

REPORT ON THE
CURRENT WORK OF FAO DEPARTMENT OF FISHERIES

The following sections are of special interest to:

"The Fifty-Sixth Statutory Meeting of the
International Council for the Exploration
of the Sea"

Copenhagen, Denmark, 30 September-9 October 1968.

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REPORT ON THE CURRENT WORK
OF THE DEPARTMENT OF FISHERIES

1. FAO CONFERENCE, FISHERY COMMISSIONS, COMMITTEES AND COUNCILS

1.1 FAO Conference

At the Fourteenth Session of the FAO Conference held in Rome from 4 to 23 November 1967 it was noted that the 1968-69 budget allocations did not provide for the rate of development over three successive biennia visualized for the Department of Fisheries at the time of its Thirteenth Session. It recognized that the allocations by the Director-General were probably as realistic as they could be within the budget ceiling approved for the Organization as a whole, even though they would entail a loss of momentum and inadequate coverage of some areas of work. It gave recognition to the valuable services to fishery science and technology being rendered by the ACMRR and expressed the wish that the Advisory Committee itself should meet annually, as well as maintain its working parties.

The Conference also noted that the Inter-governmental Oceanographic Commission (IOC) under UNESCO had decided to invite the co-operation of the Organization in support of certain meetings to be held during 1968-69, specifically meetings dealing with the marine resources of the Caribbean and Gulf of Mexico and of the Kuroshio current area, and recommended that all possible collaboration be extended within the means available.

The Conference endorsed the co-operation envisaged with the International Council for the Exploration of the Sea (ICES) in appraising the status of the resources off Northwest Africa. The planned continuation of collaboration with ILO on matters of vocational training and with ILO and the Intergovernmental Maritime Consultative Organization (IMCO) on safety of fishing operations was noted with satisfaction.

A suggestion was noted that consideration be given to the establishment of international consultative and co-ordinating arrangements for the investigation of marine resources in the Caribbean and the Gulf of Mexico areas.

The Conference called for more vigorous technical and organizational support of the regional fishery bodies.

Particular emphasis was given to the urgency of carrying out more research on marine water pollution and this would involve national and international action through international bodies.

1.2 Committee on Fisheries

The Committee on Fisheries (COFI) held its Third Session from 24 to 30 April 1968 at FAO Headquarters, Rome, Italy. The Session was attended by the representatives of 33 nations, members of the Committee (the membership of the Committee is of 34 nations); 22 observer nations; and 13 international organizations.

The Committee in considering the long-term problems of co-operation among international agencies concerned with the oceans, discussed proposals relating to operative paragraph 3 of the UN General Assembly Resolution 2172 (XXI), which were considered suitable as a basis for the discussion to be held in the General Assembly of the United Nations.

Various problems of rational utilization of fishery resources were discussed by the Committee. Areas and stocks namely whales, tunas, trawl fisheries (especially those carried out by long-range fleets), and shrimps were also noted.

The work being undertaken by FAO under the Indicative World Plan (IWP) on marine resources evaluation was reported to the Committee.

In considering expert advice to FAO in the field of fisheries, the Committee decided to recommend to the FAO Council to take steps to have the statutes of the "Continuing Working Party on Fishery Statistics in the North Atlantic Area" (CWP) amended so that it would be composed of experts of whom FAO, ICNAF and ICES would each appoint up to four.

Various actions being taken with respect to marine pollution by the Department of Fisheries in association with UNESCO and IMCO and other inter-governmental as well as international organizations concerned with fisheries, marine science, and maritime affairs were discussed. The Committee stressed that the specific responsibilities of IAEA, IMCO and other bodies should be left for those bodies to discharge, but that a proposed Joint Group of Experts on the Scientific and Related Inter-disciplinary Aspects of Marine Pollution and the inter-locking system of committees and secretariats should strive to ensue full and closer co-operation in this matter by these bodies and co-ordinated actions by their member nations.

The Committee re-emphasized the importance of education and training at all levels in the field of fisheries and strongly supported the preparation being made by the Department of Fisheries for the First Session of its Sub-Committee on Fishery Education and Training to be convened at FAO Headquarters, Rome during April 1969. The Committee discussed the work of its Sub-Committee on the Development of Co-operation with international organizations concerned with Fisheries and agreed that the work of this Sub-Committee was valuable.

The Committee further discussed the proposal for a World Fishery Congress but deferred making a definite recommendation.

The proposal for an International Decade of Ocean Exploration put forward by the United States was unanimously welcomed by the Committee.

1.3 FAO Fishery Bodies

(a) Indo-Pacific Fisheries Council (IPFC). A meeting of the Trawling Working Party of the Council was held from 24 to 26 June 1968 in Bangkok, Thailand. The Working Party concluded that there was enough technical and statistical data available for future consideration of specific problems such as the estimate of the potential demersal fisheries resources of the Indo-Pacific area, and possibly the assessment of the resources of commercially important individual species.

The Working Party considered the organization of the Symposium on Demersal Fisheries to be convened during the Thirteenth Session of the IPFC to be held in Brisbane, Australia from 14 to 25 October 1968.

The subject matter of the Symposium will cover all demersal resources including fisheries conducted by methods other than trawling, e.g., bottom long-lining and shrimp fisheries. The two major topics to be considered by the Symposium are: Experimental and Exploratory Fishing.

(b) General Fisheries Council for the Mediterranean (GFCM)
During 1968, measures have been taken to implement the resolution of the Ninth Session (Split, Yugoslavia, December 1967) of the Council. Five working parties. ((i) Fishery Statistics and Biological Sampling; (ii) Fresh, Brackish and Hypersaline Water Fisheries; (iii) Mediterranean Scombroid Resources; (iv) Demersal Resources Appraisal and Exploitation; (v) Utilization and Marketing of Fish and Fishery Products) and a network of sardine workers have been established and have initiated activities. Close co-operation has been maintained with the Inter-governmental Oceanographic Commission and the International Commission for the Scientific Exploration of the Mediterranean for the preparation of the Joint IOC/GFCM/ICSEM Co-operative Investigations in the Mediterranean. In the meantime, the secretariat is preparing the GFCM two-day Symposium on Depth Resources and Exploitation that will take place immediately before the Tenth Session. to be convened in December 1969.

(c) Regional Fisheries Advisory Commission for the Southwest Atlantic (CARPAS) The CARPAS Working Group on Fisheries Statistics and Biological Sampling held its third session from 3 to 7 June 1968. The report of the Working Group will be considered during the Fourth Session of CARPAS to be held from 8 to 14 November 1968 in Rio de Janeiro, Brazil. The Session will be preceded by a Seminar on Shrimp and related species.

(d) European Inland Fisheries Advisory Commission (EIFAC) The Fifth Session of EIFAC was held in Rome on 20 to 24 May 1968. Twenty of its 21 Member Governments were represented as well as Japan, Malta and a number of international organizations. The Commission reviewed in detail the achievements of the previous biennium and approved an extensive action programme to be implemented by EIFAC three Sub-Commissions during its next biennium as follows:

Sub-Commission I - Fisheries Biology and Management is accelerating its study of fishing waters and fish populations. In this field, it is (a) standardizing the terminology and testing methods for electric fishing and electric fish screens, (b) studying age determination of coarse fish, (c) studying the economic aspects of commercial and sport fisheries in the region, and (d) has appointed a Working Party to standardize fishery inventories.

Sub-Commission II - Fish Culture and Disease has formed the three working parties which have already started to work, for the moment by correspondence on (a) the preparation of a review on trout feed technology, (b) the economic and technical appraisal of different types of fish cultures and (c) the controlled reproduction of fish and fry raising. With respect to fish diseases, the Sub-Commission is elaborating a certificate of health for the control of international traffic in live fish and fish eggs and is encouraging importing countries to develop facilities to inspect the imported eggs and live fish by qualified fish pathologists.

Sub-Commission III - Fish and Polluted Water is continuing through its Working Party on Water Quality Criteria for European Freshwater Fish the review of literature on various pollutants and inland fisheries, in particular phenols and ammonia. It is recalled that the Working Party has already published extensive reviews on suspended solids and inland fisheries. extreme pH values and inland fisheries and is presently publishing a third study on water temperature and inland fisheries based mainly on Slavic literature. To determine its future programme of work the Sub-Commission has decided to organize a Symposium on the Nature and Extent of Water Pollution Problems affecting inland fisheries in Europe before its Sixth Session which is to be held in 1970. This Symposium would be prepared by a series of national meetings in each member country on this topic.

(e) Indian Ocean Fishery Commission (IOFC) The first inaugural session of the Indian Ocean Fishery Commission was held at FAO, Headquarters, Rome from 16 to 21 September 1968. The membership of the Commission is up to date of 26 Member Nations as follows: Australia, Bahrain, Ceylon, Ethiopia, France, Greece, India, Indonesia, Iran, Israel, Japan, Jordan, Kenya, Korea, Kuwait, Madagascar, Malaysia, Mauritius, Netherlands, Qatar, Tanzania, Thailand, United Kingdom, USA, Vietnam.

1.4 Non-FAO Fishery Bodies

(a) International Convention for the Conservation of Atlantic Tunas. It has been to date ratified or adhered by five nations: USA, Japan, South Africa, Canada and Ghana. It will come into effect upon the deposit of two more instruments of ratification, approval or adherence. The convention provides for the establishment of an International Commission for the Conservation of Atlantic Tunas.

(b) Draft Convention on the Conservation of the Living Resources of the Southeast Atlantic.

A first draft of the Convention providing for a fishery body for the area has been distributed for comments to countries fishing or interested in the area. The draft was considered by the third session of the Committee on Fisheries which recommended that a revised draft should be prepared by FAO according to the comments received, and circulated in advance of a Conference of Plenipotentiaries of interested nations to be convened in 1969.

In this connection the Committee also considered a summary report of the recent session of the ACMRR/ICES Working Party on the Fishery Resources of the Eastern Central and South-west Atlantic containing a statement on the study of the major demersal stock of hake and the major pelagic stocks of the area reviewed.

Draft Convention on the Conservation of the Living Resources of the Southwest Atlantic. The Committee on Fisheries recognized the problems of the fisheries of the Southwest Atlantic as being urgent in character and recommended that a scientific evaluation of the situation of the stocks of the area as a whole should be undertaken based on existing scientific data.

A joint working party of scientists under CARPAS and ACMRR is being established for that effect.

In the light of the scientific evaluation to be made by the Working Party a draft convention providing for a fishery body for the Southwest Atlantic will be drafted and circulated to all nations concerned.

2. MARINE RESOURCES AND ENVIRONMENT

2.1 FAO Advisory Committee on Marine Resources Research (ACMRR)

(a) The fifth session of ACMRR took place in FAO Headquarters, Rome from 8 to 13 July 1968. It was attended by Dr. C.E. Lucas (Chairman, U.K.), Dr. W.M. Chapman (Vice-Chairman and Rapporteur, USA) Dr. M.C. Bacescu (Rumania), Dr. A.S. Bogdanov (USSR), Prof. J.L. Cifuentes-Lemus (Mexico) Dr. B. Diop (Senegal), Prof. M. Fontaine (France), Prof. I. Hela (Finland), Dr. D. Menasveta (Thailand), Dr. J.L. McHugh (USA), Dr. W.E. Ricker (Canada), Prof. J.T. Ruud (Norway), Dr. S. Tanaka (Japan). Dr. A.P. Alckseev (USSR), Mr. A.J. Lee (UK) were unable to attend. Observers from WMO (Dr. G. Weploegh) IOC (Rear. Adm. W. Langerear, the Chairman of IOC), SCOR (Prof. Worster, The President of SCOR, UNESCO (Mr. O.J. Ø stvedt) and staff members of the FAO Department of Fisheries also participated in the meeting. Dr. M. Ruivo of the FAO Marine Biology and Environment Branch, F.R. Division was the Secretary.

Addressing the ACMRR at its opening meeting, Mr. R.I. Jackson, the Assistant Director-General (Fisheries) welcomed all participants both on behalf of the Director-General in his absence from Rome, and the Department of Fisheries. He confirmed the keen interest of the Director-General in the work of the Committee and informed the Committee on some concrete measures recently agreed on by FAO and UNESCO to develop joint action by the two agencies in the field of marine science and fisheries and to improve their liaison and co-operation in this field of work.

The Committee reviewed with great interest a report on FAO Activities in Marine Resources Research and Management and approved the final revised version of the Report of the ACMRR Working Party on FAO Fishery Councils and Commissions and recommended that the Working Party, having fulfilled its tasks, should now be disbanded. Similarly, the Committee received with appreciation the progress report of the Working Party on Direct and Speedier Estimation of Fish Abundance. A manual on the use of acoustic methods in fishery research is now in draft form and a first training course will be held jointly by FAO and ICES in February/March 1969. After the group was disbanded it was recommended that two of its members be invited to continue to act as correspondents for the Committee on developments in this field.

Consideration was also given to steps to be taken to promote the use of science in the management and development of international fisheries and the Committee recommended the appointment of a group of experts to make preparatory studies in view of a possible suggestion for a working party on the subject at the next ACMRR session.

The joint ACMRR/SCOR/WMO(AC) Working Party on Implementation of the UN Resolution 2172 had pointed out that the achievement of the proper scientific basis for development and management requires a substantial increase of the scientific effort engaged in research at national level as well as better co-ordination and co-operation. Accordingly, the Committee requested the Secretariat to assemble and initiate analysis of information concerning national and international expenditure on research oriented to marine fishery resource management with the object of reviewing the problems and the progress of this study at its Sixth session.

On the subject of funding research, the Committee recommended that UNDP and credit agencies make arrangements for an adequate research component in each internationally funded fishery development programme and that the regular programme of the FAO Department of Fisheries be brought into better balance with the field programme and that the integration of FAO fishery work with IOC environmental and biological research programmes be made as close as possible. The urgency of these problems was emphasized and it was suggested that practical steps could be taken to mitigate the situation such as the establishment of an International World Ocean Exploration and Development Fund.

The terms of reference of the Working Party on the Methodology of Survey and Charting of Resources were agreed upon and two revised terms of reference of the Working Party on Fish Eggs and Larvae Survey were also approved. The report of the Joint ACMRR/ICES Working Party on Fishery Resources of the Eastern Central and the Southwest Atlantic was accepted with appreciation and it was agreed to propose to ICES that the group be discontinued. The Chairman was requested to consult with CARPAS concerning the establishment and composition of a Joint ACMRR/CARPAS Working Party on Fishery Resources in the Southwest Atlantic and concerning the arrangements for a conference of nations interested in the fisheries of the Southwest Atlantic proposed by Argentina at the 14th session of the FAO Conference.

The Committee considered in detail the Programme of Work of FAO in the Field of Marine Resources during 1970/71 and subsequently. In general it was noted with concern that the proposed rate of growth of the FAO Department of Fisheries had not been maintained and that the serious imbalance between the field and regular programmes persists. Continued efforts should be made to correct this situation.

Other items on which specific action was recommended were:

- (i) Education and Training of Fishery Scientists
- (ii) Marine Pollution
- (iii) Improvement of Marine Resources and mariculture
- (iv) FAO World Scientific and Technical Conferences
- (v) World Appraisal of Fishing Resources.

The Committee discussed at length a number of aspects regarding International Co-ordination and Co-operation, in particular the Implementation of UN Resolution 2172 and related matters. It concluded that the International Decade of Ocean Exploration, as proposed by USA, could form an important initial stage of EPIC as well as make a substantial contribution to other activities contemplated in the Secretary-General's report. The Committee recommended that a Joint ACMRR/SCOR/WMO(AC) Working Party on the Scientific Aspects of International Ocean Research be established to meet in the spring of 1969 and with the following terms of reference.

(i) To develop the scientific content of a comprehensive programme of international co-operation in exploration and research in the ocean and its resources, taking into account the survey and proposals of the UN Secretary-General in connection with UN Resolution 2172, and also the Report on International Ocean Affairs the existing national and international programmes of co-operation in ocean exploration and research, and other relevant programmes and reports.

(ii) To comment on the practical problems of implementing such a programme, including priorities and timing, taking into account the likely funds, facilities and personnel required.

Considering the vital importance of effective collaboration between FAO and UNESCO/IOC in the field of marine science and fisheries, the Committee expressed its satisfaction with the joint action by UNESCO and FAO, as set out in the Aide-Memoire on Joint Action by UNESCO and FAO in the Field of Marine Science and Fisheries of 3 May 1968, and welcomed the steps taken by the Director-General of FAO to implement the Aide Memoire which provided for early exchange of draft programmes and budgets, consultation on planning of IOC activities, the outposting of a senior FAO officer to Paris, UNESCO assistance to FAO activities in documentation and related services etc. The Committee also recommended closer co-ordination of the regional activities of the two organizations in marine science preferably, as in those of IOC, on the basis of ocean areas.

Recent actions taken by the Executive Committee of WMO with regard to strengthening the marine component of that Organization were welcomed by the Committee as furthering the development of co-operation in the field of ocean research which is so essential in securing an improved and sustained yield from ocean resources for the benefit of mankind.

A decision was also made to accept an invitation from SCOR to participate in a Working Group on Continuous Monitoring in Biological Oceanography. SCOR had shown some concern about problems foreseen for the conduct of Oceanographic Research on the Continental Shelf, caused by the fact that some governments were interpreting the UN Convention on the Continental Shelf in such a way as to hinder scientific investigations. It was therefore decided to request the Director-General of FAO to take appropriate steps to make member countries aware of the serious implications this situation may create. The FAO Committee on Fisheries (COFI) would be informed of this important matter.

Various matters concerning IOC were discussed and the Committee welcomed the progress achieved in the planning of the Integrated Global Ocean Station System (IGOSS) which might become of key importance to fishery research and development, and recommended that FAO should take a very active interest in this. For the forthcoming period of activities of ACMRR, the following officers were elected: Dr. C.E. Lucas (Chairman), Dr. W.M. Chapman, (Vice-Chairman and Rapporteur), Dr. S. Tanaka, (Vice-Chairman).

The Committee also decided that it would be desirable to form a small steering group of its members to assist in further considerations of matters concerning especially the implementation of UN Resolution 2172 and its relations with IOC. It appointed to this steering group the Chairman and two Vice-Chairmen and also Dr. A.S. Bogdanov as one of two members of the Committee who are appointed by the Director-General on the basis of nominations by the IOC.

The Sixth Session of the ACMRR will be held in connection with the Sixth Session of IOC during the autumn of 1969. The final date and location will be decided later.

(b) FAO Expert Panel for the Facilitation of Tuna Research
The members of the Panel of its working groups continued their activities on various aspects of tuna research, in particular tuna taxonomy, standardization of tuna length measurements and tabulation, identification of tuna eggs, larvae and juveniles and tagging programmes.

Preparations were made for a meeting of a small group of experts in Miami in August 1968 to consider the present state of knowledge of the exploited stocks of tuna. The group was expected to prepare a report on the Atlantic stocks of tuna (especially yellowfin and bluefin) which could be used later as a basic document for the discussions in the Commission to be established under the Atlantic Tuna Convention. In view of the recent formation of the Indian Ocean Fisheries Commission, the work of the group will also include advice on the tuna stocks in the Indian Ocean. The Third Session of the Expert Panel is scheduled for the second half 1969.

(c) Evaluation of Marine Fisheries Resources

(i) The Fish Stock Evaluation Branch has continued to promote, and where appropriate, participate in the assessment of fisheries resources and the effects of fishing, with the aim of obtaining estimates for size of stocks, sustainable yields, and the effects of fishery regulation measures. A report has been published on the population dynamics of the Peruvian anchovy.

(ii) Work to establish the FAO Fisheries Data Centre is progressing. Some fisheries data from IIOE and all data from GTS have already been submitted for storage. FAO is also acting as the centre of submission on sperm whale stocks outside the areas of the North Pacific.

On the basis of returns of questionnaires, a register is being prepared of biological sampling of fish catches. For the present this is concerned only with recording the existing data.

(iii) FAO has now accepted the responsibility for continuing assessments of sperm whale stocks on behalf of the IWC and to this end an expert working group arranged by FAO met in Rome in March 1968. Responsibility for study of the Antarctic baleen whale stocks has continued.

A serious situation is developing in the North Pacific where stocks of several species of whales have been seriously depleted. Two IWC Working Groups are studying the problems connected with all species of whales in the North Pacific, and of sperm whales generally. FAO is closely co-operating with these activities and will be taking an active part in the sperm whale analysis.

(iv) Indicative World Plan A major project in the current FAO Programme of World Plan (IWP) 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 of all types will be summarized for this purpose. To assist the Fishery Resources and Exploitation Division in this task a small informal working group of experts was established. These experts were selected for their knowledge of resource information about various ocean regions and for their interest in this type of methodology of appraisal. The Group has also been selected in such a way that its members, some of whom have detailed knowledge of certain areas and types of resources, supplement FAO staff. First drafts of the detailed surveys of several of the major sea areas and of molluscs and crustaceans have been prepared.

(v) Studies have continued on general problems of fishery management. These include the preparation of papers for presentation of scientific meetings, publication in scientific and semi-popular journals, and attendance at meetings directly concerned with management problems (including the first meeting of the ICNAF Standing Committee on Regulatory Measures).

For recent relevant publications by FR. (See 2.5)

2.2 Fishery Oceanography and Environment

(a) Relations between fish stocks and upwelling areas

The IWP Working Group on Marine Resources Appraisal recognized the need to develop methods of estimating potential yields from primary production data. Following a related recommendation approved by ACMRR at its Fourth Session, FAO invited Dr. D. Cushing (Fishery Laboratory, Lowestoft, UK) to prepare a review on some aspects of the process of enrichment of surface layers and its effect on fish stock distribution and abundance. This paper is intended to be used as a contribution to the volume that it was suggested should be published by FAO and UNESCO/IOC as a preparatory stage for a possible seminar to be organized jointly by these organizations on the same subject.

(b) Mediterranean Sea Synopsis

This project has been frozen for the time being, pending reorganization of GFCM activities and the outcome of the proposed Co-operative Investigation of the Mediterranean (CIM) to be undertaken by IOC in co-operation with ICSEM and GFCM.

A draft review of Mediterranean fishery resources and various environmental aspects has been prepared and originated for internal use in the organization and as a basis for the planning of GFCM activities in the area. It is FAO's intention to make this draft available to other interested organizations and, if agreed, its various sections could be revised by specialists with a view to preparing a working document for the joint IOC/ICSEM/GFCM International Group for Scientific Co-ordination of CIM. For the same purpose a Fishery Resources Review of the Mediterranean and the Black Sea was circulated at the Ninth Session of the GFCM (Split, December 1967) and has been distributed among experts for comment. This study will also serve as the basis for the IWP study of the area.

(c) Fisheries Section of IIOE Atlas

Dr. G. Kesteven (FAO, Mexico) and Dr. F.A. Talbot (Australian National Museum) are planning the Fisheries section of the IIOE Atlas and action required to implement this project.

(d) The Report of the ACMRR Working Party on Fishermen's Charts and Utilization of Synoptic Data

This has been issued as FAO Fish.Rep., (4) Suppl. 2 and distributed to IOC, WMO and other institutions and experts concerned.

FAO has been co-operating with WMO in defining fishery requirements under the World Weather Watch and forms of promoting increasing input in the WMO system of data from oceanic areas collected by fishing vessels.

2.3 FAO/UNESCO Collaboration - Oceanic Research

In May of this year the Directors-General of FAO and UNESCO reached an agreement which will strengthen support for and bring about closer collaboration in promoting world ocean research. The agreement includes an arrangement whereby Dr. Sidney Holt, Director, Fishery Resources and Exploitation Division of FAO, has been appointed, effective in September, to collaborate with the secretariat of the International Oceanographic Commission in Paris. He will eventually be stationed in the Office of Oceanography of UNESCO which supports the IOC.

2.4 Meetings (See Annex II)

2.5 Documentation

(a) Current Bibliography for Aquatic Sciences and Fisheries

At present Volume 11 Section 1 has been printed and Volume 11 Section 2 is in press.

It is hoped that from 1970 on, using the FAO computer facilities, the information now being stored on paper tape can be automatically retrieved.

(b) Marine Science Contents Tables

FAO FR Division continues to publish this monthly periodical.

At present, tables of contents relating to about 50 journals covering fisheries biology, oceanography, maritime meteorology and other disciplines in marine sciences are reproduced in this. Further advice on the improvement of the content and format is being sought from ACMRR and SCOR. It is hoped that the number of journals covered will be increased to about 100 titles during 1969. The journal is distributed through the medium of a special mailing list prepared for this purpose and has a world-wide coverage.

(c) International Marine Science

Publication of the quarterly newsletter International Marine Science, prepared jointly by the UNESCO Office of Oceanography and the FAO Department of Fisheries has continued. Volume VI Part 2 at present in press.

(d) Synopses of Aquatic Forms of Economic Importance

During the last two years several species synopses on marine and inland water fishes were published and others are in advanced stages of preparation. Some existing synopses have been revised to include additional information and to improve the presentation of data.

Close collaboration has been maintained with the US Bureau of Commercial Fisheries (USA), CSIRO, ICES, ICNAF, EIFAC, IPFC, GFCM, CARPAS, and with fisheries experts associated with CSK activities.

A synopsis of Biological Data on West African Croakers (Genus: Pseudotolithus) has been published. With the increasing importance of anchovies in world fisheries it is intended to publish several synopses on engraulids. A manuscript on the anchoveta, Cetengraulis mysticetus, has been received. It is expected that Species Synopses on Engraulis ringens, E. mordax, Stolephorus pseudoheterologus and S. purpureus will be completed during 1968. Several species synopses on shrimp and prawn have been received in connection with the FAO World Scientific Conference on the Biology and Culture and Shrimps and Prawns.

(e) Acoustic Fish Detection Methods

The ACMRR Working Party on Direct and Speedier Estimation of Fish Abundance has completed the preparation of a training manual on acoustic fish detection methods which will be used for courses to be held on this subject, the first of which will be the one organized by ICES to be held in Norway in Spring 1969. The manual will be published as an FAO Fisheries Technical Paper during the present year and will be made available to research workers throughout the world.

Intercalibration tests will be carried out as part of the research programmes of the UNDP/SF projects covering the survey and development of pelagic fish resources in West Africa. FAO is the executing agency for these projects.

(f) Index of Hydrobiological and Fisheries Institution with Training Programmes

An Index to the World Directory of Hydrobiological and Fisheries Institutions (R.W. Hiatt, 1963) was prepared in connection with a symposium on fisheries education, convened by the Indo-Pacific Fisheries Council in 1966. (FAO Fish.Circ., (23))

The response to the questionnaire, sent out together with the index, was most encouraging. A revised version of the index will be published in the FAO Technical Paper series.

(g) A Guide to Marks used for Tunas and an Inventory of Tuna Marking Projects
This loose-leaf Guide (FAO Fish.Circ., (101) contains information derived from questionnaires distributed to those agencies conducting research on tunas. At the request of the FAO Expert Panel for the Facilitation of Tuna Research, a revised version of the Guide will be published this year.

(h) Lists of Experts and Institutions
Lists of workers associated with shrimp and prawn research, as well as those investigatins fish behaviour in ralation to fishing techniques, were prepared in connection with the meetings on the respective subjects. A preliminary list of workers in marine pollution research has also been prepared and given very restricted distribution. The list will eventually be revised in the form of a contribution to the FAO World Conference on Marine Pollution and its effects on Fishery Resources which will be held in 1969.

(i) International Directory of Marine Scientists
Following recommendations of SCOR and ACMRR it has been agreed that future editions of the International Directory of Oceanographers (which was published by the US National Academy of Sciences in 1964) will be published by UNESCO and FAO with the assistance of SCOR. Preparatory work is under way by the organizations concerned. It has been suggested that the new edition should be published by the end of 1968.

(j) Special Bibliographies
i) North Atlantic Bibliography The bibliography that FAO, ICES and ICNAF have agreed to prepare, to include references to papers printed in Journal du Conseil, Rapports et Procès-Verbaux des Réunions, ICES Co-operative Research Reports A and B, ICES unserialized Proceedings, ICNAF Research Bulletin and ICNAF Special Publication has been printed and distributed.
ii) A partial bibliography on the bacterial diseases of fish during the years 1870 to 1965 compiled by Dr. D.A. Conroy has been printed in the FAO Fish.Tech.Pap. series.

(k) Reference Booklets Fishermen and the Weather, prepared by FAO with the assistance of WMO, was published in March and considered as an FAO contribution to the World Meteorological Day (23 March).

A second draft of a new booklet entitled Oceanography for Fishermen has now been completed. Copies of this version will have limited distribution to selected collaborating scientists and organizations, particularly UNESCO/IOC and SCOR, so that their comments may be noted. A revised version of the present draft will be published in the FAO Fish.Circ. series.

(1) Recent Publications on Fishery Management

The concept of the maximum sustainable yield, and fishery management.
FAO Fish.Tech.Pap. No. 70.

Emerging patterns of international fisheries development.
Prd.Gulf and Canb.Fish.Institute (in press).

The management of Antarctic whaling resources.
J.Cons.int.Explor.Mer 31(3).

The management of fishery resources. FAO World Food Problems No. 7.
Also (in slightly different form) in Advances in Marine Biology No. 7.

The Ocean reservoir. Science Journal May 1968.

The concept of the marginal yield from exploited fish stocks.
J.Cons.int.Explor.Mer (in press).

3 FISHING CRAFT, GEAR AND FISHING OPERATIONS

3.1 Fishing Vessel and Research Craft Design and Construction

The study on "Hydrodynamic Design of Fishing Boats" was brought to a point where the publication of a report is being prepared setting out the results of computer analysis of fishing vessel data undertaken to date and giving recommendations for their use by naval architects.

Considerable ad hoc advice was given to Member Governments on the design and construction of small craft for inshore operations. Work was concluded on the problems involved in replacing primitive craft such as dugouts and rafts by improved types and a report thereon is under preparation.

Advice was provided to Member Governments on the design of new research craft and basic layout designs for five new exploratory vessels for UNDP/SF fishery projects were prepared.

The construction of a prototype fishing vessel in ferro-cement is proceeding in Thailand under the supervision of a TA expert.

A major part of the Fishing Vessels and Engineering Branch (FRv) workload is concerned with the vessel needs of field projects under UNDP/SF, TA and with servicing of projects and staff under FFHC. Five naval architects/boatbuilders and six marine engineers/ships' engineers are supervised by the Branch under these programmes.

3.2 Fishery Harbours

The Fishery Engineering Section has been operative for a short period only - since April 1968 - work mainly consisted of the technical servicing of UNDP/SF projects, including the Pre-Investment Survey of Fishing Harbours in India, participation in IBRD and other Regional Bank missions assessing fishery harbour development projects submitted by Member Governments for financing by the development banks concerned, and generally giving ad hoc advice to Member Governments on fishery harbour projects and on the initiation of TA and SF projects.

3.3 Collaboration with other agencies and industry

(a) The Fifth Session of the Commission for Maritime Meteorology of the WMO was held in the University of Rhode Island in August 1968 and a CMM Working Group on Weather Forecasts for Shipping and Fishing also met during this period. Both meetings were attended by the Chief of FRv Branch. The requirements of fishing for synoptic information, forecasts and anomaly computations of sea surface temperatures, thermocline depths etc. were discussed and included in the table of products to be provided by the forthcoming World Weather Watch.

Officers of the FRv branch also attended an FAO/IMCO/ILO Inter-Secretariat Meeting in Geneva on the Code of Safety for Fishermen and Fishing Vessels. A final draft of Part A on the subject of Safety and Health Practice for Skippers and Crews was edited and approved. This deals with operational features and is intended primarily for the use of skippers and crews. Part B has not yet been prepared but will deal with constructional features and will be chiefly for the use of owners and builders. Both parts are for the use of Government authorities concerned with safety regulations.

(b) Collaboration with IMCO regarding fishing vessel stability continued at secretariat level and FRv co-operated actively in the preparation of recommendations for minimum stability requirements of fishing vessels.

Relations with industry are being extended through correspondence, periodic visits to shipyards, as well as participation in exhibitions of which notably the Boat Show in London and INRYBPROM 68 in Leningrad were visited.

3.4 Meetings

The Second FAO Technical Conference on Fishery Research Craft was held in Seattle, Washington from 18 to 24 May 1968 with participation of officers from FRv. The Fishery Engineering Section of FRv carried a heavy workload during the preparation of the FAO Conference on Fishing Ports and Port Markets and participated in this meeting in Bremen from 23 to 28 September 1968. Officers of FRv attended the Seventh Symposium on Naval Hydrodynamics in Rome in August 1968. The Branch is also participating in the Montreal Conference on Fishing Vessel Construction Materials in October. The Eighth session of the Working Group on Stability of Fishing Vessels will be held at IMCO Headquarters in London with FRv participation. A meeting of consultants to rationalize the recommended systems of soil mechanics investigation for fishery harbour development is planned for the current year.

3.5 Equipment procurement

Several major items of fishing gear, such as big purse seines, were designed and ordered, especially for the chain of Sardinella Projects in West Africa and SF Projects in South America which are taking delivery of new Project Vessels.

FRv is largely responsible for the procurement of vessels and machinery for field projects and during 1968 seven vessels will be delivered.

3.6 Documentation

Research Vessel Data: 3 was published. Papers were presented to the Second FAO Technical Conference on Fishery Research Craft (2), the FAO Conference on Fishing Ports and Port Markets (1), and the Montreal Conference on Fishing Vessel Construction Materials. All papers presented to the Second FAO Technical Conference on Fishery Research Craft were published in collaboration with the US Bureau of Commercial Fisheries (Seattle). An interim report on ferro-cement construction for fishing vessels was published in collaboration with Fishing News International and will shortly be available in English, French and Spanish as FAO, Fisheries Technical Papers.

In collaboration with IMCO and ILO Part A of the Code of Safety for Fishermen and Fishing Vessels was compiled and edited.

4 FISHERY STATISTICS AND ECONOMIC DATA

4.1 Introduction

Until 31 December 1965 work in fishery statistics was carried out by the Fisheries Statistics Section of the Economics Branch of the Fisheries Division of FAO.

The Statistics work is now under the Fishery Statistics and Economic Data Branch, which is a new Branch within the Fishery Economics and Products Division, of the Department of Fisheries. The FEs Branch has two sections:

- (i) Current Statistics and Economic Data Section
- (ii) Statistical Services Section

This Branch continues to be responsible for the preparation of the Yearbook of Fishery Statistics, as well as the assembly of data required in connection with the work of the Fish Stock Evaluation Branch.

More attention is being given to the improvement of fishery statistics at the national, regional and international level, both through the further standardization and extension of reporting systems and through direct assistance, especially to developing countries, in the improvement of systems for the collection and collation of fishery statistics.

The activities and the programme of work of the Fishery Statistics and Economic Data Branch fall under three main headings:

(a) The development, establishment and promotion of standard concepts, definitions, classifications and methodology in the field of fishery statistics for use at the international, regional, sea-area and national levels

- (i) These activities include the issue of Fisheries Circulars dealing with fishery statistical standards, which would be used for rendering advice to national Governments, to regional sea-area bodies, and for use by the FAO Secretariat in preparing statistical tabulations published in Fisheries Circulars.
- (ii) Particular attention is being paid to the computerization of the Yearbook of Fishery Statistics dealing with "Catches and landings", and with related Bulletins of Fishery Statistics and Fisheries Circulars closely connected with this work and the projects concerned with the classification and codification of species, countries, fishing areas, fishing fleet, etc.

(b) Collection of tabular data, their processing and preparation for issue in FAO fishery statistical publications and other documents of FAO and other international and regional agencies, according to internationally and regionally accepted standard definitions, concepts, classifications and methods

- (i) Nominal catches, landings, fishing fleets, fishermen, etc.
In addition to a large number of Fisheries Circulars containing tabular material on various subjects, the principal publications to be published during 1968 are:

Yearbook of Fishery Statistics, Volume subtitled "Catches and Landings"

Bulletin of Fishery Statistics

- (ii) Disposition, production of fishery commodities, imports and exports, consumption prices, etc.

In addition to the preparation of various Fisheries Circulars, the principal publication in this field is the Yearbook of Fishery Statistics, Volume subtitled "Fishery commodities".

(c) The rendering of advice to national focal points for fishery statistics, using appropriately modified standard concepts, definitions, classifications, and in particular, standard methods to improve the coverage and quality of national fishery statistical systems meeting (1) nationally determined needs and (2) related needs established through regional, sea-area and international consultations and agreements

See Annex I

4.2 Documents Programme of the Fishery Statistics and Economic Data Branch

The publications and other documents produced by the Fishery Statistics and Economic Data Branch cover the following three series:

(a) Yearbook of Fishery Statistics Until the end of 1963, the volumes on Production and fishing craft appeared annually and the volumes on International trade biennially.

Beginning with 1964 two volumes of the Yearbook were published annually. The volume subtitled Catches and landings covers data on quantities and values of fish caught and landed by countries, by species and by fishing areas. The volume subtitled Fishery commodities covers disposition of catches and both production and international trade data by types of fishery commodities. During the three years 1967, 1968 and 1969 the following volumes of the Yearbook have been or will be published:

Vol. 22	("Catches and landings, 1966")	October	1967
Vol. 23	("Fishery commodities, 1966")	December	1967
Vol. 24	("Catches and landings, 1967")	October	1968
Vol. 25	("Fishery commodities, 1967")	December	1968
Vol. 26	("Catches and landings, 1968")	October	1969
Vol. 27	("Fishery commodities, 1968")	December	1969

(b) Bulletin of Fishery Statistics This Bulletin is issued from time to time in a limited number of copies to supplement the various volumes of the Yearbook. The following numbers of the Bulletin of Fishery Statistics are of particular interest to individuals and institutions concerned with the North Atlantic fisheries:

No. 14:	"Fishing fleet statistics, 1966"
No. 15:	"Fishing fleet statistics, 1967"

(c) FAO Fisheries Circulars These documents, given very restricted distribution, are mostly short notes, instructions for the completion of statistical forms and questionnaires, lists on various topics or provisional versions of documents which may eventually be issued in final form in one of the preceding series.

Some Circulars, presenting statistical tables with provisional data, are prepared as papers for conferences, committees, commissions and working parties; these tables may eventually be issued after revision in the Yearbook or Bulletin of Fishery Statistics.

During 1968 several Fisheries Circulars continued to be issued to present 1967 data in the tabular shape required by ICNAF and ICES. These data will be published later in the ICNAF Statistical Bulletin and the ICES Bulletin Statistique.

4.3 Inter-Agency Collaboration on Fishery Statistics in the Atlantic

Close collaboration is maintained with the International Commission for the Northwest Atlantic Fisheries (ICNAF) and the International Council for the Exploration of the Sea (ICES).

The work undertaken on behalf of and in collaboration with ICNAF and ICES involves the processing of catch and effort statistics by countries with details according to classes of fishing units, species and fishing areas with the North Atlantic. (See last paragraph under 4.2 (c)).

This close collaboration with ICNAF and ICES is maintained on a permanent basis through the activities of the Continuing Working Party on Fishery Statistics on the North Atlantic Area. This Continuing Working Party was established in accordance with Resolution 23/59 of the Tenth Session of the Conference, on the basis of the recommendations of the Expert Meeting on Fishery Statistics in the North Atlantic Area held in Edinburgh, Scotland, in September 1959.

The Continuing Working Party is keeping under continuous review the progress made in implementing the recommendations of the Expert Meeting on Fishery Statistics in the North Atlantic Area, Edinburgh, 1959, consults with officers of governments and of international organizations with respect to difficulties encountered to this end and makes suggestions for further national and international action in this field as appropriate.

The Fifth Session of this Working Party was held in Aberdeen, Scotland, 10 to 15 April 1967. The report of this Session was issued as FAO Fisheries Report No.45. The Working Party dealt mainly with further refinements and development of the Joint Inter-Agency FAO/ICES/ICNAF Statistical Programme for Catch/Effort Statistics according to fishing areas, species gear and size classes of fishing craft in the Northwestern and Northeastern Atlantic. The FAO Committee on Fisheries, during its Third Session, Rome, 24 to 30 April 1968, decided to recommend to the FAO Council to change the title to "Co-ordinating Working Party on Atlantic Fishery Statistics", and to continue to provide the secretarial services to this CWP which will continue to function on an inter-agency basis with FAO, the International Council for the Exploration of the Sea (ICES), and the International Commission for the North Atlantic Fisheries (ICNAF). It is also proposed that the meetings which will be held annually will deal with the Northern Atlantic every second year and with the Southern and Central Atlantic in alternate years. It has been agreed that the Sixth Session of the CWP will be held in Copenhagen from 3 to 7 February 1969.

4.4 Fishery Statistics in other Fishing Regions

(a) GFCM - the Ninth Session of the GFCM, held in Split, 4 to 9 December 1967, resolved on the setting up of the GFCM Working Party on Fishery Statistics and Biological Sampling. The programme of the Working Party, details of which are available in the Report of the Ninth Session, is directed towards the standardization of fishery statistical concepts and reporting methods throughout the area.

(b) CARPAS - The Third Session of the CARPAS Working Group on Statistics took place in Rio de Janeiro during 3 to 7 June 1968. The English version of the report of the First and Second Sessions has been issued as FAO Fisheries Circular No. 162.

(c) IOFC - the First Session of the Indian Ocean Fisheries Commission (IOFC) took place in Rome from 16 to 21 September 1968. The IOFC recommended the establishment with the IPFC of a joint working party on fishery statistics in the Indian Ocean and the Western Pacific. It is proposed that this body would be somewhat similar to the CWP, and would undertake similar tasks.

4.5 Collaboration with Non-Fishery Statistical Bodies

It is hoped to extend collaboration with international and regional non-fishery agencies concerned in various ways with fishery statistical information, e.g. the UN Statistical Commission and Statistical Office, the Customs Co-operation Council, OECD, the Statistical Office of the European Communities, the Inter-American Statistical Institute, the International Statistical Institute and the Regional Conference of African, Asian and European Statisticians, etc.

4.6 Development of Fishery Statistical Standards

The Branch is devoting further effort to improving the collection, processing and publication of fishery statistical data, including participation in a feasibility study on applying electronic data processing systems to meet the Department's requirements. Particular attention is being given to the international coding of fish species and fishing areas.

5 FISHERY EDUCATION AND TRAINING

(a) Training in the field of Fisheries on the West Coast of Africa

A meeting was held at ILO on 9 September to discuss with representatives of the Ivory Coast a proposed Special Fund project to assist in the organization and equipment of the Attiekoubé Training Centre. This was a follow-up to the request as presented in March 1968 and of the visit to the Ivory Coast of Mr. Siersen from ILO. On the occasion of this meeting it was stressed that the main purpose would be to provide a training vessel and some instructors to strengthen the fisheries training section of the Centre. The project would be a national one but negotiations would be undertaken by the Ivory Coast Government with neighbouring countries in order to investigate what arrangements could be made in order that these countries could send participants to the Centre and participate with the running expenses. At a later stage the Centre could be given regional status. A request along these lines is to be prepared by the Ivory Coast Government, and ILO and FAO would be further consulted before it is forwarded to New York.

(b) A seminar was held from 10 to 30 September 1968 in Berlin under the auspices of the German Foundation for Developing Countries to study the "Possibilities and Problems of Fisheries Development in South-East Asia". More than 30 participants, all of them directors of fisheries or fishery experts, participated in this Seminar. FAO co-operated in the organization of the Seminar and lectures were given by staff members of the FAO Department of Fisheries.

(c) Meeting of the Sub-Committee on Fisheries Education and Training

This Committee will meet immediately before the Fourth Session of the Committee on Fisheries, i.e. in April 1969. It is expected that this meeting will be attended by experts in the field of Education and Training. The proposed agenda will be circulated in the near future.

(d) Proposals have been forwarded to Rural Institutions Division for projects to be undertaken under this programme in 1970/71. The following projects have been proposed, in order of priority, by the Fishery Economics and Products Division:

1. Study on Programming of Fishery Education and Training in Africa.
2. Ten fellowships for training of African staff not only in the existing African training institutions but also in well-established African fishery administration and also complementary training outside Africa whenever required.
3. Seminar on Development of Fishery Industries for English Speaking Countries in Africa.

and the following by the Fishery Resources and Exploitation Division:

1. Training Centres on Fish Finding Equipment and Methods, to be held in close collaboration with the Sardinella SF Projects.
2. Preparation and printing of a Manual for Teachers on Techniques of vocational training of semi-literate fishermen.
3. Printing of Textbook/Manual for boat builders and fishermen on problems concerning replacement of dugout canoes with craft of a more advanced nature.

(e) In co-operation with CSIRO (Australia), FAO will publish French and Spanish versions of the pamphlet "Careers in Marine Science" compiled by members of the Australian Marine Science Association and originally published in English.

(f) FAO/USSR Group Fellowship Study Tour on Fish Behaviour in Relation to Fishing Gear (USSR 23 September to 18 October 1967)

Fourteen representatives from eight countries with developing fisheries participated in an FAO/TA Group Fellowship Study Tour on Fish Behaviour. The Study Tour opened at the All-Union Research Institute of Marine Fisheries and Oceanography (VNIRO) in Moscow. An 11-day seminar was then held at the Georgian Scientific Research Institute of VNIRO at Batumi. During the seminar and the Study Tour, lectures on the subject of the tour were given by 15 USSR fishery scientists and 3 provided by FAO from the UK, USA and Japan.

After the USSR Study Tour, most of the participants attended the FAO Conference on Fish Behaviour in Relation to Fishing Techniques and Tactics in Bergen, Norway. The Norwegian Agency for Development Aid provided Fellowships for their attendance at the Conference.

(g) In collaboration with the South Pacific Commission, FAO conducted in July/August in Koror, Western Carolines, a six week Training Centre on Fishing Techniques for fisheries field officers and leading fishermen from island territories throughout the South Pacific. The Centre closed by mid-August 1968.

A quantitative estimate was prepared of vocational training needs for fishermen in Africa, country by country, and grouped according to language. Based on IWP estimates of present number of fishermen and vessels of various categories in 1962 and with projections to 1985, the number of fishermen needing vocational training was estimated and grouped as to type of training needed.

(h) 2nd FAO UNDP(TA)/USSR Sea-Going Seminar on Marine Resources Research

A second Sea-Going Group Fellowship Study Tour has been organized by FAO in co-operation with the Government of the USSR for November 1968 on board the USSR research ship Akademik Knipovich. Marine research workers from developing countries of the Near East, Europe, Asia and Africa will be participants in the Cruise, during which they will be trained in modern techniques in fishery and environmental research. The training programme will include applied research by the trainees themselves, involving the collection, analysis and evaluation of data.

(i) Training Centre on Methods of Fish Stock Assessment, Denmark - 1968

A Training Centre on Methods of Fish Stock Assessment has been held in Denmark from 26 August to 28 September 1968. The Centre was funded from the Danish Special Contribution and instructors provided by the Danish Government and FAO. Participants were concerned with catch analysis and other research on marine stocks for purposes of assessment, and selected from English-speaking FAO member countries concerned with marine fisheries or fisheries in large inland lakes and seas bordered by more than one country (with the exception of IPFC member countries, for which a similar training centre has already been held in 1964). There was a limit of 25 participants and some scientists from ICES member countries participated at these countries' own expense.

(j) An FAO UNDP(SF) training centre on fish marking and analysis of data from marking experiments in the West African region is being contemplated for Autumn 1969. The course will be organized to train about 20 fishery biologists from the countries participating in the Special Fund Survey on Development of Pelagic Fish Resources. Work has already started on the planning of the shore-facilities for the course.

FIELD OPERATIONS

UNITED NATIONS DEVELOPMENT PROGRAMME

Under the UNDP/Special Fund (UNDP/SF) Scheme the Department of Fisheries is at present responsible for the planning and execution of 40 projects (27 operational and 13 approved but not yet operational) of which there are 17 in Africa, 9 in Central and Latin America, 13 in Asia and 1 in Europe). The total cost for these projects amounts to about 93 million dollars, of which about 39 million dollars are provided by the Special Fund, the rest under Government counterpart contributions. The total cost for those projects concerning marine resources research amounts to about 20 million dollars.

A brief outline is given of projects including some research on marine resources and environment. Five of the 9 UNDP/TA experts are engaged in marine fishery biology.

(a) Technical Assistance Programme (UNDP/TA)

Argentina-Brazil-Uruguay - to review and further develop the national fishery statistical systems of Argentina, Brazil and Uruguay, so as to ensure that the statistics collected and produced will take into account internationally and regionally established statistical standards and will provide the data required nationally, regionally and inter-regionally. The assignment will be completed on 31 December 1968.

British Honduras - the Fishery Biologist who had been advising and assisting the Government on biological investigations of marine fisheries resources with particular reference to spiny lobster completed his assignment in January 1968.

Burma - Fishery Biologist to advise and assist the Government in research and development of the marine fisheries resources. The assignment will be completed on 31 December 1968.

Cuba - Fishery Biologist to work in the Field of fish stock assessment, and Shellfish Biologist to work on oyster culture, spiny lobster and shrimp biology.

Kenya - Fishery Biologist to assist in the development of Kenya's deep sea and off-shore fishing by investigating the nature and composition of fish resources off the Coast of Kenya. One Fishery Statistics Expert.

West Pakistan - Marine Fishery Biologist to initiate a research programme in marine fishery biology aimed at an estimation of deep water fishery resources of Pakistan and to explore practical aspects of deep sea fishing.

Philippines - Fishery Statistics Expert.

Asia and Far East - Fishery Statistics Expert.

(b) Special Fund Projects (UNDP/SF)

(i) Projects in operation

Argentina - Fisheries Development Project (exploratory and experimental fishing, biological and environmental studies, industrial feasibility studies, development services). Two Fishery Biologists. Mar del Plata. Duration 5 years from 15 June 1966.

Brazil - Fisheries Research and Development Project (assistance in strengthening the Brazilian fisheries administration, training of key personnel). Rio de Janeiro. Duration 5 years from 3 January 1967.

Cameroon-Central Africa Republic-Congo (Brazzaville)-Gabon - Fish culture Training and Research. (Assistance in expanding and developing fish culture through training and research. Bangui. Duration 5 years from 1 December 1967.

Caribbean Region - Regional Fisheries Development Project (research and training in the field of fisheries - exploratory fishing, market research and demonstrations). Headquarters at Bridgetown, Barbados. Participating states and territories include Barbados, Guyana, French Guiana, Guadelupe, Martinique, Jamaica, Leeward Islands, Netherlands Antilles, Surinam, Trinidad and Tobago, Grenada, St. Lucia and St. Vincent, Dominican Republic and Puerto Rico. Duration 4 years from 27 August 1965.

Central America - Fishery Development Project (survey of fishery resources of the Central American isthmus, development of production and consumption of fish and fish products). Three Fishery Biologists. Participating countries: Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. Headquarters in San Salvador. Duration 6 years from 28 November 1966.

Chile - Fisheries Development Institute (research and development programmes in the fields of fisheries oceanography, marine resources research, economics and fish processing). Three Fishery Biologists, 1 Fishery Oceanographer. Santiago. Duration 5 years from 13 November 1963. The project will be completed on 13 November 1968.

Colombia - Marine Fisheries Development Project (advisory services for marine fisheries development, marine resources research, training of fishery biologists and fishermen, experimental fishing). Three Fishery Biologists. Bogota. Duration 4 years from 5 January 1968.

Congo (Brazzaville) - Survey and Development of Pelagic Fish Resources (studies on distribution and biology and pelagic coastal fish, in particular co-ordinated with similar activities in Senegal, Sierra Leone, Ivory Coast and Ghana). Four Fishery Biologists, 1 Fishery Oceanographer. Point-Noire. Duration 4 years from 30 October 1967. Subcontracted to ORSTOM.

Federation of South Arabia - Fishery Development in the Gulf of Aden (survey of fishery resources). Two Fishery Biologists. Aden. Duration 3 years from July 1966 (Suspended).

Ghana - Fishery Research Unit (marine resources research, mainly on Sardinella and other pelagic fish, improvements in fishing techniques). Seven Fishery Biologists. Accra. Duration 5 years from 18 October 1966.

India - Central Institute of Fisheries Education (for training of fisheries officers at district level). One Fishery Biologist (Assignment completed). Bombay. Duration 3 years from 1 September 1964 - extended until 30 September 1968 and will probably be extended until 30 September 1968 and will probably be extended through 31 March 1969.

India - Pre-Investment Survey of Fishing Harbours (economic and Technical studies to identify priority sites for fishing harbours; preliminary construction plans). New Delhi. Duration 5 years from 20 October 1967.

Ivory Coast - Survey and Development of Pelagic Fish Resources (similar work as in Congo (Brazzaville), supplemented by a Regional Fisheries Survey by means of a charter vessel to operate between Senegal and Congo River). Four Fishery Biologists. Abidjan. Duration 4 years from 6 October 1967.

Korea - Deep-sea Fisheries Centre (training of qualified skippers and engineers). Pusan. Duration 5 years from 1 December 1964.

Lake Chad - Survey of the water resources of the Chad Basin and development purposes. Project began May 1967. One Fishery Statistics Expert.

Lake Kariba - Lake Kariba Fisheries Research Institute. Development of Fishing Industry and ancillary activities in the lake Kariba area. Chilanga. Duration 4 years from 31 October 1963.

Lake Kainji - Lake Kainji Research. Assistance in the establishment and initial operation of a Kainji Lake Research Centre, to work in the fields of limnology and Fisheries, Sociology and economics of resettlement, public health and diseases, conservation and tourism, Lagos. Duration 6 years from 12 August 1968.

Lake Nasser - Lake Nasser Development Centre, Aswan. (Assistance in the establishment and initial operation of the Lake Nasser Development Centre which is to carry out research and planning in selected fields and problems in the development of the Lake's resources and will provide advisory services to appropriate related agencies. Cairo. Duration 5 years from 3 July 1968.

Lake Volta - Volta Lake research. To assist the Government of Ghana in research on fisheries and hydrobiology, public health and resettlement of the peoples displaced by the Volta Lake. Accra. Duration 3 years from 29 January 1968.

Nigeria - Fisheries Survey in the Western and Mid-Western regions, especially fish stock survey and exploratory experimental fishing. One Fishery Biologist. Lagos. Duration 4 years from 23 May 1963 - extended until 31 May 1968. Project completed on 31 May 1968.

Peru - Fishery Research and Development Project (additional assistance to the Instituto de Mar del Peru for further study of anchovy stocks and survey of other fishery resources, experimental fishing, economic studies and advice). Two Fishery Biologists and Consultants in population dynamics. Callao. Duration 4 years from 17 July 1967.

Philippines - Deep-Sea Fishing Development (exploratory and experimental fishing and training programme in deep-sea fishing operations, fish processing and marketing, to advise on technical and economical planning). One Fishery Biologist. Manila. Duration 5 years from 18 May 1965.

Senegal - Survey and Development of Pelagic Fish Resources (similar work as in Congo (Brazzaville) supplemented by a Regional Fisheries Survey (see Ivory Coast)). Two Fishery Biologists. Dakar. Duration 5 years from 9 May 1968.

Sierra Leone - Survey and Development of Pelagic Fish Resources (similar work as in Congo (Brazzaville), supplemented by a Regional Fisheries Survey (See Ivory Coast)). One Fishery Biologist. Freetown. Duration 5 years from 27 November 1967.

Venezuela - Fishery Research and Development Project (evaluation of marine resources, especially coastal pelagic fish stocks, exploratory and experimental fishing consultant services in processing technology, marketing and infrastructure). Four Fishery Biologists. Caracas/Cumana. Duration 5 years from 20 December 1967.

Viet Nam - Off-shore Fishery Development Project (exploratory and experimental fishing in off-shore waters, training of fishermen). Saigon. Duration 4 years from 19 March 1968.

Yemen - Fishery Development in the Gulf of Aden. Pre-investment surveys of the fishery resources of the Gulf of Aden and nearby waters and training of some off-shore fishing crews. One fishery biologist and one oceanographer. Duration 3 years from 1 July 1966. Aden.

(ii) Projects approved but not yet operational

Indonesia (West Irian) - Marine Fishery Development (to assist the Government of Indonesia in developing the marine fisheries of the West Irian). Duration 4 years.

Indonesia - Inland Fishery Development (To assist the Government of Indonesia in developing the inland fisheries of the West Irian). Duration 2 years.

Jordan - Fishery Development (Development of Jordan's fishing industry through a demonstration fishing scheme and the training of Jordanian fisherment. Duration 3 years.

Korea - Coastal Fishing Training Centre, Pusan (to assist in providing the expanding fishing industry with trained technicians to operate modern fishing vessels in coastal and nearby high seas areas. Duration 5 years.

Korea - Fishery Advisory Services (to assist the Government and the industry in detailing the current programme of fishery development). Duration 1 year.

Madagascar - Fishery Development Project (development of fishing industry by training personnel, undertaking trial and demonstration fishing, marketing studies). One Fishery Biologist. Tananarive. Duration 4 years.

Malaysia - Fishermen's Training Centre (to assist the Government in the development of the fishing industry through the establishment (including assistance in operation during the initial five years) of a Fisheries Training Centre, to train fishing technicians). Duration 5 years.

Mauritius - Fishery Development Project (development of fishing industry through demonstration fishing and marketing studies). Duration 3 years.

Mexico - Fishery Research and Development Project (advisory services for fisheries development, resources surveys off Baja California, lower mainland Pacific coast and Gulf of Mexico coast, shrimp research, experimental fishing, fish processing). Three Fishery Biologists; One Fishery Oceanographer. Duration 5 years.

Poland - Establishment of a Research Centre for High Seas Fisheries (investigations in the field of fisheries oceanography, biology, fishing and processing, and training of research officers, supervising technicians in distant water fishing). Possibly Gdynia. Duration 4 years.

Singapore - Fisheries Training and Research Centre (mainly training of fishing technicians). One Fishery Biologist. Singapore. Duration 5 years.

Somalia - Fishery Survey Project (marine resources surveys). One Fishery Biologist (tuna). Mogadiscio. Duration 2 years.

Zambia - Central Fisheries Research Institute (to assist the Government in the fields of research and training in order to develop to the fullest extent the fisheries of its major lakes and rivers). Duration 4 years.

Other projects are being considered

FORTHCOMING MEETING ON MARINE SCIENCES

SEPTEMBER 1968 TO AUGUST 1969

Bordeaux. Université, Institut de Biologie Marine: 2.9.68. Arcachon, France, 6 days, 3rd European Symposium on Marine Biology. (Institut de Biologie Marine de l'Université de Bordeaux (E.M.B.S. - 111) 33-Arcachon, France)

IUCN. 2.9.68. Paris, France, 2 days. Meeting.

OECD. Committee on Fisheries. 2.9.68. Paris, France. 3 days. 20th Session.

AIBS. 3.9.68. Columbus, Ohio, USA. 5 days. Annual Meeting.

ASLO. 3.9.68. Columbus, Ohio, USA. 5 days. 1968 Special Meeting. In conjunction with AIBS Meeting.

FAO/ILO/IMCO. 4.9.68. Geneva, Switzerland. 10 days. Inter-Secretariat Meeting on the code of practice on safety on board fishing vessels.

UNESCO/UN/FAO/WMO/IUCN/IBP. 4.9.68. Paris, France. 10 days. Conference on the scientific basis for rational use and conservation of the resources on the biosphere.

American Fisheries Society. 9.9.68. Tucson, Arizona, USA. 3 days. 98th Annual Meeting.

International Seaweed Symposium. 9.9.68. Santiago de Compostella. Spain. 5 days. 6th Symposium. (Sr. D. Alegario Rodriguez Martin. Direccion General de Pesca Maritima. Ruiz de Alarcón 1, Madrid, Spain)

Zoological Society of London. 10.9.68. London, England, UK. 2 days. Symposium on the biology of the Porifera.

MMSC. 11.9.68. Gabes, Tunisia. 2 days. 3rd Session of advisory committee.

Aquatic Microbiology Group. 12.9.68. Glasgow, England, UK. 2 days. Meeting.

Atlantic Fisheries Technological Conference. 15.9.68. (W.A. MacCallum, FRB Technological Unit. PO Box 5653. St. John's, Newfoundland, Canada).

IOC. 16.9.68. Paris, France, 5 days. 1st Meeting of IOC Working Group on legal questions related to scientific investigations of the resources of the ocean.

IOFC. 16.9.68. Rome, Italy. 6 days. 1st Session.

Institution of Civil Engineers/Hydraulic Experiment Station, Wallingford/American Society of Civil Engineers, Coastal Engineering Research Council. 16.9.68. London, England, UK. 5 days. 11th Conference on coastal engineering.

IMCO. 17.9.68. London, England, UK, 1 day. 6th Session of the sub-committee on safety of navigation.

CIESMM. 19.9.68. Monaco, France. 2 days. 2 days of planktonological studies. In conjunction with CIESMM 21st Congress on 22.9.68.

International congress on marine corrosion and foulings. 29.9.68. Athens, Greece. 5 days. 2nd Congress. (National Technical University of Athens, Laboratory of Physical Chemistry. 42, 28th October Str., Athens, Greece).

FAO. 21.9.68. Bagdad, Irak, 20 days. Near East regional conference.

CIESMM. 22.9.68. Monaco, France, 6 days. 21st Congress.

Water Pollution Control Federation. 22.9.68. Chicago, Ill. USA. 6 days. Meeting. (Mr. R.E. Fuhrman, Water Pollution Control Federation, 4435 Wisconsin Avenue, NW, Washington, DC. 20016. USA)

FAO. 23.9.68. Bremen, Federal Republic of Germany. 6 days. Conference on Fishing Ports and Port Markets. (Mr. C. Campleman, FAO, Dept. of Fisheries, Via delle Terme di Caracalla, Rome, Italia.

IOC. 23.9.68. Paris, France, 4 days.
4th Meeting of the IOC working group on
oceanographic data exchange.

Office International des Epizooties
(O.I.E.). 24.9.68. 4 days. 3rd World
symposium on fish diseases.

Challenger Society/Representatives from
the Marine Laboratories. 26.9.68.
Liverpool, England, UK. 2 days. Meeting.

ICES. 26.9.68. Charlottenlund,
Copenhagen, Denmark. 3 days. Symposium
on biology of early stages and recruit-
ment mechanisms of herring. In con-
junction with ICES 56th Statutory
Meeting 30.9.68. (Mr. A. Saville,
Marine Laboratory, Victoria Road, Torry,
Aberdeen, Scotland.)

ICES. 30.9.68. Copenhagen, Denmark.
10 days. 56th Statutory Meeting. (Mr.
H. Tambs-Lynche, Charlottenlund Slot,
Charlottenlund, Denmark).

International Association of Fish Meal
Manufacturers. 39.9.68. Bremen, Germany.
5 days. 6th Annual Conference. (Inter-
national Association of Fish Meal Manu-
facturers, 70 Wigmore St. London. W.1.
England, UK).

FAO. September 1968 (tent.). Reykjavik,
Iceland. 6 days. 6th Session of continuing
working party on fishery statistics in the
North Atlantic area (STANA). (Mr. L.P.D.
Gertenbach, FAO, Dept. of Fisheries, Via
delle Terme di Caracalla, Rome, Italy).

Canada, Department of Fisheries, Federal-
Provincial Atlantic Fisheries Committee.
1.10.68. Montreal, Canada. 3 days.
Conference on fishing vessel construction
materials. (Secretariat, Industrial
Develop. Service, Dept. of Fisheries of
Canada, Ottawa, Canada).

SPC. 2.10.68. Noumea, New Caledonia.
10 days. 8th Session of the Conference.

FAO. 7.10.68. Rome, Italy. 16 days.
51st Session of FAO Council.

FAO/WHO. 7.10.68. Bergen, Norway, 5
days. 3rd Session of the codex committee
on fish and fishery products of the Codex
Alimentarius Commission.

IMCO. 7.10.68. Rome, Italy. 3 days.
Informal International Conference of national
committees for the prevention of oil
pollution.

IMCO. 8.10.68. London, England, UK. 4
days. 2nd Session of sub-committee on ship
design equipment.

IPFC. 21.10.68. Brisbane, Australia. 2
days. 43rd Session of Executive Committee.

Pacific Tuna Conference. 13.10.68. Lake
Arrowhead, Calif. USA. 4 days.

IPFC. 14.10.68. Brisbane, Australia.
12 days. 13th Session.

UNESCO. 15.10.68. Paris, France. 38 days.
15th Session of the general Conference.

League of Arab States. 19.10.68. Cairo,
UAR. 12 days. Meeting on water resources
and oceanography.

IMCO. 21.10.68. London, England, UK.
1 day. 18th Session of the maritime safety
committee.

INPFC. 21.10.68. Seattle, Wash. USA. 11
days. Meeting of committee on biology and
research. In conjunction with INPFC Annual
meeting 4.11.68.

Gulf States Marine Fisheries Commission.
24.10.68. Biloxi, Miss, USA. 2 days
Meeting.

IPFC. 26.10.68. Brisbane, Australia. 1
day. 44th Session of executive committee.

FAO. 28.10.68. Malta. 4 days. 6th Session
of the FAO regional conference for Europe.

International Association of Fish Meal
Manufacturers. October 1968. Bremen.
Germany. Meeting.

SPC. October 1968. Noumea, New Caledonia.
31st Session.

Linnean Society of London/British Ecologi-
cal Society, tropical group. 31.10.68.
London, England, UK. 2 days. Symposium on
speciation in the tropical environment.

FAO. 4.11.68. Bangkok, Thailand. 12 days.
9th Session of the Far East regional con-
ference.

- INPFC. 4.11.68. Seattle, Wash, USA. 6 days. Annual Meeting.
- CARPAS. 8.11.68. Rio de Janeiro. Brazil-5 days. 4th Session.
- COFI. 18.11.68. Miami Beach, Fla, USA. 4 days. 21st Annual Session.
- IMCO. 26.11.68. London, England, UK. 1 day. 4th Extraordinary session of the assembly.
- FAO. 18.11.68. Kampala, Uganda. 13 days. Afrida regional conference.
- IAEA. 18.11.68. Vienna, Austria. 5 days. Panel of experts on the reference methods for marine radioactivity studies.
- UNESCO/FAO. 18.11.68. Willemstad. Curaçao, N.A. 9 days. Symposium on investigations and resources of the Caribbean Sea and adjacent regions.
- UN. 18.11.68. Bangkok, Thailand, 8th Session of the regional conference on water resources development.
- Miami. University, Institute of Marine Sciences. 18.11.68. Miami Beach, Fla, USA. 4 days. Meeting.
- IOC. 25.11.68. Curaçao, N.A. 2 days. 1st Meeting of the international co-ordination group for the co-operative investigations of the Caribbean sea and adjacent regions. (In conjunction with UNESCO/FAO Symposium 18.11.68)
- IMCO. 25.11.68. London, England, UK. 1 day. 21st Session of Council.
- Central Marine Fisheries Research Institute. 1st week of November 1968. Cochin, India. Symposium on the living resources of the seas around India. (Director, Central Marine Fisheries, Research Institute, Marine Fisheries, PO. Mandapam Camp, Madras State, India).
- IBP. November 1968. Koror Island, Palau Islands. Meeting of island ecosystem.
- COFI(FAO). 2.12.68. Undetermt. 6 days. 2nd Session of sub-committee on the development of co-operation with international organizations concerned with fisheries. (Mr. H. Rosa, jr.. FAO, Dept. of Fisheries, Via delle Terme di Caracalla, Rome, Italia).
- FAO. 2.12.68. Kinstown, Jamaica. 21 days. Latin America regional conference.
- IOC. 2.12.68. Paris, France. 3 days. 1st Meeting of IOC Working party group on training and education in oceanography.
- UNESCO. 2.12.68. Paris, France. 5 days. Panel on hydrological studies affecting the use of saline waters.
- American Fisheries Society, North Central Division. 9.12.68. Columbus, Ohio, USA. 3 days. 30th Annual midwest fish and wildlife conference.
- IMCO. 9.12.68. London, England, UK. 8 days. 5th Session of the su-committee (and working group) on oil pollution.
- FAO. 16.12.68. Rome, Italy. 5 days. 2nd Ad hoc consultation on codes of practice for fish and fishery products. (Dr. R. Kreuzer, FAO, Dpt. of Fisheries, Via delle Terme di Caracalla, Rome, Italia).
- GFCM. December 1968. Rome, Italy, 4 days. Working party on fresh, brackish and hypersaline water fisheries.
- Marine Biological Association of India. 12.1.69. Mandapam Camp, India. 5 days. Symposium on corals and coral reefs.
- ICNAF. 23.1.69. London, England, UK. 8 days. Meeting of the standing committee on regulation measures and of the assessment working group.
- FAO. 3.2.69. Copenhagen, Denmark, 7 days. 6th Session of continuing working party on fishery statistics in the North Atalntic.
- International Oceanological Equipment and Services Exhibition-Oceanology International 69. 18.2.69. London, England, UK. 4 days. (BPS Exhibition Ltd, 6 London Street, London W.2. England, UK.)
- The Society for Underwater Technology. 18. 2. 69. Brighton, England, UK. 4 days. Conference on underwater technology.
- GFCM. February 1969. Rome, Italy. 5 days. 2nd Session of the meeting of working party on fishery statistics and biological sampling.

UNESCO. Spring 1969. Hamburg, Germany.
3rd Session of Committee of check-list
of the fishes of the North-eastern
Atlantic and Mediterranean.

Optical Society of America. 11.3.69.
San Diego, California, USA. 5 days.
Symposium on hydro-optics. (Optical
Society of America. Dr. Mary E. Warga,
Executive Secretary, 2100 Pennsylvania
Avenue, NW. Washington, DC. 20037, USA.

La Société des Ingénieurs Civils de France/
la Société Française des Ingénieurs d'Outre-
Mer/l'Association Nationale des Docteurs
des Sciences Economiques: 15 days. 1st
congress-cruise on water and its resources.

British Ecological Society. 25.3.69.
Aberdeen, Scotland, UK. 4 days. Symposium
on animal populations in relation to their
food resources.

COFI(FAO). April 1969. Rome, Italy.
6 days. 4th Session.

UNESCO/Romanian Government/IASH. 22.4.69.
Bucarest, Romania. 8 days. International
hydrological decade - symposium on the
hydrology of the deltas.

NEAFC. 7.5.69. London, England, UK.
6 days. 7th Meeting.

PSA. Early May 1969. Kuala Lumpur,
Malaya. Inter-congress meeting.

Marine Technology Society. Spring 1969.
Honolulu, Hawaii, USA. Congress on food
from the sea. (Marine Technology
Society, 1030 15th Street, NW. Washington,
DC. 10005. USA).

ICNAF. 2.6.69. Warsaw, Poland. 6 days.
Meeting.

Institute of Marine Engineers. London,
England, UK. 11 days. International
Marine and shipping conference.
(Institute of Marine Engineers, 76 Mark
Lane, London, E.C. 3. England, UK).

FAO. 15.7.69. Halifax, Nova Scotia,
Canada. 11 days. Technical conference
on fish inspection and quality control.

FAO. International Conference on Invest-
ment in Fisheries. 18.9.69. Rome, Italy.
7 days. Conference.

International Botanical Congress. 24.9.69.
Seattle, Washington, USA. 10 days. 11th
Congress. (Dr. R. Cowan, Secretary, 11th
International Botanical Congress,
Smithsonian Institution, Washing, DC.
20560, USA.

OTHER FORTHCOMING MEETINGS OF INTEREST

SEPTEMBER 1968 TO AUGUST 1969

International Association on Water Pollution
Research. 2.9.69. Prague, Czechoslovakia.
5 days. 4th International conference on
water pollution research.

United Nations Conference on Trade and
Development. 2.9.68. Geneva, Switzer-
land. 19 days. 7th Session of the
Conference.

Slovak Academy of Sciences. 4.9.68.

Smolenice (Bratislava), Czechoslovakia.
4 days. International conference on the
interpretation of ageing and growth based
on scale structure and bone structure of
fishes. (Mr. J. Holčík, Slovak National
Museum, Vajanské nábřežie 2, Bratislava,
Czechoslovakia).

FID. 9.9.68. Moscow, USSR; 6 days. 34th
Conference.

International Biodeterioration symposium.
9-9-68. Southampton, England, UK. 6 days.
1st Symposium. (Secretary, 1st International Biodeterioration Symposium, 14 Belgrave Square, London, SW.1. England, UK).

WMO. Commission for Hydrological Meteorology. 9.9.68. Geneva, Switzerland 13 days. 3rd Session.

Pugwash Conference on Science and World Affairs. 11.9.68. Nice, France. 6 days. 18th Conference.

ECE(UN). 16.9.68. Geneva, Switzerland. 5 days. Body on water resources utilization and water pollution control.

FID. 16.9.68. Moscow, USSR. 3 days. International congress.

IAL. Arbeitsgemeinschaft Donauforschung. 23.9.68. Zurich, Switzerland. 7 days. 21th Meeting.

IAEA. 24.9.68. Vienna, Austria. 11 days. 21th Regular session of the general conference.

ICSU. 28.9.68. Paris, France. 6 days. 21th General assembly.

United Nations Conference on Trade and Development. 8.10.68. Geneva, Switzerland. 21 days. 3rd Session of the committee on manufactures.

European Federation for the Protection of Waters/Federazione delle Associazioni Scientifiche e Tecniche (Milano). Symposium on the catastrophes and protection of waters.