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Expert Group Meeting on the  
Fisheries Industry for Asia  
and the Pacific Island Countries\*

Singapore, 14-17 May 1991

REPORT\*\*

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\* Organized by UNIDO in co-operation with the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and Technonet Asia

\*\* This document has not been edited.

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## PREFACE

The System of Consultations is an instrument through which UNIDO serves as a forum for developed and developing countries in their contacts and consultations directed towards the industrialization of developing countries. Consultations permit negotiations among interested parties at their request, at the same time as or after the meetings. Participants of each member country include representatives of government, industry, labour, consumer groups and others, as deemed appropriate by each government.

Benefits emerging from this activity include the identification of obstacles to industrial development in developing countries, monitoring trends in world industry in order to identify action-oriented measures for increasing the share of developing countries in world production; determination of new forms of international industrial co-operation in North-South and South-South relations.

### Regional Consultation on the Fisheries Industry for Asia and the Pacific Island Countries

In accordance with the decision of the Industrial Development Board in October 1988 and the programme of work adopted, the Regional Consultation on the Fisheries Industry for Asia and the Pacific Island Countries will be convened during the 1990-1991 biennium. The UNIDO Secretariat has convened this Expert Group Meeting in order to identify priority issues to be submitted for consideration at the Regional Consultation.

### Preparatory activities carried out by UNIDO

In preparation for the Consultation and prior to the Expert Group Meeting, UNIDO carried out studies analysing the problems and constraints of the fisheries industry in Asia and the Pacific and focusing on the value-added possibilities for fish processing.

## I. ORGANIZATION OF THE MEETING

1. The Expert Group Meeting on the Fisheries Industry for Asia and the Pacific Island Countries was held in Singapore, from 14 to 17 May 1991, in co-operation with the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and Technonet Asia. The meeting was attended by 10 participants from 6 countries, and 4 international and other organizations. (See Annex I for List of Participants.)

### Opening of the Meeting

2. The Meeting was opened by the Executive Director of Technonet Asia who drew attention to the varying stages of development in the fisheries industry reached by the Asian and Pacific countries. This was attributable to the availability of raw material for processing. He also emphasized that all the countries represented at the Meeting had recognized that the fisheries sector was a key area for development, as protein obtained through consumption of fish and fish products was a cheaper source of nutrition for the people in addition to it being a lucrative source of earnings. The Meeting was then addressed by the representative of ESCAP who spoke on behalf of the Executive Director of his Organization, Mr. S.A.M.S. Kibria. He stressed that although more than 85 per cent of the world's fish catch still came from the sea, production from such marine fisheries had reached an apparent plateau that could last indefinitely due to the national jurisdictions of the majority of the world's fishing grounds. However, development opportunities were numerous for both small-scale fisheries and aquaculture. Indeed, the further development of both aquaculture and small-scale fisheries, based on traditional fishing communities where poverty and privation were the precarious norms, could provide not only more food but also help relieve the economic and social distress of millions of people.

3. UNIDO's representative explained the origin and scope of the System of Consultations. He indicated that considering the volume of catches, the fisheries industry in the region could perform better in monetary terms and should therefore aim at an increase of value-added. The Regional Consultation on the Fisheries Industry for Asia and the Pacific Island Countries, scheduled for the end of 1991, should accordingly, through its recommendations, provide the basis for a Plan of Action aimed at indicating the best ways and means to achieve the development objectives of the fisheries industry in the region.

Adoption of the agenda

4. The following agenda was adopted:

- ( 1) Opening of the Meeting
- ( 2) Adoption of the agenda
- ( 3) Election of officers
- ( 4) Technology for value-added fish processing
- ( 5) Government policies for the development of value-added fish processing
- ( 6) Financing mechanisms for the development of value-added fish products
- ( 7) Training and research for the development of value-added fish products
- ( 8) Marketing of value-added fish products
- ( 9) Technology transfer for value-added fish processing
- (10) Presentation of conclusions and recommendations

Election of officers

5. Mr. Sakthivel Medaswamy (India) was elected Chairman of the Meeting.

Documentation

6. The documents issued for the Meeting are listed in Annex II.

Adoption of the report

7. The report was adopted by the Meeting at its afternoon session on 17 May.

II. SUMMARY OF DISCUSSIONS

Technology for value-added fish processing

8. The subject was introduced by a UNIDO consultant who made a presentation based on his background paper. He emphasized that resources in the North Atlantic were different to those found in developing countries and therefore technologies could not be the same. He also mentioned that the filleting and surimi processes were developed for homogeneous, and in many cases single, species. That did not apply to Asian countries where catches were heterogeneous.

9. The consultant described the different technologies available for value-added fish products. He recommended Individual Quick Freezing (IQF), for processing in Asian countries as well as fish analogues like laminated blocks, sausages and extruded products as a low cost, valuable alternative, allowing the use of underutilized species for local markets. In that connection, one participant pointed out that Asian countries should concentrate on adding value to those products that were already processed and in most cases exported. Adding a second-step processing such as IQF to those small groups of species that have a good potential (shrimp, pelagic species, cephalopods, etc.) would, in fact, overcome limitations in trade.

10. General discussion followed on the accessibility of technology and participants concluded that technology was widely accessible. However, the biggest problem was the management of the entire fisheries chain from fishing through handling, transporting, storing, etc. up to processing. Failures in one of those steps resulted in lack of freshness. The best technology could in that event be worthless.

11. Some participants stressed that the best way to add value was by further processing and improving progressively the management of the entire fisheries chain. It was suggested that better utilization of unconventional resources through adequate processing would be useful for domestic markets.

12. Other participants underlined the importance of improving technologies for dried and salted fish which were traditional products already accepted by local markets.

13. Finally, several participants pointed out that the question of waste management was a big problems in terms of resources lost and at the same time very difficult to solve with the exception of those countries that have relatively big industries concentrated in few areas.

#### Government policies

14. The subject was introduced by a consultant who pointed out that fisheries in many Asian countries were still in a pre-industrial age.

15. Government policies, he said, were essential to:

- provide infrastructure and facilities
- promote uses of by-catches avoiding dumping

- promote R&D
- support new investments in processing
- promote exports
- establish quality control laboratories
- set up training institutions and programmes
- formulate master plans
- set up pre-processing centres

16. The consultant also stressed the difficulties in promoting active fisheries policies as government departments were too bureaucratic and rigid. He recommended independent fisheries agencies as the best instrument to implement government policies.

17. One participant from an international organization said that government rules should be formulated to support economic activity and not to regulate it excessively. In that context, industry should be closely associated in the regulatory process.

18. Many participants supported the concept that subsidies from governments should be avoided in order to keep the economic activity free of distortions. To promote new investments, temporary tax reliefs and other similar measures would be more suitable..

19. A participant underlined the bureaucratic problems that delayed any government decision and stressed that private industry had sometimes to take critical decisions in a very short time. The importance of government policies in quality control, especially in the area of certification for local and export markets was however recognized.

20. A general discussion followed on the role to be played by industry, public or private, in advising governments on policies for the development of the fisheries sector. In that connection it was felt that advice from industry, either by industrial associations or advisors committees closely related to industry, was essential to limit bureaucratic procedures.

21. The key role of government policies and agencies in promoting cooperative schemes in fisheries as well as in aquaculture was mentioned by a number of participants, particularly referring to the role of cooperatives in aquaculture development in India.

22. The role of government policies in matters concerning public issues such as health and environment was recognized as well as in the management of resources.



## Finance

23. The consultant who introduced the subject of financing stressed that financing mechanisms were varied in the region because of the countries different economic policies.
24. He made a clear separation between financing sources in the preparatory phase which included studies and site location, and in the implementation phase. The latter presented more difficulties especially when solving the problem of the operational capital. He also pointed out that there was growing pressure on international financing institutions to work more with the private sector.
25. A general discussion followed on the existing possibilities of venture capital in several Asian countries. Within this context a participant from the private sector emphasized the necessity of a good investment climate to ease banking requirements in terms of collateral.
26. It was stressed that a deregulated financial system promoted more competition among financial institutions. Where more risky venture capital existed, banks and other financial institutions tended to be more flexible in terms of guarantees.
27. Some participants pointed out that joint ventures were one of the best solutions to getting access to loans and credits, not only for creating new industries but also to upgrade existing ones towards more value-added product processing.
28. The role of national development banks was discussed. Those institutions were, in most cases, very bureaucratic and the time taken to examine proposals and to make decisions was usually very long. In many cases the opportunity for investment was lost by the time the agency finally made its decision.
29. In that respect, it was also pointed out that the cost of the bureaucracy in national development banks was too high and was reflected in excessive lending rates.
30. A general discussion followed on the possibility of governments subsidizing the running costs of national development banks in order to keep lending rates close to international rates.
31. Finally, participants agreed that co-operative schemes were the best way to get financial help for small-scale projects. In that context some innovative approaches in setting up financial schemes for co-operatives were presented.

32. One participant proposed international organizations should work more closely with financial institutions and set up small promotion units working with the chambers of commerce and government agencies.

### Training and Research

33. A participant introduced the issue and pointed out that in her country, Malaysia, R&D Centres played an important role in training. The objectives of R&D institutions might include:

- development of curricula
- conducting of courses in post-harvest practices and in product development
- provision of advisory services to the industry in the areas of technology, packaging and marketing
- conducting of applied research projects in close co-operation with the industry.

34. In order to ensure future resource availability, research programmes should be focused on three priority areas, namely, reduction of post-harvest losses, aquaculture and improved management of marine resources. In addition, development of low cost fish products such as fish noodles, fish biscuits, fish crackers or pickles, which if using unconventional species, would also be a meaningful way to manage better existing resources.

35. R&D centres should also play a main role in quality control, assisting industry to set up quality control facilities and training personnel programmes.

36. A participant from the industry pointed out that in his country, industry associations successfully organized workshops in equipment use and maintenance with the help of the equipment suppliers. In general terms, the fishery industry started with low cost equipment but the requirements of international markets in terms of quality and standards forced it to use more sophisticated equipment. Suppliers of such equipment were usually willing to provide free training courses.

37. Other participants emphasized that simple training programmes at fishermen level were also essential in order to get top quality raw material for processing. In that context, government agencies as well as audio-visual training courses dubbed in local languages, should play an important role.

38. Another participant noted that lack of training and communication between government bodies and fishermen led to unfortunate mistakes like cutting mangroves for aquaculture.

39. All participants agreed on the necessity of industry associating closely in the design and implementation of research programmes.

40. The problem of confidentiality in R&D programmes sponsored by private industry was also discussed. A participant suggested that governments should allow private industry to utilize facilities and personnel from R&D centres for their own product development.

### Marketing

41. The participant from Viet Nam introduced the issue and pointed out that his country, which had exported 35,000 tons of shrimp in 1989, had not had access to market and price information at that time. The situation was corrected in 1990 thanks to INFOFISH which updated market information.

42. Activities by FAO/GTZ in selecting products from developing countries industries and presenting them at international trade fairs were outlined. In general terms, innovative products were not supported by international buyers; the majority of business opportunities arose more from traditional products. Institutional markets, being less demanding in packaging, were easier to penetrate. Failures, however, came from the inability of some suppliers to cope with the volume of demands.

43. The strategy to penetrate highly protected markets was discussed. The best approach could be to start contacts between export-import associations or industry associations in order to improve knowledge of existing opportunities. Government support at all levels was essential. Investments in overseas distribution channels supported by bilateral industry-to-industry negotiations had also proved successful.

44. Some participants emphasized the role of joint ventures to gain access to OECD markets. Other arrangements like co-packing, licensing or joint-venture brand names were also mentioned as very useful tools.

45. In a general discussion, participants agreed on the impossibility for developing countries to penetrate OECD markets with their own brand name at least in a first phase. A step-by-step approach through partnership arrangements was considered much less risky.

46. The role of government export offices to promote value-added fish products in overseas markets was also discussed. However, participants stressed that industrial associations could be more effective.

47. The importance of internal markets as well as of deregulated and strictly monitored fish auction markets was mentioned as essential for both the consumer and industry.

48. The opinion that certificates of quality or quality labels were useful for maintaining a good image on overseas markets was shared by many participants. Self-certification promoted by industry associations was considered free of interferences and more useful in promoting quality in overseas markets, especially with trade associations.

#### Technology transfer

49. The issue on technology transfer was introduced by a UNIDO consultant who listed the most common ways to transfer technology at enterprise level, namely through:

- R&D local or overseas centres
- joint ventures
- equipment suppliers
- study tours
- trade fairs
- courses and workshops
- professional journals

50. Engineering and consulting firms were also listed as being among the main actors in transferring technology between private enterprises, particularly in developed countries. In that context, UNIDO was actively promoting local consulting engineering firms in developing countries.

51. The need for twinning arrangements among Asian R&D centres and centres in developed countries was emphasized, and many participants pointed out that technology transfer should include know-how as well as maintenance programmes.

52. In that context, participants suggested that international organizations should keep a data bank on existing and new technologies. However, bearing in mind the amount of information published in professional journals and patent offices every year, the request was considered non-realistic.

53. In the general discussion it was suggested that better access of R&D centres to publications, journals and data bases could generate a good return on investment. However, as the technologies involved in fisheries industry were not very sophisticated and generally available, the R&D centres could play a vital role in maintaining close contact and co-operation with the industry.

### III. CONCLUSIONS AND RECOMMENDATIONS

#### Selection of issues

##### Conclusion

- Participants agreed that the output of Asian and Pacific fisheries is high in volume but relatively low in value compared with that of developed countries. Therefore, there is an evident need for value addition to the present catches by the fishery industry of the region.

##### Recommendation

- Recognizing the importance of value-added fish processing, it was recommended that it be the sole issue for the forthcoming Regional Consultation on the Fisheries Industry for Asia and the Pacific Island Countries to be organized by UNIDO in 1991.

#### Technology

##### Conclusions

- Participants recognized that technologies for value-added fish processing at international standards were available. The main sources for access to technology are: joint ventures, buyers that agree to provide the necessary technology to fulfill their standards of quality, technological packages from equipment suppliers, licensing agreements and consulting firms.

- The main obstacles for the development of value-added fish processing does not come from technology availability or acquisition but, mainly from lack of financing, unfavourable investment climate, lack of technological know-how, maintenance, poor marketing information and inadequate infrastructure.

- The high degree of species' variation and the low quality of fish products as a result of poor handling and preservation, as well as lack of adequate transport and storage facilities are the main causes of failures in value-added fish processing for international markets.

### Recommendations

- In order to acquire more experience in the entire fisheries system and to avoid unnecessary risks, it is recommended to concentrate efforts in upgrading the processing of existing high value species presently exported in bulk. Accessible techniques like Individual Quick Freezing (IQF) and adequate packaging could strongly increase the added value kept in the region.
- Under-utilized species should be used to manufacture products of nutritional value using low cost technology to suit the purchasing power of the population.

### Government policies

#### Conclusion

- Participants agreed that Governments should, through adequate policies, support the development of the entire fisheries sector and regulate only those aspects that concern public interest, such as health, environment and resource management. The role of the government should be limited to supportive measures.

#### Recommendations

- It was recommended that governments support the fisheries and fish processing sub-sector, among others, by improving or providing infrastructure facilities, liberalizing trade regulations, and allowing fiscal incentives. Adequate standards and labels or certificates of quality, development of human resources and R&D programmes as well as development plans should be elaborated in consultation with industry representatives.
- Governments should also promote industry self-certification for quality assurance.

### Financing

#### Conclusions

- Innovative mechanisms such as credit to co-operatives, have in some countries, helped to solve the problem of collateral requirements. Participants agreed on the necessity to work on analogous solutions for small- and medium-scale industrial investments. A good investment climate, financial de-regulations as well as venture capital could help alleviate the problem of collateral requirements by promoting more competition among financial institutions.
- Funding schemes provided by international organizations particularly those that participate in the equity of new ventures were found to have been useful.

### Recommendations

- Direct investment subsidies as well as on-lending rates on credits should be avoided. However, temporary tax reliefs and free custom duties could help promote investments.
- A much greater involvement of the international financing organizations with the private sector was recommended which would accelerate the decision-making process.

### Training and Research

#### Conclusions

- In the context of value-added processing, the constant supply of quality raw material is a very important aspect. Therefore, applied research should comprise post-harvest handling and processing of under-utilized species, and national research centres should play a major role in disseminating updated information on technology, conducting applied research, as well as in the adaptation of technology and quality control.

#### Recommendations

- It was recommended that the national R&D centres be strengthened and the exchange of information among them facilitated. Collaboration between R&D centres and industry should be encouraged. Industry should also be allowed to utilize the facilities and staff of these centres for product development.
- Governments are requested, with the assistance of regional and international organizations, including NGO's, to continue and expand the existing programmes of training in the fisheries industry, particularly training of trainers.
- Industry should be closely associated in designing training programmes. The success of some countries in implementing tailor-made training programmes by the private sector together with equipment suppliers should be made known and copied by others.

### Marketing

#### Conclusions

- Participants agreed that demand for fish and fish products was expanding worldwide and could bring enormous opportunities for developing countries. Information on prices and market trends provided by industrial associations or international and regional organizations was already available and adequate.

### Recommendations

- As the objective of reaching the final consumer with the company's brand name or with innovative products is in most cases too ambitious, any attempt of penetration in OECD markets should be based on a careful market analysis as well as on a precise estimation of raw material supply and production capacities.

- Markets suitable for value-added products should be penetrated through intermediate products or setting up commercial/industrial agreements like joint ventures, co-packing, licensing, etc. Efforts should be concentrated on institutional markets that are less demanding in packaging.

- A successful strategy to overcome tariff and non-tariff barriers should involve government support as well as direct negotiations with industry and trade associations from both sides. Government support should also include the creation of export promotion offices working in close co-operation with the industry.



Annex I

LIST OF PARTICIPANTS

Denmark

Bent Larsen, Head of Department, Ramboll & Hannermann A/S, Bredevej 2,  
2830 Virum

India

Sakthivel Madaswamy, Director, The Marine Products Export Development  
Authority, Ministry of Commerce, MPEDA House, Panampilly Avenue,  
Kochi-682 015

Malaysia

Yu Swee Yean, Department of Food Technology and Biotechnology,  
Universiti Pertanian Malaysia, 43400 UPM Serdang, Selangor

Sri Lanka

M.P.J. Dayaratne, Director, Marine Biological Resources Division,  
National Aquatic Resources Agency (NARA), Crow Island, Mattakuliya,  
Colombo 15

Thailand

Mongkol Saraneeyatham, Vice-President, UNICORD Co., Ltd., 606-608  
Luang Road, Phomprab, Bangkok 10110

Viet Nam

Tran Van Tri, Expert-Advisor to the Ministry of Fisheries and  
Seaproducts, Ho Chi Minh City

Organizations of the United Nations System

United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)

B.P. Dhakal, Economic Affairs Officer, Division of Industry, Human  
Settlements & Environment, United Nations Bldg., Rajdamnern Avenue,  
Bangkok 10200, Thailand

Food and Agriculture Organization of the United Nations (FAO)

Jochen Nierentz, Fishery Industry Officer, Fishery Industries  
Division, Via delle Terme di Caracalla, 00100 Rome, Italy

Non-governmental Organizations

Technonet Asia

Md Shahabuddin Faruque, Officer-in-Charge, 291 Serangoon Road, #05-00  
Serangoon Bldg., Singapore 0821

Asian Fisheries Society

Khoo Hong Woo, National University of Singapore, Dept. of Zoology,  
Lower Kent Ridge, Singapore 0511

Annex II

LIST OF DOCUMENTS

Background Papers

Fishery Industry Profiles  
Selected Asian Countries

High Value-added Processed Fish

Conference Room Papers

Training and Research Needs for Value-added  
Fish Processing in Asia

Processing of Value-added Fish Products in Asia  
and Pacific

Thailand: Industry Situation and Prospects