

Training Project for Promotion of Community-based Fishery Resource Management by Coastal Small-scale Fishers in Indonesia

Report of Phase Three
(02-06 March 2010)



International Cooperative Fisheries Organization
of the International Cooperative Alliance &
National Federation of Indonesian Fishermen's
Cooperative Societies

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Preface

The International Cooperative Fisheries Organization (ICFO) of the International Cooperative Alliance (ICA) implemented the Training Project for “Promotion of Community-Based Fishery Resource Management by Coastal Small-scale Fishers in Asia (CFRM Training Project) - 2009” in Indonesia during October 2009 - March 2010. The CFRM Training Project, funded by the Ministry of Agriculture, Forestry and Fisheries (MAFF), Government of Japan, is one of the Partnership Strengthening Projects among Japan and ASEAN countries. The Project is designed to contribute to the sound development of the primary industry, including fisheries in the region, promote cooperation and exchanges that would lead to increasing of income of primary industry producers and thereby help narrow the gap in their economic status through appropriate interventions.

The CFRM Training Project was initiated in April 2006 and has concluded in March 2010. The Project aimed at promotion of community-based fisheries resource management by small-scale fishers engaged in coastal fisheries and by their organizations (fisheries cooperatives), strengthen their activities and help contribute to ensuring sustainable production, creation of employment opportunities and poverty alleviation.

Under the Project, ICFO selected one country from Asia every year for implementation of the CFRM activities. During the first year of the Project (April 2006 – March 2007), ICFO selected Philippines, followed by Thailand, Vietnam and Indonesia in the successive years. In each country, the Project was implemented in three phases, which included: Dispatching of Experts to the country selected by ICFO in Phase One; Fisheries Resource Management Study Visit in Japan in Phase Two; and finally a Seminar in the selected country in Phase Three.

In Indonesia, the National Federation of Indonesian Fishermen’s Cooperative Societies (*Induk Koperasi Perikanan Indonesia- IKPI*), one of the member organizations of ICFO, was selected as a local partner organization in implementation of the CFRM Training Project. The Project was implemented as per the following schedule:

- 1) Phase One: Dispatching of two experts to Indonesia during 01-08 October 2009. The experts visited the Ministry of Marine Affairs and Fisheries (MMAF), Government of Indonesia and various other institutions/agencies in the Islands of Java and Bali for discussions and collection of information.
- 2) Phase Two: Fisheries Resource Management Study Visit in Japan during 05-12 November 2009 (Tokyo and Aomori Prefecture).
- 3) Phase Three: Seminar on ‘Promotion of Community based Fishery Resource Management by Coastal Small-scale Fishers in Indonesia’ during 02-06 March 2010 (Jakarta, Indonesia). Prior to the Seminar, a two member-expert team also visited Ambon in the Island of Moluccas, Indonesia to see the small-scale tuna fishery.

Phase One and Phase Two were successfully completed and their reports were published. The Phase Three Seminar was conducted at the Mercure Convention Center Ancol in Jakarta, Indonesia. About 60 participants representing the fisheries cooperative sector of Indonesia, officials of MMAF, officials of the Local Government Units, etc and seven Advisors and Observers participated in the Seminar. Mr Park Kwang-Bum, Secretary, ICFO, represented the organizers.

The Seminar aimed at capacity-building of fisheries cooperative leaders for promoting community-based fisheries resource management and establishing close linkages



with responsible government officials and other stakeholders for the purpose. This may be referred to as the beginning of a stronger fisheries co-management phase in Indonesia. At the conclusion of the Seminar, participants unanimously adopted the 'Jakarta Declaration', which embodies the long-felt needs of the fisheries sector for developing a healthier and vibrant fishery and for an equally dynamic cooperative base to meet the challenges of community-based fishery resource management in Indonesia.

I would like to take this opportunity to thank all those who cooperated in bringing together their experiences, ideas and resources for making it possible to adopt the 'Jakarta Declaration'. In particular, I would like to thank the Seminar participants for their active involvement in the proceedings and constructive opinions, which immensely contributed to the success of the Seminar.

For Phase Three, the ICFO invited seven speakers, four from abroad and three from Indonesia. The speakers were (i) Dr Yugraj Singh Yadava, Director, Bay of Bengal Inter-Governmental Organisation, Chennai, India (also the chief Advisor to the Project); Dr Jun-Ichiro Okamoto, Professor, Faculty of Fisheries, Hokkaido University, Japan (also Advisor to the Project); Dr (Ms) Sandra Victoria R Arcamo, Chief Aquaculturist, Fisheries Resource Management Division, Bureau of Fisheries and Aquatic Resources, Government of Philippines; Dr Mulyono Sumitro Baskoro, Professor, Faculty of Fisheries and Marine Sciences, Bogor Agricultural University, Bogor, Indonesia; Dr Gelwynn Daniel Hamzah Jusuf, Head of Agency for Marine and Fisheries Research, MMAF, Indonesia; Dr Shidiq Moeslim, Chairman of Indonesian Fisheries Society, Jakarta, Indonesia and Mr Park Kwang-Bum, Secretary, ICFO, Seoul, Korea. I would like to extend my cordial thanks to each of these speakers and advisors for sharing their knowledge and expertise for sustainable development of fisheries sector in Indonesia.

I would also like to extend my thanks to Mr Wibisono Wiyono, President of IKPI and all other staff of IKPI for their dedicated effort in preparing not only the Phase Three activities but all the Project activities implemented during Phase One and Phase Two of the Project. Without their whole-hearted support and excellent cooperation, it would not have been possible for ICFO to achieve this success.

I would like to thank the former ICFO chairman Mr Ikuhiro Hattori, President of JF-ZENGYOREN and former Secretary, Mr Masaaki Sato for their efforts and cooperation, and support in successful implementation of the CFRM Training Project. The cooperation received from all these persons has contributed enormously in making the CFRM Training Project a great success and I'm sure the lessons learnt from this Project would be useful in many parts of the world with similar settings.

As chairman of ICFO and as an organizer of the Phase Three Seminar, I hope that the 'Jakarta Declaration' is distributed widely and used by all those concerned for furthering the intent and objectives of the Declaration. I also hope that the intent and objectives of the Declaration are included in future fisheries policies and programmes in order to help develop the fisheries sector of Indonesia. In conclusion I would also like to place on record my heart-felt thanks to the MAFF, Government of Japan for funding the Training Project.



Jong-Koo Lee
Chairman

International Cooperative Fisheries Organization
of the International Cooperative Alliance

02 April 2010



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The cooperation and assistance received from the following organizations/ and agencies in successful completion of the **Seminar for the “Promotion of Community-based Fisheries Resource Management by Coastal Small-scale Fishers in Indonesia”** is deeply acknowledged:

- Ministry of Agriculture, Forestry and Fisheries, Government of Japan.
- Ministry of Marine Affairs and Fisheries, Government of the Republic of Indonesia.
- Ministry of Cooperative and Small and Medium Enterprises, Government of the Republic of Indonesia.
- National Federation of Indonesian Fishermen’s Cooperative Societies (*Induk Koperasi Perikanan Indonesia – IKPI*).
- Indonesian Cooperative Council.
- Indonesian Fisheries Society.



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Participants at the Seminar.

Report of Phase Three

Phase Three of the Training Project for “Promotion of Community-based Fishery Resource Management by Coastal Small-scale Fishers in Indonesia” was organized in Jakarta City, Indonesia from 02 - 06 March 2010. The main activity in Phase Three was a Seminar for “Promotion of Community-based Fishery Resource Management by Coastal Small-scale Fishers in Indonesia”. The Seminar was held from 02-05 March 2010 in Mercure Convention Centre, Ancol, Jakarta. The International Cooperative Fisheries Organization (ICFO) of the international Cooperative Alliance (ICA) and the *Induk Koperasi Perikanan Indonesia* (IKPI or the National Federation of Indonesian Fishermen's Cooperative Societies)) were the two organizers of the Seminar. This Report describes the pre-Seminar activities and the proceedings and conclusions of the Seminar.

Pre-Seminar Activities

2.0 As discussed during the Phase Two Study Visit of Indonesian participants to Japan in November 2009, Dr Yugraj Singh Yadava, Director, Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO) and Chief Advisor to the Training Project and Mr Masaaki Sato, former Secretary, ICFO and Advisor to the Training Project undertook a field study visit to Ambon Province of Indonesia from 26-28 February 2010. The purpose of the mission was to see the small-scale fisheries especially that of tuna, practiced in the Islands. The visit to Ambon was coordinated by Mr Johozoa Ronald Tanamol, Secretary, Provincial Federation of Fisheries Cooperatives of Moluccas (*Puskud Mina Siwa Lima Maluku*), Ambon, Indonesia.

3.0 Ambon Island is part of the Maluku (or Moluccas) Islands of Indonesia. It is one of the three main Islands of the South Moluccas. The Island has an area of 775 km² (299 sq. miles). The main city and seaport is Ambon, which is also the capital of Maluku Province. The city has a safe harbor on Amboyna Bay.

4.0 Ambon Island is located off the south-west coast of the much larger Seram Island. It is on the north side of the Banda Sea, part of a chain of volcanic isles that form a circle around the sea. The Island is mountainous, well watered and fertile. Seram, Ambon, and most of Maluku are part of Wallacea, the group of Indonesian islands that are separated by deep water from both the Asian and Australian continents and have never been linked to the continents by land. As a result of this isolation, Ambon has few indigenous mammals, birds are more abundant and seashells are obtained in great numbers and variety.

5.0 Besides pristine beauty of the Islands and the surrounding sea, Moluccas are also famous for their fisheries resources. The fisheries in the Islands are small-scale and mostly family-based. Fishers from the other provinces, especially from North Sulawesi also migrate temporarily for conducting fishing in the waters of Moluccas.

6.0 The first visit of the mission was to *Tial* village, located close to the city of Ambon. The village has about 300 fishers and 150 fishing boats. The boats or ‘*bankas*’ are either made from wood or fibre-reinforced plastic (FRP) and run on a 15hp outboard motor (OBM). The fishers go out for fishing for about 20 days a month and fish within a radius of 30 kms from the shore. Fishing is done round the year; in wet season they shift the ground but catch the same species. They use hand lines or monofilament lines, which are about 100 meters in length. The target species is mostly yellow fin tuna (*Tatihoo* in local dialect), but at times they also catch skipjack (*Chakalang*) and sharks (*Hin*). Artificial squids are commonly used as bait. The fishers leave home early in the morning, around 0500 hrs, and return mid-day (around 1400 hrs). The tuna is cut into loins on the boat and preserved in ice boxes, which they carry with them. Local buyers purchase the fish at a cost of about Rp 50 000 per kg (approx USD 5.5 per kg). Although the fishers are organized into groups, they are yet to form



Views of Ambon Island, Moluccas.



Fishers and fisheries of Ambon.



Advisors/ experts with IKPI Staff.



Pre-Seminar meeting with IKPI Staff.



The Seminar Hall – Pulau Pelangi A.



Mr Wibisono Wiyono, President IKPI with Seminar Participants.

a cooperative. Lack of knowledge on the benefits of organizing into a cooperative is perhaps the limiting factor. The fishers have no problem with the bigger fishing boats operating in the same area, but conflicts do crop up from time to time with the pole and line fishers.

7.0 The mission then visited the neighbouring *Waa*i village where they met Mr Yance Manuputty-owner of a small purse-seiners (*Jaring bo-bo* in local dialect). The purse-seiner (10 gross tonne) has a fishing crew of 26 fishers, who are mostly related to Mr Manuputty. They fish in Seram and Haruku Sea and around Ambon Island. They fish jack mackerel, sardines, etc. Fishing is mostly day-long and the catch ranges from 1-10 tonnes per trip. The revenue is shared between the different operators on the basis of- 25% for operation; 25% for the encircling boat, 25% for owner and 25% for the crew.

8.0 On the next day the mission took a whirlwind tour of the Island and in the afternoon visited *Lai Ambon* village to meet with another small-scale entrepreneur engaged in tuna fishing. Mr Ali Butas (43 years) has been fishing for tunas since 1995. His father was also a fisherman. Mr Butas owns 4 fibre-glass boats of 9 meter length. Two persons per boat go out for fishing. Ms Rosita, wife of Mr Butas also accompanies him at times for fishing. They go for fishing for about 20 days in a month. Fishing trips usually start at 0200 hrs in the morning and they return home around 1700 – 1800 hrs. The journey to the fishing ground takes almost 4 hrs. They mostly fish tuna – yellow fin and skipjack, using squids, flying fish (*toing toing* in local dialect) and also plastic lures as bait. They also buy live bait from purse seiners fishing in the area @ Rp 2000 per 10 pieces of bait. They normally catch 5-7 numbers of yellow fin tuna, weighing about 70-80 kg each. Skipjacks weigh less- 7-10 kg each and are consumed locally. They loin the tuna on the boat and pack them in ice boxes. On shore they re-pack with fresh ice before sending them to the market or to their agents. The others who go for fishing in his boat are his partners. After deducting the operational cost, each partner receives equal share of the profits.



9.0 The mission returned to Jakarta on 28 February 2010 when the other foreign advisors and Secretary, ICFO (Mr Park Kwang-Bum) also arrived.

10.0 On 01 March 2010 a preliminary meeting was organized with the President (Mr Wibisono Wiyono) and other staff of IKPI to discuss the arrangements for the Seminar and the field visit. Mr Kwang-Bum, Secretary, ICFO and the other advisors also participated in the meeting, which was held in meeting room *Pulau Sapa II* (on the ground floor of the hotel). The final programme and the confirmed list of participants were also provided by IKPI.

11.0 The Project advisors and representative of IKPI discussed the arrangements for the Seminar with regard to the conduct of group discussions and translation of the discussions and other documents produced during the Seminar from English to Bahasa Indonesia and *vice versa* for the benefits of those participants who only spoke English or Bahasa Indonesia. To facilitate discussions and group presentation in the Seminar, it was decided that one advisor/ IKPI staff would be assigned to each group. For group discussion it was agreed to organize the participants under the following four groups.

Group A: Policy and legal Support to Coastal Resources Management (CRM)

Group B: Sustainable use of Coastal Resources and their management

Group C: Institutional arrangements and their roles in CRM

Group D: Livelihoods, Security Nets and Human Resources Development in CRM



The Chief Guest sounding the gong.



Guests receiving mementoes from President, IKPI.



Mr Benny A Kusbini



Mr Syamsul Maarif



Seminar in progress.

12.0 It was also agreed that based on the deliberations, the Seminar would adopt a set of recommendations under the title 'Jakarta Declaration'. Later in the day the advisors and IKPI staff visited the Seminar hall to finalize the arrangements.

Opening Ceremony

13.0 The Phase Three Seminar was held in Hotel Mercure's Convention Hall – *Pulau Pelangi A* (or the Rainbow Island). Sixty participants including representatives of IKPI and the lecturers, both foreign and local attended the Seminar. The participants represented the cooperative organizations of Indonesia at various levels; Ministry of Marine Affairs and Fisheries, Government of Indonesia; Ministry of Forestry, Government of Indonesia; Faculty members and students of some Fisheries Universities and members of the Press. The advisors to the Project included representatives from the BOBP-IGO; the Faculty of Fisheries, Hokkaido University; the Bureau of Fisheries and Aquatic Resources, Government of Philippines; JF-Zengyoren (National Federation of Fisheries Cooperatives Associations, Japan) and Secretary, ICFO.

14.0 The Opening Ceremony of the Seminar began at 0930 hrs, after the arrival of the chief guest and other dignitaries. Mr Wibisono Wiyono, President, IKPI welcomed the guests and participants. In his welcome address, Mr Wiyono said that Indonesia was given this unique opportunity to organize a Seminar for the cooperative sector of the country. He was happy to inform that this Seminar also constituted the first agenda of a series of activities proposed for commemoration of the Indonesian Cooperatives Day, 2010. He wished all the participants and invited guests good health, happiness and success and hoped that the Seminar would be useful for the fisheries sector of Indonesia. [Annexure 3](#) contains Mr Wibisono's welcome address.

15.0 Mr Park Kwang-Bum, Secretary, ICFO read the message on behalf of the chairman of ICFO, Mr Jong-Koo Lee, who could not attend the Seminar because of other commitments. He said that the chairman had asked him to represent the ICFO in this very important seminar.

16.0 Welcoming the Secretary General, Ministry of Marine Affairs and Fisheries (MMAF), Government of Indonesia; senior officials of the Cooperative sector of Indonesia, advisors and participants, Mr Kwang-Bum said that he felt privileged to speak at the opening ceremony of the Seminar. He said that ICFO had a long-standing cooperation with the fisheries cooperatives in Indonesia and recalled the three seminars that were conducted in the past to strengthen leadership in fisheries cooperatives in Indonesia. The first seminar was held in Bogor in November, 1989, the second in Cirebon in March-April, 1999 and the third in Jakarta in November, 2004. These three seminars dealt with a range of issues concerning policy matters and on measures to strengthen fisheries cooperatives in Indonesia, particularly with respect to their organizational and business aspects. Besides, the seminars also discussed fisheries resource management and issues related with the expanding international trade of fish and fishery products.

17.0 Mr Kwang-Bum said that the theme of the present Seminar is "Promotion of Community-based Fishery Resource Management by Coastal Small-scale Fishers in Indonesia". This Seminar is the culmination of an expert mission's visit to Indonesia in October 2009 and a Study visit by selected Indonesian participants to Japan in November 2009. He said that ICFO emphasizes on community-based fishery resource management because communities have to play a major role in sustainable development of fisheries resources in the years to come. "You all would agree with me that unless the resources are managed in cooperation with fishers and their organizations, community-based fishery resource management can't succeed", said Mr Kwang-Bum.

18.0 Mr Kwang-Bum said that the world's fish stocks were declining continuously and as per the statistics of the Food and Agriculture Organization (FAO) of the United Nations, more than 75 percent of the world's major fish stocks were either fully or over-exploited. He said that indiscriminate fishing, poor management and inadequate resource conservation measures were the prime reasons for this situation. Lack of organized community organizations in many countries was also an important reason.

19.0 Focussing on the current situation, Mr Kwang-Bum said that food, energy and environment were the three most important issues before the global community. "The impact of global warming was getting more and more serious by the day. A rise in sea level triggered by global warming would inundate low-lying areas, enhance erosion and lead to salt water intrusion and salination of coastal plains. Last year, the world leaders rushed to the Copenhagen Climate Change Conference hoping for some solution to the crisis, but they failed to arrive at a consensus. It seems now that time is running fast and we have to act collectively to save the world from a catastrophe," said Mr Kwang-Bum. He further said that both agriculture and fisheries must be promoted to satisfy the demand for food. Under the changing world climate, agriculture production looks precarious. Therefore, a great deal has to be derived from the oceans to help fill the gap in agricultural production. In order to use the potential of seas for food supply, it is necessary to use the seas wisely and ensure sustainable production.

20.0 Mr Kwang-Bum said that this Project is designed to promote community-based fisheries resource management by small-scale fishermen engaged in coastal fisheries and by their organizations and to enhance their capacities and strengthen their activities. The Project is expected to contribute to ensuring sustainable production, creation of employment opportunities and poverty alleviation. "Because more than half of fisheries production in the world is produced by small-scale fishers, and this sector of small-scale fisheries provides employment opportunities for most of the world's coastal villages, the Project becomes all the more significant", said Mr Kwang-Bum.

21.0 Speaking about ICFO, Mr Kwang-Bum said that ensuring a better quality of life for fishermen is one of the important objectives of the ICFO. To make this happen, strengthening of the economic power of fishermen and their organizations, mainly cooperatives, is essential. In this regard he hoped that that this Seminar would help strengthen the cooperative spirit of small-scale fishers of Indonesia, so that they enjoy a better quality of life and at the same time contribute to the food security and economic development of this beautiful country. Mr Kwang-Bum also placed on record his deep appreciation to the former chairman of ICFO, Mr Ikuhiro Hattori and the former secretary of ICFO, Mr Masaaki Sato for their valuable contributions to the development of cooperatives in the world.

22.0 Concluding his address, Mr Kwang-Bum said that he would also like to inform that the National Federation of Fisheries Cooperatives (NFFC) of Korea had recently assumed the responsibility of running the ICFO Secretariat and promised that the NFFC would devote itself to strengthening of the cooperative movement and developing fisheries around the world. The text of Mr Lee's message is placed as Annexure 4.

23.0 Mr Benny A Kusbini, read the welcome speech of Mr H A M Nurudin Halid, President, The Indonesian Cooperative Council & Chairman of the Board of Public Cooperation, Indonesia. At the outset, Mr Halid praised the God Almighty for giving strength and health to all those attending the opening ceremony. He said that this Seminar was the first in a series of activities to celebrate the 63rd Cooperative Anniversary in 2010. On behalf of DEKOPIN (*Dewan Koperasi Indonesia* - an umbrella organization of cooperatives in Indonesia), Mr Halid thanked the Secretary General of the MMAF for agreeing to deliver the opening speech at this Seminar and also to ICFO and the Government of Japan for making the event successful. He also welcomed the advisors and the participants attending the Seminar.

24.0 Mr Halid said that after resolving the DEKOPIN leadership issue recently, the new leadership has formulated DEKOPIN's Strategic Plan 2010-2014; policy directions and programmes for 2010; and the strategic steps that are *inter alia* aimed at consolidation of the organization in order to restore the functions as stipulated in the DEKOPIN's statutes and bylaws. All the programmes and activities are designed to answer the needs of the cooperative movement, particularly to better the welfare of its members. "We are very aware that the strengthening of the cooperative base cannot happen on its own. This has to be preceded by good ideology, awareness and most of all a firm commitment from all parties concerned, particularly the determinants of national development policies. Therefore, the main task before DEKOPIN is to increase its efforts in raising the public profile of the cooperative", said Mr Halid.

25.0 Conveying the strong support of the Chairman, DEKOPIN to the efforts of IKPI to promote community-based fisheries resources management in Indonesia, Mr Halid said that Indonesia is the largest archipelagic country in the world, but ironically the Indonesian nation-building in the last 65 years of its independence is still supported by the contributions from land-based economic activities. This is evident from the Gross Domestic Product (GDP) contributions of the marine sector, which in the year 2009 was only 3.12 percent – much less than countries like Japan (54%), China (49%), and South Korea (37%), where the sea area is much lesser than that of Indonesia.

26.0 Mr Halid said that fisheries and maritime affairs constitute important components of the Indonesian economy and should be managed in a sustainable manner so that the benefits are directed towards the welfare of the community - especially the fishing community. To achieve this we need to maintain the integrity of ecosystems, and also to ensure that the resource management creates a level playing field resulting in equity, social mobility and cohesion and participation and empowerment of all stakeholders, which ultimately can bring in economic prosperity for the fisher community.

27.0 Describing the existing situation, Mr Halid said that in 2009, 14.58 million (90%) of the 16.2 million Indonesian fishermen were still below the poverty line. Reiterating his earlier statement, he said that that it would be 'naïve' to manage the fishery resources without due consideration to the ecological aspects. "In order to preserve the environment and simultaneously enhance the economic and social welfare of fishermen, it is very important to involve fishing communities in resource management. The process of planning and policy formulation should be participatory and the fishermen should be a part of this exercise", said Mr Halid.

28.0 Concluding his speech, Mr Halid said that poverty among fishermen had largely arisen due to mismanagement of the fisheries resources. "The IKPI along with their co-members, the *Puskud* and *Kud* Minas, is concerned to improve the knowledge and enhance the involvement fishers and fish farmers in the planning processes and policy formulation, with constant attention to local traditional knowledge and wisdom. Therefore, DEKOPIN is very clear in its opinion that it would be very appropriate for IKPI to cooperate with ICFO for the benefit of the Indonesian fisher community. DEKOPIN hopes that the results of this Seminar, with the support from the Government, would be taken to the grassroots level for the welfare and benefit of our fishers and their cooperatives," said Mr Halid. The full text of Mr Halid's speech is placed as Annexure 5.

29.0 Mr M Syamsul Maarif, Secretary General, MMAF read the message of Mr H Fadel Muhammad, Hon'ble Minister of MMAF, Republic of Indonesia. Mr Muhammad said that the Strategic Plan of 2010 of MMAF sets out a vision to make Indonesia the biggest producer of fisheries products in the World by year 2015.

The mission of the Strategic Plan is to enhance the welfare of the society engaged in marine fisheries and this vision and mission will be strategically implemented through a 'Blue Revolution Policy' by empowering institutions and human resource management; managing sustainability of fisheries and marine resource; increasing productivity and competitiveness based on science and technology; and increasing marketing access either domestic or international.

30.0 The Hon'ble Minister further said that the grand strategy formulated for development of marine affairs and fisheries would be carried out under the national movement called 'Minapolitan', which is proposed to be officially declared by a Presidential Decree. The 'Minapolitan' national movement will be based on several principles such as integration, efficiency, quality and acceleration based on region-wise approach. In order to achieve the vision, a target of fish production amounting to 22.36 million tonnes was set up for the year 2014 by the central and local governments of 33 Provinces. The 'Minapolitan' movement of increasing fish production would be supported by every effort so as to increase competitiveness of fish and fishery products. To achieve this, he urged the support of all stakeholders of the fisheries sector, including the IKPI.

31.0 In conclusion, the Hon'ble Minister said that his Ministry appreciates the achievements of the IKPI, especially in joining hands with ICFO for hosting this Seminar on "Promotion of Community-based Fisheries Resource Management in Indonesia". He encouraged everybody to adopt management of fisheries resources based on community empowerment and sustainable development. He also hoped that in future there would be good synergy and cooperation among all in implementing the development of fisheries and marine affairs. The text of Mr Muhammad's speech is placed in Annexure 6.

32.0 At the conclusion of the opening ceremony, the guests and participants posed for a group photograph, which was followed by tea/ coffee break.

Technical Session

33.0 The Technical session included seven presentations by invited speakers, both from Indonesia and outside. These presentations also set the stage for the group discussions that took place in the later part of the Seminar.

34.0 In the first presentation, Dr Yugraj Singh Yadava, Director, BOBP-IGO presented the results of the "Scoping Study for Promotion of Community-based Fishery Resource Management by Coastal Small-scale Fishers in Indonesia". The Scoping Study was undertaken by a two-member mission (Dr Yugraj Singh Yadava, Director, BOBP-IGO and chief advisor to the Project and Mr Masaaki Sato, former Secretary, ICFO) to Indonesia from 1-8 October 2009. While presenting brief details on the status of the fisheries sector (including the fisheries cooperative) in Indonesia, Dr Yadava also made a SWOT analysis (Strength, Weakness, Opportunity, Threat) of the sector.

35.0 Dr Yadava said that fisher cooperatives in Indonesia could play a very important role in sustainable development of the sector. However, in order to assume that responsibility, the cooperatives need to be united and strengthened in terms of core activities such as guidance and business. The cooperatives need to assume their functions on the twin principles of democracy and transparency. In conclusion, Dr Yadava also replied to questions posed by the participants on issues such as the role of the cooperatives in terms of environmental conservation; developing management models for cooperatives, etc. Annexure 7 provides the full text of Dr Yadava's presentation.

36.0 Dr (Prof) Jun-ichiro Okamoto, Faculty of Fisheries, Hokkaido University, Hakodate, Japan made the next presentation on “Coastal Fisheries Management System and Efforts for Resource Recovery in Japan”. In the first part of his presentation, Dr Okamoto detailed the present Japanese coastal fisheries management system and also the historical background and evolution of fisher associations, the new Fisheries Law and the right-based coastal fisheries in Japan. Some examples of right based fisheries including the process of allocating coastal fisheries rights were also highlighted.

37.0 Dr Okamoto said that the Japanese fisheries management system, especially regarding fisheries rights in coastal waters, is known as one of the best models for community-based fisheries resource management. However, when we look back at the Japanese history of fisheries management system, it can be seen that the road to the existing Japanese fisheries management system was not always smooth. The Japanese fisheries resources are held as commons and most fishing activities in Japan are controlled, by the fishery-rights system and licensing system.

38.0 Detailing the evolution of the present-day system, Dr Okamoto said that the first formal fisheries-related regulation could be found in “*Yourou Rei* (757)” in the Nara period in which the government stated that usage of mountains, rivers, woodlands and moors were open for both private and public purpose. After restoration of the Emperor’s power in 1868, the first Fisheries Act (Meiji Fisheries Act) was enacted in 1901 and converted the old customary fisheries management rules into a modern legal system. This new system was based on a licensing system for relatively large-scale offshore fisheries and a fishery-right system for coastal fisheries. The Act was amended in 1911 and the exclusive fishery rights were transformed to Fisheries Cooperative Associations (FCAs), which continued to be the exclusive fishery rights holder. After World War II, when democracy was introduced in Japan, the Fisheries Act was drastically amended in 1949 to address various needs such as democratization of the fisheries management scheme and improvement in fisheries productivity. It made the FCAs key players in the fisheries management system.

39.0 In the new fisheries management measures adopted by Japan, Dr Okamoto provided details on the Total Allowable Catch (TAC); Total Allowable Fishing Effort or the TAE; and the Resource Restoration Programmes (RRPs). Examples of RRP for Japanese Spanish Mackerel, sandfish and other practices adopted by the fishers were also provided in the presentation.

40.0 Concluding his presentation, Dr Okamoto also dealt with the problems faced by the FCAs and also the remedies to overcome such problems. “The existing Japanese fisheries management system is a relatively refined and elaborate system reflecting elements necessary to fisheries co-management. However, the FCA system faces serious economic problems due to declining number of members. Overall, Japanese experience shows that political will is necessary to promote co-management along with incentives for fishers to come together and doing so in a transparent and democratic manner,” said Dr Okamoto. The full text of Dr Okamoto’s presentation speech is placed as Annexure 8.

41.0 The third presentation was made by Dr Mulyono S Baskoro, Professor, Faculty of Fisheries, Bogor Agriculture University, Indonesia on “Application of Japan’s Fisheries Resource Management System to Indonesia: Issues that have to be overcome”. This presentation was made in association with Mr Untung Samudra, Vice-President, KUD Mina, Blanbangan, Banyuwangi, Jawa Timur.

42.0 Prof Baskoro made a comparative description of the marine fisheries sector in Indonesia and Japan and also highlighted the comparative advantages of the fisheries sector in Japan. He said that some of the most important issues in Indonesian fisheries



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Technical presentations at the Seminar (1-4) and questions posed by some of the participants (5-6).



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Questions posed by a participant (1); coverage of the Seminar by a reporter of the Daily Jakarta Shimbun (2); presenters receiving mementoes from the President, IKPI (3-6).

relate to over-fishing in some grounds; over-capacity for some types of gear; decrease in CPUE and increase in operational costs; open access to fisheries; IUU fishing and lack of awareness on responsible fisheries management at the local level.

43.0 Dr Baskoro said that possible approaches to fisheries management would include reduction of catch and effort; rehabilitation of habitat and environment; resource enhancement through ranching, etc; resource evaluation; setting up of fisheries coordination committees (FCC) and community-based fisheries management. He also presented a resource management strategy, which focused on the problems, challenges and the developmental strategy.

44.0 In summary, Prof Baskoro said that it is critical for fishermen, the national government and the fisheries cooperatives to understand their roles and work together for effective management and sustainable use of fisheries. Annexure 9 provides the full text of Prof Baskoro's presentation.

45.0 The next presentation was made by Dr Sandra Victoria Arcamo, Chief, Fisheries Resources Management Division of the Bureau of Fisheries and Aquatic Resources, Government of Philippines. Dr Arcamo spoke on the "Applicability of the Japanese Community-based Fisheries Management in the Philippines". Dr Arcamo provided a brief background to her presentation and said that the objectives of the Study Visit to Japan (Philippines was the first country selected under the on-going Training Project) were to have an exposure to Japan's fisheries resource management (FRM) and draw ideas from such management practices for empowerment of fisher cooperatives in Japan.

46.0 Dr Arcamo then briefly described the fisheries sector of Japan, including the evolution of FRM and the FRM structure, the legal framework, the FCAs and the issues that confront the sector. In this regard she mentioned that Japan's seafood sufficiency is estimated at 54-55 percent and the target set by the government to increase this sufficiency by 2012 is 65 percent. Detailing the issues, Dr Arcamo said that the fisheries sector in Japan also suffers from over-fishing, loss of marine habitat, restricted fishing operations due to international measures and aging fishers.

47.0 On the lessons learned from the Study Visit, Dr Arcamo said that the small-scale fisheries sector is strongly supported and an equally strong political will exists in the country. The FCAs are successful because they are economically viable with an efficient post-harvest system (including marketing); they adhere to rules and regulations and also practice social equity. The available scientific advice is put to good use and conservation practices are voluntarily adopted by the fishers and the community.

48.0 Dr Arcamo then provided a brief outline of the fisheries sector in the Philippines. Dr Arcamo said that the fisheries sector in the Philippines is as important as that in Japan. The country now has a new Fisheries Code and also a sound structure for the FRM. The FRM strategies include fisheries resource management, capacity-building, income diversification and information education campaign. So far the outcomes of the FRM practices in the Philippines are satisfactory.

49.0 As regards applicability of Japanese FRM in Indonesia, Dr Arcamo said that the Japanese FRM systems provided good opportunities for strengthening the Philippine's FRM practices. However, the constraints that might have to overcome include leadership and governance, values and attitudes, discipline and industry regarding access to shared resources and finance and technology.

50.0 In response to questions, Dr Arcamo replied that the Japanese FRM is unique and can not be duplicated. "However, the fundamental concepts behind it are universal and can be applicable to other region's fisheries, including the Philippines.

The measure of success of FRM depends on various factors such as: sound FRM legal framework, clearly defined juridical boundaries among fishing communities for effective enforcement of rules and regulations, membership control mechanisms and advocacy for high compliance and cooperation. Having said that, the Philippine's FRM is relatively young but we are moving towards the direction that Japan is taking", said Dr Arcamo. Please see [Annexure 10](#) for full text of Dr Arcamo's presentation.

51.0 The next presentation on "Present Status of Fisheries Resource Management in Indonesia and Suggestions for Improvement" was made by Dr Geliwynn Daniel Hamza Jusuf, Head of Agency for Research of Maritime and Fishery, MMAF, Government of Indonesia. Dr Hamza said that the Indonesian waters cover two-third of its territory and are rich in terms of bio-diversity. Although, some of these resources are underutilized, the fisheries as such is under stress as is evident from reduced mean length of fish in the catches, changes of catch composition and the need for longer fishing trips. One of the major problems in Indonesian fisheries is high incidence of Illegal, Unreported and Unregulated (IUU) fishing, both by local and foreign fishing vessels. The local fishers often use explosives and poison for fishing in the coral reefs and coastal waters. On the other hand, foreign fishing vessels carry out unauthorized fishing in Indonesian waters with high capacity fishing methods and equipment such as purse seine, gill nets, drift nets and with small mesh size nets in offshore and even in territorial waters.

52.0 Detailing some of developments in the fisheries sector, Dr Hamza said that the fisheries sector in Indonesia got a boost in 1999 when the former Directorate General of Fisheries was upgraded to the Ministry of Marine Affairs and Fisheries. This created a dedicated high powered institutional framework for fisheries sector.

53.0 Dr Hamza said that a successful fishery management rests upon a chain of activities that support each other. "The starting point is an assessment of the availability of biological resources followed by an active tailoring of the fishing fleet. Only when the fishing capacity is balanced against the resources that sustainable harvest levels can be achieved and maintained. In Indonesia there are some constraints in the implementation of the assessment under a sustainability-approach. However, the principal benefits of the above exercises will be the availability of the basic management strategy and the enhanced local capacity to plan and manage sustainable development of marine and coastal resources through simulation model framework", said Dr Hamza.

54.0 Concluding his presentation, Dr Hamza said that collaborative efforts and partnership between government agencies, non-government organizations and local community organizations will oblige government authorities to become more service oriented. The direct beneficiaries would include disadvantaged coastal communities, many of whom live in poverty. In term of management, laws and regulations are one of several important components for achieving the expected objectives of development. Law and regulation should be based on scientific evidence and appropriate laws and regulation should be implemented and adopted by all stakeholders. Dr Hamza's presentation is placed in [Annexure 11](#).

55.0 Mr Shidiq Moeslim, Chairman of the Indonesian Fisheries Society made the next presentation on "How Fishermen's Organizations should be strengthened to help promote Fisheries Resource Management Efforts". Mr Moeslim said that Indonesia is also known as a mega biodiversity country. Around 17 percent of the known species of flora and fauna and around 16 percent of the known fish species of the world are found in Indonesia. He said that fisheries production has increased steadily at the rate of more than 10 percent per annum. In 2009, capture fisheries produced around 5.3 million tonnes and aquaculture 4.8 million tonnes. However, capture fisheries is approaching the Maximum Sustainable Yield (MSY) which has been estimated at 6.4 million tonnes. During the last 5 years, the growth rate of

capture fisheries production is only 2.95 percent per annum. Overfishing has been reported from ten fisheries management areas in Indonesia.

56.0 Further detailing the attributes of the marine fisheries sector of Indonesia, Mr Moeslim said that the capture fisheries production is mostly attributed to traditional fishers (90%), using non-powered boats, OBMs and inboard motorized boats. In 2009 the number of fishers was estimated at 2.75 million in 939 000 households or establishments. "Comparing the number of fishers and the estimated MSY (6.4 million tonnes), it seems that there are too many fishers chasing too few fish", said Mr Moeslim.

57.0 Mr Moeslim said that to achieve sustainability several management measures have been applied by the government. The first measure is to divide marine waters into fisheries resources management areas. The second measure is to classify the fish resources into groups such as demersal, small pelagic, large pelagic and crustaceans. The third measure adopted by the MMAF is to deploy Vessel Monitoring System (VMS) on fishing boats along with patrol boats to control IUU fishing.

58.0 Mr Moeslim said that FRM practices in Indonesia are facing several problems, such as lack of accurate and up-to-date statistics, weak fisher associations, complex administration and regulations and IUU fishing. The participation of stakeholders in FRM is also minimal. In view of these limitations it is essential to strengthen fisher organizations in order to promote FRM. A strong national fishermen organization will be able to influence central government policies and simultaneously strong local-level organizations will be able to implement the decisions effectively. Mr Moeslim also said that there is a need to improve the data quality, revise and up date the rules and regulations and also promote co-management at both national and local levels. Further, there is also a need to build the skills and capacities of local fishers, elimination of IUU fishing, increased cooperation with international organizations and other technical and donor agencies such as the FAO and Japan International Cooperation Agency and also coordination and where required cooperation with major markets, etc. Annexure 12 provides full text of Mr Moeslim's presentation.

59.0 The final presentation in the Technical Session was made by Mr Park Kwang-Bum, Secretary, ICFO. Mr Kwang-Bum's presentation covered the Fish Stock Rebuilding Plan (FSRP) of Korea, implementation of Ecosystem-based FSRP and its economic effect and some challenges that face the marine fisheries sector of Korea. Mr Kwang-Bum said that since early 2000, Korea's coastal and offshore fisheries experienced reduction in catch. The landings from coastal and offshore fisheries dropped from 1.7 million tonnes in 1986 to 1.0 million tonnes in 2004. To address this reduction, an ecosystem-based FSRP was initiated.

60.0 Mr Park said that under the new FSRP, unlike the former government-oriented fisheries management system, a joint management system was established, where actual actors (fishers) could participate in establishing, executing and evaluating the basic rebuilding plans. Furthermore, a science committee and a fishery resource management committee were organized to coordinate joint participation and undertake role assignments to relevant stakeholders.

61.0 Further explaining the progress of FSRPs, Mr Kwang-Bum said that so far 10 FSRPs have been established and operated and it is planned to expand to 20 species by 2012. The results of pilot projects showed that stocks were increasing after the introduction of FSRPs. For instance, the catch per unit effort (CPUE) of sandfish in the East Sea increased from 0.44 in 2005 to 0.78 in 2007. Consequently, fishing income has also increased by 10 percent. Similarly, sea ranching has been undertaken since 1998 and presently 5 large-scale sea ranching areas exist. Another 20 small-scale ranching areas are proposed to be set up by 2010. Artificial reefs (ARs) have also been set up to create habitat and spawning grounds. The ARs have

since been playing an important role in facilitating spawning, breeding and feeding for many fish varieties. It is planned to spend about US \$ 281 million in the next ten years to create 35 000 hectares of seaweed forests.

62.0 In the concluding part of his presentation, Mr Kwang-Bum said that the ecosystem-based FSRP aims to increase the level of fish stock from the current level to a target level within a specified period with efficient fisheries management measures and stock enhancement programmes. “The key lessons learned during the implementation of FSRP are that causes for stock decrease are various and complicated and it is necessary to adjust and eliminate some conventional policies that could have unforeseen negative impacts on fish stocks. The FSRP-based fisheries management policy in Korea carries great significance, for it has changed the focus of the policy from simply maintaining the status quo to stock recovery. Further, it has allowed relevant stakeholders to get actively involved in the procedures of establishing and promoting the plan, leading to its effective implementation. Currently, the FSRP is operated by species, but if the FSRP can be gradually expanded to encompass the whole ecosystem, it will greatly contribute to more effective management and fish stock recovery for all species, both in the offshore and coastal waters of Korea”, said Mr Kwang-Bum. Please see [Annexure 13](#) for full text of Mr Kwang-Bum’s presentation.

Group Discussions

63.0 To engage the participants in meaningful discussions and arrive at recommendations based on their requirements, the Seminar format included group discussion. At the end of the first day’s proceedings the participants were divided into four groups to discuss various issues pertaining to sustainable use and management of coastal resources in Indonesia. The topics assigned to the four groups were as follows:

Group A: Policy and legal support to Coastal Resources Management (CRM)

(The topics of discussion assigned to the group *inter alia* included policy support to CRM; legal support to CRM; monitoring, control and surveillance in CRM; inter-sectoral and intra-sectoral conflicts and mechanisms for their resolution).

Group B: Sustainable use of coastal resources and their management

(The topics of discussion assigned to the group *inter alia* included sustainable fishing practices; conservation and resource enhancement; marketing and cold chain; technological requirements).

Group C: Institutions and their role in CRM

(The topics of discussion assigned to the group *inter alia* included fisheries cooperatives, including their management bodies and activities; institutional finance; role of other departments and institutions such as universities, national and/ or international NGOs, etc in management of CRM; coordination and linkages among institutions in CRM).

Group D: Livelihoods, security nets and human resources development in CRM

(The topics of discussion assigned to the group *inter alia* included alternate livelihoods (e.g. Eco-tourism) and additional income generating activities; gender in CRM; training and extension; social security nets for fishers (including insurance for their implements, etc.); and safety and health of fishers).

64.0 Each group nominated a chairperson and a moderator for facilitating the discussions. One advisor was also assigned to each group to serve as the facilitator. After intense discussion, each group finalized its report for presentation in the Plenary. The group-wise list of participants and their recommendations are presented on pages 19-22.



Group I



Group II



Group III



Group IV



Group discussions in progress.

Group 1: Policy and legal support to coastal resources management in Indonesia

Group leader/Chair: Nurodi

Moderator: Ayon Prasetyawan

Group members: H M Syarifuddin Baso, I Wayan Sudiarsana Yoga, H Gustomi, Marlina Marbun, Johannes Hutabarat, Farhan Pramudito, Asnansyah Salimun, Wiwin Winarti, Mochamad Haryono, Sulistrianto, Hardadi Lukito, Mohammad.

Recommendations:

- All programmes (including field programmes) of concerned departments/agencies/ institutions should be integrated and carried out through a 'single window' policy. Management of 'beneficiaries' should also be carried out in the same manner. This would facilitate the monitoring, management and measurement of the success of each programme and also allow for corrections and revisions as appropriate.
- The government should make a policy to allow the Regent or the Mayor (as applicable) to permit Fishery Cooperatives to fully manage the fish auction sites (*Tempat Pelelangan Ikan* or TPI). This would vindicate the government's commitment to promote community-based fisheries resource management in Indonesia.
- The government should regulate the distribution of fuel to the fishers and the bunkers managed by Fishery Cooperatives to streamline the procedure and minimize administrative procedures in fuel distribution to the fishers. Presently, the availability of bunkers for providing fuel to the fishers is also limited. In case of fuel subsidy, verification is not carried out on the basis of vessel tonnage, but is decided on the landing location of the vessel. When the vessel lands its fish cargo at the auction site, it is eligible for subsidy. On the contrary, when it lands fish at the factory, it is not eligible for subsidy. This anomaly needs to be corrected.
- The formation of the Fisheries Coordination Committee (FCC) has become a necessity for the creation of community-based fisheries resource management. Further, the existence of the FCC must be legalized by the government (MMAF). The FCC once established would also be able to verify vessels eligible to receive subsidies.
- The Ministry of Cooperatives and Small-scale Enterprises (Ministry of CSMEs) is in the process in compiling a draft law for strengthening the role of CSMEs in fishing auction management. This revision includes provision of capital, cooperative human resources and facilities for the TPI. It is recommended that this law should be finalized and implemented at the earliest since it would help develop fisheries sector in Indonesia.
- The government is in the process of restructuring the Ministry of Marine Affairs and Fisheries (MMAF) and a team consisting of five experts from five universities in Indonesia has been set up for the purpose. It is recommended that the output and recommendations of this Seminar should be provided to the team for their consideration while finalizing the proposal for restructuring of MMAF.

Group 2: Sustainable use of coastal resources and their management in Indonesia

Group leader/ Chair: Roza Yusfiandiani

Moderator: Ayon Prasetyawan

Group members: H Djadjat Sudrajat, S Karjono, Ono Surono, H Djani, Muh. Yunus Tamamma, M Ryan Metrico, Sukaeti, Sri Haryati, M A Djaelany.

Recommendations:

- The process of licensing is too long and cumbersome. This process should be simplified and provisions should be made to submit the applications at the Provincial or Regional levels. The licensing conditions also need to be reviewed and made simple.
- The fishers should be provided with a logbook that provides information on the training aspects and other social programmes.
- The government should formulate credit schemes for fishers and this should be supported by the Ministry of Cooperatives and Banks.
- Presently, the supply of fuel to the fishers is limited. This cap should be removed.
- The government in consultation with the fishers and others concerned should replace the gears that are not environment-friendly. Further, government should also implement programmes for modernization of fishing gear.
- At the Provincial level, all management programmes aimed at fishery resources must involve fisher cooperatives.
- The government should undertake spatial planning of the coastal areas and provide law for its regulation. This should also include regulations for undertaking aquaculture in the coastal areas, including mariculture. This would benefit the fisheries sector.
- The government should ensure that the industrial sector has a waste management plan so that waste is not dumped into the sea.
- The fisheries infrastructure such as ports is inadequate in the country. The government should create fishing port facilities, which should be handed over to the fisher cooperative for technical management.
- The government should regulate the payment to fish workers by the private operators.
- The government should conduct regular training programmes for the fishers on use of modern technology, socialization and application of eco-friendly fishing methods and good governance.
- The government should streamline certification procedures for facilitating exports.
- The government should consider setting up of a fish procurement agency or *Bulog* for the benefit of fishers.

Group 3: Institutions and their role in coastal resources management in Indonesia

Group leader/ Chair: Arsyad Al Amin

Moderator: Muhammad Kadir

Group members: H A G Supeno, Dhofir Muntasib, M Yusuf Syam, Samsul Parasibu, Toyib Isnanjaya, Agus Rochimat, Riana Faiza, Edi Santoso, Kusno Wibowo.

Recommendations:

- To implement new rules and regulations, the government should consider the capacity of the fishers and also identify effective approaches for delivery. This would also need more socialization with fisher groups.
- The Grand Design and Strategic Plan for fisheries management proposed by the government should be implemented at both national and regional levels. This would help in reducing overfishing and also curbing IUU fishing.
- In Indonesia, the community-based fisheries management practices have been founded on customary laws (*sasi*, *awig-awig*, *manee*, etc). They are still effective and can be improved through more research. Further, the local institutions and the community should be involved in fisheries management to promote the concepts of co-management.
- The government needs to put in more effort to implement the provisions of the 1995 FAO Code of Conduct for Responsible Fisheries.
- In the event of reduced tax collections from fish landings, the government should consider increasing the budget to construct/ manage fish ports in the country.
- The government should consider strengthening implementation of the integrated coastal management practices, and also improving coordination among stakeholders.
- The government should also consider strengthening the rights of small/ traditional fishers for utilization of the coastal resources. This would provide unique opportunity to the coastal fishers who are also the main stakeholders for fisheries management.
- The Act No. 25/1992 on Cooperatives needs to be revised by incorporating the interests of fishermen cooperatives.
- The Grand Strategy for fishing ports, institutions and infrastructure development should consider incorporation of national and international standards such as the ISPS Code.
- The proven technology developed and designed by R&D institutions in Indonesia such as BPPT (*Badan Pengkajian Dan Penerapan Teknologi*), LIPI (*Lembaga Ilmu Pengetahuan Indonesia*), BRKP (Fisheries Ministry's Maritime Research Agency) and the Universities should be implemented.
- The function and role of fisher cooperatives should be strengthened to improve the prosperity of fishers. This should be carried out using simple systems and mechanisms. This would also help in improving the human resource development and infusion of technology into the fisheries cooperatives.
- Fishing craft and gear should be considered as collateral for providing credit to the fishers.
- The government should also consider developing Fisheries Insurance as a collateral institution for fisheries credit.

Group 4: Livelihoods, security nets and human resources development in coastal resources management in Indonesia

Group leader/ Chair: Untung Samudra

Moderator: Muhammad Kadir

Group members: Mahdi Junus, H Abdul Kadir Jaelani, Moch. Nasyrudin, Urlim Supiandi, Awaludin Syamsudin, Natalis Wahyu D, Prayekti Ningtias, Diding Sudira Efendi, Sartono, Amir Syam.

Recommendations:

- The government and other concerned agencies/ institutions should consider promoting alternate/ additional livelihoods for fishers in the form of aquaculture, ecotourism, value addition and preparation of diversified fisheries products, preparation of souvenirs, waste recycling, etc. Similarly, empowerment of fisherwomen/ or wives of fishers should also be carried out through the above activities.
- Fisheries cooperatives should foster cooperation with the insurance companies for providing insurance coverage for their members at reasonable premium rates.
- The government should enforce insurance coverage for the ship crew as a mandatory requirement for issuing fishing permit. Such insurance coverage should be taken by the ship owner.
- The government should facilitate easy flow of credit to the fisheries sector.
- The government should consider setting up of Fisheries Coordination Committee (FCC), which involves all stakeholders, following the Japanese experience of setting up of FCC. The FCC can assist the government in implementation of fishing bans in different seasons and areas, total allowable catch and conflict resolution among stakeholders.
- The government should consider strengthening/revitalizing the customary laws in relation to coastal resources management.
- The government should also consider playing an active role in improving the human resource development in the fisheries sector, especially with regard to education, training and alternative livelihoods opportunities for the fishers.
- There is an urgent need for the government to ensure that the coastal waters receive minimum pollution from the urban and industrial settlements along the coast. This would improve the coastal environment/ habitat and help enhancement of fish stocks.
- The government should consider providing legal support to promote coastal resources management through appropriate policies and mechanisms and optimization of community watch groups or *Pokwasmas* (*Kelompok Pengawasan Masyarakat*).

Field Visit

65.0 On 04 March 2010, the participants, advisors and organizers of the Seminar along with some officials of the MMAF and Provincial Government visited the Seribu Islands District, popularly known as 'Thousand Islands'. This district is under the Government of DKI Jakarta Province and the headquarters of the district are located on Pramuka Island. Pramuka Island has complete infrastructure such as school buildings, sports facilities, an integrated security system and health facility and hospital units with some speed boat ambulances. These Islands lie in the waters of Jakarta Bay and together constitute about 110 islands, in some large and small groups of islands.

66.0 The participants, advisors and organizers travelled in two speed boats to Pramuka Island and the journey took about 45 minutes. On arrival at the Island, Ms Lilik Litasari, Head of Fishery and Marine Affairs Agency of Seribu Islands District welcomed the visitors and described the fisheries activities. Mr Abdul kholiq, Staff of the Agency and Ms Ipih Ruyani, Secretary of Marine, Agriculture and Forestry Agency of Jakarta Province assisted Ms Litasari in explaining the activities and later also conducted a tour of the Island.



67.0 Ms Litasari said that the water area of Seribu Islands covers 699 750 hectare and the estimated population of the Islands in 2004 was around 20 000. About 80 percent of the population is fishers. The Seribu Islands have hatcheries for abalone, clown fish and sea-horse propagation; mangrove restocking center and a sea turtle restocking center. The activities of the Fishery and Marine Affairs Agency of Seribu Islands District include aquaculture of grouper species (since year of 2000), milkfish and sea-weeds; coral transplantation; building fish shelter or fish aggregating devices (since year 2002) and community-based sea-farming based in Semak Daun Island and hatchery of marine endangered species.

68.0 The participants and other visitors were then taken to the marine endangered species hatchery, sea turtle restocking centre and the mangrove restocking centre. Mr Kholiq and the staff of the Fishery and Marine Affairs Agency of Seribu Islands District explained the activities. The first visit was to the hatchery, which belongs to the Fishery and Marine Affairs Agency of Seribu Island District. Three endangered species namely abalone (*Haliotis asinina*), clownfish and sea horse (*Hippocampus spp*) are under experimentation in the hatchery. It was informed that so far the work carried out on sea-horse has been more successful than the other two species. Mr Kholiq explained that the sea horses are still collected from the sea or purchased from fishers. The first step is adaptation of the sea-horse to the aquarium conditions for several days. Thereafter, the spouse-matching process is undertaken to obtain sea-horse couples than can be mated. These couples should be separated from the others in order to continue the breeding process. Each aquarium is monitored carefully in terms of dissolved oxygen, temperature, salinity and other water quality parameters suitable for the sea-horse. Once breeding is successful, the baby sea-horses are raised in aquarium or in fibre-glass boxes. It takes about 4 months before the young sea-horse is ready for release into the sea. During the growing period they are fed with artemia. Some of the baby sea-horses are sold to cover production expenses and the rest are released back to the conservation area of Seribu Island. Availability of continuous power supply is one of the main problems faced by the hatchery. This erratic power supply also causes considerable mortality of the young ones.





Visit to Seribu Islands District.



Participants visiting the mangroves and turtle re-stocking centers; grouper cage culture and other facilities in the Seribu Islands District.

69.0 The objective of the hatchery is to restock abalone juveniles into conservation areas in Seribu Islands. Abalone or ear shells are nocturnal herbivorous marine gastropods inhabiting the coastal reef zone. They are commercially important. Due to unregulated and illegal fishing, their existence is now endangered. Seedlings of hatchery-produced abalone have the potential to enhance wild populations but survival of out planted juveniles has been poor. Presently, mature abalones are collected from the fishers and they are fed with sea-weed and fish-feed. The hatchery has been trying to produce eggs and hatch them to larval stages. However, the survival rate is low and the growth is slow. Usually after three months, the juveniles are ready for release.

70.0 Clownfish (family Pomacentridae) is a marine ornamental fish. Mature clownfish are collected from the wild and kept in an aquarium or fibre-glass square-boxes. The animals are monitored until each clownfish finds a spouse. Clownfish cannot be forced to find its spouse and this can take several days or even weeks. Once the couples are obtained, they are separated and kept in individual aquaria. Each aquarium is maintained in its natural conditions, including anemones or soft corals, so that the process of breeding can be completed smoothly. In the absence of original habitat, artificial coral or PVC pipes can also be provided. Since the hatchery has recently started its work with the clownfish, not much production has been achieved so far.

71.0 The participants were then taken to the sea turtle restocking centre. This centre is presently working on the restocking of hawksbill turtle (*Eretmochelys imbricata*), which is a critically endangered sea turtle belonging to the family Cheloniidae. It is the only species in its genus. The hawksbill's appearance is similar to that of other marine turtles. It has a generally flattened body shape, a protective carapace and flipper-like arms, adapted for swimming in the open ocean. *E. imbricata* is easily distinguished from other sea turtles by its sharp, curving beak with prominent tomium and the saw-like appearance of its shell margins. Depending on water temperature, the Hawksbill shells slightly change colour. While this turtle lives part of its life in the open ocean, it spends more time in shallow lagoons and coral reefs where it feeds on its primary prey, sea sponges. Because of heavy fishing practices, *E. imbricata* populations are threatened with extinction. The World Conservation Union classifies the hawksbill as critically endangered.



The Convention on International Trade in Endangered Species outlaws the capture and trade of hawksbill turtles and products derived from them.

72.0 After visit to the sea turtle restocking centre, the participants visited the mangrove restocking centre. Mr Salim, Staff of the National Ocean Park of Seribu Islands explained the activities. He said that a mangrove forest is ecologically characterized by some indicator species such as *Rhizophora mucronata* and *Rhizophora stylosa*. The importance of mangrove is due to its multi-functions in terms of biology, ecology, biodiversity, socio-economy, and also prevention of pollution. The objective of this centre is to prepare mangrove saplings to be planted in certain areas within the conservation area of Seribu Islands National Ocean Park. The mangrove saplings are prepared by collecting mangrove seeds from the forest and then they are grown in plastic bags filled with sand and fertilizer. The next step is rearing the seed until they grow big enough for replantation in the conservation area. This process takes several months before they can be replanted in the conservation areas. Mr Salim said that the National Ocean Park of Seribu Islands welcomes stakeholders such as individuals, business houses and non-government organizations to contribute to the replanting of mangrove vegetation. They may sponsor the activity by purchasing seedlings from the National Ocean Park. Through such collaboration, many stakeholders can participate in protecting the deterioration of natural resources in the Seribu Islands.

73.0 The participants then left Pramuka Island for visiting the grouper and milkfish cage farming activities in a nearby small Island. A large number of small units owned by individual fishers or group of fishers raise both groupers and milkfish. The Island also has a boneless milkfish processing unit. After visiting these units the participants enjoyed a seafood lunch at Nusa Resto, a floating restaurant.



74.0 Post-lunch, the participants travelled to another Island for a meeting with 'Seribu Sejahtera', a local fisheries cooperative. The venue of the meeting was Balai Benih Perikanan Laut, Dinas Perikanan, Kelautan dan Pertanian, Kelurahan Pulau Tidung Besar, Kecamatan Kepulauan Seribu Selatan, Kabupaten Administrasi Kepulauan Seribu, DKI Jakarta. Representative of the Cooperative participated in the meeting along with officials of the Fishery and Marine Affairs Agency of Seribu Islands District. Mr Samun Sidiq, chairman of Seribu Sejahtera said that the total number of fishers in Tidung Island is 666, which is divided into fishers using *muro-ami* nets (400), handline fishers (200) and fishers using traps or doing mariculture (66). About 30 percent of the total fishers are members of the fisheries cooperative. Presently, there are two



cooperatives in the same sub-district. The members of the other cooperatives are from the community in general and are not necessarily engaged in fishing or fishing-related activities. Mr Sidiq said that the poor membership in the cooperative is due to lack of trust in the cooperative institution and the seed fund received from the government mainly goes as bad-bebt. The fishers are only interested in joining the cooperative if they see some financial benefits from the cooperative. Mr Sidiq also made the following suggestions for consideration of the government:

- Government support for fisheries cooperatives should be in the form of assets such as small fishing vessels (which deploy less number of crew) and suitable fishing gear (preferably hand line) and not in cash.
- *Muro-ami* fishing gear should be replaced with another fishing gear, because it is hazardous (since 1995, 29 fishers have died and 15 have suffered permanent injury). It is also less beneficial for the crew as it gives more profit to the owner.
- Government support should be in line with the actual needs of the fisheries activities (for example outboard engine that runs on diesel or a fisheries jetty, etc).
- Government should also promote use of equipment that run on solar energy rather on gasoline.

75.0 The Fishery and Marine Affairs Agency of Seribu Islands District also operates a grouper hatchery in this Island. Presently, the juveniles are collected from other areas (even as far as from the Island of Bali) and reared in the hatchery. The young ones are provided to the grouper cage fish farmers operating in the nearby Islands.

76.0 After a very interesting and informative field visit the participants and advisors returned to Jakarta in the evening.

Plenary Session

77.0 The Plenary Session was held in the morning of 05 March 2010. During the Plenary Session the four groups presented the final version of their reports along with the recommendations. The recommendations of the four groups are placed in the boxes on pages 19-22. A drafting committee comprising Mr Wibisono Wiyono, Mr Park Kwang-Bum, Mr Masaaki Sato and Dr Y S Yadava prepared the draft Resolution (Jakarta Declaration) for presentation in the closing session of the Seminar.

78.0 Dr Y S Yadava presented the draft resolutions to the Plenary for its adoption. On the basis of suggestions received, the Declaration was finalized and adopted as 'Jakarta Declaration'. After adoption, the 'Jakarta Declaration' was signed by Mr Wibisono Wiyono (on behalf of IKPI) and by Mr Park Kwang-Bum (on behalf of ICFO). The full text of the Jakarta Declaration' is in Chapter 2 of this Report.

Closing Session

79.0 In her concluding remarks, Dr Sandra V Arcamo thanked the organizers for giving her the opportunity to present Philippine's experience on the possible application of Japanese community-based fisheries resource management in her country. Dr Arcamo said that Philippines and Indonesia share common FRM situation since both countries are similar in environmental conditions. The two countries have been



collaborating quite often, as neighbours in FRM, fishing agreements and other fishing related matters and hoped that such collaboration would continue in the years to come and we would benefit from each other's strengths. She also wished the participants good luck on their endeavors to improve FRM and empower the fisheries cooperatives in Indonesia. Dr Arcamo's Summing Up remarks are placed in Annexure 14.

80.0 Dr Yugraj Singh Yadava, Director, BOBP-IGO, on behalf of the Organizers of the Seminar and fellow advisors/ lecturers thanked MAFF, Government of Japan, ICFO and IKPI for the invitation to participate in the Seminar in Jakarta and also for facilitating the stay and providing excellent hospitality. Dr Yadava recalled his visit to Indonesia during Phase One activities along with Mr Masaaki Sato in October 2009 and said that these two visits gave him the opportunity to meet and interact with a large number of people representing fisheries cooperative sector, government and industry. He found the interactions to be extremely useful, and was confident that the fisheries sector in Indonesia was progressing in the right direction.

81.0 Complimenting IKPI for bringing a large number of representatives from different provinces of Indonesia to the Seminar, Dr Yadava said that this large participation not only shows the interest of IKPI in enhancing the skills and capacities of the cooperatives but also the participants own interest in sustainable development of the fisheries sector. Dr Yadava thanked the participants for their cooperation and collective action in adopting the 'Jakarta Declaration', which he felt would strengthen their hands in making Indonesia a leader in fisheries and aquaculture and also helping the government in realizing its vision and mission of increasing fish production under the national movement or '*Minapolitan*'.

82.0 While thanking the Government of Japan for funding this Training Project and the ICFO and IKPI for successfully implementing it in Indonesia, Dr Yadava said that the knowledge and experience gained through this Seminar should be further disseminated in the country for development of fisheries and aquaculture. On behalf of the resource persons, he reiterated the commitment to provide technical support in promotion of community-based fisheries resource management in Indonesia. Dr Yadava's concluding remarks are placed in Annexure 15.

83.0 Mr Kwang-Bum on behalf of ICFO expressed his gratitude to Dr Y S Yadava and to his Organization (BOBP-IGO) for the excellent contributions and support to the Training Project. He said that Dr Yadava, who is also the main advisor to the Project, played a crucial role in the success of the Project. He deserves a special mention for his whole-hearted cooperation and support to this Training Project from the very beginning. Without his cooperation, the Project would have not have achieved such a good success.

84.0 Mr Kwang-Bum extended his special thanks to Mr Wibisono Wiyono, President of IKPI and his staff Mr Hardadi Lukito and others for their support and cooperation in implementation of the Project. He also thanked the lecturers, Dr Jun-ichiro Okamoto, Dr Mulyono Sumitro Baskoro, Dr Sandra Victoria Arcamo, Dr Gellwynn Daniel Hamzah and Dr Siddiq Muslim for their presentations.

85.0 Mr Kwang-Bum said that this Seminar and the other seminars held in the past under this Training Project should be an impetus to develop Indonesian fisheries based on community-based fishery resource management. Recalling the state of world's fisheries resources, he said that fish stocks have been declining continuously over the years and now it is time to protect and manage the resources for their sustainable development.

86.0 In conclusion, Mr Kwang-Bum hoped that the 'Jakarta Declaration' would be distributed widely and used by all those concerned for furthering the intent and

objectives of the Declaration. He also urged that the intent and objectives of the Declaration be included in further fisheries policies and programmes in order to help develop the fisheries sector in Indonesia. [Annexure 16](#) contains the concluding remarks of Mr Kwang-Bum.

87.0 Mr Wibisono Wiyono in his concluding remarks thanked the advisors/ lecturers and the all the participants for their participation and valuable contributions to the Seminar. He said that the participants also deserve special thanks for their patience, dedication and commitment during the Seminar, which has concluded with the very important 'Jakarta Declaration'.



88.0 Mr Wiyono said that the 'Jakarta Declaration', which contains the recommendations and resolutions made in the Seminar, focuses on issues of fisheries resource management, fisheries cooperatives and community aspects related to the promotion of fisheries sector. It also provides guidance for implementing fishery resource management within the community. The recommendations are important for all stakeholders, including fishers, public and private sector, cooperatives, research institutions, universities and all those who are associated in one or the other way with the FRM activities in Indonesia. He urged upon all participants, to give their best efforts to cooperate and synergize the potential to implement the recommendations. He also said that all efforts have to be made to involve as many parties as possible so that the spirit of promoting community-based fishery resource management can be widely promoted and implemented in all the Provinces of the country. In essence, we need unity and cooperation to succeed this mission, said Mr Wiyono.

89.0 In conclusion, Mr Wiyono thanked the Ministry of Agriculture, Forestry and Fisheries of the Government of Japan, the ICFO, JF-ZENGYOREN and the BOBP-IGO for their contribution and support to the organization of this Seminar in Indonesia. "We feel that many benefits have accrued from this Seminar such as sharing of experiences and ideas from different resources and backgrounds. We do hope that through this Seminar, we can further intensify our collaboration and cooperation. I must not forget to admit that as a host organization of the Seminar, we would have inadvertently committed some mistakes and put you in inconvenience. I apologize for this", said Mr Wiyono. He also wished the entire participants and guests safe journey back home. [Annexure 17](#) contains Mr Wiyono's concluding remarks.

90.0 The Seminar participants were awarded certificates in appreciation of their participation and contributions to the proceedings of the Seminar. The certificates were presented by Mr Wibisono Wiyono, Mr Park Kwang-Bum and Mr Masaaki Sato.



91.0 The entire proceedings of the Seminar were covered by a reporter from the Daily Jakarta Shimbun, a newspaper bought out in Japanese language for the Japanese community in Jakarta and other parts of Indonesia. After conclusion of the proceedings, a reporter from the Indonesian Cooperative Magazine (*Pusat Informasi Perkoperasian* – PIP) also interviewed Mr Kwang-Bum Park, Dr Junichiro Okamoto and Dr Y S Yadava on the objectives and achievements of the Seminar. A report on the Seminar and the interviews is published in March 2010 issue of the magazine.

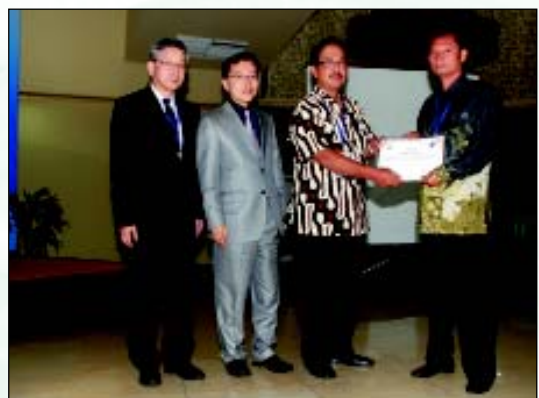
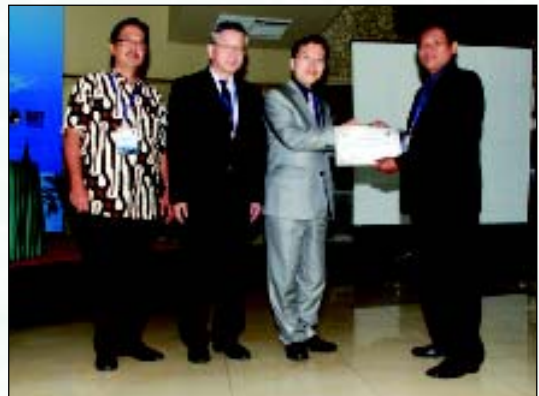
92.0 The participants and advisors returned to their respective places on 05-06 March 2010.

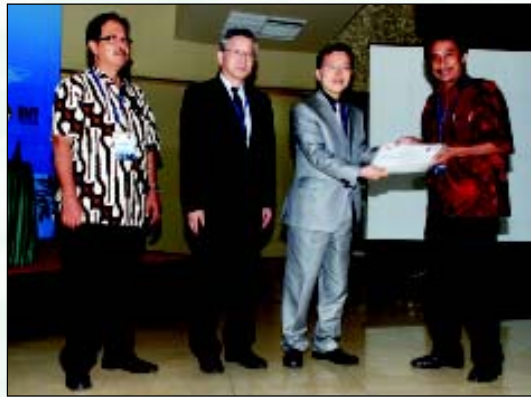
Distribution of 'certificates' to the participants





Distribution of 'certificates' to the participants







Mr Wibisono Wiyono, President, IKPI and Mr Park Kwang-Bum exchanging signed copies of the 'Jakarta Declaration'.

The Jakarta Declaration

of 5 March 2010
at Jakarta City, Indonesia

We the concerned leaders of fishery cooperatives in Indonesia, together with our equally concerned officials from the Government of Indonesia (Ministry of Marine Affairs and Fisheries, Ministry of Cooperatives and Small and Medium Enterprises), the Provincial Governments; the DEKOPIN (*Dewan Koperasi Indonesia*); the International Cooperative Fisheries Organization (ICFO) and the National Federation of Indonesian Fishermen's Cooperative Societies (*Induk Koperasi Perikanan Indonesia – IKPI*) recognize that:

Indonesia is the largest archipelago in the world with an estimated population of 229 million – home to about 3.4 percent of global population. Indonesia has made significant economic advances during the last two decades and is now the largest economy in Southeast Asia, a member of G-20 major economies and is considered as the New Asian Tiger.

We further recognize that Indonesia is an acknowledged leader in global fisheries and the fisheries sector is an important source of revenue in the domestic economy. The sector has contributed 3.1 percent of the GDP at Current Market Prices in 2009, recording an increase from 2.3 percent in 2004. The sector has recorded a growth rate of (at 2000 prices) 5-7 percent during 2004-08, which is above the growth rate of the primary sector and at par with the industrial and services sectors. The estimated employment in the sector (capture and culture) directly and indirectly was estimated at 8.94 millions in 2008 and is estimated at 10.02 million in 2009.

We further recognize that Indonesia is blessed with unparalleled fisheries resources, which include a long coastline of > 81 000 km, an Exclusive Economic Zone of 5.8 million sq. km and an estimated 14 million hectares of inland open waters. Indonesia is also known for its mega biodiversity. Around 17 percent of the known species of flora and fauna and around 16 percent of the known fish species of the world are found in Indonesia. It is reported that there are about 7 000 fish species in Indonesian waters, of which about 2 000 are freshwater species. During 2000 to 2008, capture fisheries production in the country increased from 4.12 million tonnes to 4.96 million tonnes.

We also recognize that marine capture fisheries are approaching the biological limits of 5.12 million tonnes of total allowable catch while the inland fisheries and aquaculture resources are underutilized. The open access nature in marine fisheries, coupled with many anthropogenic impacts are affecting the sustainable growth of fisheries in both marine and inland waters. The adverse impacts of climate change, though not fully established, are also aggravating the situation. Such a situation, if allowed to continue, is likely to threaten the livelihoods of a large number of small-scale fishers and entrepreneurs.

We agree that the Government of Indonesia's mission and vision to increase production and productivity from the fisheries sector can be realized if policies and programmes are based on good governance, efficient management of the fisheries resources and adoption of a participatory and community-based approach that relies on equity, empowerment, social justice, transparency and subsidiarity in management of the resources. In this regard, we the cooperators urge upon the Government, the IKPI, the industry, non-governmental and civil society organizations and other community-based organizations to whole-heartedly support the strategies and solemnly adopt the following resolutions:

A Resolution urging the Government to undertake spatial planning of the coastal areas and provide law for its regulation. This should also include strengthening the implementation of integrated coastal management practices, management of aquaculture/ mariculture in coastal areas, improving coordination among stakeholders and also revitalizing the role of community watch groups or *Pokwasmas* (*Kelompok Pengawasan Masyarakat*).

A Resolution appealing to the Government to consult the fishers and other concerned stakeholders for replacing the fishing gears that are not environment-friendly and to introduce programme for modernization of fishing gear.

A Resolution requesting the Government to streamline and integrate the programmes of all concerned ministries/ departments/ agencies/ institutions and implement them through a 'single window' policy. The management of 'beneficiaries' should also be carried out in the same manner. This would facilitate the monitoring, management and measurement of success of each programme and would also allow for corrections and revisions as appropriate.

A Resolution pleading the Government to ensure that the municipal and industrial sectors develop waste management plans so that the coastal waters receive minimum pollution from the urban and industrial settlements along the coast. This would improve the coastal environment/ habitat and help enhancement of fish stocks.

A Resolution requesting the Government to set up Fisheries Coordination Committee to advice and work with the Ministry of Marine Affairs and Fisheries on issues such as promotion of community-based fisheries resource management and implementation of management programmes from time to time.

A Resolution urging the Government to consider strengthening/ revitalizing customary laws such as *sasi*, *awig-awig*, etc. involving local institutions and the community to help promote implementation of community-based fisheries management practices and co-management of fisheries resources. It is also appealed that the rights of small/ traditional fishers for utilization of the coastal resources should be strengthened through appropriate laws and other means.

A Resolution requesting the Government to review and simplify the process of licensing of fishing vessels and to allow submission of the applications at the Provincial or Regional levels.

A Resolution appealing to the Government to regulate and reorganize the distribution of fuel to fishers by streamlining the procedures and minimizing administrative works; rationalizing the number of distribution outlets and the quantity of fuel per vessel; allowing fisheries cooperatives to manage the bunkers; and reviewing the procedures and conditionality of providing fuel subsidy to fishing vessels.

A Resolution pleading the Government to create adequate infrastructure facilities in terms of fishing ports and post-harvest paraphernalia as per national and international standards and to consider handing over such facilities to fisheries cooperatives for technical management.

A Resolution requesting the Government to finalize the new law drafted by the Ministry of Cooperatives and Small-scale and Medium Enterprises (CSMEs) aimed at strengthening the role of CSMEs in fish auction management and development of cooperative human resources. The Government may also consider revising Act No. 25/1992 on Cooperatives by incorporating the interests of fishermen cooperatives.

A Resolution requesting the Government to make a policy to allow the Regent or the Mayor (as applicable) to permit Fishery Cooperatives to fully manage the fish auction sites (*Tempat Pelelangan Ikan* or TPI). This would vindicate the Government's commitment to promote community-based fisheries resource management in Indonesia.

A Resolution requesting the Government to consider setting up of a fish procurement agency or *Bulog* for the benefit of fishers and their cooperatives.

A Resolution urging the Government to formulate credit schemes for fishers and their cooperatives and also to facilitate easy flow of credit to the fisheries sector. The Government is also requested to consider fishing craft and gear as collateral for the credit.

A Resolution appealing to the Government to make insurance coverage for the ship crew as a mandatory requirement for issuing fishing permits. Such insurance coverage should be taken by the ship owner.

A Resolution pleading the Government to regulate the payment to fish workers by the private operators.

A Resolution urging the Government to streamline certification procedures for facilitating export of fish and fish products.

A Resolution requesting the Government to implement focused programmes for human resource development in the fisheries sector at all levels. This would help in upgrading the skills and capacities of the fishers, their cooperatives and fisheries managers in use of modern and eco-friendly fishing technology, reduction in post-harvest losses and value addition, adoption of alternate/ additional livelihoods, adaptation to the adverse impacts of climate change on fisheries and good governance and management of fisheries resources.

A Resolution appealing to the Government to formulate, pilot test and implement alternate/ additional livelihoods for fishers and their families in the form of aquaculture, ecotourism, value addition and preparation of diversified fisheries products, preparation of souvenirs, waste recycling, etc.

A Resolution requesting the Government to consider implementation of proven technologies developed and designed by R&D institutions in Indonesia such as BPPT (*Badan Pengkajian Dan Penerapan Teknologi*), LIPI (*Lembaga Ilmu Pengetahuan Indonesia*), BRKP (Fisheries Ministry's Maritime Research Agency) and the Universities.

A Resolution requesting the Government to consider capacity of the fishers and cooperatives while identifying approaches for implementation of new rules and regulations or for delivery of new programmes/ activities in support of sustainable development of fisheries resources. To make such deliveries effective, active participation of fishers and their cooperatives need to be promoted.

A Resolution urging the Government to renew its efforts in implementing the provisions of the 1995 FAO Code of Conduct of Responsible Fisheries by taking the Code to the grassroots and also facilitating its adaptation to meet the local requirements.

Done by the participants, resource persons, and representatives from cooperatives, and government and related institutions in the ICFO/IKPI Seminar for "Promotion of Community-based Fisheries Resource Management by Small-scale Fishers in Indonesia" held in Jakarta City on 05 March 2010.

Attested by:



5.3.2010

Wibisino Wiyono
President
National Federation of Indonesian
Fishermen's Cooperative Societies
(*Induk Koperasi Perikanan Indonesia*)



5.3.2010

Park Kwang-Bum
Secretary
International Cooperative
Fisheries Organization



Annexure 1

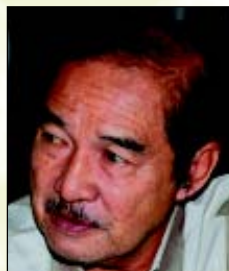
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Annexure 2

Programme

Date 02 – 05 March 2010	Venue: Mercure Convention Centre Ancol Hotel Jalan Pantai Indah Taman Impian Jaya Ancol 14430 Jakarta, Indonesia Tel: + 62 (21)640-6000; Fax: + 62 (21) 640-6123 Website; www.mecure.com
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Date & Time	Programme
February 28 (Sunday) AM & PM	Arrival of Foreign Lecturers
March 1 (Monday) AM & PM 13:00 - 17:00 14:00 - 17:00	Arrival of Participants Registration desk open Meeting of ICFO Secretariat, IKPI, Foreign and Indonesian Lecturers
March 2 (Tuesday) 09:00 - 10:00	1) Welcome address by: - Mr Wibisono Wiyono , President, IKPI 2) Speeches by: - Mr Park Kwang-Bum , Secretary, ICFO - Mr Benny A Kusbini , Vice President, Indonesia Cooperative Council (DEKOPIN) - Mr Syamsul Maarif , Secretary General, Ministry of Marine Affairs & Fisheries (MMAF), Government of Indonesia
10:00 - 10:15	Group Photo/ Tea/ Coffee Break
10:15 - 12:00	Lecture No 1 Results of the Scoping Study for Promotion of Community-based Fishery Resource Management by Coastal Small-scale Fishers in Indonesia. - Dr Yugraj Singh Yadava Director, Bay of Bengal Programme Inter-Governmental Organisation, Chennai, India Lecture No 2 Japanese Coastal Fisheries Management System and Practical Efforts for Resource Restoration. - Mr Junichiro Okamoto Professor, Hokkaido University, Japan
12:00 - 13:30	Lunch
13:00 - 14:00	Lecture No 3 Applicability of Japan's Fisheries Resource Management System to Indonesia: Issues that have to be overcome. - Dr Mulyono S Baskoro Professor, Faculty of Fisheries and Marine Science, Bogor Agricultural University
14:00 - 14:30	Lecture No 4 Applicability of Japanese Community-based Fisheries Management in the Philippines. - Ms Sandra Victoria R Arcamo Chief Aquaculturist, Fisheries Resource Management Division, Bureau of Fisheries and Aquatic Resources, Department of Agriculture, Philippines



Date & Time	Programme
14:30 - 15:00	Lecture No 5 Present Status of Fisheries Resource Management in Indonesia and Suggestions for Improvement - Dr Gellwyn Daniel Hamzah Jusuf Head of Agency for Marine and Fisheries Research, Ministry of Fisheries and Marine Affairs, Indonesia
15:00 - 16:00	Lecture No 6 Strengthening Fishermen Organization Efforts to Promote Fisheries Resources Management in Indonesia. - Dr Shidiq Moeslim Chairman, Indonesian Fisheries Society
16:00 - 16:30	Lecture No 7 Fisheries Resource Management Practices in Korea - A National Comprehensive Approach. - Mr Park Kwang-Bum Secretary, ICFO
16:30 - 17:00	Summing up/ Directions for next day/ Formation of Groups for Discussions
18:00	Welcome Dinner
March 3 (Wednesday)	
09:00 - 10:15	Group Discussion
10:15 - 10:30	Tea/ Coffee Break
10:30 - 12:00	Group Discussion Continued
12:30 - 14:00	Lunch
14:00 - 14:30	Finalization of Report by Group A and presentation on the results of Discussion
14:30 - 15:00	Finalization of Report by Group B and presentation on the results of Discussion
15:00 - 15:30	Tea/ Coffee Break
15:30 - 16:00	Finalization of Report by Group C and presentation on the results of Discussion
16:00 - 16:30	Finalization of Report by Group D and presentation on the results of Discussion
16:30 - 17:00	Summing up by chair
18:00	Dinner
March 4 (Thursday)	
09:00 - 17:00	Field Study Tour: Thousand Islands District
March 5 (Friday)	
08:30 - 09:30	- Preparation of draft recommendations by each Group
09:30 - 10:30	- Presentation of recommendations by each Group
10:30 - 10:45	Tea/ Coffee Break
10:45 - 11:15	- Presentation of final recommendations and 'Jakarta Declaration' - Summing up Remarks by Advisors
11:15 - 11:30	Closing remarks: Mr Masaaki Sato, Former, Secretary of ICFO
11:30 - 11:40	Closing remarks: Mr Park Kwang-Bum
11:40 - 12:10	Distribution of Certificate of Attendance: Mr Masaaki Sato, Mr Park Kwang-Bum, Mr Wibisono Wiyono
12:10 - 12:15	Closing remarks and Vote of Thanks: Mr Wibisono Wiyono
12:15 - 13:00	Farwell Lunch
13:00	Departure of participants and advisors



Annexure 3

Welcome Address

Wibisono Wiyono

President, National Federation of Indonesian Fishermen's Cooperative Societies
(*Induk Koperasi Perikanan Indonesia – IKPI*)

Mr M Syamsul Maarif, Secretary General of Ministry of Marine Affairs and Fisheries Republic of Indonesia; Mr Benny A Kusbini, Vice-President of Indonesia Cooperative Council (DEKOPIN); Mr Park Kwang-Bum, Secretary of International Cooperative Fisheries Organization (ICFO); Friends; Lectures from abroad as well as from Indonesia; Seminar moderators; Participants and the Distinguished Guests, Asalamualaikum Wr. Wb, Greeting and Good Morning.



Let us in this nice morning, first pray together and Praise the Almighty God for giving us good health that has enabled us to come together to participate in the opening ceremony of the "Seminar for Promotion of Community-based Fishery Resources Management in Indonesia", which is an important event for the future development of the fisheries sector of Indonesia.

First I would like to inform that this Phase Three Seminar was preceded by two earlier Phases. In Phase One, Dr Yugraj Singh Yadava, Director, Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO) and Mr Masaaki Sato former Secretary of ICFO visited Indonesia from 01- 08 October 2009 and had detailed discussions with the concerned organizations/ agencies/ individuals in Indonesia. The team also visited many places in Jawa Timur and Bali along with two officials of IKPI and one official from the Puskud Mina. In Phase Two, the following persons representing Fisheries Cooperative of Indonesia visited Japan on a Study Tour from 04 – 14 November 2009:

- Mr Wibisono Wiyono, IKPI;
- Mr Natalies Wahyu Dismianto, Puskud Mina Jawa Timur;
- Mr Johozoa Ronald Tanamal, Puskud Mina Siwa Lima, Maluku;
- Mr Anansyah Salimun Norman, Puskud Mina Kalimantan Barat;
- Professor Mulyono Sumitro Baskoro, Bogor Agricultural University (IPB), Bogor; and
- Mr Untung Samudera, KUD Mina Blambangan, Banyuwangi, Jawa Timur.

Indonesia has been given a unique opportunity to organize this Seminar, which will "Promotion of Community-based Fishery Resource Management by Coastal Small-scale Fishers in Asia". The other three Seminars were organized in the Philippines (2006), Thailand (2007) and Vietnam (2008). The present Seminar will be held from 02 – 05 March and will comprise lectures, group discussions and a day's field visit to Pramuka Island, Administrative Regency of Kepulauan Seribu. About 60 participants consisting of lecturers and leaders of PUSKUD Mina/ KUD Mina drawn from different Provinces of Indonesia are attending this Seminar, which will discuss about fisheries resource management by fisher community in the country.

I would like to share with all of you that during our Phase Two Study Visit to Japan, we were highly impressed with the status and activities of the Fisheries Cooperatives in Japan. When some of us asked the reasons behind this success to Mr Shoji Uemura, Chairman of Aomori Kengyoren (and former President of JF-Zengyoren), he explained that the Government of Japan through the Minister of Agriculture, Forestry and Fisheries had entrusted many responsibilities to the fisheries cooperatives of Japan



(Zengyoren, Kengyoren, etc.) to implement activities at the local level. Such delegation of authority to the Fisheries Cooperatives not only strengthened their hands in management of the resources, but also made them responsible for the sustainable development of the fisheries resources within their jurisdictions. The Study Tour members then asked me whether the success story of Japan could be replicated in Indonesia and if so how we could formulate it as a proposal to the Government of Indonesia.

Excellencies and guests, kindly allow me to inform you that this Seminar constitutes the first agenda of a series of activities proposed for commemoration of the Indonesian Cooperatives Day, 2010.

Before I close my address, I would request the Secretary General of the Ministry of Marine Affairs and Fisheries to address the Seminar participants and also officially declare open this Seminar.

Finally, I would like to extend my thanks to all the participants and invited guests whom are going to participate in this Seminar. We do hope that this Seminar would be useful for the fisheries sector in Indonesia.

Thank you!

Wasslamu'alaikum Wr. Wb.





Annexure 4

Message for the Opening Ceremony

Jong-Koo Lee
Chairman of ICFO

*S*elamat pagi and good morning!

I am Kwang-Bum Park, Secretary of the International Cooperative Fisheries Organization (ICFO). It is a great honour for me to deliver this message on behalf of Chairman of ICFO, Mr Jong-Koo Lee, who could not be present here because of other commitments. He has asked me to represent the ICFO in this very important Seminar. Therefore, I would like to ask for your kind understanding and kindly allow me read out his speech.

First of all, I would like to thank our distinguished delegates, Mr Syamsul Maarif, Secretary General, Ministry of Marine Affairs and Fisheries (MMAF), Government of Indonesia; Mr Benny A Kusbini, Vice-President of Indonesian Cooperative Council (DEKOPIN); Mr Wibisono Wiyono, President, National Federation of Indonesian Fishermen's Cooperative Societies (*Induk Koperasi Perikanan Indonesia*); Dr Yugraj Singh Yadava, Director, Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO); Dr Jun-ichiro Okamoto, Professor, Faculty of Fisheries, Hokkaido University, Japan; Dr Mulyono Sumitro Baskoro, Professor, Faculty of Fisheries & Marine Sciences, Bogor Agricultural University, Indonesia; Ms. Sandra Victoria Arcamo, Chief Aquaculturist, Bureau of Fisheries & Aquatic Resources, Government of Philippines; Dr Gellwynn Daniel Hamzah, Head of Agency for Marine and Fisheries Research, MMAF; Dr Shidiq Moeslim, Chairman of Indonesian Fisheries society; Mr Masaaki Sato, Former Secretary, ICFO; Fellow Cooperators, Observers, Ladies and Gentlemen;

I feel privileged to speak at this opening ceremony. The ICFO has long-standing cooperation with the fisheries cooperatives in Indonesia. I recall that in the past three seminars have been conducted to strengthen leadership in fisheries cooperatives in Indonesia. The first seminar was held in Bogor in November, 1989, the second in Cirebon in March-April, 1999 and the third in Jakarta in November, 2004. All these seminars were held with the budgetary support from the Ministry of Agriculture, Forestry and Fisheries (MAFF), Government of Japan.

The three seminars held in the past dealt with a range of issues concerning policy matters and on measures to strengthen fisheries cooperatives in Indonesia, particularly with respect to their organizational and business aspects. Besides, the seminars also discussed fisheries resource management and issues related with the expanding international trade of fish and fishery products. The present Seminar aims at "Promotion of Community-based Fishery Resource Management by Coastal Small-scale Fishers in Indonesia". One of the reasons why ICFO emphasizes on community-based fishery resource management is that the communities have to play a major role in sustainable development of the fisheries resources in the years to come. You all would agree with me that unless the resources are managed in cooperation with fishers and their organizations, community-based fisheries management can't succeed.

Under the "Training Project for Promotion of Community-based Fisheries Management by Coastal Small-scale Fishers in Asia", ICFO selects one Asian country every year, and implements a three-phased programme. The First Phase consists of a scoping study in which experts visit the selected country. In Second Phase, selected representatives of fisheries cooperatives from the participating country are invited to



make a study visit to Japan. In the Third Phase, a seminar is held in the participating country.

Coming to the global fisheries scenario, it is alarming to note that the world's fish stocks have been declining continuously over the years. According to the Food and Agriculture Organization (FAO) of the United Nations, more than 75 percent of the world's major fish stocks have been either fully or over-exploited. Fisheries management in many countries is ineffective because of indiscriminate fishing, poor management and inadequate resource conservation measures. Lack of organized community organizations in many countries is also an important reason behind this decline.

Critical food, energy and environmental issues loom large before the global community. The world is also facing the consequences of climate change. The impact of global warming is getting more and more serious by the day. A rise in sea level triggered by global warming can inundate low-lying areas, enhance erosion and lead to salt water intrusion and salination of coastal plains. Last year, although the world leaders rushed to the Copenhagen Climate Change Conference hoping for some solution to the crisis, but they failed to arrive at a consensus. It seems now that time is running fast and we have to act collectively to save the world from a catastrophe.

Although both agriculture and fisheries must be promoted to satisfy the demand for food, under the changing world climate, agriculture production looks precarious. A great deal has to be derived from the oceans to help fill the gap in agricultural production. In order to use the potential of seas for food supply, it is necessary to use the seas wisely and ensure sustainable production.

The present Project has been planned in this context. The Project is designed to promote community-based fisheries resource management by small-scale fishermen engaged in coastal fisheries and by their organizations and to enhance their capacities and strengthen their activities. It will contribute to ensuring sustainable production, creation of employment opportunities and poverty alleviation. Because more than half of fisheries production in the world is produced by small-scale fishers, and this sector of small-scale fisheries provides employment opportunities for most of the world's coastal villages, the Project becomes all the more significant.

Ensuring a better quality of life for fishermen is one of the important objectives of the ICFO. To make this happen, strengthening of the economic power of fishermen and their organizations, mainly cooperatives, is essential. In this Seminar, we expect to learn to lead, teach and guide our small-scale fishermen in sustainable management of fisheries resources. I know that the participants in this Seminar are leaders of fisheries sector in Indonesia. Therefore, I hope that you would contribute to the development of fisheries sector of Indonesia.

I further hope that this Seminar will help strengthen the cooperative spirit of small-scale fishers of Indonesia, so that they enjoy better quality of life and at the same time contribute to the food security and economic development of this beautiful country.

Before closing my message, I would like to place on record my deep appreciation to the former chairman of ICFO, Mr Ikuhiro HATTORI and the former secretary of ICFO, Mr Masaaki SATO for their valuable contributions to the development of cooperatives in the world. In addition, I would also like to promise that the National Federation of Fisheries Cooperatives of Korea, which has recently assumed the responsibility of running the ICFO Secretariat, will devote itself to strengthening of the cooperative movement and developing fisheries around the world.

I wish the Seminar every success. Thank you very much!



Annexure 5

Message for the Opening Ceremony

H A M Nurudin Halid

President, the Indonesian Cooperative Council &
Chairman of the Board of Public Cooperation, Indonesia

- Mr Syamsul Maarif, Secretary General, Minister of Marine Affairs and Fisheries (MMAF);
- Mr Jun-Ichiro Okamoto, Professor of Fisheries, Hokkaido University of Japan;
- Dr Yugraj Singh Yadava, Director, Bay of Bengal Program Inter-Governmental Organization;
- Dr Sandra Victoria R Arcamo, Chief Aquaculturist, Bureau of Fisheries and Aquatic Resources, Department of Agriculture, Philippines;
- Mr Park Kwang-Bum, Secretary, International Co-operative Fisheries Organization (ICFO);
- Dr Gellwyn Daniel Hamza Yusuf, Head, Marine and Fisheries Research, MMAF;
- Mr Shidiq Moeslim, Chairman, Fisheries Society of Indonesia;
- Mr Wibisono Wiyono, President, National Federation of Indonesian Fishermen's Cooperative Societies (IKPI); and
- The Seminar Participants.

Assalamu' alaikum Wr. Wb and Good Morning to you all!

Let us first praise the God Almighty, who has given all of us strength and health to attend the opening ceremony of the "ICFO/IKPI Seminar for Promotion of Community-based Fishery Resource Management in Indonesia". This Seminar is the beginning of a series of activities to celebrate the 63rd Cooperative Anniversary in 2010. I may also inform you that the concluding event of this celebration will be held on 12 July 2010 in Malang, East Java.

On behalf of the DEKOPIN, I would like to express our appreciation and gratitude for the willingness of the Secretary General of the Ministry of Marine Affairs and Fisheries to give the opening speech at this Seminar. I would also like to thank the International Co-operative Fisheries Organization (ICFO) and the Government of Japan along with the lecturers who have made this event successful.

Ladies and gentlemen,

Before I begin, please also allow me to inform you that after the meeting of the DEKOPIN members on 18-20 December 2009, the issue regarding DEKOPIN leadership has been resolved. With the new leadership, we have already formulated DEKOPIN's Strategic Plan 2010-2014; policy directions and programmes for 2010; followed by the strategic steps that are *inter alia* aimed at consolidation of the organization in order to restore the functions as stipulated in the DEKOPIN's statutes and by-laws. All the programmes and activities are designed to answer the needs of the cooperative movement, particularly to better the welfare of its members. In the past, low performance of the organizations had perhaps led to poor public appreciation of the cooperatives. We are determined that under this leadership, DEKOPIN will move forward as a strong organization to fight for the interests and aspirations of the cooperative sector in Indonesia.

We are very aware that the strengthening of the cooperative base cannot happen on its own. This has to be preceded by good ideology, awareness and most of all a firm

commitment from all parties concerned, particularly the determinants of national development policies. Therefore, the main task before DEKOPIN is to increase its efforts in raising the public profile of the cooperative.

Ladies and gentlemen,

I am very happy to announce that Chairman of DEKOPIN strongly supports the efforts of IKPI to promote community-based fisheries resources management in Indonesia. As we understand, Indonesia is known as the largest archipelagic country in the world, has an Exclusive Economic Zone of about 5.8 million km², a coastline of > 81 000 km and the more than 17 508 islands (large and small), stretching from Sabang to Merauke and from Miangas to Rote Island.

But ironically, the Indonesian nation-building in the last 65 years of its independence is still supported by the contributions from land-based economic activities. This is evident from the Gross Domestic Product (GDP) contributions of the marine sector, which in the year 2009 only contributed 3.12 percent - much less than countries like Japan (54%), China (49%) and South Korea (37%), where the sea areas are much lesser than that of Indonesia.

Fisheries and maritime affairs are one of the important components of the Indonesian economy and should be managed in a sustainable manner so that the benefits are directed towards the welfare of the community - especially the fishing community. Therefore, in DEKOPIN's view, resource management of fisheries should consider several aspects, including:

First, it needs to be ensured how resource management can maintain the integrity of ecosystems, such as maintenance of the environmental carrying capacity, conservation of fishery resources - including biodiversity, so that they can be sustainable. It is often seen that fishing is contributing to adverse impacts on the ecology, especially of coral reefs by use of dynamite and cyanide fishing. Such harmful fishing practices will adversely affect the fisheries as also the ecosystem.

Second, it is also essential to ensure that the resource management would create a level playing field resulting in equity, social mobility and cohesion and participation and empowerment of all stakeholders, which ultimately can bring in economic prosperity for the fisher community.

Ladies and gentlemen,

As we all know, with dwindling fish catches, the fishermen's life is faced with uncertainty. To overcome this situation and ensure some degree of social security, the fishers often enter into traditional relationship of patron-client with the merchants or middlemen. However, this relationship seldom proves beneficial for the fisher; it often leads them (fisher) into a debt trap. Based on the statistics provided in HSNI, 2009, 14.58 million (90%) of the 16.2 million of Indonesia's fishermen are still below the poverty line.

I would reiterate my earlier statement to say that it would be 'naïve' to manage the fishery resources without due consideration to the ecological aspects. In order to preserve the environment and simultaneously enhance the economic and social welfare of fishermen, it is very important to involve fishing communities in fisheries resource management. The process of planning and policy formulation should be participatory and the fishermen should be a part of this exercise.

Poverty among fishermen has largely arisen due to mismanagement of fisheries resources. The National Federation of Indonesian Fishermen's Cooperative Societies (or the *Induk Koperasi Perikanan Indonesia- IKPI*) along with their co-members, the *Puskud* and *Kud* Minas, are a business entity comprising fishing communities.

The IKPI is concerned to improve the knowledge and enhance the involvement of fishers and fish farmers in the planning processes and policy formulation, with constant attention to local traditional knowledge and wisdom. Therefore, DEKOPIN is very clear in its opinion that it would be very appropriate for IKPI to cooperate with ICFO for the benefit of the Indonesian fisher community. DEKOPIN hopes that the results of this Seminar, with the support from the Government, would be taken to the grassroots level for the welfare and benefit of our fishers and their cooperatives.

Ladies and gentlemen,

In conclusion, please allow me to quote from the speech delivered by the former Vice- President of Indonesia, Dr Mohammed Hatta, on the occasion of the first Cooperative day on 12 July 1951 for our reflection:

"... .. as a nation that for decades fights against Imperialism and colonialism, we have the ideal, high ideals, on the basis of our lives. We want to see our nation prosperous and prosperous lives, free from the misery of life. Our ideal is rooted in the Constitution: "The economy shall be organized as a common endeavor based on the principle of the family". Principle of the family is the cooperatives! The words of the Constitution are not merely a statement than our ideal, but it is also bidding on our work to pursue that "

Subhanahuwata'ala. May God always bless us all, the Nation and the State of Indonesia.

Billahit Taufik Wal Hidayah,

Wassalamu'alaikum Wr. Wb.

Message read by Mr Benny A Kusbini, Vice-President of Indonesian Cooperative Council (DEKOPIN).





Annexure 6

Message for the Opening Ceremony

H Fadel Muhammad

Minister of Marine Affairs and Fisheries
Republic of Indonesia

- Mr Benny A Kusbini, Vice-President of Indonesia Cooperative Council (DEKOPIN);
- Mr Park Kwang-Bum, Secretary of the International Cooperative Fisheries Organization (ICFO);
- Mr Wibisono Wiyono, President, National Federation of Indonesian Fishermen's Cooperative societies (IKPI);
- Participants and the Invited Guests of the Seminar.

Asalamualaikum Wr. Wb,

Within the Strategic Plan of 2010, the Ministry of Marine Affairs and Fisheries (MMAF) has set a vision which states that Indonesia will become the biggest producer of fisheries products in the World by year 2015. The mission of the Strategic Plan is to enhance the welfare of the society engaged in marine fisheries. This vision and mission of the MMAF will be strategically implemented through a 'Blue Revolution Policy' through the following four grand strategies:

- Empowering institutions and human resource management;
- Managing sustainability of fisheries and marine resource;
- Increasing productivity and competitiveness based on science and technology; and
- Increasing marketing access either domestic or international.

The grand strategy formulated for development of marine affairs and fisheries is to be carried out under the national movement called 'Minapolitan', which is proposed to be officially declared by a Presidential Decree. The 'Minapolitan' national movement will be based on several principles such as integration, efficiency, quality and acceleration based on region-wise approach.

In order to achieve the vision, fish production amounting to 22.36 million tonnes has been targeted by 2014 by the central and local governments of 33 Provinces. The increased fish production is expected to be achieved through:

- Integrated planning from pre-production to production and post-harvest and followed by implementing cost efficiency measures;
- Development of infrastructure facilities for fisheries business activities starting from pre-production, production, processing and marketing of fish products;
- Strengthening institutional capacity and the human resources engaged in marine affairs and fisheries, especially in local governments dealing with fisheries business and fisheries extension, including strengthening of fisheries cooperative institutions and small-scale fisheries enterprises;
- Increasing coordination between central and local governments in provinces, districts and cities by strengthening the role and function of local governments in synchronizing programmes and activities of marine fisheries; and
- Increasing coordination and synergy between government and all other fisheries stakeholders.

The 'Minapolitan' movement of increasing fish production should be supported by every effort so as to increase competitiveness of fish and fishery products.



These efforts will be carried out through quality control, processing and marketing of fish and fishery products, promoting and mapping of domestic and international markets, technology infusion for processing and value-addition, business mapping and investment in fisheries sector. These efforts should be supported by all stakeholders of the fisheries sector, including the National Federation of Indonesian Fishermen's Cooperative Societies (or IKPI).

The MMAF appreciates the achievements of the National Federation of Indonesian Fishermen's Cooperative Societies, especially in joining hands with ICFO for hosting the Seminar on "Promotion of Community-based Fishery Resource Management in Indonesia". We encourage everybody to adopt management of fisheries resource based-on community empowerment and sustainable development. In the future, MMAF desires there will be good synergy and cooperation among all of us in implementing the development of fisheries and marine affairs.

Message read by Mr M Syamsul Maarif, Secretary General, MMAF on behalf of the Minister of Marine Affairs and Fisheries, Republic of Indonesia.





Annexure 7

Results of the Scoping Study for Promotion of Community-based Fishery Resource Management by Coastal Small-scale Fishers in Indonesia

Yugraj Singh Yadava¹

Abstract

Indonesia, the fourth largest democracy in the World is known for its natural bounties and rich marine waters. Owing to these endowments, the country emerged as a significant contributor to global fisheries contributing about 5 percent to global capture fisheries (3rd largest) and about 6 percent to global culture fisheries production (2nd largest) during the 2000s. However, the sub-sector of fisheries: marine capture; inland capture and culture fisheries are unevenly developed. The marine waters are nearly fully or over-exploited, while about one-tenth of the potential is realized in inland capture and culture fisheries. As marine fisheries is leveling off, the future of Indonesian fisheries will be written by developmental strategies in culture fisheries. Towards this, the government, with its decentralization drive is encouraging community partnership in management and development of fisheries – a historical feature of Indonesian fisheries, gone amiss during the post-Independence planning era. Another major drawback of the fisheries sector in Indonesia is poor post-harvest facilities leading to sub-optimal value realization. Over all, a SWOT analysis of Indonesian fisheries indicates that the country has the necessary ingredients in the form of socio-economic institutions and natural capital to be a leader in fisheries sector in the coming years. However, lack of proper implementation is hindering its sustainable development.

1.0 Introduction

Indonesia, the largest archipelago in the world gained Independence on 17th August 1945. With an estimated population of 229 million, Indonesia is the fourth populated country of the world – home to about 3.4 percent of global population. Indonesia, a unitary presidential republic, comprises 17 508 islands of which 6 000 are inhabited. Due to its proximity to the equator, the country enjoys a tropical, hot and humid climate. The terrain comprises mostly coastal lowlands although larger islands have interior mountains with moderate temperature. However, it also suffers from occasional floods, sever droughts and earthquakes. The country is rich in petroleum, tin, natural gas, nickel, timber, bauxite, copper, fertile soils, coal, gold and silver.

Indonesia is the largest economy in Southeast Asia, a member of G-20 major economies and is considered as the New Asian Tiger. It has made significant economic advances during last two decades, but faces challenges stemming from the global financial crisis and world economic downturn. The industrial sector is the economy's largest and accounts for 48.1 percent of GDP in 2008 (CIA: The World Factbook 2009). This is followed by services (37.5%) and agriculture (14.4%). However, agriculture employs more people than other sectors, accounting for 42.1 percent in 2006 of the 112 million-strong workforce (2008). This is followed by the services sector (39.3% in 2006) and industry (18.6% in 2006). Major industries include petroleum and natural gas, textiles, apparel and mining. Major agricultural products include palm oil, rice, tea, coffee, spices, and rubber. Salient features of Indonesia are given in Table 1.

¹ Director, Bay of Bengal Programme, Inter-Governmental Organisation, 91, St Mary's Road, Abhiramapuram, Chennai – 600 018, Tamil Nadu, India. Email: yugraj.yadava@bobbigo.org.

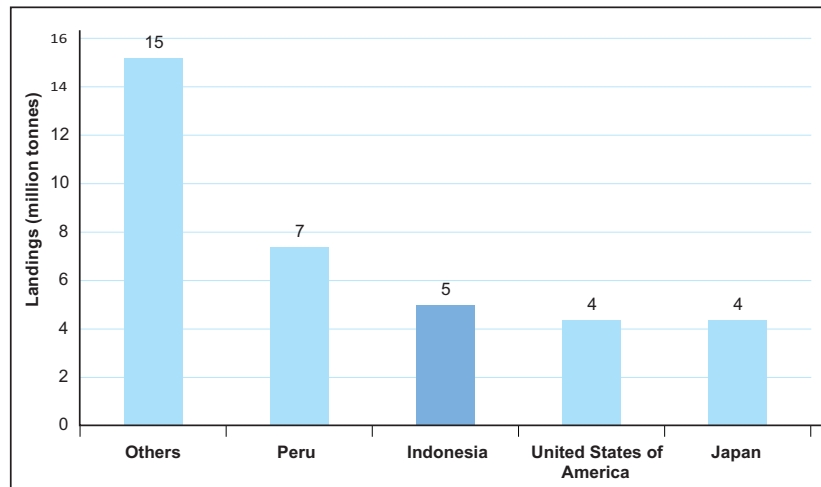


Figure 1: Top five countries in capture fisheries, 2008

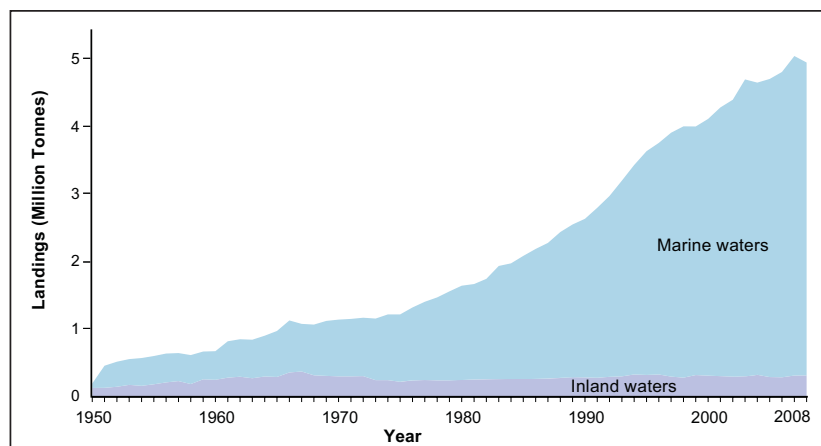


Figure 2: Growth of inland and marine capture fisheries in Indonesia, 1950 - 2008

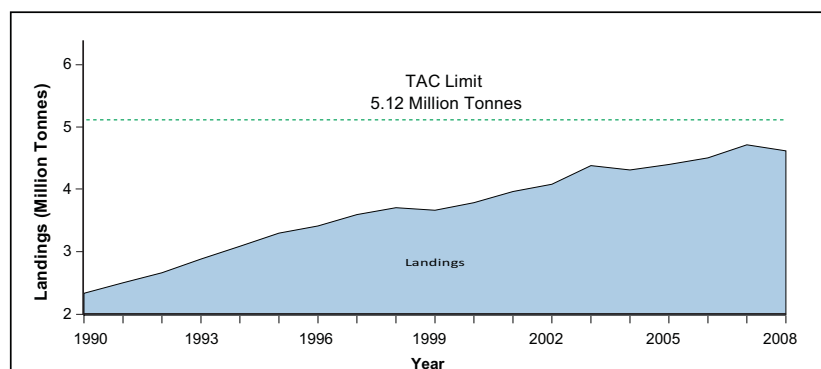


Figure 3: Approaching limits in marine capture fisheries in Indonesia, 1990 - 2008

Table 1: Salient features of Indonesia

Parameters	2000	2005	2007	2008
World view				
Population, total (millions)	206.27	220.56	225.63	228.25
Population growth (annual %)	1.3	1.4	1.2	1.2
Surface area (sq. km) (thousands)	1 904.6			
People				
Life expectancy at birth, total (years)	68	70	71	..
Employment to population ratio, 15+, total (%)	63	61	—	62
Literacy rate, adult total (% of people ages 15 and above)	..	92	—	92
Economy				
GDP (current US\$) (billions)	165.02	285.87	431.93	514.39
GDP growth (annual %)	4.9	5.7	6.3	6.1
Agriculture, value added (% of GDP)	16	13	14	14
Source: World Development Indicators Database, April 2009 & World Development Indicators Database.				

Administratively, Indonesia consists of 33 provinces, five of which have special status. Each province has its own political legislature and governor. The provinces are sub-divided into regencies (*kabupaten*) and cities (*kota*), which are further sub-divided into sub-districts (*kecamatan*) and into village groupings (either *desa* or *kelurahan*). Following the implementation of regional autonomy measures in 2001, the regencies and cities have become the key administrative units, responsible for providing most government services. The village administration level is the most influential on a citizen's daily life, and handles matters of a village or neighborhood through an elected *lurah* or *kepala desa* (village chief)².

2.0 Fisheries sector

Blessed with a long coastline of 81 000 km and a large maritime zone of 5.8 million sq. km, Indonesia is the third largest country in the World (Figure 1) in capture fisheries production in 2008 (FAO Fishstat PLUS database). During 2000 to 2008, the capture fisheries production in the country increased from 4.12 million tonnes to 4.96 million tonnes. The lion's share of capture production came from the marine waters, which has steadily increased to 90 percent of the total capture production from an earlier share of 70 percent (Figure 2). However, it seems that marine capture fisheries is approaching the biological limits of 5.12 million tonnes of total allowable catch (TAC) as set by the Ministry of Marine Affairs and Fisheries (MMAF), Government of Indonesia (Figure 3).

This trend also summarizes the bottom-line of Indonesian fisheries: over-capitalization in the marine fisheries sector and under-capitalization in the inland capture fisheries and culture fisheries. Historically, Indonesian fishery exploited its natural advantage in marine fisheries leading to increasing fishing effort. However, in absence of a proper monitoring regime, this increasing fishing effort was often unbalanced (regional variations in fishing effort) leading to over-exploitation of resources in several fishing areas. At the same time, not much public effort was directed to develop inland capture

² "Administrative Divisions of Indonesia." Wikipedia, The Free Encyclopedia. 23 Jun 2009, 12:34 UTC. 21 Oct 2009 <http://en.wikipedia.org/w/index.php?title=Administrative_divisions_of_Indonesia&oldid=298115635>.

and culture fisheries. Resultantly, while over 90 percent of the potential in marine capture fisheries is utilized, in other fisheries (inland capture and culture), not even one-tenth of the potential is utilized.

Even with such uneven development, Indonesian fisheries sector is an important source of revenue in the domestic economy and an acknowledged leader in global fisheries. The sector has contributed 3.1 percent of the GDP at Current Market Prices in 2009, recording an increase from 2.3 percent in 2004.³ The sector recorded a growth rate of (at 2000 prices) 5-7 percent during 2004-08, which is above the growth rate of the primary sector and at par with the industrial and services sectors. The estimated employment in the sector (capture and culture) directly and indirectly was estimated at 7.27 million in 2005. It (employment) has increased to 8.94 millions in 2008 and is estimated at 10.02 million in 2009. At the same time, average income of the participants in the sector has increased from Rp.⁴ 1.25 million/ person/ month in 2008 to Rp. 1.50 million/ person/ month in 2009 as per the estimates of MMAF.

2.1 Marine fisheries sector

Trends in production

Indonesia has mixed tropical fisheries. Marine fisheries resources are classified into large pelagics (skipjack, other tunas, billfish, oceanic sharks and small tuna), small pelagics (scads, mackerels, sardinellas, trevallies, engraulid anchovy), demersal and coral reef fishes (groupers, snappers, rabbitfish, etc.) and shrimp and other crustaceans, etc. The MMAF logbook lists 108 different species subject to commercial exploitation. Total production of marine capture fisheries has showed steady increase. However, production of tunas and shrimps has stayed about the same in recent years. Large increase of production was observed in blue swimming crab, common squid, cuttlefish and miscellaneous fish species including Sardinella, coraker and groupers (FAO). Overall, during 1990-2008, pelagic species contributed over half of the landings in Indonesia. Demersal species, the second largest group in landings, comprises 1/5th of the catch during the period. While other species, mainly marine fishes and crustaceans, constituted 1/3rd to 1/4th of the landing during 1990-2008 (Figure 4).

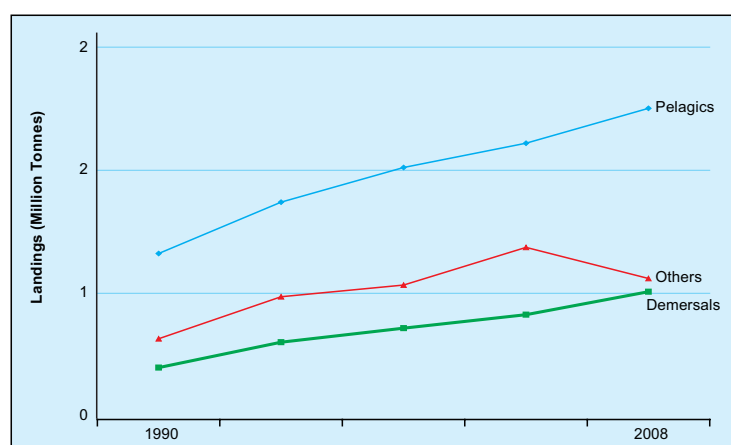


Figure 4: Landing composition of marine capture fisheries in Indonesia, 1990-2008

³ "Percentage Distribution of Gross Domestic Product at Current Market Prices by Industrial Origin." Badan Pusat Statistik Republik Indonesia (Statistics Indonesia), 2009.

⁴ US\$ 1= Rp.9 500

Fishing vessels and gear

The number of registered marine fishing gear units was 1 237 797 units in 2007. Major fishing gears are hook and line, gill nets, traps especially portable traps, trawl nets and seine nets. The marine fishing fleet in Indonesia comprises traditional non-powered boats, fishing vessels with outboard motors and fishing vessels with inboard motors. During recent years (2003-06), the number of fishing vessels has increased from 0.53 million to



0.56 million. However, the traditional non-powered fishing vessels have declined from 0.25 million to 0.24 million during the same period. The major addition to the fleet strength occurred in the segment of fishing vessels with inboard engines (122%) (Figure 5). More specifically, the increment has occurred in small and medium capacity inboard fishing vessels (< 5 GT to 30 GT), while the number of larger ocean going vessels (30 GT to 200 GT and above) has declined. In addition, the number of fishing vessels with outboard motors has also increased from 0.16 million to 0.17 million. Resultantly, there may be more pressure on the Exclusive Economic Zone (EEZ) where resources are already showing signs of strains.

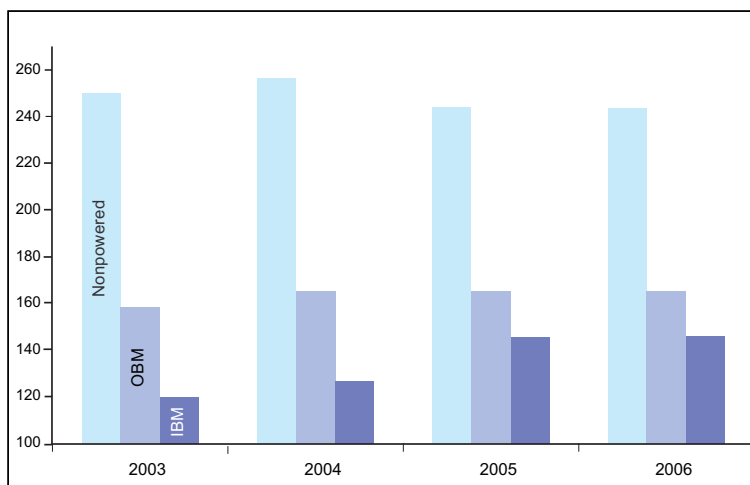
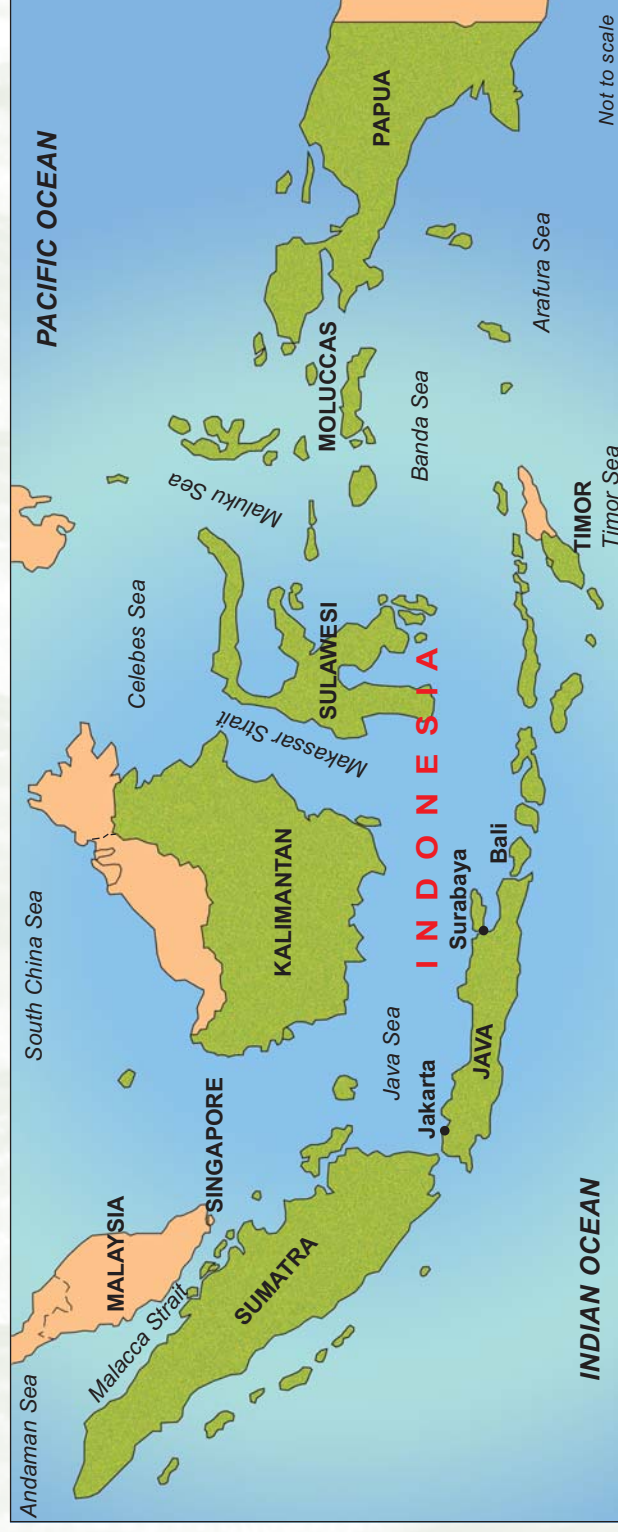


Figure 5: Increase in the fishing fleet of Indonesia, 2003-06

State of resources and scope of expansion

By a Ministerial Decree the marine capture fisheries in Indonesia has been divided into 11 fisheries management areas (FMAs): (i) Malacca Strait and Andaman sea; (ii) Indian Ocean, West Sumatera and Sunda Strait; (iii) Indian Ocean, Southern part of Java to Southern part of Nusa Tenggara, Sawu Sea and Western part of Timor sea; (iv) Karimata Strait, Natuna Sea and South China Sea; (v) Java Sea; (vi) Makassar Sea, Bone Bay, Flores Sea and Bali Sea; (vii) Tolo bay and Banda bay; (viii) Tomini Bay, Maluku Sea, Halmahera Sea, Seram Sea and Beram Bay; (ix) Sulawesi Sea and Northern part of Halmahera Island; (x) Cendrawasih Bay and Pacific Ocean and



(xi) Aru Sea, Arafura Sea and Eastern part of Timor Sea⁵ (Map on facing face). Among the provinces, Sumatera contributed the largest share of catch, followed by Maluku-Papua, Java, Sulawesi, Kalimantan and Bali - Nusa Tenggara. However, resources in most of the FMAs are showing signs of depletion. Especially shrimp and demersal resources are in their limit in most of the management areas. Based on the available statistics it may be concluded that major fishing provinces like Sumatera and Java may suffer in the near future if exiting fishing practices continue. There are some possibilities of expansion of fishing effort in Kalimantan, Sulawesi, Maluku and Papua region corresponding to the fishing areas in Makassar Sea, Bone Bay, Flores Sea and Bali Sea; Tolo Bay and Banda Bay; Tomini Bay, Maluku Sea, Halmahera Sea, Seram Sea and Berau Bay where small pelagics are still available (Table 2). It is also important to note that there are high instances of illegal fishing in Indonesia. Hence, without proper monitoring arrangements, the present trend of increasing fishing effort or any drive to redistribute fishing effort may be detrimental to the overall health of the resources.

Table 2: Description of FMAs in Indonesia

Sl. No.	Fisheries Management Area	Associated provinces	Indicative state of commonly exploited resources	Scope of expansion
1.0	FMA 571: Malacca Strait and Andaman sea.	Sumatera	Over to fully exploited	–
2.0	FMA 572: Indian Ocean, West Sumatera and Sunda Strait.	Sumatera, Java	Fully to moderately exploited	Small pelagic
3.0	FMA 573: Indian Ocean, Southern part of Java to Southern part of Nusa Tenggara, Sawu Sea and Western part of Timor sea.	Java	Fully exploited	–
4.0	FMA 711: Karimata Strait, Natuna Sea and South China Sea.	Sumatera, Kalimantan	Over to fully exploited	Shrimp
5.0	FMA 712 Java Sea.	Kalimantan, Java	Over to fully exploited	–
6.0	FMA 713: Makassar Sea, Bone Bay, Flores Sea and Bali Sea.	Kalimantan, Sulawesi	Fully to moderately exploited	Small pelagic
7.0	FMA 714: Tolo Bay and Banda Bay.	Sulawesi, Maluku, Papua	moderately exploited	Small and big pelagics
8.0	FMA 715: Tomini Bay, Maluku Sea, Halmahera Sea, Seram Sea and Berau Bay.	Sulawesi, Maluku, Papua	Fully to moderately exploited	Demersal, Small pelagic
9.0	FMA 716: Sulawesi Sea and Northern part of Halmahera Island.	Kalimantan, Sulawesi, Papua	Uncertain. Indication of over-exploitation	–
10.0	FMA 717: Cendrawasih Bay and Pacific Ocean.	Maluku, Papua	Uncertain. Indication of over-exploitation	–
11.0	FMA 718: Aru Sea, Arafura Sea and Eastern part of Timor Sea.	Maluku, Papua	Uncertain. Indication of over-exploitation	Small pelagic

2.2 Inland fisheries sector

Inland open water capture fisheries production has increased marginally from 304 989 tonnes in 2002 to 310 457 tonnes in 2007. There were 818 411 fishing gear units recorded in 2007 in inland open water fisheries. Hook-and-line gear remained the dominant gear in most areas (274 698 units). Other major gears used included portable traps and set gillnets (133 871 and 119 810 units respectively). The number of fishing boats has increased from 180 582 in 2004 to 198 534 in 2007 (MMAF, 2008).

⁵ Ministerial Decree No PER.01/MEN/2009 about Fisheries Management Area of Republic of Indonesia, 21 January 2009.

However, about 80 percent boats are not powered. This includes dug out boats and plank built boats. There were 37 747 OBM boats and 1006 IBM boats in inland open water capture fisheries during 2007. Among the provinces, Kalimantan and Sumatera contributed about 77 percent of total landings. South Kalimantan, South Sumatera and Central Kalimantan are major areas for inland fisheries in Indonesia

2.3 Culture fisheries

Aquaculture now accounts for 76 percent of global freshwater finfish production and 65 percent of molluscs and diadromous fish production. Its contribution to world supplies of crustaceans has grown rapidly in the last decade, reaching 42 percent of world production in 2006 and, in the same year, it accounted for as much as 70 percent of shrimps and prawns (penaeids) produced worldwide. In Indonesia, the aquaculture sector is far from realizing its full potential although the country ranked second in global culture fisheries scenario. The country contributes 5 percent of the global aquaculture production (15% of global production excluding China). Aquaculture is also the fastest growing fisheries sub-sector of the country. During the last two decades (1990-2008), the share of aquaculture has increased from a mere 18 percent in 1990s to 44 percent in 2008 (Figure 6).

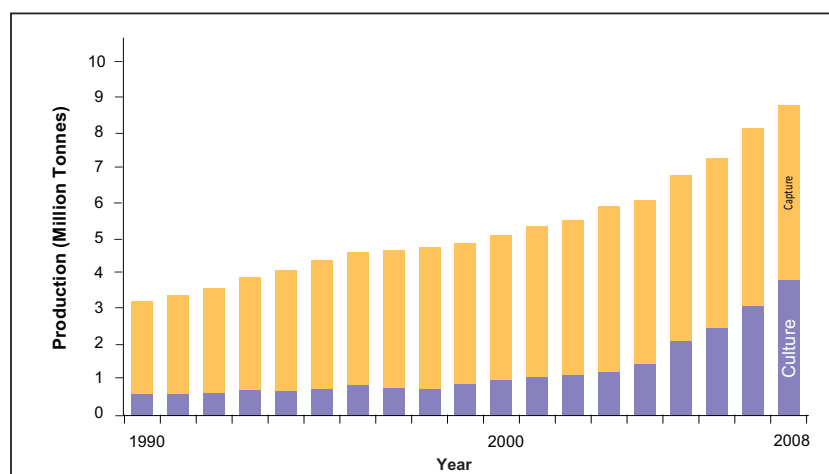


Figure 6: Culture and capture fisheries comparative growth in Indonesia, 1990-2008

Culture fisheries in Indonesia comprise sea culture, brackish water and fresh water aquaculture. Sea culture consist of fish culture (e.g. snapper, grouper and cobia), mollusk cultures (various kind of mollusks, pearls and sea cucumbers) and sea weed cultures. Fresh water culture is practiced in open waters (lakes, rivers and swamps), fresh water ponds and in the rice fields. Both marine and the fresh water aquaculture has untapped potential and tapping this untapped potential can lead to substantial increase in production. Table 3 shows the potential of aquaculture that remains unutilized.

3.0 Post-harvest use

In Indonesia, about 56 percent of fish production is consumed fresh and the balance is dried and salted (18%) or smoked or fermented. This scenario is a result of poor post-harvest infrastructure in the country. The availability of ice and refrigeration facilities is a serious



Table 3: Growth potential in culture fisheries of Indonesia

Sector	Production (Tonnes)	Area used (Ha)	Productivity (Tonnes/Ha)	Potential area (Ha)	Projected production (@ 50% of potential in tonnes)	Success rate
Mariculture	1 509 528	84 481	18	8 363 501	74 720 582	4950%
Brackish water aquaculture	933 832	452 901	2	1 224 076	1 261 955	135%
Freshwater aquaculture	750 204	224 937	3	2 218 815	3 700 067	493%
Total	3 193 564	762 319	4	11 806 392	79 682 604	2495%
Current global aquaculture production of 68 348 942 tonnes (2008)						

bottleneck as are the poor transport facilities. Resultantly, less than 2 percent of the catch is canned.

The processing operations in Indonesia are marked by large number of small-scale processors. There are about 10 000 small fish processing units generally using traditional methods. The main raw materials are oil sardines and skipjack tunas. Processing of fishmeal has still not yet developed and takes place mostly in conjunction with canning operations. About 16 percent of total production comprising mostly shrimp and tuna is frozen for export.

The volume of export of fish products during 2004 to 2006 has increased at about 6.45 percent per year while the value of export has risen by 8.60 percent. Shrimps account for about 53 percent of the export in value terms. For tuna and tuna like fishes, export in term of volume has declined. However, their value realization has increased during 2004-06. In aggregate terms, export of fish products in quantity has increased from 902 358 tonnes in 2004 to 1 018 447 tonnes in 2006. In value term it has increased from 1 780 833 in 2004 to 2 087 016 in 2006 (in '000 USD) (Table 4).

Table 4: Export of fisheries products from Indonesia

Products	VOLUME (tonnes)			VALUE (US \$ 1 000)		
	2004	2005	2006	2004	2005	2006
Shrimp	142 094	153 906	169 581	887 127	948 130	1 098 651
Tuna, skipjack, little tuna	94 221	91 631	88 791	243 937	246 303	252 511
Crab	20 903	18 593	17 191	134 355	130 905	134 215
Others	645 140	593 652	742 884	515 414	587 588	601 639
Total	902 358	857 782	1 018 447	1 780 833	1 912 926	2 087 016

4.0 Fisheries governance in Indonesia

Traditionally, governance in Indonesia has a strong central focus. However, through a series of reforms initiated in 1998, decentralization is taking place and provincial governments are now conferred with more power. In respect of fisheries sector, the most important decision taken during the reform period is setting up of the Ministry of Marine Affairs and Fisheries (MMAF or *Departemen Kelautan dan Perikanan* or DKP). Prior to this, the fisheries sector was under the Ministry of Agriculture. Further, as a major step to boost community-based management in fisheries (CBFM), the government has legally recognized the customary laws prevalent in many parts of Indonesia.



At the national level, fisheries and aquaculture are regulated by Fisheries Law No. 31/2004 (2004), which underscores the importance of sustainable use of aquatic resources in the development of fisheries. Under Law No. 22/1999 on Regional Administration (1999), and in the context of the decentralization process, Provincial Governments are now held responsible for the management, use and conservation of marine resources in their own territory, *i.e.* within territorial waters. Responsibility for local-level marine fisheries management rests with the Provincial Marine and Fisheries Service (*Dinas Kelautan dan Perikanan Propinsi*) which has offices at Province, district and sub-district levels. With the adoption of Law No. 22/1999, the Provincial Marine and Fisheries Services have been given more responsibilities as well as greater autonomy in carrying out their functions, being no longer under the technical supervision of the MMAF. This regime change in Indonesia during 1998 till present can be summarized as follows:

1999		2000		2000		2001		2001
Unrestricted access to small-scale fishers in all FMAs.	➡	Reorganization of the customary law-based resource management in small islands.	➡	Participation of local people in surveillance activities.	➡	Boost to the role of local institutions in promoting <i>Siswasmas</i> .	➡	Mandate to local governments to empower people's participation.

4.1 MCS mechanism

As of present, Illegal, Unreported and Unregulated (IUU) fishing is still a major problem for Indonesian fisheries that seriously undermines its sustainability prospects. As per the report of Director General of Marine Fisheries Resources Surveillance and Controlling (2009), petrol vessels inspected 2 492 fishing vessels (FV) in 2009. More than one-tenth of the fishing vessels were found to be



engaged in IUU fishing. However, implementation of VMS by installing transmitter and formulation of a Regional Plan of action on IUU fishing can improve the scenario in future. Information on violation of fisheries law for the last five years shows that the number of violations has steadily declined from 174 in 2004 to 77 in 2008⁶.

However, many feel that MCS mechanism of the country is still not sufficient. As stated in a recent report in Jakarta Post (2008), "A very limited amount of government employees are investigating the fishing industry. The Arafura Sea area, for example, has only 15 fishery and sea regional office investigators. Number is too low given the size of the surrounding Papua Sea and allows for many problems. This is especially true in several Papuan regencies where there are no investigators at all".⁷

⁶ Indonesian Fisheries Book, 2009.

⁷ Rahmat Pramulya, Bogor (2008): How to eliminate illegal fishing in Indonesia, 2008 The Jakarta Post - PT Bina Media Tenggara. Source URL: <http://www.thejakartapost.com/news/2009/05/22/how-eliminate-illegal-fishing-indonesia.html>

5.0 Co-management

Indonesia has deep rooted community-based system in fisheries management. Examples of such arrangements are customary laws like *Sasi* in Maluku, *Admiral Laot* in Aceh and *Awig-Awig* in Bali and West Nusa Tenggara. However, after independence, the government adopted a command and control policy to bring rapid development in the country. These measures over time replaced the practice of using local people's traditional/ local knowledge in fisheries management. As a result, the role of the local community in management was reduced bringing in inefficiencies and conflicts. Overall, this situation persisted till the decentralization drives came into picture. However, the recent guidelines issued by the MMAF contain recognition to the CBFM and encourage the practice of co-management in small island development (Minister of Marine Affairs and Fisheries Decree No: 41/2000), marine and fisheries surveillance (Ministry of Marine Affairs and Fisheries Decree No 58/2001) and integrated coastal management planning (Minister of Marine Affairs and Fisheries Decree No Kep.10/Men/2002) (Figure 7). At the same time it is also necessary to note that in Indonesia, the ownership of fisheries resources rests with the government (state property). However, through the provision of article No. 18 of the regional government law No. 32/2004, management rights for resources which occur within 12 nautical miles of the coast are delegated to the provincial government, while management rights for resources that are found up to four nautical miles from the coastline are delegated to the district/municipal government. Thus, Article No. 18 does not constitute a property right but rather a management right.

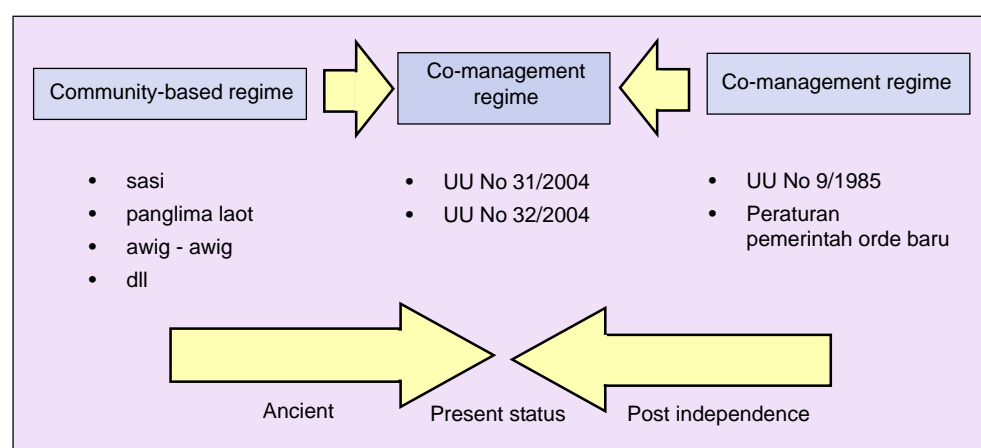


Figure 7: Shift in fisheries management regime in Indonesia

6.0 Conclusion

A SWOT (Strength, Weakness, Opportunities and Threats) analysis of Indonesian fisheries is given in Table 5. However, some of the discussion points mentioned earlier are summarized below.

- Indonesia has a rich and diverse resource base that is yet to be fully realized.
- Marine capture fisheries is near its potential and need to be managed not exploited.
- Growing fishing capacity, high incidence of IUU fishing is a serious threat to the sustainability of marine resources.
- In inland fisheries, vast areas remain unexplored. However, status of resources needs further examination in view of rapid development of the economy leading to urbanization and industrialization resulting in pollution.

- As for aquaculture resources, again there is a large scope of expansion as per the published data of the MMAF. However, taking into consideration research reports, such expansion in the past has resulted in destruction of mangrove cover. Indonesia, which has suffered heavily from the December 2004 Tsunami, cannot overlook the importance of having mangrove cover to protect its fragile coastal ecosystem.
- In terms of fisheries governance, there is a major policy shift post 1998 (reform period) towards sustainable utilization of resources and involving community in the governance process.
- Such policy shifts were bolstered by creation of MMAF and improvement of MCS regime, including the VMS.
- However, in practice MCS measures are still insufficient (Flewwelling, 2001; MCS quality score = 46%) as reflected in use of destructive fishing practices like cyanide fishing, dynamite fishing and IUU fishing.
- Traditional community-based mechanisms have shown inspiring results in resource management. However, the traditional systems are in threat from expanding market and demonstration effect. Some traditional systems now also destructive fishing practices like dynamiting. A good scope of co-management exists in the country if properly supported by the law and good governance.

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Table 5. Fisheries sector in Indonesia - A SWOT analysis

Fisheries resources			
Strength	Weakness	Opportunity	Threats
<p>Unique geographical location.</p> <p>Rich in species diversity with high incidence of commercially valuable pelagic and crustaceans species. The country hosts about 25% of globally known fish species.</p> <p>Long coast line of > 81 000 km.</p> <p>A large maritime zone of 5.8 million sq. km comprising EEZ of 2.7 million sq. km (200 nm).</p> <p>A total 673 million ha (MHa) area for capture and culture fisheries with mostly unutilized 39 MHa area for culture fisheries.</p>	<p>Important commercial stocks like tunas are transboundary species.</p>	<p>Only about 4% of potential in culture fisheries exploited. However, as marine capture fisheries is under stress there is a scope for expanding culture fisheries.</p>	<p>Indonesia has become warmer since 1900 and that the annual mean temperature has increased by about 0.3°C. The changing climate is posing a risk of sea-level rise, rainfall, changes in fish habitats, and coral reefs. There may be possible changes in the system productivity affecting fishing pattern.</p>
Resource management & policy			
Strength	Weakness	Opportunity	Threats
<p>Prominence to fisheries – metamorphosis of department of fisheries to ministry.</p> <p>Fixing TAC limit at 80% of MSY – precautionary principle.</p> <p>Elaborate legal mechanism – virtually covering every aspect of fisheries.</p> <p>Establishing 11 fisheries management area.</p> <p>Licensing and registration system – All fishing vessels > 5 GT need registration, licensing and reporting at national level. Fishing vessels < 5 GT (considered as artisanal) need registration at provincial level.</p> <p>Specification of area and gear in fishing licenses.</p> <p>Introduction of VMS.</p> <p>All vessels over 5 GT are required to be inspected for safety by the Ministry of Sea Communications and Transport prior to being licensed for fishing by the Ministry.</p>	<p>Legal framework though elaborate is somewhat complicated by multiple authority levels of legislation and the overlapping intra- and inter-agency jurisdictions.</p> <p>Vessel registration falls under the authority of the Ministry of Transportation, Directorate General and Sea Transportation, Directorate of Marine Safety. There are an estimated 36 000 vessels on the shipping register. The details have not been entered into a database and there is no detailed breakdown. There is no separate register of fishing vessels, but the Directorate estimates some 5 600 vessels are registered, under 3 categories (>24m, 12-24m and 7-12m).</p> <p>The registration categories are based on length (LOA), whereas fisheries licences are based on tonnage (GT). This creates confusion.</p> <p>Consequently the large number of small-scale and</p>	<p>Incorporation of ecosystem approaches and CBFM may lead to better policy and implementation.</p> <p>Encouraging traditional fishing rights and practices through legal support.</p> <p>Development of National Plans of Action (NPOA) to manage fishing capacity and resources.</p> <p>Growing regional approaches to manage transboundary issues.</p> <p>The Indonesian government has put an embargo on the renewal of license for trawl and purse-seine operations to renew resources.</p>	<p>Policies still address existing problems and are not forward looking. There is no clear plan to deal with emerging issues like climate change.</p> <p>Approach, although now much democratized, is still top-down in essence. Low participation of fisher groups and fisher cooperatives.</p> <p>High level of corruption - ranked 129/145, in the 2004 corruption perception index (Transparency International, 2004).</p> <p>IUU fishing - up to 1.6 million metric tonnes of fish are taken annually by IUU vessels from neighboring countries.</p> <p>Depleted resource: In the Arafuru Sea, the Makassar Straits and the Sulawesi and Flores seas up to 57 percent of skipjack,</p>

Strength	Weakness	Opportunity	Threats
	<p>artisanal fishing fleet (512 500 of 555 950) is inadequately monitored.</p> <p>The species-wise MSY is not rigorously measured and their status is not adequately monitored.</p> <p>The fishing effort is not adequately measured and monitored.</p> <p>Fishing efforts is not evenly spread due to differential productivity in west and east and as a result many FMAs are over-exploited. In terms of resources, shrimp and tuna are showing sign of exploitation.</p> <p>Weak MCS mechanism. Consequently, there are widespread but declining IUU practices ranging from use of dynamite and cyanide by domestic fishers to poaching by foreign fishing fleets.</p> <p>The fisheries management lacks cost-recovery measures.</p>		<p>71 percent of yellow fin and 75 percent of big eye tunas caught are juvenile and considered fully exploited.</p> <p>Growing fishing fleet.</p>
Aquaculture –fresh and coastal waters and inland water fishing			
Strength	Weakness	Opportunity	Threats
Large untapped area for aquaculture.	Lack of infrastructure and policy framework.	Increased attention from the government.	Late starter. Negative externalities.
Fish processing			
Strength	Weakness	Opportunity	Threats
<p>There are about 10 000 small fish processing operations, generally using traditional methods.</p> <p>Developed supply chain for tuna processors and some shrimp processors.</p>	<p>About 56 percent of fish production is consumed fresh.</p> <p>There are severe limits to the supply of ice and availability of refrigerated storage and transport facilities.</p> <p>Processing of fishmeal has still not yet developed and takes place mostly in conjunction with canning operations.</p>	Improving fish processing capacity was highlighted in MMAF mission document 2005-09.	Highly developed fish processing industry in the neighboring countries.
Fish marketing			
Strength	Weakness	Opportunity	Threats
<p>A large population base and booming economy can absorb most of the production.</p> <p>Free/ preferential trade agreement with major markets.</p>	<p>Officially, there are 21 fishing ports and an additional 700 designated landing sites. However, in practice fish is landed at an unknown number of other places and not subject to the direct control of fisheries administrations.</p>	New fisheries policy targeted at improvement of product and support to the sector.	Trade with EU often comes under pressure due to cases of unhygienic handling and presence of heavy metals. Resultantly, there is a declining trade with EU.

Strength	Weakness	Opportunity	Threats
The volume of export of fish products during 2004 to 2006 has increased at about 6.45 percent per year while the value of export has risen by 8.60 percent.	Large number of middlemen.	Many new markets are emerging as demand for seafood is increasing.	Entry of more and more countries in export market.
Institutional arrangements			
Strength	Weakness	Opportunity	Threats
<p>Established hierarchy from capital (Jakarta) to coastal areas.</p> <p>Traditional resource management system in some areas.</p> <p>Increasing capacity of MMAF through separate directorates for various fishery related activities.</p>	<p>Overlapping and lack of inter-ministerial and inter-departmental cooperation.</p> <p>Ineffective role of fisher cooperatives and fisher groups in institutional arrangement.</p> <p>Lack of manpower in responsible agencies reduces efficacy.</p> <p>Weak R&D.</p>	<p>Newly developed policies targeting community participation, standardization of product and clear delineation of authority.</p> <p>Pilot-scale implementation of fishery co-management and community-based fishery resource management on the basis of Japanese models.</p>	<p>Presence of governmental agencies in every aspect of the activity might distort market forces.</p> <p>The shift from top-down approach to democratization may be bumpy as there is no prior experience.</p> <p>Presence of vested interests in fisheries sector and risk of elite-hijacking the democratization procedure.</p>





Annexure 8

Japanese Coastal Fisheries Management System and Practical Efforts for Resource Restoration

Jun-Ichiro Okamoto¹

Abstract

The Japanese fisheries management system, especially regarding fisheries rights in coastal waters, is well known as one of the best models for community-based fisheries resource management. However, when we look back at the Japanese history of fisheries management system, it can be seen that the road to the existing Japanese fisheries management system was not always smooth. The Japanese fisheries resources are held as commons and most fishing activities in Japan are controlled, by the fishery-rights system and licensing system. The first formal fisheries-related regulation can be found in “Yourou Rei (757)” in the Nara period in which the government stated that usage of mountains, rivers, woodlands and moors are open for both private and public purpose. After restoration of the Emperor’s power in 1868, the first Fisheries Act (Meiji Fisheries Act) was enacted in 1901, and converted the old customary fisheries management rules into a modern legal system. The newly introduced system was a licensing system for relatively large-scale offshore fisheries and a fishery-right system for coastal fisheries. The Act was amended in 1911 and the exclusive fishery rights were transformed to Fisheries Cooperative Associations (FCAs), which continued to be the exclusive fishery rights holder. After World War II, during which democracy was introduced in Japan, the Fisheries Act was drastically amended in 1949 to address various needs such as democratization of the fisheries management scheme and improvement in fisheries productivity. It made the FCAs key players in the fisheries management system. The existing Japanese fisheries management system is a relatively refined and elaborate system reflecting elements necessary to fisheries co-management. However, the FCA system has faced serious economic problems due to declining number of members. Overall, Japanese experience shows that political will is necessary to promote co-management along with incentives for fishers to come together and doing so in a transparent and democratic manner.

1.0 Introduction

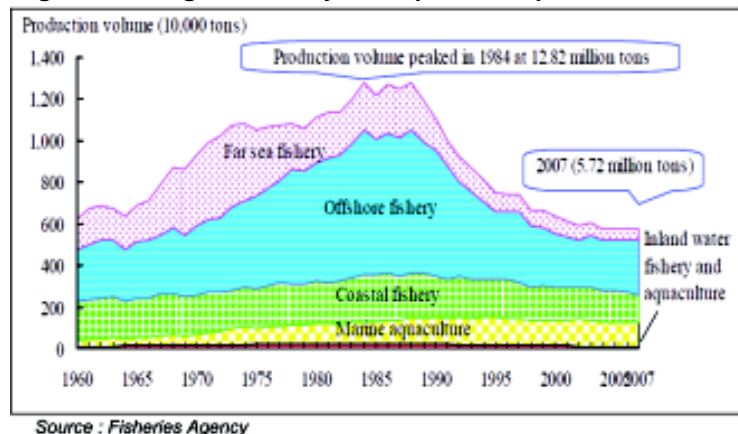
Fisheries resource deterioration is now a common issue worldwide and a serious problem in many fishing communities. Though this deterioration can be ascribed to various causes such as marine environmental change and degradation of habitats by coastal development and pollution, lack of appropriate fisheries management is also a significant cause. To address this problem, resource restoration is an urgent task for fishery authorities and policy makers so that fisheries can continue in a sustainable manner. In this connection, various fisheries management schemes and measures have been adopted.

Japan has a long history of fisheries management. The Japanese fisheries management system, especially regarding fisheries rights in coastal waters is well known and also well studied by researchers. It is sometimes quoted as one of models for fisheries co-management system based on community-based fisheries resource management (CBFRM). With respect to the performance of the existing Japanese fisheries management system, there are also various opinions. However, it should be justifiable to evaluate that the Japanese fisheries management system has

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maintained a relatively good resource condition, coastal fishing grounds, and the level of production in coastal fisheries in an orderly manner (Figure1). As suitable fisheries management system and measures can differ widely subject to the state and reality of fisheries concerned that would also change along with social change, the Japanese fisheries management system and measures have also been modified subject to changing social needs. This paper briefly describes the Japanese fisheries management system, its historical background, fisheries-related issues to be tackled and efforts to restore fishery resources.

Figure 1. Changes in fishery and aquaculture production volume



2.0 The Japanese fisheries management system and its historical background

(i) Fishery-related laws and regulations in Japan

There are now about 100 fishery-related laws and regulations in Japan. One major law is the Fisheries Act (or Fisheries Law) of 1949, which provides the principles for fisheries management and the use of public water for fisheries. The Fisheries Cooperative Act of 1948, the Fisheries Boats Law of 1950 and the Act on the Protection of Fisheries Resource of 1951, the Act Concerning the Exclusive Economic Zone and the Continental Shelf of 1996, the Act Concerning Conservation and Management of Marine Life Resource of 1996, the Fisheries Basic Act of 2001 are also important laws related to Japanese fisheries policy. These acts are expected to achieve a sustainable fisheries industry in Japan. However, when we look back at the Japanese history of fisheries management system, it can be seen that the road to the existing Japanese fisheries management system was not always smooth.

(ii) History of fisheries management system

Before the Meiji period:

The first formal fisheries-related regulation can be found in "Yourou Rei (757)" in the Nara period. It is an ancient civil code in which the government stated that usage of mountains, rivers, woodlands and moors are open for both private and public purpose. This Code also permitted the use of the sea by everyone in those days. It is also interpreted that collection of animals or plants from such areas was free and resources in such areas were common property or in non-ownership. However, this did not mean that there were no rules for harvesting fishery resources in the sea or the rivers. Records do exist to prove that the government in the Nara period often prohibited harvesting of fish in some coastal waters due to fisheries-resource depletion. This indicates that primitive fishing technology also could be a likely cause of fisheries-resource depletion. In the Heian period (794–1184), while all land and water officially belonged to the central government, a code similar to the "Yourou Rei" was applied

to manage use of public land and water owned by the government. At the end of the period, however, most land became manors owned by lieges, who controlled waters adjacent to manors. Accordingly, it was deemed that lieges' rule administered fisheries in the waters.

The next widely known regulation concerning fisheries management system was the "Ritsuryo Youryaku (1741)" in the Edo period which was prescribed by the Tokugawa government (1603~1868). It was a kind of guide for local feudal lords about dispute settlements among people and stipulated that inshore waters were subject to common use by coastal village or community and offshore waters were common of piscary (which allows fishers from all areas to fish). This implied that very shallow shore waters were under autonomous control of the coastal village or community adjacent to the water. As per these records, though the term 'common of piscary' in the offshore water suggests open for everyone, offshore fishing grounds were actually open to fishers whom the local feudal lord allowed in exchange of payment. Further, common use by the coastal village did not always mean that fishing in the village was managed in a democratic manner in present day context. Fishing in the coastal village was also under the control of the feudal regime. The most original models of existing fishing gear were completed by the end of the Edo period. Along with an increase in demand for fisheries products in towns, the monetarization of the economy affected fishing practices and control over fisheries management in fishing villages and communities.

From the Meiji restoration to World War II

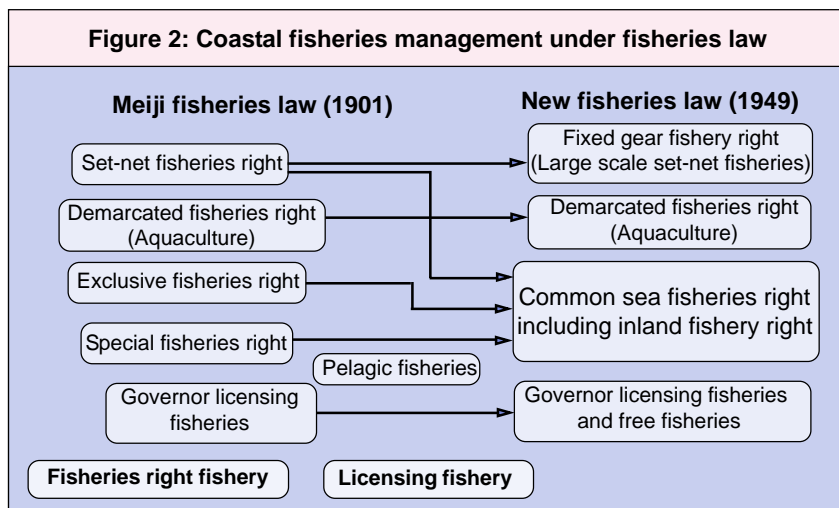
After restoration of the Emperor's power in 1868, the Meiji government tried to abolish the old regime and made a declaration of state ownership of the sea in 1875, expecting collection of user fees from fishers who wanted to engage in marine fisheries. This new policy raised numerous and serious conflicts among coastal villages chasing new opportunities of fisheries within the framework of new policy scheme. In encountering unexpected serious nationwide conflicts, the Meiji government was forced to cancel the policy and allow the previous customary fisheries management rules in fishing villages. However, the government did not give up its intention to control fisheries by modern legal system and organized fishers in coastal villages into Fisher Associations in 1885, which were expected to collect fisheries taxes from fishers and to reconcile possible conflicts among fishers as self-regulating organizations. Further, the first Fisheries Act (Meiji Fisheries Act) was enacted in 1901, and converted the old customary fisheries management rules into a modern legal system.

The newly introduced system was a licensing system for relatively large-scale offshore fisheries and a fishery-right system for coastal fisheries. Through the Meiji Fisheries Act, the government defined the scope of fishery rights, trying to abolish the vagueness of customary rule. As per the Fisheries Act of 1901, Fisher's Associations were granted exclusive fishery rights to limited shallow sea areas adjacent to coastal villages and communities, and other fishery rights were also established for running productive fisheries such as set-net fishing, beach net, offshore dip net and aquaculture. Since then, fishery rights have become a fundamental fisheries management scheme in coastal waters. Along with the amendment of the Fisheries Act in 1911, the exclusive fishery rights were transformed to Fisheries Cooperative Associations (FCAs), which continued to be the exclusive fishery rights holder. As fishery rights under the Meiji Fisheries Act were automatically renewed and transferable, many fishery rights for productive fisheries were concentrated in the clutches of rich influential people. Further, as the licenses of fishery right were issued on a first-come, first-served basis, the total number of fishery rights licensed reached around 50 000 before the new Fisheries Act of 1949 was introduced. Though most licenses were officially owned by fishers groups or FCAs, it was reported that real operators were limited number of rich fishers.

After World War II

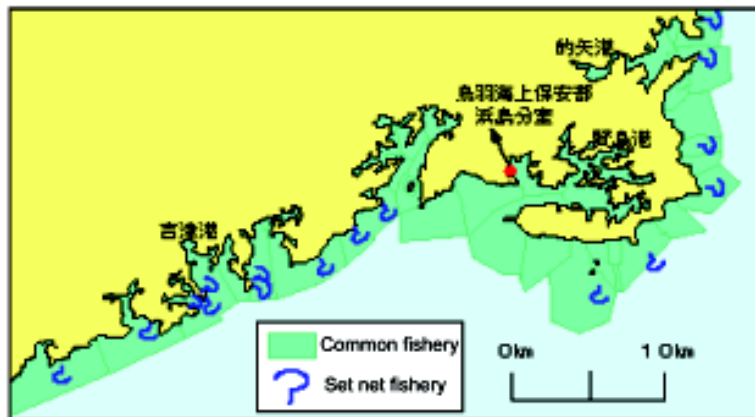
The occupation of Japan by the Allied forces after World War II was a turning point for Japan towards democratization. The Fisheries Act was drastically amended in 1949 to address various needs such as democratization of the fisheries management scheme and improvement of fisheries productivity. In those days, Japan was suffering from serious shortages of food. Around one million fishers without suitable fishing equipment and gear were left in the coastal villages. Therefore, urgent actions were required to reform fisheries management scheme to provide fishers with an opportunity to fish as independent fishers and restore the fisheries.

In line with a policy to reform the fisheries management scheme, the Fisheries Cooperative Act of 1948 was separately enacted from the Fisheries Act. Though the new Fisheries Act of 1949 drastically reformed the fisheries management system in coastal waters, it made the FCAs key players in the fisheries management system. With respect to the fishery rights system, the five renewable types of fishery rights under the Meiji Fisheries Act were reclassified to four types of fishery rights with a fixed term of validity: common sea fishery right, fixed gear (set-net) fishery right, demarcated (aquaculture) fishery right and inland fishery right (Figure 2). In addition, the new act provided for qualification of fishery rights and clauses for licenses of fishery rights (e.g., type of fishery, position and area of fishing grounds, fishing season and other related matters) to comprehensively use the coastal waters. The concerned Sea-Area Fisheries Adjustment Commission was designated as an advisory body to the governor in judgment of qualification of fishing rights and specifying clauses for licenses of fishery rights. While deciding on fisheries management measures as per the provisions of the Fisheries Act of 1949, the governor was required to consult with the Sea-Area Fisheries Adjustment Commission concerned.



With the introduction of preliminary decision mechanism of fisheries rights, the number of fishery rights licensed by the governors in the early 1950s was merged into around 16 000 within the framework of the new fisheries act. With respect to the qualification of fishery rights, the FCAs were conferred first priority to be granted any fishery rights they wanted. The purpose of priority was to assure that fishing opportunity under the fishery rights should be granted to as many fishers as possible. According to the fishery rights system, coastal waters in Japan have been covered by fishing ground of fishery rights. The outer limit of the areas of fishery rights is very close to the coast and is drawn within three miles off the coast in most cases (Figure 3 on facing page).

Figure 3. Fishing grounds for common fishery rights and set net fishery rights



3.0 The structure of Japanese fisheries management system

The Japanese fisheries management system allows free fishing to anyone based on the concept that wild fisheries resources (aquatic animals and plants) in public waters are not owned, unless there is a need for intervention by the public authority from the viewpoint of fisheries adjustment and public interests. However, as history has showed, overfishing and conflicts in fisheries were common problems in Japanese fisheries. In this connection, most fishing activities in Japan have been controlled, more or less, by the fishery-rights system and licensing system.

In general, the Japanese fisheries management system takes necessary measures for discrete fisheries classified based on the type of fishing gear used, not on the species caught. After the establishment of the Exclusive Economic Zone (EEZ) in 1996, Japan introduced total allowable catch (TAC) system as a core management practice. Management of TAC requires horizontal management in addition to vertical management based on discrete fishery type management. The legal structure to implement the fisheries management system comprises acts, ministerial ordinances of relevant acts and prefectural regulations empowered by relevant acts. In addition, the Sea-Area Fisheries Adjustment Commission established in each prefecture also has a legal function to control fisheries unless such interventions by the commission impairs public interests and justice.

(i) *Fishery rights licensed by the governor*

Fishery rights comprise fixed gear (set-net) fishery right, demarcated (aquaculture) fishery right and common fishery right. Legal characteristics of Japanese fishery rights can be described as follows:

- Right to engage in a specified fishery in a defined water body- it is not the right to exclusively or arbitrarily use the defined water body for any purpose;
- Right with a fixed period validation;
- Right to be licensed by the governor;
- Non-transferable right though it is deemed a kind of exclusive property right;
- The nature of the property allows a possessor to make a legal claim for halt of the disturbance and compensation for damage if disturbed in possession;
- Right except common fishery right can establish mortgages.

In addition to the fishery rights system, the governor of each prefecture can put specific fisheries, other than fisheries classified in fishery right, under the governor license in response to need for fisheries resource conservation and fisheries adjustment.

(ii) Designated fisheries and specified fisheries licensed by the Minister (Minister of Agriculture, Forestry and Fisheries)

Designated fisheries comprise fisheries that integrally require restricted measures to protect the reproduction of fisheries resources and for fisheries adjustment in view of inter-governmental agreements, location of fishing grounds and other considerations. The number of designated fisheries licenses is controlled based on the gross tonnage of fishing boats. Specified fisheries other than designated fisheries comprise fisheries that also require some restrictive measures for protection of resource conservation and fisheries adjustment. The validation term of a designated fishery license and specified fishery license is generally five years and one year, respectively.

(iii) Total Allowable Catch (TAC) and Total Allowable Effort (TAE) systems

After the United Nations Convention on the Law of the Sea (UNCLOS) took effect in 1996, the Act concerning the EEZ and the Continental Shelf and the Act concerning Conservation and Management of Marine Life Resource were enacted in 1996. According to the later act, Japan as a contracting party to the Convention, introduced TAC system as the new fisheries resource management system reflecting measures provided for in the UNCLOS. The Total allowable effort (TAE) was introduced in 2001 in conjunction with the fisheries resource restoration programme referred to below. The TAE is also managed within the framework of the Act concerning Conservation and Management of Marine Life Resource. Currently, seven species are managed using TAC, and nine species are managed using TAE (Figure 4). The TAC of each species is determined every year and portions of the TAC are allocated to each fishery category licensed by the Minister and each prefecture. TAE is arrived by multiplying the number of fishing boats and fishing days together, and is also allocated between relevant fisheries.

Figure 4: TAC and TAE introduced by “Act Concerning Conservation and Management of Marine Life Resource” in 1996

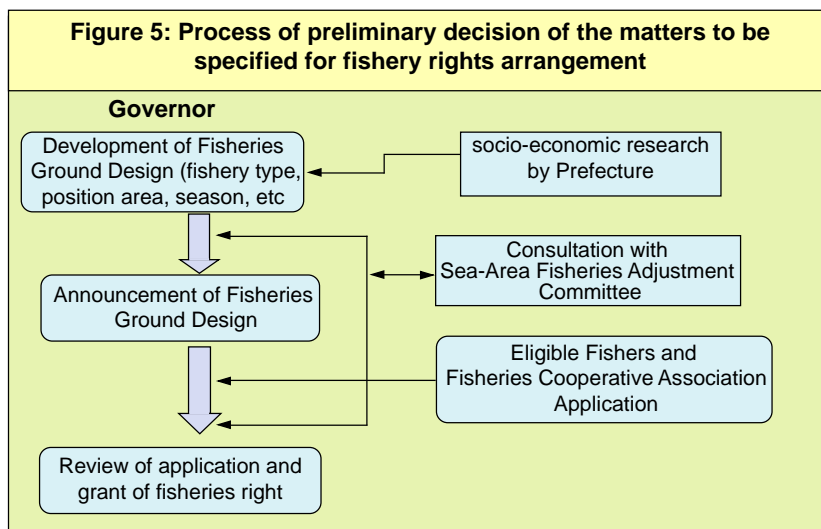
TAC (Total Allowable Catch)	TAE (Total Allowable Effort)
7 species (Pacific saury, Alaskan pollack, Jack mackerel, Sardine, Pacific mackerel, Japanese common squid, Snow crab)	9 species (Flathead flounder, Pacific sandlance, Spear squid, Roughscale sole, Brown sole, Marble sole, Willowy flounder, Globefish, Japanese Spanish mackerel)

(iv) Registration requirements for fisheries boats

In addition to management measures to control fishing activities, it should be noted that the compulsory registration requirement of fishing boats larger than one gross tonne is also an important measure to manage fishing effort. According to the Fisheries Boats Act of 1950, every fishing boat must be registered with prefectural government at its home port. The information required for registration includes name of owner, name of boat, gross tonnage, length and depth, date of construction, name of boat builder, engine power, radio equipment, user of boat, home port, and fishery type to be engaged in. Further, regardless if it is a licensed fishery, fishery right fishery or free fishery, boats cannot be used unless they are registered with the prefectural government. With this boat registration system, the total number of fishing boats in Japan is monitored and controlled.

(v) **Sea-Area Fisheries Adjustment Commission**

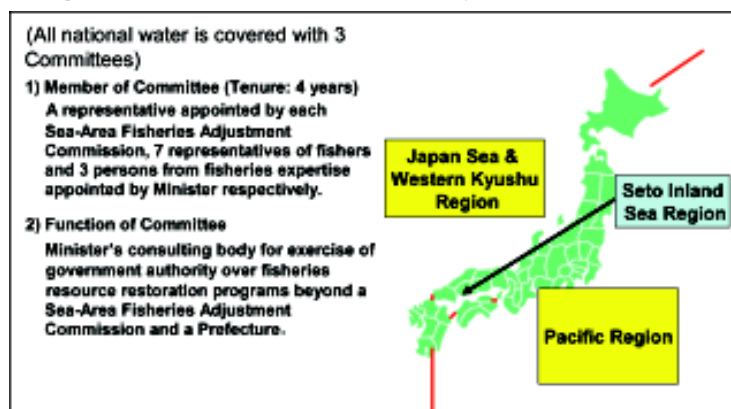
Sea-Area Fisheries Adjustment Commissions established by the new Fisheries Act of 1949 are a key mechanism to democratize the fisheries management regime. Commissions are determined by the Minister of Agriculture, Forestry and Fisheries after taking account the state of fisheries. So far, 66 Sea-Area Fisheries Adjustment Commissions have been established in Japan. The authority of the commissions covers a wide range of fisheries-related matters within their jurisdictional waters. Each commission, as an advisory body to the governor concerned, is involved not only in the process to license fishery rights from preliminary decisions about fishery right to authorization of qualified applicants to the rights concerned, but also in the process of making prefectural regulations by the governor (Figure 5). In addition, to conserve fisheries resource, and to avoid and to reconcile conflicts, commissions have authority to issue necessary directions to fishers concerned. If necessary, such directions can get the legal enforcement power by endorsement of the governor.



Each commission has fifteen members comprising 9 fisher representatives and 6 fisheries expert appointed by the governor to represent people's interest. The commission members cannot serve as members of the assembly of prefecture concerned. In considering the importance of role and function of Sea-Area Fisheries Adjustment Commissions in fisheries management practice, provisions of the Public Office Election Act are used to elect commission members from the fishers.

The Fishery Policy Council is constituted under the Fisheries Basic Act of 2001. The Fisheries Policy Council is an advisory body to the Minister of Agriculture, Forestry and Fisheries and is similar to the Sea-Area Fisheries Adjustment Commissions. However, all members of the Council are appointed by the Minister from people who represent public interests, academia, fisheries expertise, fisheries business and fishers.

In addition to the Sea-Area Fisheries Adjustment Commissions at the prefectural level, three Wide Sea-Area Fisheries Adjustment Commissions (for the Pacific Ocean area, the Sea of Japan and the sea west of Kyushu area, the Seto Inland Sea area) were established in 2001 in conjunction with the introduction of a new policy about the fisheries resource restoration programme (Figure 6). Though the Wide Sea-Area Fisheries Adjustment Commission and Sea-Area Fisheries Adjustment Commission have similar names, they function quite differently. The Wide Sea-Area Fisheries Adjustment Commissions work as platforms to consider necessary Wide sea-area resource-restoration programmes beyond prefectural boundaries. Members of the commission comprise representatives from relevant Sea-Area Fisheries Adjustment

Figure 6: Wide Sea-Area Fisheries Adjustment Commission

Commissions, and ten persons are appointed by the Minister from the public who represent public interests and fisheries expertise.

4.0 Issues concerning existing fisheries management system

The existing Japanese fisheries management system is a relatively refined and elaborate system reflecting elements necessary for fisheries co-management or CBFRM. While coastal fisheries production in the past three decades has been relatively stable (Figure 1), many fishers have opined from time to time that the resources are degraded. Therefore, the Japanese government started fisheries resource enhancement programmes in 1963 and has also encouraged prefectural governments to work on prefectural fisheries resource enhancement programmes.

Presently, in addition to ten national centers of stock enhancement with six subsidiary centers, each prefecture has its own center of stock enhancement for increasing natural stocks. As of 2008, the programme covers 85 species and in the same year, the total number of fry and seed released was 10,004,214,000 (67,522,000 of fin fish species, 190,238,000 of crustaceans, 9,674,221,000 of shellfish and 72,233,000 of other animals). In spite of such an enormous effort to increase the resources, according to a report of the Fisheries Research Agency in 2009, 36 of 86 fish stocks investigated by the agency are still classified as below the average of the past 20 years (Figure 7).

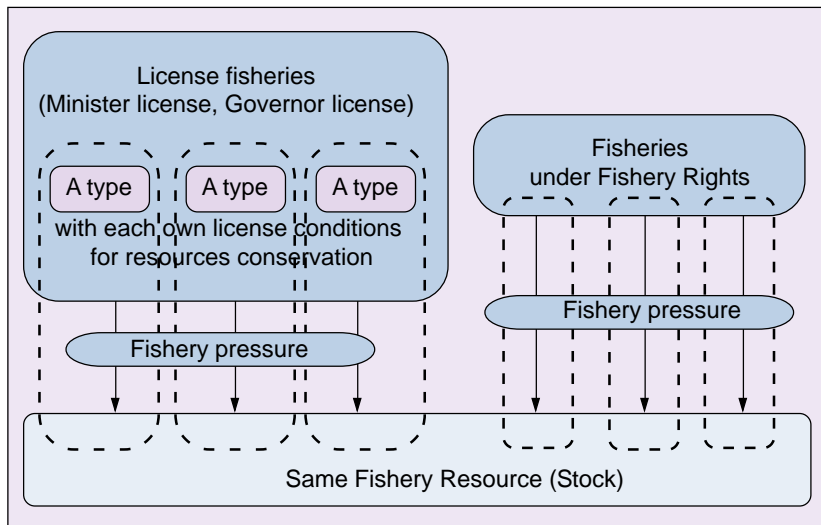
Figure 7: State of fisheries stocks in Japan (2009)

Level of stock abundance	Number of classified stocks in 2009	Major fish stocks
High level	13(16) stocks	Pacific saury, etc.
Averaged level	35(29) stocks	Jack mackerel, Squid, Snow crab, etc.
Lower level	36(48) stocks	Mackerel, Allaskan Pollack, Sardine, etc.

Figure of classified stocks in parenthesis shows that classified in 2006

With respect to fisheries resource conservation, one of the problems with the existing Japanese fisheries management system is that the conventional fisheries management system is a kind of vertical management system based on fishery type and gear. To control fisheries, actual measures are often adopted discretely by a fishery type even though various fisheries target the same fishery stock (Figure 8). Even if a stock requires a restoration programme, it is obvious that discrete management for an individual fishery through license control could not achieve suitable goal in reduction of fishing efforts. Considering the necessity of unified and horizontal resource conservation that all relevant stakeholders should participate in, a new type of fisheries resource management policy was developed in 2001 in conjunction with the introduction of the TAE system.

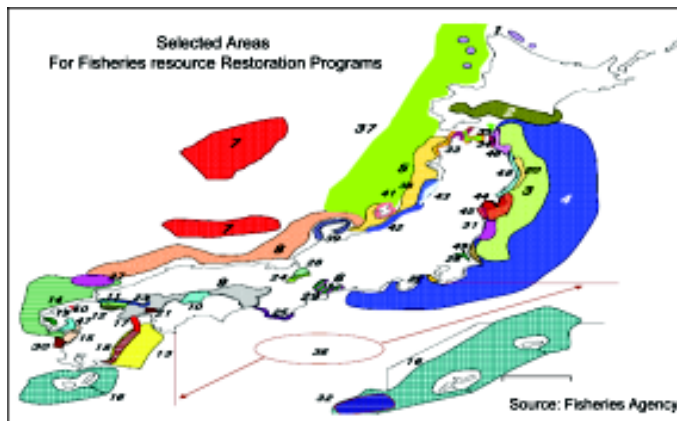
Figure 8: Fisheries resource management under present fisheries management system



(i) Resource restoration programme

Since the government introduced the new policy of resource restoration in 2001, 65 resource restoration programmes have been implemented all over the country - 47 are local resource restoration programmes within a prefecture and 18 are wide sea-area resource restoration programmes (Figure 9). As the new fisheries resource restoration programme requires the involvement of different type of fisheries in the programme and also needs their commitments, the process to formulate the programme is beyond discrete conventional management based on license category.

Figure 9: Fisheries resource restoration programmes in 2009



(ii) Formation process of resource restoration programme

At the prefectural level, the Sea-Area Fisheries Adjustment Commissions play an important role to review the state of fishery stocks concerned and to consult about the need for fisheries resource restoration programmes. The prefectural governments take the initiative to organize stakeholder consultations and encourage intensive discussion among stakeholders. The stakeholders sometimes include fishers having fishery rights and fishers under various ministerial and governor licenses. Once, a Sea-Area Fisheries Adjustment Commission agrees that a fisheries resource restoration programme is needed for specific fishery stock, formulation of the

programme will proceed within the framework of the commission in cooperation with the prefectural government.

Measures adopted in the programmes are often voluntary measures in which relevant fishers are expected to commit themselves to participate. In implementation of the programme, the Sea-Area Fisheries Adjustment Commissions has the authority to direct relevant fishers from the viewpoint of fisheries adjustment. If necessary, such directions can be made in the form of formal regulations by the government. Further, to encourage fishers concerned to participate in the programme and to agree to necessary actions, the prefectural government prepares three types of support programmes for reduction of fishing effort, financial aid to fishers and stock enhancement (Figure 10).

At the national level, the Wide Sea-Area Fisheries Adjustment Commission and the national government play the same roles respectively. The national government also subsidizes the budget of prefectural governments for implementation of fisheries resource restoration programmes. In 2009, the Japanese Fisheries Agency allocated 1.7 billion yen for relevant programmes related to implementation of fisheries resource restoration programmes.

Figure 10: Government support for implementation of resource restoration programmes

Support programs	Contents of programs
1. Support for reduction of fishing effort by fishers <ul style="list-style-type: none"> • support for scrapping fishing vessels • support for improving gear, cessation of fishing 	Aid for compensation for scrapped fishing vessel Aid for new gear, compensation for releasing small fish, charter of vessel for activities other than fishing
2. Support for resource enhancement	Aid for fry and seed production and release thereof, research
3. Support for improving environment in fishing ground	Aid for cleaning fishing ground and neighboring areas

(iii) Example of a fisheries resource restoration programme

The Japanese Spanish Mackerel or JSM (*Scomberomorus niphonius*) is an important fish species for people in western part of Japan in terms of economic value and dietary preference (Figure 11). The wide sea-area resource restoration programme for JSM in the Seto Inland Sea was the first programme formulated by the national government in 2003. Ten prefectures are involved in the JSM fishery in the Seto Inland Sea, and there were about 6 400 gill-net fishers in 2003. Each prefecture had its own fisheries management measure and there was no consistency with measures adopted by other prefectures. The catch of JSM in the Seto Inland Sea was around 6 000 tonnes in 1986, but decreased drastically to 186 tonnes in 1998 (Figure 12). This huge drop in catches brought in a sense of crisis among fishers and the prefectural governments concerned.

According to researchers, the stock level dropped below the carrying capacity level in 1992 and went critical. As a result, it was widely recognized by fishers that stock restoration was needed. Therefore, the national government took the initiative to persuade relevant prefectures and fishers to develop a wide sea-area resource restoration programme for JSM in the Seto Inland Sea. In the process of examination of necessary resource restoration programme, three options were tabled for consideration: total prohibition of catch for three years, total prohibition of catch in autumn, and the closing of the fishing season to some degree with introduction of larger mesh size for gill nets. In 2003, the programme selected the third option with

Figure 11: Japanese Spanish Mackerel (*Scomberomorus niphonius*) in Seto inland sea

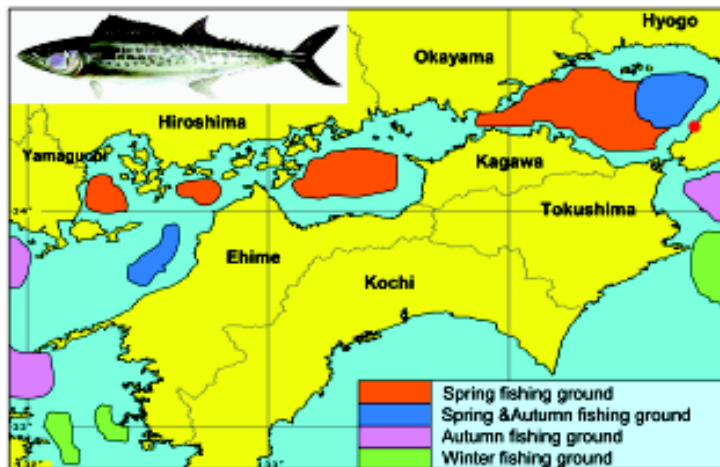
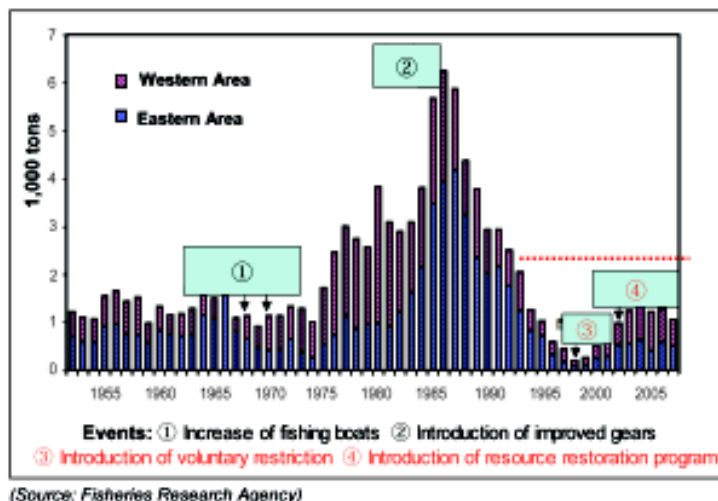


Figure 12: Catch of Japanese Spanish Mackerel in Seto inland sea



(Source: Fisheries Research Agency)

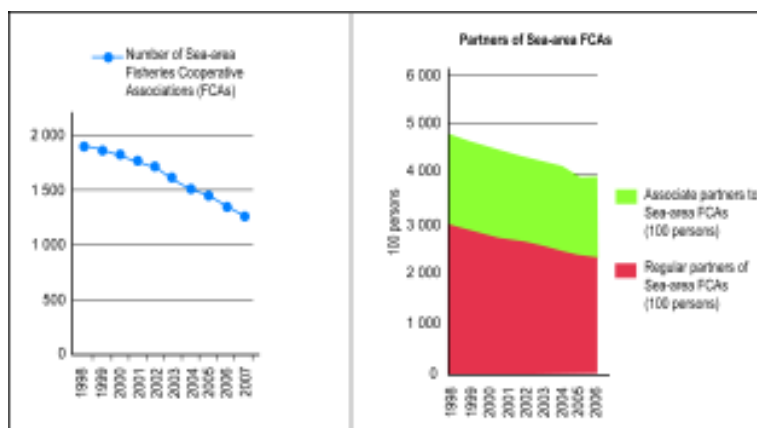
the goal of resource restoration to the stock level in 1992 by 2011. Accordingly, every prefectural government concerned changed its regulation to lengthen closed period of fishing and widen mesh size as well as enhancement of fry release. With respect to performance of the programme, results were positive but not satisfactory. The projected stock restoration level in 2011 under present measures will be at about 65 percent of the level in 1991.

5.0 Role of Fisheries Cooperative Associations (FCAs) in the Japanese fisheries management system

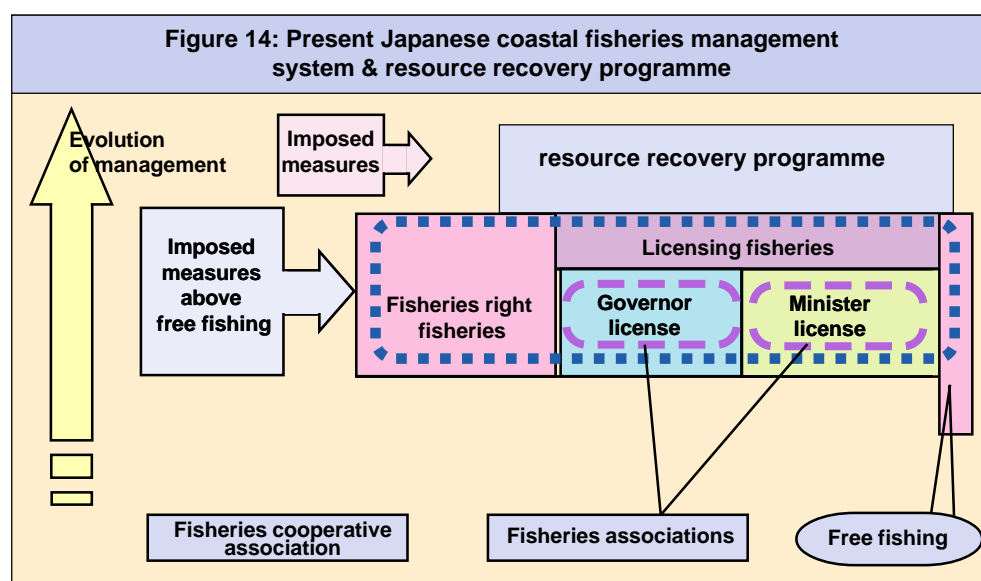
FCAs in Japan comprise Sea-Area FCAs, Inland FCAs, Fishery Specific Cooperative Associations, Fishery Production Cooperative Associations and Fisheries Processor Cooperative Associations, established in conformity with the Fisheries Cooperative Act of 1948. When the term 'Fisheries Cooperative Association' is referred to in terms of fisheries management, it generally stands for a Sea-Area FCA. The Japanese Sea-Area FCA originated from the Fishers Association, which was introduced in 1885 as the fishery right holder by the Meiji government. Accordingly, while the FCA is a group for business to improve member's livelihoods, most members in the FCA consider the status of common fishery right holder to be the most important function of the association.

There were 1 159 Sea-Area FCAs in Japan in 2008. The total number of regular and associate members of Sea-Area FCAs was around 3 95 000 in 2006. Of them, 2 31 000 were regular members (Figure 13). Almost all Japanese fishers are members in an FCA. As FCAs are sole qualified institutions to have common sea fishery rights, it is quite natural for resident fishers in coastal areas to be member in the local FCA. Since it can be deemed that a fishery operating in the common water has been managed through an FCA based on the consensus of resident fishers in the coastal area, this type of fisheries management system could be the most suitable and desirable one with appropriate stakeholders' involvement.

Figure 13: Sea-Area fisheries cooperative association and partners



With respect to fisheries under the licensing system, almost all boat owners of governor license fisheries are members in local FCAs and are also beneficiaries of fishery rights. Accordingly, the boat owners also regard FCAs as representatives of their interests as well (Figure 14). On the other hand, boat owners of ministerial license fisheries organize fishery specific associations, coordinate their interests through such fishery specific association and make the association represent their interests. When conflicts occurs between a coastal fishery and offshore fishery, the FCA representing coastal fishers' interest and the fishery specific association representing offshore fishers' interest discuss the problem. Boat owners in a ministerial license fishery are relatively rich entrepreneurs in the coastal community and have clout.



However, the boat owners will not neglect the voice of the FCA concerned, because they are also resident partners to some FCA in the coastal community and understand that FCAs have majority voice in communities.

Even in fisheries resource restoration programmes, FCAs play very important role as a forum to consult necessary measures and as communication channels or networks for various policy dissemination and programmes between fishers and the fisheries policy authority. Further, the voice of fishers in each coastal community merges into a consolidated bigger voice through the network of FCAs and can influence the decision of policy makers. Therefore, without a network of FCAs, the current Japanese fisheries policies and programmes cannot work smoothly.

However, the FCA system faces serious economic problems. As the average number of regular partners per FCA is less than 180, the business scale of most FCAs is relatively small and management of the association is becoming harder and harder. In 2008, more than 700 FCAs (more than 60% of all associations) were classified as small-scale associations with fewer than 10 staff that contributed only 20 percent of the total economic business of Japanese FCAs. Further, it was reported that the total liabilities of FCAs amounted to 45 billion yen in 2004 and most of them are becoming fixed liabilities. The growing economic disparity among the FCAs is also making the function of individual FCAs weaker and is decreasing the ability of the associations to play an important role in fisheries resource management.

6.0 Conclusion

In fisheries resource management, stakeholder involvement is considered essential. In this connection, there is no need to emphasize on the importance of organizing fishers into an appropriate entity that can be run in a democratic manner. Considering the Japanese experience, the fisheries management system needs the following:

- Strong political will is essential to improve fisheries management scheme. Without strong political will, stakeholders will not trust the seriousness of policy makers.
- Relevant stakeholders should be organized into appropriate entities so that stakeholders can represent their voice and power.
- Provision of incentives is also necessary to have stakeholders take necessary initiatives toward resource management in a sustainable manner. In Japan, exclusive fishery rights give strong incentive to fishers to maintain an FCA even though the FCA faces financial weakness.
- Execution or use of stakeholders' autonomous power should be kept in a transparent and democratic manner.
- Appropriate monitoring, intervention and support by public authority is essential to guide the decisions of the stakeholders' group.
- Human resource development for a leader is also essential to enlighten stakeholders to take their responsibility as beneficiaries in the fishery.

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Annexure 9

Applicability of Japan's Fisheries Resource Management System to Indonesia: Issues that have to be overcome

Mulyono Sumitro Baskoro¹

Abstract

The fisheries sector in Indonesia is quite complex due to diversity in fish species and also in methods of fishing. Although rich in resources, the sector is now under stress. The Government of Indonesia has introduced resource recovery plans to change this situation. These plans are based on measures such as controlling fishing effort and stock enhancement. In this background the key points of community-based fisheries resource management in coastal areas of Indonesia are conservation; economic performance; social equity; administrative feasibility; enforcement costs, and political acceptability. Further, there is legal approval to traditional fisheries management systems where community takes the management decisions.

1.0 Introduction

Indonesia, the largest archipelagic nation in the world, consists of more than 17 000 islands and a long coastline of about 80 000 km.. The total water of the country is about 5.8 million sq. km, comprising 2.8 million sq. km of internal waters, 0.3 million sq. km of territorial waters, and 2.7 million sq. km of Exclusive Economic Zone (EEZ). The fisheries sector is constituted by marine and freshwater components. Capture fisheries form the most dominant source of fish supply. Indonesian waters are part of the Western Central Pacific and Eastern Indian Oceans regions. There is a high diversity of fish including species of economic interest in this region.

Indonesian marine fisheries are characterized by multi-species and multi-gear and in most cases the same fleet exploits several stocks and several fleets compete in exploiting the same resources. Indonesian inland water resources consist mainly of small pelagics, besides a number of other economically important groups like the crustaceans, molluscs, and other aquatic animals.

Fishing gear and methods are mostly traditional and have evolved as per the felt needs and ingenuity of fishers. The modern gear in use by the Indonesian fishers are, therefore, not very different from the traditional or primitive gear. Although the traditional fishing methods and practices are rational, they often lack institutional arrangements for improvement and innovation.

2.0 Fishery resources in oceans surrounding Indonesia

The marine resources of Indonesia are is some of the world's most productive areas and sustains coastal, offshore and deep sea fisheries. Most fishing vessels in Indonesia are small-scale and family operated. In existing fisheries management system, the protection of the coastal environment is multi-faceted and a wide array of techniques and controls are employed to manage fisheries. Some such techniques and controls are described below:

(i) Resource recovery plan: The resource recovery plans were introduced to stabilize the declining resources. These plans are being implemented in conjunction with the

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conventional methods for conservation and sustainable utilization of living marine resources and *inter alia* include the following measures:

- *curbing fishing effort by reducing number of fishing vessels and fishing days at sea;*
- *releasing fry in nursery areas to supplement population; and*
- *improving habitat of fishing grounds.*

The Secretary, Ministry of Marine Affairs and Fisheries (MMAF) is responsible for input and technical control for managing fishing effort. These controls include regulating the number of fishing vessels, capacity of the fishing vessels and fishing gear (net, mesh size) and delineating fishing zones. The Fisheries Act of Indonesia (Fisheries Law No 31 of 2004 repealing No 9 of 1985) provides the legal foundation for imposing such restrictions.

(ii) Stock enhancement: In Indonesia, stock enhancement is undertaken through release of fry. This is an integral part of fisheries management. However, for stock assessment the range of a marine species needs to be considered beforehand. Species, primarily covered under stock enhancement programme are snapper and penaeid spp.



(iii) Resource evaluation: Accurate resource assessment is the foundation for effective fishery management. The key points in this regards are; (i) collecting data; (ii) research cruises and (iii) stock assessment results.

3.0 Community-based fisheries resource management in Indonesia

The key points of community-based fisheries resource management in coastal areas of Indonesia are: (i) *conservation*; (ii) *economic performance*; (iii) *social equity*; (iv) *administrative feasibility*; (v) *enforcement and costs*, and (vi) *political acceptability*.

It may be noted that Indonesia's fishing right system legally recognizes traditional system of resource management where fishers feels a sense of ownership of the fishing grounds. In this backdrop, the issues, challenges and development strategy for fisheries management system in Indonesia are tabulated below (Table 1).

Table 1. Issues, challenges and development strategy for fisheries management system in Indonesia

Sl.No	Issue	Challenges	Proposed Development Strategy
1	Fishers.	<ul style="list-style-type: none"> Increasing fisher's income Rationalization of total fisher population. 	<ul style="list-style-type: none"> Fisherman as permanent employees of company. Optimizing price realization. Training of fishers and promoting alternative livelihoods. "Export" of labor fisher. Promoting processing industry and sport fishing.
2.	Illegal fishing.	<ul style="list-style-type: none"> Law enforcement. 	<ul style="list-style-type: none"> Socialization of the law and regulation of fisheries. Enhancement capability and equipment for law enforcement agencies. Improving monitoring, control and surveillance.
3.	High price of fuel.	<ul style="list-style-type: none"> Reducing cost of production. 	<ul style="list-style-type: none"> Alternative energy and energy-saving technology. Forecasting fishing grounds for fishers.
4.	Capital investment.	<ul style="list-style-type: none"> Improving the fitness of business and managerial skills. 	<ul style="list-style-type: none"> Partnership business and mergers. Promoting Cooperatives and associations.
5.	Quality of fish products.	<ul style="list-style-type: none"> Improving the quality of fish for both exports and domestic consumption. 	<ul style="list-style-type: none"> Infrastructure (Cold Storage Chain) Socialization and training on handling, processing and transportation of fish.
6.	Imports of fishery products.	<ul style="list-style-type: none"> Import minimization. 	<ul style="list-style-type: none"> "Target species" fishing. Promoting surimi and fish flour industry.
7.	Institutional conflict.	<ul style="list-style-type: none"> Developing synergy among various organizations and department of MMAF. 	<ul style="list-style-type: none"> Unified vision and mission. Promoting Marine Board in Indonesia.



Annexure 10

Applicability of Japanese Community-based Fisheries Management in the Philippines

Sandra Victoria R Arcamo¹

Abstract

The Japanese-funded Training Project for Promotion of Community-Based Fishery Management (CBFM) by Coastal Small-scale Fishers in Asia was first implemented in the Philippines in 2006-2007. This paper is an impression on the Japanese CBFM and its possible application in the fisheries sector in the Philippines. It describes the Japanese CBFM practices, lessons learned, the CBFM practices in the Philippines, and constraints and opportunities for application of the Japanese CBFM in the Philippines setting. It is apparent that the Japanese CBFM is unique and cannot be duplicated due to socio-political conditions specific to the Japanese society. However, the fundamental concepts behind it are universal and can be applicable elsewhere, viz., in the Philippines. The measure of success of CBFM rely on various factors that include: sound legal framework, clearly defined juridical boundaries among fishing communities for effective enforcement of rules and regulations, membership control mechanisms that favor high compliance and cooperation among members. Although the Philippine CBFM is relatively young compared to that of the Japanese CBFM, the Philippines is moving towards the direction that Japan is taking notwithstanding constraints such as financial resources and technological capacity.

1.0 Introduction

The Philippines was one of four recipients of the Training Project for Promotion of Community-based Fishery Resource Management by Coastal Small-scale Fishers in Asia. The Project was implemented for sound development of fisheries in the region and promote cooperation and exchanges that would lead to increase in the income of the fishing industry through appropriate interventions.

In Philippines the Training Project was implemented in the Japanese Fiscal Year 2006 – 2007. The Philippine delegation comprised 10 members representing national government fisheries agency, national cooperative associations and local cooperatives who visited Japan from 10-19 September 2006. The study tour was an opportunity to gain firsthand experience of the fisheries sector in Japan, gain knowledge of their practices and determine the possibility of application in the Philippines setting. The delegation visited Tokyo and Okinawa Prefecture. In particular, places visited included the Ministry of Agriculture, Forestry and Fisheries – MAFF (Central Government Fisheries Agency); the International Cooperatives Fisheries Organizations – ICFO; JF-ZENGYOREN (National Federation of Fisheries Cooperative Associations) and the Central Wholesale Fish Market at Tsukiji in Tokyo; Prefecture Government of Okinawa, local Fisheries Cooperatives Associations (FCAs) and their local markets and the local wholesale fish market at Naha in Okinawa.

2.0 Lessons learned

Fisheries play a vital role in food security in Japan. Fish is second only to rice as a staple in the Japanese diet. Seafood sufficiency is lodged at 54-55 percent. The government projects aim an increase to 65 percent by 2012. Japan's fishing fleet

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provides most of the fish consumed domestically. However due to rising demand and decreasing catches, fish imports exceed exports. The total fisheries production comprises: offshore fisheries (medium-sized vessels), coastal fisheries (small boats, set nets), marine aquaculture (oysters, scallops, seaweed, yellowtail, sea bream) and far seas fisheries (large vessels fishing outside of Japan). Coastal fishing contributes about one-third of the sector's total production. Offshore fishing on the other hand, accounts for more than half of the total. These are catches landed by medium-sized boats. Deep-sea fishing by large vessels operating far from Japan makes up the remainder.

The basic fisheries resource management (FRM) system of Japan was developed several hundred years ago, during the reign of the military shogun in the early 17th century. The coastal fishing communities of Japan are autonomous in the sense that they have their own rules on the use of common-property resources. These communities are well-established fishing villages with various mutual assistance groups and village-level organizations. It is a social structure that relies on kinship, friendship, mutual help and obligation. Compliance rate among its members is rated very high. This traditional community structure has become the foundation of the modern fisheries cooperatives in the country.

The Meiji Fisheries Law of 1901 provided the framework for fisheries utilization and restrictions/regulations. It was later amended with the Fisheries Law of 1949. The Law provides for sharing of management responsibilities among the national government, the prefecture government; the Fisheries Cooperative Association (FCAs) and special fisheries regulatory commissions. The details of evolution of Japanese CBFM can be found elsewhere in the Report. The lessons learned from the Training Project can be summarized as follows.

- The FRM system of Japan is effective in the sense that the practice was developed over a very long period beginning in the feudal era up to modern times. Furthermore, this traditional system of sea tenure was legally recognized through the Meiji Fisheries Law as amended by the New Fisheries Law and the FCA Law. The institutionalization of such system provided strong protection to small-scale coastal fishers. Considering the very nature/culture of Japan, there is respect for the traditional local resource management system and the norms that is embodied in it. Moreover, the fisher members are participative in the exercise of fisheries resource management.
- FRM in Japan is quite extensive as demonstrated by the strong political will that exists at the national level and moves down to the prefecture governments. This also includes the active participation of ZENGYOREN, KEN-GYOREN and the FCAs. The role of the FCAs in FRM system is very impressive. The FCAs subsist due to:
 - **Social equity:** everybody gets a fair share of the economic benefits that accrue from resource management and conservation efforts, thereby reducing excessive competition among the fishers.
 - **Profitability:** economic returns from the various businesses encourage the members to engage in more resource management and conservation interventions.
 - **Compliance:** there is high compliance rate among members to follow rules and regulations that are simple and straightforward.
 - **Administrative feasibility:** enforcement of rules and regulations is feasible and the members practice self-regulation therefore cutting on implementation costs.
- The implementation of the Resource Recovery Plans (RRPs) to address vulnerable resources showed that acquired scientific information on commercial stocks was fully utilized. These plans are formulated based on extensive studies on the status of

the resources, actual fishery operations and after thorough consultation with fishers. It is interesting to note that there were positive results from the FRM strategies instituted under the RRP. These minimized competition and conflicts among the fishers. In addition, information culled from centralized auction market of fishery and other products are used to determine the productivity of the fishing grounds that is important in the decision making process paving the way for efficient marketing system.

- However, it was noted that conservation focus was given to some identified commercially important species only instead of a holistic perspective in the light of Ecosystem-Based Approach to Fisheries Management. It is too exclusive that there needs to be coordination among the many diverse user groups, each of which attempts to maximize its own share of the resource leading to over fishing. Social sanctions may be effective in a close-knit village, but virtually useless in terms of poaching e.g. recreational gathering of shellfish and other resources.

3.0 Community-based fisheries resource management in Philippines

The Philippines is an archipelago that consists of three main islands: Luzon, Visayas, and Mindanao with a total of +7,100 islands (Figure 1). It has more water than land. Of the 70 provinces in the country, 60 are coastal; and of the 25 cities, 17 are coastal as well. The coastline is very important in terms of food security, industry, political, and socio-economics. It provides the essential nutrition to the citizens of the country, the medium for economics and business enterprise, transportation in and around the islands, fisheries, aquaculture as well as mariculture, tourism and last but not the least, employment to substantial slice of the population. In 2007, total fisheries production was almost 5.0 million metric tonnes: aquaculture sector (47%), municipal or coastal fisheries from the shoreline to 15 km offshore (27.7%) and commercial or offshore fisheries beyond 15 km (25.3%). Fisheries contribution to the Primary Sector was estimated at 15 percent next to farming.

Evolution of CBFM

CBFM in the Philippines went through a transformation from the 1970's when attention was focused solely on fish production. By mid-1970's, exploitation increased due to sophisticated fishing gear and increasing number of fishers. However, there was marked conflicts among the different resource users. By the late 1970's and 1980's, realization that fisheries resources are limited crept in and coastal resource management particularly fisheries resource management started and proceeded in full steam subsequently. It was noted that coastal resource management had a larger degree of success when done with the active participation of the communities and other stakeholders. There were several CBFM projects, e.g. establishment of marine protected areas, instituting seasonal fishing, regulating types of fishing, etc. that were promoted for the sustainable management of fisheries resources.

Figure 1: Map of the Philippines



4.0 Structure of CBFM in the Philippines

Legal framework: The management of the fisheries in the Philippines relies on two important fisheries legislations: Presidential Decree (PD) 704 and Republic Act 8550. The old fisheries code (PD 704) contains fisheries laws for sustainable management of fisheries and aquatic resources. It includes management measures such as limiting access e.g. closed seasons, closed areas with specific orders coming from the

Secretary, Department of Agriculture, specification of the Local Government Units (LGUs) jurisdiction, prioritization of municipal folk and enforcement procedures, fees, and sanctions. The Republic Act 8550 also known as the Fisheries Law of 1998 supercedes the old fisheries law. The Act includes resource rent that were based on resource valuation studies, limited access not only to commercial fishers but also to municipal fishers based on resources studies, full control of the local government in management of the municipal waters, people empowerment in managing resources through local advisory groups, *i.e.* Fisheries and Aquatic Resource Management Councils (FARMCs), and elevating conservation and management into an integrated one recognizing that coordination has to be done with other concerned government agencies that have a stake in the environment and are conducting activities in the coastal areas.

Organisational framework: The Bureau of Fisheries and Aquatic Resources (BFAR) is the national agency mandated to conserve and manage the fisheries and aquatic resources in a sustainable manner for the Filipino people. The BFAR has a central office from where directions and policies emanate. The regional and provincial offices of BFAR implement these policies. The BFAR works very closely with the local government that have exclusive jurisdiction on fisheries resources management in the municipal waters (0-15 km from the shoreline), and the communities (Figure 2). The FARMCs, members of which come from the communities, act as advisory councils to the LGUs in FRM policy formulation and implementation.

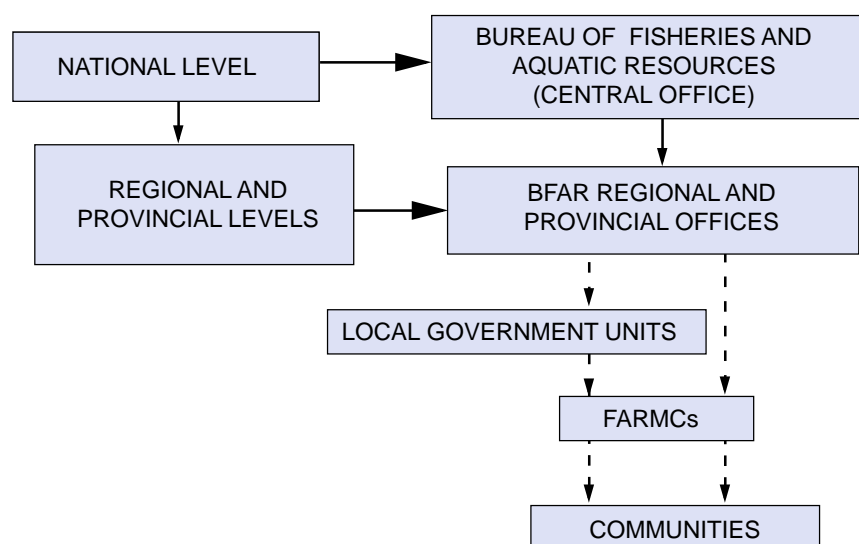


Figure 2. Structure of FRM in the Philippines

Strategies: Rationalizing the sustainable use of fisheries resources and rehabilitation of degraded fish habitats were done through a participatory resource management process (managers and stakeholders), capacity building for FRM both in the national and local agencies, and the stakeholders. There were opportunities for income diversification to wean the users from the depleted resources and alleviate poverty, and raise environmental awareness through information, education and campaign.

Outcomes: There were positive effects emanating from the FRM activities in the Philippines. Signs from biophysical parameters are indicating resource recovery. Good governance was well promoted and instituted and the number of FRM LGU practitioners increased over the years. Illegal fishing activities declined significantly, and CRM/FRM practitioners identified as individuals in the community and among other stakeholders were developed and available for sound advice to both mandated agencies and the communities.

In addition, CRM/FRM was approached in a more holistic manner to encompass a larger area of coverage (watershed to marine waters) after the realization that there are no clear-cut barriers between marine and land ecosystems, therefore, management should be integrated. Local institutions were strengthened in terms of CRM/FRM understanding and capability, raised level of community participation in resource management to address local issues, and enhanced socio-economic conditions in the coastal communities.

Constraints on the adoption of Japan's CBFM practices in the Philippines would be more of socio-political in nature including leadership and governance, values and attitudes, discipline and industry; as well as financial resources and technological know-how. Political will in all levels of governance would make a big difference in the implementation of CBFM. Although some changes have taken place during the last decade in the country, still a lot more needs to be done. Discipline and industry among the fishers are very important in pursuing any developmental effort. There is still much to be done in putting the common good first and foremost before individual interests. This is easier said than done in an environment where the problem of poverty has not been properly addressed and appropriate technology is still deficient.

Nevertheless, there is likelihood that the CBFM system of Japan may be applicable in the Philippines. The Philippine Fisheries Code of 1998 presents robust opportunities for sustainable fisheries. It comprises the country's primary legislation for managing fisheries and aquatic resources. It is closest to any national law that has come to referring to an integrated framework for management of coastal resources. It allocates the jurisdictional responsibilities over fisheries between the national and LGUs. In fact the Code has devolved extensive fisheries management powers to the cities and municipalities specifically. Within the 15-kilometer municipal waters, they exercise general jurisdiction over fisheries which include management powers through the enactment of ordinances and law enforcement, imposition of license fees, charges and rentals, closed seasons, and the designation of fish reserves, refuges, and sanctuaries. Moreover, the Code mandates extensive consultation and cooperation between the local government units and national government, with recommendations from the former being essential for certain actions of the latter, particularly in the case of setting of catch limits; designation of reserves for special or limited use, educational, research or special management purposes; and limitation or prohibition of fishery activities in overfished areas.

To support the LGUs in the management of fishery resources, FARMCs are created in all cities and municipalities abutting municipal waters. FARMCs are basically multi-sectoral councils representing the community with advisory and recommendatory functions, providing assistance to the national or LGUs in matters of fishery development planning, enactment of ordinances, management and enforcement.

6.0 Conclusion

It is quite apparent that the Japanese CBFM through the FCAs is applicable in the Philippines. Although the CBFM practice is traditional and unique to Japan, the fundamental concepts promoted are universal, therefore it is applicable to other regions' fisheries, the Philippines in this case. At the end of the day, the degree of success of CBFM is measured by various parameters that would include a sound legal framework, clearly defined juridical boundaries among the fishing communities for effective enforcement of rules and regulations, and membership control mechanisms implemented to advocate high rate of compliance and cooperation with the objectives of achieving fisheries resource management by collective action.



Annexure 11

Present Status of Fishery Resource Management in Indonesia and Suggestion for Improvement

Gelwynn Daniel Hamza Jusuf ¹

Abstract

Indonesian marine waters are resource-rich. Although, some of these resources are under utilized, the fisheries as such is under stress as is evident from reduced mean length of fish in the catches, changes in catch composition and the need for longer fishing trips. Further, high extent of IUU fishing both by domestic and foreign fishing vessels has created problems for the sector. To build a sound policy to address these issue, adequate data and appropriate modeling is a must. In view of the multi-species-multi gear nature of the fisheries, it is a challenging task but has to be done to ensure sustainability of the sector.

1.0 Introduction

Indonesia is the largest archipelago in the world situated between the Asian and the Australian continents and the Pacific and the Indian Oceans. The archipelago consists of 17 508 islands with more than 81 000 km of coastline. The Indonesian waters cover two-thirds of its territory, namely about 5.8 million sq. km marine area, which consists of 0.3 million sq. km of marine waters, 2.8 million sq. km of internal/archipelagic waters and 2.7 million sq. km of Exclusive Economy Zone (EEZ).

The maximum sustainable yield (MSY) of Indonesia's marine fisheries resources is estimated at 6.4 million tonnes comprising 5.12 million tonnes from the territorial waters and 1.26 millions tonnes from the EEZ. In terms of resources, the MSY comprises 1.16 million tonnes large and 3.6 million tonnes small pelagic fish, 1.36 million tonnes demersal fish, 0.094 million tonnes shrimp, 0.028 million tonnes squids, 0.004 million tonnes lobster and 0.14 million tonnes coral fish. The Total Allowable Catch (TAC) is 5.12 million tonnes yearly, which is about 80 percent of the MSY.

Indonesian marine capture fisheries production in year 2007 was about 4.73 million tonnes, which largely consist of little tunas (0.400 million tonnes), Skipjack tunas (0.302 million tonnes) and tunas (0.192 million tonnes). Indonesian inland openwater capture fisheries production in year 2007 was about 0.31 million tonnes of which major share came from snakehead murrel (30.3 thousand tonnes), Mozambique tilapia (11.2 thousand tonnes) and common carp (9.1 thousand tonnes). Given this fact, the fisheries sector in Indonesia plays an important role. It provides fish as a source of animal protein for local diet, a source of income and employment opportunities and foreign-exchange earnings.

One the major problem in Indonesian fisheries is high incidence of Illegal, Unreported and Unregulated (IUU) fishing, both by local and foreign fishing vessels. The local fishers often use explosives and poison for fishing in the coral reefs and coastal waters. On the other hand, foreign fishing vessels carry out unauthorized fishing in Indonesian waters with high capacity fishing methods and equipment such as purse seines, gill nets and other drift nets and with small mesh size nets in offshore and even in territorial waters.

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Fisheries resource development in Indonesia got a boost in 1999 when the former Directorate General of Fisheries was upgraded to the Ministry of Marine Affairs and Fisheries (MMAF). This has created a dedicated high powered institutional framework for fisheries sector. The MMAF is now the main entity responsible for issues relating to marine and fisheries administration and development. There is also a network of specialized agencies involved in specific issues within the mandate of MMAF.

Act No. 31 of 2004 on Fisheries and Act No. 26 of 2007 on the Coastal Management are the basic laws that provide guidance for implementation of integrated fisheries management. As per Act No. 31/2004, it is necessary to have an effective, efficient and comprehensive management plan developed by all fisheries stakeholders in the concerned area. The management plan is expected to provide a basis for fisheries management to maintain the sustainability of fisheries resources and utilization in the concerned fisheries area. However, multi-species, multi-gear and large presence of small-scale fisheries is a serious hurdle to meet the national objectives of sustainable resource management. Hence, in attempts to cope with the problems, an improvement of Indonesian current fisheries resource management programme is urgently required.

A successful fishery management rests upon a chain of activities that support each other. The starting point is an assessment of the availability of biological resources followed by an active tailoring of the fishing fleet. Only when the fishing capacity is balanced against the resources that sustainable harvest levels can be achieved and maintained. In Indonesia however, there are some constraints, highlighted below, in the implementation of the assessment under a sustainability-approach.

2.0 The problems to be addressed

The problems to be addressed in Indonesian fisheries are on how to measure the proper fishing capacity in identified areas of Indonesia's waters through appropriate stock assessment methodology. This is considered to be the most difficult part of the management of fisheries resources as the measurement, assessment and monitoring of the fishing capacity requires assessing physical inputs and fish production in a combined manner. In practice, the difficulty of stock assessment is mostly linked with the difficulty to find good and valid data for analyzing beside to establish appropriate stock assessment methods.

Along this line, currently there is no effective monitoring system for collecting, analyzing and distributing temporal and spatial data and other information on the fishery resources utilization. Hence there is a need to further develop the methods for timely provision of information essential for decision-makers to manage fisheries in a sustainable manner. Furthermore, knowledge of the status and trends of fisheries, not only in terms of fishery resources but socio-economic aspects, is a key to sound policymaking and responsible management.

Impacts of high exploitation of fishery resources: The current exploitation levels are not in balance. The large-scale fisheries in the open seas results to a varying extent in destructive impacts on the coastal fishery. These circumstances have negatively affected socio-economic conditions of the fishers, especially those with lower income. In addition, the



important spawning and nursery grounds like mangrove forests, coral reefs and sea grass beds are degrading. Indicators, such as reduced mean length of fish in the catches, changes in catch composition in favour of small size (species) and immature fish, longer time at sea, as well as low quality of fish catch also indicates that fisheries resources are highly exploited.

Stock assessment and information: Considering the multi-species, multi-gear small-scale nature of the fisheries, assessment of fishing capacity through fisheries statistic and information may not be sufficient to depict overall status of fisheries. Moreover, defining fishing capacity using classical empirical stock assessment models is deemed inappropriate as there are several target species. The introduction and review of definition of resources and simple indicative assessments based on existing information have to be undertaken immediately to identify minimum data requirement for monitoring. In addition, simple fisheries indicators can be considered to be used as a ready tool for describing the state of fishery resources and fishery activities and for assessing trends regarding sustainable development objectives. Furthermore, the fisheries indicator opens the possibility to enhance accountability as well as to assure communication, transparency and effectiveness in fisheries management.



Based on the above mentioned suggestions, a simulation model must be developed to contribute to the development of fishery resources monitoring methodology that supports Indonesia's effort for an appropriate fishery resources management, and which is also in accordance with the FAO Code of Conduct for Responsible Fisheries. The focus of simulation model should be to identify the essential resource information concerning fishing capacities that politicians/ decision-makers need in order to take timely decisions for sound management.

3.0 Conclusion

The principal benefits of the above exercises will be the availability of the basic management strategy and enhanced local capacity to plan and manage sustainable development of marine and coastal resources through simulation model framework.

Therefore, rational and coordinated allocations of resources, emphasizing protection, conservation and sustainable management have to be promoted. The planning and management concepts will increase transparency and accountability in resource planning and management decisions and help resolve conflicts among the diverse and competing user groups.

Collaborative efforts and partnership between government agencies, non-government organizations and local community organizations will oblige government authorities to become more service oriented. The direct beneficiaries will include disadvantaged coastal communities, many of whom live in poverty, from the recovery and replenishment of stocks from the improved management regime. In addition, there will be additional benefits from targeted small-scale schemes aimed at environmental protection, rehabilitation of degraded coastal fish habitats and development of alternative livelihoods for artisanal fishers.

In terms of management, laws and regulations are one of several important components for achieving the expected objectives of development. Laws and regulation should be based on scientific evidence and the appropriate laws and regulation should be implemented and adopted by all stakeholders.



Annexure 12

Strengthening Fishermen Organizations' Efforts to Promote Fisheries Resources Management in Indonesia

Shidiq Moeslim¹

Abstract

Indonesia is a nation of unity in diversity. The fisheries sector is also rich in resources. However, recent trends from capture fisheries are showing signs of stress and retarded growth. The major boost for the sector is now coming from aquaculture. Although government has taken several measures like setting up of management areas to manage resources, there is a need to promote co-management to sustainably exploit the fishery resources. Success of co-management has been seen in case of freshwater species in West Java. However, to prepare the fisheries associations for co-management, they need to be strengthened through training, information and international linkages.

1.0 The Nation's diversity

Indonesia is the largest archipelagic country in the world. It lies in the tropics, between the continents of Asia and Australia. Based on the most recent data, the country possesses a total area of 5.8 million km² consisting of 75 percent water and 25 percent land. The country has 17 504 islands and 81 000 km long coastline. Besides, the country has more than 14 million hectares of inland open waters.

Administratively, Indonesia consists of 37 provinces. Each province is divided into smaller administrative areas - *Kabupaten* or Municipality/ District, *Kecamatan* or sub-district and the smallest entity is *desa* or village. Presently, there are 254 sub-districts and 4 750 villages in the country.

There are about 256 ethnic groups with their own local language and traditions. Java is the most densely populated area. It was estimated that by 2020, population of Indonesia will be about 250 million, three times greater compared to the 1950 population. It is felt that the larger population could be considered as a market opportunity for the country.

Indonesia is also known as a mega biodiversity country. Around 17 percent of the known species of flora and fauna and around 16 percent of the known fish species of the world are found in Indonesia. It is reported that there are about 7 000 fish species in Indonesian waters, of which about 2 000 are freshwater species.

2.0 Fishers and fisheries in Indonesia

Both capture fisheries and aquaculture contribute to the fish production in Indonesia. The fisheries production has increased steadily at the rate of more than 10 percent per annum. In 2009, capture fisheries produced around 5.3 million tonnes and aquaculture 4.8 million tonnes. However, capture fisheries is approaching the Maximum Sustainable Yield (MSY) which has been estimated at 6.4 million tonnes. During the last 5 years, the growth rate of capture fisheries production is only 2.95 percent per annum.

Overfishing has been reported from ten fisheries management areas in Indonesia. The most threatened stocks are the demersal, shrimp and smaller pelagics. In the

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Malacca Strait, the stocks of demersal fish and shrimp are overfished, while the smaller pelagic stocks are fully exploited. Likewise, the fish and shrimp stocks in other management areas such as Java Sea (WPP712), Flores and Makassar Strait (WPP673), etc are also depleted. Presently, the growth in total fishery production is largely due to aquaculture, which during the last decade has grown at the rate of 21.93 percent per annum.

The capture fisheries production is mostly attributed to traditional fisheries (90%) fishing in near shore waters. They are using non-powered boats, outboard motorized boats and inboard motorized boats. The total number of such units is estimated at 5 96 230 units. In 2009, the non-powered and outboard motorized boats accounted for 70 percent of the total number of fishing boats in the country. The inboard motorized boats vary in gross tonnage, starting from 5 GT to more than 200 GT. The number of inboard motorized boats of more than 100 GT in 2009 was only 1 640 units or less than 0.27 percent. In 2009 the number of fishers was estimated at 2.75 million in 939 000 households or establishments.



Comparing the number of fishermen and the magnitude of estimated MSY (6.4. million tonnes), it seems that there are too many fishermen to fish too few fish. On an average, only 2.38 tonnes of fish can be caught per fishermen per year.

3.0 The need for rational fisheries resource management

Fisheries resources management in Indonesia has been practiced since the era of Dutch Colonial rule. Recently, it is enforced through the enactment of Fisheries Law No.31/2004 and revised by Fisheries Law No. 45/2009. The objectives of fisheries management, as detailed in the Law, are to get the optimum and sustainable benefits from fisheries and to conserve fisheries resources. It was realized that mismanagement of the resources will lead to fish stock depletion, biological imbalances and decreasing production resulting in poverty of fishers.

So far, several management measures have been applied by the government. The first measure is to divide marine waters into fisheries resources management areas, such as the *Malacca Strait, South China Sea, Java Sea, Flores Sea and Makassar Strait, Banda Sea, Laut Arafura and Teluk Tomini & Laut Maluku*.

The second measure is to classify the fish resources into groups such as demersal, small pelagic, large pelagic and crustaceans. This classification is being used for monitoring the stocks and for reporting (statistics). The third measure adopted by the Ministry of Marine Affairs and Fisheries (MMAF) is to deploy Vessel Monitoring System (VMS) on fishing boats along with patrol boats to control Illegal, Unreported and Unregulated Fishing (IUU fishing).

Fisheries resources management in Indonesia is facing several problems. Among others are lack of accurate and up-to-date statistics, weak fisher associations, complex administration and regulation and IUU fishing. The participation of stakeholders in fisheries resource management is also minimal. Though, some customary law like *sasi* in Maluku and *panglima laut* in Aceh is still practiced, in general it may be said

that fisheries resources management applied in Indonesia is a government-based management as indicated by the Fisheries Law No.31/2004. However, in certain rivers in Sumedang, West Java, community-based management of local freshwater fish is practiced by the fishers successfully. For the marine fisheries resources, it is suggested that combined management efforts between the respective government agencies and fisher associations or cooperative (co-management²) should be promoted.

In such management system, both government and fishers associations can collaborate and participate in the management of the resources right from the planning stage to monitoring, control and surveillance. The co-management procedure should be supported by an independent research institution that will provide the stakeholders with scientific data and information on natural and economic aspects. At present, this function is carried out by the National Committee of Fish Stock Assessment.

4.0 Strengthening fishermen association

At present, there are seven fisheries-related organizations in Indonesia, namely Gappindo (Indonesian Fisheries Entrepreneur's Association), HNSI (Indonesia Fishermen's Association), IKPI (Fishery Cooperatives or *Induk Koperasi Perikanan Indonesia*), BUMN (State Fisheries Enterprise or *Badan Usaha Milik Negara*), Ispikani (Fisheries Scientist Association), Perhiptani (Agricultural Extension Association), Himapikani (Fisheries Student's Association) and MPN (Fisheries Society or Masyarakat Perikanan Nusantara). The last organization is a confederation of the other seven organizations.

The larger question now is which fisheries organization should be involved in the co-management system and how they should be strengthened. At least there are three organizations worth involving namely HNSI (Indonesia Fishermen Association), Gappindo and IKPI (Fishery Cooperatives). However, they need to be strengthened through training and should be provided with accurate and timely data and updated stock assessment information. There



should be also linkages with international markets (European market, Japan tuna market) and related international organization such as, Regional Fisheries Management Organization, FAO, JICA, AUSAID, ICLARM, etc.

² FAO defined the co-management of resources as follows: devolution of management responsibilities to the local level, giving importance to the participation of fisherfolk in management and environmental monitoring activities and government support endorsing the formation of any community organization.



Annexure 13

Fisheries Resource Management Practices in Korea – A National Comprehensive Approach

Park Kwang-Bum¹

Abstract

Since early 2000, Korea's coastal and offshore fisheries have experienced reduction in catch. The landings from coastal and offshore fisheries dropped from 1.7 million tonnes in 1986 to 1.0 million tonnes in 2004. To address this reduction, ecosystem-based fish stock rebuilding programmes are being developed and implemented. However, as fish stocks have declined in spite of various management measures, the Korean government has begun to genuinely acknowledge the necessity to enhance fisheries productivity through recovery of depleted fish stocks. Based on such acknowledgement, a fish stock rebuilding plan (FSRP), combined with conventional fish stock enhancement programme, was established in 2005. Under the new FSRP, unlike the former government-oriented fisheries management system, a joint management system was established, where actual actors (fishers) can participate in establishing, executing and evaluating the basic rebuilding plans. Furthermore, a science committee and a fishery resource management committee have been organized to coordinate joint participation and role assignments to relevant stakeholders. For stocks which have shown drastic decrease, a FSRP was set up and promoted. So far, 10 FSRPs have been established and operated, and it is planned to expand to 20 species by 2012. The results of pilot projects show that stocks are increasing after the introduction of FSRPs. For instance, the catch per unit effort (CPUE) of sandfish in the East Sea has increased from 0.44 in 2005 to 0.78 in 2007. Consequently, fishing income has increased by 10 percent. The key lessons learned during the implementation of FSRP are that causes for stock decrease are various and complicated and it is necessary to adjust and eliminate some conventional policies that could have unforeseen negative impacts on fish stocks. The FSRP-based fisheries management policy in Korea carries great significance, for it has changed the focus of the policy from simply maintaining the status quo to stock recovery. Further, it has allowed relevant stakeholders to get actively involved in the procedures of establishing and promoting the plan, leading to its effective implementation. Currently, the FSRP is operated by species, but if the FSRP can be gradually expanded to encompass the whole ecosystem, it will greatly contribute to more effective management and fish stock recovery for all species, both in the offshore and coastal waters of Korea.

1.0 Introduction

The major challenge before the Korean fisheries sector is to manage the declining fish stocks and stabilizing fisheries production. Despite consistent policy efforts, the fishery resources, both in the coastal and offshore areas have continued to decrease and the total catch is also declining. Moreover, if the current level of fishing effort persists, it is highly likely that the total fish stock would be reduced much further in the years to come. The government has so far used various management measures such as licensing of fishing vessels, spatial and temporal closure, gear restrictions, input and output control and artificial stock enhancement programmes to attain sustainable production. However, these initiatives, as reports on the state of fisheries resources suggest, are not complete enough to manage the Korean fisheries.

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To address these inadequacies, the Korean government in 2005 declared the recovery of fish stock as the main objective of fishery policies and established an eco-system based Fish Stock Rebuilding Plan (FSRP) to supplement the existing array of programmes. The FSRP is based on active voluntary participation of fisher communities and aims to reach a specific target amount of fish stocks. A more elaborate management system was also established by assigning new operating organizations (Science Committee and Fishery Resource Management Committee) to the existing fisheries management system. As of 2007, FSRPs have been set up based on the pilot project for 7 fish species and it is expected to expand to 20 species by 2015.

This paper is intended to introduce and examine the processes and the contents of the FSRP and fisheries management policy of Korea in details. The paper also proposes ways and means to address the current issues in implementation of FSRP effectively.

2.0 Current situation and characteristics of Korean fisheries

(i) *The Status of coastal and offshore fishery resources*

The fishery resources, which used to be up to 10 million tonnes in the 1980s reduced to 7.9 million tonnes in 2004. If this trend persists, it is expected that fish stocks would be further reduced to 3.9 million tonnes in the next 10 years. With this decline in fish stocks, the total coastal and offshore catch that reached 1.6 million tonnes in the mid 1990s reduced to 1.15 million tonnes in 2007 (Figure 1). Especially in the 2000s, it was found that the share of adult fish in the catch declined by < 20 percent.

Figure 1. Annual change in coastal and offshore catch (1975-2007)

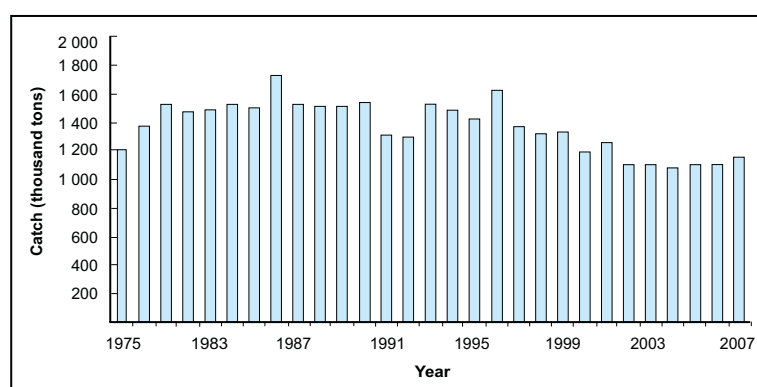
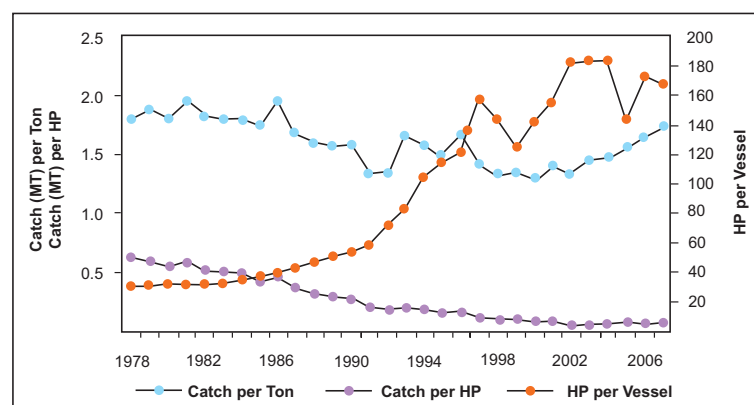


Figure 2. Trends in catch per tonne, catch per HP and HP per vessel (1978-2007)



This situation indicates that the reproductive capacity of fish stocks has drastically declined, which has not only aggravated the trend of decrease of fishery resources but has also increased the proportion of low-grade species in the catch.

Even though the fish stocks in the Korean coastal and offshore waters are declining, the level of fishing effort (hp per vessel) has continued to increase. Therefore, catch per unit effort (CPUE) in coastal and offshore fisheries is decreasing (Figure 2 on facing page). Furthermore, the catching ability of some offshore fisheries has already exceeded the biologically appropriate limits, which means that pressure on the fish stock is at a relatively high level.

(ii) Fisheries management system and measures

The Korean government has traditionally managed the fishing industry and fish stocks through technical measures such as closed time, closed area, mesh size regulation, etc. as well as input controls based on licensing system of fishing vessels and fisheries. In addition to these technical regulations and fishing effort control, the vessel buyback programme has been implemented since 1994, and since 1999 output control is also used by adopting the Total Allowable Catch (TAC) policy. Besides these fisheries management measures, fish stock enhancement programmes, such as artificial reef and fry releasing have been launched in order to increase both fishery resources and fishing income for offshore and coastal fisheries.

Licensing system and technical measures: Korea has restricted the number of fishers/ fishing vessels by limiting the number of licenses in offshore and coastal fisheries for conflict resolution and for balanced development of fisheries. In offshore fisheries, the limited licensing system was implemented for large otter trawl fisheries and diving fisheries in 1953 and for trawl, offshore angling and offshore gillnet fisheries in 1976. In coastal fisheries, the limited number was set for *Sukjo* net fisheries and *Yangjo* net fisheries in 1975 and after 1990s it was expanded to other coastal fisheries too. In addition, the tonnage of fishing vessels by fishery has been regulated for all offshore and coastal fisheries to restrict the total tonnage. Further, the government is also expanding and strengthening existing technical measures such as gear regulation and spatial and temporal closures.

Total allowable catch: The TAC was introduced in the revised Fisheries Law of December 30, 1995; the Fishery Resources Protectorate was revised on December 31, 1995; and the 'Regulations on the Management of Total Allowable Catch' was implemented on April 25, 1998. The TAC is determined in two phases: first, based on fish stock estimates by the National Fisheries Research & Development Institute (NFRDI), the TAC Council evaluates the annual TAC and the Central Fisheries Coordination Committee (CFCC) makes a final decision on the annual TAC and the norms for its management. Next, the Ministry for Food, Agriculture, Forestry and Fisheries (MFAFF) allocates annual TACs to cities and provinces. Each city or province then assigns 70 percent of the allocation to individual fishers keeping in view the tonnage of fishing vessels and the catch of previous three years. When more than 80 percent of the individual quota is spent, additional allocation or total distribution is done from the remaining 30 percent.

Initially, in 1999 the TAC was implemented for commercially valuable and vulnerable fish stocks such as mackerel, jack mackerel, sardine and red snow crab. By 2007, the number increased to 10 by adding snow crab, purplish washington clam, pen shell, spiny top shell, blue crab and the Japanese flying squid (Table 1).

Vessel buyback programme: Since its implementation in 1994, a total of 5 114 fishing vessels were bought back between 1994 and 2006, including 1 942 coastal fishing vessels and 3 172 offshore fishing vessels. The buy-back mainly covers such fishing vessels that are either engaged in excessive fishing and/ or are not competitive.

Table 1. TAC by species: 2003-2007

(unit: thousand metric tonnes)

	Mackerel	Jack mackerel	Sardine	Red snow crab	Snow crab	Purplish clam	Pen shell	Spiny top shell	Blue crab	Japanese flying squid	Total
2003	158.0	11.0	13.0	22.0	1.0	9.0	2.5	2.15	13.0	-	231.65
2004	155.0	10.0	5.0	22.0	1.0	8.0	2.5	2.15	13.0	-	218.65
2005	160.0	12.0	5.0	22.0	1.0	7.0	2.5	1.68	6.0	-	215.98
2006	155.0	19.0	5.0	24.5	1.0	5.1	2.44	1.63	4.0	-	217.67
2007	154.0	19.0	5.0	25.0	1.0	3.7	3.2	1.48	3.35	250.0	381.93

Source: NFRDI (2007), MIFAFF (2008)

Further, a plan to annually reduce the number of coastal and offshore vessels with relatively high fishing intensities was established and is currently being implemented, taking into consideration the changes in domestic and international fishing conditions and conditions of the fishery resources.

Fish stock enhancement programmes: The fish stock enhancement programme, comprises artificial reefs, a marine seaweed forest, marine ranching and a fry releasing programme. It is the second largest programme with an annual budget of US\$ 4.6 million in 2007. The initiatives under these programmes are as follows:

Artificial reef programme (circa 1971) – By 2007, artificial reefs have been installed in 202 141ha. The annual progress and the funds spent for the programme are shown in Table 2.

Marine seaweeds forest programme – The seaweed forests are important for the health of the ecosystem. Under this initiative, the government will set up marine seaweed forests on the east and south coasts over the next 10 years to improve marine habitat and productivity as well as for growing edible seaweed. About US\$ 281 million will be spent on this programme to grow 35 000 hectares of seaweed forests.

Table 2. Artificial reef programme: area and expense (2004-2007)

(unit: ha, US\$ million)

	2004	2005	2006	2007
Area	5 668	5 263	5 450	4 698
Expense	33.8	33.1	30.9	31.0

Source: MIFFAF(2008)

Table 3. Fry releasing programme: 2004-2007 (unit: thousand fish)

(unit: thousand fries, US\$ 1,000)

	2004		2005		2006		2007	
	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Total	100 670	8 101	92 267	8 958	128 359	10 624	84 728	15 954
Rock fish	999	299	2,787	783	1 586	674	7 701	2 286
Flounder	6 093	1 968	4 482	1 608	3 843	1 236	9 622	2 196
Black sea bream	1 988	499	2 967	562	2 598	514	5 214	1 202
Rock bream	909	348	1,045	520	2 183	867	2 694	780
Black rockfish	464	174	920	284	1 887	457	2 771	814
Sea cucumber	1059	253	1 532	358	4 310	997	2 243	558
Fleshy fawn	73,435	564	61 214	205	89 903	379	24 660	125
Abalone	3 415	2 885	3 856	2 913	3 516	3 122	5 003	4 111
Inland	6 724	716	8 744	932	12 541	1 433	10 973	1 730

Source: MIFFAF(2008)

Fry releasing programme (circa 1976) – This programme was implemented to enhance the recruitment of fishery resources, to increase catch limits through ranching, to increase the income of small-scale fishers in coastal fisheries and to promote the re-vitalization of fishing villages. Between 2004 and 2007, about 400 million fry of giant prawn, flatfish, abalone, and rockfish were released (Table 3 on facing page). The fry releasing programme continues to expand with the local autonomous system and it is expected to grow with the necessity of fish stock recovery.

Marine ranching programme - The marine ranching programme in Korea has been conducted at Tongyoung on the south coast, the Jeonnam archipelago and the East/West/Jeju coasts since 1998. It aims to improve marine habitats for increased production of fishery resources. The programme uses multiple networks and is based on the industry-university-institute partnership to establish optimum technical and model development. In particular, it involves four stages such as: (1) understanding the ecological properties and model setup, (2) improvement of habitat, (3) annexation of fish stocks and (4) operation and management of marine ranching activities.

The experience gained from the programme will be used in the development of coastal marine ranching plans as base models. The data and experience gained from large-scale marine ranching programme will also be utilized to promote implementation of small-scale marine ranching programmes in various coastal areas.

Community-based Fisheries Management (CBFM) – This programme was introduced in 2001 to overcome the drawbacks of state-controlled fisheries management (over fishing, limited human resource, dependency of fishers on state, etc.). Beginning with 63 fishing communities in 2001, the number of participating communities has expanded to 579 in 2007. In CBFM, the fishing community takes the responsibility of managing its fishery. In case of a dispute between communities, industries or regions, problems are voluntarily resolved through consultations and discussions. Further, the Fisheries Office has appointed a public fishing village guidance serviceman for each participating community to provide technical guidance and advice. In addition, private consultants are also hired for struggling or newly formed communities to provide customized education.

(iii) Limitations of conventional fisheries management system

As mentioned earlier, such diverse array of policies did not bring the desired results in the fisheries sector. The following are some of the reasons for this shortfall:

- Direct and indirect causes of depletion of fish stocks may include destruction of habitats by pollution of marine environment and the adverse impacts of climate changes and ecological changes.
- Due to geographical characteristics of fishing grounds, the joint management by adjacent nations was not carried out adequately.
- Conventional fishery management policies had the ultimate objective of arbitration between industries and maintenance of fishing order, failing to show the clear goal for resource recovery.
- Management policies based on the amount of resources were not available and strict management and control of fishing activities were rather ineffective. Because of 'multi-species/multi-fisheries' characteristics of coastal and offshore fisheries of Korea, there were limitations in establishing clear-cut policy management measures.
- Further, the failure to effectively prevent overfishing of small fishes due to mixed fishing is also considered as one of the causes of depletion of resources.



Korean fisheries in action.

Therefore, in order to recover over-fished fishery resources and improve fishing income through higher level of fishing intensity, it is of utmost importance to understand such multi-species/multi-fisheries relationships, to configure the objectives of recovery for individual fish species and to select fisheries management measures that can effectively achieve the objectives.

3.0 The establishment of ecosystem-based FSRP

(i) *The establishment of ecosystem-based FSRP: Background and concept*

The Korean government established the basic plan for the FSRP and its fisheries management policy in order to overcome the limitations of the conventional fisheries management policy and to ensure recovery of the resources within its Exclusive Economic Zone (EEZ). This was all the more necessary since the Korea-Japan/Korea-China Fishing Agreements set up under the UN Convention on the Law of the Sea had also come into effect. Under the new EEZ regime, the Korean government has begun to genuinely acknowledge the necessity of policies for management and recovery of individual species to manage all fish species and achieve sustainable and economically viable fisheries.

Further, as CBFM developed since 2001, fisher communities started to recognize the importance of stock management and recovery, and voluntary participation of fishers in establishing necessary fisheries management policy was systematized. It has also focussed on the need for recovery of depleted individual fish species through the joint efforts of fishers and the government. This situation also enabled the FSRP to be established and implemented with high level political support.

FSRP is a comprehensive plan to rebuild fish stocks that are excessively exploited to a target level within a certain period of time. More specifically, the policy aims to increase the level of fish stocks from the current level to a target level within a rebuilding period. Therefore, it consists of a series of specific and scientific fish stock management programmes including selecting the most effective fisheries management measures as well as implementing any necessary management support.

(ii) *Management objectives of ecosystem-based FSRP*

The overall objective of the ecosystem-based FSRP and its fisheries management policy is to enhance the total fish stocks to the level of 10 million tonnes by 2015 in order to maintain the stable catch limit of 1.3 million tonnes annually in offshore and coastal fisheries. It is expected that this would allow sustaining the optimum quantity of fishery resources in the Korean offshore and coastal waters.

(iii) *Action plans of FSRP*

In specific FSRP, the management and recovery of fishery resources are attempted by dividing them to recovery target fish and management target fish with consideration of stock condition by species of fish. That is, for species whose stock has drastically decreased, a stock rebuilding plan is set up and promoted, while a management plan is set up and promoted for species that is not so depleted. The selection of species for stock rebuilding and the target quantity of recovery are supposed to be determined through a series of steps based on the condition of fishery and biological resources in offshore and coastal seas; examining applicable materials and recovery target fish; classifying fish to recovery target fish and management target fish; and setting the target quantity of recovery for each stage.

The selection and management of recovery target species: The only information available to evaluate the state of fish stock by species is the annual fish catch for most of the species. To achieve this, a three-year moving average of the fishery-related data was analyzed (after Garibaldi and Caddy, 2004). If the current level of

catch is less than 20 percent of the maximum value of moving average, it is categorized as a depleted resource. More specifically, from the fisheries production statistical data, the three-year moving average values between 1990 and 2004 (15 years) were calculated for 93 classified species excluding those classified as marine algae and others. With the highest moving average value as a base, the levels of fishery as of 2004 were evaluated.

From the first analysis, the species for which production declined by ≥ 30 percent were selected as recovery target species. Meanwhile, since fish stocks considerably decreased before the 1990s, the data from the first analysis could not properly reflect the state of the stocks for the concerned fish species. Therefore, the fluctuations in trends of catch by species of fish were also analyzed to add more recovery target species. Thus, with consideration of the characteristics in the fluctuation trends of catch, they were divided into (i) increasing, (ii) stable, (iii) fluctuating, (iv) decreasing after increasing, (v) decreasing, (vi) low, and (vii) very low. Finally, the species of fish under categories (v), (vi), and (vii) were selected as recovery target species. Among the species excluded from recovery target species, the levels of fish stock that are (i) increasing, (ii) stable, and (iii) fluctuating were selected as management target species.

Setting the target volume for each stage: In setting the recovery target volume for recovery species and management species of fish stocks, the aforementioned method used by Garibaldi and Caddy (2004) was applied again to evaluate and determine the current level of fishing with the highest three-year moving average between 1990 and 2004 as a base value. The recovery target volume in particular was determined for mid-term (by 2012) and long-term (2017) plans.

Since stable stock recovery is needed for depleted fishery resources, the mid-term objective is to increase by 10 percent of the current level as a stage to create the foundation for recovery. The long-term objective is to rebuild fish stocks to a stable level and maintain consistent fishing through efficient management, and its target is set to increase by 30 percent of the current level. The mid- and long-term target volumes are set with a premise that policy efforts are to be made for future stock enhancement through efficient resource management, fish stock enhancement and environmental improvement of fishing grounds. Therefore, in the mid-term plan, more efforts are focused on the expansion and management of fish stocks rather than substantially increasing catch limits in a relatively short period of time. The long-term plan aims to increase fish stocks through stock enhancement programmes.

However, as seen from above, in setting mid-and long-term target numbers the ecological and resource-dynamic characteristics for individual fish species are often overlooked. Therefore, in addition to the first target volume estimated from the analysis of fishing activities, an amount of possible recovery for each rebuilding period was estimated with additional consideration of stock parameters (growth, maturity, lifespan, natural mortality, and generation time) by species. Based on this, the mid-term (by 2012) and long-term (by 2017) recovery target volume was determined as shown in Table 4.

Table 4. Mid and long-term recovery target volume (unit: metric tonnes)

	Current Catch (2004)	Mid-term Targets (2012)	Long-term Targets (2017)
Recovery Target Species (40 species)	169 467	219 480	294 490
Management Target Species (40 species)	827 591	912 020	999 220
Others	79 629	81 310	183 960
Total	1 076 687	1 212 810	1 477 670

Source: MOMAF(2005)

FSRP operational plan by stage: It is impossible to establish and promote the FSRP for all recovery target and management target species under the current policy conditions, which include insufficient scientific research and review system of fishery resources and lack of fish stock management organizations in local governments. Therefore, establishment of a system for operation of the ecosystem- based FSRP will first allow the mid-term goal to be achieved and then the expansion and settlement in the long-term period can raise the effectiveness of the policy.

The operational objectives and promotional strategies for each FSRP stages are: Stage 1 - mid-term and long-term basic planning (2005); Stage 2 - establishment of fish stock recovery system through a pilot programme of fish stock recovery (2006-2010); Stage 3 - settlement of fish stock recovery system through unidirectional expansion of the ecosystem-based FSRP (2011-2015) (Table 5). Also, in order to reach the set target volume, a pilot project, reinforcement of fish stock research and evaluation by species, and pre- and post-management for fisheries management measures will also be executed step-by-step.

Pilot projects: The significance of a pilot project before the promotion of the FSRP is to minimize trials and errors and to secure solid implementation of the FSRP policies. In addition, it aims to increase efficiency of the policy by developing and proposing a management model which represents the characteristics by sea area, fish species and type of fisheries. To expect ripple effects, the pilot projects need to be extended to other areas too.

The criteria for selection of fish species for the pilot projects include: first, among recovery target species, those that can be considered for development of a management model which can accommodate different characteristics by sea area, species and type of fisheries and that can be included in the annual extension of the FSRP through pilot projects; second, species with high feasibility of monitoring and acquiring the information needed for fisheries management as well as economic efficiency and artificial propagation; third, the species that can provide ecological information for target fish stock; and, fourth, species that allow participating fishers to form a cooperative system and an autonomous management organization.

Table 5. FSRP operational plan by stage

	Operational objectives	Enforcement strategies
Stage 1 (2005)	Establishment of Basic Mid and Long-term FSRPs and Institutional Improvement	[Establishment of a Master Plan] <ul style="list-style-type: none"> - Institutional improvement for implementing FSRP, including enactment of new 'Fisheries Management Act' - Establishment of annual mid and long-term FSRP - Establishment of fisheries management system and assignment of roles for government and fishermen - Selection of species for pilot projects and establishment of FSRPs
Stage 2 (2006-2010)	Implementation of FSRPs for Species	[Mid-term Plan] <ul style="list-style-type: none"> - Establishment of targets that maintain a total catch at 1.2million tonnes - Implementing pilot projects for 7 species by 2007 - Establishment and implementation of FSRPs for 29 species by 2010
Stage 3 (2011-2015)	Settlement of FSRP-based Fisheries Management System	[Long-term Plan] <ul style="list-style-type: none"> - Achievement of targets that sustain a total catch at 1.5million tonnes - Establishment and implementation of FSRPs for 40 species for rebuilding - Transition from establishment of species-based FSRPs to ecosystem-based FSRPs - Review and revision of FSRPs

Source: MOMAF (2005)

Based on these criteria, for the 2006 Pilot Project, *Haliotis japonica* in Jeju area, *red crabs* in West Sea, *octopus* in South Sea, and *sandfish* in East Sea were selected. Thus, since 2006, a pilot project with these species has been promoted based on a basic plan (Table 6) on specific management target sea area for individual species, target limit of catch, rebuilding period and specific recovery measures.

Table 6. A plan of pilot projects

	Blue crab	Sandfish	Octopus	Tokobushi abalone
Sea area	West sea	East sea	South sea	Jeju Island
Species	Crustacean	Fish	Cephalopod	Shellfish
Types of Fisheries	Coastal and offshore gill nets, coastal traps, coastal stow nets	Eastern sea trawl and Danish seine, Coastal gill nets	Coastal longline and traps, West southern Danish seine	Diving
Management Body	MIFAFF	MIFAFF	Local government	Local government
Characteristics of Species	International management needed	Coastal and Offshore Migratory	Coastal sedentary	Coastal sedentary
Current Management Measures	Closed seasons and TAC	Size limit (under 10cm)	-	Size limit and closed seasons
Targets (2004 - 2015)	2 683 - 8 100 tonnes	2 472 - 3 100 tonnes	7 023 - 11 000 tonnes	19 - 100 tonnes
Rebuilding Measures	Adjustment of closed seasons, MPA, fry-releasing programme	Adjustment of size limit and MPA	Protection of habitats and control illegal fishing	Adjustment of size limit and fry-releasing programme

Source: MOMAF(2005)

(iv) Management and operation system of ecosystem-based FSRP

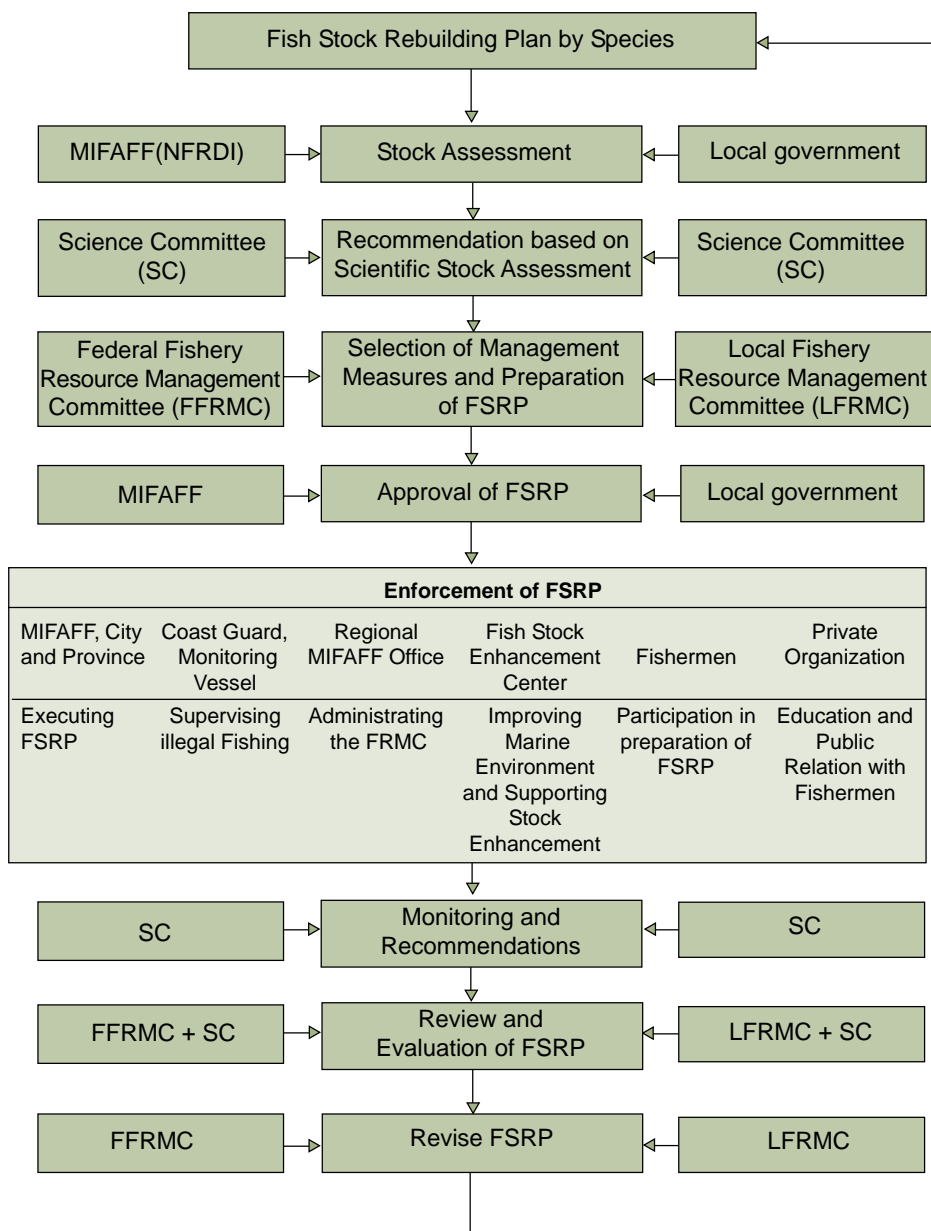
Unlike the former government-oriented fisheries management system, under the FSRP the roles and functions are efficiently distributed among central government, local governments, research institutes and fishers. Furthermore, a Science Committee (SC) and a Fishery Resource Management Committee (FRMC) were organized for joint participation and role assignments of stakeholders. The SC consisting of experts from diverse areas (resources, ecology, statistics, etc.) works to establish and promote a recovery plan based on various information collected from different scientific areas and makes suggestions for rebuilding fish stock based on scientific evidences. It is planned to carry out the operation of the plan in four zones – East Sea, West Sea, South Sea and Jeju Island and making a committee for each sea zone.

The FRMC is in charge of an intensive management of recovery target species and comprises 10 members representing the government, academics and fishers involved with the target species. It is housed in MIFAFF. The Federal Fishery Resource Management Committees (FFRMC) supervises commercial species and migratory species and the Local Fishery Resource Management Committees (LFRMC) supervises the coastal sedentary species. The overall operational system of the ecosystem based FSRP and the functions of each facility are as shown in Figure 3.

(v) Characteristics of Korean FSRP

The main characteristics of the FSRP are as follows:

- It is based on a holistic ecosystem-based approach as a policy framework at the national level.

Figure 3. Management and operation system of FSRP

- Unlike the conventional fisheries management policy, FSRP specifies the target fish stock recovery in the policy.
- Further, FSRP specifies type and content of a fishery management measure based on detailed scientific diagnosis.
- Under the conventional fisheries management system, the policies were established by the central government, restricting the participation of fishers. The FSRP promotes voluntary participation of fishers in setting up and executing the plan as well as making them responsible for the outcome.
- The FSRP requires analysis on management measures by species of fish, type of fisheries and sea area before and after an operation so that the fisheries management measures can be utilized more effectively.

- Unlike other nations, recovery of fishery resources is not only promoted through direct restrictions (or entire suspension of fisheries for fast recovery of resources) on fishing activities. Instead, while maintaining fishing activities through restrictions on individual fishery, the system allows effective and quick recovery of resources. As a result, fishing business can be maintained with relative stability while promoting resource recovery at the same time.
- Another characteristic of the Korean FSRP is that it promotes voluntary participation of fishers by connecting them with CBFM. In this system, fisher communities make voluntary decisions to manage and use available resources. Resultantly, efficacy of the FSRP improves.

4.0 Biological and economic effectiveness of FSRP

(i) *Biological and economic benefits of ecosystem-based FSRP*

It is difficult to clearly describe the effects of ecosystem-based FSRP conducted since 2006. So far 7 FSRPs are being implemented. These include sandfish, blue crab, octopus and *Tokobushi* abalone in 2006 and skate ray, cod and yellow croaker in 2007. Comparing the catch in 2004 and 2007 (Table 7), the landings of most of the species have increased. Though such increase in the catch cannot be directly correlated with the FSRPs, probably the control of fishing effort, protection of spawning grounds and active stock enhancement programmes have together contributed to the success of the programme.

Table 7. Biological and economic effectiveness

(unit: M/T, US\$ million)

Species	2004 Catch	2007 Catch	2012 Target Catch	Recovered Volume	Price (US\$/kg)	Increase in Fishing Revenue
Sandfish	2 472	3 767	4 000	1 528	2.24	3.4
Blue crab	2 683	13 606	14 000	11 317	7.98	90.3
Octopus	7 023	6 625	11 000	3 977	11.82	47.0
Tokobushi Abalone	19	62	200	181	24.57	4.4
Skate Ray	259	375	500	241	11.67	2.8
Cod	2 641	7 533	8 000	5 359	2.69	14.4
Yellow Croaker	17 570	34,221	35 000	17 430	3.34	58.2
Total	32 667	66 189	72 700	40 033		220.5

Due to data gaps on economic parameters, the increase in fishing income from resource recovery was based on simple analysis. Once the 2004 catch is subtracted from the objective amount of catch for the mid-term (2012), the recovery figures during the period can be calculated. Once this increment in catch is multiplied by the average market price, the annual increase in fishing income for each species can be calculated. Based on this analysis, the annual fishing income increase has varied from 2.8 million USD to 90.3 million USD by species.

(ii) *Case studies*

Case 1: Sandfish ecosystem-based FSRP

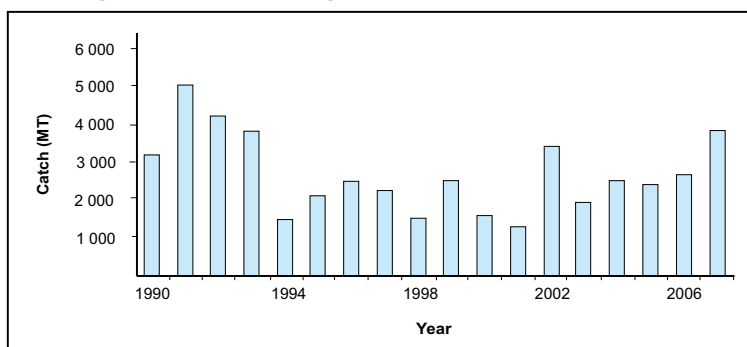
Sandfish was selected as the target of ecosystem-based FSRP for the East Sea region of Korea in 2006 because of large reduction in its landings due to destruction of spawning grounds and overfishing of both adults and juveniles. As shown in Figure 4, the amount of sandfish catch in early 1990s was about 5 000 tonnes but was reduced to about 2 500 tonnes by 2004.

While sandfish is being caught by various fisheries, the main fishing is done by East-sea trawl and coastal gill-net fisheries. The FSRP for sandfish required resolution of disputes between fisheries and settlement of means to recover the resource through natural scientific resource investigations. Looking at the accomplishments of ecosystem-based FSRP for sandfish, the SC performed investigations on the amount of available resource, selection of protected spawning grounds, TAC and adjustment of gill-net size to 53mm or larger. Also, a FRMC composed of 16 management and operating system supervisors was formed to hold field presentations and discussions, actively performing policy promotion activities.

To induce active and voluntary participation of fishers, an agreement was concluded with fisher organizations to form community-based management associations. Voluntary agreements by fishers included amount of fishing gear by vessel, limitation on trip days of fishing and establishment of spawning protection regions. Active participation of fishers on the recommendations of the SC was also discussed.

As a result of FSRP for sandfish, fisheries compliance markedly improved. The amount of catch also began to increase in 2006 to reach 3 769 tonnes in 2007, which shows 52 percent increase compared to 2004 (Figure 4). The CPUE per vessel also increased from 0.44 tonnes in 2004 to 0.78 tonnes in 2007, showing a recovering trend of the resource.

Figure 4. Annual change in sandfish catch (1990-2007)



Case 2: Blue crab ecosystem based FSRP

With a peak of 32 000 tonnes in 1988, the blue crab catch was reduced to about 2 700 tonnes by 2004. Accordingly, blue crab was suggested as a species that required resource recovery and included under the ecosystem-based FSRP in the West Sea region of Korea since 2006. After setting up of FSRP, self management communities agreed to voluntarily adhere to the use of specified fishing tools with appropriate sizes, observance of fishing prohibition periods and voluntary control of unlawful fishers. A fry releasing programme was also expanded to recover the blue crab resource and 909 000 blue crabs were released during 2006-2007. Resultantly, by 2006 the blue crab catch increased to 6 900 tonnes and reached 13 600 tonnes in 2007. The SC is currently investigating the resource condition of blue crab according to changes in catch and is planning to accurately estimate the stock biomass and catch changes in the future. Based on accurate estimation, the committee will continue to implement measures necessary to further recover the resource.

(iii) Some challenges

Given the short duration of its implementation, efficacy of the FSRP is yet inconclusive. However, there are positive signs considering better compliance levels, complementing scientific investigations and increasing catch. However, there are several challenges in enforcement of the ecosystem-based FSRP pilot projects. Such challenges can be summarized as follows:

First, the lack of necessary data brings limitations in establishment of plans to maximize resource recovery. In addition, the number of species that can be evaluated is limited, resulting in limitation on expansion of plans. Accordingly, investigations and data collection on resources, environment, ecology and production must be expanded to accurately and comprehensively examine various causes of reduction and depletion in fishery resources.

Second, the current ecosystem-based FSRP emphasizes policies that reduce fishing pressure and increase resources; they tend to neglect reclamation projects, ocean bottom sand gathering businesses and waste (garbage) disposal that can contaminate the coastal fishing grounds. Although the departments that enforce such matters differ, related enforcement departments must mutually cooperate to maximize the efficacy of resource recovery plans.

Third, the effects of ecosystem-based FSRP for individual species on other related species must also be taken into consideration. Further, to accomplish recovery of overall fishery resources, ecosystem-based FSRP must gradually be established.

Fourth, restrictions on fisheries with development of ecosystem-based FSRP may cause losses in fishing income during the recovery period and set limitations on active and voluntary participation by fishers. Accordingly, measures to support fishers through stabilization of fishing business during such recovery periods must be considered in order to induce active participation (for example, support for reduction in fishing effort such as limitation on the number of fishing days and suspension system, improvement of fishing grounds for selective fishing of small-sized fishes and avoidance of mixed fishing, aids for expenses on disposition of fishing gear, and support system on training of fishers).

Fifth, major coastal and offshore species of Korea are jointly harvested in the EEZ of East Sea, West Sea and South Sea by Korea, China and Japan. Therefore, operation of ecosystem-based FSRP only by Korea cannot obtain complete efficacy in resource recovery. A joint regional fisheries management system between Korea, China and Japan must be established in the future for success of large marine ecosystem-based FSRP between adjacent nations.

5.0 Conclusion

The newly established ecosystem-based FSRP and its fisheries management policy is meaningful as it helps in overcoming the limitations of the conventional fisheries management policy. It is also helpful in changing the policy focus by shifting the objective of fisheries management from maintenance of fishery order or fishery adjustment to fish stock recovery. Establishment of ecosystem-based FSRP that can more effectively and quickly recover the fishery resources through controlling of individual resources is also meaningful. Furthermore, preparation of a new management system for recovery of fishery resources and promotion of participation of fishers by connecting with traditional self management fisheries can also be considered as important. This new fisheries management policy could also meet the obligations of international obligations including the 1995 FAO Code of Conduct for Responsible Fisheries. Thus the new policy is expected to make strong contributions to the management and rebuilding of domestic fish stocks in Korea.

The new ecosystem-based FSRP is showing an increase in amount of catch and corresponding economic benefits through pilot projects. However, it is yet to improve many aspects including a system of research and evaluation of fish stocks, scientific analysis of the effects of the fisheries management measures, a management system involving active participations of fishers, and the implementation of fisher's support system. Also, there are many who voice their concerns on the achievements of the fixed mid-term and long-term target numbers.

The need of the hour is not to make hasty conclusions on the FSRP and its management system, but to address the concerns that can be overcome and in the process strengthen the policy and promote sustainable development of fisheries in the country. Another important requirement is to ensure that success in stock rebuilding would need regional cooperation, especially with neighbouring countries like Japan and China since they together with Korea share the resources in the EEZ. Therefore, if an ecosystem-based FSRP is established and effectively implemented jointly by Korea and Japan for migratory and straddling fish stocks, the effort to recover fish stocks in offshore and coastal seas around Korea could be maximized. Finally, the current FSRP, which is operated by species, should be gradually expanded to encompass the whole ecosystem so then it can more effectively manage and rebuild fish stocks for all species of fish in both offshore and coastal waters of Korea.

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Annexure 14

Closing Speech

Sandra Victoria R Arcamo

Bureau of Fisheries & Aquatic Resources, Philippines

Good morning!

I would like to thank you all for giving me this opportunity to present Philippine's experience on the possible application of Japanese community-based fisheries resource management in our country. I hope you picked up some lesson from our experience.

The Philippines and Indonesia share common Fisheries Resource Management (FRM) situation: issues on resources, governance, etc., since our countries are similar in environmental conditions, though they differ in size (area).

We have been collaborating quite often, as neighbours in FRM, fishing agreements and other fishing related matters. We hope such collaboration would continue in the years to come and we would benefit from each other's strengths.

At this point, I wish you good luck on your endeavors to improve FRM and empower the fisheries cooperatives in your country.





Annexure 15

Closing Speech

Yugraj Singh Yadava

Director, BOBP-IGO

Ladies and gentlemen!

On behalf of the Organizers of this Seminar and my fellow speakers and advisors, Dr Sandra Victoria Arcamo, Dr Jun-Ichiro Okamoto, Dr (Prof) Mulyono Baskoro, Dr Gelwynn Daniel Hamza Yusuf, Mr Shidiq Moeslim, Mr Park Kwang-Bum and Mr Masaaki Sato, I would like to thank the Ministry of Agriculture, Forestry and Fisheries (MAFF), Government of Japan and the International Fisheries Cooperative Organization (ICFO) for inviting us to this Seminar in Jakarta City and to *Induk Koperasi Perikanan Indonesia* (IKPI) for facilitating our stay and providing excellent hospitality. The visit to the beautiful Thousand Islands and interaction with the local fisher community was an added bonus to our visit to Indonesia.

Personally, I have been more benefitted by participating in this Training Project. As some of you may recall, I along with Mr Masaaki Sato had also visited Indonesia during Phase One activities in October 2009. These two visits have given me the opportunity to meet and interact with a large number of people representing fisheries cooperative sector, government and industry. I found the interactions to be extremely useful, and I am confident that the fisheries sector in Indonesia is progressing in the right direction.

I would also like to compliment IKPI for bringing together a large number of representatives from different provinces of Indonesia to the Seminar. This large participation not only shows the interest of IKPI in enhancing the skills and capacities of the cooperatives but also the participants own interest in sustainable development of the fisheries sector. I would like to thank all the participants for their cooperation and collective action in adopting the 'Jakarta Declaration', which I feel would strengthen your hands in making Indonesia a leader in fisheries and aquaculture and also helping the government in realizing its vision and mission of increasing fish production under the national movement or '*Minapolitan*'.

I would also like to place on record my sincere thanks to the Government of Japan for funding this Training Project and to the ICFO and IKPI for successfully implementing it in Indonesia. I would urge upon all of you to further disseminate the knowledge and experience gained through this Seminar for the development of fisheries and aquaculture in Indonesia. On behalf of the resource persons and advisors, I would also reiterate our commitment to provide technical support in promotion of community-based fisheries resource management in Indonesia.

In conclusion, I would like to wish you all safe return to your families and friends.

Thank you!





Annexure 16

Closing Speech

Park Kwang-Bum

Secretary, ICFO

On behalf of the ICFO, I would like to express my gratitude to Dr Y S Yadava and to his Organization for the excellent contributions and support to this Training Project. I am fully convinced that he has played a crucial role in the success of the implementation of the Project and the results will be commendable in Indonesia. Dr Yadava, who is also the main advisor to the Project, deserves a special mention for his whole-hearted cooperation and support to this Training Project from the very beginning. Without his cooperation, the Project would not have achieved such a good success.

I also extend my special thanks to Mr Wibisono Wiyono, President of IKPI and his staff Mr Hardadi Lukito and others for their support and cooperation in implementation of the Project.

Further, I would like to thank the lecturers, Dr Jun-ichiro Okamoto, Dr Mulyono Sumitro Baskoro, Dr Sandra Victoria Arcamo, Dr Gellwynn Daniel Hamzah and Dr Shiddiq Moeslim.

I believe that this Seminar including the past three seminars held under this training Project would be an impetus to develop Indonesian fisheries based on community-based fishery resource management. As you know well, the world's fish stocks have been declining continuously over the years. According to the Food and Agriculture Organization of the United Nations (FAO), more than 75 percent of the world's major fish stocks have been either fully or over-exploited. Now it is time to protect and manage the fishery resources for the sustainable development of fisheries.

From this standpoint, the ICFO proposes to highlight fishery resource management in the Project so that fishermen are encouraged to tackle the issues related to fishery resources management.

I sincerely hope that the 'Jakarta Declaration' is distributed widely and used by all those concerned for furthering the intent and objectives of the Declaration. I also hope that the intent and objectives of the Declaration are included in future fisheries policies and programmes in order to help develop the fisheries sector in Indonesia.





Annexure 17

Closing Speech

Wibisono Wiyono

President, National Federation of Indonesian Fishermen's Cooperative Societies
(*Induk Koperasi Perikanan Indonesia–IKPI*)

Asalamualaikum Warohmatullohi Wa barokatuh.

First of all, I would like to thank our lecturers, Dr Yadava, Dr Okamoto, Mr Park, Dr Sandra and our important colleague from JF-Zengyoren, Mr Masaaki Sato.

I would also like to thank all the participants for their participation and valuable contributions to the Seminar for 'Promotion of Community-based Fishery Resource Management in Indonesia'. The participants also deserve special thanks for their patience, dedication and commitment during the Seminar, which has concluded with the very important 'Jakarta Declaration'.

The 'Jakarta Declaration', which contains the recommendations and resolutions made in the Seminar, focuses on issues of fishery resource management, fisheries cooperatives and community aspects related to the promotion of fisheries sector. It also provides guidance for implementing fishery resource management within the community. The recommendations are important for all stakeholders, including fishers, public and private sector, cooperatives, research institutions, universities and all those who are associated in one or the way with the fisheries resource management.

Dear Participants, we have to give our best efforts to cooperate and synergize our potential to implement the recommendations. We have to also make efforts to involve as many parties as possible so that the spirit of promoting community-based fishery resource management can be widely promoted and implemented in all the Provinces of the country. In essence, we need unity and cooperation to succeed this mission.

I would like to once again thank the Ministry of Agriculture, Forestry and Fisheries of the Government of Japan, the ICFO, JF-ZENGYOREN and the BOBP-IGO for their contribution and support to the organization of this Seminar in Indonesia. We feel that many benefits have accrued from this Seminar such as sharing of experiences and ideas from different resources and backgrounds. We do hope that through this Seminar, we can further intensify our collaboration and cooperation.

I must not forget to admit that as a host organization of the Seminar, we would have inadvertently committed some mistakes and put you in inconvenience. I apologize for this.

Finally, I would like to say good bye to all of you. May you have safe journey back home and convey my warm regards to your families.

Thank you, and Wassalamu'alaikum Wr. Wb.





Annexure 18

Abbreviations and Acronyms

ARs	Artificial Reefs
BFAR	Bureau of Fisheries and Aquatic Resources (Philippines)
BOBP-IGO	Bay of Bengal Programme Inter-Governmental Organisation
CBCRM	Community-based Coastal Resources Management
CCRF	Code of Conduct for Responsible Fisheries
CFCC	Central Fisheries Coordination Committee
CPUE	Catch Per Unit Effort
CRM	Coastal Resources Management
CRMP	Coastal Resources Management Programme
CSME	Cooperative & Small and Medium-scale Enterprises
DA	Department of Agriculture (Philippines)
DOF	Department of Fisheries
DEKOPIN	<i>Dewan Koperasi Indonesia</i>
DKP	<i>Departemen Kelautan dan Perikanan</i>
EEZ	Exclusive Economic Zone
EIA	Environment Impact Assessment
FAO	Food and Agriculture Organization of the United Nations
FARMC	Fisheries and Aquatic Management Council
FCA	Fisheries Co-operative Association
FCC	Fisheries Coordination Committee
FMO	Fisheries Management Organization
FRM	Fisheries Resource Management
FRP	Fibre-Reinforced Plastic
FSRP	Fish Stock Re-building Plan
IBM	In-board Motor
ICA	International Cooperative Alliance
ICFO	International Cooperative Fisheries Organization
IEC	Information, Education and Communication
IKPI	<i>Induk Koperasi Perikanan Indonesia</i>
IUU	Illegal, Unreported and Unregulated
JF-ZENGYOREN	National Federation of Fisheries Co-operative Associations
JSM	Japanese Spanish Mackerel
LGU	Local Government Unit
LIPI	<i>Lembaga Ilmu Pengetahuan Indonesia</i>
MAFF	Ministry of Agriculture, Forestry and Fisheries
MCS	Monitoring, Control and Surveillance
MIFFAF	Ministry of Food, Agriculture, Forestry and Fisheries
MMAF	Ministry of Marine Affairs and Fisheries
MPA	Marine Protected Area
MSY	Maximum Sustainable Yield
NFRDI	National Fisheries Research & Development Institute
OBM	Out-board motors
RFCC	Regional Fisheries Co-ordination Committee
RRP	Resource Recovery Plan
TAC	Total Allowable Catch
TAE	Total Allowable Effort
TPI	<i>Tempat Pelelangan Ikan</i>
SWOT	Strength, Weakness, Opportunity, Threat
UNCLOS	United Nations Convention on the Law of the Sea
VMS	Vessel Monitoring System

