one retort and preferably more than one can-seamer and in a hot climate a chilling unit after retorting will be needed. A cannery should have at least one man able to run bacteria count tests (microbiologist).

The first tests for canning could be carried out in a very simple manner with the use of a pressure-cooker and a small manual can-seamer.

Besides the cost of the cans and labour, the main component is fuel for steam generation A cannery needs to waste energy in order to ensure safety in its operation (venting and bleeding). To produce a ton of canned products requires more than one ton of steam, although it theoretically would require only a fraction of a ton. Calculated in fuel oil, a ton of canned food requires more than 100 kg of fuel oil. Canned fish, such as tuna, is often pre-cooked prior to canning and this is often done to reduce the oily flavour. Another reason for pre-cooking is that dark meat can then more easily be separated from the white meat. The dark meat could then be canned separately, as there are people who prefer the flavour of the dark meat over the white. Dark meat is also canned as pet food. Canned fish is often smoked prior to canning. Canned fish is sometimes canned in a weak brine, in oil or mixture of oil and tomatoes. For oil, refined fish oil could be used but olive or cottons seed oil is usually used.

Low-Price Retail Fish Shop in Deira Municipal Market

		Dirham	
Investment			
Basic building, size about 6 x 8 m^2		20 000	
Tiles on floor and walls		15 000	
Refrigerated counters		20 000	
Air conditioner		7 000	
Cash register, scales, etc.		5 000	
Electrical installation		5 000	
Plumbing		5 000	
Sundry		3 000	
	Total	75 000	
Depreciation, interest, repair and maintenance		50	D/day
Electric energy, 100 kWh/day (10 fils/kWh)		10	"
2 shop workers		80	"
Overhead		110	"
	Total	250	D/day

Expected fish sale is 600 to 1 000 kg/day, which makes 25 to 40 fils/kg

Manual Fish Section at Supermarkets (Counter Sale)

Required floor area in the store is 10 m^2	
Rental fee 10 x 500 = 5 000 D/year	15 D/day
Refrig. counter (D 8 000 inv.) Depr., int., maint.	7 "
Electric power 20 kWh/day	2 "
Shop worker	40 "
Overhead	46 "
Total	110 D/day

Estimated sale is 40 to 100 kg/day making 110 to 275 fils/kg

Sale of Fresh Pre-packaged Fish in Supermarkets as Self-Service

Required floor area in the store is 6 m^2	
Rental fee 6 x 450 = 2 700 D/year	8 D/day
Refrig. display cases inv. D 10 000	9 "
Electric power 30 kWh/day	3 "
Product handling costs	10 "
Overhead	20 "
Total	50 D/day

Estimated sale is 40 to 100 kg/day trimmed fish which makes 50 to 125 fils/kg

Fish Handling Station in New Fishing Port in Deira

	Dirham
Investment	
Reception and dispatch area 120 m^2	75 000
Container handling section 100 "	20 000
Chill room 40 "	40 000
Ice storage 10 "	25 000
Cold storage 80 "	100 000
Blast freezer 4 tons a day	90 000
Ice machine 5 tons a day	100 000
Machine room and workshop	30 000
Office space and personnel rooms	20 000
Plumbing	40 000
Electrical installation	40 000
Total	580 000
Depreciation, interest, repair and maintenance	320 D/day
Fish Containers	
100 large size (pallet size)	100 000
200 medium size (3 on a pallet)	100 000
Depreciation, interest, repair and maintenance	200 D/day
Personnel	
Manager (Foreman)	60 D/day
Accountant	50 "
Engineer (repairman)	50 "
4 labourers	160 "
Electric power 2 000 kWh/day	200 "
Overhead	760 "
Total	2 000 D/day

Estimated daily fish handling is 4 tons making 50 fils per kg. To this must be added transportation cost of about 20 fils per kg.

ANNEX E

DRAFT PROPOSAL FOR A FISH PROCESSING PLANT TO BE LOCATED ON THE EAST COAST OF UAE

There is an immediate need for a fish processing plant to be located preferably on the east coast, as this area needs to be developed and employment opportunities for the population there are needed.

Freezing fish will be the main activity in the first phase, as well as distribution of fresh iced fish to other consumption areas in the UAE. Packaging fresh fish in consumer packs for sale in supermarkets will also be taken up in this processing plant, where good sanitary procedures could easily be introduced. Canning fish and fish products will also be taken up at a later stage.

Fish will be frozen and sold to the local market, as well as to foreign markets. Filleting fish and freezing the fish in consumer packs will be the main activity but freezing in institutional packs and in fish blocks as raw material for fish stocks, etc., will also be an important activity. At a later stage, preparation of convenience dishes could also be introduced.

As the UAE is a small country, the cold storage will be the main one in the Union and cold storage should also store other products than those frozen in the plant. This cold storage will be the vital part of the processing plant and, as this one is going to be the predominant one in the Union, it is essential that the plant be well designed for the highest possible security with the most suitable storage conditions for the stored food. This will require safety against machinery breakdown and low storage temperature, with small temperature fluctuations.

A blasted rock cavern, besides being the cheapest solution, is also the most reliable type of cold storage that exists. The cooling down cycle will last for about half a year but, once the desired temperature has been obtained, a machinery breakdown will not have a direct effect on the storage temperature and weeks may pass until the temperature reaches a dangerous level. The influence from outdoor temperature fluctuations is almost nil. All other types of cold storages have the disadvantage of a continuous deterioration of the heat insulation but a rock cavern will become even better in time and will have an infinite lifespan. A cold storage in a rock cavern will in time increase in value (as there are no maintenance costs). The freezing point isotherm is usually at about 5 to 6 metres in the rock and a good design should always have at least 7 metres of rock to a warmer area, preferably 10 metres. Usually the most economical section is 20 by 25 m^2 but this height is often difficult to utilize in a cold storage unless a multistorey unit is built inside. (Modern material handling equipment may soon solve this problem but this has not yet been tested in rock cavern.) A section of about 15 by 10 m^2 is most likely to be a good choice and a length of the "tunnel" could be chosen of 50 metres. The possibilities for expansion at a later date are first to build a new tunnel parallel to the first one, perhaps of longer length, and the expansion after this could be either to build a third tunnel or to extend the length of the first tunnel.

As a rock cavern is the cheapest type of any regular building, also the chill room and ice storage, as well as the working area, should be located in a cavern side by side with the cold storage with a corridor interconnecting them. Here the ice-maker should be installed on top of the ice storage and the ice storage should be located on top of the chill room, thus utilizing the height of the cavern. The processing area should be built with an inside deck dividing the space into a two storey unit, where the warmer and dry operations are done on the upper floor and the cooler and wet work is carried out at ground level. In this working area the cavern cannot be unlined for hygienic reasons. Machinery rooms and a mechanical workshop could also be blasted in the rock, preferably in front of the cold storage.

The blast freezers should be located inside the cold storage so that the cooling units could be used during the initial cooling down cycle and to be in reserve when the main cold storage units are under repair.

Certain premises like office, etc., may be better located in a separate building just outside the cavern entrance.

When the time comes for taking up canning, the main part of this operation should also be located in a cavern that could be blasted on the other side of the processing area and interlinked by a corridor. The steamy part, such as retorting and smoking, should be done in a separate building just outside the cavern.

The fish waste from filleting and fish offal not otherwise suitable as food could be either dried and milled into animal feed or processed in a dry rendering plant or fishmeal unit attached to the plant or sold wet to farmers or other fishmeal plants.

A processing plant of this size is likely to dominate the community where it is located and many things may have to be done in cooperation with the community, such as diesel-electric generator, water supply and water treatment, sewage, etc. By having this centralized, the energy could be better utilized, waste heat could be used for steam generation for the cannery, as well as for a fishmeal plant, drying of fish for food and for feed, etc.

A rough estimation of the investment for the first phase is:

	U.S.$
Rock cavern cold storage 50 x 15 m^2	90 000
Rock cavern cold storage machinery	90 000
Rock cavern cold storage cooling down energy (U.S.$ 0.04/kWh)	10 000
Rock cavern cold storage blast freezer 15 ton/day	100 000
Rock cavern chill room, ice storage, machine room 6 x 15 m^2	11 000
Rock cavern chill room wall finish	3 000
Rock cavern chill room floor tiles	2 000
Rock cavern chill room refrig. unit	6 000
Rock cavern chill room ice maker 25 tons/day	60 000
Rock cavern processing section 46 x 15 m^2	80 000
Rock cavern processing section deck	12 000
Rock cavern processing section wall finish	10 000
Rock cavern processing section floor tiles	10 000
Rock cavern processing section air-conditioning unit	10 000
Rock cavern machine room and mechanical workshop	7 000
Office and staff facilities, separate building	12 000
Non-expendable equipment	50 000
Water treatment and plumbing	10 000
Diesel-electric generators	60 000
Iceboxes for collection and distribution of the fish	50 000
Miscellaneous	20 000
Total	693 000

The cavern component is $ 210 000
Fixed yearly costs 10% of 210 000 $ 21 000/year
Fixed yearly costs 20% of 483 000 $ 96 600/year

$ 117 600/year or $ 320/day

Assume 50% utilization of the plant

Energy consumption about 8 000 kWh/day or 2-ton diesel fuel $ 300/day

Fixed costs and energy cost total $ 620/day

Personnel costs	$/day
Manager	100
Food technologist	70
Foreman	50
Refrigeration mechanic	30
Workshop mechanics (2)	60
Labourers (80)	800
Accountant	50
Office clerks (3)	90
Total	1 250

Estimated production 15 tons frozen fish (40 tons raw material)
Daily production 5 tons packaged fresh fish
5 tons iced fish

TECHNICAL REPORTS OF THE INDIAN OCEAN PROGRAMME

1. Iran - Formation of a Fisheries Development Branch within the ADBI. Labon, A., IOP/TECH/75/1.

2. Pêcherie de Crevettes - Rapport au Gouvernement de la Republique Malgache. Labon, A., IOP/TECH/75/2 (in preparation).

3. Fisheries Development Possibilities in the Republic of Kenya. Labon, A., IOP/TECH/75/3.

4. A Report on the Building Up of a Statistical System for the Collection of Marine Fisheries Statistics in the United Arab Emirates. Banerji, S.K., IOP/TECH/75/4.

5. Report to the Ministry of Agriculture and Fisheries - United Arab Emirates. Labon, A., IOP/TECH/75/5.

6. Some Developments in the Tuna Fisheries in the Indian Ocean. Kearney, R.E., IOP/TECH/75/6.

7. Statistical System of Marine Fisheries in Mauritius. Banerji, S.K., IOP/TECH/76/7.

8. A Report on Legal and Institutional Aspects of Fisheries Development in the United Arab Emirates, with Particular Reference to the Establishment of a Fisheries Development Corporation, Marketing and Cooperatives. Gustafsson, N. and G.K.F. Moore, IOP/TECH/76/8.