

**On-Site Training and Awareness Raising on the Integration of Fisheries
Management and Habitat Management and the Management of Fishing Capacity**

Myeik district, Myanmar

3-5 March 2011



reported by

Dr. Aung Naing Oo

Southeast Asian Fisheries Development Center

The Secretariat

Supported by Swedish International Development Cooperation Agency (Sida)

in collaboration with

Department of Fisheries, Myanmar

SEC/SP/132

June 2011

PREPARATION AND DISTRIBUTION OF THIS DOCUMENT

Report of the On-Site Training and Awareness Raising on the Integration of Fisheries and Habitat Management and the Management of Fishing Capacity, Myeik district, Myanmar, 3-5 March 2011 was prepared by the Secretariat of Southeast Asian Fisheries Development Center (SEAFDEC). The document is distributed to participants of the meeting, SEAFDEC Member Countries, SEAFDEC Departments and concerned institutions.

BIBLIGRAPHIC CITATION

SEAFDEC. 2011. Report of the On-Site Training and Awareness Raising on the Integration of Fisheries and Habitat Management and the Management of Fishing Capacity, Myeik district, Myanmar, 3-5 March 2011, Southeast Asian Fisheries Development Center. 59 pp.

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ACKNOWLEDGEMENT

The On-Site Training and Awareness Raising on the Integration of Fisheries and Habitat Management and the Management of Fishing Capacity, which was held in Myeik district, Myanmar from 3 to 5 March 2011, co-hosted by the Southeast Asian Fisheries Development Center (SEAFDEC) in collaboration with the Department of Fisheries, Myanmar, with support by the Swedish International Development Cooperation Agency (Sida).

We sincerely thank all resource persons for their valuable information share to participants. Also, we would like to extend our gratitude to all participants including representatives from Thailand for their contribution during the Training.

We would like to extend sincere thank to staff of Department of Fisheries, Myanmar, under supervision by Mr. Win Myint Maung (SEAFDEC National Coordinator) and Mr. Nyunt Win (SEAFDEC-Sida project focal point) for their supporting and coordinating for the Training. We also would like to thank to the staff of the Myeik Regional Fisheries Office (Taninthayi Region), in particular to Mr. Hla Tun for their hospitality and assistance in the arrangement of the Training.

We wish to convey the appreciation to Dr. Aung Naing Oo¹, who served as the Member of the Regional Fisheries Policy Network (RFPN) for Myanmar based in SEAFDEC/Secretariat, Bangkok, Thailand for completing this report and his support and assistance during the conduct of the Training.

SEAFDEC-Sida project

¹ Dr. Aung Naing Oo served as the Regional Fisheries Policy Network for Myanmar from July 2010 to June 2011

Report of the “On-Site Training and Awareness Raising on the Integration of Fisheries and Habitat Management and the Management of Fishing Capacity”

3-5 March 2011, Myeik district, Myanmar

I. INTRODUCTION

1. The ‘On-Site Training and Awareness Raising on the Integration of Fisheries and Habitat Management and the Management of Fishing Capacity’ was organized from 3 to 5 March 2011, in Myeik district, Myanmar. The On-Site training was organized by SEAFDEC-Sida Project, in collaboration with Department of Fisheries, Myanmar and the BOBLME Project. The On-site training was mainly aimed to provide information and to raise awareness and capacity building on the Integration of fisheries management and habitat management and the institutional responsibilities. Another important objective is to provide information and to raise awareness and capacity building on establishing MCS Network, fishing vessel record, port monitoring.

2. Attended by participants from the Department of Fisheries and officers from other ministries such as Forest Department, General Administrative Department, Marine Department from Myeik University, Zoology Department from Myeik University and Myanmar Fisheries Federation, local fishers from both in-shore and off-shore fisheries as well as delegates from Thailand and SEAFDEC officials. Eleven resource persons delivered and shared their knowledge to the participants during the On-site training/Workshop. The list of participants appears in **Annex 1**.

3. The Welcome remark delivered by Mr. Aung Myint, Head of the State, General Administrative Department, Myeik District, Tanintharyi Region, Myanmar. He welcomed distinguished guests and all participants to the meeting and presented the development status of the fisheries sector of Tanintharyi region. He emphasized that local departments and organizations need to work together to maintain and safeguard the fisheries resources in order to sustain the development of fisheries. He informed the meeting that this workshop gave the opportunities for discussion on fisheries management and on the conservation of fisheries resources for concerned parties to achieve a balanced development of the fisheries industry in the Myeik Archipelago region. His Welcome Remark appears as **Annex 2**.

4. After that, Mr. Kyaw Myo Win, the Deputy Director General of DOF, Myanmar and Alternate Council Director of SEAFDEC for Myanmar delivered the opening remarks to the meeting. He expressed his gratitude and thanks to SEAFDEC and SEAFDEC-Sida project for organizing this event. He requested other agencies to work together with Department of Fisheries for marine resources conservation matters and urged the resources persons and participants to well participate in the discussion. He expected that this workshop will provide lots of information on ecosystem, fisheries laws and regulation, MCS measures, and information on trans-boundary and highly migratory fish species which are beneficial for the development of fisheries industry not only for Tanintharyi region, Myanmar but for the whole sub-region of Andaman Sea. His opening remark appears as **Annex 3**.

5. Then, Dr. Magnus Torell, Senior Advisor to SEAFDEC gave the introductory remark. He welcomed honorable guests, resources persons and all participants to the on-site training and thanked the DOF, Myanmar for well organized preparations of this information sharing event. He informed the meeting that this workshop will look at ways to enhance local abilities, the monitoring, record and control of fishing capacity including the status of small scale coastal fisheries. Furthermore, this event is an opportunity to facilitate the improved understanding amongst participants, government agencies, local knowledge and local organizations. He hoped this workshop would be instrumental in showing directions and steps to take to establish good practices and cooperation among Central government, local government, local communities, stakeholders, experts and the local fisher-folks in promotion of sustainable fisheries and responsible fishing activities at local level, national level, sub-regional and regional level. His Introductory remark appears as **Annex 4**.

II. BACKGROUND AND INTRODUCTION OF THE ON-SITE TRAINING

6. Dr. Aung Naing Oo, the Regional Fisheries Policy Network for Myanmar presented the background of this Workshop. He highlighted that the objectives of the On-site training were mainly to provide information and rising awareness and capacity building on the Integration of fisheries management and habitat management and capacity building on establishing MCS Network, fishing vessel record, port monitoring as appears in **Annex 5**. He then informed on the agenda for the On-site training/workshop. The Agenda was divided into two parts one part with lectures in the Meeting room and the other part being a one-day field trip. After the introduction the participants to the On-site Training/Workshop adopted the agenda as appears in **Annex 6**.

III. PRESENTATIONS BY RESOURCE PERSONS

7. After the opening session information related to fisheries and habitat management and management of fishing capacity were provided by resource persons. Summaries of each presentation are provided below. The participants were actively involved in the discussions and “questions and answers sessions”, thus, sharing their experiences and points of view based on their knowledge on fisheries management and habitat management.

8. Mr. Myint Pe, Assistant Director, Department of Fisheries expressed the importance of ecosystem and habitats to fisheries (mangrove forest, coral reef and seagrass beds) and the need to manage these areas for sustainable of fisheries. He firstly showed the decreasing trend of the mangrove forest areas of Tanintharyi division. While noting the utilization of mangrove for construction and fishing gears in Myanmar, he highlighted the causes of mangrove destruction and threats to mangrove forest. He also provided information on the coral and seagrass in Myanmar.

9. He further provided information on the existing status of fisheries management and habitat management in Myanmar and on the conservation laws and marine protected areas in Myeik Archipelago, including solutions toward conservation. During the discussion, the participants were informed on the “closed season” for fishing in the area. They were informed on the program of conservation for *Rastrelliger* spp and the importance of public awareness for conservation. Furthermore discussions included the need to control for fishing capacity, the restrictions of fishing boat construction and

aspects on alternative livelihood for fisher-folk in Myeik Archipelago. His presentation appears in **Annex 7**.

10. Mr. Hla Tun, Chief of the regional fisheries office, Tanintharyi Region gave a presentation on “Management of fishing capacity and reduction of illegal fishing in Tanintharyi region”. He explained the characteristic of coastal fisheries in the region by indicating the number of in-shore/off-shore fishing vessels and number of foreign fishing vessels in Tanintharyi water area including the types of fishing gears engaged in the area and the construction of new fishing vessels. He also reported on the production from marine capture fisheries and the development of mariculture practices. In restricting the fishing effort he explained some of the management measures applied in fisheries including surveillance efforts on fishing activities, the prohibition of certain fishing activities by rules issues by the department of fisheries. Furthermore, he mentioned conservation activities and public awareness activities implemented in Tanintharyi region.

11. He also added the requirements for development of coastal management programs included the encouragement of research and the development of long-term monitoring programs. The requirements also include the build-up of a data base as well as information sharing with international conservation communities for technical and logistic support. During the discussion the participants suggested that special considerations should be made in issuing licenses to fish and, furthermore, they requested that “closed seasons” should be implemented as needed for off-shore fishing and there should be a limit to permissions given for the construction of new fishing vessel. The participants also discussed about options available to facilitate the search for alternative and supplementary livelihood for fisher-folk and coastal communities. The Deputy Director General of DOF gave the comment that the establishment of “closed seasons” was possible. The scheme could be developed through the DOF and before, finally, to be forwarded to the Minister for endorsement. His presentation appears in **Annex 8**.

12. Mr. Htun Thiha, Law officer, DOF gave a presentation on “Law and regulations/restrictions with implication for fishing, fisheries and habitat management in Myanmar”. In his presentation he mainly focused on existing fisheries laws and regulations, such as the; Law relating to fishing rights of foreign fishing vessels including duties of the master; Law enforcement, and prohibitions; Myanmar Marine Fisheries Law; Duties of license holders, prohibition and penalties. He also stressed the importance to increase the awareness of the CCRF and encourage people involved in fisheries to obey the laws, notifications and directives. The establishment of more prohibited season and protected areas should be considered. Efforts should be made for fisher-folk to be able to substitute or complements their household income by any other income generating work during prohibited or closed season. The local fishers asked him how, in enforcing the national laws, they would control the intentionally fishing for trash fish. He responded that the existing law cover this case and he gave some suggestions on how that could be used to promote law enforcement and surveillance. Another responsible person from Myanmar DoF explained that Myanmar can not effectively implement the CCRF guide line with regards to fishmeal plant construction and operation. Mr. Htun suggested that improved efforts should be made to encourage the effective implementation of CCRF. His presentation appears in **Annex 9**.

13. With regards to the presentation on the “Current status on the research and management of *Rastrelliger spp* and related species or Hilsa in Myanmar area”, Mr. Saw

Aung Ye Htut Lwin, Assistant Director and Mr. Tun Than, Fishery Officer from DoF informed the workshop on the biology facts of *Rastrelliger spp* and Hilsa. They included references to monitoring schemes of some of the trans-boundary and (highly) migratory species such as a tagging program for economically important small pelagic fish. Indications were provided on possible migratory routes of Hilsa including possible threats of depletion of fish stock. They also emphasized that for effective implementation of fisheries management the most important step is to ensure that you have the communities' motivation. It is essential that joint efforts with all stakeholders are developed and that effective coordinate among them are aimed for effective integration of fisheries management and habitat management in Myeik Archipelago.

14. In addition the workshop was informed on the outcomes of the National Workshop for Hilsa fisheries management which was held in Yangon on 25th February 2011. To strengthen the public awareness on the tagging program (and to recover more tags) a participant from Myeik University suggested that the DoF could get help from University to inform the communities. Participants from the fishing communities highlighted three burning issues; 1) they strongly emphasized that there is the need to control the intentionally fishing of trash fish; 2) there is an urgent need to control the sand siltation business in Myeik Archipelago; and 3) they stressed the importance to continue the programs to maintain and replant mangrove forest. Their presentation appears in **Annex 10**.

15. The Head of the Fishing Vessel Licensing Section of Department of Fisheries, Mr. Thiha informed the on-site training/workshop on the number of fishing vessels that engage in in-shore and off-shore fishery in Myanmar waters while indicating the fishing grounds demarcated for fishing in Myanmar. He then went on to inform the meeting on the number of fish landing ports that exist along the coast line of Myanmar. Furthermore he provided use information on existing management measure including detailed information on the national fishing vessel registration system and procedures to follow to develop a transparent and traceable system for catch documentation (Product Movement Document, and Catch Certificate) building upon international requirements. He suggested that local fishers should explore options for fishing further offshore instead of fishing in coastal waters in order to reduce the fishing pressure in Myeik Archipelago. In follow up to the presentation SEAFDEC indicated that SEAFDEC would try to initiate, with partners, further efforts to have a small scale fishing vessel record in future. His presentation appears in **Annex 11**.

16. Mr. Hla Win, District Fishery Officer, Myeik District, informed the workshop on aspects related to "Port Monitoring". He explained the details of the port monitoring system in Myeik, including routines for daily check-in and check-out of fishing vessels that provide information on the numbers and types of fishing vessels. He also informed the meeting on the different institutions that are involved in the running of the fisheries inspection station with details of the inspection procedures that has to be observed. A Senior Fisheries Officer at the meeting suggested that there should be a more systematic port monitoring for small scale fishing vessels. In follow up to the presentation the DOF Thailand asked for information on for catch certification of inshore fish landings in Myanmar. DOF, Myanmar replied that they had just started to given certification (or validations) for off-shore fisheries to facilitate exports to EU and other Markets. Participants agreed that were a need to cooperate between or among ASEAN states to

have a common approach on actions taken to deter and combat IUU fishing. His presentation appears in **Annex 12**.

17. Mr. Hla Than, Myanmar Fisheries Federation provided information on local knowledge and local activities such as providing support to fisher-folk on health related aspects and to disseminate technical knowhow from DOF. Local activities also include restocking of fish, to provide shrimp seeds and support to the transplanting of mangrove forest. In response to a question from the Deputy Director General of the DOF a participant from the Forestry Department explained that it is better to maintain the mangrove forest rather than having to transplant of mangrove trees. Based on a question from SEAFDEC the meeting was informed on the campaign for mangrove plantation in Myeik Archipelago.

18. The Principal of the Institute of Fisheries Technology, Department of Fisheries, Mr. Khin Maung Aye, explained about the basic elements for “Monitoring, Control and Surveillance”. He informed on the definition of M, C and S and on MCS component as such. He continued by explaining the role of MCS in fisheries management and pointed out the characteristics of an effective MCS system. Information was provided on ongoing MCS network initiatives and on important MCS training themes. He elaborated on the justification for the establishment of MCS system in that when it is operational it is an effective mechanism to control the implementation of fisheries management measures. The establishment of a MCS network is called for in support of effective control of fishing capacity and IUU fishing as well as to improve collaboration and cooperation among adjacent coastal nations to be able to effectively combat IUU fishing. In the discussion a local fisher requested SEAFDEC to make a research survey in Myeik Archipelago because they would like to get an assessment on the actual availability of stocks in the area. The Deputy Director General of DOF responded that the proposed survey program would by the DOF be addressed as input to the SEAFDEC Council Meeting for consideration by the Council. His presentation appears in **Annex 13**.

19. Mr. Sangthong Pattalord, small scale fisherman from Ranong Province, Thailand shared his information on the crab bank activities by his community in Ranong province, Thailand. He informed that the crab bank activity had been successfully implemented and supported by community. The activity had provided benefit to the community (more income), the status of habitats (mangroves) has improved as well as an enhancement of fisheries resources. In follow up to the presentation Mr. Win Myint Maung, National Coordinator of SEAFDEC, expressed his appreciation to the local community in Ranong and the Department of Fisheries, Thailand for providing information on crab bank methods and experiences. His presentation appears in **Annex 14**.

20. From the result of the evaluation of on-site training the participants expressed that the event had improved their understanding on the shared exploitation/use of fisheries resources (and habitats) between/among neighbouring ASEAN countries together with recognition on the importance to agree on common approaches to address key management issues. Overall participants felt that they had gained valuable knowledge and the way the event was organized had allowed for information and knowledge to be shared among participants. Participants also thanked the SEAFDEC-Sida project for conducting this On-site training/workshop.

21. One full day of site visits was conducted on 5th March 2011 and participants visited many places including the lobster trading company, dry squid processing, fish landing sites, ASK fish processing plant, Kaung Kaung soft-shell crab farming, Pyay Pho Htun company Marine Products processing plant, and fishmeal factory around Myeik Island.

IV. RECOMMENDATION FROM THE DISCUSSION

After the presentation and discussion, fishermen, stakeholders and officials from Department of Fisheries, Myanmar and Thailand summarized the outcomes of this on-site training/workshop as follows;

1. Promote integration of fisheries management with habitat management, including the development of extension, education and awareness raising programs for local fishing communities.
2. Establish networking among local government, relevant institutions, line agencies, (Myeik) University for the implementation of an Ecosystem Approach Fisheries (EAF).
3. Explore options for the establishment of larger fisheries resources conservation area incorporating existing management areas (protected areas, mangroves)
4. Consider options for a three-month closed season (June, July, and August) in Tanintharyi Province fishing grounds.
5. Introduce the crab bank system with the lessons learnt from the experiences in Thailand (Ranong).
6. Enhance awareness on the importance to reduce target fishing for low value /trash fish in Tanintharyi Region.
7. Enhance awareness and the knowledge on the value of mangrove. Control the use of mangrove in charcoal production, fire wood use and construction materials through allocation of selected plots for alternative cutting followed by replanting.
8. Improve and extend of mangrove rehabilitation programs in the area.
9. To establish collaborative coral survey and sea-grass survey programs together with conservation measures for the Myeik Archipelago and the surrounding ecosystem.
10. Educate fishery operators to actively participate in vessels registration system.
11. To develop practical MCS system applicable to Myanmar.
12. To acknowledge the value of local experiences and information in fishery management and conservation.
13. Assess the applicable and value of artificial reefs in the coastal areas of Myanmar.
14. To seek for technical advice to survey of spawning grounds, feeding grounds and migration paths of *Rastrelliger spp*, hilsa and related species.
15. To cooperate with Thailand and other countries to deter and reduce IUU fishing including the elimination of destructive fishing.
16. To cooperate with Thailand to get information for the volume of exported fish and fishery products from Myanmar to Thailand and from Thailand to Myanmar.
17. Improve capacity of port inspector based on existing rule and regulation in Myanmar.
18. Introduce community based fishery management (CBFM) system.
19. Promote and develop capacity for diversified and alternative income generating opportunities (also outside of the fishing sector) and in the process consider the important role of women.
20. propose SEAFDEC to utilize the M.V.SEAFFDEC 2 for conducting stock assessment in Myeik Archipelago.

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Annex 2

WELCOME REMARKS

*By Mr. Aung Myint, Head of State, General Administration Department,
Myeik District*

Distinguish guests from SEAFDEC-Sida Project,
Distinguish representatives from Thailand,
Distinguish guest from Myanmar Fisheries Federation, Tanintharyi Region,
All participants, Ladies and Gentlemen,

Good morning,

Today, we are implementing the 12 objectives of Myanmar's political, economical and social affairs according to the three national causes needed for the emergence of the new peaceful modern and developed State. Amongst four economical objectives, there is included one objective for "development of agriculture as the base and all-round development of other sectors of the economy as well". For providing the development of national economical sector, we are carrying out economics concerned with rice, palm oil and rubber industries from Tanintharyi region as well as fisheries industry that is major sector for achieving food and social securities and earning foreign income for the nation.

We know that fisheries sector contributed 7.6% of national GDP (Gross Domestic Product) and per capita fish consumption is 46 kg in Myanmar. Tanintharyi Region is shared 39.9% of national GDP contribution from fisheries sector and per capita fish consumption in this region is 63.39 kg. This region is one of the main areas for the catching, processing and exporting of fisheries products and we, our region are directly exporting the fisheries products to Thailand and Malaysia. If we look at the export amount of fisheries products from our region, in 2009-2010, there is 130338.278 tonnes in volume and 99.87 million (US\$) in value that included export through from Yangon. In this year up to February 26, this region exported 132326.976 tonnes of fisheries products and 100.619 million US\$ in value. Regarding with fisheries sector, various kinds of business such as, inshore/offshore fishing, fish/prawn processing factories and cold storage, fish meal plant, surimi plant, factories for producing dry fish, dry shrimp and dry squid, ice factories, fishing boat dockyard industry, and seaweed culture are developed in Tanintharyi region. Due to closed border with Thailand and Malaysia, this region has a good chance to export fisheries products conveniently. We are closely monitoring to the fishing, transportation, marketing of local produced fisheries products in accordant with following the regulations. To conduct responsible fishing practice in marine area of this region, Navy and Coast Guards closely control the illegal, unregulated, and unreported fishing and using of destructive fishing gears. On the other side, we are also doing cooperation and collaboration with responsible institutions to achieve the smoothly and quickly operation of export/import for local stakeholders and fish exporters in time.

Myeik Archipelago, in Myanmar we called Myeik Kyun Zu, is one of the important area that located in southern coastal part of Myanmar. The area comprises over 800 beautiful islands and diversity of flora and fauna, marine ecosystem such as corals, sea grass and mangrove forest. Therefore, responsible departments and organizations need to maintain our local marine resources not to be depleted, and to be sustainable. With the increasing population in the region, there have to do fisheries industry for food and social securities

on one side and on the other side, there need to do continued looking for the ways to development of marine resources. I would like to explain that this workshop held today “On-site Training and Awareness Raising on the Integration of Fisheries and Habitat Management and the Management of Fishing Capacity” is organized by the SEAFDEC with funding support by SEAFDEC-Sida project. I am glad to have a chance to present Myanmar fisheries development and our Tanintharyi region’s fisheries development condition and I also would like to thank SEAFDEC and Sida Organizations, and representative from others organizations.

In conclusion, I wish to have good discussion in this workshop for fisheries management, development of fishing, producing, transportation and marketing, conservation of marine resources, following the laws and regulations, and exporting fisheries products to the requirement of international markets with the best balance and achievement of Tanintharyi region.

Thank you.

Annex 3

INTRODUCTORY REMARKS

by

Mr. Kyaw Myo Win

Deputy Director General of the Department of Fisheries, Myanmar

Dr.Magnus Torell, Senior Advisor of SEAFDEC,
Distinguish guests from Thailand,
Distinguish representatives from other Departments and Academics,
All Stakeholders, Ladies and gentlemen,

Good morning,

On behalf of the Department of Fisheries of Myanmar, it is a great honour for me to be here to deliver the opening remarks at the On-site Training and Awareness Raising on the Integration of Fisheries and Habitat Management and the Management of Fishing Capacity.

First of all, I would like to express my sincere gratitude and profound thank to SEAFDEC and Sida Organizations for their kind budget support for organizing this On-site Training. I would like to highlight that this On-site Training is the first ever one organized in Myeik and participating by Senior Officials from SEAFDEC, distinguish guests from Thailand and representatives from other concerned ministries. Myanmar is one of the largest countries in main land of Southeast Asia and its long coastline; about 2832 km is stretching and touching with two bodies of waters, namely Bay of Bengal and Andaman Sea.

Distinguish guests, Ladies and gentlemen,

Myeik Archipelago, in Myanmar we called Myeik Kyun Zu, is covers approximately 14,000 sq miles and located in southern part of Myanmar. The area comprises over 800 beautiful islands and amazing diversity of flora and fauna, marine eco system and marine life, critical habitats and very beautiful under water scene are not only famous in Asia but also in the World. Sea-dwelling people, we called salon, is also famous symbol for this area.

In fishery concern, the area is very important for fisheries industries. In Tanintharyi region, fisheries is one of the main businesses of the local people and they are depending coastal and marine areas for many reasons including fishing and extraction of mangrove forests for their living and income. The area produces various kinds of economically important fish, prawns, mollusc and preserved type of fisheries products as well. Most of fishing communities are located along the coast and numbers of family were dependent on fishing and processing of fishery products for their income and food security. The development of coastal aquaculture and other alternative livelihood are still in infant stage. As aware to conserve long term sustainability of fisheries, the Government of Myanmar issued a set of Law relating with fisheries since 1990s and lots of management measures such as closed areas and closed seasons for spawning seasons, restricted mesh size, banned fishing methods have been declared . The regulations also covered for endangered aquatic animals and conservation of its habitats.

Distinguished Guests, Ladies and Gentlemen,

The demand for fish and fishery products has been increasing in local, regional and global consumption owing to population growth and economic activities. As a result, the natural resources including fishery resources are being degraded. Moreover, the increasing pressures from industrial and urban development and global climate change may be the causes for damage to degradation of ecosystem including fishery resources. So, national policies and regulations for conservation and protecting of natural resources are required. At the same time, the fishermen as well as local communities related in fisheries should participate in the planning and performance for the sustainable development of fisheries management.

The maintenance of ecological system is the main factor for the development of fisheries. Regarding the maintenance of ecosystem, we should do the management of the conservation in the coastal mangrove forests and environment. As we all know, mangrove are a source of shelter for fish. Many coastal species spent the critical early stage of their lives in mangrove waters. So, the conservation of ecosystem such as mangrove forests, coral reefs, sea grass, mud flats and salt marsh are essential to save fisheries resources.

So, I would like to request other agencies related to environment conservation matters to join hand by hand with Department of Fisheries and also would to urge the resource persons and participants to participate actively in the discussion. I expected that from this On-site Training, the participants will get lots of valuable information on eco-system, laws and regulations ,MCS measures, information on trans-boundary and highly migratory species and local knowledge.

I also would like to request SEAFDEC and Sida to continue kindly support and expend such activities in the future as well. The awareness raising is very important for the sustainable fisheries and food security in the Andaman Sea that is important area for fish production.

Distinguished Guests, Ladies and Gentlemen,

Once again, I am very delighted standing here together with you and let me say welcome to Myeik and wish for a meaningful and fruitful On-site Training.

Thank you for your attention.

Annex 4

OPENING REMARKS

By Dr. Magnus Torell, Senior Advisor of SEAFDEC

Mr. Kyaw Myo Win, Deputy Director General of the Department of Fisheries, Myanmar,

Mr. Aung Myint, Head of the state, Administration Department, Myeik District,

Respected resources persons,

Honourable guest from Thailand,

Distinguished participants, Ladies and Gentlemen

Good morning. On behalf of SEAFDEC, and SEAFDEC-Sida project, we refer to continued more support by the BOBLME and my great honor to be here with all of you.

First, I would like to thank, Department of Fisheries, Myanmar to be well organized on this on-site training event and information sharing. As we may be aware of that SEAFDEC in cooperation with BOBLME as being implementing the range of activities for promotion and improved fisheries management and facilitate responded reflect of climate change in and around the Andaman Sea. The project and furthest have been interested need to global modern implementation of fisheries management and practice in local level this will meet. As suggested couple of years, this place will last improvement techniques fisheries management included the needs providing information, the raised fishing awareness provide capacity building for integration of fisheries and habitat management. We specific remind on the trans-boundary of such as Indo-pacific mackerel, Indian mackerel and others related species. Moreover, the project focuses to the management of fishing capacity including monitoring, control and surveillance system as a tool to strengthen effort to integration of fisheries and habitat managements. Key areas refer to as promote regional, sub-regional and local level. In the process of strengthening, cooperation SEAFDEC, as well with collaborating regional organization like BOBLME project, Wetland Alliance and Mangrove for the Future. As we may be aware of the sequent of events to organize at Ranong, Yangon and Phuket through the BOBLME project with SEAFDEC cooperation and promotion for sub-regional cooperation and management of similar issues as indicate earlier. This event will be in similar ways cooperation with BOBLME by following up. Through this meeting, recommendations from earlier events, the further developed more specific indication areas focus on cooperation bilateral arrangement. This on-site training/workshop will be looking to ways enhance local abilities, monitoring, record and control of fishing capacity with small scale coastal fisheries. Hopefully, this event can facilitates and can improve understanding amongst participants, government agencies, local knowledge and local organizations.

Ladies and Gentlemen, I truly hope this workshop will become more space in directing of good practices to see among Central government, local government, local communities, stakeholders, experts and other fisherfolks to promote sustainable fisheries and responsible fishing activities at local level, national level, sub-regional and regional level. And I hope that participants take parts in this national training share of the based on information providing as well as motivated from Thailand. Ladies and Gentlemen, finally SEAFDEC would like to trace of gratitude to all of you, particularly Department of Fisheries, Myanmar on working hard in arranging on this event. Thank you all for your attending to this workshop and I wish for the best and good meeting.

Have a good day. Thank you very much.

PROVISIONAL PROSPECTUS

Background

Depletion of fisheries resources and marine natural habitats due to overfishing (including illegal fishing and uncontrolled fishing) and degradation and destruction has been recognized as a major problem not only locally but it has also emerged as a global concern. The immediate impacts of these problems affect fishing communities and fisher-folk livelihoods in many coastal areas of ASEAN and Southeast Asia. The need to integrate fisheries management and habitat management, including restoration and maintenance of important habitats together with conservation measures for valuable fish stocks has been increasingly recognized as necessary for the sustainability of marine and coastal resources. It is also recognized that in order to manage fisheries it is imperative to manage active fishing capacity.

Furthermore, the increased unpredictability in weather patterns is severely affecting countries of the region. Many coastal communities are faced with natural hazards such as typhoons and hurricanes which directly affect fisher-folk's livelihood. It also impacts on coastal resources, with subsequent reduction in the very base for their incomes. Hence, the management of fisheries resources and important habitats is necessary to sustain resources for long term uses. Serious efforts should be done to build up capacity locally – and nationally - and to provide knowledge and better understanding on the management of the coastal environment and the restoration coastal areas/habitats as a protection against future hazards. This together with awareness of important element to implement to secure important habitats for the sustainability of the fisheries and habitats would also improve the capacity to address and respond to climate change and adaptation needs. The general approach to be taken is to pay attention to the build-up of resilience and adaptation abilities to focus on longer-term management responses rather than to rely on restoration and rehabilitation emergency efforts.

SEAFDEC, with funding support by Swedish International Development Cooperation Agency (Sida), has been implementing a range of activities for the promotion of improved fisheries management and region/sub-regional cooperation. The process and implementation has been done in collaboration with ASEAN and other countries of the region as well as in coordination with organizations and initiatives such as BOBLME, FAO/APFIC, RPOA, UNEP/GEF/SCS and MRC. To build up a consensus and general understanding a sequence of consultations/events have been organized together with member countries to recognize and identify issues that need to be resolved to improve fisheries management in ASEAN region. During 2009 the project organized major events in promotion of regional and sub-regional cooperation on important aspects of fisheries and habitat management including responses to climate change and adaptation. These events include:

1. *The Second Gulf of Thailand Meeting* to promote sub-regional cooperation and the development of sub-regional arrangements was held 24 – 26 February 2009, in Bangkok. GOT countries agreed to move towards stronger cooperation starting with vessel records, MCS network and the Pla Too and related species.
2. *Expert meeting on Vessel Record and Inventory, 28 – 30 July 2009, in Satun, Thailand.* It was suggested that each of the countries, within the context of their own system should prepare a basis for information sharing. Countries should work to improve cooperation among agencies in terms registration and licensing. The region should a framework on

information needed to improve licensing systems in the region. Work should be done on ways to complete and improve the forms (large and coastal fisheries) at various levels (sub-region and on-site training) to record vessels.

3. *The first Andaman Sea Sub-regional Meeting, also with an aim to promote sub-regional cooperation and the development of sub-regional arrangements, was held 20 – 22 October 2009, in Phuket, Thailand.* The participants could confirm and approve criteria and scope for the initiation of fisheries resources conservation areas (*refugias*). It was agreed to explore cooperation around *Rastrelliger* spp, Hilsa and related species. The meeting gave a clear response with regards to the willingness to jointly address fishing capacity and a process was initiated to share information, establish MCS Network, to improve vessel record and port monitoring.
4. *ASEAN Fisheries Consultative Forum (AFCF), Prep-meeting 26 - 27 May 2009, in Bangkok.*

The implementation of effective fisheries management is vital and has been recently highlighted at international and regional/sub-regional level. The importance of effective implementation at all levels has been stressed recognizing the need for improved implementation at local level. As discussed over the last couple of years, key areas for improved and effective fisheries management include the management of fishing capacity; Monitoring Control and Surveillance (MCS) system; and fishing licensing and registration systems as tool to strengthen efforts to integrate fisheries and habitat management. It is recognized that improved capacity is needed, at various levels, to address these and other areas.

SEAFDEC-Sida Project has been promoting sub-regional management arrangements starting with the Gulf of Thailand and currently with the Andaman Sea in order to better address area-specific issues such as habitats, fish species/fish migration, IUU fisheries and the potential conflicts and opportunities in trans-boundary areas. The project has also attempted to raise awareness on the need for better management including knowledge and relevant practices with regard to the management and responses to natural hazards.

Recently, SEAFDEC-Sida project hosted the First Meeting of the Andaman Sea sub-region held in Phuket from 20-22 October 2009. The meeting emphasized the need for capacity building, through on-site training for local communities in the Andaman Sea Sub-region. Furthermore, the meeting recognized the need to ensure improved understanding among government agencies on aspects of local knowledge and local organizations as applied in community-based fisheries management.

The Andaman Sea countries shared the opinion and it was agreed that the definition of IUU fishing applicable to the Andaman Sea should be:

- Conducted by national or foreign vessels in waters under the jurisdiction of a state, without the permission of that state, or in contravention of its laws and regulations
- In violation of national laws or relevant international obligations
- Which have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws or regulations
- In areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in manner inconsistent with State responsibilities for the conservation of living marine resources under international law

In response to the recommendations from the October 2009 meeting, SEAFDEC-Sida project will organize on-site training to initiate and promote the integration of fisheries and habitat management, fisheries resources conservation areas (*refugia*). The event will also provide information on steps to manage effective fishing capacity and elements required such as information of fishing boats, MCS, port monitoring, vessel records, inventories, better information gathering and tools to monitor large and small-scale fisheries, and the need to embark on the building up of MCS networks that also include smaller-scale fisheries. The October meeting in Phuket provided specific recommendations on key “thematic” issues as follows based on recommendations from the Phuket meeting:

1. *Integration of fisheries and habitat management, fisheries resources conservation areas (refugia) – ecosystems approach*

Increased attention to be given to the need to apply ecosystems based approaches to management. SEAFDEC consultations have more specifically focused on the **integration of fisheries management and habitat management** and the institutional responsibilities involved.

In an area like the Andaman Sea, there is a need to explore ways to manage the resources of **trans-boundary and (highly) migratory species**, including *Rastrelliger* spp. (*i.e.* *R. brachysoma* and *R. kanagurta*) and related species such as cuttlefish, anchovy and *Nemipterus* spp. as these economically important species also spawn in the same areas as the *Rastrelliger* spp. The information on life cycle, maturation stages, migration and distribution in the Andaman Sea of *Rastrelliger* spp and related species clearly indicates loops of migration across boundaries of Myanmar and Thailand, and Thailand, Malaysia and Indonesia, respectively.

Initiate development of management measures for *Rastrelliger* spp. and related species highlighting the need for and design of regulatory measures, considering that these fishery resources are shared by Thailand, Indonesia and Malaysia (on the southeast Andaman/Malaka Strait) and Myanmar and Thailand (in the Northeast Andaman).

The possibility of establishing **larger management areas (*refugia*) in the Andaman Sea based on existing smaller management schemes should be explored**. In the process of on-site events address the definition and Define suitability of larger fisheries resources conservation areas (*refugia*) based on an aggregation or network of already established small management areas. The area should be large enough to manage and to protect trans-boundary habitats and (highly) migratory species “embracing” a number of existing defined management areas. The more specifically defined size of the area should gradually be developed through consultative processes involving coastal villagers, the traditional users of the resources, researchers, local and central authorities and other stakeholders, taking into consideration the following factors:

- a) *To build upon an aggregation of smaller management areas (established for local fisheries, fisheries resources protection, habitat management and/or other purposes)*
- b) *To recognise the existing zoning schemes (like trawling free zones)*
- c) *To take note of the seasonality in fishing, fish migration/spawning, etc*

Presently, there are in the region **a whole range of management schemes**, such as MPAs, Ramsar sites, heritage sites, etc. An inventory of the existing management schemes has been initiated for the ASEAN-Andaman Sea countries and it is important to follow up and complete that also at local level during on-site events. Due consideration should be given to the importance of estuaries, deltas and river systems to the productivity of the Andaman Sea as well as of its importance as a main source of aquatic production.

Facilitate the **sharing of biological, social, economical and other (scientific) data** on economically important species as well as on endangered species and important habitats.

Furthermore, emphasise the importance of oceanographic data (e.g., seasonal changes in water currents) in focal areas and the Andaman Sea as a whole.

Examine factors such as **climate change** that lead to distribution shift and production fluctuations of important fishery resources, or where primary productivity is decreasing but production is increasing (paradox of the time). Addressing this at local level would increase awareness and provide feedback on local recognition on changes taking place due to climate change.

Efforts should be done to harmonize and/or (initially) assess areas of **compatibility of national regulations** as a tool for cooperation and specifically point at the need for flexibility to allow for the integration of fisheries management with habitat management also at local and trans-boundary levels.

Promote and generate compliance to reduce the need for strict enforcement

2. MCS Network, Vessel Record and Inventory

Sustainable approaches to fisheries (and habitat) management cannot really be done without also addressing the management of fishing capacity (of various scales).

A process has been initiated by the Gulf of Thailand Sub-region members, to **establish a MCS network**. This network would initially have its focus on information sharing, such as on the number and types of boats, people involved in fishing, landings among others. As a step in this direction, a process has been initiated to develop a **fishing vessel record and inventory** in Southeast Asia as well as in the Gulf of Thailand Sub-region. The Andaman Sea meeting in October 2009 agreed to explore the extent of implementation of MCS by the countries in the Andaman Sea Sub-region, and initiate cooperation among the relevant countries for the implementation of MCS and to **initiate development of a MCS network for the Andaman Sea** (by initially focus on the sharing of information).

In the process, and during on-site events explore possibilities to build **local MCS systems at community level** including incorporation of traditional knowledge and local organization.

An **institutional matrix on Monitoring, Control and Surveillance** is relevant to support the building up of MCS network for the Andaman Sea Sub-region. The information on “responsible institutions”, “supporting legislation” and relevant “convention/international agreement” should be further developed and shared during on-site events. The matrix should be left as open ended, to give free hand for the countries concerned to provide additional relevant key activities and information on responsible institutions and supporting legislation and also to include information as relevant on practices at local/provincial level. Additional key activities such as “stock assessment” and “ecosystems health monitoring” should be included in the matrix on Monitoring (M).

Effective implementation of MCS would depend on the **fisheries management policy of each country**. Specific elements can be operated at the local or fishing community level. This can be effective through capacity building of fishermen enabling them to understand the context and to collect data in support of the “Monitoring” aspect as well as to establish local structures for purposes of creating reference points as a basis for “Control”.

In follow up to the draft survey forms to initiate a **“Vessel record and inventory”** and to further the process to develop a vessel record and inventory for the sub-region it is recommended to use the forms and **insert available information in connection with on-site training** to be held at provincial level among Andaman Sea countries.

Awareness to be raised on the **draft legally-binding Port State Measures**, which has been finished but need the endorsement of FAO later during 2009 before it can be adopted by the FAO Committee on Fisheries (COFI) in early 2010. “Port monitoring” is something that would be of increasing priority and special reference was made during the meeting to the “final” version to the requirements for Port State Measures, EU requirements for catch documentation (to be applied from 1 January 2010) and of a more local nature to the landings of fish that is being done in “neighbouring countries”. The **survey form to assess the types of information that would be available in connection with port monitoring could be a useful tool to explore (and insert) available information in connection with on-site training** to be held at provincial level among Andaman Sea countries.

Provide **capacity building on MCS at national, provincial and local level** and build upon the forms for “vessel record and inventory” and “port monitoring” and in the process provide inputs to the survey forms to enter required information, as available.

3. Capacity Building, Climate Change and Local Knowledge

A general recognition is that **local knowledge, traditional practices and local organisations could provide important in the development of M, C and S at local level** specifically on the monitoring and control as indicated by experiences in Indonesia and La-Ngu District in Satun as well as from earlier references to the CHARM project in Thailand. Explore during on-site events and other means additional examples of good local practices. Through the feedback from on-site (and other) events develop “area management systems” based on success stories of community involvement in fisheries management using traditional practices (*e.g.* those in Indonesia and Thailand), to be integrated into fisheries management planning and regulations where the roles of all stakeholders are clearly defined.

Climate change cuts across all aspects related to fisheries and habitat management as including social development. Actions needed to improve fisheries and habitat management, maintain ecosystems health and increased resilience among coastal and inland fishing communities. These actions would also be relevant to address impacts of climate change and building up adaptive capacity. It is important to find or develop suitable indicators to report results of actions implemented and to train people and project staff to include perspectives of climate change in the regular reports. **Local knowledge, traditional practices and local organisations** are important factors to build upon when **building up capacity to adapt to climate change** and in efforts to mitigate effects caused by climate change, such as impact from storms, typhoons, floods, etc. Facilitate the implementation of action to enhance resilience and to improve capacity to adapt to the effects of climate change and increased unpredictability of weather patterns. Furthermore, build up the ability, at various levels, to understand the impacts of climate change and links to fisheries and habitat management.

Capacity building is considered a cross-cutting matter that needs to be addressed continuously at all levels. Recommendations on capacity building needs has been made in each of the sections referred to above, including aspects integration of fisheries and habitat management, MCS and MCS networks, vessel records, port monitoring, local/traditional knowledge, climate change and how to report in perspective that shows efforts made in response to perceived impacts of climate change. These aspects would be important to include in on-site training and dialogue events. In the process of training and awareness-raising put more emphasis on the needs of the local communities, *e.g.* communication and accessibility and transparency on the part of the government.

In addressing the need for capacity building through on-site training for local communities in the Andaman Sea Sub-region and in the process recognise the need to ensure **improved understanding among government agencies on aspects of local knowledge and local organizations** as applied in community-based fisheries management.

Objectives and Goal of the Workshop

1. To provide information, rising awareness and capacity building on the integration of fisheries management and habitat management and the institutional responsibilities involved.
2. To provide information, rising awareness and capacity building on fish stocks conservation and sustainable fisheries practices (including efforts to mitigate future natural disasters).
3. To explore ways to manage resources of trans-boundary and (highly) migratory species, including *Rastrelliger* spp. (i.e, *R. brachysoma* and *R. kanagurta*) and related species such as cuttlefish, anchovy and *Nemipterus* spp.
4. To provide information on the importance to maintain coastal features (mangroves, sandy beaches, coral reefs, etc).
5. To provide information, rising awareness and capacity building on key management issues in the process of establishing MCS network(s), fishing vessel record, port monitoring, including having inputs provided on the forms for Vessel Record and Inventory and Port Monitoring.
6. To enhance local ability to monitor, record and control active fishing capacity in small scale/coastal fisheries.
7. To facilitate improved understanding among government agencies on aspects of local knowledge and local organizations.

Expected Outputs

At the end of the workshop it is expected that information have been provided, awareness raised and capacity built on aspects referred to above (points 1 – 7).

Furthermore, it is expected that feedback will be provided from the event on steps to take to further promote and initiate sub-regional cooperation and bi-/tri-lateral arrangements and agreements.

Date and Venue

The on-site training will be organized 3-4 days in Andaman Sea countries namely:

- Malaysia (Lankawi), 23-26 November 2010 (Completed)
- Indonesia (Medan), 19-22 July 2010 (completed)
- Thailand (Satun), 23-24 March 2011 (Completed)
- Myanmar, (Myeik), 3-5 March 2011 (Completed)
- Thailand, (Ranong), June 2011 (Date and Venue will be confirmed)

**Date and Venue of the workshop will be identified and consulted with the host countries for appropriate timing and location.

AGENDA

Date	Activities	Resource person	Facilitators
3 rd March 2011 (Thu.)			
08:30-09:00	Registration		
	Agenda 1: Opening <i>facilitated U Khin Mg Soe</i>		
	<ul style="list-style-type: none"> Welcome Remarks <i>by Mr. Aung Myint, Head of the State, General Administrative Department, Myeik District, Tanintharyi region, Myanmar</i> 		
	<ul style="list-style-type: none"> Introductory Remarks <i>by Mr. Kyaw Myo Win, Deputy Director General, Department of Fisheries, Myanmar</i> 		
	<ul style="list-style-type: none"> Opening Remarks <i>by Dr. Magnus Torell, Senior Advisor, SEAFDEC</i> 		
09:30-09:45	Group Photo and Coffee Break		
09:45-10:00	Agenda 2: Background Introduction <i>by Dr. Aung Naing Oo, SEAFDEC RFPN for Myanmar</i>		
10:00-12:00	Agenda 3: Resource Presentation 3.1 Integration of fisheries management into habitat management 3.2 Management of fishing capacity and reduction of illegal fishing	U Myint Pe U Hla Tun	<i>U Khin Mg Soe</i>
	<i>Afternoon session</i>		
13:30-17:00	3.3 Other regulations 3.4 Special sessions/focus: <i>Rastrelliger spp.</i> and related species (migration, spawning, etc)	U Htun Thiha U Saw Ag Ye Htut Lwin/ U Tun Than	
4 th March 2011 (Fri)			
<i>Morning session</i>			
09:00-10:00	3.5 Fishing Vessel Record and Inventory	U Thiha	
10:00-10:15	Coffee Break		
10:15-11:00	Crab bank activities in Ranong province	Mr. Sangthong Pattalord	
11:00-12:00	3.6 MCS Matrix on institutional responsibilities	U Khin Mg Aye	
	<i>Afternoon session</i>		
13:30-14:30	3.7 Port monitoring	U Hla Win	
14:30-15:30	3.8 Local knowledge/local organization	U Hla Tun/MFF	

15:30-15:45	Coffee Break		
15:45-16:15	Agenda 4: Evaluation of On-Site Training		
16:15-17:00	Agenda 5: Conclusion and Recommendation		
17:00-17:30	Agenda 6: Closing		
5 th March 2011 (Sat)	Field Trip		

Integration of Fisheries Management into Habitat Management

Mr. Myint Pe

Assistant Director, Department of Fisheries, Yangon, Myanmar


Integration of Fisheries Management into
Habitat Management

Myint Pe
Assistant Director
Department of Fisheries

On-site Training and Awareness Raising on Integration of Fisheries and
Habitat Management and the management of Fishing Capacity

Merguie Hotel, Myeik, 3 – 5 March 2011


Myeik Archipelagos



The Myeik Archipelago is an archipelago in far southern Myanmar. It consists of more than 600 islands, varying in size from small to hundreds of square kilometers, all lying in the Andaman Sea off the western shore of the Malay Peninsula near its landward (northern) end where it joins the rest of Indochina.

Geologically, the islands are characterized mainly by limestone and granite. They are generally covered with thick tropical growth, including rainforest, and their shorelines are punctuated by beaches, rocky headlands, and in some places, mangrove swamps. Offshore are extensive coral reefs.

Myeik Archipelagos



The Myeik Archipelago (also known as the Mergui Archipelago) covers an area of some 36,000 square kilometres in the Andaman Sea, between 9 and 13 degrees N, off the southern coast of Myanmar.

Most of the larger islands are covered by tropical forest, including luxuriant rainforest with tall trees and dense undergrowth, that provide habitat to a variety of wildlife, including monkeys, mouse deer and wild boar and a large number of bird species.

Their shorelines are fringed by sandy beaches, rocky headlands or mangrove forests and the seas are home to many species of fish, as well as the dugong, or sea cow, and several kinds of marine turtle.

- **Mangrove forest:** In the early 1990 there were about 720,100 ha of mangroves. In 2000-2001 there were only 320,604 ha (274,795 ha reserved forest and 29,239 ha conserved and planted till 2000) found in the coast of Myanmar. The type of mangrove found along this coast are **Rhizophora**, **Sonneratia**, **Avicennia**, **Bruguiera** and **Xylocarpus** spp.

Mangrove Forest Areas in Tanintharyi Region

S/N	Township	2008	2010
	Myeik	58,200	35373.12
	Kyun Su	240,088	299,038.2
	Palaw	40,117	15413.92
	Tanintharyi	346	87.09
	Myeik District	338,751	349,912.33

Mangrove Forest Areas in Tanintharyi Region

S/N	Township	2008	2010
	Dawei	479	185.9
	Laung Lone	15,140	3,860.39
	Tayet Chaung	4,102	9,987.67
	Yae Phyu	19,454	4829.01
	Dawei District	39,175	18862.97

Mangrove Forest Areas in Tanintharyi Region

S/N	Township	2008	2010
	Kawthaung	25,253	50,843
	Boke Pyin	85,846	62,480.26
	Kawthaung District	111,099	113,323.96

Mangroves of Lampi Island & Adjacent Areas

- Mangroves of Lampi and adjacent Islands namely Kyun Pya Gyi, Kyung Mi Thar Su, Nyaung Wee, Bo Cho, Ko Phawt and Tandar Ni Islands are studied in 2008.
- A total of fifty species of mangroves and their associates are observed.
- The common plants in these areas are **Rhizophora mucronata**, **R. apiculata**, **Cer tops tagal**, **Xylocarpus granatum** and **Excoecaria**. **Rhizophora mucronata** and **R. apiculata** are co-dominant mangrove plants of Lampi and Nyaung Wee Islands.



Study areas of Mangrove in Lampi and Adjacent Islands

Utilization of Mangrove



Construction

Fishing gears

Mangrove destruction

- Of greatest concern on the coast is the loss of mangrove forest, a key component of that ecosystem, especially on the mainland coast and estuaries, and the innermost islands of Myeik Archipelago. Loss is estimated at 50 % by the Forest Department (Htun Paw Oo, 1998; Forest Department, 2003), resulting from cutting of timber and fuel wood, clearing of land for paddy and aquaculture (fish and shrimp farming) and building development (residential and commercial). One result of the loss of mangroves, seen particularly around Myeik and Mottama areas, is an increased of land slides, as serious form of erosion (Su Su *et al.*, 2004; Tin Tin Aye *et al.*, 2004)

Threats to Mangrove Forest

- **Illegal mangrove cutting.**
 - Cutting mangrove trees is prohibited by law.
 - Poachers cutting mangrove trees for charcoal making and home construction.
 - Some fishers use mangrove trees for the construction of fishing gears and cages for coastal aquaculture.
- The conversion of mangrove forest into aquaculture
- The conversion of mangrove forests for supporting tourism industry and urban expansion.

Causes

- Lack of awareness on mangrove forest conservation.
- Lack of knowledge and understanding on mangrove forest and its ecosystem.
- Unplanned and unregulated expansion of coastal area development.

Coral Reefs

- One of the world's most diverse marine ecosystem
- Provide wide variety of food and habitats for aquatic plants and animals
- Globally, there is about 60,000 sq.km of coral reefs
- More than half are distributed in Indian Ocean.
- Undoubtedly, varieties of coral species are available spreading across Myanmar waters.
- In particular, environment of Myeik Archipelagos coastal areas are most abundantly distributed with diverse coral communities.
- Reports on corals is scarce due to limited fund and essential tools

Coral Reefs

- Among anthozoans coral polyps, 93 species belonging to 21 families 47 genera from Tanintharyi coastal areas have been recorded.

Corals of Myanmar



The threats of Coral Reefs

- **Overfishing and destructive fishing practices.**
 - Removal of key herbivore and predator species may ultimately affect large-scale ecosystem changes.
 - Trawls, push net, dynamite fishing, fishing with cyanide and other poisonous chemicals.
- **Effects of coastal development.**
 - Sediments, which smother corals
- **Tourism**
 - Unregulated tourism has destroyed the coral reefs.
- **Climate Change**
 - Temperature change
 - Coral bleaching

Causes

- Lack of knowledge on ecosystem of marine fauna and fishery resources.
- Destructive fishing methods, including dynamite, trawls and push nets.
- Irresponsible divers and tour operators.
- Domestic wastes from human settlement, fishing vessels and tour boats.
- Coastal construction that effect sediment transport.

Threats to Marine Fauna and Fishery Resources

- Over-fishing.
 - Improvement of fishing technology
 - Over fishing capacity
- Degradation of fish habitat
 - Destructive fishing practices.
 - Pollution.

Causes

- High demand on fishery resources for domestic consumption and export.
- Lack of awareness on fishery resources conservation.
- Low efficiency of enforcement.
- High cost of law enforcement.
- Fishers collaboration in fishery management is limited.

Sea-grasses ecosystem

- Soe Htun et al. (2001) identified (9) species of sea grass in Myanmar waters mostly occurring in Rakhine and Tanintharyi coastal regions.
- Sea grass surveys were conducted in the surrounding waters of twelve islands in the Myeik Archipelago: Pulau Bada (Buda), Lampi, Anne, Bushby, Bentinck, Thompson, Ross, Courts, Jack, Domel (Letsok-aw), Kyun Phila and Russell.
- A total eight species belonging to 2 families and 6 genera were identified in the Myeik Archipelago, Myanmar. They include: ***Syringodium isotofolium***, ***Cymodocea rotundata***, ***Enhalus acoroides***, ***Thalassia hemprichii***, ***Halophila uninervis***, ***Halophila pinifolia***, ***Halophila ovalis***, ***Halophila minor***.



Lampi (Kyun Tan Shae), Kyun Philar, Palau Bada (Nyaung Wee),

Role of Sea grass

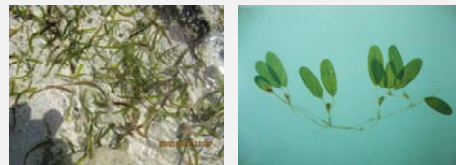
- Important habitat and food source for marine fauna.
- Perform as coastal stabilization, filters and exporting organic nutrients to the nearby ecosystems of coral reefs and mangrove
- Provide sheltered habitats as crucial feeding, spawning and nursery grounds for economically important species of marine invertebrates, coral fishes and Dugong.

Threats to Sea grass beds

- Fisheries
 - Bottom trawl fishing in near shore.
- Natural disaster
 - Storm, waves and currents
- Land reclamation
- General deterioration of seawater quality

Causes

- Lack of awareness
- Coastal development without taking sea grass beds into consideration.



Fisheries Production from Tanintharyi Region
(2010-2011)
(in thousand viss)

Township	Fish	Shrimp	Total
Dawei	214.08	59.74	273.82
Long Loe	310.62	71.17	381.79
Tayet Chaug	193.41	53.69	247.10
Yae Phyu	198.35	59.76	258.11
Dawei District	916.46	244.36	1,160.82

Fisheries Production from Tanintharyi Region
(2010-2011)
(in thousand viss)

Township	Fish	Shrimp	Total
Myeik	2,293.14	290.78	2,583.92
Palaw	339.11	90.81	429.92
Kyun Su	308.30	99.38	407.68
Tanintharyi	52.07	1.69	53.76
Myeik District	2,992.62	482.66	3,475.28

Fisheries Production from Tanintharyi Region
(2010-2011)
(in thousand viss)

Township	Fish	Shrimp	Total
Boke Pyin	241.58	53.86	295.44
Kawthaung	630.78	150.69	781.47
Kawthaung District	872.36	204.55	1076.91

Fisheries Production from Tanintharyi Region
(2010-2011)
(in thousand viss)

District	Fish	Shrimp	Total
Myeik	2992.62	482.66	3475.28
Dawei	916.46	244.36	1160.82
Kawthaung	872.36	204.55	1076.92
Total	4781.44	931.57	5713.01

No. of Permanent Fishers in Tanintharyi
(2010-2011)

Type	Myeik	Dawei	Kawthaung	Total
Off-shore	6,097	2,773	5,725	14,595
In-shore	24,987	10	12,155	37,152
Processing	213	61	30	304
Fish buyers	-	127	2	129
Aquaculture	-	3	-	3
Total	31,297	2,974	17,912	52,183

No. of Cold Storage, Processing Plants, Fish Meal Plants
and Dockyards in Tanintharyi Region

District	Cold Storage	Processing Plants	Fish Meal Plants	Dockyards
Myeik	24	10	5	4
Dawei	11	3	1	-
Kawthaung	7	2	1	1
Total	42	15	7	5

Fishery Management and Habitat Management.

- In Myanmar, environmental degradation is still minimal. However, like other developing countries, the major source of environmental issues in Myanmar lies in the problem of underdevelopment. So, in the national endeavor to protect and conserve the environment, Myanmar's approach to the environmental protection is through alleviating poverty and uplifting the living standard of the people.

- In the long term-term interests of the State, the National Commission for Environment Affairs (NCEA) has been formed under the Government Notification No. 7/90 since 14th February 1990. It has been constituted with the Minister for Foreign Affairs as chairman and members are Head of department from various government agencies. Under the commission, four specialized committees are formed.

- They are:-
- Committee on Conservation of Natural Resources
- Committee on Control on Pollution
- Committee on Research, Education and Information and
- Committee on International Co-operation

- The National Environment Policy of Myanmar was adopted under the Government Notification No. 26/97 on 5th December 1994. The Policy calls for harmony and balance between environment and development through the integration of environmental considerations into the development process. National Environment Policy forms the basis for developing environmental strategies, environmental programme and plans.

- Myanmar is a party to the Convention on Biological Diversity, Convention on Climate Change, Vienna Convention for the Protection of the Ozone Layer and London Amendment, Convention to Combat Desertification and Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

- Myanmar Agenda 21 in line with the global Agenda 21 adopted at the United Nations Conference on Environment and Development was published in 1997.
- In the area of achieving sustainable management of coastal, marine and island ecosystems, Myanmar Agenda 21 aims to address the following activities.

- To promote research and monitoring programmes
- To develop and implement strategies for the sustainable use of marine resources
- To strengthen legal and regulation framework
- To enhance education and awareness campaign
- To conserve marine biological diversity
- To establish a coordinating mechanism
- To promote coastal zone management and development

- Environment management pattern in Myanmar largely sectorial, with existing policies and regulations relating to environmental management being formulated and administrated by the sectoral ministries and departments concern.
- Myanmar has a number of sectorial laws that are related to protecting and conservation of natural resources and control of pollution.

- They are:
- The Factories Act 1951 controls factories involve with chemicals, particularly hazardous or toxic chemicals
- The Forest Law 1992 declared all mangrove forests as protected areas. Fishing within three hundred yards around mangrove area is strictly prohibited
- The pesticide law 1990 monitors and controls the selection, storage, transportation and use of pesticides
- The Myanmar Marine Law 1994 controls safe disposal of waste, tailing and fumes
- The Myanmar Pearl Law 1993 protects and conserves water areas of pearl oyster fishing ground from destruction and oysters from over-fishing

- The Water Power Act 1927 prohibits pollution of public waters for obtaining energy and mining purpose
- The Law Relating to Aquaculture 1989, The Law Relating to the Fishing Rights of Foreign Fishing Vessels 1989, The Myanmar Marine Fisheries Law 1990 and the Freshwater Fisheries Law 1991 are provided for further development of fisheries, preventing over fishing, safeguarding and protection of fishing grounds and management of fisheries. These laws prohibit fishing without license, causing water pollution, use of destructive fishing practices and promotion of sustainable use of fishery resources.

- The Territorial Sea and Maritime Zone Law 1997 defines and determines the maritime zone, contiguous zone, exclusive economic zone and continental shelf in respect of preservation and protection of marine environment, its resources and prevention of marine pollution.
- The Ministry of Industry (1) issued a standing order in 1995 on water and air pollution for prevention of pollution and damage to the environment by waste discharged by factories.

- The Myanmar Investment Commission notified in 1994 that all permitted enterprises shall compulsorily install sewage treatment plant, industrial waste water treatment plant and other pollution control procedures and abide with existing sanitary and health regulations set by the State.
- Myanmar is a party to international conventions relating to marine environments as shown in Table (18)

Existing Marine Protected Areas in Myeik Archipelago			
Protected Organism	Locality	Protected/Closed Season	Protected Areas
Crab	Kalone Chaung Kwin, Boke Pyin Township, Kawthaung District	The whole year	100 acres

Existing Marine Protected Areas in Myeik Archipelago			
Protected Organism	Locality	Protected/Closed Season	Protected Areas
Hard Clams & Cockles	Kyauk Kan Phare village's sand dune, Palaw Township, Myeik District	January to March	20 acres

Existing Marine Protected Areas in Myeik Archipelago			
Protected Organism	Locality	Protected/Closed Season	Protected Areas
Marine Turtle	Long lone Boat Is., Long lone Township, Dawci District	The whole year	The whole island

Existing Marine Protected Areas in Myeik Archipelago			
Protected Organism	Locality	Protected/Closed Season	Protected Areas
Indian threadfin (<i>Polynemus indicus</i>)	Wet Phyu Taung & Thar Myar Mi Is. and adjacent waters fishing ground, Kyun Su Township, Myeik District	1 st June to 31 st August	

Existing Marine Protected Areas in Myeik Archipelago			
Protected Organism	Locality	Protected/Closed Season	Protected Areas
Shark	From Ross Is to Lampi Is.	The whole year	Area 1 & 2

Existing Marine Protected Areas in Myeik Archipelago			
Protected Organism	Locality	Protected/Closed Season	Protected Areas
All kind of fishery	Pearl Is & adjacent areas Lampi Is & adjacent areas Between Minor Sea & Zar Det Gyi Is.	The whole year	

Toward conservation solutions

- Having identified the threats to Myanmar's coastal and marine resources, we must put our energies into devising appropriate plans to manage and conserve these resources and protect the outstanding biodiversity they represent.
- At the same time we should provide regulation allowing their legitimate and sustainable use for the well being of all Myanmar peoples.

- As a prelude of such planning, and to provide an objective scientific basis for it, it is proposed that each segment of our coastline and adjacent marine waters is subjected to surveys aimed at compiling an inventory of the diverse resources (it is considered highly probable that many new species await discovery and identification, particularly on the uninhabited islands of the Myeik Archipelago), recording their relative abundance and mapping their distribution and any present or potential threats to their long-term survival.

Annex 8

Management of Fishing Capacity and Reduction of Illegal Fishing

Mr. Hla Tun

*Assistant Director, Department of Fisheries, Regional Fisheries Officer,
Tanintharyi Region, Myanmar*

On-site Training and Awareness Raising on the Integration of Fisheries and Habitat Management and the Management of Fishing Capacity
3-5 March, 2011, Myeik, Myanmar.

Management of Fishing Capacity and Reduction of Illegal Fishing in Tanintharyi Region

Hla Tun
Chief of Regional Fisheries Officer
Tanintharyi Region
Myanmar



Tanintharyi Region

Coastal length - 1,200 km
EEZ Covers area - 35,136 sq-km

3 Districts
18 Townships
Population 1,681,000
Fisherman 52,315

Coastal Fisheries activities

Coastal Fisheries activities are classified into two components as :-

- ◆ Marine Capture Fisheries
- ◆ Mariculture

Marine Capture fisheries

- ◆ Inshore Fisheries
- ◆ Offshore Fisheries

Mariculture

- ◆ Marine Fish, Soft-shell Crab and Shrimp
- ◆ Seaweed

Number of Inshore fishing vessels in Tanintharyi Water

Inshore fishing boats – 7,366

- Myeik District - 3,717
- Dawei District - 960
- Kawthaung District - 2,689

Number of off-shore fishing vessels in Tanintharyi Water

Offshore Fishing Vessel – 686 (2009-2010)

Number of Foreign fishing vessels in Tawintaryi Water (2009-2010)



SIAM JONATHAN Co; Ltd	- 111
RYUJI INTERNATIONAL Co; Ltd	- 19
SANG AROON Co; Ltd	- 3
NAYLAWADY Co; Ltd	- 3
SWANYIMYINT Co; Ltd	- 8
TOTAL	- 144

Type of fishing vessel engaged in Tawintaryi Region (2009-2010)

No	Type of Gear	Number
1	Trawl	482
2	Purse Seine	100
3	Stow net	2
4	Drift net (Gill net)	-
5	Long line	-
6	Squid cast net	35
7	Fish Trap	67
Total		686

3

Construction of new Fishing Vessel

- Application
 - Owner name
 - Type of fishing vessel
 - Deck
- Construction
 - Inspection
 - 1st time (25%)
 - 2nd time (50-60%)
 - 3rd time (100%)
- Issue recommendation for fishing vessel registration by DPA
- Fishing licence by DCF



5 Dockyards

5

Marine Capture Fishery Production

Thousand Viss

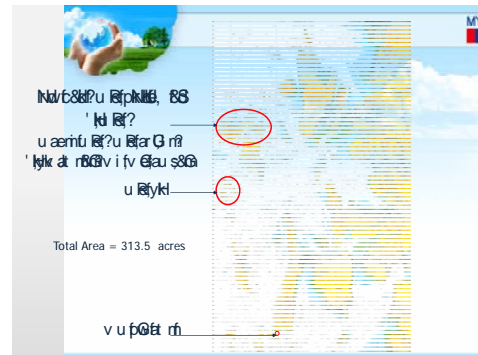
No.	Year	Marine Fisheries
1	2004-2005	408921
2	2005-2006	468928
3	2006-2007	513565
4	2007-2008	566945
5	2008-2009	596068
6	2009-2010	661907



Mariculture practices

Seaweed farming

- Since 2003, a Korean private company in collaboration Myanmar DCF has initiated seaweed farming in southern coastal area.
- The species is *Eucheuma cottonii*
- Progressive result has been gained.
- Korean company is planning to establish a factory to extract carrageenan from culture seaweed.



Mariculture practices (Sea weed Culture)

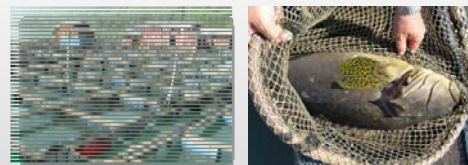


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Marine finfish aquaculture

Marine finfish

- Groupers and seabass culture in marine floating net cages by three private companies.



Mariculture practices

Soft shell crab culture



Area = 150.73 acres

Surveillance efforts on fishing activities

Strict law enforcement on fishing activities
(problems of illegal fishing)

Enforcement agencies with particular activities are listed as:-

Inspection at sea

- * Myanmar Navy

Inspection authority at shore

- * Department of Fisheries
- * Myanmar Port Authority
- * Myanmar Custom
- * Immigration Department
- * Department of Marine Administration
- * Myanmar Police Force

Management Measures in Fisheries

Goal to achieve sustainable coastal fisheries;

various management strategies were formulated and implemented

- To control fishing efforts
- To promote rehabilitation and conservation

These measures include:

- Allowed Fishing ground
- Allowed Fishing days
- Fishing gear / method
- Close area
- Close season

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Management Measures in Fisheries

Restricted

Mesh size

- for Trawler : not less than 2 inches for fish and
: not less than 1.5 inches for Shrimp

Fishing

- Dynamites, explosives, Chemicals, Drugs and Electric fishing are not allowed



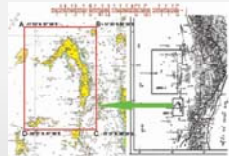
18

Management Measures in Fisheries

For Resources Conservation ;

Under the Fisheries Law,

- Lampi Island of Tanintharyi coast, as Marine Park and Marine Reserve.
- around all the islands area ; (announced as fisheries protect area) whereby collection of marine fauna and flora is prohibited.



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Prohibition of fishing Activities by DOF

- Spawning Season
Jun- July-August (Started from 1993-94)
- Lobster and Commercial Fishes Spawning Season
Jun- July-August (Started from 2008-09)
- Grouper (2/2006)
All fishing ground, July-Aug-Sept
- Sea bass (2/2006)
All fishing ground, Jan-Feb-Mar
- Hard Clam (9/2008) Myeik, Palaw, Kyae chaung and Ta Bo chaung point. 20 Acre
Jan-Feb-Mar
- Set Bag net (Bom Kyaung Pike)- (1/2009)
April- May
- Shark (2/2004) Myeik Archipelago



Indian Threadfin Conservation



Wet Phyu Taung Island



Thar Myar Mei Island



Protected Period - Jun, July, August

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Juvenile (Indian Threadfin)



22

Hard Clam Conservation

- Name - Hard Clam (*Meretrix Annamensis Duxsonyana*)
- Place - Palaw Township
- Close season - Jan, Feb, March



Conservation Activities (Turtle)

Long Lone Township, Long Lone Boke Island

Hatching and releasing program



34

Conservation Activities (Mud crab)

Mud Crab protected areas

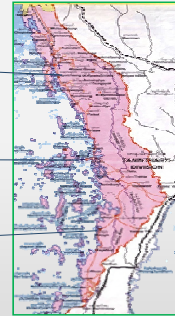


Crab Protected areas

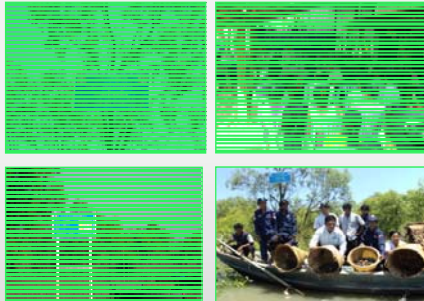
Thayetchaung Township - 115 acres

Kyunsu Township - 350 acres

Bokepyin Township - 100 acres



Mud Crab protected activities in Tha Yet Chaung Township



37

Mud Crab protected activities in Kyun Su Township



38

Mud Crab protected activities in Boke Pyn Township



39

Conservation Activities (Mangrove forest)

Mangrove forest protect and re-plantation program ,collaboration with Forest Department , Local authority , NGOs and Local people.



Mangrove forest Conservation Activities (Long Loe Township)



31

Mangrove forest Conservation Activities



32

Safety of Fishermen

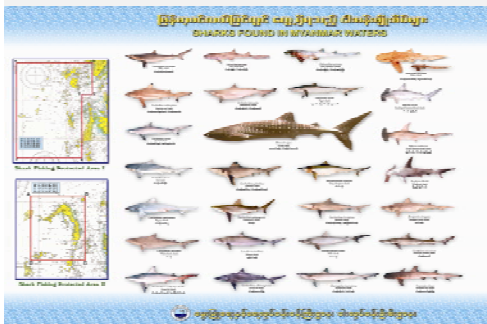


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Public Awareness for Conservation Poster



Public Awareness for Conservation Poster



Public Awareness for Conservation Posters



Pollution

Coral reef

33

REQUIREMENT FOR DEVELOPMENT OF COASTAL MANAGEMENT

- Encourage research and develop long-term monitoring programmes database and information sharing with international conservation communities for technical and logistic support.

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Law and regulations/restriction with implication for fishing, fisheries and habitat management in Myanmar

Mr. Tun Thiha

Fisheries Law Officer, Department of Fisheries, Head Office, Yangon, Myanmar

On – Site Training and Awareness Raising on the Integration of Fisheries and Habitat Management and the Management of Fishing Capacity
(3-5 March, 2011) Mergui, Myanmar.


LAW & REGULATIONS / RESTRICTION WITH IMPLICATION FOR FISHING, FISHERIES AND HABITAT MANAGEMENT

By
Htun Thiha
Law Officer
Department of Fisheries

Introduction

Republic of the Union of Myanmar, having a long coast line of 2832 Km with many rivers flowing into the extended and large continental shelf of 225,000 square Km is rich in natural fisheries resources.

The marine fishery is the main fishery of Myanmar, In terms of production, it contributed 53% of the total fishery production in 2009-2010.



Fisheries

Fishery means carrying out operations relating to fish for the purpose of systematic management, commercial production, conservation and development. This expression also includes operations such as ;

- Fishing,
- Aquaculturing,
- Exploration,
- Research,
- Stocking,
- Propagations,
- Processing,
- Transporting,
- Storing and
- Marketing.

Fisheries Laws

DOF manages the fishery in accordance with following existing Fisheries Law;

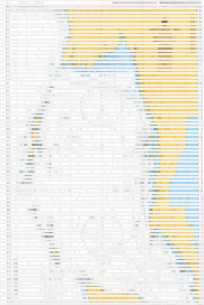
1. Law relating to the Fishing Rights of Foreign Fishing Vessels (Law No.11/89) (2.4.89)
2. Law relating to Aquaculture (Law No. 24/89) (7.9.89)
3. Myanma Marine Fisheries Law (Law No. 9/90) (25.4.90)
4. Freshwater Fisheries Law (Law No.1/91) (4.3.91)
5. Law amending the law relating to the Fishing Rights of Foreign Fishing vessels (Law No.15/93) (25.10.93)
6. Law amending the Myanma Marine Fisheries Law (Law No.16/93) (28.10.93)

Fisheries Laws



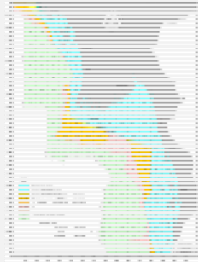
Taninthayi Region

The Taninthayi coastal Region (From Gulf of Moattama to the mouth of Pakchan River) about 1200 Km is length in the Andaman Sea. Hence, fishery of this region are operating in accordance with the Law relating to the Fishing Rights of Foreign Fishing Vessels and the Myanma Marine Fisheries Law.



Law relating to the Fishing Rights of Foreign Fishing Vessels (1989)

- **only for fishery of foreign fishing vessels**
- Foreign fishing vessel means;
 - (a) a vessel belonging to a foreigner
 - (b) a vessel is registered in any foreign country
- engage in a fishery in the Exclusive Economic Zone beyond the Territorial Sea.



Law relating to the Fishing Rights of Foreign Fishing Vessels (1989)

Duties of the Master

- shall abide by the **terms and conditions attached to the license**
- shall hang the **licence and registration certificate** prominently at the wheel house of the vessel
- shall maintain **ship log-book and fishing data book**
- shall report **48 hr prior to DOF, all the particulars** of the vessel before the enter to leaves/ **from Myanmar waters.**
- shall directly proceed to the port for inspection.
- shall maintain **fishing implements are stored while** traversing in the EEZ or not permitted waters.

Law relating to the Fishing Rights of Foreign Fishing Vessels (1989)

Duties of the Master (Cont'd)

- shall not catch **marine turtles and their eggs, pearl oysters, lobster with eggs, aquatic mammals and other fish** prohibited by DOF, from time to time
- caught or taken **unavoidably if it alive be released** immediately.
- shall use **2 1/2 inches at the cod end for fish trawl, 2 1/2 inches for shrimp trawl and 1 inches net for India Mackerel and 4 inches net for Threadfin and Hilsa for purse seine.**
- shall not transport **any alive fish without permission** from DOF.

Law relating to the Fishing Rights of Foreign Fishing Vessels (1989)

Law Enforcement

- An entrepreneur **who has obtained a licence shall** abide by the terms and conditions **attached to the licence, Notifications and Directives** issued by DOF and **Provisions of the Law** relating to the Fishing Rights of Foreign Fishing Vessels (1989)
- The Inspectors (**Army, Navy, Customs and DOF**) shall examine whether the vessel **comply with the Law, Notifications, Directives and Terms and Conditions attached to the licence.**
- If the Inspector has found out the vessel had contravened any Prohibitions of Law, **the fishing vessel, fishing implements, fish and other articles and money may be confiscated by DOF DG.** In addition, the offender may also be **arrested and trial to Court.**

Prohibitions

- shall not fish without a licence
- shall not engage **loading, unloading, processing** and transferring of fish and **harassing, catching, killing, storing, transporting, processing and transferring of fishes which DOF has prohibited**
- shall not keep or **use explosive substances, poisons, chemicals and other substances.**
- shall not (a) fish in the **fishing grounds** (b) use **fishing implements** (c) fish in the **fishing period** (d) fish **specific types of fish** not permitted in the licence
- shall not harass, assault or hurt the Inspector while discharging his duties.
- shall not dispose of **from aboard the fishing vessel living creatures or any material to cause pollution of the water body** or to harass the fish and other marine organisms.
- shall not fail to **comply with any duty of Master**
- shall not conceal or **dispose the fish, fishing implement, other material or money** while the Inspector is examining

Myanma Marine Fisheries Law (1990)

The **Myanma Marine Fisheries Law** is concerning the systematic management of **inshore fisheries, offshore fisheries, joint venture fisheries and collecting of marine products, conservation and protection of marine resources and collecting the actual data of the fishery.**

Inshore Fisheries

Inshore fisheries means 10 nautical miles from shoreline in Taninthayi coast. In this area, fishery is allowed to not only fishing by the fishing implements without boat and traditional fishing boat with motor but also the boat not more than in the length of 30 feet and 12 H.P.



Offshore Fisheries

Offshore fisheries means fishing outside the area specified for inshore fisheries to the EEZ.

Vessel more than in the length of 30 feet and 12 HP.



Joint Venture Fisheries

- Joint Venture fisheries may be formed in any of the following forms;
 - (a) a joint venture formed between state economic organization and foreigner;
 - (b) a joint venture formed between a citizen and a foreigner
- DOF may be granted the joint venture vessel, the baselines to EEZ.

Collecting of Marine Products

- Marine product means fishes obtained from the sea, aquatic organisms, their excreta, scales, bones, skins, plants, non-living things. This expression also includes marine turtle and eggs, crocodile and eggs, crab, ambergris, oyster shell, clam shell, mussel, coral, sea sponge, sea weed, moss, algae etc;



Duties of the Licence Holder

- shall abide by the Provisions of Myanmar Marine Fisheries Law (1990)
- shall comply with the Notifications and Directives issued by DOF
- shall carrying out the fishery in accordance with the terms prescribed in the licence.
- shall appoint on board his vessel only those fishermen who are registered in DOF.

Law Enforcement

- A person who has obtained a licence shall abide by the terms prescribed in the Licence, Notifications and Directives issued by DOF and Provisions of the Myanmar Marine Fisheries Law (1990)
- The Inspectors (Army, Navy and DOF) shall examine whether the vessel / marine products collector comply with the Law, Notifications, Directives and Terms prescribed in the licence.
- If the Inspector has found out the vessel / marine products collector had contravened any Prohibitions of Law, the fishing vessel, fishing implements, fishes, marine products, other articles and money may be confiscated by DOF DG. In addition, the offender may also be arrested and trial to court.

DOF Activities for Sustainable Fisheries

Shark Protected Area

- From Done Island to Lumpi Island, Myeik Archipelago
- Area (1)
 - Point (A) Lat 12° 29'(N) Long 97° 25' (E)
 - Point (B) Lat 12° 29'(N) Long 98° 18' (E)
 - Point (C) Lat 12° 06'(N) Long 98° 18' (E)
 - Point (D) Lat 12° 06'(N) Long 98° 09' (E)
 - Point (E) Lat 11° 14'(N) Long 98° 09' (E)
 - Point (F) Lat 11° 14'(N) Long 97° 25' (E)

Marine fisheries waters between these points
- Area (2)
 - Point (A) Lat 11° 03'(N) Long 98° 00' (E)
 - Point (B) Lat 11° 03'(N) Long 98° 20' (E)
 - Point (C) Lat 10° 36'(N) Long 98° 20' (E)
 - Point (D) Lat 10° 36'(N) Long 98° 00' (E)

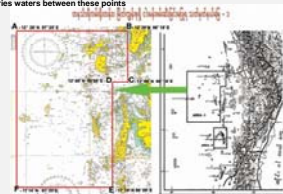
Marine fisheries waters between these point

DOF Activities for Sustainable Fisheries

Shark Protected Area

- From Done Island to Lumpi Island, Myeik Archipelago
- Area (1)
 - Point (A) Lat 12° 29'(N) Long 97° 25' (E)
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 - Point (E) Lat 11° 14'(N) Long 98° 09' (E)
 - Point (F) Lat 11° 14'(N) Long 97° 25' (E)

Marine fisheries waters between these points

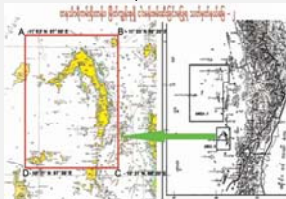


DOF Activities for Sustainable Fisheries

Shark Protected Area

- Area (2)
 - Point (A) Lat 11° 03'(N) Long 98° 00' (E)
 - Point (B) Lat 11° 03'(N) Long 98° 20' (E)
 - Point (C) Lat 10° 36'(N) Long 98° 20' (E)
 - Point (D) Lat 10° 36'(N) Long 98° 00' (E)

Marine fisheries waters between these point



DOF Activities for Sustainable Fisheries (Cont'd)

Prohibited Area

- (1) From the shoreline of Zardetgyi Island to EEZ
 - Lat 10° 00' (N) to Lat 11° 00' (N)
 - Long 95° 17' (E) to Long 98° 30' (E)
- (2) 2 nautical miles from low – tide elevation line of Lumpi Island
 - Lat 10° 41.5' (N) to Lat 10° 59.3' (N)
 - Long 95° 17' (E) to Long 98° 18.3' (E)
- (3) 3 nautical miles form Pearl Island
 - Lat 11° 10' (N) to Lat 11° 22' (N)
 - Long 98° 12' (E) to Long 98° 22' (E)

- Protected species
- Whale shark (*Rhincodon tyous*)
- Protected size
- Crab under 8.15 cm (width), 6.15 cm (length)

DOF Activities for Sustainable Fisheries (Cont'd)

Closed species / season

- (1) Grouper 1st July to 30th September
 (2) Sea bass 1st January to 31st March
 (3) Hard clam 1st January to 31st March
 - area between
 - Lat 11° 50' (N) to Long 98° 45' (E)
 - Lat 12° 10' (N) to Long 98° 45' (E)
 and
 - Lat 11° 50' (N) to Long 98° 42.22' (E)
 - Lat 12° 10' (N) to Long 98° 42.22' (E)
 (4) All species 1st June to 31st August
 - Lat 13° 30' (N) to Lat 16° 00' (N)
 Long 97° 30' (E) to Long 98° 00' (E)
 - Lat 12° 00' (N) to Lat 13° 00' (N)
 Long 97° 30' (N) to Long 98° 00' (E)
 - Lat 11° 55' (N) to Lat 12° 00' (N)
 Long 98° 09' (E) to Long 98° 15' (E)
 Marine fisheries waters between these points.

DOF Activities for Sustainable Fisheries (Cont'd)

Permitted Mesh size

- Trawl Net (Fish) 2" (Cod End)
 Ratio is 7" per 4 grid / mesh
 Trawl Net (Shrimp) 1½" (Cod End)
 Handing Ratio is 4" per 3 grid / mesh

Not Permitted Marine Product

- Marine turtle and eggs
- Crocodile and eggs
- Oyster
- Coral
- Marine Mammals

Prohibitions and Penalties

Section No	Prohibition	Section No	Penalty
33	- shall not fishing without inshore fisheries license	44	imprisonment up to 10 years or with fine up to kyats 300,000 or with both
34	- shall not fishing without offshore fisheries license		
40	- shall not collecting the marine products without a license		
35	- shall not violate any of the terms and conditions contained in license	45	imprisonment up to 3 years or with fine up to kyats 200,000 or with both
36	- shall not transfer fisheries license		
37	- shall not obtain by way of transferred license		

Prohibitions and Penalties

Section No	Prohibition	Section No	Penalty
39	- shall not dispose any material to cause pollution of water or to harass marine organisms	46	imprisonment up to 3 years or with fine up to kyats 100,000 or with both.
41	- shall not establish commercial sport fishing		
42	- shall not harass, assault the Inspector	47	imprisonment up to 10 years or with fine up to kyats 500,000 or with both
38	- shall not keep or use explosive substances, poisons, chemicals and other dangerous substances		
43	- shall serve as a fisherman without a registration card issued by DOF	48	imprisonment up to 3 years or with fine up to kyats 500,00 or with both

Issue

- Fishing in prohibited area
- Using non permitted mesh size
- Using Dynamite
- Neglect of inshore and offshore criteria
- Weak of awareness

Suggestion

- Discussion / Training with vessels' owners, masters and fishermen on CCRF awareness and more obey the Law, Notifications and Directives
- Established more prohibited season and area (spawning ground)
- Substitute any other income work in prohibited season.

Conclusion

CCRF explains effective use of fisheries resources in sustainable manner to express livelihood, economic, social, environment and culture, so that sustainable fisheries management program and activities, which may relevant with fisheries laws and regulations in appropriate sector.

Current status on the research and management of *Rastrelliger spp* and related species or Hilsa in Myanmar area

Mr. Saw Aung Ye Htut Lwin¹ and Mr. Tun Than²

1. Assistant Director, Department of Fisheries, Myanmar
2. Township Fishery Officer, Palaw Township, Myeik District

***Rastrelliger spp.* or Hilsa and related species**

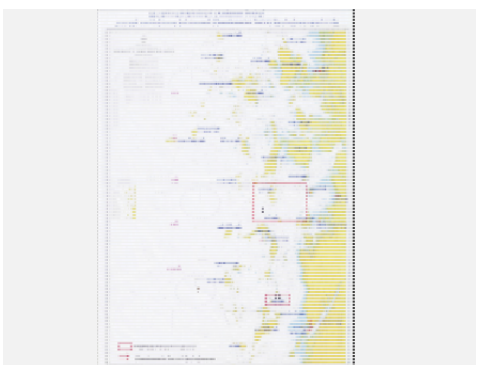


**Saw Aung Ye Htut Lwin (Assistant Director)
U Htun Than(Deputy Fishery Officer)**

3.3.2011 **Myeik, Tanintharyi**

BIOLOGY FACTS OF <i>Rastrelliger brachysoma</i>	
Scientific name	<i>Rastrelliger brachysoma</i>
Local name	Pa-La-Tu
Size	Max: 34.5 cm
Habitat & Biology	An epipelagic, neritic, found in water warmer than 17°C, forms large school, Feed on Phyto & Zooplankton(juvenile) and or fishes and shrimp larvae when adult, usually at depths between 10 and 50 m.
Used	Marketed fresh or frozen, also make canning, smoke, dried, fermented.

BIOLOGY FACTS OF <i>Rastrelliger kanagarua</i>	
Scientific name	<i>Rastrelliger kanagarua</i>
Local name	Pa-Lar-Lan
Size	Max: 35 cm
Habitat & Biology	An epipelagic, neritic, found in water warmer than 17°C, forms large school, Feed on Phyto & Zooplankton(juvenile) and or fishes and shrimp larvae when adult, usually at depths between 10 and 50 m.
Used	Marketed fresh or frozen, canned, dried, salted, smoked, also made into fish sauce



2008 Economically importance of small pelagic fish tagging programme

Location	Site	Species	Target	Tagged	Occupied	
ANDAMAN SEA	Site - 1	<i>R. kanagurta</i>	700	664		
	Boke Pyinn	<i>B. brachysoma</i>	700	214		
		<i>R. kanagurta</i>	700	700		
	Kaw Thaug	<i>B. brachysoma</i>	700	89	1	
	Total			2800	1667	

2009 Economically importance of small pelagic fish tagging programme

Location	Site	Species	Target	Tagged	Occupied	
ANDAMAN SEA	Site - 1	<i>R. kanagurta</i>	700	996		
	Boke Pyinn	<i>B. brachysoma</i>	700	1375		
		<i>R. kanagurta</i>	700	322		
	Kaw Thaug	<i>B. brachysoma</i>	700	1562	7	
	Total			2800	4255	

2010 Economically importance of small pelagic fish tagging programme

Location	Site	Species	Target	Tagged	Occupied	
ANDAMAN SEA	Site - 1	<i>R. kanagurta</i>	700	791	-	
	Boke Pyinn	<i>B. brachysoma</i>	700	53	-	
		<i>R. kanagurta</i>	700	616	-	
	Kaw Thaug	<i>B. brachysoma</i>	700	28	-	
	Total			2800	1488	

Activities of tagging programme in 2010



EXPORTED MARINE FISHES OF 2009-2010

NO	SPECIES	METRIC TON	US \$(million)
1	HILSA	17005.957	27.802
2	WHITE POMFRET	5876.258	21.933
3	ROSY JEW FISH	6018.676	16.040
4	RIBBON FISH	9789.997	14.313
5	<i>Decapterus spp (Platukae)</i>	22293.906	10.739
6	YELLOW CROAKER	3911.402	9.422
7	BIG EYE CROAKER	6699.378	7.771
8	<i>Rastrelliger spp</i>	9279.087	6.621
9	TONGUE SOLE	5100.398	6.299
10	SARDINE	12775.983	5.849

Rastrelliger spp contributed significantly to export earning.

Conclusion

- Depletion of fish stocks & overfishing were some of the main problems of coastal and marine fisheries in this region.
- Most fishing communities almost entirely on fishing livelihood and lack of alternatives.
- Communities motivation is the most important step for effective implementation of the fisheries management.
- Joint effort by all stakeholders and coordination among them is essential ; Fisheries management cannot be practiced in isolation by the DoF.

SPECIES DIVERSITY

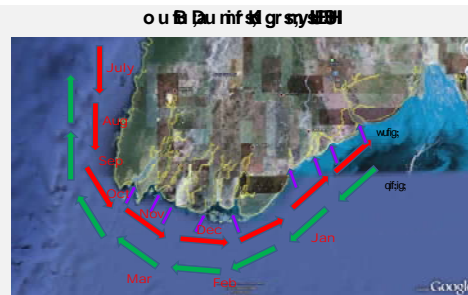
- Five species of hilsa occurs in the Indo-Pacific faunal region.
- Popular name Ilisha (Indian shad) belong to general *Tenulosa* & Hilsa
- 2 species of *Tenulosa* (*T. ilisha* & *T. toli*) occur in Myanmar waters.



Tenulosa ilisha



Tenulosa toli





The Exported Marine Fish (Species Wise) 2007-2008

MT – Ordinary
US\$ - Million

No	Commodities	MT	US\$
1.	HILSA	17952.312	39.528
2.	WHITE POMFRET	7903.802	34.019
3.	RIBBON FISH	18895.869	20.158
4.	ROSY JEW FISH	6381.545	15.062
5.	YELLOW CROAKER	6166.003	12.133
6.	TONGUE SOLE	4634.969	7.026
7.	BIG EYE CROAKER	9499.727	6.150
8.	SEA EEL	3494.416	5.255
9.	BLACK POMFRET	1805.003	4.618
10.	THREAD FIN BREAM	4474.445	4.186
11.	WOLF HERRING	6119.919	4.110

The Exported Marine Fish (Species Wise) 2008-2009

MT – Ordinary
US\$ - Million

No	Commodities	MT	US\$
1.	HILSA	16743.555	29.140
2.	WHITE POMFRET	4372.703	18.919
3.	ROSY JEW FISH	5232.055	13.527
4.	YELLOW CROAKER	5063.189	9.721
5.	RIBBON FISH	6855.578	8.502
6.	BIG EYE CROAKER	4127.447	4.552
7.	SEA EEL	2253.985	3.858
8.	TOUNGUE SOLE	2636.866	3.298
9.	BLACK POMFRET	1321.885	3.207
10.	BARA MUNDI(FILLET)	559.199	2.040
11.	THREAD FIN	372.696	0.726

Hilsa Fisheries Management Workshop Outcomes(25-2-2011)

- Hilsa drift gill net – 4“ mesh size
- To consider Purse Seine mesh size
- To control Purse Seine Fishing Vessels(Fishing Capacity)
- Trammel drift net will be closed, 1-8-2012
- Stow net mesh size (cod end) 2”
- To ban mosquito net
- Closed Season/Area or Sanctuary
- To form national taskforce

Annex 11

Fishing Vessel Record and Inventory

Mr. Thiha

Deputy Director, Head of the Fishing Vessel Licensing Section,
Department of Fisheries, Head Office, Yangon, Myanmar

On-site Training and Awareness Raising on the Integration of Fisheries and Habitat Management and The Management of Fishing Capacity. (3-5 March, 2011)

Fishing Vessel Record and Inventory in Myanmar

Thi Ha
Department of Fisheries
Myanmar



MARINE FISHERIES

Marine capture fisheries

a. In-shore Fishery

- 5 nautical mile from shore (Rakhine coastal)
- 10 nautical mile from shore (Ayeyarwady & Tanintharyi)
- Not more than 12 HP engine & 30 Feet length of the boat.

b. Off-shore fishery

- Outer area of inshore to end of EEZ
- More than 12 HP engine boat
- Bottom trawl, Purse seine, Surrounding net, Drift net & Long line.

Number of Fishing Vessel Engage in Inshore Fishery

Year	Mechanized Boat	Non-mechanized Boat	Total
2004-05	14176	16687	30863
2005-06	14099	16361	30460
2006-07	14284	16284	30568
2007-08	14289	15219	29508
2008-09	14052	14645	28697
2009-10	13788	17054	30842

Number of Fishing Vessel Engage in Off-shore Fishery

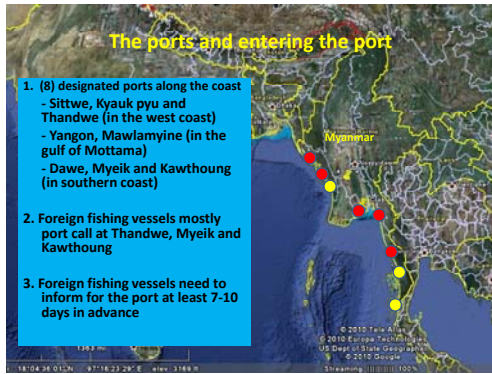
No	Type of Gear	National	Foreign
1	Trawl	895	256
2	Purse seine	163	50
3	Stow net	458	-
4	Drift net (Gill net)	148	1
5	Long line	3	49
6	Squid cast net	35	13
7	Fish Trap	112	-
Total		1814	369

Offshore Fisheries

Demarcated 4 fishing grounds

1. Rakhine
2. Ayeyarwaddy
3. Mon
4. Tanintharyi

- Local vessels have privilege to operate fishing at one or two adjacent fishing grounds
- Foreign vessels have privilege to operate one selected fishing ground of three (1,2,4) from outside the territorial up to EEZ during the license period (The license can renewable to extend fishing period)



Fishing Vessel Registration System

- National Fishing Vessel Registration
 - Inshore Fishing Vessel
 - Off shore Fishing Vessel
- Foreign Fishing Vessel Registration

National Fishing Vessel Registration (1. Inshore Fishing Vessel)

- By the Authority from the (DMA), General Administration Department inspected and process all inshore vessels .
- After fishing vessel have inspected the Department of Fisheries (DOF) issue fishing and fish carrier license to the inshore vessels by recommendation of the General Administration Department,

National Fishing Vessel Registration (1. Inshore Fishing Vessel)

- National Inshore Fishing/Carrier Vessel registration format of license are as follows;
 - Name of owner
 - Identity card No
 - Address
 - Name of fishing vessel
 - Fishing vessel registration No
 - Measurements
 - Gross tonnage
 - Kind of engine
 - Horse power
 - Fishing ground
 - Fishing gear/Fish commodity and amount
 - License expire Date

National Fishing Vessel Registration (2. Offshore Fishing Vessel)

- Department of Marine Administration (DMA) inspects and process all vessel according to the procedure and rule of the IMO for registration so as to be safe from danger the LSA inspected.
- The Department of Fisheries (DOF) issue fishing and fish carrier license to the vessel after recorded on fishing vessel registration which has vessel registration from the DMA.



Cover



Inside



Attach

National Fishing Vessel Registration Format

- National Fishing Vessel registration format are as follows;
 - Name of fishing vessel
 - Name of owner
 - Identity card No
 - Address
 - Name of company
 - Fishing vessel registration No
 - Gross tonnage
 - Measurements
 - Kind of engine
 - Horse power
 - Vessel registration number from (DMA)
 - Fishing ground
 - License fees (Annually)
 - Bank Payment Chalan No / Date

National Fishing Vessel Licensing format

National Fishing Vessel Licensing format are as follows;

- Name of owner
- National Identity card No
- Owner address
- Fishing method / fishing gear
- Name of vessel
- Fishing vessel registration No (DOF)
- Measurement
- Gross tonnage
- Kind of engine / horse power
- Vessel registration No (DMA)
- Permission / Date
- License fees
- Payment chalan No / Date
- Fishing ground
- License period

License for Foreign Fishing Vessel



Cover



Inside



Attach

Foreign Fishing Vessel Registration and Licensing format

Foreign Fishing Vessel Registration and Licensing format are as follows;

- (a) Name of vessel
- (b) Name of Master
- (c) Name of Company
- (d) Type of Vessel (Trawler/Purse seiner/Gill netter/ Long Liner etc)
- (e) Gross tonnage (GT)
- (f) Measurement (LOA/LBP)
- (g) Horse power (HP)
- (h) Vessel registration Document and Number (Flag Country)
- (i) License fees (According to size of vessel and type of fishing methods)
- (j) Fishing vessel registration No (DOF)
- (k) Payment chalan No / Date
- (l) Fishing ground
- (m) License period

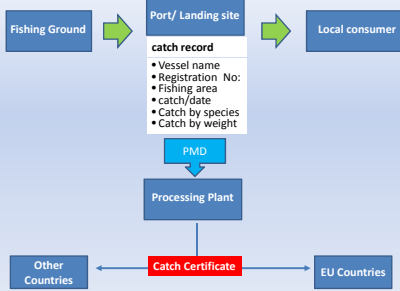
Management Measures

Prohibition of fishing gear

- Under "Law Relating To The Fishing Rights Of Foreign Fishing Vessels", "Myanmar Marine Fisheries Law" and related regulations, fishing gear that is destructive to the environment and the fisheries resources are banned.
- These gears includes gear trawl fishing, electric fishing, fishing using poisons, chemicals, explosives.
- Purse seine net not less than 3.5 inch mesh size for local fishing vessels and 4 inches for foreign vessels
- Trawl net cod-end mesh size not less than 2 inches for local fishing vessels and 2.5 inches for foreign vessels.

Catch Documentation

Catch Flow

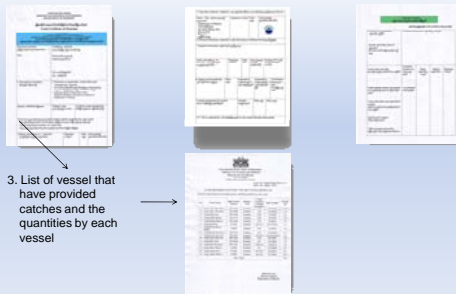


Catch Documentation

Product Movement Document (PMD)



Catch Certificate

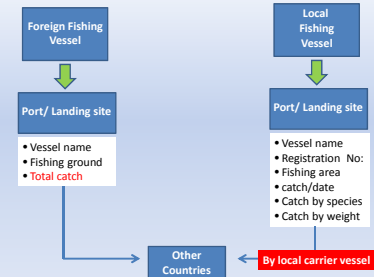


ISSUE CATCH CERTIFICATE

1. The export of marine product to EU countries from Myanmar has to be declared that the fish caught was not from the I.U.U vessels in the Catch Certificate and the EU countries have accepted according to their EC regulation.
2. Catch made from Myanmar that from the date of 31st March 2010 are authorized to export to the EU when accompanied by a valid Catch Certificate.
3. In order to issue Catch Certificate the following is required:
 - a) The Company that will export to the EU must apply to the DOF for the C/C.
 - b) In the application ED/PMD to be attached together.
 - c) The PMD will be inspected at the Landing Site and recommendation given.
 - d) Compile the list of each vessel catches from PMD that have attached with C/C.
 - e) PMD must be as the evidence of the export document and case file opened and C/C will be issued.
 - f) All the case files are filed and kept case by case for each C/C issued.

Catch Documentation

Catch Flow (Fresh fish)



Port Monitoring


Mr. Hla Win

District Fisheries Officer, Myeik District, Myanmar

On-site Training and Awareness Raising on the Integration of Fisheries and Habitat Management and The Management of Fishing Capacity. (3-5 March, 2011)


PORT MONITORING in Taninthayi Region

HLA WIN
District Fishery Officer
Myeik District




INTRODUCTION

- Coastal city, Myeik located in the southern part of Myanmar. Between Latitude (12 42') and (12 48') North and Longitude (90 46') and (98 48') East.
- The population of Myeik city is (317,000).



Port Monitoring System in Myeik for Fishing Vessels


In Myeik, there is 1 Check Point and 9 landing site. As a daily check-in, check-out fishing vessels, round about 20 fishing vessels



Port Monitoring System in Myeik for Fishing Vessels

Check in, check-out of Off-Shore Fishing vessels in Myeik district are as follow:



(1)	Local off-shore fishing vessels	-	675
(2)	Foreign off-shore fishing vessels	-	109
(3)	JV off-shore fishing vessels	-	45
(4)	Carrier Vessels	-	44



Port Monitoring System in Myeik for Fishing Vessels

Type of Fishing Vessel Operated in Taninthayi Water

Type of vessel	Number
Trawler	495
Purse seine	87
Trap	58
Squid Cast Net	35






Port Monitoring System in Myeik for Fishing Vessels

In the fishing Inspection Station, have to inspect one stop service (OSS) system.

- (1) Department of Fisheries (DOF)
- (2) Custom Department
- (3) Immigration
- (4) Port Authority
- (5) Marine Administration
- (6) Police Force

When Fishing vessels want to go-out to the fishing ground, have to apply the sailing order to the DOF.

Port Monitoring System in Myeik for Fishing Vessels

When Fishing vessels want to go-out to the fishing ground, have to apply the sailing order to the DOF.

The members of OSS inspect the fishing vessels just before depart to the fishing ground.

- (1) Fishing Licence
- (2) Fisherman Registration Card.
- (3) National Registration Card .
- (4) Vessel Registration Certificate.
- (5) Life Saving Appliance (LSA)
- (6) Navigation Certificate.
- (7) Mesh size of Fishing Net.

Port Monitoring System in Myeik for Fishing Vessels

(1) Fishing Licence

Port Monitoring System in Myeik for Fishing Vessels

(2) Fisherman Registration Card.

Port Monitoring System in Myeik for Fishing Vessels

(3) National Registration Card .

Port Monitoring System in Myeik for Fishing Vessels

(4) Vessel Registration Certificate by DMA

Port Monitoring System in Myeik for Fishing Vessels

(5) Life Saving Appliance (LSA)

Port Monitoring System in Myeik for Fishing Vessels

(6) Communication Equipment Licence.

Port Monitoring System in Myeik for Fishing Vessels

(7) Inspection of Mesh size

Port Monitoring System in Myeik for Fishing Vessels

Sailing Order

After inspection above mentioned regulation, the of OSS issued the Sailing order.


Port Monitoring System in Myeik for Fishing Vessels

When the Fishing Vessels come back to the Check-Point, as a OSS members inspect again below:

- (1) Whether the Fishermen those come-back to Check Point.
- (2) Check the Fishing log book.
- (3) Whether the fishing vessels have operated in the fishing ground over fishing period.
- (4) Inspection the species of catching.
- (5) After inspection above mentioned, allowed to fishing vessel to proceed their landing site.

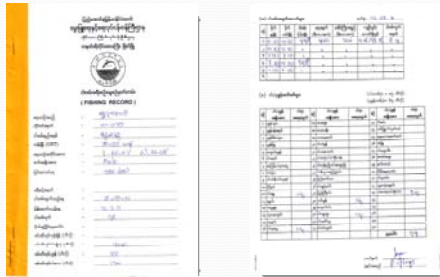
Port Monitoring System in Myeik for Fishing Vessels

(1) Whether the Fishermen those come-back to Check Point.




Port Monitoring System in Myeik for Fishing Vessels

(2) Check the Fishing Log Book



Port Monitoring System in Myeik for Fishing Vessels

(3) Inspection the species of catching.




Port Monitoring System in Myeik for Fishing Vessels

(4) After inspection above mentioned, allowed the fishing vessel to proceed their landing site.




Awareness Programme

Beside that, as the OSS Members , especially DOF used to explain, not only the Rule and Regulation of Department but also about safety at sea, conservation of natural resources, to release dangerous species when unexpected catching.



Awareness for Conservation Posters



Dugong conservation Turtle conservation

23

Awareness for Conservation Posters



Pollution Coral reef

24

Annex 13

Introduce the Monitoring, Control and Surveillance (MCS) Matrix

Mr. Khin Maung Aye

Assistant Director, Principal of the Institute of Fisheries Technology, Department of Fisheries, Myanmar

On-site Training and Awareness Raising on the Integration of Fisheries and Habitat Management and The Management of Fishing Capacity. (3-5 March, 2011)

Introduce the Monitoring, Control and Surveillance (MCS) Matrix

Khin Maung Aye
Institute of Fisheries Technology
Department of Fisheries

1

Definition

Monitoring, Control and Surveillance (MCS) System

A system that ensure the monitoring, control and surveillance of fishing activities. Monitoring involves the requirement of continuously observing, collecting, measuring and analyzing data and information on fishing activities. Control refers to specifying the regulatory conditions (legal framework) under which the exploitation, utilization and disposition of the resources may be conducted. Surveillance involves the degree and types of observations required to maintain compliance with regulations.

2

MCS

Monitoring, Control and Surveillance

3

Definition

A 1981 Conference of Experts defined monitoring as

- **M = Monitoring**
–the continuous requirement for the measurement of fishing effort characteristics and resource yields;

4

Definition

Expanded, in a 1993 workshop, to include the measurement of

- **M = Monitoring**
Monitoring Involves the collection, measurement and analysis of fishing activity on catch, species composition, effort, discards, area of operations, etc., which is to assist fishery managers to arrive at management decisions. If this information is unavailable, inaccurate or incomplete, managers will be handicapped in developing and implementing management measures.
 - catch
 - species composition
 - fishing effort
 - by-catch (i.e., species other than the targeted one incidentally captured by the primary effort)
 - area of operations

5

Definition

According to the 1981 Conference of Experts

- **C = Control**
–the regulatory conditions under which the exploitation of the resource may be conducted;

6

Definition

• C = Control

Control involves the specification of the terms and conditions under which resources can be harvested. These specifications are normally contained in national fisheries legislation and other arrangements that might be nationally, subregionally, or regionally agreed. The legislation provides the basis for which fisheries management arrangements being implemented and define the requirements and prohibitions that will be enforced.

7

Definition

■ C = Control

Management criteria include:

- Establishing designated fishing areas in which no fishing, fishing by vessels with licence, or open fishing is allowed.
- Restrictions on fishing gear, including the banning of certain types on vessels in give areas, or controls on such parameters as the mesh size of fishing nets. These restrictions can be enforced only by physical inspection at sea or at dockside.

8

- Catch and quota controls, by species or total take
 - Days at sea
 - Daily time at sea
 - Seasonal catch limits
 - Per-trip catch limits
 - Limits on catch within certain areas
 - Individual (vessel) transferable quotas
 - Minimum or maximum fish sizes
 - By-catch
- Vessel movement controls
 - Into areas
 - Exiting areas
 - Sightings in areas
- Onboard observers
- Licensing
- Vessel Inspection

9

Definition

According to the 1981 Conference of Experts

• S = Surveillance

–the degree and type of observations required to maintain compliance with the regulatory controls imposed on fishing activities.

10

Definition

• S = Surveillance

Surveillance involves the checking and supervision of fishing activity to ensure that national legislation and terms, conditions of access, and management measures are observed. *This activity is critical to ensure that resources are not over exploited, poaching is minimized and management arrangements are implemented.*

11

Definition

■ S = Surveillance

- Through surveillance, overfishing by authorized fishers and poaching by unauthorized fishers can be detected. Many systems are involved in the technical process of surveillance. Radar, including coastal, airborne, and spaceborne systems, may be intended for national security or law enforcement, but can simultaneously provide information to fisheries management and environmental protection authorities. [Vessel monitoring system](#) principally intended for fisheries surveillance can provide critical information to [search and rescue](#) (SAR) under the [International Convention for the Safety of Life at Sea](#) (SOLAS) and its associated [Global Maritime Distress Safety System](#) (GMDSS).

These wider definitions amplify the importance of all aspects of MCS.

12

MCS component

- Sea (Myanmar Navy)
- Air
- Land (DoF, DMA, Custom, Police, IMPD)
- Satellite technology (VMS)

13

Sea



14

Sea

Description	Place of Licence Issue	Word colour on Line Colour of Hull
Off Shore Fishing Vessel	Taninthayi	White
	HO/Ayeyarwaddy/Mon	White
	Rakhine	White
Off Shore Carrier	Local Carrier	Red
	Joint Venture	Red
Foreign Fishing	OTS (Long Line, Squid, Trap)	Red
	Fishing Right	White

15

Land



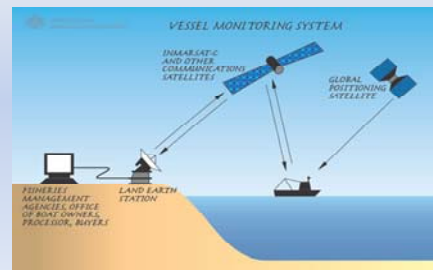
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(VMS)

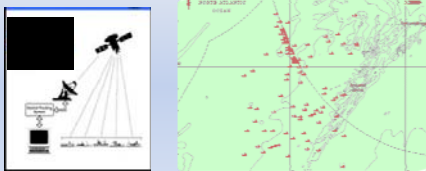


17

(VMS)



(VMS)



19

Role of MCS in Fisheries Management

- Establishing a regulatory framework – The management plans need to be supported by appropriate legal instruments by means of which the plans are implemented. These legal instruments detail all the control mechanisms available for fisheries management including, but not limited to:
 - Input controls** – such as access (number of fishers, number of vessels by fishery), licences, closed seasons, gear restrictions, vessel limitations, area restrictions (Protected Areas), VMS requirements, and vessel identification.
 - Operational and output controls** – such as species and catch limits, by-catch limits, reporting requirements, air surveillance, sea patrols/inspections, boarding, logbooks, dockside monitoring, observers, port inspections, and catch documentation schemes.

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Role of MCS in Fisheries Management

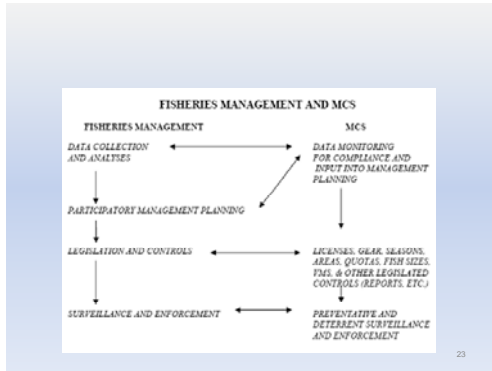
- Implementation** – this includes such measures as:
 - participatory community-based management (CBM);
 - "preventive" MCS activities to encourage voluntary compliance;
 - public awareness and education campaigns;
 - assistance to small scale fishers for supplemental livelihood development to reduce coastal area pressures;
 - full enforcement to ensure compliance by those minority of fishers that persist in ignoring the law.

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Role of MCS in Fisheries Management

- Unfortunately, not all fisheries administrators understand MCS, or its critical role as an implementing mechanism for fisheries management. Some view arrests as the only relevant indication of the effectiveness of MCS efforts. The real indicator for MCS is the level of compliance, and this is governed by many factors, e.g. the number of fishers; the number of vessels; effort and area coverage of patrols; results of patrols; increase in voluntary compliance, etc.

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Effective MCS

Port State Control

- Port State Measurement
- Port inspection
- Safety and Environmental protection

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Effective MCS

preventive approach

- to encourage "voluntary compliance" through understanding and support for the management strategies and this includes:
 - a) enhancement of community/fisher awareness and understanding of management practices and MCS through seminars, public awareness and information, education, and communication campaigns;
 - b) participatory management development to promote ownership of the management regime and input into the regulatory/control aspect of management (laws and regulations) in preparation for acceptance by the fishers of their joint "stewardship" role for the management of their fisheries in partnership with government;
 - c) peer pressure towards voluntary compliance and support for the management regime;
 - d) the institution of accurate and verifiable data collection regimes; and
 - e) surveillance and verification for compliance.

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MCS Network initiatives

The Gulf of Thailand sub-region (Cambodia, Malaysia, Thailand and Vietnam)

- Initiated the development of MCS network, starting with information sharing and suggested that "Institutional Matrix" be developed.

The Andaman Sea sub-region (Indonesia, Malaysia, Thailand, Myanmar and India)

- Initiated the development of MCS network, information sharing and introduced the "Institutional Matrix".
- MCS network to be further developed and the Institutional Matrix showing key institutions to be included in the further development of MCS network.

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MCS Training Themes

- Team-building activities

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MCS Training Themes

- Marine safety system

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MCS Training Themes

- Marine safety system

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MCS Training Themes

- Collecting information on marine animals and monitoring vessels

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MCS Training Themes

- Fishery laws and enforcement



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Managing fishing capacity and IUU fishing in Myanmar

Prepared by the Myanmar Government, Department of Fisheries, Yangon, Myanmar, 2010

Fishing Capacity

- Myanmar's fishing capacity is estimated to be 1.5 million GRT.
- Myanmar's fishing capacity is estimated to be 1.5 million GRT.
- Myanmar's fishing capacity is estimated to be 1.5 million GRT.

Drivers of increased fishing capacity and IUU fishing

- Rapidly increasing and diversified investment in Myanmar's fisheries.
- Increase in the local and international market for fish and fish products.
- Increase in the number of fishing vessels.
- Increase in the number of fishing vessels.
- Increase in the number of fishing vessels.

LIST OF CAPACITY ISSUES

Issue	Impact
1. Overcapacity	Overcapacity leads to overfishing and depletion of fish stocks.
2. IUU fishing	IUU fishing leads to illegal, unreported and unregulated fishing, which is harmful to the environment and the economy.
3. Lack of information	Lack of information on fishing capacity and IUU fishing leads to ineffective management and enforcement.

Capacity Impacts

- Overcapacity leads to overfishing and depletion of fish stocks.
- Overcapacity leads to overfishing and depletion of fish stocks.
- Overcapacity leads to overfishing and depletion of fish stocks.

Resource Status

- Lack of information on fishing capacity and IUU fishing leads to ineffective management and enforcement.
- Lack of information on fishing capacity and IUU fishing leads to ineffective management and enforcement.
- Lack of information on fishing capacity and IUU fishing leads to ineffective management and enforcement.

Future actions

- Strengthening of fishing vessels.
- Strengthening of fishing vessels.
- Strengthening of fishing vessels.

Other Information

- Myanmar's fishing capacity is estimated to be 1.5 million GRT.
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- Myanmar's fishing capacity is estimated to be 1.5 million GRT.

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Conclusion

- Motivation of MCS system is important for effective implication of fisheries management measures.
- Establishment of efficient MCS system is essential for effective controlling of fishing capacity and IUU fishing.
- Collaboration and cooperation of adjacent coastal nations would be most effective in combating IUU fishing.

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Crab bank activities in Ranong province

Mr. Sangthong Pattalord

Small scale fisherman from Ranong Province, Thailand



ความเป็นมาของโครงการธนาคารปูม้าชุมชน
Background

ธนาคารปู บ้านท่ายาง จ.ระนอง เริ่มต้นในปี 2549 หลังจากการเกิดสึนามิ ชาวประมงส่วนใหญ่ที่ทำการประมงปูม้า แต่จำนวนปูลดลงจึงได้มีแนวคิดในการรวมตัวกันจัดทำธนาคารปูขึ้น โดยได้รับการสนับสนุนจากมูลนิธิรักไทย

Since 2004 Indian Tsunami Fisherman in Tha-Yang village, mostly swimming-crab fishery, found that number of crab decreased and they need to increase swimming crab. Tha-Yang community crab Bank was established supported by RakThai Foundation in 2007

ธนาคารปูม้าชุมชน โดยการสนับสนุนจากองค์การบริหารส่วนตำบลม่วงกลางในปี 2552 งบประมาณ 599,000 บาท
Community Crab Bank Support by Tambon Administrative Organization



การประชุมโครงการธนาคารปูม้าชุมชน
Community Crab Bank meeting

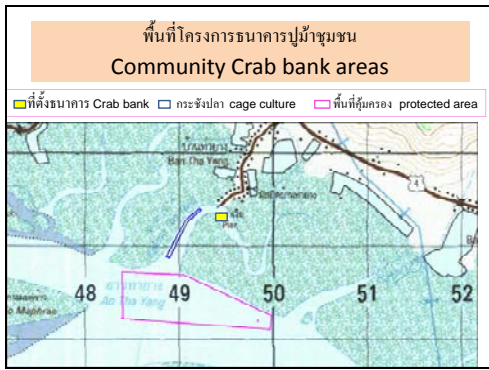
การประชุมโครงการธนาคารปูม้าชุมชนบ้านท่ายาง ของสมาชิกและตัวแทนมูลนิธิรักไทยเพื่อหาแนวทางการพัฒนาโครงการฯ

Community crab bank meeting with RakThai Foundation for developing project

วัตถุประสงค์
Objectives

- เพื่อเพิ่มปริมาณปูม้าในแหล่งประมงบ้านท่ายาง
- เพื่อฟื้นฟูทรัพยากรสัตว์น้ำในพื้นที่ชายฝั่ง
- เพื่อสร้างความเข้มแข็งของคนในชุมชน

- To increase Number of crabs in fishery ground
- To recover coastal resources
- To strengthen community fishery



นำปูไข่ให้กรรมการธนาคารปูลงทะเบียนก่อนปล่อย
Registered swimming crab to Crab bank




การปล่อยปูแม่ไข่นอกกระชังในกระชัง
Swimming crab stock in cage for larvae releasing



การเลี้ยงปูแม่ในกระชังเพื่อให้ปล่อยไข่
Swimming crab stock in cage



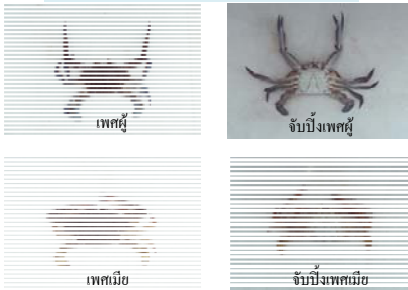
ภาพแสดงความกว้างและความยาวของปูแม่



ความยาว (Length)
หรือ Carapace length

ความกว้าง (width)
หรือ Carapace width

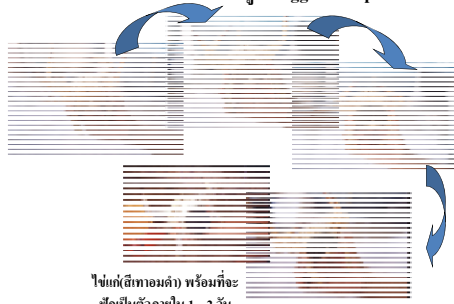
ภาพแสดงความแตกต่างของปูแม่เพศผู้และเพศเมีย



เพศผู้ จับปิ้งเพศผู้


เพศเมีย จับปิ้งเพศเมีย

ภาพแสดงพัฒนาการของไข่ปูแม่ Egg Developments



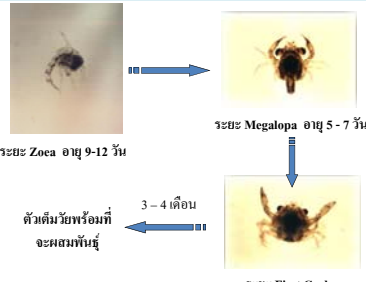
ไข่แก่(สีทามล่ำ) พร้อมที่จะฟักเป็นตัวภายใน 1 - 2 วัน

ไข่แก่สีทามล่ำ พร้อมที่จะฟักเป็นตัวภายใน 1-2 วัน



ไข่ปูแม่พร้อมตัวอ่อนที่อยู่ภายในไข่

ลูกปูแม่วัยอ่อนระยะต่างๆ Larvae stages



ระยะ Zoea 01-12 วัน

ระยะ Megalopa 01-5 - 7 วัน

ระยะ First Crab

ตัวเต็มวัยพร้อมที่จะผสมพันธุ์ 3 - 4 เดือน



