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COLLABORATION BETWEEN FAO AND ICNAF, 1957/58

The following notes report action taken by FAO Fisheries Division in response to recommendations in the report of the Seventh Annual Meeting of ICNAF and other aspects of the current work of the Division of interest to the Commission.

1. Standardization of Fishery Statistics

At the Lisbon meeting the Commission decided to give encouragement to FAO to convene a meeting of experts to develop a plan of standardization and to prepare for this by studying methods used in the various countries concerned. The Committee on Research and Statistics recommended that such a meeting should include expert representatives of national fishery statistical institutions, including particularly the nations fishing in the North Atlantic, and made some suggestions regarding the subject matter to be discussed. It also considered it desirable that FAO should send one or more experts to as many of the countries concerned as possible to study and prepare a report upon the problems and methods of collecting fishing statistics. Accordingly, FAO Fisheries Division contracted with Mr. F. Rashley of the Dominion Bureau of Statistics, Ottawa, Canada, and Mr. J.B. Rutherford of the Economics Service of the Department of Fisheries of Canada, to conduct a survey of fishery statistics in the North Atlantic area. The following countries were visited by one or other of the two experts: - the United States, Iceland, Norway, Sweden, Denmark, the Federal Republic of Germany, the Netherlands, France, the United Kingdom, Spain, and Portugal. In addition, a study of Canadian fishery statistics was included in the survey. The Division now has in its hands a draft report based on this survey. The second part of this report describes the systems in each country, one by one, and these descriptions will be sent to each of the countries concerned for their comment. The final draft of the whole report will be circulated to prospective participants in the meeting on fisheries statistics which FAO intends to convene in the autumn of 1959. We are at present corresponding to determine a suitable venue for this meeting, which will preferably be in a European country of both ICES and ICNAF, immediately preceding or after the 1959 Statutory Meeting of ICES, though not necessarily at the same place. Suggestions for working and background papers for this meeting would be welcome and it is hoped that participation will be obtained from the Secretariats of ICNAF, the ICNAF Research and Statistics Committee, the ICES Committee on Statistics, users of international statistics in both the biological and economic fields, and - particularly important - those who are responsible for collecting and compiling statistics in each of the participating countries.

2. Sampling Manual

At Lisbon the Research and Statistics Committee affirmed the need for a manual of statistical methods for fishery workers and encouraged FAO as sponsors to pursue this project. The draft of the paper on "Sampling problems and methods in fishery research" by J.A. Gulland, which was distributed during the Lisbon meeting, has now been revised and published in English, French and Spanish in the FAO "Fisheries Bulletin" (reprints of this paper are available). Mr. Gulland has now been commissioned by FAO to prepare a more comprehensive manual on this subject and has submitted to FAO the first outline of it. We

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have approached the United Kingdom Government with a view to obtaining Mr. Gulland's services as instructor during the International Training Center on methodology of mackerel investigations, to be held under the Expanded Technical Assistance Programme at Bangkok during the last quarter of this year. We propose that Mr. Gulland should on his way to the Center visit fish landing places in the Indo-Pacific region to study conditions there under which market sampling would be undertaken and also the conditions of sampling at the fishing sites. The outline notes of the manual, which will be largely based on those prepared for the course on stock assessment held at the Fisheries Laboratory, Lowestoft in February 1957, will be used during the Bangkok Training Center and revised on the basis of experience gained there with a view to completing the manuscript during 1959. In this connection, the Commission may also be interested to know that a manual on methods in fishery population dynamics is also in preparation and this work will include a review of the methods of age determination of fish and of the methods of conducting and interpreting tagging experiments.

3. Joint Scientific Meetings

The Commission will be interested to know that, as a result of some publicity given to the 1956 Biarritz meeting of the Research and Statistics Committee and of correspondence since then with workers in the field of population dynamics, we have received a large number of requests for copies of the published proceedings. That meeting has, in fact aroused very considerable interest outside the North Atlantic area.

With regard to the publication of the reports and proceedings of the Joint Scientific Meeting of ICNAF/ICES/FAO held at Lisbon in 1957, we can report good progress in the editing of manuscripts of contributions to the workshop on the effects of fishing on stocks. The Steering Committee of the meeting convened in Bergen at the time of the last Statutory Meeting of ICES and made detailed arrangements for the preparation of the final manuscript and its publication. FAO will undertake the latter task and we hope that the final proceedings will be published during the first half of next year.

The Joint Meeting in Lisbon recommended that steps should be taken to ascertain the need for an international Journal of Fishery Dynamics. A small committee was appointed with representatives from each major area of the world and questionnaires were sent out. The replies were analysed and a report on them considered by a meeting of those members of that committee who attended the UN Conference on the Law of the Sea at Geneva earlier this year. As a result of their consideration, it has become clear that there is indeed a desire for such a journal and recommendations were made for definite action to be taken to establish the Journal. FAO is considering the possibility of underwriting such a journal for a short initial period and will approach possible publishers, as well as initiate action to establish an appropriate international editorial board.

The Joint Lisbon meeting also made certain recommendations regarding the standardization of mathematical notation for fishery population dynamics. Action on this recommendation has been taken as far as submission of a joint note by S.J. Holt, FAO, Clyde Taylor, ICNAF, J.A. Gulland, ICES and Susumu Kurita, Japanese Notation Committee, for publication in the forthcoming issue of the Journal of the International Council for the Exploration of the Sea. Reprints of this paper will be distributed widely to editors of journals, other international organizations and institutes regularly publishing papers of a kind to which the proposed standards refer.

In addition to this paper on notation we have begun work on the indexing of the papers for the Lisbon meeting and on the extraction of terms and definitions from those papers. This is part of our work on

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the definition of concepts and terms, and on classification, which has been rather slowed down over the past eighteen months; however, we are very alive to the importance of this work and intend now to give it high priority.

The report of the Joint Lisbon meeting recommended further studies of the use of high-speed computers in the assessment of fish stocks and other fisheries research problems. In addition to correspondence between the convenor and scientists in various parts of the world concerned with this problem, arrangements have been initiated for collaboration between FAO and the International Computation Center recently established by UNESCO with its Headquarters in Rome. It is hoped that it will be possible to make arrangements both for the computation of tables of functions important in fisheries population studies and also evaluation of comparative compiled data relating to the parameters of exploited stocks.

4. Other Scientific Meetings

Apart from the Second Fishing Boat Congress and the International Meeting on Costs and Earnings of Fishing Enterprises, to which publicity has already been given, two scientific symposia on subjects of some interest to the Commission are planned by FAO for the near future. In December this year FAO is collaborating with the Indo-Pacific Fisheries Council in a Symposium on Fish Behaviour, for which contributions will be obtained from outside the Indo-Pacific area. In September 1959 we are convening at Rome a world meeting on the biology and fluctuations of sardine stocks and it is hoped at this meeting to review the whole field of the analysis and interpretation of fluctuations in stocks and catches of the commercially important pelagic fishes.

The Commission may recall that at its 4th Meeting, in 1954, we gave a preliminary account of our plans for work relating to the data and methods of resources appraisal. Those plans included the holding of a series of subject meetings the results from which, associated with the results of consultations with regional councils and commissions, were to be considered at a world colloquium on fishery resources at which a stocktaking of these resources might be attempted. Such a stocktaking, it was thought, would revise and bring up to date the conclusions reached at the UNSCUUR Conference of 1948. The Commission will be interested to know that the plans are developing with reasonable success, even if on a timetable substantially longer than was contemplated in 1954. The Division collaborates closely in this work with UNESCO chiefly through its International Advisory Committee on the Marine Sciences. The following table shows the tentative plan being followed by FAO and UNESCO in this collaborative effort. The Commission will recognise that this series seeks to deal with the several aspects of fish populations and their environments in a constructive and cumulative way to permit at the end a reappraisal of fishery resources. The schedule is by no means fixed; nor is it exclusive: the Commission will note that supplementary meetings will be organized to consider special groups (for example the sardine meeting) and limited subjects.

A copy of the prospectuses for the behaviour and sardine symposia are available at this meeting for examination by interested persons.

- (1) Methods of measuring basic production; Bergen; 1957; ICES, UNESCO
- (2) Fish behaviour and its determinants; Colombo or Bangkok; 1958; IPFC, FAO
- (3) Methods of measuring fish food populations and their processes; New York, U.S.A.; 1959; AAS, UNESCO, FAO

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- (4) Fish mortality and its determinants; Tunis; 1960; GFCM, FAO
- (5) Fish nutrition and its determinants; Latin America; 1961; FAO, UNESCO
- (6) Fish reproduction and its determinants; East Africa; 1962; CCTA, FAO
- (7) Productivity and the inventory of production of the seas; Rome; 1963; FAO, UNESCO

5. Bibliographic Work

Some members of the Commission may know that Fisheries Division Biology Branch began in January this year the publication of a monthly "Current Bibliography for Fisheries Science", copies of the first two issues of which are available. This cumulative, annotated bibliography is being given a limited distribution to other international organizations and collaborating persons and institutes and taxonomic and geographic indexes are being prepared. The subject classification is being revised and it is hoped during next year to introduce cumulative subject indexing. We are exploring the possibilities of practical collaboration with other bodies interested in this project, especially, at present, the International Council for the Exploration of the Sea, and are making arrangements with institutions in Japan and the USSR to furnish translated contents lists of journals and annotations ready for immediate publication. The FAO observer will be happy to discuss with the ICNAF Secretariat possible ways in which practical collaboration may be started between the two organizations.

6. Research Methods: Standardization and Mechanization

A major objective of the Bangkok Training Centre mentioned above in section 2 is to promote the standardization of field and laboratory operations and techniques. In proposing the organization of this centre, the IPFC and its Rastrelliger sub-committee strongly emphasized the desirability of basing the co-ordination of national research programmes on methods that had been statistically tested and standardized and considered that the centre would give an opportunity to test methods and to formulate a common plan of studies. It is intended to submit a report of the centre and a set of recommendations on these matters, to the IPFC 8th Session in Colombo, immediately after the Training Centre.

At the same time efforts are being made through the GFCM to initiate similar work on the standardization of clupeoid measurements. Mr. Ruivo's paper on this question, written under contract with FAO and submitted to the last session of the GFCM, has been widely disseminated and comments on it have been sought. It is hoped that this work may be carried a step further at the next GFCM session in Rome, in October this year.

Our plan to make a thorough survey of biological methods in use throughout the world, and to appraise the practicability and desirability of mechanizing some of these operations, has had to be deferred because of the pressure of work on other commitments. We hope to be able to make an energetic attack on this question in the near future and, of course, the results of the Bangkok Centre, and of the GFCM discussions should here be of considerable assistance.

7. Data and Methods of Resource Appraisal

Our work in this field stands firmly on three broad foundations: the bibliography and documentation, terminology and classification, and methodology. Establishment of these foundations has occupied

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much of our time since we first described these plans to the Commission; some of our activities in connection with them are mentioned in the preceding sections.

The substantive resources work is being pursued along four lines between which there is constant communication. The first approach obviously must be by way of examination of current exploitation and extraction from this of evidence as to the nature and magnitude of exploited resources. For this purpose we are systematically storing information on current production and on all factors whose operation influences production and for which allowance must be made in deducing anything about resources from the evidence of production. This information is being reduced into country and regional synopses, of which nineteen have now been made. These synopses are at present in only draft form, serving as working papers for us. We hope that before long they will assume a definitive form worthy of distribution to interested workers.

The second approach is by way of analysis of the characteristics and properties of species of present or potential economic importance. For this purpose we have made extensive lists of species, accumulating for practical purposes also their common names. Next we are accumulating data concerning each species and for selected species, genera or groups we assemble the information according to a special pattern which gives, we believe, an ecological specification of the species. Five of these species synopses have prepared (for Rastrelliger, Hilsa, Whales, Tinca tinca, and Trichiuridae), and have been submitted to specialists throughout the world for comment and modification. A synopsis for sardines is being made at present, and one for gadids is planned. Many methodological advances in the treatment and reduction of data, must be made before these synopses will be satisfactory for our purposes.

The third approach is by way of examination of the characteristics of the environment of the species of economic interests, taking here the broader definition of resource as embracing the entire system whose working has the economic species as end-product. Again information is being accumulated and reduced into synoptic statements. One set of information related to oceanic areas, the other to river systems and basins. Synoptic statements for 10 marine areas have been prepared, and others are in course of preparation; synoptic statements for the Ganges-Brahmaputra and for the Mekong basins are in preparation.

Copies of the outlines employed for these synoptic statements are available for examination by interested persons.

The Commission will recognize that many of these papers will come before meetings of regional councils and commissions (as for example, the paper on the resources of the ICNAF area) and before the subject meetings referred to above; the Commission will also recognize that if preparation of these papers is successful the operation will result in a set of authoritative documents to serve as working papers for the eventual world appraisal meeting which we contemplate.

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