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Report by FAO Fisheries Division to the
13th Meeting of ICNAF (May - June 1963)

The following notes report action by FAO Fisheries Division in response to recommendations made in the 12th Meeting of ICNAF and other aspects of the current work of the Division on projects concerning fisheries research and oceanography, in which it is believed that the Commission may be interested.

1. INFORMATIONAL SERVICES, BIBLIOGRAPHIES, REFERENCE BOOKS

1.1 Information - general

1.1.1 The Biology Branch, Fisheries Division, FAO, continued to prepare, on the basis of its registers of fisheries institutions and experts in fisheries science, lists of institutions and of workers in particular subjects.

1.1.2 Twelve parts and indexes to Volume 5 of the printed version of Current Bibliography for Aquatic Sciences and Fisheries have now been published. This work continues in collaboration with other international organizations and research institutions and an advance has been made in the provision, jointly by FAO and the Aquatic Sciences Information Retrieval Centre (ASIRC) at the University of Rhode Island, U.S.A., of an integrated information retrieval service for marine and freshwater sciences. This integration has been achieved by the provision to FAO by ASIRC of punch-tape typewriters, so that machine search and print-out of selected bibliographies, sorted and indexed lists of experts and specialised institutions, and scientific periodicals, names of aquatic organisms, etc. are now possible. A code for genera of marine and freshwater organisms has been issued; special bibliographies and lists of scientists have been prepared as background material for meetings and in response to requests from regional bodies and other sources. Several hundred individual requests for such information have been met. ICNAF Secretariat has been directly supplied by ASIRC with manuscripts containing bibliographic references on the ICNAF area, for use in making the ICNAF list.

1.1.3 World List of Periodicals for Aquatic Sciences and Fisheries

The first volume of this list, containing the titles and their short forms of several thousand periodicals, has now been distributed as FAO Fish. Biol. Tech. Pap., (19.1):239 p. + xl9. The first supplement is being prepared and others will be issued regularly.

The second volume to be prepared in 1963 will give indexes to the list, and detailed bibliographic information, such as languages of texts and summaries, publishing address, subject coverage, availability (exchange, subscription, etc.) and frequency.

- 1.1.4 A paper entitled "A developing aquatic sciences information retrieval system", at the University of Rhode Island and based on the FAO Current Bibliography and related projects, has been published by J.S. O'Connor and S.B. Saila (1962) in Trans. Amer. Fish. Soc. 91(2): 151-154. Reprints are available.

A second paper "An international service for retrieving aquatic science literature" by S.B. Saila, J.S. O'Conno and R.A. Shappy, as FAO Fish. Biol. Tech. Pap., (28): 8 p. has now been published and distributed.

- 1.1.5 The newsletter "International Marine Science"

The first issue of International Marine Science, a quarterly newsletter prepared jointly by the Office of Oceanography of UNESCO and the Biology Branch of the Fisheries Division of FAO is now in press. The newsletter is intended to help marine scientists, administrators and government officials to be better informed on international, regional and significant national activities in this field.

The newsletter is based on information supplied to its compilers. Certain information is now furnished more or less regularly to UNESCO and to FAO and a further requirement for reporting has been established by the IOC. Material for sections on "Meetings" and "Training facilities" and under the section "Miscellaneous news items" on new periodical publications, research vessels and laboratories, is prepared by FAO, and pertinent information should be reported to the FAO Fisheries Division, Biology Branch. These items in some cases replace and continue certain sections of the FAO Current Bibliography for Aquatic Sciences and Fisheries.

Approximately 2,500 copies of this issue are being printed. An initial mailing list has been established jointly by UNESCO and FAO in order that the newsletter shall be available to both governmental and academic institutions concerned with the marine sciences and including other international and regional organization

1.2 Reference Books

1.2.1 Sampling Manual

- Gulland, J. (1962)
Manual of sampling methods for fisheries biology.
FAO Fish. Biol. Tech. Pap., (26): 75 p.
has now been published and distributed.

This first draft of the Manual has so far been used in the Cronulla and Lowestoft Population Dynamics Training Courses. The final version will be re-published in the Manual series after the revision of the first draft is completed.

1.2.2 Manual on Gear Selectivity

Mr. Pope (Aberdeen) has now completed the final draft which incorporates the comments and additions made by the Biology Branch. The first version of the Manual will be printed in the FAO Fisheries Biology Technical Paper series. FAO has brought to the attention of research workers in Australia and the Mediterranean region the decision of ICES to use the so-called ICES gauge as a reference standard for research purposes.

We have already made available one gauge for tests in Australia and have ordered two more from the manufacturers to be tested in Eastern and Western Mediterranean. Other tests will be conducted in Japan and other IPFC countries.

1.2.3 Manual on Fish Tagging

FAO is planning to give wide distribution to the Proceedings of the ICNAF Meeting so that the scientists engaged in similar research will benefit from this publication until the Tagging Manual is printed.

1.2.4 Manual on Stock Assessment

Little progress has been made with this, but Mr. S. J. Holt and Mr. Cadíma have completed drafts of some sections, and other sections will be based on the material prepared by Mr. J. A. Gulland and collaborators for the 2nd Low-stoft Training Course in Stock Assessment held in February-March 1963.

2. AQUATIC RESOURCES APPRAISAL

2.1 Country and regional appraisals, reviews or synopses

2.1.1 As an aid to the preparation of such synopses for marine areas, the following paper was issued in June 1962:

- Biology Branch, Fisheries Division, FAO (1962)
Preparation of regional fisheries oceanographic synopses
FAO Fish.Biol.Synops., (5-Rev.1): 14 p.

2.2 Reviews or synopses of aquatic forms of economic importance

2.2.1 General

The following synopsis:

- Wise, J.P. (1961)
FAO Fish.Biol.Synops., (21): 46 p.
Synopsis of biological data on cod Cadus morhua
Linnaeus 1758.

is now being revised by a small group of cod experts consisting of Dr. J. Corlett (U.K., Convener), Mr. A. Hylan (Norway), Mr. Jón Jónsson (Iceland), Dr. Ju. Ju. Marty (U.S.S.R.), and Dr. U. Schmidt (Federal Republic of Germany) appointed by the ICE at its last statutory meeting. The purpose of this revision is to enlarge its original contents to properly cover the whole area of distribution of the species.

The Branch is continuing to develop the Fisheries Synopsis Series and considers that Melanogrammus aeglefinus and the species of the genus Hippoglossus are among those which should have in the future the highest priority. The co-operation of ICNAF in helping to prepare synopses on those species would be very welcome.

2.2.2 Tunas

The FAO World Scientific Meeting on the Biology of Tunas and Related Species, at which 34 synopses were presented, was held 2-14 July 1962 at La Jolla, California. It was attended by about 250 participants including delegates from France, Israel, Spain and the United Arab Republic.

In addition to thirty-four synopses on the biology of tunas and related species, another 58 contributions were issued as documents of the Meeting, and a report was drafted containing the results of the work of the Meeting. The report has now been published as the first volume of the Proceedings of the Meeting. All the contributions will be issued in four volumes sometime in 1963.

Among the 22 Resolutions approved by the Meeting, Resolutions (5) International Tuna Tagging Programs; (6) Collection, Collation and Dissemination of Catch and Effort Statistics; (9) World-wide study of Tuna Eggs, Larvae and Juveniles; (12) Relation of Tuna Research to Ocean-Wide Surveys; and (19) Provision for Continuing Committee, are of special interest to the Commission. The Director-General of FAO has in response to Resolution (19) established a Continuing Committee for Facilitation of Tuna Research consisting of scientists selected from the FAO Panel of Fisheries Experts.

2.2.3 Prawns and Shrimps

The Eleventh Session of the Conference of FAO (November 1961) noted that international meetings had been held for the exchange of technical information on fisheries biology and to discuss future lines of research. It subscribed to proposals to hold similar future international meetings for example, one on "Shrimps", subject to the availability of funds (Conference Proceedings, Eleventh Session, Rome, 4 November 1961, Provisional Report, 5 December 1961, Paragraph 234).

The Shellfish Committee of ICES at its last session appreciated the value of holding a world meeting devoted to the biology and culture of shrimps and prawns under the auspices of FAO, and offered to assist in the formulation of a program for such a meeting.

Consideration is being given to include such a meeting in the FAO Program of Work and Budget for 1966/67.

3. RESEARCH, METHODOLOGY AND TECHNIQUES

3.1 Standardization of equipment and methods of assessment of plankton populations

3.1.1 FAO has kept in touch with work of SCOR and an IOC working group on this subject with reference to the International Indian Ocean Expedition (IIOE). This group has agreed to standard reference methods of zooplankton sampling and field comparisons of different methods are in progress

3.1.2 FAO considers of fundamental importance those projects of standardization and intercalibration, and is prepared to support them, either directly or through its regional Fishery Councils. Considerable attention was devoted to these matters by ACMRR.

3.2 Identification of aquatic organisms

A list of genera of aquatic organisms indexed up to and including Vol. 5 of the "Current Bibliography for Aquatic Sciences and Fisheries" was issued by FAO as:

- FAO Fisheries Division Biology Branch (1961-)
Current Bibliography for Aquatic Sciences and Fisheries -
Taxonomic Classification. Alphabetical Key to 8 digit Code
FAO Fish.Biol.Tech.Pap., (12): 84 p.

These names and related information have now been put on IBM punch-cards at the Aquatic Sciences Information Retrieval Center Rhode Island, U.S.A., which will in future assist FAO in the preparation of supplements to and revisions of the generic list as well as analyses of the taxonomic code. Common names of organisms of commercial importance will also be included on the punch-cards, as those are augmented from level of genus to that of species and sub-species.

3.3 Population dynamics, age determination, fish behaviour and related studies

Concerning the progress towards development of methods of stock assessment without recourse to age determination, the following paper was published:

- Holt, S.J., (1962) The application of comparative population studies to fisheries biology - an exploration. pp. 51-71. In Le Cren, E.D., and M.W. Holdgate [ed.] The exploitation of natural animal populations. British Ecological Society, Symposium (2). Oxford, Blackwell Scientific Publications.

Mr. E. Cadima working as a consultant to FAO, has made further progress in this matter, an account of which will be published and made available at a later date.

3.4 Oceanography

3.4.1 The following papers concerned with general and fishery oceanography have been published and distributed:

- Popovici, Z. (1963)
Considerations on fishery oceanography
FAO Fish.Biol.Tech.Pap., (29): 6 p.
- Laevastu, T. (1962)
The effects of current eddies on the distribution of plaice eggs
FAO Fish.Biol.Tech.Pap., (21): 4 p.
- Cushing, D.H. (1962)
Current Bibliography for Aquatic Sciences and Fisheries. Volumes 1 to 3 and 1957 Supplement Subject Index (Physical Oceanography)
FAO Fish.Biol.Tech.Pap., (25): 32 p.

3.4.2 Serial Atlas for Marine Environment

Folio 2 has been printed and is now on sale. Some other folios are under preparation: Folio 5 - Surface Water Types in the North Sea, by T. Laevastu; this Folio is revised Sub-section (4.5) of the North Sea Synopsis. Mr. F. E. Lumb (U.K.) has prepared a section on Sea and Swell for the North Sea (Section 3 of the revised North Sea Synopsis). The ICES Working Group on the North Sea Synopsis, under the Chairmanship of Dr. J. N. Carruthers, has taken over the general responsibility for this Synopsis.

Oceanographic synopses prepared under FAO sponsorship will generally be issued as documents in the series "FAO Fisheries Biology Synopses". However, to avoid duplication of effort and facilitate ease of reference to these compilations by fisheries scientists, FAO has decided with the agreement of the Advisory Group for the "Serial Atlas" to submit instead for publication in the Atlas all such material pertaining to the areas within its scope, and to encourage other organizations, institutions and persons to do likewise. Since the area covered by base maps now includes the Mediterranean and much of the African west coast, the General Fisheries Council for the Mediterranean and the newly formed West Africa Fisheries Commission respectively have been informed of this decision, and asked to consider taking similar steps for their particular area. The GFCM has agreed, initially, to use the base maps for its projects concerning biology, statistics and fisheries for sardines and tunas. The FAO Advisory Committee for Marine Resources Research, at its first Session in Rome January 1963, proposed the GFCM and the International Commission for the Scientific Exploration of the Mediterranean Sea should collaborate in preparing a synopsis for the Mediterranean according to the standard pattern, and FAO has also proposed that the Serial Atlas base maps should be used for presentation of results of the Guinean Trawling Survey being conducted under the auspices of the CCTA, the EQUALANT surveys sponsored by the IOC under UNESCO, and the NORWESTLANT project of ICNAF.

- 3.4.3 The 11th FAO Conference recommended that the possibility of holding a world symposium on Fishery Oceanography in 1964-65 biennium should be explored. The ACMRR considered that a symposium on the Effects of Environment on Fish Abundance and Distribution should receive top priority. The Secretariat was requested to prepare some material for further discussion and final decision at the second ACMRR session.

The results of the ICNAF symposium on the influence of the environment on the groundfish stock in the North Atlantic would represent a very valuable contribution to the proposed FAO world meeting on Effects of Environment. FAO would welcome ICNAF comments and suggestions on this project.

- 3.4.4 FAO was happy that ICNAF had accepted the invitation to hold the ICNAF Environmental Symposium in FAO Headquarters, in Rome (January 1964). Correspondence has been exchanged with Dr. C. E. Lucas, Convener of the Symposium.

4. FAO ADVISORY COMMITTEE ON MARINE RESOURCES RESEARCH

In recent years fisheries research and oceanography has shown an important expansion at national and international levels. In relation to this development, efforts have been made to adapt the existing international organizations and to meet the increasing need for co-ordination and co-operation in this field to set up new bodies where necessary.

An Advisory Committee on Marine Resources Research (ACMRR) has been established by the Director-General on the authorization of the Eleventh Conference of FAO. ACMRR is to be composed of not more than fifteen fisheries scientists and experts appointed, after con-

sultation with member governments and regional fisheries bodies, for a one-year period and eligible for reappointment. Regional and subject representation have been taken into consideration but members were selected on the basis of their expert knowledge and not as representatives of governments. Its purpose is to study and report to the Director-General on the formulation and execution of the programs of FAO concerned with research on marine fisheries resources, and the dissemination, interpretation and application of the results of such research, special attention being paid to the fisheries aspects of oceanographic research. The Intergovernmental Oceanographic Commission (IOC) under UNESCO was informed of these actions.

The IOC considered, at its second session in Paris (20-29 September 1962) the question of its own advisory bodies. A resolution was unanimously approved recognizing formally advisory bodies to the Commission:

- (i) The Scientific Committee on Oceanic Research (SCOR) of the International Council of Scientific Unions insofar as the world scientific aspects of oceanography were concerned;
- (ii) The FAO Advisory Committee on Marine Resources Research (ACMMR) on fisheries aspects of oceanography.

As it was noted that some member countries of the Commission are not at present members of FAO (this is true particularly of the U.S.S.R., whose role in fisheries and fisheries research is very important), the recommendation stated that for the purpose of advising IOC, the FAO Committee would be augmented by two members selected among the fisheries institutions of U.S.S.R.

The resolution was communicated to the Director-General of FAO by letter of 22 February 1962 and formally accepted by him in a letter to the Chairman of IOC dated 14 December 1962.

The first session of ACMRR took place in FAO Headquarters, Rome from 28 January to 2 February 1963. It was attended by Dr. A. Needler (Canada - Chairman), Dr. C. E. Lucas (U.K. - Vice-Chairman and Rapporteur), Prof. M. Uda (Japan - Vice-Chairman), Dr. V. Angelescu (Argentina), Mr. V. E. Brock (U.S.A.), Dr. M. Buljan (Yugoslavia), Dr. W. M. Chapman (U.S.A.), Dr. D. Cushing (U.K.), Dr. J. Furnestin (France), Dr. R. Margalef (Spain), Dr. N. K. Panikkar (India), Dr. H. Rotschi (New Caledonia) and by representatives from UNESCO (acting also as Observer for IOC) and IAEA; IMCO, WMO and SCOR were not represented. Dr. M. Ruivo, Chief, Research Programs Section, Fisheries Biology Branch, FAO, was appointed Secretary of the ACMRR. Dr. G. Rollefson (Norway) was unable to attend the session. The IOC Chairman informed the Director-General of FAO that as the result of unexpected delays in consultations, the Bureau of the Commission had not been able to recommend names of two scientists from U.S.S.R. in the field of fisheries oceanography, for nomination to the Committee.

The Committee considered the FAO Fisheries Division Current Program 1962-63 in the field of marine resources research and the proposals for the 1964-65 budgetary biennium and the questions referred to it by the Second Session of the IOC. Among items on which specific action was recommended are the following (See Annex 1):

- (a) Intensified compilation and publication of statistics of fish catches, and also biological data, for various fisheries resources, on a regional basis; this to be done not only for use in future conservation and management, but also to give data on which rational fisheries development and expansion can be based;
- (b) Direct estimation of fish abundance by new echo-sounding techniques, and on the standardization and intercalibration of gear for sampling and for exploratory fishing;
- (c) Preparation of lists of aquatic organisms, and work on their systematics and distribution, especially in little-known regions;
- (d) Preparation for a world scientific meeting on the effects of the marine environment on fisheries resources;
- (e) Collaboration with SCOR and other bodies, including regional fisheries organizations, in preparing a comprehensive program for world ocean study, as requested by the 2nd Session of IOC
- (f) Participation of marine and fisheries biologists in the International Biological Program being planned by ICSU on the Biological Productivity of Terrestrial, Freshwater and Marine Communities;
- (g) Fisheries aspects of the international oceanographic projects and fisheries for the Indian Ocean, Tropical Atlantic, North Pacific and the South Atlantic;
- (h) Review of research and development in the improvement of marine resources by transplanting, stocking, environmental manipulation and in other ways.

The Committee will meet again in Rome early in 1964. Meanwhile its report will be published and made available to interested scientists, and several Working Groups established at this First Session will be active.

5. CO-ORDINATION OF FISHERY STATISTICS

The Third Session of the Continuing Working Party on Fishery Statistics took place in Rome from 18 to 22 March 1963. ICNAF was represented by Mr. B.F. Calvin De Baie and Mr. R.C. Hennemuth. Several papers were presented to the Third Session on the various aspects of the ICES-ICNAF-FAO common reporting system. The Continuing Working Party agreed to request ICNAF to consider again the subject of adopting the common reporting system or, at least, of taking some action towards the adoption of the system. The Continuing Working Party requested FAO to prepare a list of scientific and common names used by ICNAF and ICES for consideration at the following meetings of these two agencies. This has been done in a document entitled "Lists of Common and Scientific Names of North Atlantic Species Appearing as Statistical Categories in ICNAF and ICES Tabulations" prepared by FAO Fisheries Division, to be presented at the 1963 ICNAF Meeting. The Report of the Third Session of the Continuing Working Party will also be presented at the 1963 ICNAF Meeting as document No. 11, Serial No. 1078.

6. OTHER MATTERS

- 6.1 Mr. Traung, of FAO Fishing Boat Section, is prepared to proceed with the study on vessel characteristics related to fishing power, as soon as the ICNAF list of vessels for 1962 is published.
- 6.2 Mr. Holt, from FAO Fisheries Biology Branch, has acted as instructor in the Second Course on Fish Stock Assessment organized by ICES in Lowestoft, U.K., February 1963; FAO sponsored scientists from Ghana, Yugoslavia and Brazil also participated in this Course.
- 6.3 Training and education continues to receive much attention from the Division. 15 fellowships under EPTA, UNSF and André Mayer programs were organized by Biology Branch during the 1962-63 biennium. In 1964 will be held: a Workshop on Methods of Research on Mackerel, Malaya; Seminar on Sardine Tagging, Yugoslavia; Training Centre and Study Tour on Fishery Biology and Oceanography, U.S.S.R. FAO is collaborating with UNESCO in the organization of the Training Course in Fishery Oceanography for the Middle East, to be held in Turkey, in September-October 1963. Prof. M. Zei, FAO/EPTA Fisheries Biology Expert, in Ghana, will be one of the instructors. A curriculum for the course is being developed by co-operation between UNESCO and FAO.