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Meeting on Cooperation
between African and Asian
Fisheries Specialists*

isp
table

Singapore, 25 - 30 October 1992

REPORT**

* Organized by UNIDO in cooperation with the Asian
Fisheries Society.

** This document has not been edited.

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BACKGROUND

1. The cooperation between Asian and African countries in various industrial sectors has always been a major component of the UNIDO Programme for Economic and Technical Cooperation among Developing Countries (ECDC). From the 1986 Meeting on Industrial Cooperation between Asian and African Countries (New Delhi, India) to the most recent ones which focused on specific industrial sectors (agro-based industries, agricultural machinery, etc.) all meetings have achieved positive results.

2. At the Regional Consultation on the Fisheries Industry for Asia and the Pacific Island Countries, held in Vienna, 2-6 December 1991, participants from the Asian and African regions strongly called for encouragement of ECDC through UNIDO and other international agencies concerned. Areas such as aquaculture, product development, post-harvest technology, marine resources, management, exchange of information and training were indicated as being especially suitable for economic cooperation among developing countries.

3. In Asia, the Asian Fisheries Society was established in 1984. Since then the number of society members has grown from the fourteen who signed the Society constitution to almost 700 from 42 countries.

4. The primary objectives of the Society are:

(a) To promote effective interaction and cooperation among scientists and technicians involved in fisheries research and development in Asia with a view to encouraging and facilitating research activity complementation, sharing of information and publication of research results;

(b) To create and propagate an awareness of the importance and ways of sound utilization, cultivation, conservation and development of aquatic resources in the region; and

(c) To promote the establishment of national fisheries societies and to seek affiliation and cooperation with societies, organizations and institutions having similar objectives.

5. These objectives are to be pursued by:

(a) Providing an effective mechanism, in the form of an Asian fisheries journal for the dissemination of research and other relevant information;

(b) Providing further opportunities as appropriate for fisheries industrialists and technicians to get together by the holding of meetings, symposia, workshops, conferences or other gatherings;

(c) Addressing other important issues related to the fisheries industry in the region; and

(d) Convening, on a regular rotational basis, an Asian Fisheries Forum as a gathering of scientists and technicians who, in their professional capacities can freely discuss broad issues and specific topics related to fisheries, and publishing the proceedings;

The Third Asian Fisheries Forum, held in Singapore in October 1992 provided the framework for the meeting on Cooperation between African and Asian Fisheries Experts.

6. In Africa, with rare exceptions, deep sea stocks are either fully exploited or overexploited while coastal resources are very often under-fished. While industrial-scale fisheries do exist they cannot be said to supply the local markets; on the contrary, consumption habits are centred on products associated with non-industrial-scale techniques such as those used in small-scale fishing and handling and in the kind of processing that results in salted, dried and smoked products.

7. Considered as a whole, the continent exhibits a very irregular pattern of distribution of resources and population, resulting in widely differing situations with respect to the supply and availability of fish. This unevenness of distribution is also true of the infrastructural facilities required for research, human resources development, quality control, handling and processing which may be inadequate or even non-existent in some areas and substantially under-utilized in others.

8. The Meeting on Cooperation Between African and Asian Fisheries Specialists which took place within the Third Asian Fisheries Forum with the purpose of bringing together fisheries specialists from the two regions, was attended by 22 participants from 15 countries. Six African countries were represented among which were four Least Developed Countries (Cameroon, Comoros, Ethiopia, Kenya, Tanzania, Uganda). (See Annex I)

Opening Ceremony

9. At the opening ceremony, Dr. Chua Thia-Eng, President of the Asian Fisheries Society welcomed the participants to the meeting and introduced the fisheries specialists from the Asian region requesting them to present their area of activities.

10. He then expressed interest in learning from the participants from Africa about the problems and prospects of the fisheries sector in their respective countries. Dr. Chua concluded by indicating readiness to assist in the establishment of cooperation between fisheries specialists of the two regions and wished all participants a fruitful meeting.

11. The Director of the Special Measures and Activities Division of UNIDO, thanked Dr. Chua and the Asian Fisheries Society on behalf of the Director-General and the Director of the System of Consultations Division for hosting the Meeting on Cooperation Between African and Asian Fisheries Specialists. He stressed the importance of providing the African participants with an opportunity to learn about the latest technology developments taking place in Asia in the fisheries sector.

12. The Director of the Special Measures and Activities Division underlined the different conditions of this sector in the two regions pointing out several factors such as level of supply and consumption, participation in international trade, available resources and markets, infrastructure and human resources development.

13. Concluding his speech, the Director of the Special Measures and Activities Division pointed out a number of areas for future cooperation between the specialists from the two regions, including provision of expertise, training programmes, exchange of information and transfer of technology.

Third Asian Fisheries Forum

14. The Third Asian Fisheries Forum and the Fish Asia '92 exhibition appropriately reviewed and addressed subjects related to achievements in fisheries and aquaculture technology in terms of product development (fish feeds, chemicals), equipment and instrumentation (radar, sonar), aquatic food processing products and equipment. Papers presented at the seminars and symposia on aquaculture, captive fisheries, aquatic ecology, fish biology, post-harvest technology and socio-economics were not only highly informative but also scientifically stimulating. The African participants attended several of the sessions and were also able to make useful contacts with several researchers, academicians and investors present at the Forum and Fish Asia '92.

Summary of Discussions

15. At the first session on 25 October 1992, the six participants from Africa (Cameroon, Comoros, Ethiopia, Kenya, Tanzania and Uganda) presented briefly their country papers, focusing on the fisheries industry sector's problems and needs.

16. A number of priority issues were identified for further discussion during the following sessions and several resource persons selected from among the Asian fisheries specialists were assigned to each issue.

a. **Priority issues emerging from the first discussions**

- Post-harvest techniques;
- Training;
- Establishment of the African Fisheries Society;
- Investment;
- Environment.

The latter two issues as well as the aquaculture issue were discussed less intensively.

17. An important feature of the meeting was the identification of several opportunities for future cooperation between Asian and African fisheries specialists in areas such as training, exchange of information, expert assistance and research activities.

18. Priority areas in training and research for such collaboration were identified as:

- (a) Post-harvest fisheries technology;
- (b) Aquaculture (fish farming) technology;
- (c) Fishing gear and methods technologies;
- (d) Fisheries research and management;
- (e) Boat building technology.

19. Training at the levels of post-graduate certificates and diplomas, bachelor's degrees, masters degrees and Ph.D.'s were identified as being appropriate. Training could be implemented at appropriate Asian institutions for qualified African trainees provided the following requirements are met:

- (a) Availability of sponsorship with adequate funds to meet all training needs;
- (b) Sufficient academic qualifications;
- (c) Suitability of the institution recommended for the training.

b. **Post-harvest techniques**

20. It was noted that post-harvest losses were still a problem in both regions. It is, therefore, necessary to adopt technologies that would reduce such losses and convert the losses into usable products as it is possible to use all the fish.

21. Wastage could be avoided during handling, traditional processing, preservation, transportation and storage by the development of infrastructure such as roads, electricity, water and handling facilities. Promotion of industrial fish processing, as is undertaken in Kenya, Uganda and Tanzania, could solve part of the problem.

22. In this respect the Taiwan Fisheries Research Institute offers a training programme in post-harvest technology aimed at minimizing losses both on-board and on-shore.

23. Particularly interesting to the African participants is the 3 - 4 weeks training programme on use of waste fish for value-added products. In this respect, the need of African countries for training of extension specialists was mentioned.

24. The participants were informed of two training facilities in China, namely the Fisheries University at Shanghai and the Aquaculture Training Centre. However, it was clearly pointed out that experience in avoiding or minimizing post-harvest losses in China was still lacking.

c. Training

25. The representative of SEAFDEC (South East Asia Fisheries Development Centre) presented in detail the four departments of his organization:

- (a) Training Department at Bangkok;
- (b) Post-harvest Department at Singapore
(Fish processing at industrial level);
- (c) Marine resources assessment at Kuala Lumpur;
- (d) Aquaculture in the Philippines.

26. The above four countries as well as Japan are the member countries of SEAFDEC. They operate research and training programmes in the areas of (a) capture fisheries, (b) post-harvest fish technology, (c) marine resources assessment, and (d) aquaculture. While Japan provides experts, equipment and fellowships to the member countries, each of the other four specializes in one of the disciplines above. Each member government has full discretion in the management of the research, training and information programmes for the discipline in question.

27. Research is conducted in each country as in-house research, collaborative research and as externally-funded research. Training is also in-house, i.e. within the individual country, collaborative within SEAFDEC member countries and external. Twelve vacancies are offered each year but six are reserved for collaborative and/or externally-funded candidates. The information division in each country publishes various types of scientific information for dissemination to the scientific communities.

28. Admission for external trainees to any of the institutions is possible, either through the SEAFDEC Secretariat in Bangkok or directly with the respective selected institution. Institutions within SEAFDEC offer post-graduate certificates or diplomas following successful completion of any of the training programmes. Thailand, in addition, offers degree programmes in aquaculture, marine biology/fisheries and post-harvest technology.

29. The possibility of an agreement between SEAFDEC and UNIDO was discussed to facilitate future assistance in training and research for African fisheries specialists.

30. The participants' attention was also drawn to a number of Asian fisheries training institutions by their respective representatives.

Taiwan Fisheries Research Institute

31. The Institute offers training and research programmes in marine fisheries, aquaculture and food processing. Emphasis in training is on practical experience in the field. Studies in post-harvest technology emphasize reduction of post-harvest losses through complete utilization of the fish for food, fish meal and fish by-products. Availability of training programmes is announced through the appropriate Government channels. Applicants may obtain financial assistance through the International Economic Development Fund (IEDF).

University of the Philippines

32. The University offers graduate programmes in fisheries such as (a) Master of Aquaculture, (b) Master of Science in Fisheries with majors in Aquaculture, Fisheries Biology and Fish Processing Technology. The latter programme concentrates research in fish quality control and losses due to spoilage which are the current pressing problems of the industry.

University Pertanian Malaysia

33. This University offers fisheries education at the undergraduate level.

Other courses of 3 to 4 years are offered by the Faculty of Fisheries and Marine Science. The faculty has also been offering short courses on fish disease, water quality and aquaculture designed to train fisheries assistants, farm managers and supervisors.

College of Fisheries - Mangalore, India

34. This College conducts masters programmes in two main areas: fish production and management and industrial fisheries technology. Relevant supporting courses in fisheries microbiology, fisheries biochemistry, fisheries statistics and fisheries economics are offered in both areas.

Shanghai Fisheries University - People's Republic of China

35. This University offers five specialized courses to postgraduates, namely Ichthyology, Aquaculture, Marine Products Processing, Marine Fishery and Fish Ecological Environment.

In the People's Republic of China middle fisheries technical schools supply medium-grade technicians for fishery production and management. Some agricultural schools in the inland provinces also have established fishery sectors.

Deakin University - Australia

36. The Deakin University offers short courses in addition to long courses to B.Sc., M.Sc., and Ph.D. levels in aquatic science and aquaculture. It also offers distance courses. External candidates can be admitted for courses at the University as long as they fulfil the entry requirements and are fully sponsored.

d. Investment

37. The issue of investment was mentioned in connection with fresh water fisheries in Thailand developed on a cooperative basis. The experience of Thailand was illustrated as an example to be followed for obtaining funding from financing institutions such as the Industrial Development Bank and the World Bank.

38. Aquaculture, capture fisheries and fish processing were identified as areas suitable for investment. It was recommended that to encourage foreigners to invest in developing countries, either on their own or in joint venture with nationals, the respective governments should ensure that the environments for investment are attractive.

39. Since aquaculture is relatively new in Africa, it was considered best to start with small-scale operations which would initially require little capital. Commercial farming could start with shrimps and with fish as they are oriented to foreign markets.

40. Investment in fish processing should be accompanied by setting up quality standard laboratories to ensure that only acceptable fish products are exported to developed countries. Market outlets for fish should also be sought in some of the Asian countries as they take more varieties of fish products than Europeans or Americans.

e. Fisheries Society of Africa

41. In 1982 a first questionnaire was sent out to African fisheries specialists and organizations to assess the need for setting up a regional society for fisheries specialists. Later on, in October 1990, at the meeting of the Committee for Inland Fisheries in Africa organized by FAO at Cairo, the decision was taken to request countries in Africa to nominate candidates to

the Executive Committee of the Fisheries Society of Africa. Prof. Dadzie from Kenya was nominated Chairman of the Society. The establishment of the Society was announced in a bulletin of ICLARM (International Center for Living Aquatic Resources Management).

42. The first meeting of FISA (Fisheries Society of Africa) took place at the World Congress of Fisheries at Athens in April 1991. The first symposium is planned for 1994. The FISA will be a non-governmental organization like the Asian Fisheries Society and will not necessarily be composed of national societies.

43. At the meeting it was decided that the six African fisheries specialists as well as Prof. Dadzie, who was invited to participate at the meeting as an observer, constitute themselves into a working group to adopt the draft constitution and commission the Technical Secretary to register the Society in Kenya after consultation with Kenyan legal authorities. A general meeting would then be called for the inauguration of the Society.

44. The Constitution was adopted in a separate meeting on 30 October. Members present provisionally enrolled and paid an official entry fee.

Conclusions

45. During the closing session of the meeting a number of important issues which had been discussed during the previous days were highlighted by the participants from the two regions in order to outline the action to be undertaken as follow up to the meeting. In particular, the participants concluded that:

- A number of developments achieved by the Asian fisheries specialists in the fisheries sector of their respective countries can be applied to the African countries, provided a suitable infrastructure exists to sustain the above developments;
- In this respect African governments should recognize the important role the fisheries industry is playing in the economy of their country, and should therefore strengthen their support to fisheries research, training and management and fish processing and marketing;
- The information exchanged at the meeting through round-table discussions, bilateral meetings, attendance at the Forum's sessions and visits to the Fish Asia '92 Exhibition proved to be very stimulating for participants from both regions;
- Before undertaking steps towards transfer of technologies in the fisheries sector, it is essential to develop human resources capable to acquire and apply new technologies. High priority is therefore to be assigned to training of manpower and upgrading of skills;
- Within the framework of ECDC cooperation between African and Asian fisheries specialists, two main activities were identified as suitable to tackle the issue of training for African countries:
 - (a) Visits by African fisheries specialists to Asian training institutions for upgrading courses;
 - (b) Visits by Asian training experts to African countries to assess the status of their training facilities. In case of established and functioning training facilities (such as in Kenya and Tanzania) regional training courses could be held with the assistance of Asian fisheries experts.
- The Asian Fisheries Society could play an important role as "clearing-house" to identify the most suitable training facilities for African fisheries operators through its network and knowledge of available courses and existing institutions.
- Post-harvest and related infrastructure (on board and on-shore conservation, refrigeration and transportation) could

be greatly improved through financial resources generated by the fish processing industry;

- In respect to the investment needed for the growth of the fisheries sector in Africa, the experience of Asian fisheries in attracting foreign investment should not always be taken as an example. In fact too much foreign investment can cause (a) over-exploitation of resources; (b) an imbalance in equity percentage between national and foreign owners; and (c) a negative impact on the environment.
- The catalytic role of international organisations, in particular of UNIDO, should be emphasized and oriented towards the needs of the fisheries sector, particularly of African countries. Project proposals prepared for the meeting should accordingly be screened by relevant UNIDO sections (Feasibility Studies, Investment Promotion, Agro-industries, Environment) in order to assess their suitability for submission to possible donors. Their circulation through UNIDO services in developed and developing countries should be part of the follow-up action to this meeting.

ANNEX I

List of participants

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ANNEX II
PROGRAMME OF THE THIRD ASIAN FISHERIES FORUM

DAY	MORNING (0900-1200)	LUNCH BREAK (1200-1400)	AFTERNOON (1400-1820)	EVENING (2000-2200)
1 MONDAY OCTOBER 26	0900-1000 Registration 1000-1100 Opening Ceremony 1100-1120 Break 1120-1200 Plenary*	Poster Viewing	1400-1600 Scientific Sessions: Aquaculture/Capture Fisheries/ Post-Harvest Technology/Physiology 1600-1620 Break 1620-1820 Scientific Sessions: Aquaculture/Capture Fisheries/ Post-Harvest Technology/Physiology	
2 TUESDAY OCTOBER 27	0900-1000 Scientific Sessions: Aquaculture/Genetics/Physiology/Fish Biology 1000-1040 Break 1040-1200 Scientific Sessions: Aquaculture/Genetics/Physiology/Fish Biology	Fish Health Meeting Aquaculture Clinic Poster Viewing	1400-1600 Symposium: 1. Ornamental Fish 2. Shrimp Culture 3. Socio-Economics 1600-1620 Break 1620-1820 Symposium: 1. Ornamental Fish 2. Shrimp Culture 3. Socio-Economics	
3 WEDNESDAY OCTOBER 28	0900-1000 Symposium: 1. Groupers Breeding and Fry Production 2. Post-harvest Technology 1000-1100 Break 1100-1200 Symposium: 1. Groupers Breeding and Fry Production 2. Post-harvest Technology 0900-1200 IWGON Workshop	Fish Health Clinic Poster Viewing	1400-1600 Symposium: Molecular Biology & Aquatic Biotechnology Scientific Sessions: Diseases/Ecology/ Capture Fisheries 1600-1620 Break 1620-1820 Symposium: Molecular Biology & Aquatic Biotechnology Scientific Sessions: Diseases/Ecology/Capture Fisheries	IFS Night
4 THURSDAY OCTOBER 29	0900-1000 Plenary 1000-1040 Break 1040-1200 AGAM/Decision of Councilors	Biotechnology Clinic Poster Viewing	1400-1600 Symposium: Hormones & Aquaculture Scientific Sessions: Nutrition/Genetics/Ecology/Shrimp Culture 1600-1620 Break 1620-1820 Symposium: Hormones & Aquaculture Scientific Sessions: Nutrition/Genetics/Ecology/Shrimp Culture	Banquet
5 FRIDAY OCTOBER 30	0900-1000 Scientific Sessions: Aquaculture/Nutrition/Genetics/Fish Biology 1000-1040 Break 1040-1200 Scientific Sessions (continued)	Poster Viewing	1400-1600 Scientific Sessions: Aquaculture/Nutrition/Genetics/Fish Biology 1600-1620 Break 1620-1820 Plenary & Closing Ceremony	

* Including ceremonial hand over of specimens by Fish Health Section to the Zoological Reference Section, National University of Singapore.

ANNEX III

Meeting on Cooperation between African
and Asian Fisheries SpecialistsPROGRAMME25 October

- Afternoon:
- Opening ceremony
 - Discussions on possibilities of a structured and continuous interregional cooperation

26 October

- Morning:
- Opening of the Third Asian Fisheries Forum
- Afternoon:
- Round-table discussions among fisheries specialists, donor and international agencies

27 October

- Morning:
- Post-harvest technology
- Afternoon:
- Attendance at Third Asian Fisheries Forum
 - Visit to exhibition Fish Asia '92

28 October

- Morning:
- Training
 - Investment
- Afternoon:
- Attendance at symposia on packaging, post-harvest technology, socio-economics

29 October

- Morning:
- African Fisheries Society
 - Environment
- Afternoon:
- Bilateral Discussions

30 October

- Morning:
- Final discussions
 - Closing ceremony