

IIFET 2004 JAPAN SPECIAL SESSION SUMMARIES

Rapporteur: Suriyan Vichitlekarn

Note: Where indicated, the rapporteur's summaries have been edited by session chairs and participants, and/or additional reports provided by session chairs

Special Session 1:

Community-Based Fisheries Management (CBFM) and the Role of Fisheries Cooperatives: Past, Present and the Future

As reported by S. Vichitlekarn, and revised by P. Copes

Session Chairs: Parzival Copes (Canada), Masahiro Yamao (Japan)

Panelists:

Alyne Delaney

Milton Haughton

Pepito S. Fernandez

Naoyuki Tao

Kungwan Juntarashote

Kenneth Ruddle

Synthesis of Discussion

There was consensus on the importance of CBFM, including roles of fisheries cooperatives, as an expression of responsible fisheries. Discussions led by the Co-chairs and the Panelists brought out common positive views on the merits of CBFM.

In line with these perspectives, participants arrived at the following conclusions:

1. CBFM was found to be a useful approach in managing coastal fisheries in conformity with concepts of responsible fisheries. Important characteristics of successful CBFMs were highlighted as follows:
 - CBFM focuses on fishers not resources;
 - Strong emphasis on participatory approach by involving stakeholders in the decision-making process and by using local knowledge;
 - Encouragement of adaptive learning based on local context and initiatives; and
 - Promotion of a sense of ownership by concerned stakeholders.
2. However, common constraints and limitations in the implementation of CBFM were identified as follows:
 - Difficulties in phasing out entrenched open-access fisheries regimes;
 - A balance between overcapacity and overexploitation of resources VS protecting livelihoods and alleviating poverty of resource poor community members;

- Insufficient political will and seriousness of government to put in place effective CBFM and resulting in limited funding support for research and introduction of CBFM regimes;
 - Insufficient legal provision and support for effective CBFM;
 - Lack of qualified personnel and weak local institutions;
 - Lack of supporting data and information management system to support CBFM;
 - Lack of understanding of fishers of the concepts of CBFM and of the need for action; and
 - Uncertain sustainability of CBFM initiatives.
3. In promoting CBFM in the future, the following issues were identified for further discussion:
- Need for clarification of terms and concepts of CBFM to facilitate application;
 - System to regulate access to fisheries as an initial step for effective CBFMs;
 - Further developing systems of rights-based fisheries or access rights in the application of CBFM;
 - Stimulating effective partnership among stakeholders;
 - Developing supplementary/alternative livelihoods inside and/or outside fisheries sector;
 - Monitoring and evaluation of performance of CBFM;
 - Criteria for measuring success of CBFM and its impacts on sustainable development of coastal fisheries;
 - Developing approaches and experience in applying CBFMs in various contexts;
 - Incorporating self-sufficient economy concept in the implementation of CBFM;
 - Identifying factors for success to clarify common approaches and/or models for future promotion; and
 - Need for establishing networking, either at regional or international level, to exchange experiences in the implementation of CBFM, which could contribute to the on-going efforts in developing CBFM at the national level.
4. The experience of CBFM including the roles of fisheries cooperatives in Japan was found useful to clarify steps forward in developing management of coastal fisheries in other countries. However, it was noted that direct application of the Japanese CBFM system might not be appropriate owing to differences in socio-cultural, political and fisheries contexts. Views were also expressed that management solutions to coastal fisheries, in many cases, lie outside the fisheries sector and should generally form part of national development and management of aquatic resources.

**Special Session 2:
Fisheries Management for Industrial Fisheries: Past, Present and Future**

As reported by S. Vichitlekarn

Session Chairs: Ola Flaaten and Tadashi Yamamoto

Panelists:

Ludmilla Shchegoleva
Michael Harte
Seiji Ohsumi
Seiichiro Ono
Alistair McIlgorm

1. With the view to achieving responsible fisheries, there was consensus on the need for concerted efforts in developing effective management of industrial fisheries. Although there was no internationally accepted term of industrial fisheries as it largely depends on fisheries structure and context, which is different from region to region and country to country. However, the general notion of “industrial fisheries”, in contrast to “small-scale fisheries”, refers to fisheries activities that are commercial and/or large-scale, involving fish workers/crews, operated in offshore (within EEZs or other countries’ EEZ) and high sea areas, etc.
2. Common issues related to management of industrial fisheries that need to be addressed were identified as follows:
 - Difficulties in implementing effective management under open-access regime of fisheries in contrary to limited entry regime;
 - Effective approaches to eliminate illegal, unreported and unregulated (IUU) fishing including Flag of Convenience (FOC), which undermines existing management frameworks and initiatives;
 - Overcapacity which lead to IUU fishing and overexploitation of fisheries resources;
 - Positive and negative impacts of subsidies and direct foreign investment to fisheries;
 - Non-tariff barriers which limit access to markets; and
 - Corruption in the implementation of industrial fisheries management.
3. Considering differences in social, economic and fisheries structures in various contexts, it was noted that there is no definite formula for management of industrial fisheries. However, general management approaches for industrial fisheries can be categorized into the following:
 - Capacity and effort (input) controls including registration and licensing system, moratorium of fishing boats;
 - Quota (output control) systems including individual transferable quotas (ITQs);
 - Economic instruments including access fees and taxes;
 - Co-management, which encourages cooperation and partnership among stakeholders including government, fishers and traders in achieving sustainable fisheries. An example of

the Organization for Promotion of Responsible Tuna Fishing (OPRT) by involving the industries into management of tuna resources was noted; and

- Various forms of use rights.
4. The following **priority issues** (potential solutions) were identified for further investigation to improve management of industrial fisheries:
- Better utilization of fisheries resources including
 - Maximizing the use of catch and value-added products to reduce pressure on demand for raw fish materials; and
 - By-catch (including discards and waste) reduction;
 - Application of eco-system approach to fisheries management;
 - Better integration of social and economic aspects into fisheries management rather than mainly based on biological/ecological aspects;
 - Awareness & capacity building and incentives for better management practices and initiatives;
 - Active involvement and participation of the industries into management of fisheries;
 - Consideration of joint venture arrangements and conditions to allow better management of industrial fisheries in other countries' EEZ;
 - CITES vs. conservation and management of aquatic species – it is important that fishery management authorities (at national and regional levels) should put in place effective management framework
 - Effective high sea management framework under sustainable development and responsible fisheries principles
 - Regional Fisheries Management Organizations (RFMOs) in case of *tuna fisheries* by addressing issues of IUU fishing including FOC, overcapacity, fleet transformation, which can be tackled by, *inter alia*, market access control and collaborative MCS;
 - International Whaling Commission (IWC) in case of *whaling* issues;
 - Effective management institutions at national and regional levels; and
 - Other issues include precautionary catch limits and use of Vessel Monitoring Systems (VMS) to combat with IUU fishing.

**Special Session 3:
Capacity Reduction through “Buyback” Programs with Special Reference to Experiences
throughout the World: Past, Present and the Future**

As reported by S. Vichitlekarn, and edited by E. Thunberg

Session Organizer: John Ward, NOAA Fisheries.

Session Chairs: Eric Thunberg (USA) and Masanori Miyahara (Japan)

Panelists:

Sherry Larkin

Jenny Sun

Yasuso Sato

Massimo Spagnolo

Dohoon Kim

Michele James

Paper Presentations:

Michele James: The British Columbia Salmon Fishery "Buyback" Program: A Case Study in Capacity Reduction

Gordon Gislason: The Harsh Market and Business Realities Facing the West Coast of Canada Seafood Industry

Eric Thunberg: Capacity Management in the Northeast United States Groundfish Fishery in Retrospect: Fishery Management: Court Orders, and Buybacks

Sherry Larkin and Charles Adams: Valuation of Directed and Incidental Shark Permits for a Proposed Buyback Program for the U.S. Atlantic Shark Fishery

Dohoon Kim: A Bioeconomic Analysis on the Evaluation of Buyback Program in the Korean Fisheries: Should It be Stopped or Continued?

Massimo Spagnolo: A Comparative Analysis of Italian Buyback Programs

Synthesis of Discussion

Special Session 3 was conducted in two parts. The first part consisted of a series of presentations on various aspects of buybacks and experiences with buybacks in Canada, Italy, Korea, the United States, and Japan. These papers were the raw material from which panelists in the second session were asked to engage in a debate on the proposition that “Buybacks are a rational part of responsible fisheries management.”

Discussion of the proposition by panelists and the audience centered around two themes. A pragmatic perspective suggested that fisheries management is itself a public process in which rational individuals, acting in their own self-interest, exert pressure on the management system to fund buybacks. The second theme noted that buybacks can, if properly designed and sufficiently funded, reduce capacity in fisheries. Further, buybacks can be designed to address conservation, economic, and social objectives. But, buybacks, in general, should not be viewed as an end in and of itself if for no other reason that capacity remaining at the end of the buyback will not be

the capacity you have in the future due to technological change alone. Rather, if they are to be used at all, buybacks should be used as a part of a transition from an ineffective management regime to one that is more effective.

This led to a second major point of discussion based on the question “Given that buybacks are, and will continue to be, a part of responsible fisheries management, what can economists contribute to make sure buyback schemes are implemented responsibly?”

Although, there was no accepted consensus on the effectiveness and practicability of buyback programs for capacity reduction to achieve sustainable and responsible fisheries, a number of cases show direct impacts of buyback programs on capacity reduction and higher economic benefits. In line with these perspectives, the following views were noted:

1. Linkages of buyback programs and capacity reduction

- There is no clear formula to successfully apply buyback programs to achieve sustainable fisheries;
- Based on objectives of buyback programs, that may include conservation, economic efficiency/viability, adjustment, and/or political objectives, buybacks provide a viable option for management of fisheries particularly during a transitional period of fisheries regimes;
- A number of experiences show that with proper planning and efficient implementation, buyback programs can be successful in capacity reduction at least in the short term.

2. Factors contributing to successful buyback programs

- The buyback fishery must be limited access;
- Buyback programs should be designed based on capacity removal and integrated into the overall management plan;
- Buyback programs should not only target at fishing vessels but also fishery licenses/permits. In addition, the programs should be coupled with capacity control of existing licenses/permits such as size of vessels;
- Stakeholders should be involved in program design and implementation;
- Longer term success is enhanced where effective management frameworks are in place;
- Effective program planning for buyback requires consideration of – target beneficiaries, target fleet reduction, target classes of vessel size, required funds, target duration, etc.

3. Problems, constraints and limitations in the implementation of buyback programs

- Eligibility and willingness of vessel owners to participate in buyback programs;
- Substantial financial implication compared to the value of resources caught, which could be better mobilized for other purposes such as improving livelihoods of fishers;
- Difficulties in determining fair market value of vessels;
- Potential impacts on other fisheries as buyback programs may lead to transfer of capacity to other economically viable fisheries;
- There is no direct linkage of buyback programs to improvement of resources status as this still largely depends on performance of remaining capacity in utilization of the resources;
- With fast developing technology, capacity can still be increased even though the size of fishing fleets may be reduced from buyback programs;

- Possibility that only vessel owners get benefits from buyback programs and not fishers or fishing works; and
- Buybacks may produce short-term successes but may not assure continued success in the long run.

4. Issues to be addressed in future consideration on capacity reduction through buyback programs

- Serious evaluation on readiness and relevance of buyback programs to capacity reduction should be conducted before deciding to implement such programs;
- Establishment of a set of prerequisite conditions for successful implementation of buyback programs; and
- Effective planning and implementation of buyback programs in achieving objectives and goals of management.

**Special Session 4:
International Trade of Fisheries Products with Reference to Fisheries Management,
Processing, and Consumption: Past, Present, and Future**

As reported by S. Vichitlekarn and R. Johnston

Session Chairs: Richard S. Johnston (USA), Yuichiro Harada (Japan)

Panelists:

Audun Iverson
Ruangrai Tokrisna
Masaru Okamoto
Walter Keithly
Kate Barclay
Xiang-Guo Zhang

Introductory Observations by Richard S. Johnston, Oregon State University

In 1982, at the inaugural meeting of IIFET, Parzival Copes pointed out that, only 4-5 years after most of the world's coastal nations had significantly extended their fisheries jurisdiction (EFJ), international seafood trade had increased dramatically. Countries with large distant-water fleets had experienced significant reductions in resource access and, thus, experienced a higher demand for imports. Coastal countries, on the other hand, could now exploit their newly-acquired fishery resources and found themselves facing new export opportunities. This trend has recently been confirmed over a much longer period by Jim Anderson, in his new book on International Seafood Trade.

Many of the EFJ countries were developing countries. Not only did their seafood exports rise in absolute terms, but so did their share of the world's seafood exports. (It is important to observe

that increased trade was not primarily a consequence of increased harvests or production, but, rather, the result of a change in who owned the production.)

In his keynote address, Dr. Ichiro Nomura observed that, in recent years, the volume of seafood trade has stabilized. Inspection of the data reveal that the ratio of world fish trade to world fish production rose from 11% to 39% between 1976 and 1993 but, by 2002 had dropped (slightly) to 38%. Perhaps some of the disequilibrium conditions generated in seafood markets by EFJ have, to some extent, sorted themselves out. This does not, of course, mean that there are no developments unfolding in seafood markets – far from it, as the panel members in this session point out.

Since the EFJ period, how does seafood trade compare with trade in the other food sectors? Back-of-the-envelope calculations suggest that, when adjusted for price differences, the patterns have been comparable. How can this be? Agricultural production can be increased in response to price increases; this is much for difficult in the case of the fisheries. It is hard to “plant” fish in the ocean, especially when compared with planting crops or raising animals on land.

Among the possible explanations are the following:

1. Extended fisheries jurisdiction, as just outlined.
2. The growth of aquaculture. Production has more than doubled since 1994 and is now equal to approximately 30% of world fish harvest.
3. “Overharvest” of some species, with a resulting short-run increase in fisheries output.
4. Fishery management.

Others would add to this list. In any event, there are certainly links among fishery management, aquaculture management and seafood trade. Some observers argue that liberalizing trade can promote sustainable development. Evidence of how this can be accomplished is provided by those large seafood-importing companies that meet regularly with fisheries administrators of supplying countries to encourage “responsible fishing” because of their need for steady, long-term, supplies. Other observers point out that, if trade liberalization occurs “too quickly,” this could result in costly dislocations in some countries. While these individuals may not oppose liberalization, they call for a gradual approach to implementation.

Here are a few general questions for consideration:

1. What are the most critical international trade issues, especially with respect to trade in fish and shellfish? Can there be agreement on what “responsible fisheries trade” entails?
2. What issues require more research and do we have the research tools to conduct such research? For example, how good are our conceptual and empirical models? Do we understand international demand – and, perhaps, supply – relationships between fish and non-fish products? That is, do we need more general, as opposed to partial, equilibrium models?

3. Are we likely to see increased use of trade measures to address fishery management, both to liberalize trade (e.g., removal of export subsidies) and to restrict trade (e.g., imposition of import tariffs, quotas, etc.)?
4. What about the use of trade measures to help resolve other environmental conflicts, such as the relationships between fishing activity and the preservation of endangered species: is there a role for ecolabeling, for example?
5. Can we understand trade issues in fisheries and aquaculture by relying on traditional trade models, many of which assume full employment, competitive markets, factor divisibility and mobility, etc.? Should economists be working with other analysts, including geographers, cultural anthropologists, etc. to increase our understanding?
6. Policies to reduce trade barriers generate both winners and losers. There may be major dislocation, especially for labor, at least in the short run. What kinds of compensation (adjustment) policies have been used and what are the consequences of these policies?
7. What can we expect of the WTO with respect to seafood trade issues? What, if any, exceptions will be made for developing countries?
8. What are the likely consequences of regional trade agreements: a world of rival trading blocs? increased seafood trade? significant trade diversion? Are they likely to promote regional fishery management?
9. How well do we understand the relationship between seafood trade and foreign direct investment in fishing and fish processing?
10. What about data issues for seafood trade analysis? Import data don't always agree with exports data, for example. How can we resolve the "data problem?"

Synthesis of Discussion

As reported by S. Vichitlekarn, and edited by R. Johnston

There was a general notion of the increasing importance of international trade in fish and fishery products and of the close link between international trade and management of fisheries. There is a clear direction towards liberalization of trade as it could contribute to sustainable development of fisheries. Based on the Code of Conduct for Responsible Fisheries, it was cited that "international trade in fish and fishery products should not compromise the sustainable development of fisheries and responsible utilization of living aquatic resources." In addition, "states should not undermine conservation measures for living aquatic resources in order to gain trade or investment benefits."

In line with these perspectives, the following views were discussed and noted:

1. Framework and initiatives related to international trade of fish and fishery products

- It is accepted worldwide that international trade of fish and fishery products should be based on the principles, rights and obligations under the relevant WTO agreements including Multilateral Environmental Agreements (MEAs including CITES, CBD and the Cartagena Protocol on Bio-safety), SPS and TBT Agreements; and
 - Other fisheries-related instruments, including the UN Fish Stock Agreement, the FAO Code of conduct for Responsible Fisheries and supporting International Plans of Action were also noted to provide principles for responsible fish trade.
- 2. Common issues, problems and constraints in relation to international trade of fish and fishery products, including processing and consumption in relation to fisheries management**
- Globalization has escalated international trade flows, which is not always in conformity with improved human livelihoods, environmental conditions and status of resources. This pitfall of globalization should be observed in promoting international trade of fish and fishery products to ensure responsible utilization of fisheries resources;
 - There are unclear impacts of fisheries management on market/trade systems in fish and fishery products;
 - There is a variety of influences on responsible trade. Among them are
 - Technical Barriers to Trade (TBT) including eco-labeling;
 - Tariff measures;
 - Non-tariff measures including SPS, TBT, environment, import regulations, import quotas, etc.; and
 - Various levels of traceability of fish and fishery products;
 - Impacts of fisheries subsidies on trade distortion and responsible trade;
 - Seafood quality and safety standards and assurance systems in response to consumers' demand and requirements of the importing countries;
 - Linkages between international trade and issues related to reduction of overcapacity and elimination of IUU fishing. On-going attempts towards the listing of responsible fishing vessels and accepting their products in importing countries, such as Japan, were noted as a possible solution to avoid international trade in IUU products;
 - Insufficient understanding by national representatives of fisheries contexts when discussing issues and developing directions of international trade of fish and fishery products; and
 - How to handle the adjustments that must be made by those industries that "lose" from trade, especially imports.
- 3. Issues to be addressed in future promotion of international trade in fish and fishery products, including processing and consumption, in relation to fisheries management**
- Interactions of fisheries management practices and international trade in fish and fishery products and how the interactions could contribute to responsible trade;
 - Roles of regional fisheries management organizations (RFMOs) such as CCSBT in conservation and management of high sea fisheries resources to support responsible trade;
 - Development/strengthening of certification schemes such as the "Trade Information Scheme" in tuna fisheries to support responsible trade;
 - Effective mechanisms to exclude IUU or uncertified products from international trade in fish and fishery products;

- Awareness building and strengthening roles of consumers in promoting responsible fisheries and fish trade;
 - Information access mechanisms and capacity building in meeting international standards for seafood quality and safety and market access; and
 - Increased understanding of the role of China in international seafood trade, especially with respect to products from aquaculture.
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**Special Session 5:
Aquaculture Management: Past, Present, and the Future**

As reported by S. Vichitlekarn, and edited by session participants

Session Chairs: Denis Bailly (France), Shunsuke Koshio (Japan)

Panelists:

Gunnar Knapp
Tran Van Nhung
Toshihisa Matsuzato
Alistair McIlgorm
Poulomi Bhattacharya
Xing-young Han

Synthesis of Discussion

In response to the increasing demand of fish and fishery products coupled with the declining status of resource base for capture fisheries and need for supplementary/alternative livelihoods of resource poor fishers/farmers, aquaculture plays an important role to meet this demand is important. However, there is a need for better management of aquaculture.

In line with these perspectives, the following views were discussed and noted:

1. What is Responsible Aquaculture?

- A promising alternative production to capture fisheries production in response to the increasing world demand of fish and fishery products.
- Aquaculture management is not only achieving target production but also environmental impacts, safe products, etc.

2. Common issues, problems and constraints in relation to aquaculture management

- Vast adverse impacts on environment particularly on mangrove areas. There is a direction for aquaculture towards best farming management practices including organic farming.
- Fish health management including disease diagnostic and preventive surveillance systems
- Chemical and antibiotic residues in aquaculture products. This relates to the requirements in low-level detection of the residues of the importing countries, which are difficult for the developing countries to comply with.
- Interactions between aquaculture and capture fisheries on the same species

- In the case of stock enhancement and sea farming there are impacts on environment and wild stocks resulting from releasing of reproduced stocks
- Risk management, including stock mortality insurance, though this varies between countries (example: Australia accesses the insurance market, whereas Japan has cover through cooperative management system).
- Access to capital for aquaculture development is often conditional on having insurance cover.
- Economic approaches/tools such as cost-benefit analysis, environment valuation to policy formulation and management of sustainable aquaculture
- Quality brood stocks, seeds and feeds for aquaculture
- Quality and safety of aquaculture products including genetically modified organisms (GMOs)
- Limited awareness and education of fishers/fish farmers on importance of sustainable fisheries and aquaculture leading to limited cooperation and compliance in the implementation of responsible aquaculture development policy and programs.
- Technical barriers to aquatic product trade (TBT) such as anti-dumping cases (in shrimp, catfish, etc), quality product controls (e.g., chemical and antibiotic residues in aquaculture products). This relates to the requirements in low-level detection of the residues of the importing countries, which are difficult for the developing countries to comply with. If this regulation is to be adopted, negative impacts on small scale producers, especially the poor, are likely.
- Different objectives and development directions for traditional aquaculture for livelihoods and domestic consumption vs. aquaculture for exports
- Aquaculture has been shifted from supply driven to demand driven industries due to increasing awareness and roles of consumers for quality and safe aquaculture products.
- Eco-labeling
- Land and common resource use conflicts particularly in the case of aquaculture
- Different concepts and approaches for aquaculture in freshwater and marine waters
- Determination of carrying capacity for sustainable aquaculture
- Conversion of rice fields, coastal bare land resources to shrimp farms.
- Aquaculture has been driven by short term benefits, unplanned development.
- Aquaculture is a new activity, and in many places capacity of management officials to handle their management responsibilities is limited.

3. Issues to be addressed in future promotion of aquaculture management

- Effective aquaculture development planning which should be integrated into coastal resource development and management planning
- Enhancing community participation into coastal aquaculture development planning and management to resolve conflicts in the multiple resource use and sustainable livelihoods.
- Awareness and capacity building including attitude change of fishers and fish farmers and other stakeholders such as traders to cooperate in achieving sustainable fisheries and aquaculture.
- Economic approaches/tools such as cost-benefit analysis, environment valuation should be adopted to better support policy formulation and management of sustainable aquaculture.

- Management policy, concepts and practices in line with the demand driven industries of aquaculture that could better address issues of sustainable livelihoods of aquaculture for resource poor farmers, consumers' access to safe fish (diseases and chemical residues) and reverse impacts of aquaculture to environments (pollution, mangrove deforestation and bio-diversity)
 - Pay more attention to sustainable aquaculture development studies, especially interdisciplinary research on three conflicting goals of environment, society and economics, ways of integrating these three goals.
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**Special Session 6:
Emerging Asian Fisheries and Aquaculture: Past, Present and Future**

As reported by S. Vichitlekarn

Session Chairs: Mahfuzuddin Ahmed and Yasuhiko Taki

Panelists:

Annabelle Cruz-Trinidad (Philippines)
Runia Mowla (Thailand)
Anandamoy Puste (India)
Tsuyoshi Kawasaki (Japan)
Sun Chen (China)
Md. Aminur Rahman (Bangladesh)

With additional commentary from the following papers:

Tridoyo Kusumastanto: The Challenge of Improving Fish Consumption in Developing Countries: The Case of Indonesia

Anandamoy Puste, Pranab Kumar Sarkar, Dilip Kumar Das: Wetland Ecosystem-A Study on Fish-Aquatic Food Crops Diversity for Enhancing Productivity and Economic Stability for Fish-Farm Families in Indian Subtropics

Annabelle Cruz Trinidad: An Evaluation of The Commercial Fishing License Policy in The Philippines

Runia Mowla, Md. Ghulam Kibria, Md. Enamul Kabir: Community Based Fisheries Management in The Coastal Area of Bangladesh With Emphasis on Gender

Su-Chang Chen: Current Situation of E-Learning for Fisherman in Taiwan

Considering that some of the most significant fisheries and aquaculture production of the world is based in Asia, there is a need to call for concerted action among Asian countries to promote responsible practices for sustainable fisheries and aquaculture as well as the livelihoods of people depending on them.

Importance and trend of Asian fisheries and aquaculture in global responsible fisheries

- Asian countries are among the main fisheries and aquaculture production bases, globally

- Japan, China and ASEAN countries play important roles in fisheries and aquaculture in terms of production base as well as import-export of fish and fishery products.
- Aquaculture provides an increasingly important component of seafood supply.

Emerging issues, problems and constraints of Asian fisheries and aquaculture

- Increasing recognition of small-scale fisheries and aquaculture considering multi-functionality of fisheries
- Adverse impacts of aquaculture on aquatic habitats including mangrove areas and pollution
- Watershed management
- Integrated farming
- Need for quality statistics and information of fisheries and aquaculture to support better development planning and management of the industries
- Use of chemicals in capture fisheries
- Carrying capacity of aquaculture in relation to environment
- Ongoing overfishing and IUU fishing, which undermine existing management frameworks and initiatives, continue to affect fisheries industries as a whole including livelihoods of fishers.
- Dilemma between the need for increasing production from aquaculture to compensate for the declining production from capture fisheries vs. environmental problems

Issues and challenges to be addressed in future promotion of fisheries and aquaculture in Asia

- Holistic approach to development and management of capture fisheries, aquaculture and fisheries trade to sustain Asia as the global fisheries and aquaculture production base.
- Due to the interlinkage of fisheries and aquaculture within Asia and with other regions, there is a need for collaboration, possibly in the form of networks, in fisheries and aquaculture industries. This includes sub-regional (areas such as the Yellow Sea) collaborative networks for fisheries and aquaculture as well as inter sub-regional dialogues.

Conclusions

- The session brought forward concerns about demand for increasing fish production. There are commonalities between fisheries and aquaculture situations.
- The roles of fisheries and aquaculture particularly to improve livelihoods and poverty alleviation were highlighted.
- Pitfalls of technology development in fisheries which could solve fisheries problems, but may leave out women in fisheries.
- Capture fisheries is supply-driven in contrast to aquaculture which is demand-driven. The role of the market in defining directions for fisheries and aquaculture development is important.
- Note was made of Latin America which will be an important export base for fisheries and aquaculture products.
- India and Vietnam were mentioned as fast-developing countries in fisheries and aquaculture.
- Need for quality statistics and data to indicate status and trend of fisheries and aquaculture and facilitate development planning and management.

- Cooperation, in contrast to competition, is needed among the Asian member countries to look into the interrelation of fisheries and aquaculture to ensure their sustainable development.
- Although there have been some initiatives in relation to this, there is still a need for more active roles in response to the needs of the member nations.
- There is a need for harmonization of trade policy among the countries within the ‘South’.
- The Code of Conduct for Responsible Fisheries needs to be instrumental. There is a need to devolve this to national and local levels of implementation.

Special Session 7:

10 Years’ Achievement of JSPS-DGHE Core University Program for Fisheries Science

by Takafumi Arimoto, Tokyo University of Marine Science and Technology (TUMSAT)

The session was held as the Commemorative Meeting of the Core University Program of Japan Society for the Promotion of Science (JSPS) on Fisheries Science in Indonesia during the occasion of IIFET 2004 at the Tokyo University of Marine Science and Technology on 27th July 2004. The hand-out version of the Proceedings was prepared for including the papers to identify the outcome of our 10-years program, with a special emphasis on the Fisheries Development in Indonesia. Some of the selected papers were also included for understanding the Fisheries Socio-Economics in each region of Indonesia.

This meeting can be defined as the 6th JSPS-DGHE International Seminar on Fisheries Science in Tropical Area, as being commemorated to be the final Seminar gathering of this program, as the follow-up of our 10-years academic activities since 1995. Our network for the Research and Education on Fisheries and Marine Science between Japan and Indonesia is now extended to the wider coverage over the Asian countries, with a good coordination of other JSPS programs with Philippines, Thailand and Korea on Fisheries Science. Through this meeting, the good information sharing was completed as what have been done through our activities, and what can be the next goal for the purpose of sustainable development of fisheries in each region, in each country, and in Asia, towards the strengthened linkage between Japan and Indonesia, for moving together forward to support the scientific approach for the global issue of the sustainable fisheries development.

Special Session 7 Agenda, July 27, 2004:

14:00 Opening Address & Welcoming Speech: Prof. R. Takai, President of TUMSAT and Prof. Eko Budihardjo, Rector of UNDIP

14:10 JSPS Partnership with Asian Countries: Mr. H. Endo, JSPS official

14:40 Activity Review of JSPS Core University Program for fisheries Science: Prof. T. Arimoto, TUMSAT

Regional Review–Fisheries Development through University Research and Education

Sumatra: Dr. Feliatra, UNRI Dean

West Java: Dr. Kadarwan Soewardi, IPB Dean

Central/East Java: Dr. Johannes Hutabarat, UNDIP Dean

- Kalimantan: Dr. A. Syafei Sidik, UNMUL Dean
 16:00 Coffee Break
 16:30 Regional Review – continued
 South Sulawesi: Dr. Hamzah Sunusi, UNHAS Dean
 North Sulawesi: Dr. K. W. A. Masengi, UNSRAT Dean
 Maluku: Dr. Johanis Hiariey, UNPATTI Dean
 17:20 Research and Training Vessels for Fisheries & Marine Science in Indonesia: Mr. Deni A. Soeboer, IPB
 17:50 Closing Address
 18:00 JSPS Reception at Seikyo Shokudo (University Canteen)

The meeting was opened with the welcoming speech given by Prof. R. Takai, the President of Tokyo University of Marine Science and Technology, together with the opening address by Prof. Eko Budiharjo, the Rector of Diponegoro University. The overall review of the Japan Society for the Promotion of Science was also given by the honorable guest, Mr. H. Endo who is in charge of the Asian Program Division of JSPS, to give the information of its organization and functions.

In the main session, the overall report on the Core University Program on Fisheries Science with Indonesia was presented by Prof. T. Arimoto, followed by the regional reviewing from each Cooperating University along the archipelago of Indonesia. The identification of the University role on research and development was also analyzed in relation to the regional development of capture fisheries, aqua-culture and post-harvesting, both for the human development and infrastructure development towards the coastal community empowerment and the off-shore industrial improvement. The role of practical training on-board will be also presented for understanding the needs in the University level, for the future possibility to the sustainable development of marine capture fisheries.

The intensive discussion was scheduled in the following days, for summarizing the situation of past, present and future of fisheries development in Indonesia, for the purpose to seek the needs and seeds of the research and education in Fisheries Science, and to cover the wider extension for the Asia and for the World, as the wrap-up of all the regional and national issues for setting the next common goal for us both in research and education activities on Fisheries and Marine Sciences. The participants from the cooperating Universities had dedicated the continuous efforts for completing the grand designing of the Fisheries Development in Indonesia, until the last minutes of their stay in Tokyo in August 20, in close collaborating works with the Japan-side coordinators of TUMSAT.

The coordinators of this Session would like to express their greatest gratitude to all the persons who dedicated the time, resources and funding to support the meeting. All the efforts are continued for a long time started with the preparation activities since 2002 of the 3rd phase activities, until the completion of the Proceedings in future. Special thanks are extended to the Japan Society for Promotion of Science and the Directorate General of Higher Education, Indonesia, for their sponsorship and encouragement. We also really appreciate the enthusiastic collaboration given from Dr. Subiyanto, Indonesian Coordinator of this JSPS-DGHE program, and Prof. Eko Budiharjo, Rector of UNDIP, the guest of honor of this seminar, as well as to all

the invited speakers and participants for their energetic input in the meeting. At last but not least, the great gratitude should be emphasized to the enormous and continuous effort of the Local Organizing Committee at Tokyo University of Marine Science and Technology, for organizing this meeting and publishing the hand-out Proceedings on time in the tight rope schedule. Their efforts from the younger generations studying in TUMSAT can be the new energy source for the cooperating activities between Indonesia and Japan on Fisheries and Marine Science, definitely in the very near future.

**Special Session 8:
The Outlook on Global Fish Production, Consumption, and Trade: Implications and
Options for the Developing World**

Session summary provided by M. Ahmed

Organizer: Mahfuz Ahmed (WorldFish Center)

Co-chairs: Mahfuz Ahmed and Yoshi Matsuda (Kagoshima University)

Panelists:

Cathy A. Roheim

Liz Petersen

Mafasino Hara

Presenters: names of presenting authors are underlined

Following several decades of unparalleled growth, further fundamental changes are expected to shift the pattern of supply, demand, trade and consumption of fish and seafood products in the next two decades. The objective of this session was to present the outlook for fish to 2020, and discuss the implications and options for developing countries who have a major role in the future supply. Six papers with the following titles provided substantive information on the emerging changes in global fisheries production, markets and policy, and discussed how poor people in the developing countries could benefit from expanding production and markets particularly from aquaculture. Two hours of presentation followed by one hour of panel remarks and open discussions addressed issues arising from the findings of the presented papers.

1. Outlook for Fish to 2020: Supply and Demand in Changing Global Markets (by C. Delgado, M. Rosegrant, M. Ahmed; C. Delgado, Nik Wada, R. A. Valmonte-Santos) presented a landmark study that applied state-of-the-art-modeling techniques to analyze the outlook for global fish markets over the next 20 years. With as high as 77% of the total consumption of fish taking place in developing countries by 2020, projection results showed that the value of net imports in the EU and Japan will decline in the next decade accompanied by a higher price of fish, while major increases in net exports are expected in India, China and Latin America.

2. Fish to 2020: Implications for Developing Country Fisheries (by M. Ahmed; C. Delgado, and M. Rosegrant; and R.A. Valmonte Santos) discussed the priority policy issues for developing

country fisheries, based on the supply and demand outlook projected by the Fish to 2020 study by Delgado et al. (2003). The paper concluded that increased demand and consumption of fish in developing countries would certainly encourage south-south trade of fish, particularly on low-value food fish. It also raised concern with regard to higher prices for low value food fish as it is only the poor who will feel the pinch of higher prices.

3. Disaggregated Projections of Supply, Demand, and Trade for Developing Asia: Preliminary Results and Conclusions from the AsiaFish Model (by M. Dey, R. Briones, U-P. Rodriguez, M. Ahmed and P. Kumar) used a disaggregated fish sector model for projections of fish supply and demand in nine countries in Asia.

4. China as the Leader of Global Fish Production, Consumption, and Trade: Outlook for Markets and the Policy Environment (by J. Huang, Lu Ping Li, M. Dey, M. Ahmed) showed that China will drive future trends in supply, demand, and trade in fish. It also described the likely evolution of the policy regime in Chinese fisheries, and discussed implications of these trends for global fisheries.

5. Global Trade and the Poor: The Impact of Product Standards in Major Importing Countries (by Roehlano M. Briones, Madan Dey, Chen Oai Li, and Mahfuzuddin Ahmed) discussed market access issues and described the appropriate policy responses in terms of re-orienting the regulatory structure of global trade in fish, as well as in promoting more inclusive processes and institutions for collective action among poor stakeholders.

6. Strategies and Options for Increasing and Sustaining Fisheries and Aquaculture Production to Benefit Poor Households in Asia (by M. Dey, and M. Ahmed) presented the findings of a recently concluded major study on strategies and options for increasing and sustaining benefits from aquaculture and capture fisheries for poor households in Asia.

**Special Session 9:
European Union Fisheries**

Session Chair: Denis Bailly (France)

No report available.