

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

INDO-PACIFIC FISHERIES COUNCIL

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SECTION I

IPFC Secretariat, FAO Regional Office
for Asia and the Far East
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OFFICE BEARERS OF THE INDO-PACIFIC FISHERIES COUNCIL

1968-1970

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as designated at the 13th Session

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ADDRESS BY THE HONOURABLE G.W.W. CHALK,
ACTING PREMIER AND TREASURER,
GOVERNMENT OF QUEENSLAND

*Mr. Chairman, Mr. Anthony, Distinguished Delegates,
Ladies and Gentlemen:*

It is my pleasure to have this opportunity to extend on behalf of the Government of the State of Queensland sincere greetings to you all at the opening of this 13th Session of the Indo-Pacific Fisheries Council.

It is now 18 years since a Meeting of this Council took place in Australia. On that occasion it was held in New South Wales. Since then a great deal has been achieved for the fishing industries of the Indo-Pacific area as a result of the meetings of your Council. The fact that they have been held regularly in different countries has, I believe, added to the worth of the meetings. It has helped all members to see some of the problems of others at first-hand. It has added to international understanding not only in the narrow problem of fisheries generally but on a much wider general basis. The mere fact of meeting and discussion in itself is worthy of the best encouragement as a means of international understanding and goodwill.

During your stay in Queensland you will no doubt find many differences in manners and customs from what you are used to in your own countries, but I think you will find us a friendly people and I hope that you will enjoy your stay amongst us. I bid you welcome and, on behalf of the Government, I wish you a pleasant stay in Queensland.

In conclusion may I ask you, Mr. Chairman, to convey to the Director-General of Food and Agriculture Organization of the United Nations my Government's satisfaction and pleasure that the 13th Session of the Indo-Pacific Fisheries Council is being held in Queensland. To the delegates, I can only say that I trust your deliberations will be fruitful and rewarding and that the objectives of your Council will come closer to realization by means of this conference.

ADDRESS BY THE HONOURABLE J.D. ANTHONY, M.P.,
MINISTER OF STATE FOR PRIMARY INDUSTRY

*Excellencies, Honourable Ministers, Honourable Members
and Distinguished Visitors:*

As most of you are aware, the Indo-Pacific Fisheries Council, which Australia has the honour to welcome to Brisbane today, is a regional council of the Food and Agriculture Organization.

The Food and Agriculture Organization is an agency of the United Nations and was established to increase world food production, not only to meet the world's rapidly increasing population but also to raise the level of nutrition in many parts of the world. Although a great deal has been achieved over the years there is no reason whatsoever for reducing our efforts in these directions, because so much has still to be done.

FAO has recently recognised the increased importance of fisheries and has raised the status of its fisheries sector from a division to a department. I regret that Mr. Roy Jackson, Assistant Director-General, Fisheries, who is in charge of the Fisheries Department, was not able to be with us today but I understand he will be joining the Session at the end of the week.

The Indo-Pacific Fisheries Council, which was established as a result of a conference in Baguio (Philippines) in February 1948, had its first meeting in Singapore in 1949 and its second meeting in Sydney in 1950; has played an active and important role in fisheries development in the area. The present membership of the Council is eighteen and ranges from Korea and Japan in the north to Australia and New Zealand in the south, and to West Pakistan in the west. It should be remembered that this area embraces about half the population of the world and a large proportion of this population depends heavily on fish for its protein food.

The functions of the Council are very broad, covering biological, environmental, scientific and technical aspects of the problems of development and proper utilization of living aquatic resources in both marine and fresh waters.

These functions are essentially advisory in character and unlike certain international fisheries commissions, the Council does not have the power to regulate fisheries but may only make recommendations for action to Member Governments and to FAO.

The IPFC carries out its activities at periodic sessions, now generally biennially, during which it is assisted by an Executive Committee, Technical Committees and other subsidiary bodies and by the Secretariat. These organs also have important functions to perform in maintaining continuity of the Council's work.

The Secretary of the Council, who is also the Regional Fisheries Officer for Asia and the Far East, is stationed at Bangkok, Thailand. I note with interest that the present Secretary, Mr. J.A. Tubb, is an Australian who was previously engaged in fisheries research in Australia. I understand that the only previous Secretary of the Council was also an Australian, so that Australia has no doubt played an important role in the work of the Council.

Australia has been represented at all sessions of the Council and has welcomed the opportunity provided by the Council of co-operating with countries of the Indo-Pacific region in examining the problems associated with the utilization of marine resources. My Government hopes that this co-operation will continue for the benefit of all countries in the Region.

As far as the Australian fishing industry is concerned there have been notable developments in the exploitation of the high quality fish resources, for which attractive markets are available in countries outside Australia. For example, the crayfish, scallop, abalone and prawn fisheries have expanded rapidly.

On the other hand development in certain of our fisheries, especially the trawl fisheries, has been slow and they are facing strong competition from imported fish, particularly in the form of frozen fillets and other consumer packs. I understand that this situation, which has been described in the Host Country Paper as a two-economy fishing industry, will be discussed during this Session.

Papua/New Guinea, for which Australia has responsibilities, is in a different situation. Perhaps it could be compared with the situation in a number of member countries, when IPFC was first established. The fishing industry in Papua/New Guinea is now emerging from a subsistence industry to a commercial industry.

As you are aware, we have a Federal System in Australia, and the Commonwealth Government and each of the State Governments have responsibilities for fisheries. The problems of such divided control have been largely overcome by the development of close liaison between Commonwealth and State Ministers responsible for fisheries and between the Commonwealth and State Fisheries Officers. The practice has been to hold annual meetings of Ministers, preceded by meeting of officers, at which matters of mutual interest are considered.

On the industry side, it is with satisfaction that I am able to report the establishment of an Australian Fishing Industry Council representing all sectors of the industry in all States, which has been recognized by Governments as the voice of the industry. The Industry Council has branches in each State to look after matters concerning the State only.

On behalf of the Australian Government, I am very pleased to welcome delegates to this important meeting of regional countries.

The year 1968 has been a very busy one for Australia in its regional activities. Last April, we were honoured by the attendance in Canberra of representatives of all the member countries of the Economic Commission for Asia and the Far East, at its 24th Session. Later in the year, in July/August, we acted as host to the Third Ministerial meeting of the Asian and Pacific Council. Both these meetings underlie the great importance and value Australia attaches to the development of close co-operation and active and effective working relationship with the countries of our region.

This co-operation and these working relationships are being achieved in many fields that touch upon our mutual interests, whether they be in trade, economic development, transportation, communication, fisheries or other areas affecting our economic wellbeing and the regional interest.

Australia has much in common with our neighbouring countries in this region in trade and economic development matters. In spite of its high standard of living and its relatively small population, Australia depends largely on exports of primary products for its earnings of foreign exchange. We face similar difficulties of climate and topography, and similar problems in regard to the need to transport machinery, equipment and other materials over long distances, both to and from points within Australia and overseas, where many of our major markets are located.

While the contribution of agriculture to our gross national product is declining, relatively, the health of the Australian economy still depends heavily on the efficient and strong agricultural sector. Many of Australia's agricultural problems - though not all of them, unfortunately - have been overcome by the application of science and technology. Despite the geographical differences, we believe that our experiences may be of interest and value to other countries in the region.

We are always ready to lend assistance when asked to do so, and as our resources allow, in the work of regional organization and in the general tasks of economic development of the region. As has been stated on several occasions by my colleague, the Minister for External Affairs, we do not for a moment imagine that we have all the answers, or indeed, many of them. Our desire is to participate, as we have been doing, in the common search and the common effort toward finding the right answers and overcoming the enormous development problems in this region.

I believe that this meeting will make a valuable contribution to this search, and toward finding answers to these problems as they affect our common interests in fisheries, an industry of growing importance to Australia and of course to the region as a whole.

I sincerely trust that your discussions during the Session will be both satisfying and enjoyable and that your stay in Australia will be a very pleasant one.

I now have great pleasure in declaring the 13th Session of the Indo-Pacific Fisheries Council open.

ADDRESS BY ROY I. JACKSON, ASSISTANT DIRECTOR-GENERAL (FISHERIES)
DEPARTMENT OF FISHERIES, FAO

*Mr. Chairman, Distinguished Delegates,
Ladies and Gentlemen:*

I would like first of all to apologise for my late arrival, and for not having been able to join you at the opening of the thirteenth Session of the Indo-Pacific Fisheries Council. This overlapped with the Fifty-first Session of the FAO Council, where a number of matters were discussed of importance to FAO's future, its programmes and internal structure, and these are directly relevant to the forward planning of our own work in fisheries; it was therefore necessary for me to delay my arrival here.

I bring with me, however, very cordial greetings from the Director-General, Mr. Addeke Boerma, and his best wishes for a successful Session. He asked me in particular to express the Organization's appreciation and gratitude to the Government of the Commonwealth of Australia, and also to the State of Queensland for their kind invitation to the Indo-Pacific Fisheries Council to hold its Thirteenth Session here. I take this opportunity of adding my own gratification on meeting so many old friends in such delightful surroundings.

This delay in my arrival does enable me to outline to you some of the matters which the FAO Council has been considering during these last few days. Perhaps the most important of these is the Director-General's proposal to channel and concentrate a great deal of FAO's future efforts into a few major programme objectives. These were selected by the Director-General as the most likely to be fruitful in yielding practical results over the next decade or so. The Council gave its endorsement to this proposal, and the Director-General is therefore authorised to shape his Programme of Work and Budget for 1970/71 accordingly, including his proposals for the work of the Department of Fisheries.

I would emphasize that the Director-General's approach to the Organization's forward programming is selective; it is quite clear that FAO cannot cover very desirable action in all the wide fields of food and agriculture, and the Organization, if it is to have any real impact at all, must conserve its resources and apply them with more massive effect in selected fields.

The fields selected are five, four of which will engage all of us concerned with fisheries, alike in Member Nations and the Secretariat, very fully over the years to come. The first area of concentration is filling the protein gap. This is central to the main thrust of all our work in the field of fisheries, and scarcely needs any further elaboration from me, to this audience of fishery administrators and scientists.

The second is a war on waste which has a double relevance for fisheries; namely the elimination of waste by straightforward improvements in handling, processing and distribution of fish and fish products and by reduction of spoilage generally; and equally in eliminating the wastage of leaving those under-utilized resources which are available for development, as well as promoting a more efficient and rational use of those already under exploitation. In this regard particular attention shall be devoted to the use of unconventional resources. Any action towards the economically viable development of new or neglected resources, or towards the development of new products, or even the provision of more adequate harbour and shore-side facilities, all have relevance if they enable larger quantities of fish to be landed and distributed.

The third of these selected lines of action concerns earning and saving foreign exchange. This is closely related to our other tasks as they concern some of the fish products of high unit value that enter international trade, for instance frozen shrimp and tuna. Self-sufficiency in fish production will also be part of this endeavour.

The fourth of these objectives is the mobilization of human resources. The use of larger vessels with more complicated fish detection and catching equipment and gear, has created a demand for a new generation of fishermen and engineers with longer and more specialized training; fish product development is the concern of food technologists specially trained for the purpose. The whole range of fishery research effort in exploring and assessing resources and monitoring the effects of fishing on the more valuable stocks, calls for greater numbers of highly competent scientists; more fishery economists and administrators are needed. In all these fields, therefore, increased facilities for education and training are needed. The Committee on Fisheries has already given this a high priority, and has set up a special Sub-Committee to analyse these matters further and recommend action; the COFI Sub-Committee is planned to convene early next April immediately before the Fourth Session of the Committee on Fisheries itself. Your own recommendations in this field will, therefore, be timely.

The remaining selected field for concentrated effort is the work on high yielding varieties of basic food crops. This does not appear, on the face of it, to be of very much concern to fishery development; and it is intended to concentrate on plants and land crops. However, the selection for intensive culture of fast growing, meaty varieties of fish, particularly among the freshwater and brackish water, is already being studied in some countries among your membership, and I feel confident that further genetical studies in this direction will be rewarding. These studies may eventually become applicable in the corresponding new marine activity, which we now call mari-culture.

As you are aware, the Department of Fisheries has been instrumental in preparing the fisheries section for the Indicative World Plan, under which an attempt will be made to predict and set targets for food production by the years 1975 and 1985. Existing information about the living marine resources in the area covered by IPFC has been compiled and a first draft has been circulated for comments among the scientists of the member countries of the Council. We expect that in future this section of IWP will be kept under review by the Council and will provide the basis for identification of research gaps and measures required for the management of fishery resources in the area.

The activities of the Indo-Pacific Fisheries Council cover the "entire waterfront" over a very large area of the globe, but it is impossible within the limited resources available to the Council to give equally detailed attention to every desirable field of work. You will have been assisted in concentrating and rationalizing your efforts by the establishment of the Indian Ocean Fishery Commission, which has already held its First Session in September. Close co-operation between your Council and the new Commission will of course be essential, and some division of labour will be necessary in the interests of overall efficiency. For instance, the Commission has already recommended the establishment of a Joint Working Party on Statistics, and the setting up later on, of joint working parties on stock assessment on those resources of common interest to both bodies. The future relations between your Council and the IOFC should, in my view, be kept flexible; and co-operation should develop as required by the often parallel or complementary programmes of work of the two bodies.

Your Council has always placed high in its recommendations for future action the need to assess the available resources of fish in the various great bodies of water covered by your activities. Hitherto it has been left to the unaided resources of your hard-pressed national departments of fisheries and science laboratories to try and put these recommendations into effect. You have been able to get a number of national programmes well off the ground, but I believe that special effort is now needed to launch international cooperative investigations into the stocks and ocean environment of some of the major bodies of water; for instance the South China Sea. But stock assessment surveys and researches are costly; alike in human resources and skills, in vessels, and therefore in money. The Council's reserve powers for undertaking cooperative research or development projects, to be paid for by its Member Governments in form and proportion to which they mutually agree (under Article VI of your Constitution), have never been utilized.

I think it is fair to say that the problem of funding such international fishery activities in the Indo-Pacific Fisheries Council's area has never really been faced up to hitherto. This problem was reviewed by the ACMRR Working Party on FAO Fishery Councils and Commissions which made some specific proposals which were considered by COFI and the Conference at its Fourteenth Session and that your Council may wish to elaborate. It recognized, in paragraph 121 of its Report, that international fishery bodies like your Council lacked the resources to put into effect large scale ocean fishery researches, and that Regular Programme funds of FAO were not intended for this purpose. The Conference, therefore, (and I quote) "believed that the various multilateral funding agencies including the UNDP should support research and development activities sponsored by regional fishery bodies directed towards increased exploitation of resources of fish and their more efficient utilization and effective management". You are aware of the problems and activities that need such support; the determination of priorities and an approach to the UNDP are your next tasks. There is also a clear opportunity for bilateral support for many of these activities, but this Regular Programme allocation must, as the Conference has observed, remain on a modest scale. Your determination of priorities will, therefore, be most helpful when arrangements are made for meetings of your working parties and the like.

Many of you are familiar with the work of the Committee on Fisheries, especially those who have served as representatives of Member Nations of that body. This Committee has, over its first three sessions, established itself as a most influential body with world wide competence in the field of fisheries, and its handling of emergent international problems, its advice on FAO's programming, and the work of its standing sub-committees, have been both authoritative and forward looking.

I would also like to mention the important part which the FAO Advisory Committee on Marine Resources Research is playing in promoting the use of science in the management and development of international fisheries. At its last session, held in Rome in July this year, the ACMRR, as well as making recommendations on specific actions on various scientific and technical items, some of them of particular interest to your Council (e.g. education and training of fishery scientists, improvement of marine resources and mari-

culture, world appraisal of fishing resources) discussed at length a number of aspects regarding international coordination and co-operation, in particular the implementation of UN Resolution 2172 and related matters, and recommended that a Joint ACMRR/SCOR/WMO Working Party be established to develop the scientific content of a comprehensive programme of international co-operation in exploration and research in the ocean and its resources, part of which is expected to be implemented during the International Decade of Ocean Exploration proposed by the United States.

Just a word on a few programme items. I have already mentioned the Committee on Fisheries Sub-Committee on Fishery Education and Training; this will, incidentally, discuss a draft manual of education and training prepared by Dr. D.N.F. Hall of the United Kingdom as an FAO Consultant, as a direct follow-up of your own Symposium on this subject two years ago. I recently attended the FAO Conference on Fishing Ports and Port Markets in Bremen where the representation and contributions from your region were outstanding; this has undoubtedly sharpened an awareness, in Member Nations and Secretariat alike, of the technical, economic, and investment problems involved.

Next year we have scheduled for July a Technical Conference on Fish Inspection and Quality Control in Halifax, Canada; and in September in Rome an International Conference on Investment in Fisheries. Both these technical conferences need your support if they are to be of real value in our forward planning in developing countries. While on the subject of investment, I would mention that members of my Department have taken part in a number of investment identification missions organized in co-operation with the International Bank for Reconstruction and Development, and Asian Development Bank. Much of this work emphasizes the need to develop further our competence in the Department of Fisheries on the industrial side, and I will revert to this point a little later.

I must now say a few words about the developments that have flowed from the UN General Assembly's Resolution 2172 - Resources of the Sea. The Secretary-General of the United Nations in preparing his position on this subject, has had the advice of a Group of Experts including representatives of the Committee on Fisheries, and of FAO itself. Moreover the purely scientific aspects have been examined by a Joint Group comprising experts appointed by ACMRR, SCOR and WMO. The pattern of recommended action in the near future by the UN Agencies concerned is now taking fairly definite shape. The draft recommendations as they now stand include a considerable strengthening and broadening of the functions of the Intergovernmental Oceanographic Commission; this Commission would be assisted by a Secretariat jointly provided by UNESCO, FAO, WMO and possibly by other Agencies concerned, and they would all participate in organizing the work of IOC. This expanded programme would of course have implications for some other studies that you as a Council have undertaken, for example in the successful collaboration with IOC on the study of the Kuroshio Current, which is an excellent example of inter-relation between oceanic and environmental investigations and marine resource research.

The Director-General's proposals for developing and strengthening the work of the Department of Fisheries will be shaped by the various influences that I have already mentioned. First of all the five areas of concentration; secondly the closer co-operation with IOC; and in this connection I can already announce the establishment of a special post - FAO Marine Science and Fishery Coordinator, which has been established for an experimental period of twelve months. This senior officer - Dr. Sidney Holt has been appointed - will spend much of his time in Paris and elsewhere, and help lay the groundwork for the closer relationship between IOC and FAO in marine science matters. A more permanent arrangement may be made in 1970/71. Another factor in shaping our programmes will be an increased emphasis on the industrial side. It is our tentative proposal, already endorsed by the Committee on Fisheries, to restructure the Department into three divisions, namely a renamed Fishery Resources Division, a renamed Fishery Economics and Institutions Division, and a new Fishery Industry Division; comprising elements at present in the other two, covering vessels, harbours, engineering, fishing methods and gear, products and marketing. This is less an expansion than a redeployment of staff and resources. This new emphasis on industry should strengthen our competence to respond to the increasing number of requests for advice in these areas of investment.

There is no time to say very much about the field programmes, except that they are growing both in quantity and in spread of technical subject matter. The general restructuring at FAO Headquarters, where our Department's Field Projects Operations Office was used as a pattern, should strengthen our effectiveness and competence in supervising and executing field projects; I look forward to discussing with you individually your special problems in regard to the UNDP/Special Fund. There has also been a gratifying increase in our FFHC field activities which are supported by Trust Funds from various donors; Australia, I may say, has been generous in this respect. For its originality, I would mention the design and construction of a novel ferro-cement boat in Thailand, which I look forward to seeing on my way home; this is supported partly by UNDP/Technical Assistance and partly by FFHC; the expert, Mr. John Fyson, is a New Zealander.

These few observations are offered at a time when your consultations and discussions are in full flood, and of necessity I am speaking before I have had any opportunity of getting the feel of this Session and of familiarising myself with the trend of your discussions. It is my earnest hope that you will find some of these observations timely and helpful in reaching your conclusions and recommendations, and I will no longer stand between you and the next item on your Agenda.

ADDRESS BY THE CHAIRMAN, INDO-PACIFIC FISHERIES COUNCIL
MR. SOONG MIN KONG
13th Session, Brisbane, Queensland, Australia

*Honourable Ministers, Excellencies, Distinguished Delegates,
Ladies and Gentlemen:*

I would like first of all, on behalf of the Indo-Pacific Fisheries Council to express my sincere appreciation to the Government of Australia and particularly to the Honourable the Minister of State for Primary Industry for the courteous invitation to the Council to hold its 13th Session in this beautiful city of Brisbane and for the warm hospitality and generous facilities extended to us. At the same time it is pleasant to recall that this is the second occasion that the Government of Australia has acted as host to the Council, the first being the Second Session of the Council which was held in Cronulla in New South Wales in 1950. We are therefore doubly indebted to the Government of Australia for their continued support and their abiding interest in the work of the Council. Nor is this all. Australia has given through her noted sons many years of fruitful service to the work of the Council. I refer to Dr. G.L. Kesteven, the first Secretary of the Council and to our present Secretary Mr. J.A. Tubb. Between them they have served sixteen years out of the twenty years since the Council was established.

Turning now to the work of the Council, I am glad to say that the Indo-Pacific Fisheries Council which consists at the moment of 18 member nations of FAO has continued to maintain its position as the leading organization in the field of fisheries in the region. Over the years since its inauguration in Baguio in the Philippines in 1948, it has continued to fulfil its main function of focussing the attention not only of Governments but also of FAO on urgent fishery problems. At the same time it has acted as the forum for discussion and exchange of much useful information for fishery development. Indeed the Proceedings of the Council since its inception is a continuous authentic record not only of the many fishery research and development problems faced by member countries but also happily of the solutions already found to some of them.

However, we cannot afford to be complacent. Although significant increases in fish landings have been achieved by all the member countries in the region there is still a great protein gap to be filled. This, coupled with the realization that there are as yet vast fishery resources both pelagic and demersal to be exploited renders the work of the Council both onerous and challenging. In this respect the Council is thrilled to hear of the tremendous opportunities now being grasped by our host country in developing her prawn resources. As you will gather from the country reports and technical papers presented to our Council for consideration, similar developments are also taking place in many member countries, so much so that one is tempted to speculate what would have been the position if there has not been the Council to assist in the identification of fishery problems and acting as the forum for exchange of information.

As you will see from the draft agenda presented to the Council at this Session, important changes are in the offing. Among other things we shall be discussing the reorganization of the structure and functions of the Regional Fishery Office and the establishment of a close liaison with the newly formed Indian Ocean Fishery Commission. The Council is indeed passing through an important transitional period in its history. Important decisions will have to be made by you the delegates as to how best the Council can adapt itself to the changes before us.

In comparison with previous years this Council Session has been reduced from the usual 14-day period to one of 11 days. We have therefore a very heavy work load ahead of us. In particular I would mention our symposium on demersal fisheries which has attracted many important contributions. This together with the agenda item proposed by the host government namely "Priorities in Fishery Development and Research Planning" will take up a major part of our time. They are both important problems of great interest to all member countries and we shall all look forward with great expectation to the discussions and the conclusions drawn thereon.

Fellow delegates, I am fully conscious of the honour accorded me and in particular to my country in my assumption of office as Chairman since my election at the 12th Session of the Council at Honolulu in October 1966. My responsibility as Chairman for this Session will be not an easy one. Nevertheless, I sincerely hope with your co-operation and combined efforts we shall be able to bring this Conference to a successful conclusion.

On behalf of the Council I would wish to thank the Honourable G.W.W. Chalk, M.L.A. Acting Premier and Treasurer of the Government of Queensland for introducing to us the Honourable J.D. Anthony, M.P., Minister of State for Primary Industry and for jointly making the facilities available to the Council for this Session.

Finally, on behalf of the Council I wish to extend my warmest appreciation and gratitude to the Honourable the Minister of State for Primary Industry Mr. Anthony for his most inspiring speech and particularly for his courtesy in attending this meeting and formally declaring this Session open.

I will now call upon the Secretary to read to you a message from Mr. A.H. Boerma, Director-General of FAO.

Thank you.

MESSAGE FROM THE DIRECTOR-GENERAL, FOOD AND AGRICULTURE
ORGANIZATION OF THE UNITED NATIONS, TO THE CHAIRMAN,
INDO-PACIFIC FISHERIES COUNCIL, ON THE OCCASION
OF THE OPENING OF THE 13TH SESSION OF THE
COUNCIL IN BRISBANE, QUEENSLAND,
AUSTRALIA

The Director-General of the Food and Agriculture Organization conveys to the Chairman of the Indo-Pacific Fisheries Council sincere greetings and good wishes for a successful session of the Council and expresses the hope that the deliberations of the Council will, as in the past, result in a valuable contribution towards the development of the Fisheries Industries of the Region.

The Director-General would be grateful if the Chairman of the Council would convey to the Council in Plenary Session his kind personal regards and especially to the delegation of Australia an indication of his appreciation for the invitation received from the Government of Australia to hold the Council's 13th Session in Australia and for the facilities and organization which have been made available and which must contribute materially to the success of the Session.

CHAPTER I
COUNCIL PROCEDURE

AGENDA

1. Adoption of the Agenda
2. Appointment of Steering Committee
3. Secretary's Report on Credentials
4. Statements by Delegations
5. Council Nominations
 - 5.1 Administrative Correspondents
 - 5.2 Technical Committee Members
6. Report of the Executive Committee
 - A. Report on Intersession Period
 - B. Proposals for Future Work of the Council
 - C. Statement of Expenditure and Budget Proposals
7. Reports from Technical Committees and 12th Session Working Parties
 - 7.1 Intersession Reports
 - 7.2 Session Reports
8. Secretary's Report on the Status of the Industry
9. Amendment of the Council's Agreement
10. Agenda Items Proposed by Member Governments, FAO and Executive Committee
 - 10.1 Host Government - Priorities in Fisheries Development and Research Planning
 - 10.2 FAO Proposals -
 - (a) Regular Programme Activities
 - (b) Indian Ocean Fishery Commission
 - (c) Proposals for Support by Multilateral Funding Agencies
 - 10.3 Executive Committee Proposal - Structure and Function of Regional Fisheries Office
11. Representation by Observers
12. Demersal Fisheries (13th Session Symposium)
13. Joint IPFC/IOC Meeting on Fishery Aspects of CSK

14. Future Symposia
 - 14.1 Fourteenth Session - Coastal Aquaculture
 - 14.2 Fifteenth Session - Proposals
15. U.N. Resolution on the Resources of the Sea
16. Time and Place of 14th Session
17. Formal Resolutions
18. Election of Office Bearers
19. Adoption of Summary Report.

COUNCIL PROCEEDINGS

OPENING CEREMONY

The official opening of the 13th Session of the Indo-Pacific Fisheries Council was held in the Legislative Council Chamber, Parliament House, Brisbane, Queensland, Australia, on Monday, 14th October, 1968.

The Honourable G.W.W. Chalk, M.L.A., Acting Premier and Treasurer of the Queensland Government welcomed the Delegations of the Indo-Pacific Fisheries Council and introduced the Honourable J.D. Anthony, Minister of State for Primary Industry of the Commonwealth of Australia. The address of welcome is included in the preamble to these Proceedings.

The Honourable J.C. Anthony, M.P., Minister of State for Primary Industry of the Commonwealth of Australia then addressed the meeting and his address is included in the preamble to these proceedings. At the termination of his address Mr. Anthony formally declared the 13th Session of the Indo-Pacific Fisheries Council open.

An address was also received from Mr. R.I. Jackson, Assistant Director-General (Fisheries) of the Food and Agriculture Organization.

The Chairman of the Indo-Pacific Fisheries Council, Mr. Soong Min Kong (Malaysia) then addressed the meeting and at the termination of his speech requested the Secretary to read a message from Mr. A. Boerma, Director-General of the Food and Agriculture Organization.

The speeches of Mr. Jackson, the Chairman and the message from the Director-General are included in the preamble to these Proceedings.

AGENDA FOR THE 13TH SESSION

The Provisional Agenda, amended by the inclusion of a new Item, Item 11, Representation by Observers, with consequent renumbering of Items 11 to 18, was adopted.

STATEMENTS BY DELEGATES AND OBSERVERS

In accordance with the Resolution passed by the Council at its 6th Session, Statements by Delegates and Observers were tabled and not presented verbally. Delegates and Observers were, however, advised that reference to their Statements could be made where relevant during the Council's discussions.

The Delegate for Australia informed the Council that his country's Statement was incorporated in the Address of Welcome delivered at the Opening Ceremony of the Council's 13th Session by the Minister of State for Primary Industry, the Honourable J.D. Anthony, M.P. (See preamble).

Noting that his Government was increasingly aware of the importance of fisheries, the Delegate for Ceylon briefly reviewed the structure of the fishing industry in his country and referred to the proposed Five Year Development Plan for the period 1969-1974 in which a substantial increase in the number of mechanized fishing vessels, the expansion of brackish water fish farms and the construction of a number of modern harbours and anchorages is envisaged. He noted that a number of measures had been taken to improve the small boat mechanization scheme including the standardization of engines and the provision of adequate servicing and repair facilities. Attention was also given to problems arising through the hire purchase system for providing engines and action was being concentrated on the organization of fishery co-operatives. He noted that the Fisheries Training Scheme centred at Negombo since 1962 had recently expanded its activities and proposals were under consideration for expanding the facilities at this centre to increase the annual out-put of trainees. He said that his Department was continuing to provide services to fishermen in the form of housing, credit, coastal navigation aids and extended compensation for death and disablement among other activities. He noted also that the Ceylon Fisheries Corporation had commenced work on a fishing gear manufacturing plant and a fish canning plant and had taken over a boat yard for small mechanized vessels previously operated by the Small Industries Corporation. He emphasized the need for increased production to meet the present short-fall in production of some 80,000 tons which were in part supplied by imported fish and fish products.

Le délégué de la France tient à indiquer combien son gouvernement apprécie l'hospitalité donnée par le gouvernement australien à la 13ème Session du Conseil et se félicite du choix de Brisbane comme ville-hôte.

Son gouvernement le charge de réaffirmer l'intérêt qu'il porte à l'oeuvre du Conseil et exprime le voeu de voir continuer les efforts en vue d'en améliorer l'efficacité; notamment par un choix de plus en plus sévère des objectifs qu'il s'assigne. Il note avec satisfaction les efforts faits dans ce sens récemment, mais pense qu'il faut sans doute aussi restreindre, ou du moins mieux définir les limites géographiques dans lesquelles il entend agir en pratique. En particulier, il semble nécessaire de tenir compte de la création récente de la Commission des Pêches de l'Océan Indien qui a maintenant commencé son activité et d'assurer une coordination parfaite des programmes retenus par les deux institutions.

The Delegate for Indonesia thanked the Council for the invitation to be represented at the 13th Session and conveyed to the Government of Australia an expression of appreciation for the excellent arrangements made. He emphasized that his Government had given food production the highest priority in the Indonesian Five Year Development Plan 1969-1973 with the emphasis on fishery products as a major source of protein supply. The fisheries of Indonesia were complex with the greater part of the living marine resources as yet unexploited and large brackish water areas unutilized. However, in some areas the fishing population was extremely dense and the catch per effort extremely low. He said his Government was already placing emphasis on researches on the resources, introduction of modern fishing methods, quality control of the products, motorization of the fleet and development of fish markets and harbours. Provision of cold storage facilities and loans to fisheries co-operatives, together with the development of inland fisheries were also in the programme. He said that his Government was also aiming towards the exploitation of the deep sea resources and increased utilization of the vast coastal and brackish water areas.

The Delegate for Japan expressed his Government's sincere appreciation of the action of the Government of Australia in sponsoring the 13th Session of the Indo-Pacific Fisheries Council. Noting that his Government fully supported the Council's activities, he expressed the hope that the Council would be able to put even more effort into the development of fisheries, particularly in the Indo-Pacific waters. He noted that there was need in certain areas for appropriate measures to be taken to conserve fish stocks but felt that within the Indo-Pacific region there may be many unexploited areas awaiting exploration. Drawing attention to recent research work in Japan on the problem of the conservation of fish stocks, he emphasized that this problem could not be dealt with effectively without international co-operation and expressed the view that research work in the Indo-Pacific region should be more closely integrated.

Expressing his appreciation for the opportunity to participate in the 13th Session of the Council, the Delegate for Korea informed the Council that his Government had been exerting every effort towards the development of the coastal and off-shore fisheries including exploitation of the shallow seas and tidal flats. He said that the Korean Government had successfully carried out its first Five Year Economic Development Plan and that under the second Five Year Plan 1967-1971 the Government was taking active measures towards raising the standard of living of the fishermen and expansion of the deep sea fishing activities. He noted that such development required international co-operation especially between Member Governments of the IPFC. He said that his Government was willing to participate in the activities of the Council and anticipated close co-operation with the other Member Governments.

The Delegate for Malaysia reviewed in some detail the present status of the industry in his country noting a rapid increase in production and value of the living aquatic resources and noting the strong trend towards mechanization, particularly the use of inboard engines and the accompanying increase in size of vessels and power of engines with the development of the trawling industry. He said that there was considerable development in the culture and capture of edible fresh water fish in Malaysia, Sabah and Sarawak. The Delegate

referred to the institution of a M\$21 million fisheries development plan covering West Malaysia and Sarawak and a M\$2.8 million plan for Sabah. These plans included training, provision of research facilities, extension services, financial aid to the operatives and the provision of an adequate fleet of research vessels, experimental fishing units and patrol vessels. He emphasized the importance of training at the practical level and referred to the establishment and operation of the Fisheries School in Penang. He also noted an increasing interest in deep sea fishing especially for tuna in the Indian Ocean and remarked on the very rapid development of trawling in West Malaysia and Sabah.

The Delegate for the Netherlands expressed his pleasure at the opportunity to attend the 13th Session of the Council and said that his Government followed with keen interest the scientific, technological and economic development in the field of fisheries in the IPFC region. It considered that the work of the Council, including exchange of information, results of research and the testing of new ideas was of great importance to the members in helping to solve the problems confronting the fishery industry, particularly in those countries where fisheries played such an important part in providing protein supplies for the people. He conveyed an expression of appreciation to the Australian Government for acting Host to the 13th Session of the Council.

On behalf of his Government the Delegate for New Zealand expressed sincere thanks to the Government of Australia for its kindness and courtesy in acting as Host for the 13th Session. He noted that since 1966 there had been a continued expansion of New Zealand fisheries, catches of demersal fish had continued to rise and attempts were being made to exploit the pelagic fishes. The New Zealand crayfish fishery continued to support a flourishing and expanding industry and there were interesting developments in shellfish farming. He said that since the major fishery in New Zealand depended upon the demersal stocks, efforts were being made to expand the fishery and to assess the available resources. Problems in New Zealand were similar to those of Australia and he anticipated with pleasure mutual co-operation between the two countries in all fields of fisheries endeavour. He said that New Zealand was anxious to contribute wherever possible in the development of fisheries studies within the Indo-Pacific area for the mutual benefit of the member countries and associated organizations.

The Delegate for the Philippines brought greetings from His Excellency, President Ferdinand E. Marcos and Vice-President and Secretary of Agriculture and Natural Resources, Fernando Lopez and emphasized the continuing interest of his Government in the IPFC. On behalf of his Government and Delegation he extended sincere thanks to the Government of Australia for the facilities and hospitality provided and thanked the Chairman and Executive Committee for the preparations leading to Philippine participation in the Session. He extended greetings also to other Delegations with the assurance of utmost co-operation for the success of the meeting. Noting that rice and fish were the two important food items in the daily diet of the Philippines he said that the Government was fully supporting fisheries development, and a programme of expansion with the objective of attaining self-sufficiency in fish supplies had been drawn up. This programme incorporated studies on the assessment of fish

resources, improvements in methods of fish production, expansion of infrastructure facilities, training of man-power and research and extension services. Incentives were being provided in mechanization of craft and gear and the development of fish processing. He offered to share with the countries of the Council the Philippine experience in dealing with common problems and said that his country was willing to exchange views and offer proposals for regional fisheries research and development programmes.

The Delegate for Thailand expressed his Government's sincere appreciation and gratitude to the Government of Australia for hosting the 13th Session of the Indo-Pacific Fisheries Council and noted the efficient arrangements in connection with it. He re-affirmed his Government's unwavering faith in the activities and aims of the IPFC and assured its continuing support and co-operation. He said that fisheries again has an important role in the Second National Social and Economic Development Plan (1967-1971) in providing production for the demand of national domestic need and export trade, and also in improving the social and economic well-being of the fishermen. He presented a brief review of current development and progress, and briefly outlined the future plan. Problems encountered in its implementation included the inadequacy of technical experience and capital investment necessary for the expansion of distant offshore fisheries, the shortage of trained and qualified researchers and staff needed in the field of management and conservation, and the inherent difficulties in the improvement of statistics, both for marine and freshwater. His Government considered that FAO should place particular emphasis on efforts to relieve these shortcomings which are common in the region and emphasized the need for greater facilities for the training of fisheries personnel.

The Delegate for the United Kingdom said that Her Majesty's Government welcomed the invitation received from the Chairman and Executive Committee of the Indo-Pacific Fisheries Council to be represented at the Council's 13th Session and for the opportunities it afforded to exchange views on all aspects of fisheries. The Demersal Fisheries Symposium at which the United Kingdom was tabling a number of papers was keenly anticipated, offering as it did an excellent opportunity to contribute to the advancement of fisheries techniques. He said Her Majesty's Government was most grateful to the Government of Australia for their hospitality and the provision of the excellent facilities of every kind which had been provided for the Session.

The Delegate for the United States expressed his Government's appreciation to Australia for being Host to the 13th IPFC Session and to the Council and Secretariat for their efforts in connection with this Session. He brought best wishes for a profitable discussion and re-affirmed his Government's interest in the aims and objectives of the Council. He noted that the newly formed Indian Ocean Fisheries Commission would undoubtedly affect the operations of the IPFC and anticipated considerable discussion during the current Session. It was believed that the assumption of operational activities was a course which must be followed if the IPFC were to be responsive to the changing needs of the time and of the region. Responsibility for the Fishery Aspects of the Co-operative Study of the Kuroshio and Adjacent Regions had constituted a modest step in this direction. Additional opportunities might be found in the suggestion of the Executive Committee that the IPFC consider the means by which it could serve as the co-ordinating mechanism for fishery development programmes

in the region, whether these were arranged under the UNDP/SF, bi-lateral agreements, multi-lateral agreements, or by private foundations. The subject proposed by the Host Government, "Priorities in fisheries development", was of obvious importance and raised problems difficult of solution, and it was to be hoped that this subject would be explored in sufficient depth as to produce results of wide application and utility. He said that the 13th Session of the Council promised to be a productive Session.

The Observer from the General Fisheries Council for the Mediterranean was grateful to the Chairman of the IPFC for his invitation to the GFCM to be represented at this 13th Session of the IPFC. He informed the Session of the interest of the GFCM in the work of the IPFC referring in particular to the proposed IPFC Symposium on coastal aquaculture, a subject of particular interest to the GFCM and in which he hoped both Councils could closely co-operate.

The Observer from the recently established Indian Ocean Fishery Commission thanked the Chairman of IPFC for his kind invitation to the Commission to send an Observer to this 13th Session of the IPFC. He informed the Council of the great interest of the Commission to closely co-operate with the IPFC in their common problems. The Observer drew attention to the report of the first session of the Commission held at FAO, Rome, from 16 to 20 September 1968 which was available to the Council's Session and in which some areas of collaboration were considered. He noted that the Commission proposed the establishment of an IOFC/IPFC Joint Working Party of Experts on Indian Ocean and Western Pacific Fishery Statistics, and working parties of experts on stock-assessment to review the status of various stocks, pointing out the interest of the Commission in collaborating with the Council in these fields.

ARRANGEMENTS FOR THE 13TH SESSION

Through the courtesy of the Commonwealth Government of Australia and with the co-operation of the Government of Queensland, facilities for the IPFC 13th Session were made available in Brisbane, Queensland.

The Queensland Parliament graciously made available for the Opening Ceremony of the Session the Legislative Council Chamber in the Queensland Houses of Parliament and the ensuing deliberations of the Council took place in accommodation provided in the Belle Vue Hotel, George Street, Brisbane.

SECRETARY'S REPORT ON CREDENTIALS

Letters of credence of authorization in proper form were received from Delegations representing the Member Governments of: Australia, Ceylon, France, Indonesia, Japan, Korea, Malaysia, Netherlands, New Zealand, Philippines, Thailand, United Kingdom, United States of America.

International Organizations represented by accredited Observers were: South Pacific Commission, Indian Ocean Fisheries Commission, General Fisheries Council for the Mediterranean, Inter-governmental Oceanographic Commission, United Nations Educational, Scientific and Cultural Organization, Food and Agriculture Organization.

Expressions of regret at inability to attend the 13th Session were received from the Member Governments of Burma, Cambodia, India and Vietnam, the non-Member Governments of Brunei and Canada, and the United Nations Organization, World Meteorological Organization and the International Council for the Exploration of the Sea.

NOMINATION OF STEERING COMMITTEE

At its first business meeting, the Council appointed a Steering Committee consisting of the Executive Committee and the Chairmen of the two Technical Committees.

NOMINATIONS TO TECHNICAL COMMITTEES AND DESIGNATION OF ADMINISTRATIVE CORRESPONDENTS

In accordance with Rule of Procedure X, para 2a, the Chairman polled Delegations requesting nominations for membership of the Technical Committees I and II and the designation of official Administrative Correspondents.

The nominations received are listed in Appendix III to these Proceedings.

REPORT OF THE EXECUTIVE COMMITTEE

The Chairman presented the report of the Executive Committee in three sections: A. Administration, B. Proposals for the Future Work, C. Financial Statement and Budget Estimates.

The Council adopted Section A of the report and referred Section B to the Technical Committees for consideration during the preparation of the Technical Committee reports to Council.

Section C, Financial Statement and Budget Estimates was received by the Council, the Estimate of Expenditure being modified in the light of information presented by Mr. R.I. Jackson, A.D.G. (Fisheries).

This Section is attached as Appendix I to these Proceedings.

REPORT ON THE STATUS OF THE INDUSTRY

The Secretary's report on the Status of the Industry was received by the Council, it being noted that the report should be read in conjunction with several of the Working Papers submitted, particularly those covering the intersession activities of Technical Committees I and II.

AMENDMENT TO THE COUNCIL'S AGREEMENT AND RULES OF PROCEDURE

The proposals for amendment to Council's Agreement and Rules of Procedure as submitted by the Commonwealth Government of Australia were presented to the Council.

Speaking on the subject the Delegate for U.S. noted that the previous adjustments to these documents had been related closely to steps in the re-organization of the FAO, Department of Fisheries. He understood that a further re-organization of the Department was contemplated which might result in the establishment of at least one and possibly two further Divisions within the Department. Under the circumstances, and in view of the fact that the Council might wish in the future to restructure itself along lines similar to those adopted by the Department of Fisheries, the Council might defer consideration of the proposals until further information was available and the structure of the Department of Fisheries was stabilized. i.e, therefore, formally moved a deferment of consideration of this question until that time.

Speaking on the Motion the Delegate for Australia noted that in the past the Indo-Pacific Fisheries Council had shown a tendency to set up a large number of subsidiary bodies and said that his Government felt there was need for systematization within the Council and his Government considered that the structure of the Council should be formalized specifically in the Agreement rather than in the Rules of Procedure. However, he considered that in view of the situation as described by the Delegate for U.S.A. his Government would agree to the proposed deferment and he accordingly seconded the Motion.

There being no other comment the Motion for deferment of consideration of the proposals was adopted.

REPRESENTATION BY OBSERVERS

The Council had before it applications for the granting of Observer status to representatives of the Republic of China (Taiwan) and Nauru.

Following the discussion on the subject, the representative of Nauru advised the Council that he wished to withdraw his application pending further discussions with his Government.

In respect of the application from the representative of the Republic of China, the Chairman ruled that the proposal be put to a ballot and appointed scrutineers.

The results of the ballot were as follows:

In favour:	7
Opposed:	1
Abstained:	4

The number of votes cast being 12, the Council noted that, a simple majority having been obtained, it was in favour of granting Observer Status to the Government of the Republic of China and the Secretary was instructed to convey the results of the ballot to the Council of FAO for consideration at its meeting to be held in June 1969.

INTERSESSION REPORTS OF TECHNICAL COMMITTEES

The Intersession Reports of the Technical Committees I and II, subject to minor amendments arising during the Committees' discussion of the Draft Reports, were tabled and adopted.

For the session Technical Committee I appointed Dr. Arporn Sribhithadh, Thailand, as Chairman and Dr. K.M. Chan, Hong Kong, as Rapporteur.

Mr. I. Petersen, Hong Kong, was appointed Chairman and Mr. J. Dassow, U.S.A., Rapporteur for Technical Committee II.

TECHNICAL COMMITTEE SESSION REPORTS

The work of the Technical Committees during the session is dealt with below in these Proceedings on a subject basis. The reports on matters for which the Technical Committees held responsibility were referred to the Council in Plenary Session for consideration and adoption.

INDICATIVE WORLD PLAN

The Council appreciated the work of FAO on the Indicative World Plan as outlined in Working Paper 9 (Rev. 1). It noted, however, that while the information in this document is probably the best presently available, it is essential for the purpose of both development planning, and the timely introduction of management measures, that this information is kept under regular review. The Council accordingly requested FAO to continue the work in this field and produce such general reviews of the area as a whole.

This work should be closely linked with the resources studies being undertaken by the Working Parties on Rastrelliger and on Trawling. It was emphasized that this work cannot be efficiently pursued without adequate support from the Secretariat of FAO and Member Governments in supplying appropriate data and from funds for meetings of Working Parties. The Council may wish to establish a Working Party of Experts on Stock Assessment at its next Session, and the Council accordingly recommends that provisions be made for meetings of such a Working Party during the 1970-71 biennium and that the Working Party should work jointly with the IOFC.

RELATIONS BETWEEN IPFC AND IOFC

Recognizing that a large part of the area with which IOFC is concerned is included in the area of IPFC, the Council realized that there could be some overlap of interests. Therefore, it recommended close consultation between the two bodies to avoid duplication of studies in fields of mutual interest. Council supported the proposal made by IOFC for the formation of joint working parties to deal with problems of common interest.

Council agreed that the geographical area in which the two bodies operate should remain flexible but that subjects for study which would be of mutual interest (e.g. IOFC-IPFC statistics) should be handled by joint working parties.

13TH SESSION SYMPOSIUM - DEMERSAL FISHERIES

ARRANGEMENTS FOR THE SYMPOSIUM

At its 12th Session, the Council decided that the Symposium subject at the 13th Session should be "Demersal Fisheries" and that the Working Party on Trawling, under the convenorship of the Chairman Dr. Arporn Sri-bhibhaddh, be requested to organize the Symposium. It was further considered that the subject matter should be considered under the following headings:

Experimental Fishing

Exploratory Fishing

Stock Identity and Distribution

Stock Assessment

The Working Party on Trawling, after consideration, proposed that the working objectives for the Symposium should be:

- (a) to examine the information submitted in the form of
 - (1) review papers
 - (2) experience papers
 - (3) other relevant documents
- (b) to attempt description and appraisal of the available resources and the future prospects for the rational utilization of these
- (c) to outline the industrial growth and changes required to realize these prospects
- (d) to propose courses of action, at governmental level, to assist, guide and control these changes.

Fifty-one papers were contributed of which forty-nine were from countries within the region and two were from the Food and Agriculture Organization.

THE SYMPOSIUM

At the 13th Session Mr. C.G. Setter was appointed Chairman of the Symposium with Mr. T.W. Burdon acting as Chairman during the sessions which Mr. Setter was unable to attend. They were assisted by a small working group. The Symposium was then dealt with under the following headings:

- | <u>(a) Present Status of Industry</u> | <u>Discussion Leader</u> | <u>Rapporteur</u> |
|---|--------------------------|---------------------|
| | Dr. A. Sribhibhadh | Dr. D.E. Kurth |
|
<u>(b) Evaluation of Unexploited or Under-exploited Resources</u> | | |
| (1) Experimental Fishing) | | |
| (2) Exploratory Fishing) | Mr. Chin Phui Kong | Mr. T.B.S. Gorman |
| (3) Stock Evaluation | Mr. Chin Phui Kong | Mr. J.S. Hynd |
| (4) Others | Dr. A. Sribhibhadh | Mr. B.T. Cunningham |
|
<u>(c) Action Needed</u> | | |
| (1) Research | Mr. T.W. Burdon | Mr. I. Petersen |
| (a) biological | | |
| (b) technological (boat, gear and food technology) | | |
| (c) economics | | |
| (2) Statistics | | |
| (3) Management | | |
| (4) Education, Training and Extension | | |
| (5) Financial Assistance to Industry | | |
| (6) Respective Roles of Government and Industry | | |
|
<u>(d) General Summation and Discussion</u> | | |

The Symposium took place on 16, 17 and 19 October, 1968.

SUMMARY OF MAIN POINTS

A. PRESENT STATUS OF INDUSTRY

For convenience the Indo-Pacific area can be considered as consisting of four sub-areas, i.e. the West Indian, East Indian, North-west Pacific and South-west Pacific Oceans. Associated with these sub-areas are the adjacent areas - Japan Sea, Yellow Sea, East China Sea, South China Sea and others progressing south to the Shelf Areas of Australia and New Zealand.

The papers in this section were informative of the status of the fisheries over a wide area in which the total annual production of marine species (excluding Australia and New Zealand) is in the region of two million metric tons.

Discussion largely related to clarification of the papers followed by statements outlining the situation in areas not covered by such papers.

It was considered that the status of the Indo-Pacific Region could be classified as follows:

- (1) Unexploited and Partially Exploited - Indonesian waters, offshore Philippine waters, South Vietnam, Gulf of Matapan, Bay of Bengal, the Sunda Shelf, Seas of West India and Ceylon, Coastal waters of New Zealand, and waters of East Malaysia.
- (2) Fully Exploited - includes East China Sea, the Gulf of Thailand, Yellow Sea and Manila Bay.

B. EVALUATION OF UNEXPLOITED OR UNDER-EXPLOITED RESOURCES

(1) Experimental Fishing

Discussion under this section largely related to the choice of echo sounders for experimental fishing and the value of differing frequencies. Attention was also drawn to the use of such equipment for minimizing gear damage, bottom discrimination and thermocline detection. The value of "aimed trawling", in which a fish concentration was located by echo sounder before the gear was set, was also emphasized. The importance of matching boats and gear and the relative efficiencies in different sizes of nets were discussed.

(2) Exploratory Fishing

The choice of fishing gear to be used in exploratory fishing was considered. It was agreed that it was preferable to adopt fishing gear of proven effectiveness for use in an unknown area. Such action would also permit ready assessment of commercial prospects by comparison of results.

The results of exploratory fishing in the Indo-Pacific Region were discussed and the importance of co-operation in such projects was emphasized. Special reference was made to the paper entitled "Demersal Fish Explorations in the North-eastern Pacific Ocean - An Evaluation of Exploratory Fishing Methods and Analytical Approaches to Stock Size and Yield Forecasts" by D.L. Alverson and W.T. Pereyra. This will be of value to all fisheries organizations in the region.

(3) Stock Evaluation

It was emphasized that preliminary surveys should be followed by exploratory fishing and thence to estimates of the catch the stock can support. The importance of the reliability of data or data estimates in making such predictions was stressed, but it was pointed out that preliminary stock estimates could be made from very few data provided the data were of the right kind. Different methods of stock assessment were discussed in terms of specific problems as well as generally. Special reference was made to papers by Dr. S. Shindo.

(4) Others

Eight miscellaneous papers were discussed.

C. ACTION NEEDED

No Symposium papers had been presented postulating the changes which should take place in industry or the responsibility of a government in respect of research, development to management. However, a number of papers, which related to the types of action taken in specific countries, were discussed. The host country paper and the Report of the Australian Fisheries Development Conference, 1967, in which specific lines of development action were proffered, were also considered.

The Symposium deliberations were then conducted under the following headings:

- (1) Research (biological, technological and economic)
- (2) Statistics
- (3) Fishery Management
- (4) Education, Training and Extension
- (5) Finance
- (6) Respective Roles of Government and Industry.

It was considered, however, that projects of any size or complexity would not seem possible unless specialist staff was available. Adequate information is also rarely available in many countries and the pressing need for development often cannot await research findings. While this was recognized, the benefit of efficient fisheries management was emphasized. The value of action, such as the utilization of lesser known species, to avoid wastage of fish catches was also emphasized. Concern was expressed as to the imbalance between the finance made available to scientific research as against purely developmental aspects of fisheries and it was suggested that research into management of resources should go hand-in-hand with surveys made for the exploitation of fish stocks.

The need for adequate research, statistical information, education and training and extension was fully recognized. Discussion of the roles of government and industry lead to the view that the role of government was to provide the climate in which industry could develop and to stimulate such development whenever necessary. A warning was given as to the dangers of over-capitalization. The desirability of the formulation of national fishery goals and of a mechanism to assist in decision making within the framework of such goals were discussed. The importance of public relation aspects was also stressed.

CONCLUSIONS

In light of the discussions which took place in the Symposium, the Council

- (1) Recommends to the IPFC Working Party on Trawling that the material relative to the status of the demersal fisheries in the region be consolidated, extended (if possible) and revised at intervals of not more than two years to provide an up-to-date assessment of the situation in the region. For this purpose, Council requests that FAO provide the services of a consultant to assist the Working Party.
- (2) Recommends to the Secretariat that the co-ordination and dissemination of information relating to experimental and exploratory fishing in the IPFC area be undertaken to ensure that co-operation between member countries is facilitated.
- (3) Requests that member countries prepare lists of priorities in respect of the development of these resources and that the Secretariat consolidate such lists to provide guidance to member countries and the Organization in the action to be taken at national and international levels; and
- (4) Recommends that, in view of the importance of fisheries management as a form of resource saving, the FAO Stock Assessment Branch service member countries in the IPFC Region.

14TH SESSION SYMPOSIUM - COASTAL AQUACULTURE

In reviewing the report by Dr. T. Ino (Japan), who unfortunately is no longer in a position to continue his assignment as Convenor of the Working Party on Coastal Aquaculture, the Council considered that this Working Party, which is covering the subject of the next Symposium of the Council, should have the highest priority. It therefore recommended the continuation of this Working Party with the following membership:

Dr. Masaru Fujiya (Japan) (Convenor)
Dr. A. Sribhibhadh (Thailand)
Dr. G.J. Blanco (Philippines)
Mr. Kim Kyun Hyon (Korea)
Dr. J. Bardach (U.S.A.)
Mr. T.G. Pillai (Ceylon)

The Council agreed with the suggested topics as recommended by the Working Party and decided that the Working Party should have the following Terms of Reference:

To prepare the prospectus and act as Steering Committee for the Symposium on Coastal Aquaculture in the marine and brackish water environment which is to cover the following main topics:

1. Research into the biology of the organisms concerned.
2. A review of species and areas with developmental potentials.
3. Problems of the taxonomy in certain groups concerned.
4. Environmental factors involved in the establishment of properly managed aquaculture systems.
5. Problems connected with the transfer of unwanted, harmful components of the flora and fauna to regions new to them.
6. Socio-economic factors, particularly in relation to possible conflict with coastal fishermen.
7. Market research to determine the demand for the various species concerned.
8. Administrative problems involved in the development of the industry and its relations with fisheries development policy and other protein producing industries.
9. Studies on the economics benefits from aquaculture.
10. Effects of marine pollution on aquaculture.

The Council recommended that the Working Party should meet within four months to complete the first draft of the prospectus for the Symposium. The draft prospectus upon approval by the Executive Committee of the Council should be distributed to the Consultative Group of the Symposium for final comments. The final version of the prospectus should be available for distribution not later than July 1969.

The Council noted with interest the action taken by ACMRR following the request from SCOR to consider the proposal by Prof. Zenkevich on the question of transplantation and mass culture of marine organisms. The Council agreed that these questions are of principal concern to FAO and noted that FAO's programme can be carried out only by strict selection of priorities. It recommends to FAO that its activities in this field over the next two years be centred around the proposed IPFC Symposium on Coastal Aquaculture. Thus the IPFC Symposium may become a World Symposium on Aquaculture, or serve as a preliminary to a World Symposium.

15TH SESSION SYMPOSIUM

In view of the information gained from the Symposium on Demersal Fisheries at this Session, and also noting that the production of the coastal and high seas pelagic fishery resources and its potential are of considerable and probable greater magnitude than other fishery resources in the Indo-Pacific Region, the Council recognized the importance of the coastal and high seas pelagic fishery resources and its impact on the economic development of member countries in the Region, and recommended that a Symposium on the Coastal and High Seas Pelagic Resources should be held during its 15th Session.

The Council agreed that the pertinent matters to be considered by the Symposium should include:

1. The present status of the industry.
2. The potential and gaps in present knowledge of the resources.
3. Required action to achieve maximum utilization of the potential resources.

Due to the complexity of the subject of the Symposium and the need for its proper preparation, the Council decided to establish a small Working Party consisting of:

(Convenor) Mr. R.S. Shomura (U.S.A.)
Dr. Akira Suda (Japan)
Mr. V. Encina (Philippines)

The Working Party, which should carry its work during the inter-sessional period by correspondence, should initiate as soon as possible a study of the present status of the industry, the potential resources and gaps in present knowledge of these. The Working Party should prepare a report on these subjects to be presented to the 14th Session of the Council for consideration.

The Council, noting that the IOFC had established at its first Session a Committee on the Management of Indian Ocean Tuna, decided that the Working Party should consult the Secretariat of the Commission on the activities of this Committee.

The Council noting that difficulties experienced in the processing and reviewing of papers (many of which were received very late) contributed for the 13th Session Symposium, emphasized that the Working Party should arrange for papers on the subject to be in hand at least six months before the 15th Session to permit proper analysis and compilation of the material available. The compilation should be designed to provide basic documents for each section of the Symposium and these should give a comprehensive coverage of the material to be presented.

STRUCTURE AND FUNCTION OF REGIONAL FISHERIES OFFICE

At the request of the Chairman, Mr. R.I. Jackson, Assistant Director-General (Fisheries) FAO briefly reviewed the re-organization and development of the FAO Department of Fisheries over the past few years and outlined the possible steps which might be taken within the not too distant future for further re-organization of the Department and particularly of the Regional Fisheries Office staffing and functions. He pointed out that the subject was still somewhat fluid and that the Director-General of FAO would be taking into consideration recommendations and suggestions arising from the forthcoming FAO Regional Conference to be held in Bangkok in November 1968.

He assured the Council that every effort would be made to provide adequate Secretarial servicing for the Council. In addition, Headquarters support for regional fishery bodies like the IPFC was being re-organized and strengthened. Mr. Jackson believed that the new arrangements in the Regional Office plus improved Headquarters Secretarial support now being organized, would together provide even more effective assistance for the IPFC than had been possible in past years.

The Council expressed its appreciation of Mr. Jackson's presentation and expressed the hope that the services provided by FAO in support of the Council would not be weakened by the re-organization of the regional structure.

In support of this view, attention was drawn to the views expressed during the 12th Session of the Council in Honolulu, Hawaii, October, 1966 (IPFC/12th Proc. (I), p. 23) in which it was emphasized that the role of the Regional Office should be to assist Member Governments, FAO and the Council itself to identify problems and opportunities for action rather than to provide specialists able to assist in solving those problems. The Regional Office should maintain an intelligence service through which it would have a reliable and up-to-date view of the status of the industries in the region and of Governmental and other problems relating to these industries.

Any strengthening of the Regional Office should be by way of providing personnel able to participate in the operation of such an intelligence service and available for consultation by Member Governments.

The Council requested the Executive Committee, in consultation with FAO, to examine the organization and format of the Council Sessions with a view to facilitating the work of the Council and, if possible, to institute any desirable changes in the organization of the 14th Session. Consideration of the organization and format of Council Sessions will also involve consideration of documentations and publications, referred to elsewhere in this Report.

PUBLICATION OF 13TH SESSION PAPERS

The Council decided that the papers considered at the 13th Session Symposium should be published together with the Prospectus for and Report on the Symposium in Section III of the Proceedings.

With regard to the Technical Papers presented, the Council decided that these should be utilized as follows:

Published in full in Section II of the Proceedings: 1, 3, 4, 5, 9, 10, 11, 12, 13, 14, 17, 18, 26, 27, 28.

Issued as Occasional Papers: 2, 6, 7, 15, 16, 19, 20, 21, 22, 24, 25, 29, 30.

Article in Current Affairs Bulletin: 23 (In condensed form).

Technical Paper 8 was withdrawn by the contributor.

The Council noted that many of the papers presented could be improved by editing.

The Council approved for publication in the Occasional Papers series of the Council the Intersession Reports of Technical Committees I and II as amended.

COUNCIL'S PUBLICATIONS POLICY

The Council noted that its publication "Current Affairs Bulletin" had proved most useful but required more timely information on fishery developments in the IPFC area. It therefore requested Member Governments to supply relevant information at regular and frequent intervals to the Secretariat in order to increase the value and timeliness of the C.A.B.

With respect to the Proceedings of the Council's Session it was considered that Section I of the Proceedings should conform as closely as possible to the Summary Record of the Proceedings adopted by the Council at the end of each Session.

The content of Section II, Technical Papers, and Section III, Symposium Papers, was discussed at some length as well as other series of documents provided during the Session.

Publication of the Technical and Symposium Paper series in mimeographed form for the Council Sessions had been satisfactory but it was felt that better quality paper should be used.

As a result of its discussions on the question, the Council recognizing that the magnitude and scope of the documents made available at its Sessions did not comply fully with its actual needs and noting that no specific guide lines had been available, requested the Executive Committee to consider in detail the basic requirements for documentation and publications of the Council and to formulate a set of procedures for their preparation, submission, editing and publication.

This proposal should be implemented as soon as possible so that the next Session of the Council could benefit from its application and a set of rules for the preparation of IPFC documentation and publications could be circulated to the Member Governments and prospective authors as soon as possible.

PRIORITIES FOR WORKING PARTIES

The Council reviewed the status of the seven Working Parties established at the 12th Session and decided that the Working Party on Rastrelliger and the Editorial Working Party on Pelagic High Sea Resources should carry out their continuing commitments by correspondence. It was noted with satisfaction that funds would be available for the Joint IPFC/IOC Working Party on Fishery Aspects of CSK and for the proposed Joint IPFC/IOFC Working Party on Statistics.

Having noted that the Advisory Group on Indian Ocean Resources had completed its work within its Terms of Reference, the Committee then reviewed the position of the three remaining Working Parties which it decided should continue to function during the ensuing intersession period.

It was decided that order of priority for these Working Parties should be

- (1) Working Party on Coastal Aquaculture.
- (2) Working Party on Economics of Fish Culture.
- (3) Working Party on Trawling.

TIME AND PLACE OF 14TH SESSION

There being no invitation offered by any Member Government represented, the Council invoked the provisions of Rule II, placing responsibility for the selection of the time and place for the next Session on the Chairman, in consultation with the Director-General of FAO and subject to the approval of a majority of Member Governments.

TECHNICAL COMMITTEE OFFICE BEARERS

Technical Committee I - For the intersession period and 14th Session:

Chairman: Dr. Deb Menasveta (Thailand)
Rapporteur: Mr. Mohd. Unar (Indonesia)

Technical Committee II - For the intersession period and 14th Session:

Chairman: Mr. V.L.C. Pietersz (Ceylon)
Rapporteur: Mr. B.T. Cunningham (New Zealand)

COUNCIL OFFICE BEARERS

ELECTION OF THE CHAIRMAN AND VICE-CHAIRMAN

The Delegate for United Kingdom nominated and the Delegate for Ceylon seconded, Delegate for U.S.A. as Chairman. The nomination was supported by the Delegates for Australia and Thailand and Mr. J.C. Marr was declared elected, with acclamation.

The Delegate for Indonesia nominated and the Delegate for Philippines seconded, Mr. C.G. Setter the Delegate for Australia as Vice-Chairman. Mr. Setter was declared elected, with acclamation.

Mr. Soong Min Kong, retiring Chairman, became Member (ex officio) of the Executive Committee.

VOTE OF APPRECIATION

The Delegate for the Philippines moved, seconded by the Delegate for New Zealand that the following statement be recorded and incorporated in the records of the Council:

'The Council notes with regret the real possibility of Mr. J.A. Tubb leaving his post as Regional Fisheries Officer and Secretary of the Council in the near future. All Members of the Council were unanimous in their expression of gratitude not only for his efficiency and helpfulness as the Council's Secretary for so many years, but also for his tact, understanding and cooperation in his work and contacts with Regional fisheries workers. In the event of Mr. Tubb leaving the IPFC Secretariat, the Council wished him every success and happiness in his new duties.'

The Council adopted the motion with acclamation and Mr. Tubb was accorded a standing ovation.

FORMAL RESOLUTIONS

The Delegate for Malaysia moved and the Council adopted the following resolution:

The Council having convened in Plenary Session desires to place on record its very deep appreciation for the courtesy and generosity of the Commonwealth Government of Australia and in particular the Ministry for Primary Industry for extending to the Council an invitation to hold its 13th Session in Brisbane, Queensland, Australia.

The Delegate for Thailand moved and the Council adopted a resolution that the Council express to the Honourable the Minister of State for Primary Industry its sincere appreciation for his courtesy in officially declaring open the 13th Session of the Council and also for the gracious hospitality accorded to the participants at the Council's 13th Session.

The Delegate for Korea moved and the Council adopted a resolution that the Council express to the Honourable the Acting Premier and Treasurer of the Queensland Government its sincere appreciation for his courtesy in officiating at the Opening Ceremony of the Council's 13th Session and for the gracious hospitality accorded to participants at the Council's 13th Session.

The Delegate for New Zealand moved and the Council adopted a resolution expressing sincere appreciation to the Australian IPFC Organizing Committee and in particular the Liaison Officer and the Government staff both from Canberra and Queensland for their willing, courteous and generous assistance in the day-to-day operations of the Council's Session.

CHAPTER II

PROBLEMS IN FISHERIES DEVELOPMENT

INTRODUCTION

In accordance with an earlier recommendation, the Council gave particular attention to the Agenda item referred to it by the Host Government.

To facilitate discussion and to permit participation in the debate by all members of delegations, observers and visitors, the Chairman ruled that the Council adjourn and reconvene immediately in Committee of the Whole.

He then invited Mr. T. Burdon of the Australian Delegation to introduce the subject.

Mr. Burdon reviewed in considerable detail the basic document (IPFC/C68/WP 14), commenting where appropriate on particular sections of the paper.

HOST COUNTRY PAPER

PROBLEMS IN FISHERIES DEVELOPMENT

by

Fisheries Branch, Department of Primary Industry
Canberra, A.C.T., Australia

ABSTRACT

The first part of this paper outlines the nature of fishery development, the benefits consequential on such development, the characteristics of the resources and some of the more important techniques which can be used for promoting development or growth. It also indicates some of the problems which arise in projects affecting individual fisheries.

This discussion provides the background for the second part of the paper concerning Australian problems. A brief outline of the setting of the Australian fisheries, and the stage of development in a number of these, leads into a discussion of some of the problems of fisheries development and administration in Australia. The recommendations of the Australian Fisheries Development Conference, 1967, insofar as these relate to the need for a national policy, and the lines of action required to implement such a policy, are also discussed. In particular, the need to integrate various development techniques into a co-ordinated pattern of action is emphasised, and a method of programming development projects is suggested.

This leads into the major problem - the conflicting needs of the prosperous export fisheries based on molluscan and crustacean resources on the one hand, and the somewhat depressed scale fisheries which rely on the domestic market and are subject to strong competition from imported products on the other. The question as to whether government should co-operate with industry in the development of the prosperous fisheries or whether this be left to industry whilst government activity is concentrated on the "depressed" fisheries is discussed.

Effective fisheries management is considered to be of great importance. However, the problem of integrating fisheries at different levels of development into a single national policy poses questions of policy for development; priorities in use of scarce resources; and responsibility and co-ordination of such programmes.

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PART A - PARAMETERS OF DEVELOPMENT

I. THE NATURE OF FISHERY DEVELOPMENT

Economic development and growth to the economist means the expansion of a country's production of goods and services over a period of years. To the layman, however, development is more often regarded irrespective of the profitability of such ventures as synonymous with the physical changes that accompany it, such as the exploitation of hitherto untapped resources and the construction of roads, dams and other public works. Terminology is thus basic to discussions on development.

Economic growth and economic development are used in this paper in the sense employed by economists, but development and growth when used without the qualifying adjective have been given different and more restricted meanings:

Development is thus used to describe any qualitative change taking place in industry which leads to economic growth. That is, development arises from the introduction of a new factor such as a modification of the structure or mode of operation of any of the physical components in an industry or an alteration of the organization of an industry at any level, provided that such change results in increased productivity.

Growth, on the other hand, relates to changes of a quantitative nature which do not include modification in structure or organization, but consist solely of an increase in the number of units identical to those already in operation, thus increasing the effort or throughput.

Growth is thus largely dependent on the availability of finance, whilst development relies principally on innovation which usually flourishes only in a suitable atmosphere of technology. It should also be noted that development may lead to a rapid proliferation of modified elements which, in turn, might necessitate control of growth to avoid uneconomic competition or in the primary sector of the fishing industry, a decline in the total catch.

The distinction between growth and development also has implications in respect of the role of government. Since finance is the main requirement, a government wishing to foster growth could be expected to ensure that loans suitable in terms of interest rate and security, are available to the fishing industry. Growth can then be guided into the most productive areas. A positive role has thus to be accepted by any government wishing to encourage development. Technical information and technical assistance can best be provided by centralized authority(s). This calls for the employment of appropriate qualified specialists and technicians. The problem of providing such assistance is rendered more difficult by the dispersed nature of, and lack of organization in many fisheries. The value of such aid is well illustrated by the massive technical support and training which countries with advanced fishing industries consider essential.

II. THE BENEFITS OF FISHERY DEVELOPMENT

The main benefits which can be derived from fishery development and associated growth can be outlined as follows:

(a) Nutrition

Most countries depend on fisheries for a source of protein foods, although this is of relatively minor importance in Australia as other protein foodstuffs are readily available. Malnutrition is, however, a world problem for which the development of unexploited fishery resources offers a promising solution.

(b) Economic

Fishery resources, which are living and self-renewing, are most valuable to the economy of a country in that once developed and subjected to proper management, they can provide a perpetual benefit. Furthermore, except in the relatively small sector concerned with fish culture, man makes none of the contributions such as are required in agriculture. The long term cost of development is thus infinitesimal whilst the annual return can be very high.

The return to a country is the most obvious benefit provided - a benefit which is further enhanced if the produce can be exported. A fishing industry also makes a substantial contribution to import saving - a factor which has been recently recognized by the United Kingdom in the decision to subsidize the deep sea fleet for a further five years at least*.

* In Australia, the value of fishery exports in 1967/68 exceeded for the first time the value of imported fish and fish products.

Besides providing direct employment, the industry is also an important income generator as it supports canneries and processing establishments; gear and equipment manufacturers; boat yards; refrigeration and ice-making plants, and transport services.

(c) Infrastructure

The fishing industry with ports and associated services scattered around the coast can play a part in encouraging some degree of balance in the distribution of population between urban and non-urban areas. Similarly the development of new fisheries can facilitate investment in the infrastructure essential to the general development of remote areas. The prawn fisheries in northern and north-western Australia illustrate this point well.

(d) Rescue and Defence Services

Fishermen play a major role in many countries in formal or ad hoc rescue services. Experienced fishermen and the craft they operate have also played an important part in the defence services of some countries.

A government can benefit in all or any of these ways. There is, however, a subtle and significant difference in attitude between developing countries, in which fishery development is regarded as an essential part of nutrition and economic planning, and countries at a relatively late stage of economic development in which fishery development is usually fostered to meet a sudden worsening of the economic position of a valuable industry.

III. SOME CHARACTERISTICS OF THE FISHERY RESOURCES AFFECTING DEVELOPMENT

The fishing industry has much in common with other industries engaged in the exploitation of natural resources, but fishery resources have certain special features which have implications in respect of development and management.

The self-renewing nature of fishery resources and the low cost of development have been mentioned previously. The cost of harvesting is also relatively low, the "capital - annual gross return" relationship in many fisheries being in the ratio of 1:1. In Australia, for instance, the estimated values of boats and equipment and value of production to the fishermen during 1966/67 were \$A48 million and \$A44 million respectively*

A more important characteristic is the common property nature of the resource which permits the usage simultaneously by more than one individual or economic unit. No single individual has a right of exclusive use and the amount of effort applied cannot be subjected to the restraints that govern exploitation of a solely owned resource. This has serious implications as the individual usually competes with all other users in his efforts to get as large a share of the resource as possible, and it is unreasonable to expect an individual to restrain his efforts if there is no limit on the

* See also Appendix I for "capital-net" returns in some Australian primary industries.

numbers that can participate in the fishery. In these circumstances, increasing demand for the product may lead to the depletion of the fishery and the consequent inefficient use of labour and capital. Uncontrolled competition thus necessitates control and consequently governments have a more direct and continuing responsibility in the primary sector of the fishing industry than would normally be acceptable in other industries. This responsibility is further accentuated by the international nature of many fisheries which makes such control even more difficult.

The physical nature of the resource also gives the industry certain peculiar characteristics. Fish are wet, highly perishable and consist of discrete units of various size and shapes which can rarely be processed at source. The handling of this commodity thus presents special technical problems which are particularly acute in respect of transport, refrigeration and processing. These problems are aggravated by the variability in supply which arises from the uncertainty imposed on the fishing unit by factors such as weather and the occurrence and behaviour of fish.

Fishing is an occupation of a hazardous nature which encourages an extreme individualism and requires special skills and equipment. In fact, the risks in the primary sector are such that matters of fitness of equipment, competence of personnel and provision of sea rescue and similar services have been accepted generally as the responsibility of government. The individualism of the fisherman also has important implications in respect of programmes of education and training.

IV. CONDITIONS FOR DEVELOPMENT AND GROWTH

An opportunity for development or growth may exist in a fishery if either:

- (i) the resource is underexploited (or, in the secondary and tertiary sectors, the catch is under-utilized) and there is a demand for the product at an economic level, or
- (ii) the equipment or operational methods can be changed to give an increase in productivity directly or by reduction in losses.

This implies that knowledge or information is available about such opportunities. In the primary sector such information relates to:

- (i) location, distribution, behaviour and abundance of resources and includes predictions of these characteristics,
- (ii) weather conditions,
- (iii) markets,
- (iv) technological matters.

Similarly, in the secondary and tertiary sectors information is required about the availability of supply and the seasonal and other variations in such supply; the consumer preference as to types and form in which products are processed or presented; the level of demand for each of these categories; and technological matters.

To these basic requirements must be added the means to effect development, of which possibly the most important are know-how, the availability of skilled and competent operators capable of utilizing the information, and finance to implement the project. The first of these factors, in turn, reflects a need for training and education services. There must also be the intent or resolve to carry out the development, an intent usually created by the profit incentive but this is not the only factor involved. Obviously the human element is of major importance.

Finally there is the climate for development. Public interest and government activity may be concentrated on other industries thereby limiting the resources available for fisheries development. Then a new factor, such as an increasing need for protein foodstuffs or the profitable exploitation of the resources by foreign fleets, may change the climate resulting in the diversion of finance and manpower to fisheries development.

V. SOME TECHNIQUES FOR PROMOTING DEVELOPMENT AND THE PROBLEMS WHICH MAY ARISE

(a) The Human Factor

"The ultimate aim is the development of the people. Unless people are changed, no permanent improvement can be achieved. Physical and economic accomplishments become sterile without the development of the people".*

Without manpower there can be no development. Success of any development project will be largely dependent upon the ability and skills of the manpower concerned. The provision of education, training and extension services is thus of very considerable importance, the extent depending upon the general standard of education and technology in the country concerned. Obviously the lower the standard, the greater the need for fisheries training and education. Furthermore, since fishermen are highly individualistic, independent in character, and are usually scattered around the coast in small communities, the role of government in relation to such training and education is often a critical factor in development. The social characteristics of a fishing community and the special skills required often constitute a barrier between the fishermen and the rest of the community thus denying them the technical, economic and educational advantages which might be obtained by close association with other sections of society. However, such educational programmes depend for their success on information. Capable research, technical and extension workers from which such information stems are in short supply in most countries and this is particularly the case in those in which help is most needed. Even in developing countries where such staff is available, progress is largely determined by the quality of the personnel and particularly the experience, ability and enthusiasm of the top level administrators. Technical assistance from countries with more advanced fishing

* C.W. Chang "Extension Education for Agricultural and Rural Development", FAO, 1963.

industries can thus play a very important role in "developing countries" and has, in fact, initiated the development of fisheries in many countries. However, the type of person required to make a success of such a project - which involves identification of restraining factors; devising remedial action in keeping with local social and economic conditions; and implementing the programme during a comparatively short stay in a country in which language may be a serious communication barrier - is rare. Short-term advisory assignments may be of assistance in some cases, usually those in which the problem has been defined and specialist advice is required, but "advice" is easy to give - it is often the "practice" on which development projects founder.

Nevertheless, the importance of external assistance should not be under-rated as it provides a source of specialist staff who can concentrate on a specific project. Too often development is just another responsibility undertaken by personnel who are already over committed. There is, in fact, a very strong case for the establishment of a special unit for development - such a unit consisting of an expert capable of identifying the problems and specialists in particular fields being employed on contract for specific development projects. Such specialists may work in several areas on similar projects or the best trainees may in turn be employed if the need is apparent. This technique is being employed with success by the Canadian Department of Fisheries.

The human element is of particular importance in developing countries in which labour is cheap and plentiful but capital is severely limited. In such cases, the use of manpower to avoid capital investment may well be the best method of development. For instance, very large beach seines are hauled by hand in most countries, but manpower requirements can be reduced if powered winches are employed as in the Australian salmon fishery in Western Australia.

In more advanced countries, manpower is relatively expensive and there is need for research into its use in all sectors of industry. Such research should be principally directed to increase the efficiency of operations, but should also analyse the different types of works carried out in the industry to permit the introduction of vocational training as needed.

(b) Equipment and Capital

(i) The general economic and technological development of a country largely determines the quality or standard of equipment available to the fishing industry*. In Europe and North America, for instance, technological development in the fishing industry lagged behind other industries thus allowing all sectors of the industry to draw upon great reserves of technological and commercial experience. The introduction of new materials and particularly the post-war development of synthetic twines and ropes, improved navigational equipment, and electronics for fish location, are some

* Peru would appear to be an exception. However, the fisheries in this country are remarkable, being almost entirely based on industrial fishing for fishmeal production.

of the technological innovations which have led to marked development of the primary sector. Parallel development has also taken place in the secondary and tertiary sectors of fishing industries in these areas. This is particularly noteworthy in the handling, transport and processing of fish.

(ii) Technical support from competent mechanics and trained operators is necessary if the equipment is to be successful. "Preventive maintenance" is particularly desirable in the fishing industry and this implies a support programme of training. The use of imported equipment can lead to difficulties if adequate servicing materials including stocks of spare parts are not readily available to the industry. Similarly the use of steel hulled vessels in areas where there are no suitable repair facilities may lead to difficulties. Locally manufactured equipment and the use of indigenous materials avoids many of these problems.

(iii) The effect of the level of economic and technological development is not confined to equipment specifically designed for the fishing industry. A weakness in the basic economy or in the standard of technical development is often reflected in poor common services such as transport, communications and port facilities and in deficiencies in utilities such as water and electricity. These deficiencies are applicable to all industries, but the geographical dispersion and isolation of the fishing industry makes it particularly vulnerable. In planning development the standards of communications, utilities and facilities at a port are particularly relevant.

(iv) The fishing industry competes with other industries* for the limited capital available. The high element of risk and uncertainty in development of the industry, however, deters the ordinary investor and finance for such development generally has to be provided by government through credit facilities, direct or indirect subsidies, tax concessions or other devices intended to strengthen the incentive and manipulate industrial activity to achieve the objective of government. Funds for growth, on the other hand, are usually readily available following successful development and government assistance in this field should be provided sparingly and then only to achieve specific targets, such as the growth of fisheries in remote areas where facilities are limited or non-existent, or to meet adverse economic pressures. For instance, such measures were employed in highly developed fisheries to foster rapid post-war rehabilitation of fishing fleets. In the U.K. grants of up to 40% of the cost of new vessel construction (subject to specified limits) with loans for most of the remaining cost were made available to industry. Incentive was also provided to promote fishing during the winter months to reduce the seasonal decline in catches.

In injecting capital to foster development, account has to be taken of the market situation. Cases may be encountered where despite what would appear to be a favourable market situation, the primary sector is stagnant. Investigation is then necessary to ascertain whether development is being frustrated by inadequacies in other sectors of the industry and particularly in respect of transport.

* It may also compete with other fisheries, in that a sport fishery may provide a higher return (in terms of tourist revenues) than does a commercial fishery operating on the same resources.

(c) Organization in the Industry

In many countries, the problem is not so much one of how to introduce technological innovation as of its likely effects on the manpower in the existing industry. Any major programme of development should, therefore, be preceded by a careful investigation of the social and economic structure of the industry particularly in respect of the manpower employed, its organization into family units, community groups, co-operatives and companies, and the social customs and attitudes. For instance, the towkays of Malaya play a critical role in the fishing industry as owners and/or financiers and only after careful study and planning should an alternative organization be considered.

The organization of the industry, that is the way in which the various elements are related and work together, is an interlocking, integrated and dynamic system which should be treated with respect. It may work badly, but at least it works.

In most developing countries organization in the primary sector is relatively simple. The fishermen not only fishes, he makes his gear and, in many areas, his boat. This lack of specialization hinders innovation as the techniques and designs are traditional and the fishing methods are suited to the boat. Specialization with division of labour gives greater economy in the use of individual skill and increases competence. This facilitates the transition from traditional "craftsman" - made vessels and hand-made gear to standardised boats and equipment made by modern methods.

Such development leads to changes in the primary sector of the industry. The fishermen become specialists in fish capture and concentrate their activities on those methods offering the greatest return for effort. Such specialization may also lead to the design of a vessel to provide maximum efficiency and economy in a particular fishery and thereby to greater concentration of effort in that fishery. As more vessels enter the fishery the total effort increases and the catch per unit effort declines. This in turn encourages further effort by the individual fisherman who wishes to maintain his total catch. Such continued effort may affect total production and finally the resource may be seriously depleted. To avoid this management measures are introduced which limit the efficiency of individual operators by placing restrictions of the kind or size of gear that might be employed, the period during which such catches can be taken etc. The incentive offered to an individual may thus result in the inefficient use of available manpower and equipment. However, the transfer of excess effort to other fisheries cannot be achieved by reducing the incentive in the prosperous fisheries - it is necessary to provide an equivalent or near equivalent incentive in the other fishery concerned.

In Australia, the heavily exploited but extremely prosperous crayfishery is subject to gear restrictions, close seasons and a minimum size limit, but that fishery still offers a stronger incentive than do the valuable but unexploited striped tuna resources.

Problems of organization and specialization also arise in the secondary and tertiary sectors of the industry. The operations of the primary sector are often relatively small-scale and are scattered. The volume passing through any single outlet is often small, and the cost of handling and transport disproportionately high. In some developing countries this is aggravated by a complex system of middlemen which controls the wholesale and retail trade. Yet co-operative action is poorly developed and, even when such organizations are established, the lack of commercial and administrative experience hinders efforts to increase the turn-over.

Advanced countries, in which the fishing company plays an important role, also have problems of industrial organization. In recent years, large fishing companies have arisen by merger. Vertical integration by processors into wholesaling and, to some extent, also into retailing is not uncommon. This action is aimed at obtaining a larger share of the market by brand promotion. Vertical integration into the primary sector is less common and is confined largely to operations designed to obtain a greater proportion of a scarce resource. Freezer trawler operations and the growth of processing at sea in general, however, give this additional impetus.

There are obvious advantages to such integration - the enterprise has greater financial power and greater economy is possible in combined operations. However, it requires a higher standard of management.

Co-operation between small firms or groups of independent co-operatives offer an alternative system of effecting similar economies. Joint processing facilities, for example, enable small enterprises to reap the cost benefits of mechanization without the heavy and uneconomic investment necessary for the individual purchase of equipment. Such arrangements are unlikely to lead to the establishment of a monopoly and integration is thus to be encouraged.

In some developing countries, however, local monopoly is not uncommon. The extreme perishability of fish ensures that the catch must be sold to the local dealer who arranges for its transport and sale. The fishermen may also be dependent on the dealer for financial assistance in the slack season, his future catch being the security for the loan. As the fishermen has no other outlet, the dealer is able to keep the fishermen in a perpetual state of indebtedness. Co-operative societies offer one possible remedy in such cases.

Industrial organization also determines the rate at which a developmental change will occur. For instance, the availability of capital to an individual is limited and his operations are almost invariably restricted to one sector of the industry. In consequence, development based on individual action is relatively slow and is retarded by the slow adjustment of other sectors to the changes which result. Group progress, however, is not so restricted and this is particularly marked if the organization of the group extends into those other sectors of the industry which might exert a restricting influence on the principal operation. Such vertical integration not only permits a wider range of techniques to be employed but facilitates the integration of these throughout the industry.

(d) Scope, Size and Timing

In all countries and especially in developing countries, a conscious choice should be made as to the scope, size and timing of development projects. The potential benefit will determine the finance and staff which will be available, but the skills, abilities and knowledge of the operatives concerned are also determining factors. Within these limitations, however, the scope can range from a relatively minor project to a package deal involving the establishment of a fishing industry. Whilst the latter undoubtedly is fishery development, it may super-impose a modern fishing industry on the traditional fishery. The consequent competition may then lead to the recession of the traditional fishery displacing the older and less adaptable fishermen.

Development may take place either through biological discoveries (including improved knowledge of the habits of known species) or through improvement on what can broadly be termed the mechanical side (including the vessels themselves). The first effect of biological-type development is to increase both total output and total costs. Mechanical-type improvements normally have the effect of enabling the known sustainable catch to be taken at lower cost.

The way that net returns are affected by particular technological improvements - development, in the sense of the term used in this paper - is more complex and will depend on the effect of the innovation on (a) total take, (b) total production costs and (c) the availability and price of factors of production. It will also be influenced by the extent to which returns are affected by any increase in the catch, i.e., the price elasticity of demand for the fish, crustaceans or molluscs concerned.

Projects restricted to one sector of the industry will be successful only if the other sectors can accommodate to the changing pattern of operation. Development in the primary sector leading to increased production would thus be successful only if it impelled changes in the secondary and tertiary sectors. Similarly changes in the secondary or tertiary sectors leading to greater demand might well induce changes in the primary sector. In determining priorities in the development of a particular fishery, therefore, it is imperative that the "bottleneck" be identified and initial action be directed to overcome it. For example, mechanisation of indigenous craft creates few problems since it does not involve the fisherman's ability to handle the vessel nor does it create the social problem that might follow extension of a daily operation to one lasting several days. Admittedly such a project involves provision of finance, training and repair facilities but, if the market can absorb the increased catch without serious reduction in returns, the project can be made to succeed.

The rate of development is also normally a matter of some concern. A relatively simple project involving a change in one sector of industry is, once the innovation has been proved, largely a question of growth. The speed of expansion can be very considerable, being determined by the arrangements provided for training and "preventive" maintenance. Reference has already been made to the problems that may follow from an excessive or unrestrained rate of growth, both for the particular fishery and for other related fisheries.

More complex development may be dependent on several separate but interdependent innovations. In such cases the speed of development is determined by that of the slowest component. This is particularly true of projects in which several quantitative changes are involved. On the other hand, complex projects proceed at a greater rate if a qualitative change is dependent only on quantitative changes elsewhere.

Relatively simple projects of general interest, such as the introduction of synthetic fishing lines and nets into Singapore about 1950, have the advantages that a major effect can be achieved at low cost. Success, even at this level, gives government and industry confidence in the future development of the industry and provides the support for more complex operations. On the other hand, the psychological effect of failure can be very considerable - the "failure" of some of the early trawling projects in tropical waters inhibited fishery development in the areas concerned for many years.

More complex projects such as those involving the introduction of a new fishing unit will involve new skills and may result in far-reaching social changes. The employment of demonstration units from industry in other areas offers perhaps the greatest chance of success since the unit is known to be effective and the problem is one of location of the resource and modification of operations to new conditions.

(e) Administration of Industry

In the 19th century the government role in industry in western countries was essentially regulatory with an increasingly wide concern for public welfare and safety. However, in more recent times the emphasis on regulation as the normal governmental economic function has given place to active guidance or even participation in economic life. Nevertheless, these nations have retained a clear division between guidance and control on one hand, and direct involvement in the industry on the other. Both these practices have important implications in respect of fishery development and must have an effect on industry even if this is not always measurable. For instance, regulations relating to conditions of work may be implemented to achieve social objectives, but the ultimate economical, political and even administrative results can be very considerable.

In other countries the State may control industry, but even in such cases the implementation of regulations can produce side-effects of great consequence. Nevertheless, in both these ideologies the importance of efficient administration within the framework of national policy is self-evident. The importance of the way in which fisheries administration is organized, however, is rarely noted. Willson*, however, points out that "a very small, self-contained fisheries organization might well have less chance of carrying out an effective programme than would be the case if the organization was part of a larger Department so constructed to ensure that fisheries interests were given just and balanced consideration.... Moreover, a department embracing more than fisheries may attract one of the more

* Fisheries Administration and Development by F.M.G. Willson, FAS/Bp/66/2 Conference on Fishery Administration and Services, Rome, 1966.

influential political leaders and thus may enhance the status of fisheries despite the apparent lack of department independence".

PART B - THE AUSTRALIAN PROBLEM

VI. A TWO ECONOMY INDUSTRY IN THE CONTEXT OF A SINGLE NATIONAL POLICY

(a) Outline of the Industry

The Australian coastline is 12,466 miles long and is washed by the world's largest oceans which support a varied aquatic fauna including over 2,000 species of fishes. Yet Australian fisheries are small compared with those of other countries and the total production in 1966-67 from all living aquatic resources excluding whales was approximately 90,500 tons valued at \$A44.4 million only. This is minute compared with the Peruvian and Japanese catches which were 8,789,000 tons and 7,077,400 tons respectively in 1966.

However, the continental shelf surrounding Australia is small in relation to that supporting the major fisheries in the Northern Hemisphere and no rich ocean currents, such as the Humboldt Current on which the giant fish-meal industry of Peru is based, impinge on the Australian coast. The fish fauna also differs from the northern regions in which a very few species dominate the catches. Other reasons for the limited development of the Australian fisheries are the sparse population, great distances and difficulties of communication. Furthermore, Australia is not dependent on the fisheries for protein foodstuffs, ample supplies being available from the agricultural and pastoral industries.

This limited development has facilitated the import of fish at prices which provide serious competition with many Australian scale fish products. Such competition is further aggravated by the form in which these imports are received, boneless fillets and fish fingers satisfying the consumer preference for "ready-to-cook" packs. The very nature of these frozen products make them much easier to handle and transport than whole or partly cleaned fish and thus have provided a wider outlet for such products. The sale of Australian caught fish has been further hindered by poor handling, transport and marketing. Efforts have been made by co-operative societies and some companies to overcome these difficulties. Fish filleting and skinning machines have been introduced and integrated production line operations established. However, the industry still finds competition on the domestic market difficult to meet particularly when the same species of fish are involved.

Australian imports of sea foods in 1967-68 amounted to \$A27.3 million and the major part of all edible fisheries products consumed in Australia was imported. This might be considered as a first approximation of the size of market which the Australian industry has so far been unable to supply. However, these imports included canned salmon valued at \$A6.7 million which could not be replaced by Australian production. Thus the variety of fish is important if consumer preferences are to be met. On the

other hand, imports of canned herring and possibly sardines might be replaced by local products for which suitable raw material appears to be available in Australia. A better approximation than of the measure of the market which the Australian industry is unable to satisfy might be \$A20 million.

On the other hand, there has been remarkable development of crustacean and molluscan fisheries in Australia in response to overseas demand during the post-war period. Production in the western crayfishery rose from just over half a million pounds in 1944-45 to 22 million pounds in 1962-63. This fishery, which has now stabilized at about 18 million pounds, together with the smaller southern crayfishery produced over 31 million pounds live weight and provided export earnings of \$A23.5 million in 1967-68. Similarly prawn production rose from 1.4 million pounds in 1946-47 to 13.6 million pounds live weight in 1966-67. This fishery is developing rapidly in northern Australia and the value of exports in 1967-68, which was \$A3.7 million, is expected to grow rapidly.

The most spectacular development to date, however, occurred in the scallop and abalone fisheries. Scallop production, which was confined largely to Tasmania, was 6.5 million pounds (live weight) in 1962-63. The establishment of a fishery in Port Phillip Bay in late 1963 lifted Australian landings to nearly 30 million pounds in 1966-67 and provided exports worth \$A2.2 million in 1967-68. The establishment of an abalone fishery in January 1964 led to even more remarkable development. In three years the fishery had extended to four States and production was nearly 11 million pounds. Export earnings from this fishery during 1967-68 amounted to \$A3.5 million.

All told, Australian fishery exports rose to \$36.3 million in 1967-68 and exceeded imports for the first time in recent years.

(b) Some Problems of Fishery Development in Australia

Australia thus has a thriving import and export trade and, whilst some of the imports might be replaced by local products, there is no local substitute for others. However, imports provide serious competition with the production of wet fish by Australian fishermen. The fishing industry consequently has two economies - the prosperous export fisheries, for whose products there is a strong and growing demand; and the fisheries relying on the domestic market, which are subject to competition from countries in which the industries are subsidized. It is not surprising, therefore, that the economy of these fisheries is depressed and developmental activity minimal.

Some domestic scale fisheries have provided excellent returns to the operators. For instance, the strong demand for edible shark in Melbourne led to the growth of a fishery which provided nearly 13.3 million pounds live weight in 1966-67. However, some of these fishermen claim that increasing effort in the fishery has led to overfishing and falling returns and have requested licence limitation.

One consequence of the flourishing export trade was its effect on the less prosperous fisheries. The development of the crayfish, prawn and scallop fisheries has retarded the development of or led to a transfer of effort from fisheries in which the return was lower. Fishery management has thus become necessary and crayfish, scallops and abalone are currently subject to licence limitations as a permanent or interim measure. For economic reasons, similar provisions apply to some prawn fisheries in Western Australia.

In turn, the management measures created new problems. Limitation of opportunity to enter a fishery was and is the cause of dissatisfaction. But if such limitation is not imposed, other measures have to be applied to prevent overfishing and damage to the resource. This involves restraining the effort by gear limitation, catch quotas, close seasons or similar devices. However, such measures limit the efficiency of the operations and reduce productivity in terms of capital and manpower.

Development of road and rail facilities in the early part of the century was a symptom of a growing national economy, and stimulated production. More recently, the slow growth rate in the fisheries serving the domestic market shows that an expanding market outlet does not of itself lead to development of a local fishery. It may, in fact, attract imports which seriously reduce the profitability of local operators. This may arise from economic competition and/or by providing a product for which there is strong consumer preference.

Australia thus, has or has experienced many of the problems of fisheries development familiar to other I.P.F.C. countries. The role which the fishing industry could play in the economic development of Australia is also often given too little weight in spite of the continued increase in the value of exports and the favourable balance of trade in marine produce during 1967-68, results which were achieved without subsidy or price support schemes.

(c) Fisheries Administration in Australia

Perhaps the most remarkable feature of the Australian fishery industry, however, relates to its administration. The Government of Australia consists of the Commonwealth Government with responsibility for the Territories; the State Governments of New South Wales, Victoria, Queensland, South Australia, Western Australia, Tasmania; and the local government of cities, towns and country districts.

Division of jurisdiction between the States and Commonwealth was made broadly on the principle that those powers concerned solely with internal affairs should be vested in the State whereas the Commonwealth was empowered to legislate on external affairs and matters extending beyond the boundaries of the individual States.

Prior to the Second World War the responsibility for administration of the fisheries rested entirely with the States. However, the Commonwealth Fisheries Office was set up in 1946 and in agreement with the States became

responsible for fisheries in the extra-territorial waters, whaling, pearling, commercial development of fisheries, training schools, promotion of uniform regulations governing the capture of various species of fish, statistics, information and publications. The Commonwealth Fisheries Office subsequently became the Fisheries Branch, Department of Primary Industry.

This divided administrative framework is further complicated by a division of responsibility within the States and within the Commonwealth. For instance, development and administration of the major ports is usually the responsibility of a statutory body such as a Harbour Trust. Most fishing ports, however, are administered by another State department such as the Department of Public Works or Harbours and Marine.

Similarly there is neither uniformity nor co-ordination of fish marketing in Australia and the fisheries authorities have no authority in this field.

The effect of these and similar instances of divided and sometimes conflicting functions is considerable. However, efforts are now being directed towards closer co-operation and co-ordination between the activities of individual States and Commonwealth, and between the States themselves in respect of fisheries administration, management and development.

A Commonwealth/States Fisheries Officers' Conference followed by a meeting of Commonwealth and State Ministers responsible for fisheries is now held annually. This permits discussion of matters of mutual interest and provides the mechanism whereby State and Commonwealth activities in fisheries administration and management can be co-ordinated. This arrangement does not, however, detract from the jurisdiction of the States over the fisheries within territorial waters nor from their responsibility for the welfare of the industry.

The importance of an industrial organization to represent all sectors of industry and to inform and thereby influence government is also very evident. In 1967, an Australian Fisheries Development Conference was held on an Australia-wide basis to discuss the problems of development and the prospects for existing fisheries. This was the first time at which government officials and members of the fishing industry, including allied trades and services, met on an Australia-wide basis for such a purpose. The success of this Conference undoubtedly increased interest in Australian fisheries and the fishing industry.

(d) National Policy

One of the most significant contributions considered at the Conference was a draft document providing a basis for a National Fisheries Policy. This provided a statement of the objectives and policy which Conference felt should guide future development. It also included lines of action which were needed to achieve such development. This document, which appears as Appendix II, indicates the extent of the problems which are to be overcome.

In considering this document Conference recognized that the existing division of responsibility between the States and Commonwealth, as provided by the Constitution, was unlikely to change. Nevertheless, Conference placed considerable emphasis on the view that planning and prosecution of development should be on a nation-wide basis and that there should also be integration of both government and industrial efforts in research, management and development. The importance of an industrial organization to provide the machinery for government and industry co-operation was thus evident, and the Australian Fishing Industry Council came into being as a direct result of this Conference.

Planning for development, however, does not solely involve the application of a series of unrelated techniques. The supply of equipment is of little or no value if the recipient has not the knowledge or training to use it. Such planning must integrate the various techniques needed whilst ensuring that the sequence and timing does not interrupt the steady progress of the project. The Fisheries Development Conference recognized this problem but was not able, in the time available, to determine patterns of action most likely to prove effective in different development situations.

It seems likely, however, that there is no universal panacea and that at this stage each development project must be investigated and planned individually. In fact, there are few examples illustrating how the pattern of action for a specific project was developed. This is unfortunate since comparison between such patterns might permit some general conclusions to be reached. However, a modification of the critical path technique appears to offer a method for programming and developing the pattern of action needed in respect of a particular development project. (An example illustrating this relating to the mechanization of a West Indian canoe fishery appears as Appendix III. Although not an Australian example it provides a simple illustration of the suggested technique).

(e) The Major Problem

The main Australian problem, however, is not so easily solved. It relates to the wide difference in the profitability of the export and domestic fisheries. In fact, the problem lies in the complication arising from a two economy fishery in the context of a single national policy.

Should Government co-operate with industry in the development of the profitable and prosperous export fisheries, or should this be left to industry whilst Government activity is concentrated on the less profitable and depressed fisheries?

It could be argued on economic grounds that the limited resources of capital and manpower available to the fishing industry in Australia should be used to develop the export fisheries since these will provide the greatest benefit in terms of cost. However, these fisheries will only attract fishermen and investors as long as catches are rising. When catch levels fall and more and more fishermen share the same catch, the fisheries will become unprofitable. Subsequent government action to save the resources usually involves regulations making the operations less efficient. The return on

capital invested falls and the fisherman finds himself in an unprofitable fishery. On the other hand, government intervention in a depressed fishery will, if successful, lead to increasing profits which in turn result in an inflow of boats and fishermen.

Licence limitation might be effective in both these cases but, since such a measure limits competition, it can lead to inefficiency. It also denies some fishermen the opportunity to enter the fishery yet, if this "right" was given to all applicants, effort would increase and the catch per unit effort would fall thereby reducing the economic return from the fishery. Possibly other management measures such as a quota on landings might be more effective, but this could lead to massive effort early in the season with each fisherman striving to obtain as large a share of the total before the quota was reached.

Effective fisheries management is obviously one of the remedies in both the prosperous and depressed fisheries. However, this does not solve the problem of priority in development.

Social considerations suggest that at least some of the available resources should be directed to alleviate the situation in "depressed" fisheries, such as the "trawl" and snoek (barracouta) fisheries in which marketing is the major problem. But there are also problems in the intermediate fisheries and there are substantial resources of pelagic fish yet to be exploited.

It has also been suggested that the depressed fisheries should be subsidised by government or that funds collected from prosperous fisheries should be used to support those fisheries supplying the domestic market. Subsidies, however, do not alter costs as far as the community as a whole is concerned. Fundamentally, the cost of production relates to the capital and labour required to carry out an operation and this cost must be allocated against a source of income. The transfer of part of these costs to another sector of industry or to the community as a whole does not make the operation any more profitable. Somebody still has to pay.

Another danger of continuing subsidies is the effect on industry. The subsidies become part of "income" and operators thus become dependent upon them. In fact, such subsidies often cushion an industry from economic reality thereby fostering inefficiency. Loans or grants to permit the acquisition of improved equipment or vessels would appear more appropriate, provided technical advice is available. This offers another alternative, the implementation of a substantial programme of research to increase the efficiency of the units in the "depressed fisheries" and to locate more productive grounds. But this solution could be frustrated if the success of such a programme led to the entry of more units and increased effort, with the same catch being shared between an increasing number of fishermen. It might thus be advisable to limit the number of vessels in a "depressed" fishery before undertaking such development.

Even if a solution could be found - and the implementation of a programme of research, training and provision of technical advice backed by effective fisheries management seems one promising line of action - the problems of integrating fisheries which have reached different stages of development into a single national policy is one common to most member countries. It poses the question of policy for development, priorities in use of scarce resources and the question of responsibility and co-ordination at Government level.

SOME COMPARISONS OF CAPITAL AND NET RETURNS

Net returns in some primary industries and the capitalization of the producing units are listed below. For land based industries capital involved has been valued in general on a depreciated replacement value and excludes the value of land. For fisheries, the boats, gear, etc. were assessed at market valuation.

PER FARM OR FISHING UNIT

Industry or Fishery	Period	Capital Invested (\$'000)	Net Value of Prod'n (\$'000)	Net Income or Profit (\$'000)	Value of Prod'n Invest- ment	Return on Capital (%)
<u>Crayfishing</u>		<u>Fisheries</u>				
Western Australia	1962/63	6.6	11.4	1.7	1.7	26
Victoria (1) (2)	1964/65	10.4	10.3	1.6	1.0	15
Tasmania (1) (2)	1964/65	12.8	11.2	1.7	0.9	13
<u>Danish seining</u>						
N.S.W.	1964/65	24.8	25.6	5.4	1.0	22
<u>Prawning</u>						
Shark Bay W.A.(1)(2)	1966/67	36.2	45.4	9.2	1.3	25
		<u>Land Based</u>				
Dairying	1961/62 to 1963/64	16.5	7.6	2.4	0.5	15
Wheat (4)	1964/65 to 1966/67	44.9	22.5	9.4	0.5	21
Dried Vine	1960/61 to 1962/63	5.1	7.3	2.2	1.4	43
Wool (1)	1966/67	44.4	21.2	8.4	0.5	19
Potato	1961/62 to 1963/64	17.5	11.8	2.0	0.7	11

(1) Provisional.

(2) Value includes production of other fish.

(3) Value of production comprises prawns 2/3 and crayfish 1/3.

(4) All Australian States except Tasmania.

Direct comparison between fisheries and landbased industries is difficult as the methods of valuation, particularly in respect of capital invested, differ between the two sectors. However, any adjustment necessary to make the data exactly comparable would not alter the general conclusion that fisheries compare quite favourably with the rural industries mentioned above.

The ratio of approximately 1:1 for investment and net value of production indicates the productivity of investment in fisheries.

Jan-Olof Traung in "Problems with Fishery Boats in Australia" observed that "the annual value of catch and the value of boats and equipment both have about the same magnitude, which is normal for non-specialized fisheries."

PROPOSAL FOR A NATIONAL FISHERIES POLICY

Preamble

Living aquatic resources are a source of food for man and of other materials of economic importance to him; their exploitation offers gainful employment and opportunities for recreational activity; their products are valuable items in commerce, often of importance in international trade. The industries directly concerned in the exploitation of these resources are important elements of the economy of many nations, not only for the employment they offer and the products they provide, but also because they use the products and services of many other industries.

Each nation wishes to make good use of the resources which lie within its territorial limits, and to have some share of resources lying in international waters, but the nature and distribution of these resources are such that, in a great many instances, exploitation on one side of a national boundary has consequences on the other side of it. In recent decades, extensive arrangements have been entered into for the management of international activities and relations in the exploitation of living aquatic resources. The foundation of such international relations is that resource exploitation should be (a) conducted in the light of reliable resources information; (b) conducted in accordance with sound technical principles; and (c) directed toward an agreed objective. A nation whose exploitation of its own resources is conducted according to such criteria assures its position in international negotiation with respect to high seas resources.

Objectives

1. Most efficient utilization of living aquatic resources for the benefit of the community at large.
2. Highest possible contribution to Australian Gross National Product.
3. Conduct of the industry (in all its sectors) with maximum efficiency to bring best rewards to its operatives, least spoilage and wastage of its products, and delivery of its products to the consumer in best quality and at a fair price.
4. A major role in the exploitation of the living aquatic resources of the waters in and around Australia extending from the shore as far as necessary for fisheries development.

Policy

In pursuit of these objectives, it is desirable that the Government and the fishing industry of Australia:

1. Locate, assess and bring under full and effective exploitation, as speedily as possible, all living aquatic resources of Australian waters;

2. Reduce the financial and personal risks of this industry;
3. Raise the technical competence and social and economic standing of operatives of the industry;
4. Develop the industry to the full;
5. Co-operate fully with the New Zealand governmental agencies and industry.

Lines of Action

To achieve these general objectives it is necessary:

1. That an inventory should be made of the living aquatic resources in and around Australia and adjacent thereto, and such research should be made as may be necessary to obtain the information required -
 - by industry in the conduct and management of its operations; and
 - by Government in the discharge of its obligations to conserve resources, to regulate and control operations, and to ensure in each fishery the achievement of chosen objectives.
2. That industry should be kept informed of the results of biological, technological and economic research into resources and equipment, and should be assisted in its operations by -
 - day to day intelligence services;
 - a system of regulations designed to enhance the efficiency of resources exploitation;
 - Sea-rescue services;
 - arrangements to spread the losses resulting from natural events, paying attention to the need to provide financial assistance to alleviate resource disaster and consequent failure of commercial fisheries.

For their part, fishermen have obligations -

- to participate in and assist the research programmes aimed at obtaining information for their use, including the provision of catch and effort statistics and other information relating to their activities;
- to observe the current set of fish regulations and to assist positively in giving effect to what is sought by those regulations; to contribute positively as far as lies in their power, to whatever activities are necessary for achievement of general and particular objectives.

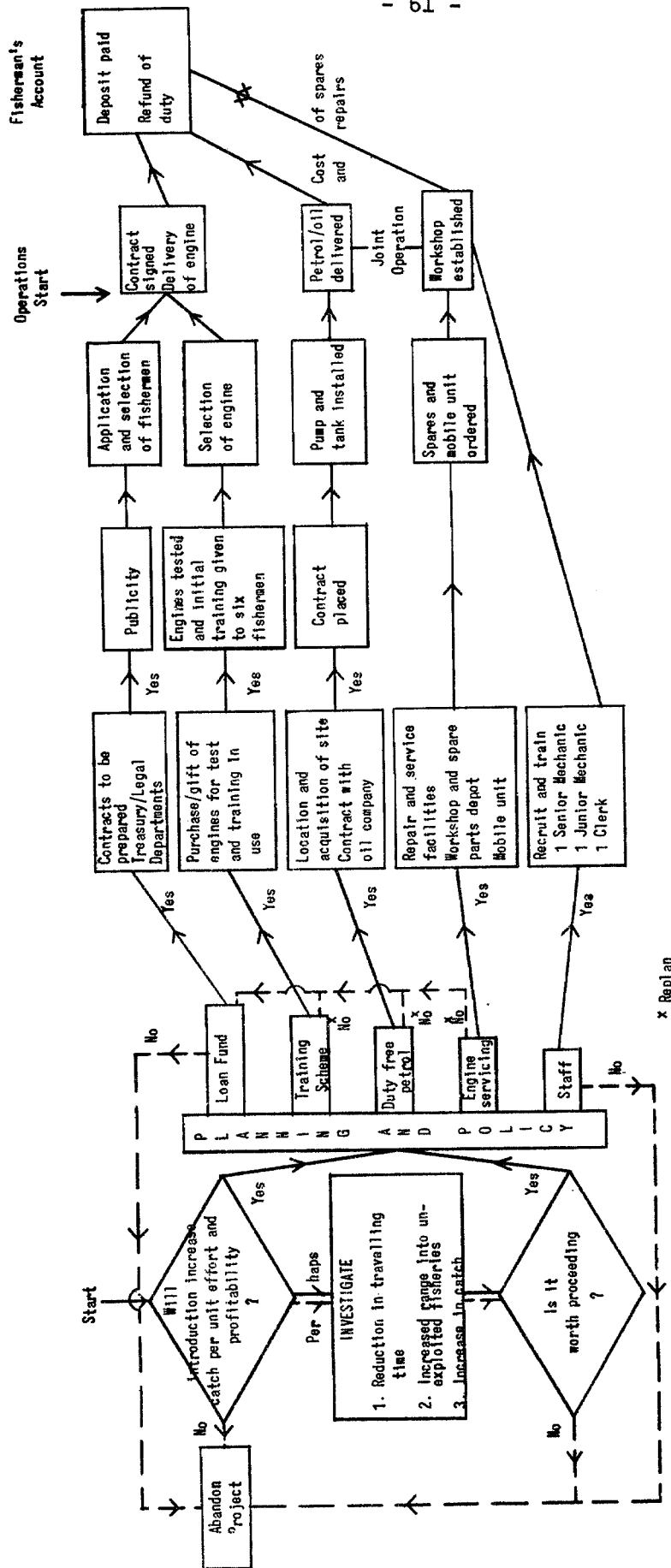
3. That the manpower, equipment and organization of the industry should be such as to secure the objectives of resources use (with the lowest expenditure of labour compatible with the country's prevailing industrial standards).

For this purpose -

- technical education for fishery occupations should be available;
- extension services should be established for the industry;
- effective arrangements should be made to draw upon the results of overseas research on fishing boats, gear, food technology and to make these fully available to all fishermen. Research in these subjects should be carried out in Australia with respect to particular local problems for which overseas solutions are unsuitable;
- the productivity of the industry should be kept under constant review and economic research should be carried out in this connection;
- every effort should be made to reduce the risk element in fishing and these efforts should include:
 - appropriate radio dissemination of weather, market and other relevant information,
 - provision of navigational aids and sea-rescue services,
- enforcement of an effective uniform set of Commonwealth and States regulations relating to sea-worthiness of fishing vessels (including carriage of life-saving equipment) and to the competence of fishing crews;
- every effort should be made to improve the conditions of work on fishing vessels;
- every effort should be made to furnish fishermen with resources information, to assist them -
 - in designing, constructing and working their gear; and
 - in carrying out their operations by dissemination of the most up-to-date results from research;
- uniform Commonwealth and State regulations relating to fishing should be framed in the light of research and directed towards the achievement of agreed objectives; fishermen should be informed of proposed regulatory measures and given an opportunity of commenting on the aptness of such measures to these objectives;

- boat and crew licensing should be rationalized and made uniform.
- 4. That co-ordinated and uniform minimum standards be required for processing plants and food products, to apply equally to establishments providing both export and local markets.
- 5. That an Australian Fisheries Organization be set up to represent all types of fishermen, fish processors and industry, and that this Organization be controlled and operated by the industry for the dissemination of information and co-ordination of activities.

SUGGESTED METHOD OF PLANNING A DEVELOPMENT PROGRAMME



Example: Mechanisation of a West Indian
Canoe Fisheries using Outboard Motors

1. This scheme envisaged the supply of engines at cost plus 10% on a 30% deposit initially.
2. Duty free petrol was supplied at ruling duty paid prices less 1/- per gallon, the balance of the refund being credited to the loan account.
3. Timing of implementation would obviously vary.
4. In this scheme 50 engines were introduced within one year and approximately 200 by the end of the second.
5. The loan fund consisted initially of a revolving fund of \$A 10,700.

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CHAPTER III
RESOURCES AND EXPLOITATION

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INTERNATIONAL DECADE FOR OCEAN EXPLORATION

The Council noted with interest the proposals for "An International Decade for Ocean Exploration (1970/80) and called the attention of Member Governments to the likely importance of this proposed to the IPFC region and requested the Secretary to keep Member Governments informed of the progress of the arrangements for this Decade.

U.N. RESOLUTION ON THE RESOURCES OF THE SEA

At the request of the Chairman, Mr. R.I. Jackson, Assistant Director-General (Fisheries), FAO, spoke to Agenda Item 15: U.N. Resolution on the Resources of the Sea.

Referring to earlier remarks made in his opening address, Mr. Jackson reminded the Council that at the 21st Session of the United Nations General Assembly in December, 1966, Resolution No. 2172 had been adopted in connection with the living and mineral resources of the sea. The Resolution provides for an Expanded Programme of International Co-operation (EPIC) to assist in the better understanding of the marine environment through science and in the exploitation and development of marine resources with due regard to the conservation of fish stocks. It also provides for the initiation and strengthening of marine education and training programmes. A survey of existing arrangements and activities by national and international institutions was a prerequisite.

Mr. Jackson said that a number of international organizations including FAO and its Committee on Fisheries (COFI), UNESCO and its Inter-governmental Oceanographic Commission (IOC), WMO and other inter-governmental bodies were assisting the Secretary-General of the United Nations in formulating the recommendations required under the Resolution. A report had been prepared for the 23rd Session of the U.N. General Assembly, now in session, containing recommendations for implementation of the Resolution. The recommendations of the Secretary-General, prepared with the assistance of a small group of experts selected from national and international organizations, proposed the strengthening and broadening of the existing Inter-governmental Oceanographic Commission (IOC). The IOC would have a most important function in formulating and co-ordinating the Expanded Programme of International Co-operation (EPIC). This function would not detract in any way from the respective present responsibilities of the individual governments and of the organizations of the U.N. system relating to the ocean and its resources, who would use the IOC as an instrument for discharging certain of their responsibilities in the field of marine science.

In anticipation of the results arising from the General Assembly's discussions FAO had, in fact, already taken action and a senior member of the FAO Department of Fisheries staff had been posted to Paris as Liaison Officer between FAO and IOC. This officer would participate in IOC programme formulation and implementation to ensure that adequate consideration was given to fisheries problems. Reciprocal arrangements would provide opportunities for FAO to give appropriate consideration to oceanographic problems brought to its attention by IOC.

Advice on the scientific elements of an Expanded Programme of International Co-operation in marine science would be provided by co-operation among the several scientific advisory groups now in existence, including the Scientific Committee on Oceanic Research (SCOR), the Advisory Committee on Marine Resources Research (ACMRR) plus whatever additional scientific advisory bodies are established by the other co-operating agencies of the U.N. system. A considerable amount of work has already been done by these several scientific advisory bodies on the development of an expanded programme and additional work on the subject will be done at a combined meeting of selected members of the advisory groups to be held in early 1969.

A recent meeting of consultants had been convened by the Bureau of the IOC to offer advice on the changes which would be necessary in order to prepare the IOC to undertake its contemplated new role. The consultants, appointed by the various Specialized Agencies concerned with the ocean and its resources had also recommended the establishment of a permanent Inter-agency Board for the IOC, consisting of senior representatives from the Secretariats of the Agencies, which would co-operate in sponsoring the broadened and strengthened IOC.

The arrangements described by Mr. Jackson would thus provide for:

- (1) a broadened and strengthened IOC with its Member Governments taking all policy decisions;
- (2) an arrangement for obtaining independent scientific advice on marine science programmes; and
- (3) an Inter-agency Board for co-ordinating the activities and programmes of the various agencies who would together sponsor the IOC.

Mr. Jackson noted that the crux of the matter was not just the question of establishing new committees or of re-organization but rather that emphasis must be placed on expansion of current programmes involving new and greater investment in money, manpower and equipment and the proper co-ordination of arrangements leading to the maximum co-ordinated effort. He said that FAO was particularly concerned to keep its overall fisheries programme in balance and felt that with a strengthening of marine science aspects it might be possible to strengthen the programme throughout. Mr. Jackson in closing stressed that FAO's main interest was in the field of assistance in fishery development and that a greater part of its present activities would not be directly affected by the proposed new arrangements. He stressed the urgent need to continue to develop and strengthen all aspects of FAO's programme in the field of fisheries.

The Chairman thanked Mr. Jackson for a most lucid exposition of the present position and invited Dr. G. Humphrey, Observer on behalf of UNESCO and IOC to comment.

Dr. Humphrey said that the most important statement Mr. Jackson made and which immediately concerned IPFC was that the expanding programme in marine sciences would touch only about one-third of the subjects important to the Council and its concern with fisheries resources. He noted that the new moves were largely in marine sciences and although these were directly related to the problems of utilization of fisheries and other marine resources, one must not expect to feel the effect of these moves for several years.

He emphasized that Member Governments of FAO must not think that they could slacken either their interest in, or support for, FAO, although they might be called upon to give much greater support for the activities of agencies such as UNESCO, IOC and WMO. He said that he felt that although changes would occur the support for FAO and its work in regard to fisheries should be increased.

FISHERIES ASPECTS OF CSK

The Council noted the recommendation of the ICG/CSK Fifth Meeting that a IPFC/IOC Joint Meeting be held as part of the Council's 13th Session and arranged such a Joint Meeting. The Joint Meeting presented the following report to the Council:

"The Joint Meeting devoted most attention to the South China Sea Survey part of the CSK, in view of the decision concerning future work taken at the Fifth ICG/CSK Meeting.

Countries participating in the South China Sea Survey reported briefly on their plans. Korea plans to carry out trawling and oceanographic studies with one ship. Japan will probably send one or more ships for oceanographic and fishery observations. Hong Kong will continue to carry out oceanographic studies and exploratory fishing in the northern part of the South China Sea and will participate in inter-calibration trials among research trawlers. Philippines will carry out fishery-oceanographic surveys from Babuyan channel to Southern Palawan, in the area west of Palawan, and in the Sulu Sea. Thailand will carry out bottom longline exploratory fishing and oceanographic studies in the Gulf of Thailand and the southern part of the South China Sea. Indonesia will carry out fishery and oceanographic studies in the South China Sea and the Java Sea.

The need for co-ordination and integration of country programmes, UNDP/SF and other international programmes, and bi- or multilateral programmes, such as the South East Asia Fishery Development Center, was stressed. Accordingly, countries and organizations were requested to send more detailed information to the CSK Assistant International Co-ordinator for Fisheries on their plans for programmes as part of the South China Sea Survey and other programmes which are relevant, including information on areas to be covered, dates of operations, kinds of observations and collections to be made, kinds of gear to be used, station spacing, etc.

In order to facilitate co-ordination and integration of programmes, to ensure comparability of observations, to provide for adequate coverage in space and time, and to eliminate possibilities of duplication, a meeting of the responsible individuals, with detailed information available on work planned in the South China Sea, is essential. The Joint Meeting therefore recommends that ICG/CSK meet at the earliest possible time for this purpose. Otherwise there is the strong possibility that the South China Sea Survey will merely be a collection of individual programmes which may or may not be related, rather than a well-planned single programme from which the maximum benefit can be derived.

The Meeting called attention to the fact that the emphasis thus far in planning for the South China Sea Survey has been on demersal fishes and suggested that consideration also be given to pelagic fishes.

The Joint Meeting recommends that the Working Party on CSK Fishery Aspects be continued with the following individuals serving in their capacities as individual experts:

K. Tanii	(Japan)	
M. Unar	(Indonesia)	
Suh, Hack Keun	(Korea)	
D. Pathansali	(Malaysia)	
I. Ronquillo	(Philippines)	
D. Menasveta	(Thailand)	
W.L.Y. Chan	(U.K. - Hong Kong)	
J.C. Marr	(U.S.A.) (Chairman)	
Tran Van Tri	(Vietnam)	"

The Council received and endorsed the report of the Joint Meeting and appointed the Working Party on CSK Fishery Aspects as recommended.

POLLUTION IN THE MARINE ENVIRONMENT

The Council took note of FAO plans for a World Conference on Marine Pollution and its effect on fishery resources and fishing operations and urged Member Governments to collaborate to the greatest possible extent with FAO in preparation for this conference.

The Council noted that its member countries were concerned also with pollution problems in brackish and fresh waters and urged that attention be given to these with a view to seeking solutions.

FISH IDENTIFICATION MANUAL

The Council reviewed the report of Mr. W.L.Y. Chan (U.K.) on the progress made in producing the Identification Manual proposed by the 12th Session of IPFC. Member countries were urged to support this project by

submitting their comments on the proposed layout of Aquatic Organisms Identification Card, which has been circulated by FAO, and by providing Mr. Chan with the material necessary to complete the above work.

RASTRELLIGER

The reports received contained only little information on the research activities on this species. However, it was apparent that active studies of Rastrelliger were being continued in various member countries. The principal requirement seemed to be a mechanism by which to ensure rapid exchange of information. It was felt that this could be achieved by having a small working group of two experts, who would compile information from data and reports from member countries for the purposes of producing:

- (a) a series of reports summarising the current status of the work in the member countries, and to promote research activities especially with a view towards the collection, compilation and study of:
 - (i) catch statistics;
 - (ii) catch effort data;
 - (iii) length-frequency composition of catch;
 - (iv) age;
 - (v) growth; and
 - (vi) tagging
- (b) an annotated bibliography of recent work on Rastrelliger
- (c) a report on the feasibility and desirability of implementing Recommendation 1 of the UNESCO 4th Meeting of Marine Science Experts, Singapore, 18-21 March 1968.

The Council therefore recommended the continuance of the Working Party on Rastrelliger, which in the coming intersession period would consist of two members, Dr. D. Menasveta (Thailand) and Dr. T.P. Goonewardena (Ceylon).

PELAGIC HIGH SEA RESOURCES

In order to complete the editorial work started by the Working Party on Pelagic High Sea Resources, the Council recommended that this Working Party should be continued with the following membership:

Convenor: Mr. R.S. Shomura (U.S.A.)
Dr. S. Kikawa (Japan)
Dr. S. Jones (India)
Dr. Tham Ah Kow (Singapore)

TRAWLING

Of the four working objectives of the Symposium on "Demersal Fisheries", the Council noted that only the first one namely:

"(1) to examine the information submitted to it in the form of

- (a) review papers
- (b) experience papers
- (c) other relevant documents "

was dealt with completely by the Symposium.

In view of the mass of material submitted to the Symposium and the lengthy discussions that ensued it was not possible to make much headway on objectives (2) and (3) - namely:

"(2) to attempt description and appraisal of the available resources and the future prospects for the rational utilization of these;

(3) to outline the industrial growth and changes required to realize these prospects."

The Council therefore recommends that a consultant be appointed by FAO to achieve the two objectives, utilizing (a) the material submitted and discussed at the Symposium and (b) material which the consultant would wish to gather from other sources.

Regarding Objective (4) namely:

"(4) to propose courses of action, at governmental level, to assist guide and control those changes"

the Council decided that it would have to await the report of the consultant.

In the light of the above, the Council decided to continue the Working Party in Trawling and that the following be appointed members of this Working Party:

Convenor: Dr. A. Sribhibhadh (Thailand)
Dr. S. Shindo (Japan)
Mr. A.S. Mendis (Ceylon)

The new terms of reference of the Working Party on Trawling should be:

1. To continue to compile, analyse and review data on yields from various demersal grounds of the region.
2. To continue to promote the collection of statistics and to assemble sets of statistics drawn from trawling operations in the region.

3. To promote and, as it sees fit, to carry out an analysis and interpretation of the statistics.
4. To undertake any follow up action on the Symposium on "Demersal Fisheries", particularly by close collaboration with the consultant referred to above.
5. To undertake and collaborate with other international agencies such as IOFC, CSK etc. in studies pertaining to demersal fisheries in the region.
6. To propose courses of action, at governmental level, in the above terms of reference.

FISHING CRAFT DESIGN AND CONSTRUCTION

The Council noted that member countries were interested in obtaining comparative costs on the construction of vessels of similar size and type of wood, steel fibreglass, and ferro-cement. Such cost data are needed for vessels designed and built for the IPFC area since there were only a few countries in the region in which such data were available. It was therefore requested that the Secretariat collect and disseminate such data as was immediately available from member countries, noting the offer of the Philippine delegate to provide such data on craft up to 25 feet in length constructed of wood and fibreglass.

The Council, noting and re-affirming the desirability of the appointment of a Regional Specialist in Boat Design and Construction as referred to at its 12th Session drew the attention of its Member Governments to this question, and recommended that provision be made during the preparation of country programmes under UNDP/TA for such a post on a regional basis and further requested FAO to render such assistance in the implementation of this proposal as lay within its power.

HARBOURS

The Council called the attention of the Member Governments to the FAO Conference on Fishing Ports and Port Markets held in Bremen, Germany, in September 1968. The Proceedings of this conference will be available through the FAO in the near future and will supply valuable information to those member countries concerned with development and improvement of their harbours. The Council recommended to the FAO that future consideration be given to the organization of one or more regional conference relating to the problems of harbour finance and fish port management in the IPFC area.

FISH DETECTION

The Council review the great variety of electronic equipment for fish detection that is now available and noted that it was increasingly difficult for a fisherman to select the equipment best suited to his needs. The Council therefore wishes to draw to the attention of member countries the need for providing advisory services to their fishermen on the selection of electronic equipment suited to their particular fisheries.

TRAINING IN ACOUSTIC METHODS

The Council expressed great interest in the application of acoustic methods to assessment of fisheries resources. The Council stressed the needs for making the fullest use of such speedy and direct methods in the research work of the IPFC area, and took note of the information that FAO has produced a Training Manual on Acoustic Methods and is planning to hold courses for fisheries scientists in the use of such methods. The Council accordingly recommended that FAO be requested to organize such a course in the IPFC area as soon as possible.

WEATHER FORECASTING AND NAVIGATION AIDS

To encourage the greater development of fisheries with the better craft and gear now available in the region, the Council called the attention of the member countries to the increasing need for communication of specialized weather forecasts and information to their fishermen.

CHAPTER IV
ECONOMICS, TRAINING, STATISTICS, UTILIZATION

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MULTILATERAL FUNDING

The Council noted the activities of the countries bordering the South China Sea designed to increase the supplies of fishery resources available to them and also noted the need for a co-ordinating mechanism to ensure that the most efficient use is made of the limited national and international funding available for this purpose. The Council believed that it could provide the mechanism to co-ordinate and implement the existing programmes in the South China Sea, which includes national programme, UNDP programme, bi- or multilateral programme such as the South East Asia Fishery Development Centre, and international co-operative programme such as the CSK, provided that adequate support could be made available through the UNDP or other source of international assistance.

The functions of such a South China Sea Fishery Development and Co-ordinating Programme would be to (1) provide a focal point for information on fishery development programme in the South China Sea, (2) provide leadership in co-ordinating and integrating the programmes now in existence or which may come into existence, and (3) carry out such programmes as are needed in order to provide adequate coverage and which will not otherwise be carried out.

The Council requested the Director-General of FAO to arrange in consultation with the members of the Council and with the UNDP, for a request on behalf of the Council for UNDP assistance in planning to this end.

Plans for the South China Sea Fishery Development and Co-ordinating Programme, including an indication of the nature and magnitude of the necessary contributions, should be prepared by a small group of consultants under the leadership of an experienced fishery expert and in close consultation with the Council's Executive Committee. The plans then developed should be referred to the member countries for consideration and approval. They should be completed in approved form to be presented to the UNDP Governing Council at the earliest possible time.

MANPOWER REQUIREMENTS AND FISHERIES EDUCATION

The Council reviewed with considerable interest the report "Notes on and Synopses of a Manual on Fisheries Education and Training" by D.N.F. Hall and expressed its appreciation to Dr. Hall and the FAO for the preparation of this detailed and comprehensive document on a most important subject. In considering the application and revision of this report for the IPFC region, the Council believed that further documentation was most essential to provide manuals of fisheries education and training particularly directed towards the conditions in the region, with initial emphasis at the fishermen's level.

As a further development at the practical level, the Council was particularly pleased to learn through a communication from Mr. Prida Karnasut, Chairman, Council of the South East Asian Fishery Development Centre, of the successful establishment of this centre which consists of two departments,

the training department, located in Bangkok, and the research department, located in Singapore. The operation of this Centre through intra-regional participation of the Governments of Malaysia, Philippines, Singapore, Thailand, and Vietnam was a most significant development in the continuing need for such intra-regional educational programmes in fisheries in the IPFC region.

MOTORIZATION AND ECONOMIC IMPACT OF MODERNIZATION

The Council noted with interest FAO's plans to carry out research on the impact on fishing communities of modernization of fishing craft and motorization of traditional craft and invited member countries to contribute, through the Secretariat, material considered of relevance for the preparation of case studies on modernization of fisheries in the region.

INSURANCE

A review of the limitations and problems of marine insurance for fishermen in the IPFC region showed that the lack of adequate marine insurance suited to the fishing industry can act as a deterrent to the development of a fishery; therefore, the Council wishes to call the attention of Member Governments to the need for developing co-operative or government insurance programmes where appropriate. Such programmes should include not only the normal operation of the industry but also protection against loss of boats and fishing gear by natural disasters.

FISHERIES CO-OPERATIVES

The Council was pleased to learn of the significant progress in the development of co-operatives in member countries, particularly Malaysia, the Philippines and Ceylon and the continuing efforts to solve the problems that limit the growth of fishery co-operatives in the IPFC region. As discussed in previous sessions it was recognized that the development of managerial skills and incentives for the fishermen and boat owners was essential to formation of successful co-operatives. The plans of the FAO to conduct regional seminars on fishery co-operatives should lend significant support to the member countries concerned in this development.

CAPITAL INVESTMENT IN FISHERIES

The Council welcomes FAO's initiative in organizing a Conference on Investment in Fisheries in 1969 and expresses the hope that Member Governments will find it possible to participate in the preparations and conduct of the Conference.

ECONOMICS OF FISH CULTURE

The Council recommended that the membership of this Working Party should be:

Convenor: Mr. A. Hasegawa (Japan)
Mr. A.B.O. Merican (Malaysia)
Mrs. M.N. Delmendo (Philippines)
Mr. Soekarno (Indonesia)

The Council felt that the functions of two of its working parties established at 12th Session, namely, the Working Party on Coastal Aquaculture and the Working Party on Economics of Fish Culture, should be clearly distinguished. Accordingly, it decided that the Working Party on Coastal Aquaculture should confine its studies to the marine and brackish-water environments while the terms of reference of the other Working Party should be confined to the study of economics of fresh water fish culture only. In view of the importance of fresh water fish culture to many member countries, it was stressed that Working Party on the Economics of Freshwater Fish Culture should continue to function and report to the 14th Session.

FISHERY REGULATION METHODS

The Council discussed the problem of effective regulation methods for fishery resource management under the diverse economic and cultural conditions of the region.

The Council requested the Secretariat to compile a listing of the available methods together with the clearly stated objectives of such regulations and to request Member Governments to comment on the observed and likely effects of such regulations. The Secretariat was requested to report back on this question to the Council at the 14th Session.

FISHERIES STATISTICS

The Council expressed its appreciation of the work of Dr. T. Yamamoto in establishing guide lines for statistical surveys of the area, and it accepted the invitation from IOFC to establish a Joint Working Party on Statistics. The Council further approved the Terms of Reference proposed by IOFC for this Working Party, subject to the following modification of Section 3 where the word "statistical" should be inserted before the word "limits" in the first line; and the addition to Section 7, of the following sentence: "This should not lead to extra effort being required of the member nations simply for the sake of standardization alone."

The Council named the following participants to the Joint Working Party:

Mr. P. Sucondhmarn (Thailand)
Mr. Jose de la Cruz (Philippines)
Mr. Kim, Ki Ju (Korea)
Dr. T. Kurogane (Japan)

The Secretary was requested to transmit this list to the Chairman of the IOFC and to determine if the Chairman of IOFC would wish to propose additional experts, bearing in mind the necessity of keeping the size of the Working Party small, and to designate the Convenor.

The Council further recommended that priority consideration be given to questions relating to the assessment of statistical requirements for use in the international management and development of fisheries in the IPFC area.

REGIONAL FISHERY CENSUS

The Council was pleased to note in the report of the FAO Regional Fishery Statistician the progress made in the development of adequate fishery statistics in member countries. Particularly the Council reaffirmed its support of this programme as expressed in its 12th Session Proceedings with reference to the need for member countries to facilitate implementation of the regional fishery census in relation to the 1970 World Census of Agriculture.

FISH MARKETING

As markets for fish and fish products must be expanded in proportion to increased opportunities for resource harvest, the Council recommended that FAO give consideration to the preparation of guides and other instructional material to assist member countries to improve market facilities, organization, and operations. In particular, there was a need to assemble material on the specific problems of the region that should form the basis for the preparation of text book material.

FRESH FISH

The FAO documents "Draft Code of Practice for Fresh Fish" and "Ice in Fisheries" had provided the Council with the basic information needed for the improvement of the methods of handling and distribution of fresh fish in the IPFC region. The Council suggested that member countries review these documents carefully and plan the application of the code of practice and recommendations to their fisheries, keeping in mind the need to adapt the code for their particular needs and requirements.

It was further suggested that member countries prepare individual codes of practice for their particular species or fisheries and forward to the Secretary in Bangkok for the co-ordination of this information and preparation of a report for presentation to the Council at its next Session.

PROCESSED PRODUCTS AND QUALITY CONTROL

SALT

Regarding the use of salt in the IPFC region, the Council noted with interest the experience of Malaysia where it was apparent that salt-cured products prepared for domestic consumption were more economical and more suited to local tastes when prepared with solar salt traditionally used as compared to pure Liverpool salt obtained from England. On the other hand it was recognized that pure salt must be used in other processed products, especially those intended for export.

FOOD REGULATIONS

To facilitate increased production of fishery products for export, the Council considered that a list of the appropriate agencies that are concerned with food regulations and import requirements in various countries would be useful. It requested the IPFC Secretariat to prepare such a list for distribution to Member Governments.

CONFERENCE ON FISH INSPECTION AND QUALITY CONTROL

The Council called the attention of the Member Governments to the FAO Technical Conference on Fish Inspection and Quality Control to be held in Halifax in July 1969 and hoped that Member Governments will find it possible to participate in the preparation and conduct of the Conference.

CHAPTER V

SUMMARY OF RECOMMENDATIONS

CONTENTS

A. TO MEMBER GOVERNMENTS

B. TO FAO

C. TO EXECUTIVE COMMITTEE AND SECRETARIAT

D. TO TECHNICAL COMMITTEES AND WORKING PARTIES

A. TO MEMBER GOVERNMENTS

1. Member Governments to prepare lists of priorities in development of demersal resources. (Ch. I, p. 27)
2. Member Governments to provide information for Current Affairs Bulletin. (Ch. I, p. 31)
3. Member Governments to submit details of survey plans for CSK to Assistant Coordinator. (Ch. III, p. 70)
4. Recommendation to hold ICG/CSK Meeting as soon as possible (Ch. III, p. 71)
5. Member Governments to collaborate with FAO in plans for a World Conference on Marine Pollution. (Ch. III, p. 71)
6. Member Governments to support preparation of Fish Identification Manual. (Ch. III, p. 71)
7. Member Governments to make provision in UNDP/TA programme for appointment of Regional Specialist in Boat Design and Construction. (Ch. III, p. 74)
8. Member Governments to provide advisory services for fish detection. (Ch. III, p. 74)
9. Member Governments to consider necessary necessity for specialized weather forecasts for fishermen. (Ch. III, p. 75)
10. Member Governments to provide information on impact of motorization on their fishery industries. (Ch. IV, p. 78)
11. Member Governments attention called to need for developing cooperation on government insurance programmes. (Ch. IV, p. 78)
12. Member Governments to facilitate regional fishery census. (Ch. IV, p. 80)

13. Member Governments to prepare codes of practice for fresh fish handling and distribution and forward copies to Secretariat. (Ch. IV, p. 80)

B. TO FAO

1. Observer status for Republic of China. (Ch. I, p. 21)
2. FAO to maintain regional IWP reviews on a current basis (Ch. I, p. 22)
3. Provide services of Consultant to Working Party on Trawling. (Ch. I, p. 27)
4. FAO Stock Assessment Branch to service member countries. (Ch. I, p. 27)
5. Working Party on Coastal Aquaculture to meet within four months. (Ch. I, p. 28)
6. FAO to assist towards appointment of Regional Specialist in Boat Design and Construction. (Ch. III, p. 74)
7. FAO to consider organizing one or more regional conferences on harbour financing and management. (Ch. III, p. 74)
8. FAO to organize a training course in acoustic methods. (Ch. III, p. 75)
9. FAO to arrange for UNDP assistance for South China Sea Fishery Development and Coordination Programme. (Ch. IV, p. 77)
10. FAO to prepare guides and other instructional material concerning fish marketing. (Ch. IV, p. 80)

C. TO EXECUTIVE COMMITTEE AND SECRETARIAT

1. Establishment of Working Party of Experts on Stock Assessment. (Ch. I, p. 22)
2. Secretariat to consolidate and disseminate information on exploratory and experimental fishing. (Ch. I, p. 27)
3. Secretariat to consolidate lists of priorities in development of demersal fisheries, provided by Member Governments. (Ch. I, p. 27)
4. Working Party on Coastal Aquaculture to have highest priority. (Ch. I, p. 27)
5. Executive Committee to review organization and format of Council Session. (Ch. I, p. 30)

6. Executive Committee to formulate procedures in respect of Council and Session documentation. (Ch. I, p. 31)
7. Chairman to consult D.G. of FAO on time and place for 14th Session. (Ch. I, p. 32)
8. Council to maintain close consultation and cooperation with IOFC. (Ch. I, p. 23)
9. Secretariat to keep Member Governments informed of progress of arrangements for International Decade for Ocean Exploration. (Ch. III, p. 68)
10. Secretariat to compile and disseminate construction cost data on vessels. (Ch. III, p. 74)
11. Secretariat to compile a listing of regulations and resource management methods. (Ch. IV, p. 79)
12. Secretariat to inform IOFC of IPFC members of Joint IPFC/IOFC Working Party on Statistics. (Ch. IV, p. 80)
13. Secretariat to prepare a list of agencies concerned with food regulations and import requirements. (Ch. IV, p. 80)

D. TO TECHNICAL COMMITTEES AND WORKING PARTIES

1. Working Party on Trawling to consolidate extant and revise every two years material relative to demersal fisheries. (Ch. I, p. 27)
2. Working Party on Coastal and High Seas Pelagic Resources to initiate study of present status of industry, etc., and report to 14th Session. (Ch. I, p. 29)
3. Working Parties on Rastrelliger and Pelagic High Seas Resources to work by correspondence. (Ch. I, p. 32)
4. Joint IPFC/IOC Working Party on CSK to continue (Ch. III, p. 71)
5. Working Party on Rastrelliger to continue (Ch. III, p. 72)
6. Working Party on Pelagic High Seas Resources to continue. (Ch. III, p. 72)
7. Working Party on Trawling to continue. (Ch. III, p. 73)
8. Working Party on Coastal Aquaculture to confine itself to marine and brackish waters environments, to draft Prospectus and act as Steering Committee for 14th Session Symposium. (Ch. IV, p. 79)
9. Working Party on Economic of Fish Culture to confine itself to freshwater culture. (Ch. IV, p. 79)

APPENDIX I

REPORT OF THE EXECUTIVE COMMITTEE
FINANCIAL REPORT AND BUDGET ESTIMATES

1967-68 and 1969-70

I. NORMAL RECURRENT EXPENDITURE 1967-68

Every effort has been made to bring this report up-to-date but certain outstanding commitments have had to be entered merely as estimates for the year 1968.

In preparing these statements of expenditure and estimates, it has been realized that the financial biennium of the Council differs from that of Food and Agriculture Organization and hence the various statements and estimates are presented on a yearly basis.

For the year 1967 there were no Executive Committee meetings, printing costs, largely due to delays, were held within the original figures estimated, and Miscellaneous Costs matched the Budget Estimates.

For 1968, the second year of the biennium, the expenditure shown covers only the period January-June.

IPFC STATEMENT OF EXPENDITURE FOR 1967

	Expenditure US\$	Budget Allocation US\$
A. <u>EXECUTIVE COMMITTEE TRAVEL</u> (No Executive Committee Meeting took place in 1967)		
B. <u>PRINTING</u>	2,100	2,100
500 cc. Regional Studies No. 4 (Binding)	54.09	
1000 Reams bonded paper plus clerical charges & freight	1004.96	
IPFC Procs. 12(I+II)	55.55	
Stationery	297.80	
750 cc. IPFC C.A.P. No. 48 (Binding)	54.09	
Preparation aluminium plates IPFC Procs. 12(I)	15.14	

	Expenditure US\$	Budget Allocation US\$
B. <u>PRINTING</u> (Contd.)		
Collation, binding 1400 cc. IPFC Procs. 12(I)	168.07	
750 cc. IPFC C.A.B. No. 49 (Binding)	60.34	
Preparation aluminium plates for C.A.B. No. 48, 49 and IPFC Procs. 12(II)	216.82	
Preparation aluminium plates for Procs. 12(III) and C.A.B. Nos. 50-51	41.40	
Callation and binding of C.A.B. No. 50	56.90	
Collation and binding of IPFC Procs. 12(II) part changes	74.84	
C. <u>MEETING</u>		
(No Council Session in 1967, therefore no expenditure incurred)	-	-
D. <u>MISCELLANEOUS</u>	1,500	1,500
Postage & Telegrams	577.61	
Office supplies	523.36	
Worldwide distribution postage on 1000 copies IPFC Procs. 12(I)	232.93	
Distribution postage charges world-wide on 1000 copies IPFC Procs. 12(II): part charges	166.10	
Expenditure made on behalf of IPFC by FAO Regional Office, New Delhi (Indian Rupees)		

IPFC STATEMENT OF EXPENDITURE FOR 1968

January - June

	Expenditure US\$	Budget Allocation US\$
A. <u>EXECUTIVE COMMITTEE TRAVEL</u>	1,455.70(est)	1,500.00
42nd Executive Committee Meeting, 3-5 July, 1968 Bangkok, Thailand		
Chairman: Mr. Soong Min Kong (Malaysia)		
Fare:	127.70	
Subsistence:	92.00	
Terminal:	12.00	
	<u>231.70</u>	
Vice-Chairman: Mr. John C. Marr (U.S.A.)		
Fare:	855.00	
Subsistence:	139.00	
Terminal:	24.00	
	<u>1,017.00</u>	
43rd Executive Committee Meeting, Brisbane, Australia		
Chairman - Subsistence (2 days):	46.00	
Vice-Chairman - Subsistence (2 days):	46.00	
Member - Subsistence (2 days):	46.00	
44th Executive Committee Meeting, Brisbane, Australia		
Chairman - Subsistence (1 day):	23.00	
Vice-Chairman - Subsistence (1 day):	23.00	
Member - Subsistence (1 day):	23.00	
B. <u>PRINTING</u>	1,420.70	2,500.00
Multilith Service Charge IPFC Procs. 12(3)	49.21	
Printing, binding, cover and collation 1400 copies, IPFC Procs. 12(2) Balance charges	174.33	
Multilith machine supplies for printing IPFC Procs. 12(3)	79.18	

	Expenditure US\$	Budget Allocation US\$
B. <u>PRINTING</u> (Contd.)		
1000 reams bond paper for IPFC Procs. 12(3)	861.32	
Printing, binding, cover and collation, 1400 copies, IPFC Procs. 12(3)	256.66	
C. <u>MEETING</u>		500.00
D. <u>MISCELLANEOUS</u>	1,263.97	2,000.00
Postage and telegrams	485.37	
Office supplies	211.14	
Worldwide distribution postage on 1000 copies IPFC Procs. 12(3)	557.46	
Expenditure made on behalf of IPFC by FAO Office New Delhi (India Rupees)	10.00 (est)	

II. IPFC BUDGET ESTIMATES 1969, 1970

A. Executive Committee Travel

Funds available have permitted only one intersession meeting of the Executive Committee during 1967-68. The Executive Committee feels this arrangement is not in the best interests of the Council, nor is the practice followed over the past several years, of holding major meetings of the Committee in Bangkok.

Accordingly, the Executive Committee has budgetted for two intersession meetings, in addition to the usual pre- and post-session meetings.

B. Printing

Allowing for increasing costs for paper and supplies, and in anticipation of some 30-40 technical papers, with probably a similar number of contributions to the 13th Session Symposium, including provision for three issues of the Current Affairs Bulletin annually and not less than

B. Printing (Contd.)

5 Regional Studies annually, an appreciable increase in the printing estimates will be necessary.

Also it will be necessary to reprint the Council's Agreement and Rules of Procedure to incorporate 12th Session amendments to the latter and such amendments to the Agreement as the Council may adopt at its current session.

C. Meeting Costs

No meeting will be scheduled for 1969, and provision is made only for the 14th Session, 1970.

D. Miscellaneous

Increases in postage rates and an anticipated increase in mailing costs in connection particularly with Secretarial circulars, pre-session distribution of documents and documentation for Working Party Meetings necessitate an increase in this Item of at least US\$1,000.

IPFC BUDGET ESTIMATES

Normal Recurrent Expenditure

				US \$
A.	<u>EXECUTIVE COMMITTEE TRAVEL</u>			5,207
	1969	45th Executive Committee Meeting	2,500	
	1970	46th " " "	2,500	
		47th (Pre-session)" "	138 (p.d.only)	
		48th (Post-session)	69 (p.d.only)	
B.	<u>PRINTING</u>			9,350
			<u>1969</u>	<u>1970</u>
	IPFC 13th Session Proceedings 1,400 copies	5,000	-	
	Current Affairs Bulletin, 3 issues x 750 "	300	300	
	Regional Studies, 5 issues x 750 copies	750	750	
	Distribution Costs	<u>1,300</u>	<u>750</u>	
		7,550	1,800	

			<u>US \$</u>	
C.	<u>MEETING COSTS</u>		750	
	No Session scheduled for 1969			
	Costs for 14th Session, 1970			
D.	<u>MISCELLANEOUS</u>	<u>1969</u>	<u>1970</u>	4,000
	Postage & Telegrams	1,000	1,000	
	Stationery, Office Supplies	1,000	1,000	

III. IPFC WORKING PARTIES AND SUB-COMMITTEES

Budgeting for such meetings cannot be incorporated in the IPFC budget as described under Rule XI (2) of the Rules of Procedure.

In this connection, Article III, para 3 and 4, of the Agreement of the IPFC is relevant:

"3. The Council may establish working parties to study and recommend on specific technical problems. These working parties shall be convened by the Director-General of the Organization at such times and places as are in accordance with the objectives for which they were established.

4. The establishment of committees and working parties referred to in para 2 and 3 above shall be subject to the availability of the necessary funds in the relevant chapter of the approved budget of the Organization; the determination of such availability shall be made by the Director-General. Before taking any decision involving expenditures in connection with the establishment of committees and working parties, the Council shall have before it a report from the Director-General on the administrative and financial implications thereof."

Attached hereto is a statement showing the expenditure involved in convening the 2nd Meeting of the IPFC Working Party on Trawling. Unfortunately funds were not available to convene any of the other Working Parties.

It is not possible to derive precise estimates of costs for any proposed meeting until the venue and duration of such a meeting are determined. However, previous experience suggests that the average of such meetings approximate US\$450 per person, including fares and subsistence, for 4-day meeting.

... Estimates, similar to those submitted to the 12th Session of the Council are appended.

IPFC WORKING PARTY MEETING

EXPENDITURE 1968 (est)

WORKING PARTY ON TRAWLING, Bangkok, 24-26 June 1968

Chairman:	Dr. A. Sribhibhadh (Thailand)		
Members:	Mr. T. Kaar (Australia)	Fares, etc.	783
		Subsistence	138
			<u>921</u>
	Mr. A.S. Mendis (Ceylon)	Fares, etc.	272
		Subsistence	115
			<u>387</u>
	Mr. K.V. Rao (India)	Fares, etc.	295
		Subsistence	92
			<u>387</u>
	Dr. S. Shindo (Japan)	Fares, etc.	509
		Subsistence	92
			<u>601</u>
	Mr. Hahm, Jae Yoo (Korea)	Fares, etc	509
		Subsistence	92
			<u>601</u>
	Mrs. P. Caces-Borja (Philippines)	Fares, etc.	301
		Subsistence	92
			<u>393</u>
	Mr. Lai-Yee Chan (H.K.)	Fares, etc	203
		Subsistence	92
			<u>295</u>

BUDGET ESTIMATES*

1969 - 1970

	<u>1969</u>	<u>1970</u>
WORKING PARTY MEETINGS 3, each of 5 persons (at Bangkok)	\$3,000	\$6,000
SUB-COMMITTEE MEETING 1 of 12 persons, at Bangkok		\$7,200

* Based on estimate of average costs of US \$600 per person for meeting.

APPENDIX II

LIST OF DELEGATES AND OBSERVERS

<i>Member Government</i>	<i>Name</i>	<i>Designation</i>	<i>Address</i>
Australia	Mr. C.G. Setter (Delegate)	Assistant Secretary (Fisheries)	Department of Primary Industry, Barton Canberra, A.C.T. 2600 Australia
	Mr. T.W. Burdon (Alternate)	Assistant Director	Fisheries Branch Department of Primary Industry, Barton Canberra, A.C.T. 2600 Australia
	Dr. G.F. Humphrey (Adviser)	Chief	Division of Fisheries and Oceanography CSIRO, P.O. Box 21 Cronulla, N.S.W. 2230 Australia.
	Mr. W. Conroy (Adviser)	Director	Department of Agriculture, Stock and Fisheries Papua, New Guinea
	Dr. D.D. Francois (Adviser)	Director of Fisheries	N.S.W. State Fisheries 211 Kent Street, Sydney N.S.W. 2000, Australia
	Mr. G.G.T. Harrison (Adviser)	Chief Inspector of Fisheries	Department of Harbours & Marine, G.P.O. Box 2195, Brisbane Queensland 4001 Australia
	Mr. A.R. Mead (Adviser)	Director	Department of Agriculture, G.P.O. Box 192 B, Hobart Tasmania 7001 Australia
	Mr. D.C. McGroarty (Adviser)	President	Australian Fishing Council, Queensland Branch, C/- Irvin & Johnson (Qld.) Pty. Ltd., 62 Cordelia St. South Brisbane, Queensland 4101 Australia

<i>Member Government</i>	<i>Name</i>	<i>Designation</i>	<i>Address</i>
Australia (Cont'd)	Mr. J.L. Allen	Deputy Assistant Secretary, Economic Relations	Department of External Affairs Canberra, A.C.T. 2600 Australia
Ceylon	Mr. I.O.G.K. Fernando (Delegate)	Director	Department of Fisheries, P.O. Box 531 Colombo, 3, Ceylon
	Mr. A.S. Mendis (Alternate)	Research Officer	Ceylon Fisheries Corporation, Galle Face, Colombo, 3 Ceylon
	Dr. M. Durairatnam (Adviser)	Research Officer UNESCO Fellow	C/o Division of Fisheries and Ocean- ography, CSIRO, P.O. Box 21, Cronulla N.S.W. 2230 Australia
France	Mr. M. Legand (Delegate)	Chef de la Section Laboratoire d'Océanographie	ORSTOM, B.P. No. 4 Noumea, New Caledonia
Indonesia	Mr. Soekarno (Delegate)	Director Inland Fisheries	IR.H. Djuanda Street No. 2 Djakarta, Indonesia
	Mr. Unar (Alternate)	Director, Institute Marine Fisheries Research	Jalan Kerapu 12 Djakarta, Indonesia
Japan	Mr. S. Shindo (Delegate)	Chief	Demersal Resources Division, Seikai Regional Fisheries Research Laboratory 49 Kokubu-cho Nagasaki, Japan
Korea	Mr. Kim, In Su (Delegate)	Director of Production	Office of Fisheries 49-4 Hoehyun-Dong Chung-Ku, Seoul Korea
Malaysia	Mr. Soong Min Kong (Delegate)	Director	Fisheries Division Ministry of Agric- ulture & Co-operatives Jalan Swettenham Kuala Lumpur West Malaysia

<i>Member Government</i>	<i>Name</i>	<i>Designation</i>	<i>Address</i>
Malaysia (Cont'd)	Mr. Chin Phui Kong (Alternate)	Senior Fisheries Officer	Fisheries Branch Department of Agriculture Jesselton, Sabah East Malaysia
	Mr. D. Singh (Adviser)	Fisheries Officer	Fisheries Division Ministry of Agric- ulture & Co- operatives Jalan Swettenham Kuala Lumpur West Malaysia
Netherlands	Mr. F. Jensma (Delegate)	Agricultural Attache	Netherlands Embassy 120 Empire Circuit Yarralumla, Canberra A.C.T., Australia
New Zealand	Mr. G.D. Waugh (Delegate)	Director of Fisheries Research	Marine Department P.O. Box 2395 Wellington New Zealand
	Mr. B.T. Cunningham (Alternate)	Assistant Director	Fisheries Division Marine Department P.O. Box 2395 Wellington New Zealand
	Mr. J.C. Campbell (Adviser)	General Manager	Fishing Industry Board, 6th Floor Motor Trade House 32-34 Kent Terrace P.O. Box 9232 Wellington New Zealand
Philippines	Mr. A.M. Mane (Delegate)	Commissioner of Fisheries	Philippine Fisheries Commission, Lascan Building Real St. & Magallanes P.O. Box 623 Intramuros, Manila Philippines
	Mr. F.R. Gonzales (Alternate)	Supervising Fishery Technologist	Philippine Fisheries Commission, Lascan Building Real St. & Magallanes P.O. Box 623 Intramuros, Manila Philippines

<i>Member Government</i>	<i>Name</i>	<i>Designation</i>	<i>Address</i>
Philippines (Cont'd)	Mr. V.B. Encina (Adviser)	Senior Fishery Biologist	Philippine Fisheries Commission, Lascan Building Real St. & Magallanes P.O. Box 623 Intramuros, Manila Philippines
Thailand	Dr. A. Sribhibhadh (Delegate)	Chief	Invertebrate Fishery Investigations Marine Fisheries Laboratory 89/1, Soi Sapan Pla Yanawa, Bangkok-12 Thailand
	Mr. A. Sidthimunka (Alternate)	Senior Fisheries Biologist	Department of Fisheries Ministry of Agriculture Rajadamnern Avenue Bangkok, Thailand
	Mr. Mek Boonbrahm	Lecturer	Head, Department of Fisheries Faculty of Fisheries Kasetsart University Bangkhen, Bangkok Thailand
United Kingdom	Mr. I. Peterson (Delegate)	Senior Fisheries Officer	Agriculture & Fisheries Department Cambridge Court 84 Waterloo Rd., Kowloon, Hong Kong
	Dr. K.M. Chan (Alternate)	Acting Senior Research Officer	Fisheries Research Station Shek Pai Wan Road Aberdeen, Hong Kong
United States of America	Mr. J.C. Marr (Delegate)	Area Director	US Bureau of Commercial Fisheries P.O. Box 3830 Honolulu, Hawaii 96813 U.S.A.
	Mr. J.A. Dassow (Alternate)	Supervisory Research Chemist	Technological Laboratory US. Dept. of the Interior Fish & Wildlife Service 2725 Montlake Boulevard East, Seattle, Washington 98102, U.S.A.

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OBSERVER ORGANIZATIONS

<i>Organization</i>	<i>Name</i>	<i>Address</i>
Indian Ocean Fishery Commission (IOFC)	Mr. H. Rosa, Jr. (Observer)	FAO of the United Nations, Via delle Terme di Caracalla, Rome, Italy
General Fisheries Council for the Mediterranean (GFCM)	Mr. H. Rosa, Jr. (Observer)	FAO of the United Nations, Via delle Terme di Caracalla, Rome, Italy
Intergovernmental Oceanic Commission (IOC)	Dr. G.F. Humphrey (Observer)	Chief, Division of Fisheries and Oceanography, CSIRO, P.O. Box 21, Cronulla, N.S.W. 2230, Australia
South Pacific Commission (SPC)	Mr. V.T. Hinds (Observer)	Fisheries Officer South Pacific Commission P.O. Box No. 9 Noumea, New Caledonia
UNESCO	Dr. G.F. Humphrey (Observer)	Chief, Division of Fisheries and Oceanography, CSIRO, P.O. Box 21, Cronulla, N.S.W. 2230, Australia

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

<i>Name</i>	<i>Designation</i>	<i>Address</i>
Mr. R.I. Jackson	Assistant Director- General (Fisheries)	Department of Fisheries, FAO of the United Nations, Via delle Terme di Caracalla, Rome, Italy
Mr. H. Kristjonsson	Chief	Gear Technology Section, Fishery Resources and Exploitation Division, Department of Fisheries, FAO of the United Nations, Via delle Terme di Caracalla, Rome, Italy
Mr. H. Rosa, Jr.	Chief	Fishery Liaison Office Department of Fisheries FAO of the United Nations, Rome, Italy
Dr. T. Yamamoto	Regional Fisheries Statistician	FAO Regional Office for Asia and the Far East, Phra Atit Rd. Bangkok-2, Thailand
Mr. A.D. Druzhinin	FA Marine Fishery Biologist	c/o UNDP 24 Manaw Hari (Cheape Road) Rangoon, Burma

IPFC SECRETARIAT

<i>Name</i>	<i>Designation</i>	<i>Address</i>
Mr. J.A. Tubb	Secretary of IPFC	Regional Fisheries Officer, FAO Regional Office for Asia and the Far East, Maliwan Mansion, Phra Atit Rd., Bangkok-2, Thailand
Mr. S. Olsen	Technical Secretary (Technical Committee I)	Fishery Biologist Marine Biology Section Marine Biology & Environment Branch Fishery Resources & Exploitation Division Department of Fisheries FAO of the United Nations Via delle Terme di Caracalla, Rome, Italy.
Dr. G.N. Subba Rao	Technical Secretary (Technical Committee II)	Fisheries Officer, FAO Regional Office for Asia and the Far East, Maliwan Mansion, Phra Atit Rd., Bangkok-2 Thailand
Dr. R. Hamlich	Technical Secretary (Technical Committee II)	Chief, Economic Analysis and Planning Section Fishery Economics & Products Division Department of Fisheries FAO of the United Nations, Via delle Terme di Caracalla, Rome, Italy
Miss A. Jiannee	Conference Officer	Technical Assistant Fisheries Department FAO Regional Office for Asia and the Far East Maliwan Mansion, Phra Atit Rd., Bangkok-2 Thailand
Miss M.T. Iordonow	Interpreter	Via del Plebiscito 112 Rome, 00186, Italy
Mrs. G. Barrau	Interpreter	P.P. 43, Noumea New Caledonia

IPFC SECRETARIAT (Cont'd)

<i>Name</i>	<i>Designation</i>	<i>Address</i>
Mrs. A Robson	Interpreter	8 Adderstone Avenue North Sydney, N.S.W. Australia
Miss D. Porret	Interpreter	C/o International Coffee Organization 22 Berners Street London, W. 1 England

AUSTRALIAN IPFC LIAISON COMMITTEE

Mr. T.W. Burdon	Chairman
Dr. G.F. Humphrey	Member
Mr. A. Dunbavin-Butcher	Member
Mr. G.G.T. Harrison	Member
Mr. R.M. Taylor	Member
Dr. L.D. Thomson	Member
Mr. D. Macdonald	Secretary & Liaison Officer, 13th Session.

APPENDIX III

NOMINATIONS FOR PERIOD BETWEEN 13TH AND 14TH SESSIONS (1969-70) TO IPFC

*Note: Where fresh nominations have not been received, those for the period between 12th and 13th Sessions have been carried over.

Member Governments	Administrative Correspondent	Technical Committee I	Technical Committee II
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WORKING PAPERS:

IPFC/C68/WP	1	Provisional Agenda.
	1(Fr.)	Ordre du Jour provisoire.
	1(Rev.1)	Provisional Agenda.
	2	Report of the Executive Committee.
	3	Amendment to the Council's Agreement.
	3(Fr.)	Amendement a l'Accord du Conseil.
	4	Report of IPFC Observers to International meetings, January 1967 - October 1968.
	5.	Status of Fisheries Projects in the Indo-Pacific Region in which FAO is concerned or interested 1966-1968.
	6	The Fisheries Status of the Industry.
	7	Intersession Report (1966-1968) of IPFC Technical Committee I.
	7(Add.1)	Ditto /Additional information from France (for French Pacific Territories), India/.
	8	Intersession Report (1966-1968) of IPFC Technical Committee II.
	8(Add.1)	Ditto (Additional information from USA & HK).
	9	I.W.P. Regional Study. Fisheries in the Asia Region and their Development Prospects.
	*9 Rev.1	Ditto. (Revised)
	10	Report of the IPFC Working Party on Coastal Aquaculture.
	11	Trawling Working Party Report of Meeting 24-26 June, 1968, Bangkok, Thailand.
	12	Fisheries Aid Programmes in IPFC Countries (excluding UNDP, PFHC and WFP Activities).
	13	IPFC Technical Committee II - Provisional Agenda.

* Limited supply.

- IPFC/C68/WP 14 Problems of Fishery Development
by Fisheries Branch, Dept. Primary Industry, Canberra,
Australia.
- 15 The Progress Report on the Work of FAO Regional
Fisheries Statistician between the 12th and 13th
Sessions of IPFC
by T. Yamamoto.
- 16 The Sizes of Vessels Used for Demersal Fishing in
the Region of IPFC
by T. Yamamoto.
- 17 Distinction of Catch and Fishing Effort Data between
subsistence Fishermen and Commercial or Enterprise
Fishermen
by T. Yamamoto.
- 18 Preparations for the Development of a Fishery
Harbour Programme
by W.J. Guckian.
- 19 A Note on the Inter-sessional Activities of the
Working Party on the Economics of Fish Culture
(1966-1968)
by T.V.R. Pillay.
- 20 Summary Report on the Seminar on the Possibilities
and Problems of Fisheries Development in South
East Asia organized by the German Foundation for
Developing Countries in co-operation with the
Federal Research Board for Fisheries and FAO held
in Berlin, 10 - 28 Sept., 1968.
- 21 Bibliography of Indian Fisheries Literature
(1966 - 1968).
- 22 Fisheries Training in South East Asia.
- 23 Symposium Arrangements.
- 24 Report on the discussion of IPFC/C68/WP14
Problems of Fisheries Development.
- 25 Fisheries in Indonesia in Recent Years.
- 26 Some aspects of Fish Marketing in Indonesia.
- 27 Social Economic Review of the Indonesian Fisheries.
- 28 Technical Committee II - Programme of Work for the
Intersession period between 1969-1970.

- IPFC/C68/WP 29 Secretary' Report of Credentials.
- 30 Nominations for the Period between 13th and
 14th Session (1969-1970) to IPFC.
- 31 IPFC Technical Committee I - Provisional Agenda.

INCIDENTAL PAPERS:

- IPFC/C68/INC 1 Provisional Programme.
 1(Fr.) Programme Provisoire.
 1(Rev.1) Provisional Programme.
- 2 Provisional List of Documents.
 2(Rev.1) List of Documents (Interim).
3. Provision List of Delegates and Observers.
- 4 Order of the Day, Monday 14 Oct., 1968.
- 5 Order of the Day, Tuesday 15 Oct., 1968.
- 6 Order of the Day, Wednesday 16 Oct., 1968.
- 7 Opening Statements.
- 8 Order of the Day, Thursday 17 Oct., 1968.
- 9 Order of the Day, Saturday 19th Oct., 1968.
- 10 Order of the Day, Monday 21st Oct., 1968.
- 11 Mailing Documents.
- 12 Order of the Day, Tuesday 22nd Oct., 1968.
- 13 Order of the Day, Wednesday 23rd Oct., 1968.
- 14 Order of the Day Thursday 24th Oct., 1968.
- 15 Order of the day, Friday 25th Oct., 1968.

TECHNICAL PAPERS:

			Subject
IPFC/C68/TECH	1	A Morphometric Study of <u>Rastrelliger</u> Spp. from the Mergui Archipelago, Burma by A.D. Druzhinin and Daw Tin Tin Myint.	Marine Biology
	2	Some Basic Concepts on Fish Culture by G.A. Prowse.	Fish Culture
	3	On the Biology of Roundscads (<u>Decapterus</u> Bleeker) in Philippine Waters by K. Tiews, I.A. Ronquillo and P. Caces-Borja.	Marine Biology
	4	On the Biology of Anchovies (<u>Stolephorus lacepede</u>) in Philippine Waters by K. Tiews, I.A. Ronquillo and L.M. Santos.	Marine Biology
	5	Recover of the Quality on Shrimp Subsequently Used for Freezing by Miss Bung-orn Kasemsan and Arun Rattagoolngu.	Fish Utilization
	6	Fishery Salt Production on a Small Scale by G.N. Subba Rao.	Fish Utilization
	7	Illustrations of the Gross Egg and Larval Development of <u>Pla Swai</u> <u>Pangasius sutchi</u> Fowler by V. Warakulrand C. Boomson.	Fish Culture
	8	Australian Fishing Ports and Markets by Fisheries Branch, Department of Primary Industry, Canberra, Australia.	Fish Marketing
	9	Studies on Compatibility and Competition Between Silver Carp, <u>Hypophthalmichthys molitrix</u> (Val.) and Catla, <u>Catla catla</u> (Ham.) by K.K. Sukumaran, S.B. Singh, D.S. Murty and P.C. Chakrabarti.	Fish Culture
	10	Observations on the Postlarval Prawns (Penaeidae) in the Pulicat Lake with Notes on the Utilization in Capture and Culture Fisheries by M. Subrahmanyam and K. Janardhan Rao.	Resources Survey
	11	Distribution of Copepods in the Inter Gulf and the Western Coast of the Gulf of Thailand by S. Suvapepun and W. Suwanrumpha.	Marine Biology

		<u>Subject</u>
IPFC/C68/TECH	12 Preliminary Experiments on the Modification of the Reproductive Cycle of an Indian Carp <u>Cirrhina reba</u> (Ham.) by Control of Light and Temperature by P.U. Verghese.	Fish Culture
	13 Identification of Juveniles of the Prawns, <u>Penaeus monodon</u> Fabricius and <u>P. indicus</u> H.M. Edwards by R. Mallikarjuna Rao and V.Gopalakrishnan.	Marine Biology
	14 On the Winter Breeding of <u>Hilsa ilisha</u> (Ham.) in the Ganga River System by A.N. Ghosh and T.D. Nangpal.	Marine Biology
	15 Observation on the Hydrology and Fisheries of Ubolratana Reservoir (1965-1966) by M. Sidthimunka, M. Potaros and C.Boomson and O. Pawapootanon.	Biology
	16 An Evaluation on the Boiled Fish Industry of Thailand by Malee Sundhagul and Bung-orn Kasemsarn.	Food Technology
	17 Food and Feeding Habits of the Economic Species of Fish in Laguna de Bay by M.N. Delmendo.	Marine Biology
	18 Serum Protein Polymorphism in Grey Mullet (<u>Mugil cephalus</u> Linn) by Veravat Hongskul.	Biology
	19 Some Observations on the Fisheries of Naujan Lake and Recommendations for their Conservation and Management by M.N. Delmendo.	Biology
	20 Cockle-culture at Ketapang, Banten (West Java) by I. Wardana.	Marine Biology
	21 Is the Cultivation of Seaweed (<u>Eucheuna spinosum</u> and <u>Eucheuma edule</u>) in Indonesia technically possible and economically justified? by Soeriodiroto.	Marine Biology
	22 A Comparative Study on Some Improved Methods of Processing Pindang by S. Iljas and S. Darmoredjo.	Food Technology

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IPFC/C68/TECH	23	Export of Frozen Shrimp from Indonesia by S. Darmoredjo.	Food Technology
	24	Studies on the Larva of Commercial Prawns and the Possibility of their Culture in Indonesia by A. Poerhomo.	Fish Culture
	25	Preliminary Observations of Disused Tin-mining Pools in Malaysia and their Potential for Fish Production by A.A. Jothy.	Fish Culture
	26	Indian Mackerel, <u>Rastrelliger</u> spp., in Burmese Waters by A.D. Druzhinin.	Marine Biology
	27	Induced Spawning of Pituitary Hormones Injection of Pond-reared Fishes by M. Boonbrahn, Tarnchalanukit and W. Chuapoehuk.	Fish Culture
	28	Studies II. Extraction and Determination of Vitamin A Content of Liver Oils of Some Philippine Fishes by the Direct Method by S.V. Bersamin, L.C. Salcedo and G. Guevara.	Food Technology
	29	Tahong - Food for the Millions by R.A. Obusan and E.E. Urbano.	Food Technology
	30	Studies on Fish Population of Laguna de Bay by M.D. Delmendo and R.N. Bustillo.	

SYMPOSIUM PAPERS: "Demersal Fisheries"

- IPFC/C68/SYM
- 1 Announcement of Symposium on Demersal Fisheries, IPFC 13th Session.
 - 2 A Report of the Research being done in Japan on Trawl Fishery
by S. Shindo.
 - 3 Some Problems concerning the Conservation of the Demersal Fish Populations in the East China and Yellow Seas
by S. Shindo.
 - 4 Korean Trawl Fishing
by Hahm Jae Yoon.
 - 5 Some Basic Requirements for Stock Assessment Studies
by Fish Stock Evaluation Branch, Fishery Resources and Exploitation Division, FAO, Rome.
 - 6 Some Notes on the Demersal Resources of South East Asia
by J.A. Gulland.
 - 7 Analysis of Demersal Catches taken from the Exploratory Fishing Off the Coast of Pakistan
by A.G. Hussain, M.A. Burney, S.Q. Modiuddin and S. Zupanovic.
 - 8 On the Food and Feeding Habits of Some Philippine Shrimps in Manila Bay and San Miguel Bay
by K. Tiews, S.A. Bravo and I.A. Ronquillo.
 - 9 On the Food and Feeding Habits of Eight Species of Leiognathus Found in Manila Bay and San Miguel Bay
by K. Tiews, P. Divino, I.A. Ronquillo and J. Marques.
 - 10 On the Biology of Saurida tumbil (Bloch, 1801) Family Synodontidae, in the Philippine Waters
by K. Tiews, A. Mines and I.A. Ronquillo.
 - 11 On the Benthos and Its Seasonal Variations in Manila Bay and San Miguel Bay and a Comparison of their Foraminiferan Fauna
by K. Tiews, J.A. Ordonez and I.A. Ronquillo.

- IPFC/C68/SYM 12 Demersal Trawling in New Zealand
by J.H. Sorensen.
- 13 Observations on the Trawl Fishery of
Southern Burma
by A.D. Druzhinin and U Phone Hlaing
- 14 Present Status of the Trawl Fishery in Japan
by S. Shindo.
- 15 Investigations on the Pursuit of
Artificially Produced Prawn Larvae
Liberated into the Sea
by S. Mito.
- 16 Demersal Fish Explorations in the North-
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Approaches to Stock Size & Yield Forecasts
by D.L. Alverson and W.T. Pereyra.
- 17 Exploratory Bottom Trawling in Hawaiian Waters
by H.O. Yoshida.
- 18 The Status of the Hong Kong Trawling Industry
by Au Lai-shing.
- 19 An Inventory of Demersal Fisheries in Hong Kong
by Au Lai-shing.
- 20 Note on the Study on the Stock of Lizard-
Fish, *Saurida tumbil* in the East China Sea
by S. Shindo.
- 21 Brief Review of the Population Study on the
Yellow Croaker in the East China and the
Yellow Seas
by S. Shindo.
- 22 The Selection of the Trawling Gear on the
Base of the Technical Efficiency of the Net
by S.L. Okonski.
- 23 An Ecological Study on Some Marine Bivalve
Beds of Korean Tidelands
by Lee, Choonkoo.
- 24 Measurements of the Horizontal Opening of the
Trawl Nets
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- 25 The Catch Rate in relation to Depth and Its
Seasonal Variation for Two Groups of Com-
mercially Important Fish from the Wadge Bank
Trawl Fishery
by N.L.R. Munashinghe.

- IPFC/C68/SYM
- 26 A Survey of the Trawl Fish Resources Off Karwar, India
by S.V. Bapat, N. Radhakrishnan and K.N. Rasachandra Kartha.
 - 27 The Fishery of Polynemus heptadactylus Cuv. and Val. in India
by P.V. Kagwade.
 - 28 Results of the Exploratory Fishing Operations of the Government of India Vessels at Bombay Base for the Period 1961-1967
by K. Virabhadra Rao, K. Dorairaj, P.V. Kagwade and D.M. Punwani.
 - 29 Certain Observations on the Effectiveness of Rectangular and Oval Otter Boards
by S.D. Deshpande, S.V.S. Ramarao and K.N. Kartha.
 - 30 On the Optimum Length of Single Sweep Wire for an Otter Trawl
by G. Narayanappa.
 - 31 Comparative Catch Efficiency Studies Between Two-seam and Four-seam Otter Trawls
by S.D. Deshpande, T.M. Sivan, K.N. Kartha and S.V.S. Ramarao.
 - 32 Certain Observations on the Otter Trawl Operations Carried Out in the Inshore and Deep Waters of Kakinada
by G. Narayanappa, D.A. Narasimha Raju and A.V.V. Satyanarayana.
 - 33 Exploratory Trawling Operations Off Gujarat Coast
by Survey and Research Division, Directorate of Fisheries, Government of Gujarat, India.
 - 34 Stern Trawling on the Wadge Bank with 235-ton Trawlers
by A.S. Mendis.
 - 35 Survey of Fishing Resources in the Konkan Region of Maharashtra
by S.M. Waknis.
 - 36 Species Composition of Fish Captured by Trawlers in the Wadge Bank
by E.F.W. Fernando.
 - 37 Fishing Gear Used by Trawlers Operating from Ceylon
by A. Fernando.

- IPFC/C68/SYM
- 38 A Review of the Trawling Industry in West Malaysia
by Fisheries Division, Ministry of Agriculture and Cooperatives, Kuala Lumpur, Malaysia.
 - 39 The "Chantrang" Danish Seine Fishery of the North Coast of Java
by M. Unar.
 - 40 On Experimental Tagging of Demersal Fishes in the East China and the Yellow Seas
by H. Otaki.
 - 41 Trawl Fishing in India
by K. Virabhadra Rao.
 - 42 Demersal Trawling in Australia
by Fisheries Branch, Department of Primary Industry, Canberra, Australia.
 - 43 The Result of Experimental Trawl Fishing in South China Sea
by J.H. Chang.
 - 44 On the Trawl Fishery in the Philippines
by J. Magnusson.
 - 45 Demersal Trawling in Australia
by T. Kaar.
 - 46 Korean Off-shore Trawling by Kim, In Su.
 - 47 A Preliminary Report on the Use of Echo Sounders for Fish Detection by Ceylon-based Trawlers
by A.S. Mendis and S.L. Okonski.
 - 48 Further Observations on the Commercial Trawl Fishery of Manila Bay (1960-1962)
by P. Caces-Borja, R. Bustillo and S. Ganaden.
 - 49 Preliminary Observations on the Other Trawl Fishery of Manila Bay
by I.A. Ronquillo, P. Caces-Borja and A.N. Mines.
 - 50 Exploratory shrimp Trawling with the R.I. Jalandhi
by Purwito.
 - 51 A Report on Two-boat Bottom Trawl Fishing in the Philippines
by V.B. Encina.

CONTRIBUTED PUBLICATIONS: Note: The following publications have been made available in limited supply to the Council. These have been distributed as widely as possible. When numbers of copies have been small distribution has been limited to Heads of Delegations only.

- IPFC/C68/CP
- 1 Report of the IPFC Group of Experts on the Indian Ocean. Present Status of Fisheries and Assessment of Potential Resources of the Indian Ocean and Adjacent Seas, Rome, 23-25 January 1967. FAO, Rome Fish. Rept. 54, 32 pp.
 - 2 Methods and Equipment for Application of Aquatic Herbicides by L. Holm, Crop Protection Branch, FAO, Rome and R. Blackburn, Crops Research Div., US Dept. Agric., Fort Lauderdale, Florida. FAO, Rome PL: CP/16, 1967, 8 pp, 1 App.
 - 3 The Concept of the Maximum Sustainable Yield and Fishery Management, by J.A. Gulland. FAO, Rome, Fish. Tech. Pap. 70, 1968, 13 pp.
 - 4 On the Changes in the Abundance of Demersal Fish Stocks in the Gulf of Thailand from 1963/64 to 1966 as a consequence of the Trawl Fisheries Development, by K. Tiews, P. Sucondhamarn and A. Isarankura. Dept. of Fisheries, Bangkok, Contribution 8, 1967, 39 pp.
 - 5 Notes on the Synopsis of Manual on Fisheries Education and Training, by D.N.F. Hall. IPFC Bangkok, Mimeo. 1968, 31 pp.
 - 6 Report of ACMRR Working Party on Direct and Speedier Estimation of Fish Abundance, Rome, 16-21 January 1967. Report of the Fourth Session of the Advisory Committee on Marine Resources Research. FAO, Rome, Fish. Rept. 41, Suppl. 1, 39 pp.
 - 7 Report of ACMRR Working Party on Fishermen's Charts and Utilization of Synoptic Data, Rome, 16-21 January 1967. Supplement 2 to the Report of the Fourth Session of the Advisory Committee on Marine Resources Research. FAO, Rome, Fish. Rept. 41, Suppl. 2, 25 pp.
 - 8 Rapport special elabore par un groupe de travail mixte CCRRM/CSRO/OMM(CC) concernant la mise en oeuvre de la Resolution des Nations Unies sur les ressources de la mer, Rome, 17-21 July 1967. Supplement 3 au rapport de la mer quatrieme session du Comite Consultatif de la Recherche sur les Ressources de la Mer. FAO, Rome, Fish. Rept. 41, Suppl. 3, 26 pp.

- IPFC/C68/CP 9 Distribution and Movement of Albacore in the Indian Ocean Based on the Catch Statistics of Japanese Tuna Long-line fishery, by T. Koto. Far Seas Fish. Res. Lab. Japan, Mimeo, 8 pp.
- 10 Discoloration of Meat and Loss of Weight in the Southern Bluefin Tuna, Thunnus maccoyii (Castelnau) related to Spawning, by I. Warashina and K. Hisada. Far Seas Fish. Res. Lab. Japan, Mimeo, 4 pp.
- 11 Recent Studies on Migration and Distribution of the Southern Bluefin Tuna, Thunnus maccoyii (Castelnau), by C. Shingu. Far Seas Fish. Res. Lab. Japan, Mimeo, 7 pp.
- 12 Metropolitan Fish Market and Processing Division by Queensland Fish Board, Brisbane, Queensland, Mimeo, 13 pp.
- 13 Potential Demersal Fish Resources of the Sunda Shelf by Deb Menasveta, Marine Fish. Lab., Dept. of Fisheries, Bangkok, Thailand. Paper submitted to CSK Symposium, 29 April - 2 May, Honolulu, 1968, 70 pp., 9 Figs. Mimeo.
- 14 An Economic Survey of the New South Wales South Coast Danish Seine Fishery. Fish. Branch, Dept. Primary Industry, Canberra, Fish. Rept. 2, 1968, 52 pp.
- 15 An Annotated Bibliography of Malayan Fresh-Water Fisheries by E.R. Alfred. Journ. Malay. Br. Roy. Asiat. Soc., 39(1): 145-165, 1966.
- 16 The Fresh-water Food Fishes of Malay. II Xenentodon cancula (Hamilton-Buchanan) by E.R. Alfred. Fed. Mus. Journ. 9 (n.s.): 77-79, pl. 13, 1967.
- 17 Japanese Fisheries, 1967. Overseas Technical Cooperation Agency, Tokyo, 163 pp., ills. 59 Tables, 23 Figs.
- 18 Demersal Fish Stocks of the Great Australia Bight as Estimated from the Results of Operations of F.V. Southern Endeavour by G.L. Kesteven and A.E. Stark. CSIRO Aust. Div. Fish. Oceanogr. Tech. Paper No. 24, 1967, 62 pp, 33 Tables.
- 19 SPC 3rd Technical Meeting on Fisheries, Report Noumea, New Caledonia, 4-13 June, 1968. SPC Mimeo, 11 pp., 3 Apps.
- 20 Problems with Fishing Boats in Australia. Observations and Recommendations by J.O. Traung, 1964 and 1966. Fish. Branch, Dept. Primary Industry, Canberra, Fish. Rept. 1, 36 pp.

- IPFC/C68/CP 21 Australian Fisheries Development Conference, Canberra, Feb. 20-22, 1967. Fish. Branch, Dept. Primary Industry, Canberra, Australia, 53 pp.
- 22 Commonwealth of Australia Technical Meeting on Fishing Boats, Broadbeach, Queensland, March, 1966. Fish. Dept., Dept. of Primary Industry, Canberra, Mimeo, 12 pp.
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MINUTES

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2 Minutes of the Third Plenary Meeting
3 Minutes of the Fourth Plenary Meeting
4 Minutes of the Fifth Plenary Meeting
5 Minutes of the Sixth Plenary Meeting
6 Minutes of the Seventh Plenary Meeting
7 Minutes of the Eighth Plenary Meeting
8 Minutes of the Ninth Plenary Meeting

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Kuralon Nets
Prawns
Big Catch
Pearlshers of the Coral Sea

*Limited supply.