

REPORT
OF THE
FOURTH SESSION OF THE INDIAN OCEAN FISHERY COMMISSION
Mombasa, Kenya, 21-25 July 1975

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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This is the final version of the report as approved by the Fourth Session of the Indian Ocean Fishery Commission.

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OPENING OF THE SESSION

1 The Indian Ocean Fishery Commission (IOFC) held its Fourth Session from 21 to 25 July 1975 at Mombasa, Kenya. The session was attended by the representatives of 15 members of the Commission, by observers from two other member nations of FAO, by the representatives of the United Nations Development Programme and the United Nations Economic Commission for Africa, and observers from four international organizations. A list of delegates and observers is given in Appendix A to this report.

2 The session was opened by the Chairman, Mr. N. Odero (Kenya), who became Chairman following the death of Mr. C.G. Setter (Australia). Mr. Odero paid tribute to Mr. Setter and his work on behalf of the Commission and for fishery development in general.

3 The participants were welcomed in an address by the Honourable Mathews J. Ogutu, Minister for Tourism and Wildlife in the Government of Kenya (Appendix B).

4 The Assistant Director-General (Fisheries) of FAO, Mr. F.E. Popper, replied to the Minister in an address in which he outlined the future work of the Commission in the light of the present world situation in fisheries (Appendix C).

ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION

5 The Commission adopted the agenda reproduced in Appendix D. The documents before the Commission are listed in Appendix E.

6 At the suggestion of the Chairman, the Commission appointed a Nominations Committee, composed of the representatives of Australia, Japan, Kenya, Mauritius and Sri Lanka, to facilitate the election of officers to serve during the intersessional period and the Fifth Session of the Commission.

FISHERY STATISTICS

7 The Commission considered the Report of the Third Session of the IPFC/IOFC^{1/} Joint Working Party of Experts on Indian Ocean and Western Pacific Fishery Statistics (IOFC/75/Inf. 3) (Jakarta, 25-30 October 1974) and the document "Fishery Statistics in the Indian Ocean Fishery Commission (IOFC) Area" (IOFC/75/4) which drew attention to the main points of the Working Party's report. In an introductory statement the Commission was also informed of encouraging developments that had recently taken place in the work of the FAO Secretariat in fishery statistics. The Commission endorsed the Working Party's proposals which were discussed under three main headings:

- (i) The development of national fishery statistical systems
- (ii) The establishment of a standardized system for the reporting of statistics needed for regional studies to a central agency (at present FAO)
- (iii) The processing of regional statistics received and their presentation by the central agency in an annual regional bulletin of fishery statistics

There was also discussion of the FAO programme for the production of sets of Species Identification Sheets on an area basis.

^{1/} IPFC Indo-Pacific Fisheries Council

National fishery statistical systems

8 The Commission was reminded that within the Indian Ocean Programme (IOP) there is a Senior Fishery Statistician, who has already advised several countries of the region on the improvement of their national systems and was available to assist others on request. It was noted, however, that aid in the implementation and firm establishment of new surveys would require the stationing of a fishery statistician within a country for at least two years, preferably as a member of a wider project. This has already happened in Indonesia and was soon to occur in connection with further projects. The Commission accepted the view that whenever projects were being prepared for funding by the United Nations Development Programme (UNDP) or other agencies, the importance of statistics and the value of external assistance in developing adequate statistical systems at a reasonable cost needed to be borne in mind.

9 The Commission particularly welcomed the proposal that the IOP should run two general training courses on fishery statistics some time in 1976. The first course would be of one week's duration and intended for Senior Fishery Officers. It was hoped that the course would help these officers in making better known their requirements within their own national administrations and thus increasing the possibility of obtaining the funds and staff necessary to carry on adequate statistical work. The second course would be of a more technical nature and intended for 25 officers responsible for the operation of national fishery statistical systems. It would last six weeks and would include lectures and practical work on the organization and methods required for planning and running surveys.

10 Lastly, the Commission was informed of the programmes for the publication of handbooks and manuals on fishery statistics, of which IOFC/75/Inf. 8 was an example.

Standardized reporting of international statistics

11 For some time countries have been reporting to FAO total annual catch for the western Indian Ocean and eastern Indian Ocean separately, broken down according to their national species groupings. The statistics received are subsequently compiled and published in the FAO Yearbook of Fishery Statistics (Catches and Landings) and also in regional circulars such as that presented in IOFC/75/Inf. 7. The intention was to introduce a system early in 1976 for the reporting of national catches, starting with 1975 data, broken down by sub-area and division, and also in accordance with a standardized Indian Ocean species list. These two classifications, which were developed by the IPFC/IOFC Joint Working Party of Experts on Indian Ocean and Western Pacific Fishery Statistics, were presented in IOFC/75/Inf. 4 and IOFC/75/Inf. 5 respectively. Document IOFC/75/Inf. 6 presented the reporting form to be used and instructions for its completion. It was also explained that the IOP was prepared to provide short-term help to countries which had difficulties in completing the reporting form, if they requested such assistance.

12 The Commission welcomed this progress and also the proposal by the Secretariat that work should commence on a standardized system for the reporting of catch and effort data for important large-scale fisheries of the region with a view to its introduction as soon as possible; in this connection note was taken of the vessel classification in paragraph 13 of IOFC/75/4. With regard to the species statistical lists presented in IOFC/75/Inf. 5, one delegate thought that Lethrinids should be shown as a separate species item. It was provisionally agreed that detailed statistics for Group 36 in that same document—Tunas, Bonitos, Billfishes, etc.—should, following the practice in the Atlantic, be the subject of special reporting (e.g. by 5° squares for longliners) and should not be reported by sub-area and division. A proposal was made that statistics of live bait captured should also be collected.

Regional fishery statistical publication

13 It is now possible for FAO to produce periodically documents of the type presented as IOFC/75/Inf. 7. The Commission was pleased to learn that, with the aid of the IOP, data made available by the new regional reporting system described above would be compiled and presented in an expanded fishery statistical bulletin devoted to the Indian Ocean area.

Species Identification Sheets for Fishery Purposes

14 The four-volume publication in the series of FAO Species Identification Sheets for Fishery Purposes, covering jointly the Eastern Indian Ocean Fishing Area 57 and the Western Central Pacific Fishing Area 71, was welcomed. Delegates hoped that FAO would be able to provide the additional sheets needed for the completion of the series for Fishing Areas 57 and 71 and also produce a similar set of sheets for the Western Indian Ocean Fishing Area 51.

STATE OF STOCKS AND MANAGEMENT

(a) Tuna stocks

15 The report of the Third Joint Meeting of the IOFC and IPFC Committees on Tuna Management (IOFC/75/5) was introduced by their Chairman, E.A. Purnell-Webb (Australia). The Committees were complimented on their work, and in particular the recommendations endorsed for the establishment of a small Ad Hoc Committee of Nations ^{2/} on the Mechanics of Tuna Research and Management, with the following terms of reference:

- (i) To prepare statements on the functions and methods of operation of a joint secretariat and standing committee or committees on statistics and scientific review, and on management advice
- (ii) To prepare a statement on the method of financing the management structure, both in the short term and long term

The Commission also endorsed the other recommendations of the Committee, namely:

That the Bureau ^{3/} of IOFC be empowered to consider and act upon proposals in these specific fields and to initiate follow-up action

That the matter be placed on the agenda of the next session of the IPFC Executive Committee

That FAO seek funds for carrying out urgent work in this connection, pending the completion of the arrangements mentioned above

16 In relation to statistics, it was stressed that the collection of statistics was the responsibility of national governments. Where countries were unable to carry out this responsibility, they could seek the support of UNDP or FAO through its Field Programme, and FAO was urged to provide this support. Shortcomings in national systems should not be a reason for extra burdens to fall upon the secretariat of regional bodies which should not, except as an emergency or interim measure, be engaged in direct collection of statistics.

17 It was also stressed that the establishment of the Ad Hoc Committee did not prejudice the views of some delegations that in the long run the management of tuna in the Indian Ocean required the establishment of an independent treaty-based body.

^{2/} This Ad Hoc Committee held its First Session at Mombasa on 23 July 1975. The report of the session appears in Appendix F

^{3/} Bureau in this context refers to the officers defined in Rule II-1 of the IOFC Rules of Procedure:

"The Commission shall elect, at the end of every Session, a Chairman and a maximum of six Vice-Chairmen who shall remain in office until the election of the new Chairman and new Vice-Chairmen. The out-going Chairman and Vice-Chairmen shall be eligible for re-election"

18 To ensure a balance between countries with existing tuna fisheries, or aspiring to establish such fisheries, between longline and surface fisheries and between different geographical parts of the region, the following membership of the Committee was agreed upon: Australia, India, Indonesia, Japan, Kenya, the Republic of Korea, and the United States of America. Australia was proposed as Chairman. It was noted that FAO could make available the necessary funds to support the work of the Committee but, to minimize costs, its meeting or meetings should be held in conjunction with other meetings of IOFC or IPFC.

19 In reply to a question concerning the work of delineating the stocks of skipjack (paragraph 9 of the Committees' report), the Secretariat drew attention to the proposal for a skipjack survey and a tagging programme in the southwestern Pacific (IOFC-IPFC/TM/75/Inf. 4). The Commission endorsed this proposal which should assist greatly in delineating the stocks of skipjack and also assist in the development of local skipjack fisheries. If the project proved successful, close consideration should be given to extending it in a second phase to parts of the Indian Ocean.

(b) Shrimp stocks

20 The Secretariat introduced the documents relating to shrimp stock assessment and management (IOFC/75/6 and 21, and IOFC/75/Inf. 10). It was pointed out that, as for any fish stock, management of shrimp stocks required four stages:

- (i) The collection of statistical and other data
- (ii) Scientific analysis and assessment
- (iii) Consideration of the technical, economic and social factors involved in the choice of management measure
- (iv) Implementation of the chosen measure

There were great potential advantages of regional discussion. It was also noted that most of the located shrimp stock lay within national waters, and implementation of management measures was ultimately a matter of purely national concern; however, concern was expressed over the inadequacy of management expertise in shrimp fisheries and it was suggested that steps should be taken to improve national expertise in stock assessment and management by taking measures such as the organization of workshops on a regional basis.

21 The delegation of Australia introduced an information paper (IOFC/75/Inf. 16) describing the experience in the northern prawn fishery of Australia, and the delegate of France described experience in Madagascar. These confirmed that many stocks of shrimp around the Indian Ocean were already heavily exploited though some stocks, particularly of deep-water shrimp, could provide greater catches. Shrimp were of great significance to many countries, both for large-scale, export-oriented industrial fisheries and as the major economic component of small-scale fisheries. The proper choice of management measures, taking account of the local economic and social factors, was therefore of great importance.

22 Experience of closed seasons was that these did not notably increase the total catch but, if chosen at the time of the main recruitment of small shrimp to the fisheries, could increase the average size of shrimp and hence the economic returns. Whether or not closed seasons were introduced, some control of the amount of fishing was highly desirable and for industrial fisheries this was probably best done by licensing vessels.

23 The Committee took note of the state of stocks in the Gulf between Iran and the Arabian Peninsula (IOFC/75/Inf. 10), which appeared to be so heavily fished that the total catch was being significantly reduced. Management of these stocks seemed to be urgently needed. While the Commission welcomed the study made by FAO in the document presented to it, this assessment should be reviewed by scientists from the countries directly concerned. It was therefore recommended that a small ad hoc group, drawn in part from the existing IOFC Special Working Party on Stock Assessment of Shrimp in the Indian Ocean, should be constituted to

meet once only, if possible before the end of 1975, to review the assessment and report to IOFC, and to the Committee for the Development and Management of the Fishery Resources of the Gulfs. The report of the ad hoc group should also be circulated to the members of the Working Party for their consideration and comment. It was felt that, in addition to its other functions, such a meeting would help to develop the capacity of participating local scientists in the specialized techniques of shrimp assessment.

24 The Commission also recommended that the Gulfs Management Committee should, at its next meeting, consider the report of the ad hoc group and review possible management measures, taking account of economic and social factors, so as to assist member governments to identify appropriate actions to be implemented at the national level.

(c) Other stocks

25 The Secretariat introduced reports on the state of other stocks of fish (IOFC/75/7 and 9). It appeared that, following the progress in developing fisheries around the Indian Ocean, a number of stocks in addition to those of tuna and shrimp were becoming heavily fished or might become so in the not too distant future. In particular, it was noted that documents IOFC/75/8 and IOFC/75/Inf. 11 drew attention to the possibility that, depending on the identity and movements of the stocks concerned, the development of industrial fishing on species such as the oil sardine in one part of the Indian Ocean might affect the fisheries of the same species in other parts. It was felt that though this might be a real problem, regional studies on this question must wait until further biological information became available from ongoing surveys and other research activities.

INTERNATIONAL INDIAN OCEAN FISHERY SURVEY AND DEVELOPMENT PROGRAMME

(a) Progress report

26 In introducing the item the Programme Leader drew attention both to changes in the budget and to shifts in emphasis in the work of the Programme. The budget originally approved by the UNDP for the four-year period of Phase II, beginning in 1973, was just over \$2 million but subsequent revisions had brought the figure up to \$4.2 million. At the same time the work of the Programme was changing, with less emphasis on the basic studies and more on survey and development work; much of the recent increase in cost in fact had been to provide additional funds for this latter activity.

27 At the present time four major resource surveys were either under way or on the point of being launched; these surveys covered the Arabian Sea, the East African coast, the area southwest of Indonesia and west of Australia, and the Bay of Bengal. In addition the Programme was heavily involved in the preparation of survey and development projects which went beyond resource identification and covered, as far as possible, all the vital components of fishery development. In this connection particular mention was made of the proposal for a Bay of Bengal Fishery Development Programme which had been submitted to the Swedish International Development Authority (SIDA) for consideration. Mention was also made of the Gulf Regional Fishery Survey and Development Project which had recently become operational with a budget of \$7 million over 3½ years. Other activities of the Programme included publication of a study on joint ventures, assistance to individual countries in certain specific fields, e.g. advice on improvement of fishery statistics, as well as some training work, although this had not been a major element in the work of the Programme so far.

28 The meeting was reminded of the innovative nature of the Programme which was the first of its kind to be implemented by the UNDP and that its evolution had had an important effect on similar programmes which had been introduced subsequently. There was now adequate evidence to permit some evaluation of the Programme which should be judged not only on the catch of fish but its effect on employment and income in the region. Also important were the institutional linkages which were likely to have been formed and which would provide potential for continuation of the work which had been begun. The Commission expressed considerable satisfaction with the work of the Programme which was achieving its objective of

stimulating the development of fisheries in the region and of calling attention to the long-term problems of management. It recognized the need for continued work at the inter-regional level in the development of the Indian Ocean fisheries.

29 Delegates from a number of donor countries amplified the details given in respect of their countries' contribution to the work of the IOP. The delegation of India requested the taking of early steps for quick implementation of the Bay of Bengal Fishery Development Programme. The delegate of Sweden said that SIDA would take a decision in the next two or three months on the financing of at least part of the proposed Bay of Bengal Fishery Development Programme. While it was difficult to distinguish priorities between different elements in the Programme, discussions of the proposal within SIDA's advisory body had indicated that the resource survey of the shelf area and the development of small-scale fisheries were highly rated. The delegate of Norway gave details of the Arabian Sea Pelagic Resource Survey to which his country was the major contributor. Since the survey was to identify the existence of resources, it would be necessary to undertake follow-up action to determine appropriate gear and vessels for exploitation as well as how and where the fish might be marketed. The delegate of Japan informed the Commission that a Japanese research vessel would participate from October onwards in the survey programme in close collaboration with the Norwegian research vessel.

30 The need to follow up survey work was stressed by a number of delegations. Reference was made to the pelagic fishery investigations on the southwest coast of India which had been undertaken by a UNDP/NORAD-sponsored project.^{4/} The first phase, which was now nearing its end, had been of value, setting guidelines covering the resource and the type of vessels which should be used, but a second phase was needed. It had now been formulated in such a way as to help to interest investors in the utilization of the resource. The importance of providing the relevant information to permit the expansion of fisheries at increasing distances from the coast was also stressed. The role of the proposed Bay of Bengal Fishery Development Programme in the development of coastal fisheries was referred to. The hope was expressed that it would be possible to find finance for all elements of the project.

31 Attention was also drawn to the role of the IOP in formulating projects and attracting financial investment to the region. Insofar as formulation was concerned, it was considered desirable that national programmes should be prepared and evaluated within a regional framework. The hope was expressed that it would be possible to involve bilateral agencies to a greater extent in the work of the Programme in the future.

32 Delegates from the East African countries welcomed the resource survey for East Africa which would begin later in 1975 with the aid of the chartered research vessel from the U.S.S.R. This survey would provide the opportunity for local scientists to get experience in this type of work and thus eventually enable the countries of the region themselves to undertake this work. The IOP will arrange a pre-survey workshop for the scientists involved and it was suggested that this procedure should, insofar as possible, be adopted as a matter of course elsewhere. In view of the area to be covered, however, the time of one year allotted to this project was considered to be too short. It was not only the short time available which suggested that coverage of the main survey might be incomplete, but the large size of the research vessel which made it difficult for her to work in coastal waters and it was therefore unlikely that very detailed information would be provided on these waters. The need for detailed information which could lead to investment and commercial exploitation in a fairly short time was emphasized. And it was also felt desirable that the survey should go beyond identifying resources and give some indication of the level of fishing which the stocks could sustain.

^{4/} NORAD Norwegian Agency for International Development

33 The possibility of local vessels supplementing the information provided by the survey was discussed and in an ad hoc meeting of interested parties ^{5/} held during the IOFC session preliminary proposals to increase the detail of the survey along the East African coast were examined.

34 In conclusion it was observed that the Programme should be thinking of its next phase and in doing so it was important to consider the nature of the balance between the phases; in this respect training should probably play a larger role in the future. The Programme had responded to a great number of requests and had been very important for the region but it was nevertheless necessary to give some consideration to priorities. Human and financial resources were not unlimited and care must be taken that the tremendous range of activities being undertaken would not result in too little being spread too thin.

(b) Fishery development opportunities

35 In introducing the report, the Secretariat drew attention to the long time lag which frequently occurs between the availability of the results of a survey or identification of an investment opportunity and the follow-up development programmes. It was suggested that the flow of basic data was now being much improved and with it the possibility of undertaking more realistic development planning. FAO, through the Programme, was in a position to help countries with their planning and in this respect particular mention was made of a proposed Workshop on Fishery Development Planning which was to be organized in the region by IOP during 1976. Additionally, in order to speed up the process of translating investment opportunities into reality, the Programme was able to assist in the negotiation of joint venture arrangements.

36 The proposal to hold a Workshop on Fishery Development Planning was welcomed and in particular the proposal to include within the syllabus a short course for senior administrators, as well as the fact that travel and per diem would be met by the sponsors of the workshop. It was important that the administrators were aware of the subject matter in which their juniors or technical advisers had been trained and at the same time the defrayment of the costs of attendance would overcome the foreign exchange constraint which frequently limited participation from developing countries at such courses. It was also suggested that attendance should not be limited to government fishery officials but should include planners and persons from industry.

37 Training in other contexts was also stressed and the point was made that surveys should provide on-the-job training to enable local personnel to carry on the work begun. In this connection the arrangements for the training of scientists in Norway in connection with the NORAD pelagic project in India was commended. The Australian delegation told the Commission of the plans in their country for the establishment of training courses in quality control and indicated that there might be a number of places available for students from overseas. The Japanese delegation said that their country was providing fellowships for training in Japan and in the past year some 44 people from the region had received such fellowships.

38 It was pointed out that in order to be fully effective, the Programme should give adequate attention to landbased activities, e.g. how to improve boats, gear and marketing. A survey of the present status of fishing in the countries of the Programme might be useful.

39 The representative of the UNDP informed the Commission that, as part of normal procedures, it was arranging for an assessment of the Programme in order to determine its effectiveness to date and to give guidance on formulating a possible extension. It is planned to carry out this assessment with the cooperation of the Commission through its Executive Committee.

^{5/} Representatives of Kenya, Tanzania, United Kingdom (and Seychelles), East African Marine Fisheries Research Organization, UNDP and the FAO Secretariat (IOP)

40 The Commission, in welcoming the proposed appraisal of the Programme, expressed the view that it was already clear that the Programme was achieving, or had already achieved, many of the objectives of its initial phases. The principal value of the appraisal would therefore be to determine realistic objectives for the next phase of the Programme. The Commission emphasized that the appraisal of the effectiveness of the Programme needed to take account of the necessary time that occurred between completion of basic studies and the actual implementation of fishery development. Ultimately, of course, the success of the Programme will be measured in terms of increased production, employment, earnings and the like.

SMALL-SCALE FISHERIES

41 In introducing the topic the Secretariat referred to two background papers: IOFC/75/15 on small-scale fishery development, which had been submitted to the Ninth Session of the Committee on Fisheries (Rome, October 1974), and IOFC/75/14 which described the progress made and set out current plans and thinking. The Commission noted that small-scale fisheries involved complex social and economic problems which are tending to become more pressing. The importance of small-scale fisheries as a source of fish for consumption locally and in providing employment for millions of people in the Indian Ocean area was emphasized. Indeed the social and economic problems inherent in small-scale fisheries are of such magnitude as to warrant special priority in development planning.

42 Reference was made by the Secretariat to FAO's policy and strategy in small-scale fishery development and to the proposal to establish a number of regional and subregional projects in the IOFC area, including pilot operations and model projects, and further to develop, in time, global concepts and policy guidelines. A proposal for various workshops for fishery administrators and government planners is part of present thinking for the regional programme.

43 Among points raised in discussion it was particularly mentioned that many countries attach great significance to their small-scale fisheries, as a large proportion of the countries derive their fish production above all from this sector which also employs a very high number of fishermen. For example, small-scale fisheries account for 90 percent of fish production in Sri Lanka, 75 percent of the fishermen in Japan, one million small-scale fishermen in India, and a large proportion of fishermen in Indonesia.

44 The challenging question currently is: How best to proceed with the development of small-scale fisheries? In this connection it was essential that facts about current and past experience should be collected and disseminated and then used in preparing new programmes. It was recognized that small-scale fishery development should be part and parcel of a comprehensive rural development plan requiring a multidisciplinary and integrated approach.

45 Throughout the discussion the need for training for fishermen was reiterated, particularly by means of long-term extension work. While participation in such extension programmes could build up a cadre of fishery officers and research administrators and planners, it was considered that there was also a need to establish regional training centres for extension work. The need was also mentioned for the organization of small-scale fishermen for social, economic and educational reasons, e.g. the importance of community work and cooperatives. In particular, appropriate national institutional frameworks must be built up so that small-scale fishery development is encouraged and assisted. Such frameworks could then be used for international assistance and finance. The particular problems of fisheries are often not taken into account as they should be in development planning and the Commission recognized that to have a lasting effect the technical impact by international agencies upon national small-scale fishery development required a firm commitment by governments to give the required attention to this sector.

46 The Commission welcomed the proposed activities, including national and regional workshops. While recognizing the fact that small-scale fishery development may not offer opportunities for immediate spectacular results nor returns according to established economic criteria, the Commission supported regional collaboration to solve common problems and in particular to mobilize funds for development, including support by bilateral donors.

DEVELOPMENT OF COASTAL AQUACULTURE

47 The Commission was referred to document IOFC/75/16 which suggested that a study should be undertaken of the possibilities of coastal aquaculture development in the Indian Ocean region with a view to recommending appropriate action on a national and regional basis. This proposal was made following identification of considerable potential for coastal aquaculture and in view of the availability of several traditional culture techniques and the development of new methods which could have application over a wide area in the region. It was anticipated that the study would be funded jointly by the Indian Ocean Programme and the FAO/UNDP Aquaculture Development and Coordination Programme.

48 The Commission, recognizing the potential for coastal aquaculture in the region but appreciating the constraints on development of coastal aquaculture of the lack of sufficient training and specific technical knowledge, endorsed the proposed study and, subject to the detailed recommendations resulting from that study, recommended support for:

- (i) The establishment of large regional coastal aquaculture demonstration farms
- (ii) The establishment of aquaculture training centres on a sub-regional basis
- (iii) Research into the economic viability of coastal aquaculture techniques
- (iv) Research related to development of advanced technology of coastal aquaculture

49 The Commission noted with appreciation the research activities related to coastal aquaculture being undertaken by the Southeast Asian Fisheries Development Centre (SEAFDEC) and the East African Marine Fisheries Research Organization (EAMPRO), and offers of assistance from these agencies and from national delegates in expanding coastal aquaculture production in the Indian Ocean region.

50 The Commission recommended that in the proposed study consideration should be given to: the high level of capital investment required for coastal aquaculture; the advanced technical knowledge required for successful transfer of culturable species to new areas; the preference for selection of non-carnivorous species for cultivation; the need for manipulation of environments to enhance natural productivity of coastal waters; the need to review available information on the dependence of fish, crustacea and mollusc populations on mangrove swamps; and the wealth of applicable information available from previous studies undertaken by IPFC, SEAFDEC and other national and international agencies.

51 The Commission endorsed the proposal for study of the potential for aquaculture in the Indian Ocean region to be undertaken by FAO. The Commission noted with appreciation the information on the FAO Technical Conference on Aquaculture to be held in Kyoto, Japan, in May 1976, as this would provide a good opportunity to exchange experience and information on achievements in various parts of the world.

IPFC/IOFC SYMPOSIUM ON THE ECONOMIC AND SOCIAL ASPECTS OF NATIONAL FISHERIES PLANNING AND DEVELOPMENT

52 Following the joint IPFC/IOFC Symposium, an ad hoc group was set up by IPFC to decide on possible intersessional action. The group identified some seven topics: infrastructure; education and extension; resource assessment; resource management; project preparation and planning; processing, marketing and distribution; and business management and credit. For each of these topics specific action in the intersessional period was recommended and in a number of cases this action had already been initiated and considerable progress made. The Commission was invited to recommend participation in these activities by those member countries which were not members of IPFC.

53 The Commission welcomed the proposal but suggested that due regard should be paid to the activities of the Indian Ocean Programme in order to avoid any duplication of effort. In this connection attention was drawn to the relationship between the South China Sea Programme (SCSP) and follow-up activities of the symposium in the IPFC area. Work on the follow-up activities could provide guidance to the SCSP which was itself able to finance consultant and other assistance necessary to undertake certain aspects of the follow-up work. The importance of maintaining the momentum of this work in the intersessional period was also mentioned and to ensure this it was agreed that progress reports would be submitted to the IOFC Executive Committee for the Implementation of the International Indian Ocean Survey and Development Programme.

SUBSIDIARY BODIES OF THE INDIAN OCEAN FISHERY COMMISSION

54 The Commission reviewed the information provided in documents IOFC/75/19 and 21 on the activities of its subsidiary bodies since the last session in October 1972. It decided to abolish the Committee on the Management of Gulf Shrimp as its activities could now be taken over by the Committee for the Development and Management of the Fishery Resources of the Gulfs.

COOPERATION WITH OTHER BODIES

55 The Commission considered this item on the basis of document IOFC/75/20 which contained information on matters of common interest to the Commission and to other international bodies.

56 The Commission noted that, when the IPFC had set up, at its Sixteenth Session in October-November 1974, an ad hoc committee to undertake a review of its functions and responsibilities, it had referred to the need for devoting particular attention to its relationship with other bodies serving adjacent areas, especially the Indian Ocean. One member of the Commission drew attention to the areas of competence of the IPFC and of the Commission that were overlapping and suggested that what might be needed was an entirely new body to be responsible for marine fisheries in the Western Pacific. Such a new body would have to develop close co-operation with the Commission and with existing or prospective bodies in the South Pacific. It was also mentioned that due account should be taken of the intention of member countries of the Association of Southeast Asian Nations to extend cooperative activities to fishery resource development that would subsequently lead into establishing joint machinery for fishery resource management and to elicit participation by other countries. Several delegations, representing countries that were also members of the IPFC, indicated that they were not in a position to discuss at this stage the views that would be presented to the ad hoc committee of the IPFC, scheduled to be convened in December 1975. In this connection it was noted that 11 countries were members of both the Commission and the IPFC, so that the need for effective working relations between the two bodies should be borne in mind for the mutual benefit of all countries in the areas concerned.

57 In the course of the debate on this matter, it was stated that as a result of the possible emergence from the United Nations Conference on the Law of the Sea of extended coastal state jurisdiction affecting world fisheries and because of the pressure on resources and the need for management, nearly all regional fishery bodies were facing substantial and significant changes. This was one of the problems that would be considered by the Committee on Fisheries' Sub-Committee on the Development of Cooperation with International Organizations Concerned with Fisheries.

58 The Commission agreed that it was necessary to continue and strengthen collaboration with the International Commission for the Conservation of Atlantic Tunas (ICCAT) and with the Inter-American Tropical Tuna Commission (I-ATTC), particularly in view of the similarity of the problems encountered in obtaining good tuna statistics and the fact that to a large extent the same countries and often the same vessels are involved. The Commission heard with interest a statement by the observer from ICCAT on existing cooperation between the Commission and his organization. The observer noted in particular that such cooperation was essential since the Indian and Atlantic Oceans had common tuna populations, fleets and landing ports, and management measures taken in one ocean could affect tuna fisheries in the other.

59 The Commission also noted with appreciation the information provided on the recent initiatives taken by governments and international organizations to protect the Gulfs, the Red Sea and the Gulf of Aden against pollution. In view of the increasing pollution by oil and its adverse effects on fisheries, the Secretariat was requested to ensure that similar action should be initiated with respect to the western part of the Indian Ocean.

ANY OTHER MATTERS

Report of the Tenth Session of the Committee on Fisheries

60 The Commission heard a brief account of the salient points in the report of the Tenth Session of the Committee on Fisheries held in Rome from 3 to 10 June 1975. It noted in particular the views expressed by the Committee regarding the increasing management and development responsibilities of the FAO fishery bodies and the need to provide greater support for the activities of these bodies. It also noted with appreciation that the Committee had requested the Secretariat to collect systematically, analyze and disseminate information on fisheries aid, on donor criteria and the needs of potential recipients, and welcomed the view expressed by the Committee that regional and inter-regional UNDP/FAO projects offered scope for the coordination of development assistance and for attracting additional bilateral aid to fishery programmes. It was stressed that information should not be collected on existing projects only but should also cover projects under consideration and long-term planning. Several delegations provided details on current assistance programmes in the area served by the Commission and pledged their cooperation in supplying data on the results achieved.

Election of the Executive Committee for the Implementation of the International Indian Ocean Fishery Survey and Development Programme

61 The Commission noted that, in accordance with Resolution IOFC/2/1, the membership of the Executive Committee consists of the Chairman and the Vice-Chairmen of the Commission, as well as representatives of not more than four other countries. Following the election of officers (see paragraphs 62 and 63 below), it agreed that, in addition to these officers, the representatives of Australia, Qatar and the United States of America would serve as members of the Executive Committee.

ELECTION OF OFFICERS

62 Under Rule II-1 of its Rules of Procedure, the Commission is required to elect, at the end of every session, a Chairman and a maximum of six Vice-Chairmen who shall remain in office until the election of the new Chairman and Vice-Chairmen.

63 On the recommendation of the Nominations Committee, the representative of Kenya (Mr. N. Odero) was unanimously elected Chairman of the Commission and the representatives of India (Prof. P.C. George), Indonesia, Japan, Mauritius, Sweden and Tanzania as Vice-Chairmen.

DATE AND PLACE OF THE NEXT SESSION

64 The Commission considered the date of its next session and agreed that it should be held during the first half of 1977, the precise date to be decided by the Director-General in consultation with the Chairman. The Commission noted that, as provided in Rule IV-2 of the Rules of Procedure, the Director-General would also consult with the Chairman to decide on the place where the session would be held.

Appendix A

LIST OF DELEGATES AND OBSERVERS

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Vice-Chairmen	P.C. George (India)
Representatives of:	Indonesia Japan Mauritius Sweden Tanzania

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Representatives of: Australia
Japan
Kenya
Mauritius
Sri Lanka

SECRETARIAT

Host Government

Liaison Officer	N. Odero
Assistant Liaison Officer	P.N. Kamande
Executive Officer	S.M.A. Shah
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Appendix B

ADDRESS BY THE HONOURABLE MATHEWS J. OGOTU, M.P.
MINISTER FOR TOURISM AND WILDLIFE, GOVERNMENT OF KENYA

Mr. Chairman, Mr. Popper, Your Excellencies, Mr. Provincial Commissioner, Coast Province, Distinguished Delegates, Ladies and Gentlemen,

It is my great pleasure to welcome you all on behalf of His Excellency the President Mzee Jomo Kenyatta, the people and the Government of the Republic of Kenya, to the Fourth Session of the Indian Ocean Fishery Commission.

May I take this opportunity to convey our gratitude to the Director-General of the Food and Agriculture Organization (FAO) for having accepted our invitation to host the Fourth Session of this Commission in Kenya. We have closely followed the work of this regional fishery body which is essentially centred in a developing area surrounded by many developing countries. Our interest in your work is motivated by our desire for rational exploitation of the available natural resources for human benefit. My country has continually participated in the various functions and activities of this Commission since its inception.

The establishment of the Indian Ocean Fishery Commission by FAO was a milestone in the development of the fisheries of this area. The fishery resources of this vast ocean have been and still continue to be only slightly exploited. Although the countries in this region are anxious to expand their fishing activities, lack of adequate capital has prevented many of them from venturing into the open off-shore waters. Even within the coastal waters, fishing in many areas remains primitive.

One of the most important factors in the development of natural resources such as fisheries, is the availability of reliable data and statistics on which the necessary planning could be based. This Commission, through the International Indian Ocean Fishery Survey and Development Programme with support from the United Nations Development Programme, has been conducting various investigations in order to provide the required information. Many documents have been produced on the various aspects of the fisheries development relating to specific areas or to the Indian Ocean as a whole. Some of these documents I must say are very useful and should be studied carefully by all those concerned and the various recommendations contained therein turned into tangible and viable projects. We recognize the importance of conducting research to provide the required data and information; however, if the available information is not utilized and converted to realistic and beneficial projects, the surveys conducted would be futile.

Although many of the developing countries may not have enough financial resources to invest in the marine fishing industries the main bottle-neck that restricts investment in this sector is the uncertainty surrounding the industry. The investors with limited means would especially wish to know as much as possible about the resource availability, fluctuation, nature and concentration before taking the risk. Your Commission is best placed to provide all this information and, in so doing, tremendously contribute to the development not only of the fishing industries in these countries but also to the general development and elevation of the standards of living in the developing nations.

I note with appreciation the assistance your Commission has been receiving from various countries and development agencies. In this respect I refer to the recent survey which covered the north-western Indian Ocean, conducted by the NORAD fishery research vessel FRIDTJOF NANSEN. We are happy to acknowledge its preliminary report which has reached us. We are also pleased to note that a similar survey will soon be carried out with assistance from developed nations. It is hoped that donor countries and agencies will continue these examples and make available to the Indian Ocean Fishery Survey and Development Programme any equipment, research vessels and technical personnel. I should like to emphasize that the

main aim in these technical assistance programmes should be the transfer of technical know-how and expertise from developed nations to the developing countries. The survey programmes should contain training elements which will enable scientists from the developing countries to participate in the research investigations.

This Commission should make use of all available facilities and institutions in the countries around the area for the surveys to be conducted. The cooperation which has been established with the Indo-Pacific Fisheries Council is therefore commendable. In order to bring about more rapid development we would suggest that this Commission go further and initiate joint programmes with other national and regional research organizations which exist in the countries surrounding the Indian Ocean. I am certain some of the envisaged programmes of development could easily be tackled in this way. Before I leave this topic of cooperation and technical assistance, I wish to express our gratitude to the various countries and organizations which have and/or are continuing to assist us in our marine and coastal fisheries development and research programmes. Just to name a few: we express our sincere thanks to the United Kingdom who gave us a research vessel on technical assistance. This vessel, R.V. SHAKWE based at Mombasa, has rendered invaluable service to our survey programmes and pilot projects within the coastal waters. We are very grateful to Japan for continuously supplying us with technical assistance personnel and more particularly for entering into a joint venture with us, through which we established a shore facility oriented towards deep-sea fishing ventures. This facility, which some of you may visit during the week, comprises of a modern cold storage capable of holding 2 000 tons of frozen fish at a time and a modern jetty equipped with conveyor belts for the loading and off-loading of fish cargo. Appreciation is also extended to FAO and Sweden for the assistance in establishing a regional laboratory for monitoring pollution in our country. Land has been made available in Mombasa along the Nyali Beach area not very far from here and plans for this set-up are fairly advanced; the construction work is expected to start soon. This centre will be very useful in the training of scientists and research personnel from the developing countries in this region. It may be worthwhile to mention that our country enjoys cordial relations in marine research with our neighbouring states, Tanzania and Uganda, through the East African Community Research Organization, the East African Marine Fisheries Research Organization.

I note from your agenda that you will be discussing many important subjects during your meetings. These include fishery statistics, state of stocks and management, small-scale fisheries, and the development of coastal aquaculture. All these topics are of great interest to us and we will keenly follow your deliberations. I realize that you have among you here many fisheries experts from all over the world and the conclusions you reach and your recommendations at the end of this conference will have far-reaching effects and should form guidelines for the future.

Meanwhile, we warmly welcome the presence of many distinguished fisheries biologists and administrators from many countries at this meeting. I expect that you will all use this opportunity to examine our trend of fisheries development and that you will feel free to discuss with and to advise our officers as best as you can.

Perhaps some of you have heard about the beauty of our country, especially as a holiday resort. Our Government attaches great importance in providing the infrastructure to develop tourism. Since our independence in 1963, Kenya has embarked on ambitious programmes to expand and modernize our tourist resorts to cater for all needs of the people of the third world. Our efforts have been rewarded and we can now boast of many beautiful sceneries throughout the country. In these activities we have been assisted by our moderate climate, which is unique for tropical countries. We are able to cater for a wide range of our tourists' and visitors' needs depending on their interests. Maybe while you are here, you should take the advantage to visit some interesting places in our country. My officers, the tour operators and the hoteliers will be very happy to assist and advise you as to where to go according to your interest. After your visit and tour we will look upon you to be our ambassadors in spreading the good news of our attractive spots and surroundings as widely as you can.

Lastly, I wish the distinguished delegates, observers and visitors assembled here, very successful and fruitful deliberations which I shall follow with keen interest. I trust you will enjoy your stay at our coast and elsewhere in the country.

Ladies and Gentlemen, I now have the honour to declare the Fourth Session of the Indian Ocean Fishery Commission formally open.

Thank you.

* * * * *

Appendix C

ADDRESS BY MR. F.E. POPPER
ASSISTANT DIRECTOR-GENERAL (FISHERIES), FAO

Mr. Chairman, Excellencies, Honoured Guests, Distinguished Representatives, Ladies and Gentlemen,

It is my privilege and pleasure to express, on behalf of the Director-General of FAO, my Organization's appreciation and gratitude to the Government of Kenya, and in particular to His Excellency, the Minister for Tourism and Wildlife, for hosting this Fourth Session of the Indian Ocean Fishery Commission here in Mombasa. We are indeed fortunate to be able to do our work here in these ideal surroundings. I would like to thank His Excellency especially for his kind words of welcome and of appreciation for the work of FAO and of this Commission. I would also like to underline what he has said about the importance of this work for the developing countries in the region.

Mr. Chairman, the IOFC has responsibility for a wide ocean area which holds many possibilities for fishery development, particularly for its coastal countries. This in itself makes any session of your Commission an important event. This session, moreover, comes at a crucial moment when, as a result of the discussions at the United Nations Conference on the Law of the Sea, it is sufficiently clear that its outcome will involve a general extension of national control over offshore resources, including particularly fishery resources.

This session offers the IOFC an opportunity to take stock of the situation and to see what your Commission's role should be in the future in the light of the changes likely to occur in the regime of the seas. I shall be specially interested to see the Commission's reaction in this situation because the IOFC is the first of our FAO Commissions to meet since the Conference on the Law of the Sea concluded its third session in Geneva in May of this year. The IOFC will therefore be in the position of a pace maker and your action may influence the future role of all the regional fishery commissions. This, of course, places a special responsibility on you at this time.

As you know, when the Committee on Fisheries met in early June, it discussed the likely consequences of the Conference on the Law of the Sea. You may wish the Secretary of the Committee on Fisheries to report to you on this matter in some detail later in your session, but I should mention now that the Committee on Fisheries decided to reactivate its Sub-Committee on the Development of Cooperation with International Organizations concerned with Fisheries and requested it to consider the likely roles of the regional fishery bodies, the Department of Fisheries of FAO and the Committee itself in the context of any new legal order that may govern fisheries.

Clearly, the Sub-Committee (and later on the Committee on Fisheries itself) will benefit from such preliminary thought as you may be able to give to IOFC's own role in this context. One aspect to bear in mind will be the additional assistance from FAO and from IOFC that will be needed by developing countries if they are effectively to manage and fish these resources over which they will gain control. Whether these needs can be met adequately, may well be crucial to the success of the new regime in enhancing the use of the existing fishery resources.

Mr. Chairman, I realize that this is not an item on your agenda but it is, I think, something that you will have to bear in mind throughout your discussions and to which reference will no doubt be made as opportunity offers.

Turning now to your agenda, I would like to say a few words about the two main subject matter areas with which you will deal: management and development.

First, management. Here, apart from questions of improving statistics and stock assessment, you will consider the choice of appropriate management measures for the various stocks. No doubt you will give special attention to tuna and shrimp and, probably, also to some others.

On the first two you will have the advantage of preliminary work by subsidiary bodies. On tuna, you will have in your hands the report of the Third Joint Meeting of the IPFC Special Committee on Management of Indo-Pacific Tuna and of your own Committee on Management of Indian Ocean Tuna which completed its work only today. On shrimp, you have the report of the Committee for the Development and Management of the Fishery Resources of the Gulfs which met in Kuwait last month.

In each case you will have to decide what further work on assessment needs to be done, but also whether in any particular case the situation requires that management measures should be introduced on a multinational or sub-regional basis and the part you may wish your Commission to play in proposing and adopting such measures.

As for development, the three agenda items relevant to this subject place emphasis on improving the lot of the small fishermen. This aspect is generally recognized to be specially important at this time, but it is also specially difficult. I hope that your discussions will help to plan better for a fuller participation of small-scale fishermen and their communities in the uses of the resources of the sea and inland waters.

But development is, of course, a broad concept with many ramifications. In the IOFC area we have the good fortune of being able to draw on the resources of the first of the large inter-regional projects to have been set up by FAO, mainly with UNDP support. I refer to the Indian Ocean Programme. The Programme Leader will be introducing his progress report of activities in the course of your session and also an important paper on fishery development opportunities. This should lead to interesting and, I hope, fruitful discussions.

In closing, Mr. Chairman, let me say that I am convinced that regional fishery commissions like yours can and should have an increasingly important part to play in both management and development, but they must have the full support of their member countries. This would benefit these member countries above all. You can be the pioneers in adapting international cooperation in fisheries to new circumstances. This is both a great responsibility and a great opportunity. I wish you the best of success in coping with both.

Thank you, Mr. Chairman.

AGENDA

- 1 Opening of the session
- 2 Adoption of the agenda and arrangements for the session
- 3 Fishery statistics
- 4 State of stocks and management
 - (a) Tuna stocks
 - (b) Shrimp stocks
 - (c) Other stocks
- 5 International Indian Ocean Fishery Survey and Development Programme
 - (a) Progress report
 - (b) Fishery development opportunities
- 6 Small-scale fisheries
- 7 Development of coastal aquaculture
- 8 IPFC/IOFC Symposium on the Economic and Social Aspects of National Fisheries Planning and Development
- 9 Subsidiary bodies of the Indian Ocean Fishery Commission
- 10 Cooperation with other bodies
- 11 Any other matters
- 12 Election of officers
- 13 Date and place of the next session
- 14 Adoption of the report

Appendix E

LIST OF DOCUMENTS

IOFC/75/1	Provisional agenda
2	Annotated provisional agenda
3, Rev.1	Provisional timetable
4	Fishery statistics in the Indian Ocean Fishery Commission (IOFC) area
5	Report of the Third Joint Meeting of the IPFC Special Committee on Management of Indo-Pacific Tuna and the IOFC Committee on Management of Indian Ocean Tuna
6	Some aspects of the shrimp fishery in the Gulf between Iran and the Arabian Peninsula
7	Review of the state of exploitation of the world fish resources
8	Problems on the full utilization of the Indian oil-sardine in the Arabian Sea
9	Current management problems in the Indian Ocean
10	Progress report of the Programme Leader on the International Indian Ocean Fishery Survey and Development Programme
11	Report of the Fourth Session of the Indian Ocean Fishery Commission Executive Committee for the Implementation of the International Indian Ocean Fishery Survey and Development Programme
12	Survey and development of the Red Sea
13	Fishery development opportunities in the Indian Ocean
14	Small-scale fishery development
15	Small-scale fisheries
16	Coastal aquaculture in the Indian Ocean region
17	Report of the IPFC/IOFC Symposium on Economic and Social Aspects of National Fisheries Planning and Development
18	IPFC/IOFC Symposium on Economic and Social Aspects of National Fisheries Planning and Development: Proposals for follow-up action by IOFC
19	Activities of the subsidiary bodies of the Indian Ocean Fishery Commission (IOFC)
20	Cooperation between the Indian Ocean Fishery Commission and international bodies
21	Report of the IOFC Committee for the Development and Management of the Fishery Resources of the Gulfs

IOFC/75/Inf.1	List of documents
2	Information for participants
3	Report of the Third Session of the IPFC/IOFC Joint Working Party of Experts on Indian Ocean and Western Pacific Fishery Statistics
4	Description of area for statistical purposes: western and eastern Indian Ocean
5	Classification of aquatic animals and plants for statistical purposes: western and eastern Indian Ocean
6	Notes for the completion of forms FISHSTAT 51A and 57A: FAO Statistical Fishing Areas 51 (western Indian Ocean) and 57 (eastern Indian Ocean)
7	Nominal catches by species and by countries 1965-73: western and eastern Indian Ocean
8	Improvement of national fishery statistics
9	Report of the Second Session of the IPFC/IOFC <u>Ad Hoc</u> Working Party of Scientists on Stock Assessment of Tuna
10	An analysis of the state of the shrimp stocks of the Gulf between Iran and the Arabian Peninsula
11	The biology and stock identity of the Indian oil-sardine in the Arabian Sea
12	Fishery development in East Africa
13	Report of the Third Session of the Indian Ocean Fishery Commission
14, Rev.1	List of delegates and observers
15	Follow-up to the IPFC/IOFC Symposium on the Economic and Social Aspects of National Fisheries Planning and Development: Interim report on resources management
16	Management of the Australian northern prawn fishery

Appendix F

REPORT OF THE FIRST SESSION OF THE IOFC AD HOC COMMITTEE ON TUNA MANAGEMENT

The session was held on 23 July 1975 at Mombasa to discuss the pattern of work of the Committee. All member countries were represented (see Annex 1). On the proposal of the United States of America, Mr. E.A. Purnell-Webb (Australia) was elected Chairman, as proposed at the IOFC itself.

Timing of sessions

It was agreed that the Committee should meet as soon as possible, but in conjunction with other IOFC or IPFC meetings. The dates of 12-13 December 1975 immediately following the meeting of the Ad Hoc Committee on the Functions of IPFC, in Bangkok, were tentatively agreed as the time of the next session.

Participation

Participation in the next session should be kept to a minimum in order to facilitate discussion; however, the views of other member countries of IOFC or IPFC should be brought to the attention of the Committee, and its member countries in each region around the Indian Ocean were invited to seek the opinion of adjacent countries. It was also felt that the experience of other international bodies concerned with tuna would be useful. In the first instance member countries of the Committee or FAO could report their experiences, but the possibility of inviting such bodies to attend further sessions of the Committee should be kept open.

Preparation of documents

A single working document should be prepared by the Secretariat as a basic paper for the next session. The Secretariat would be helped in the preparation of this paper by suggestions from member countries on the functions of the Secretariat in relation to tuna, and of the standing committee or committees, as well as on method of financing. To ensure adequate consideration of the basic paper by countries, this should be distributed from Rome not later than 1 November, and ideas and suggestions for inclusion in this paper should be sent by member countries to arrive in Rome not later than 15 September.

LIST OF PARTICIPANTS

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MURPHY, Dr. G.I.

India

GEORGE, Prof. P.C.

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