REPORT OF
THE 3th MEETING OF THE ANDAMAN SEA SUB-REGION

Bangkok, Thailand
18-20 October 2016

THE SECRETARIAT
SOUTHEAST ASIAN FISHERIES DEVELOPMENT CENTER

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THE 3rd MEETING OF THE ANDAMAN SEA SUB-REGION

18- 20 October 2016
Bangkok, Thailand

I. INTRODUCTION

1. The Third Meeting of the Andaman Sea Sub-region was convened in Bangkok, Thailand from 18 to 20 October 2016. The Meeting was attended by representatives from the Andaman Sea countries, namely: Indonesia, Malaysia, Myanmar, and Thailand, as well as from collaborating international organizations such as the Food and Agriculture Organization of the United Nations/Regional Office for Asia and the Pacific (FAO/RAP), Bay of Bengal Large Marine Ecosystem (BOBLME) Project, International Union for Conservation of Nature (IUCN)-Asia, Sustainable Development Foundation (SDF), and the Coastal Resource Institute Asia (CORIN Asia)-Myanmar. Senior officers from SEAFDEC Secretariat, SEAFDEC/TD, SEAFDEC/MFRDMD, and members of the Regional Fisheries Policy Network (RFPN) were also in attendance. The list of participants appears as **Annex 1.**

2. The Meeting was mainly aimed at facilitating and supporting the development of the Andaman Sea Sub-regional agreements/arrangements based on an ecosystems approach to fisheries through the integration of fisheries and habitat management. The Meeting was also intended to look for action-oriented recommendations towards the development of joint approaches and agreements to address problems/issues common to all four countries in the Andaman Sea, including options for development of a management plan for the whole Andaman Sea and related water bodies.

II. OPENING OF THE MEETING

3. The Secretary-General of SEAFDEC, *Dr. Kom Silapajarn* welcomed the participants to the Meeting and appreciated the participation of the delegates from the countries in the Andaman Sea Sub-region. He recalled the efforts made by SEAFDEC with support from SEAFDEC-Sweden Project and in collaboration with the BOBLME Project in strengthening the cooperation of the Andaman Sea Sub-region, especially in improving management of fishing capacity which includes the initiation of sub-regional MCS Networks together with development of port monitoring capacity and coordinated efforts to combat illegal fishing. He encouraged the participants to share information on the progress made with respect to the said aspects taking into consideration the recommendations made during the previous Andaman Sea Sub-regional meetings and to come up with valuable recommendations for the benefit of stakeholders in the Sub-region. He also cited the importance of strengthening collaborative efforts with other related international organizations and initiatives such as those of the BOBLME Project, FAO and Mangroves for the Future of the IUCN, among others. After expressing those insights, he then declared the Meeting open. His Opening Remarks appears as **Annex 2.**

III. BACKGROUND, OBJECTIVES AND ADOPTION AGENDA OF THE MEETING

4. The Senior Policy and Program Officer of SEAFDEC Secretariat, *Dr. Taweekiet Amornpiyakrit* gave a brief presentation on the background, objectives and Agenda of the Meeting, based on the Prospectus which appears as **Annex 3.**

IV. REVIEW OF RECOMMENDATIONS OF PREVIOUS MEETINGS AND UPDATES ON PROGRESS AND RESULTS OF ACTIONS BY ANDAMAN SEA COUNTRIES

4.1 Recommendations from the Second Meeting of the Andaman Sea Sub-region

5. The Senior Policy and Program Officer of SEAFDEC Secretariat, *Dr. Taweekiet Amornpiyakrit* presented a review of the results of the Second Meeting of Andaman Sea Sub-region organized in August 2012 in Phang Nga Province, Thailand and made emphasis on the recommendations of the said Meeting, namely: i) development of cooperative agreements within and among countries with relevant agencies on dialogues for information sharing, ii) capacity building and in the process building upon existing cooperative in border provinces, iii) enhancing cooperation by strengthening institutional responsibilities especially on the implementation of coordinated fisheries managements for transboundary stocks based on available reliable information, and iv) conservation and protection of important habitats and building resilience and capacity for climate change adaptation. He encouraged the participants to provide updates on the activities that had been done by respective countries since the Second Meeting.

4.2 Initiatives of BOBLME Project

6. The representative from the BOBLME Project, *Mr. Rudolf Hermes* presented the results of Phase 1 and the planned activities for Phase 2 of the Project focusing on transboundary fisheries management in Andaman Sea Sub-region. Comprising five (5) modules with indicators, the Project covers eight (8) countries, namely; Bangladesh, Sri Lanka, Myanmar, Thailand, India, Maldives, Malaysia, and Indonesia. The common issues of the Andaman Sea area that are considered top priority include: i) fish stocks over-exploitation, ii) habitat degradation, and iii) pollution. The areas of works of the Project therefore included: Ecosystem-based Management, Integrated Coastal Management, Critical Habitat Management, Marine Protected Areas, Policy Harmonisation, Fisheries Resources Assessment and Management, Ocean Dynamics, Productivity and Climate Change, Ecosystem Health, Land-based Sources of Pollution, and Training: Science communication, ICM, EAFM, SocMon. For Phase 2 of the BOBLME Project, implementation of the Project's SAP would involve five (5) components, namely: i) sustainable management of fisheries, ii) restoration and conservation of critical marine habitats and protection of biodiversity, iii)management of coastal and marine pollution to improve ecosystem health, iv) improved livelihoods and enhanced resilience of peoples among BOBLME participating countries, and v) regional mechanism for coordination, monitoring and assessment of results generated from the project. His presentation appears as **Annex 4.**

7. In response to the inquiry of the Chief of MFRDMD, *Mr. Raja Bidin Raja Hassan* about the results of the "Genetic Stock Identification of Indian Mackerel across the BOBLME Region Using Microsatellite Markers," *Mr. Rudolf* explained that the final report had already been published and that copies would be sent soon to SEAFDEC/MFRDMD.

8. The representative from SDF, *Ms. Ravadee Prasertcharoensuk* commended the BOBLME Project for its activities conducted in the Andaman Sea Sub-region that led to positive outcomes including those on the implementation of Port State Measures (PSM) and ecosystem-based management with the active involvement of small-scale fisher-folk. Such efforts had highlighted the importance of implementing the Voluntary Guidelines for

Securing Sustainable Small-Scale Fisheries (VGSSF) in the Sub-region. In this connection, *Mr. Rudolf* also suggested that the ASEAN Member States (AMSs) should consider developing their respective national plans for VGSSF as well as a sub-regional plan for the implementation of the VGSSF in the Andaman Sea Sub-region.

9. The representative from Malaysia, *Mr. Richard Rumpet* requested the BOBLME Project to share the results of the "Genetic Stock Identification of Indian Mackerel across the BOBLME Region Using Microsatellite Markers" with the countries in the Andaman Sea Sub-region as this could be used as reference for the countries' efforts in assessing the populations of the Indian mackerel in the Sub-region. Regarding the project funding for Phase 2 *Mr. Rudolf* explained that the Project Identification Form (PIF) is currently being drafted to be submitted to the Global Environment Facility (GEF) for approval and possible funding.

10. While commending the governance structure of the BOBLME Project which focuses on ecosystem-based management, the representative from IUCN, *Mr. Petch Manopawitr* inquired about the improved strategy for Phase 2 of BOBLME Project, especially with regards to bridging the gap of ecosystem-based fisheries management among the AMSs. In response, *Mr. Rudolf* suggested that the background and success of the activities in Phase 1 would be taken into account in Phase 2 and expressed the willingness to communicate with concerned stakeholders to enhance the activities under Phase 2 of the Project.

4.3 Initiatives of SEAFDEC-Sweden Project

11. The SEAFDEC-Sweden Project Manager, *Ms. Pattaratjit Kaewnuratchadasorn* presented the "Updated Actions on Implementation of the Results from the Second Andaman Sea Sub-Region Meeting". She referred to the information of the Andaman Sea Sub-region, SEAFDEC is collaborating with several organizations, namely: FAO, BOBLME Project, IUCN/MFF, and local partners (PSU, CORIN Asia-Myanmar) in addressing key issues that include: i) promoting effective management of fishing capacity, ii) combating illegal and destructive (IUU) fishing, and iii) transboundary stock management (*e.g*. Indian Mackerel and Hilsa) in the Andaman Sea. In the process, capacity building activities had been promoted that include: i) basic stock assessment training, ii) basic fish larval identification training with focus on Scombridae, iii) E-EAFM (ToT-EAFM) for Myanmar, and iv) provincial capacity building through a sub-contract with CORIN-Asia Myanmar. The project also worked with regional issues/concerns such as RPOA-Neritic Tuna, RPOA-Capacity, Labor issues, SSF, etc. The details of the presentation appear in **Annex 5.**

12. During the discussion, the Chief of MFRDMD cited that based on the results of a study conducted with a university in Malaysia, the rising sea surface temperature of 1.6°C that occurs in Malaysian waters had affected the migration route of *Rastrelliger* spp. in the country's EEZ. On capacity building, the representative from Malaysia requested that more participants should be accommodated in future trainings organized by the SEAFDEC-Sweden Project, especially involving participants coming from the Andaman Sea Sub-region countries, to enhance their capacity as this would ensure standardized implementation of relevant activities in the Sub-region.

13. In response to the query of the representative from Thailand regarding the transboundary stock management of species under the jurisdiction of the Indian Ocean Tuna Commission (IOTC), *e.g*. neritic tunas, *Dr. Magnus Torell* explained that species in the

national waters of the Andaman Sea countries are under the respective national jurisdictions of the countries and not covered by the IOTC even though recommendations from the IOTC are taken into consideration. The representative from SEAFDEC Secretariat, *Dr. Somboon Siriraksophon* added that for some species that are not under the mandate of IOTC especially those in the Andaman Sea sub-region, SEAFDEC is promoting the development of the necessary management measures and through stock assessment, the required data on such species in the Andaman Sea Sub-region could be established. With such data and information, proper management measures of such species could be promoted in the Andaman Sea Sub-region.

4.4 Initiatives of CORIN-Asia Myanmar and IUCN/MFF

4.4.1 CORIN-Asia Myanmar

14. The representative from CORIN Asia-Myanmar, *Mr.Win Naing* opened by indicate some general key points to be considered by Myanmar in strengthening cooperation among Andaman Sea countries including focus to the management of Indian Mackerel, port State measures (PSM), procedures of Myanmar fisheries management, and Myanmar's responsibility under the PSM Agreement. With a specific of the CORIN Asia-Myanmar project he added that the objectives of CORIN Asia-Myanmar are to: i) strengthen institutional and staff capacity of local agencies/authorities, ii) contribute to the establishment of reliable and accessible data and development of national fisheries information system, iii) collaborate with other organizations on conservation initiatives in Myanmar, and iv) conduct the main activities which were planned during the project's inception. His presentation appears as **Annex 6.**

15. In response to the query of the representative from Thailand about the future plan of Myanmar with regards to the IOTC, the representative from Myanmar explained that Myanmar is already in the final stages of its membership application with the IOTC. However, the process still needs to undergo inter- and intra-departmental negotiations.

4.4.2 Initiatives of IUCN/MFF

16. The representative from IUCN/MFF, *Mr. Petch Manopawitr* presented some key activities related to transboundary marine conservation of Myanmar and Thailand, where the ecosystem approach was used to establish transboundary marine protected conservation areas between Thailand and Myanmar, and Thailand and Cambodia. However, he mentioned that the result was limited as the project still needs to develop transboundary conservation area between Thailand and Myanmar especially in terms of protecting the resources upstream. He added that social activities related to marine resources in the Andaman Sea needs to be promoted as the lack of restraint among the fishing communities resulted in over-exploitation of resources, destruction of the ecosystem, unmanaged exploitation of trash fish catch, among others. He therefore reiterated the importance of sustainable management of the marine resources in the Sub-region. His presentation appears as **Annex 7.**

17. In response to the query of the representative from FAO/RAP about the results of the surveys on coral reefs in Thailand based on different management types, *Mr. Petch* explained that coral reefs surveys are being conducted by the Department of Marine and Coastal Resources of Thailand every year. However, he agreed that a survey should be conducted to compare the status of coral reefs within and outside the country's National Parks. The

representative from Myanmar also added that Myanmar would cooperate with national and regional agencies to manage the marine resources in the transboundary waters of the Sub-region.

V. INTEGRATION OF FISHERIES AND HABITAT MANAGEMENT, AND IMPORTANCE OF TRANSBOUNDARY STOCKS AND HABITAT IN ANDAMAN SEA SUB-REGION

5.1 Current Status of Management of Shared Stocks, *e.g.* Indo-Pacific Mackerel, Indian Mackerel

5.1.1 Indonesia

18. The Senior Researcher from the Agency for Marine and Fisheries Research and Development of the Ministry of Marine Affairs and Fisheries (MMAF) of Indonesia, *Mr. Duto Nugroho* reviewed the current status of Indonesia' efforts in the management of shared stocks in Andaman Sea, especially for the small pelagic fishery in Malacca Strait (designated as Indonesian Fisheries Management Area (IFMA) 571). He explained that IFMA 571 is one of the most productive fishing grounds and main contributor to the country's total production of small pelagic fish of about 165,000 metric tons (MT) from total of 374,000 MT of fish landed. He added that the fishing gear used in IFMA 571 are offshore types, *i.e.* gill net, pots, bouke ami, while the catch composition is dominated by seven (7) major species such as *R. brachysoma, Stolephorus* spp., *Selar* spp., *Decapterus* spp,, *Megalaspis cordyla, Mugil* spp., and *S. fimbriata.* With regards to vessel structures in IFMA 571, he explained that in 2006-2013 small-scale fishing boats had dominated including non-powered boats and those with inboard motors <30 GT. He cited that purse seine fishing vessels comprised less than 5% of the total number of fishing boats. He also mentioned that based on the analysis of data and trends, the number of purse seine fishing vessels reached its peak in 2002 and since then it started to decline. Such analysis is quite interesting to discuss regionally and data sharing could be started among the countries. He also highlighted that based on the estimation of Indonesia's fish stock status, purse seine fishing in IFMA 571 is already beyond the fishing area's capacity, a condition that should be disseminated to all relevant stakeholders in order to maintain the sustainability of fishery resources in the area.

19. Considering that IFMA 571 has specific transboundary condition, *Mr. Duto Nugroho* mentioned that for the area's management, any regional forum could be availed of to share and discuss the data and trend of the area's fisheries. However, since the data collected could in one way or another be considered biased, than through such forum the current conditions of the resources could be shown and discussed. He also mentioned that Indonesia has been conducting in-house research studies that support fish stock assessment and explained that the activities include laboratory research, exploratory acoustic surveys, and regular sampling for important species. He then pointed out that the Government as policy maker has the responsibility not only to regulate and manage the fisheries but also to increase public awareness on the issues at hand. He also emphasized that improvement of fishers' welfare had also been considered as an important element to secure the sustainability of the country's fishery resources. His presentation appears as **Annex 8.**

5.1.2 Malaysia

20. The country's update on the current status of management of shared stocks, such as the Indo-Pacific Mackerel and other species, along the West Coast of Peninsular Malaysia was presented by *Mr. Richard Rumpet*, Senior Researcher from the Fisheries Research Institute (FRI) of the Department of Fisheries Malaysia. He explained that three (3) relevant research studies have been completed in the West Coast of Peninsular Malaysia and one (1) is currently ongoing. The first research study on Spawning Areas and Seasons for Indian Mackerel along the West Coast of Peninsular Malaysia conducted during 2013-2014 aimed to update and synthesize stock assessments of Hilsa and Indian Mackerel into regional or sub-regional assessments. The study concluded that the spawning areas could be better determined and verified through larval surveys, and that there are two (2) peaks of spawning season throughout the year (in September and February). He also mentioned that some of the findings from this study could be utilized as input for determining the potential areas for fisheries *refugia*.

21. In the second research study, *Mr. Richard Rumpet* explained that the Genetic Stock Identification of Indian Mackerel across the BOBLME Region Using Microsatellite Markers was conducted during 2012-2013. This has helped to improve knowledge and understanding of the population structure of the Indian mackerel along the West Coast of Peninsular Malaysia. He added that all samples from Malaysia have been collected, labelled, processed, and analysed accordingly, and all genotype data were sent to BOBLME for further analysis. The third research study on Resource and Biology of Neritic Tuna Species in Malaysian Waters was conducted during 2014-2015 with the objective of determining the status of stock and biology of neritic tunas in Malaysian waters. The study concluded that the stock status of kawakawa and frigate tuna from all sub-areas in Malaysian waters are still at safe level for further exploitation while for longtail tuna, the stock in the West Coast of Peninsular Malaysia is over-exploited. The fourth research study on Spawning Areas and Seasons for Selected Species along the West Coast of Peninsular Malaysia which is ongoing focuses on target species such as the short-bodied mackerel *(Rastrelliger brachysoma)*, squids, Spanish mackerel, and anchovies. His presentation appears as **Annex 9.**

22. In response to the query from SEAFDEC about the results of the genetic study on the Indian mackerel, *Mr. Richard* explained that the result was sent to the BOBLME Secretariat for further analysis and interpretation. However, Malaysia has not received any feedback so far on the said data.

5.1.3 Myanmar

23. The Fishery Officer from the Department of Fisheries of Myanmar, *Mr. Soe Win* informed the Meeting that in Myanmar, pelagic fishes are being exploited by shallow-water purse-seines, encircling gillnets, lift nets, surrounding nets and bottom trawls. He mentioned that the catch of Indian mackerel, *Rastrelliger kanagurta* in Myeik, Tanintharyi Division was highest in 2012-2013 but decreased in 2015-2016. He continued that in the fishing grounds of Ayeyarwaddy, Rakhine, Tanintharyi and Mon, the catch of neritic tunas per year had not been highly different from that of 2010 to 2014. He added that 90% of Myanmar's fishery resources are declining based on results of research conducted by the Norwegian marine research vessel R.V. *Dr. Fridtjof Nansen.* In this regard, the Department of Fisheries of Myanmar had already started to implement restrictions on the number of fishing vessels and types fishing gears in 2016. His presentation appears as **Annex 10.**

5.1.4 Thailand

24. The representative from the Department of Fisheries (DOF) of Thailand, *Mr. Suchart Sangchan* presented the country's capture fisheries production data from the Gulf of Thailand and Andaman Sea. He mentioned that Thailand has implemented a New Ordinance on Fisheries (B.E. 2015) and related regulations such as the Fisheries Management Policy (FMP), vessels registration system and licensing, MCS and Traceability system. All these regulations are meant to promote the implementation of various fisheries management measures. Based on information compiled under the New Ordinance B.E. 2015, there are 38,630 fishing vessels in Thailand, of which 27,413 are small-scale vessels and 11,217 are larger-scale vessels. He explained that MSY, Maximum Allowable Catch (MAC) and Fishing Day Scheme could be implemented as tools for managing fishing capacity and Thailand. He hopes that studies on Indian mackerel and Indo-Pacific mackerel could provide information to enhance the implementation of measures to regulate fishing effort. In addition to improve port monitoring in line with the PSM Agreement the setting up of port monitoring network as specific step to the adoption of the PSM Agreement could be initiated soon. He also cited the challenges and future work plan of Thailand which focus on: i) multidisciplinary approach, ii) scientific- and participatory-based through monitoring, and iii) traceability and adaptive management. His presentation appears as **Annex 11.**

25. While responding to the query of the representative from SEAFDEC/MFRDMD about the monitoring strategy based on the new management measures, *Mr. Suchart* explained that MSY is an important principle for management measures and production control. He added that Thailand has established working group and committees to follow up on the implementation of the MSY requirement, and collect monthly data for calculating and analyzing the MSY for confirmed and new species. On fishing gear licensing, 2-year licensing system is used and does not change in one year but licenses could be re-issued for another year. The committees would decide on the allowable 90% MSY which is adopted year by year or for every 2 years. This Production Model was developed by a joint working group comprising experts from with DOF, Kasetsart University in Thailand, and Hokkaido University in Japan.

26. In response to the query of the representative from Myanmar on how to differentiate inshore from offshore fishing, *Mr. Suchart* cited that inshore fishing is within the 200 nautical miles EEZ while offshore fishing is outside the country's EEZ. In the previous law, three (3) kilometers from the shore was a reserved zone for small-scale fisheries, but under the new law, this had been expanded from three (3) to twelve (12) kilometers depending on the agreement of the government committees (*i.e.* provincial committees). In addition, while vessels could previously move freely from the Gulf of Thailand to Andaman Sea, this is now prohibited under the new law. As for small-scale fisheries, its definition is based on the type of gear used and the corresponding mesh size.

27. Regarding the implementation of logbook for fishing vessels, *Mr. Suchart* explained that logbook is used to check the catch landed at fishing ports. The use of logbook is strictly required by DOF, where the entries are cross checked with data gathered through the VMS system (for consistency of data between the logbook and that of the VMS system). Inspection at sea is conducted as well where transshipment will only be allowed if there is observer-on-board. To ensure the validity of the logbook, the vessels must show the catch report to relevant officers when the vessel comes to port (port-in). He added that logbook is

required for commercial vessels but not for small-scale fisheries as small-scale fishers need only to show their registration documents.

28. On the apparently fluctuating trend of the MAC, *Mr. Suchart* explained that the figure is based on statistical records of pelagic fish catch from 1971 to 2013. Based on the maximum allowable catch for 2016, the allowable catch of pelagic fish for the Andaman Sea is 110,184 MT. Similarly, the historical catch from the Gulf of Thailand also reflects the allowable catch of pelagic fish in the Gulf of Thailand.

5.2 Initiatives on Transboundary/Migratory Stocks by Projects/Working Groups

5.2.1 *Rastrelliger* spp.

29. While reporting the overview of the project on "Transboudary/Migratory Stocks of *Rastrelliger* spp. in the Andaman Sea," the Chief of SEAFDEC/MFRDMD, *Mr. Raja Bidin Raja Hassan*explained that *Rastrelliger kanagurta* (Indian mackerel)and short mackerel, *Rastrelliger brachysoma* or Indo-Pacific mackerel are the two (2) most dominant species of Rastrelligers in the Andaman Sea. He added that MFRDMD has been conducting major projects such as: i) information collection for commercially important pelagic fish in the South China Sea areas, ii) tagging of economically important small pelagic species in the South China Sea (SCS) and Andaman Sea (AS) under JTF II, iii) population of Indian mackerel in the Bay of Bengal Large Marine Ecosystem (BOBLME), and iv) management of purse seine fisheries in the Southeast Asian region (JTF VI). He mentioned that MFRDMD had completed such important studies on: i) Information Collection for Commercially Important Pelagic Fish in the South China Sea Areas, ii) Tagging Program for Economically-important Small Pelagic Species in SCS and AS, iii) Use of DNA Marker for Gathering Information on *Decapterus maruadsi* and *Rastrelliger kanagurta*, and iv) Population of Indian Mackerel in the Bay of Bengal. His presentation appears as **Annex 12.**

30. In response to thesuggestion to utilize the expected catch to control fishing effort, *Mr. Raja Bidin* explained that MFRDMD had experienced difficulties in mixed species of the catch, and is now challenged to implement some defined management strategy and policy like the MSY concept based on fish population models.

5.2.2 Neritic Tunas

31. The representative from SEAFDEC Secretariat, *Dr. Somboon Siriraksophon* presented the "Regional Plan of Action for Sustainable Utilization of Neritic Tunas (RPOA Neritic Tuna) in the Southeast Asian Region," and stressed that the RPOA Neritic Tuna could help in coming up with a sub-regional management plan and TAC, especially for the Andaman Sea Sub-region. He focused on three (3) main key areas under the RPOA Neritic Tuna, namely: i) development of the RPOA Neritic Tuna, ii) activities that have been done under the RPOA, and iii) the future actions to be carried out under the RPOA. He recalled that the issues on neritic tunas were raised by SEAFDEC Council that also recommended the RPOA Neritic Tuna should be developed in support of the sustainable utilization of these economically important commodities. He also elaborated on the directives from the SEAFDEC Council and the progress on developing the RPOA Neritic Tuna which was endorsed by the 47th Meeting of the SEAFDEC Council in April 2015, 17th ASWGFi in June 2015, and SOM-AMAFF as a collaborative work of MFRDMD and the AMSs through a series of meetings since 2012. The prioritized issues raised by the AMSs during the

development of the RPOA Neritic Tuna included the open access nature of fisheries that affects management of fishing capacity, insufficient stock/catch data, IUU, double flagging or post-harvest losses. At the regional level, the SEAFDEC-Sweden Project had recognized the need to establish a sub-regional management of neritic tunas, thus, Scientific Working Groups (SWGs) were established to handle and sustain the work while linkages for data collection were established as well as for the promotion of an ASEAN catch documentation scheme. The RPOA Neritic Tuna has six (6) objectives, namely: i) data collection and development of indicators, ii) improvement of sustainable fisheries management, iii) improved compliance to legal issues and market access, iv) social issues: benefits, working conditions and labor, v) enhancing regional cooperation, and vi) improvement of interaction between fisheries and ecosystem. He also explained that the future work plan would put more focus on how to utilize the results of the stock assessment of long-tail tuna and kawakawa. Actions will be implemented for the development of management measures to control fishing efforts/capacity together with the modification of the ASEAN Catch Documentation Scheme (ACDS) to be used for neritic tuna fisheries. Joint trade promotion will be developed within and outside the region as well as through the ASEAN Tuna Working Group. Information exchange will promoted on legal frameworks together with the organization of fora to facilitate cooperation among scientists and managers in the region. His presentation appears as **Annex 13**.

32. In response to the queries on the development of a strategy and common policy together with how the implementation of management efforts of neritic tunas should be carried out in the Andaman Sea Sub-region, the representative from SEAFDEC explained that these questions could be addressed during the group discussion on how to manage the fishing capacity based on the scientific results. Furthermore, the RPOA Neritic Tuna could be used as a model to develop a form of RPOA for the Andaman Sea Sub-region.

5.3 Establishment of Fishery Resources Management Plan for Andaman Sea Sub-Region and Way Forward for Sub-Regional Cooperation on Conservation and Management

33. The Senior Advisor to SEAFDEC, *Dr. Magnus Torell* summarized the information provided by the Andaman Sea countries including updates on stock assessment for mackerels. He offered some suggestions to strengthen the cooperation between the Andaman Sea countries, especially in the aspects of improving fisheries production, managing fishing capacity to better utilize the available resources, developing measures for sustainability of transboundary species, implementing port State measures, strengthening the cooperation among the Andaman Sea countries, and implementing the ACDS to improve data and information collection. He also highlighted on the need to share data on vessel registration schemes, as well as information on Monitoring, Control and Surveillance (MCS) networks among the Andaman Sea countries to improve management of fishing capacity.

VI. EFFECTIVE MANAGEMENT OF FISHING CAPACITY AND REDUCING ILLEGAL FISHING: LAWS AND LEGISLATIONS IN THE ANDAMAN SEA COUNTRIES

6.1 Updates on Management of Fishing Capacity and Combating IUU Fishing, and Laws and Legislations

6.1.1 Indonesia

33. The representative from the Directorate General of Capture Fisheries of MMAF, *Mr. Bima Priyo Nugroho* presented the updates of Indonesia on management of fishing capacity and combating illegal (IUU) fishing, including the relevant laws and legislations as well as on the issues available in the Southern Andaman Sea area. He reiterated that Southern Andaman Sea area includes the Indonesian Fisheries Management Area (IFMA) 571, covering three (3) provinces and twenty (20) districts. The issues in the Andaman Sea (Indonesian territory) include fishing across borders, fishing gear conflict, over-exploitation, habitat degradation, and use of selective fishing gear in relation to trawl prohibition policy. IUU fishing activities in IFMA 571 include the use of prohibited fishing gear (*e.g*. trawl, pair trawl), incomplete fishing documents, inappropriate fishing area corresponding to fishing license issued, and illegal entry of foreign vessels to national waters. On preventing and combating IUU fishing in Indonesia, the Meeting was informed that this issue is a long-term battle, but eventually in 2014, the Government adopted a moratorium for ex-foreign fishing vessels, banned the transshipment of catch and unsustainable fishing gears, and established a Task Force for preventing and combating IUU fishing. He added that the use of trawls and seine nets in Indonesian fisheries management areas had also been prohibited in accordance with Minister Regulation No. 2 in 2015. Starting in 2016, ex-foreign vessels, foreign vessels, and foreign investments in capture fisheries industries are already prohibited in the country's fisheries management areas. He also explained that Indonesia had already ratified the Port State Measures Agreement.

34. While providing a review on the procedures of landing across boundaries, *Mr. Bima Priyo Nugroho* highlighted some key checks that are applied to fishing vessels after issuance of entry permit allowing them to enter in country's waters, including checking by harbor master, fisheries surveillance, custom, health/quarantine, and immigration. He also shared the fishing quota management in Indonesia to support management of fishing capacity. He emphasized that priority issues include national level cross-agency coordination, coordination with international law enforcement networks, strengthening the RPOA-IUU MCS Network, and analysis of the movement of IUU vessels. Identified priority issues need to be addressed in order to prevent entry of IUU foreign fishing vessels attempting to enter the national waters of Andaman countries. His presentation appears as **Annex 14.**

6.1.2 Malaysia

35. The Fishery Officer from the Resource Protection Division of the Department of Fisheries Malaysia (DOFM), *Mr. Muhamad Abdul Rauf Abdullah* presented the "Updates on Management of Fishing Capacity and Efforts to Combat IUU Fishing" of Malaysia. He explained that Malaysia had launched six (6) National Plans of Action (NPOAs) under its Fisheries Act 1985 providing the legislative frameworks for conservation, management and development of capture fisheries in Malaysia, and added that the Department of Fisheries

Malaysia has appointed sixteen (16) officers as port inspectors to implement the Port State Measures Agreement. The DOFM has also requested the assistance of the RPOA-IUU Member Countries to deny the use of their ports by Malaysian registered fishing vessels to land their catch, as part of the country's efforts to combat IUU fishing in the Southeast Asian region. He also revealed that in the country's revised NPOA for Fishing Capacity and IUU, the DOFM has allowed the purchase of used foreign fishing vessels and amended the procedures for licensing foreign fishing vessels. He reiterated that Malaysia is committed to take action in combating IUU fishing at domestic, regional and international levels as part of sustainable fisheries management and good governance towards securing the supply of fish as food source for the country and the entire world. His presentation appears as **Annex 15.**

6.1.3 Myanmar

36. The Deputy Director for the Department of Fisheries (DoF) of Myanmar, *Mr. Nyunt Win* informed the Meeting that MCS functions had already been started in Myanmar, at sea and on land (shore), and the DoF is now trying to establish the satellite technology system (VMS) in collaboration with a French partner to improve the management of fishing capacity in Myanmar. He continued that the country's One Stop Service (OSS) had been launched with various agencies as members including the DoF, Department of Marine Administration and Customs Department, police, immigration, and port authority. The OSS also includes the conduct of check-in and check-out inspections at shore, issuance of sailing order, and instruction on how to proceed to landing sites for offshore and foreign fishing vessels. He added that the DoF always shares with fishers the information on rules and regulations of DoF, safety at sea, conservation of natural resources, and release of endangered species, and has already conducted MCS training courses with support from FAO. His presentation appears as **Annex 16.**

6.1.4 Thailand

37. The representative from the Andaman Sea Fisheries Research and Development Center (Phuket) of DOF Thailand, *Ms. Sampan Panjarat* explained in chronological order the activities of Thailand from 2005 to 2016 with respect to the implementation of port state measures and later the PSM Agreement. She explained that inspection of PSM pilot projects has been conducted through 130 trips of 42 long liners from October 2013 to February 2014. There are twenty (27) designated ports along the coastline of Thailand, *i.e.* 10 in the Andaman Sea Coast of Thailand (ASCoT) and 17 in the Gulf of Thailand (GoT), which are used by foreign flagged and Thai flagged vessels. She also explained the procedure and protocol for foreign fishing vessels and transshipment vessels, and provided information on the list of IUU fishing vessels and list of authorized vessels of the RFMOs. She clarified that reports on inspections are sent to flag States, RFMOs, coastal States, beneficial owners, and relevant parties. She revealed that Thailand had carried out 234 inspections since 2015, and 86 during January-June 2016. For its future plan, Thailand will be improving the efficiency of inspections, increasing cooperation among countries in ASCoT and GOT, setting up its MCS network, and conducting capacity building through training courses. Her presentation appears as **Annex 17.**

6.2 Advances in the Development of RPOA-Fishing Capacity, RPOA-IUU, MCS Networks

38. The representative from SEAFDEC Secretariat, *Dr. Somboon Siriraksophon* presented the "Regional Plan of Action for Managing Fishing Capacity, including IUU and MCS," which covered the status and the importance of fisheries in the Southeast Asia region to the world. He also indicated the commitments made of ASEAN-SEAFDEC Member Countries to combat IUU fishing and he introduced the webpage of SEAFDEC RFVR. He briefly referred to activities that have been done or are in progress to further introduce the RPOA-fishing capacity. Although the ASEAN region's total fisheries production has over the last 20 years ranked top 10 in the global food supply from capture and aquaculture reaching almost 14 million MT, this production level has been under threat from fish decline and increased demand for fish. He cited that such threat has been addressed through collaborative efforts among the AMSs that include assessment of stock status, combating IUU fishing, and enhancing the competitiveness of ASEAN fish and fishery products for the international market. He added that as an offshoot of such regional cooperation, the AMSs adopted on 3 August 2016, the Joint ASEAN-SEAFDEC Declaration to Combat IUU Fishing and Enhance the Competitiveness of ASEAN Fish and Fishery Products.

39. Specifically for capture fisheries, *Dr. Somboon* also mentioned that actions had been carried out in terms of capacity building and awareness raising programs that include: (1) Enhancing the Traceability of Fish and Fishery Products from Capture Fisheries based on the Recommendations of the ASEAN Guidelines and also along line with the ASEAN Catch Documentation Scheme (ACDS); (2) Managing Fishing Capacity; (3) Promoting the Implementation of PSM Agreement; (4) Enhancing Regional Cooperation in Managing Transboundary Fishery Resources; (5) Quality and Safety of ASEAN Fish and Fishery Products Development and Promotion of ASEAN Seafood; (6) Enhancing Close Collaboration among the ASEAN Member States (AMSs) and Relevant RFMOs; (7) rehabilitation of resources and also recovery of fish stocks; and (8) enhancing sustainable aquaculture development, among others.

40. Concerning the RPOA-Fishing Capacity, *Dr. Somboon* cited that the SOM-AMAF is the ASEAN authority that would endorse the RPOA-fishing capacity which consists of five (5) main actions, namely: (i) assessment of fishing capacity,(ii) preparation and implantation of national plan of action to manage fishing capacity, (iii) international consideration, (iv) required urgent matters for regional fisheries management, and (v) mechanism to promote the implementation of the RPOA-fishing capacity. Also included in the RPOA-fishing capacity is the need to harmonize work and cooperation in order to come up with clear scientific data from stock assessment and fishing capacity assessment, and to explore the necessary cooperation mechanisms.

41. In order that SEAFDEC could technically support the actions to be undertaken by the AMSs, particularly on the Joint ASEAN-SEAFDEC 2016 Declaration, *Dr. Somboon* added that regional cooperation should be strengthened for the effective implementation of the standard measures or standard tools on fisheries management in the Andaman Sea countries in particular and the Southeast Asian region in general.

42. During the ensuing discussion, the Secretary-General of SEAFDEC cited the many tools and measures that have already been made available to be used in the region. In order

to effectively utilize such tools and measures, collaborative actions should be developed on sustainable management of fisheries for the Andaman Sea Sub-region.

43. While responding to the query on the follow up activities related to assessment of fishing capacity in order that proper management of fishing capacity could be developed for the Andaman Sea Sub-region, *Dr. Somboon* explained that there is a need to carry out assessment of the fishing capacity for different types of fishing gears used in the Sub-region. Nevertheless, lessons could be learned from the experience of some countries in managing fishing capacity such as the one applied by Indonesia for Java Sea. Although such measure is applicable only in the jurisdiction of Indonesia, for sub-regional area that involves more than two countries, there is a need for the concerned countries to support the potential works even at the national level, while SEAFDEC could work together with the concerned countries to come up with the necessary Sub-regional measure. If at the country level, capacity building on stock assessment of commercially important species would be needed, SEAFDEC through the SEAFDEC-Sweden Project could organize training sessions for young scientists or concerned resource persons to enable them to carry out stock assessment of particular species on their own.

44. After the discussion, the Meeting suggested that the information provided by SEAFDEC related to the advances in combating IUU fishing should be improved by including not only figures and data but also indicators that could be used to monitor and evaluate the implementation of the various tools and measures including the various ASEAN Guidelines by the concerned countries. While recognizing the importance of fostering cooperation among concerned countries in managing the resources of the Andaman Sea Sub-region, the Meeting agreed that common goals, objectives and policies should be established as these are keys in utilizing the scientific findings and harmonizing the implementation of the agreed joint management plans, based on information that emanate from the stock assessments as well as fishing capacity assessments.

6.3 Port Monitoring and Landings across Boundaries

6.3.1 FAO

45. The representative of FAO, *Dr. David Brown* presented the role and initiatives of FAO in supporting its Member Countries with their efforts in addressing illegal, unreported and unregulated (IUU) fishing and implementing the Port State Measures Agreement (PSMA), especially in the Asia Pacific Area. He cited that global production from marine capture fishery has not increased because of over-exploitation, climate change, and large numbers of fishing vessels operating in the waters of this area. In order to address such concerns, FAO encouraged the countries to establish relevant legislations, for example, NPOA for the implementation of the PSMA, and to strengthen national capacity in enforcing the regulations on preventing IUU fishing. His presentation appears as **Annex 18.**

6.3.2 SEAFDEC/TD

46. The representative from SEAFDEC Training Department, *Mr. Kongpathai Saraphaivanich* reported on the "Regional Cooperation to Support the Implementation of Port State Measures in Southeast Asian Region". In order to combat IUU fishing in the region, he emphasized that there is a need to identify and harmonize the issues to support the implementation of PSMA. Some of the issues hindering the implementation of PSMA

include: i) absence of any form of fishing vessels registration and licensing system, ii) insufficient recording of fish landings, and iii) outdated list of IUU fishing vessels. He also mentioned that in order to promote regional cooperation to support the implementation of PSM, capacity building is very much needed especially for those who are involved in national ports' inspections. His presentation appears as **Annex 19.**

47. During the discussion, the representative from SDF, *Ms. Ravadee Prasertcharoensuk* revealed that combating IUU fishing is also a concern of various NGO movements. While expressing the interest to participate in future training programs, especially those related to the implementation of PSMA and combating IUU fishing, she suggested that small-scale fishers' groups should also be involved in such capacity building activities.

6.4 Directions and Recommendations on Common Priorities and Approaches to Joint Action

48. In response to the concerns raised on the promotion of more effective management of fishing capacity and combating illegal and destructive fishing in the Andaman Sea, SEAFDEC Senior Advisor, *Dr. Magnus Torell* explained that the directions and recommendations on common priorities and approaches should be in a form of joint action among the Andaman Sea countries. He reiterated that it is necessary to consider the importance of balancing the available number of fishing vessels and fishing effort with the fisheries resources in the Andaman Sea. He added that fishery resources management should be implemented taking into account fishing quotas whichever is applicable in respective countries' jurisdictions. He also stressed on the importance not only of improving each country's systems to address issues on IUU fishing but also on combating illegal fishing while strengthening the efforts to reduce unregulated fishing and the amount of catches being unreported through the promotion of legal, regulated and reported (LRR) fishing activities. In order to determine the platform and realize the target of LRR fishing, countries should come up with common goals and objectives in more positive ways, one of which could be through the effective management of fishing capacity.

VII. WORK PLAN DEVELOPMENT FOR ANDAMAN SEA SUB-REGION

7.1 Group Discussion to Develop Work Plan for the Andaman Sea Sub-region

49. The participants were divided into two groups to discuss two main issues for the development of a Work Plan for the Andaman Sea Sub-region, *i.e*. Transboundary Fishery Resources Management, and Effective Management of Fishing Capacity and Reducing Illegal and Destructive Fishing in the Andaman Sea.

7.1.1 Transboundary Fishery Resources Management

50. The most economically-important transboundary fish species in the Andaman Sea were identified, namely: Indian mackerel and short mackerel, hilsa shad, neritic tunas, and sharks and rays. The discussion on management of transboundary fishery resources therefore centered on these species. Output of the discussion on Transboundary Fishery Resources Management in the Andaman Sea Sub-region appears as **Annex 20**.

51. In the ensuing discussion, it was recognized that there are not enough information on Indian mackerel currently available in the countries of the Andaman Sea Sub-region

therefore the concerned countries should conduct larval studies to determine the spawning areas of mackerels in the Sub-region's waters. Once the detailed information is available, appropriate management measures such as closed season or closed areas could be formulated. However, since some countries have already compiled initial data on the species, therefore some activities relevant to the development of the necessary management measures could be initiated. Concerns were also raised on inadequacies of the countries in terms of funding as well as on the capability of organizations and technical persons to conduct the necessary research surveys, and the absence of clear policy for joint actions at high level management among the countries. Moreover, some countries also do not have comprehensive data collection systems even though SEAFDEC has standardized the compilation of fishery data for the AMSs but there seems to be lack of compliance among the countries on the prescribed data collection framework.

52. In a related development, the representative from Myanmar reiterated that the MoU between Thailand and Myanmar for collaborative work on data collection of transboundary species including their migration patterns is already in the final stages of negotiation and finalization. The said MoU could be expanded to serve as model for other countries in addressing other relevant management issues in the Andaman Sea Sub-region.

53. The representative from SDF also mentioned that construction of infrastructures in coastal areas could have negative effects on the effective management of marine resources. She added that cooperation between governments and governments to stakeholders had not been very effective in evaluating the impacts of other social-economic activities like small-scale fishery, tourism, NGOs for management, on the natural resources, especially that research outcomes seemed to focus only on resources but not on their social impacts. In order to address this concern, she suggested that involvement of relevant stakeholders should be enhanced during consultations, as well as during policy and decision making. In this regard, the Meeting agreed that a new co-working mechanism among neighboring countries could be developed for the effective implementation of the management measures.

54. On establishment of working groups/teams among the countries, it was reiterated that a 'planning and management committee' had already been created through collaboration of BOBLME with SEAFDEC Sweden which could be revived and enhanced by supporting the concerned countries if and when necessary. However, since such mechanism may no longer exist due to the completion of Phase 1 of the BOBLME Project, the Meeting suggested that the existing mechanism of Thailand-Malaysia working group in the Gulf of Thailand could be used as a model. Nevertheless, results of previous activities of the BOBLME working groups could be referred to and lessons should be learned from the outputs of the previous working groups so that new mechanism/working group could be established that would work well at national and sub-regional levels in the future.

55. The representative from SDF added that many stakeholders still have inadequate knowledge about the impacts of climate change to fishery management thus their awareness should be enhanced especially in terms of adaptability to climate change and variability. This would require establishing a link between research and the national management systems of the respective countries.

7.1.2 Effective Management of Fishing Capacity and Reducing Illegal and Destructive Fishing in the Andaman Sea

56. The key issues that need to be addressed for the effective management of fishing capacity and reducing IUU fishing in the Andaman Sea Sub-region were identified. These include insufficiency of data or information with regards to double flagging, and number of fishing vessels among others. Although some countries in the Andaman Sea Sub-region have their own national data but such information could be limited to some extent, thus, should be enhanced through exchange of information. Moreover, the concerned institutions at regional level should help to provide support in promoting the effective management of fishing capacity in Andaman Sea Sub-region. The output of the discussion on Effective Management of Fishing Capacity and Reducing Illegal and Destructive Fishing in the Andaman Sea appears as **Annex 21.**

VIII. FISHERIES MANAGEMENT MECHANISM FOR THE ANDAMAN SEA SUB-REGION, AND BILATERAL/MULTILATERAL DIALOGUES: INDONESIA-MALAYSIA-THAILAND AND THAILAND-MYANMAR

57. Based on the results of the group discussion and presentation, *Dr. Magnus Torell* reiterated that bilateral/multilateral dialogues between and among countries is important to follow up on the recommendations of the existing working groups and to develop the necessary sub-regional management plans. He therefore encouraged the countries to report on the latest development of bilateral/multilateral cooperation forged including areas where joint training/collaboration could be explored.

58. In this connection, the representative from Myanmar provided the updated information on the Northern Andaman Sea Cooperation (Myanmar-Thailand), and specified that to date Myanmar and Thailand are in the process of conducting internal discussions in preparation for the signing of the MoU on Fisheries Cooperation. The MoU includes six (6) areas for cooperation, namely: i) combating IUU fishing and illegal trade, ii) implementation of the PSM Agreement, iii) promotion of fisheries trade, iv) responsible fisheries and aquaculture, v) enhancement of cooperation and coordination to relevant international/ regional areas of interest, and vi) joint fisheries transboundary management. During the implementation of the MoU, there will be joint working groups meeting every year, the first of which will be held in Thailand in 2016, while next will be in Myanmar in 2017. He added that issues on IUU fishing and Catch Certification are the priorities identified for discussion by the joint working groups during the said meetings.

59. With regard to the aforementioned Northern Andaman Sea Cooperation, the representative from Thailand added that focal points for the Cooperation to be responsible for implementing the identified activities must be designated first, to make sure that dialogues and follow up actions between the concerned countries could be properly undertaken.

60. The representative from MFRDMD informed the Meeting that, compared to the Northern Andaman Sea, the planning and management committee for the Southern Andaman Sea is still in the process of formal establishment. He also mentioned that although the Sub-Regional Meetings for the Southern Andaman Sea were held in 2011 there is a need to follow up on the progress of development based on the recommendations during the earlier

meeting. He therefore suggested that SEAFDEC could take this opportunity to plan the management platform for sub-sub-regional arrangements in the future.

61. Considering that there is a need to enhance collaboration among the countries through frequent dialogues and meetings, the representative from Indonesia suggested that video conferencing or internet meeting through *Skype* or any other internet-based platforms could be an alternative strategy to facilitate the conduct of the dialogues. He explained that although the participants in the series of meetings could change but the topics for discussion and working papers are the same. This alternative way of communication nonetheless, requires a promoter/coordinator to maintain the issues and for the discussion to remain on the track. In this regard, he proposed that the coordinator should be a SEAFDEC staff. Along with such development, the Secretary-General, *Dr. Kom* agreed that SEAFDEC could serve as Coordinator and that SEAFDEC would send official letters to the Council Directors of the Andaman Sea countries for the nomination of the Andaman Sea focal point from each country who would be taking part in the dialogues.

62. During the discussion, recommendations were raised for the joint fishery management not only for the South Andaman Sea Sub-sub-region but also for the North Andaman Sea Sub-sub-region. These include: creating a balance between the existing legal and institutional framework for implementing the fisheries management cooperation mechanism; inclusion of EAFM into national fisheries management plan with the establishment of respective national working teams for EAFM; integration of gender, small-scale fisheries and climate change in the management setting; and consideration should be taken on the need of the countries to set-up institutional dialogues and establish functioning joint fishery management with other countries. These recommendations would be ideal for discussing the joint fishery management set up for the Andaman Sea Sub-region during the Skype meetings which should also aim to encourage the joint management team to compile basic information from the concerned countries.

IX. SUMMARY AND WAY FORWARD

63. The summary of the discussion and ways forward as follows:

1. RESEARCH

1) Confirm the observed migration of *Rastrelliger* spp. due to rising sea surface temperature-moving outside EEZ waters which could affect the catch of species in Malaysian waters.
2) Analyze the situation of mackerel stocks at regional level…so need to conduct capacity building on this for all Southeast Asian countries.
3) Case study can be leant from the results of studies on round scad population in Java Sea which is declining so there is a need to come up with appropriate management measures. It is also noted that closed season may not be appropriate in this situation due to some openings for fishers to move so fishing pressure would be a problem, the best way of leave it and limit subsidies so that proportion of vessels would reduce, but these vessels are small-scale so catch efficiency would increase and nobody will control with limited capacity.
4) For Malacca Strait, there is a need for data sharing and since R. *brachysoma* is abundant, there is a need to come up with stock assessment of the species for the benefit of countries bordering the area.

5) Some country viewed that MAC (maximum allowable catch), could be used in monitoring scheme of this management measure considering that MSY could be difficult to implement.
6) If MAC is based on MSY or population model - the natural maturity rates, potential yield could also change and could result in over-estimation or under-estimation of the stock -- so MSY is necessary. In Japan they just monitor the landings and based on this = MSY is determined.
7) Lesson learnt from Thailand, logbook from fishing boat counterchecked with production landed, VMS system is used to roughly know production of each boat, logbook is strictly required, and thus is controlled through the port in-port out system

2. GENERAL VIEWS ON MANAGEMENT OF FISHING CAPACITY

1) Although neritic tunas already under IOTC, but there is a need to study the neritic tunas stock in Andaman Sea compared to Indian Ocean, to complement with IOTC efforts focusing in the Andaman Sea which is a subset of the Indian Ocean
2) The Andaman sub-region should have its own management capacity which could be used as inputs for that of IOTC, However there is a need to have volunteer(s) scientist to conduct the sub-regional assessment with the support by relevant Andaman Countries by sharing of data and information.
3) On management of fishing capacity, the established indicators to manage fishing capacity could be used, but should be adjusted for the Sub-region. In addition, the scores methods could be applied to show the progress of the implementation of the regional tools and measures too.
4) In terms of capacity, need a common goal at national level, the same common goal to decrease capacity could be achieved for the region taking into consideration the capabilities of the countries at national level.
5) Considering the good practices on Fishing Quota Management in Indonesia to Support Managing Fishing Capacity

3. CAPACITY BUILDING NEEDS

1) Trainings on fishing capacity, larval identification and other capacity building needs should be conducted covering all Andaman Sea countries.
2) Considering the results from Group Discussions on capacity building needs to support the management of fishing capacity

4. STRENGTHENING COLLABORATION

1) Management of transboundary fish stock issues should be a collaborative effort among the concerned countries in the Andaman Sea.
2) Need to talk with neighbors to make sure that management is done in both sides --- transboundary resources could be the same and come up with institutional setting to determine the partners to be involved.
3) Share resources and experience through bilateral or trilateral dialogues in order to move forward.
4) Countries in the Sub-region need to work together to address the challenges.
5) Build bi-tri lateral (Andaman Sea) networks on Monitoring, Control and Surveillance.

6) Build on comparative reviews of laws and institutional responsibility.
7) Reviews the existing mechanism of appropriate agencies to ensure the involvement.

5. OTHER MATTERS

1) Lots of things have been done with respect to mackerels and also other things === where to increase cooperation in AS to improve management, fishing effort, address different types of transboundary species, and etc.
2) On capacity assessment == BOBLME has conducted a training-workshop, but need more work as this is a difficult task === but there are already indicators on this === but need to strengthen the regional approach == needs to be advanced
3) Need to have indicators on the progress of any SEAFDEC Collaborative Program to understand the situation of implementation and to analyze the required action for future support. The progress of indicator could also be applied to the policy commitments by SEAFDEC Member Countries such as the joint ASEAN-SEAFDEC Declaration adopted in 1 September 2016, and etc.
4) Since combating IUU is high priority for small-scale groups these groups should also be involved in training of inspectors,
5) There is a need to balance number of fishing vessels and capacity with the resources in the Andaman Sea.
6) There is a need to come with common goals and targets, and aim for RRL (regulated, recorded, and legal to improve the management actions)
7) To expand cooperation with local and regional NGOs to determine the stock --- conduct survey and keeping track on how to extend the cooperation on this aspect.
8) Integrate gender aspect in all activities.
9) Intensify the promotion of EAFM in the Andaman Sea Sub-region.

64. During the discussion, the representative from Malaysia informed the Meeting that it might be difficult for Malaysia to collect information on gender aspect, and for the sake of clarification, she asked the Meeting to explain the important role of gender in the fishery sector. In this connection, the representative from SDF replied that it is important for women to be also involved in the whole project planning and implementation of the activities especially in assessing the benefits of the activities, and also in making decisions. The representative from BOBLME also added that gender aspect is necessary to obtain clear information on the roles and capabilities of men and women in sustainable fisheries development.

X. CLOSING OF THE MEETING

65. The Secretary-General of SEAFDEC, *Dr. Kom Silapajarn* expressed his gratitude to the participants for their inputs during the three days Meeting where good exchange of views solidified the close cooperation among representatives from the countries in the Andaman Sea Sub-region. He affirmed that this Meeting was indeed an important avenue as directions were set and priority projects and workable activities were identified. With that note, he declared the Meeting closed.

Annex 1

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Annex 2

OPENING REMARKS

By Dr. Kom Silapajarn
SEAFDEC Secretary-General

Distinguished delegates from the countries of the Andaman Sea Sub-region;
Representatives from the academe and our collaborating partners;
My colleagues from SEAFDEC, and Members of the Regional Fisheries Policy Network;
Ladies and Gentlemen, Good morning!

Before anything else, may I request for a minute of silence to enable us to pray for the eternal repose of His Majesty King Bhumibol Adulyadej who passed away on 13 October 2016. Thank you.

Although Thailand is in the midst of deep sorrow as we mourn the passing of His Majesty King Bhumibol, it gives me great pleasure to welcome all of you to the "Third Meeting of the Andaman Sea Sub-region" which is organized by SEAFDEC with support from the SEAFDEC-Sweden Project and in collaboration with the BOBLME Project. On behalf therefore of SEAFDEC, I would wish to express my sincerest thanks to everyone for sharing your time and giving effort for this important event.

Please allow me to recall the process of promoting sustainable fisheries around the Andaman Sea Sub-region with Swedish support in cooperation with the BOBLME Project. Such action was initiated in October 2009 through the First Meeting of the Andaman Sea sub-region which also obtained the participation of India for the Andaman and Nicobar Islands through the BOBLME Project. During the Second Meeting in Phang Nga in August 2012, the Andaman countries agreed to cooperate for the management and utilization of trans-boundary stocks, conservation and protection of important habitats, and building up resilience and capacity for climate change adaptation. Furthermore, the importance of improving management of fishing capacity, including the initiation of sub-regional MCS Networks together with development of port monitoring capacity and coordinated efforts to combat illegal fishing, was well recognized. In addition to the two Andaman Sea Sub-regional meetings three bilateral meetings were convened for Northern Andaman involving Myanmar and Thailand, and one tri-lateral meeting for Southern Andaman involving Indonesia, Malaysia and Thailand.

The sequence of Andaman Sea Sub-regional meetings has not been as frequent as that of the Gulf of Thailand but activities had been ongoing within and among the countries of the Andaman Sea. These were mostly linked with the activities of the BOBLME Project such as those for mackerels, MPAs, and EAFM; and also with those of SEAFDEC such the RPOA-Neritic Tunas, RPOA-Fishing Capacity, and promotion of EAFM. Most of these activities had the active involvement of almost all of the Andaman Sea countries.

Ladies and Gentlemen,
In order for us to move forward, recommendations during the previous Sub-regional meetings should be considered including the need to strengthen collaborative efforts with other related international organizations and initiatives such as those of the BOBLME Project and Mangroves for the Future of the IUCN, among others. In addition priority interventions and strategies addressing various fisheries related issues in the Sub-region should be discussed for our plans to be more action-oriented. The integration of habitat management into fisheries management by building upon EAFM should also be given more emphasis in considering efforts for better management of the coastal environments and resources in the Andaman Sea.

Lastly, I would wish to thank you once again and welcome you all. I hope that, apart from learning more about our sea and our resources during this Meeting, our successful output from our deliberations is a must. Without further ado, I now declare the Third Meeting of the Andaman Sea Sub-region open. Thank you and have a good day.

Annex 3

PROSPECTUS

1. Introduction

The Andaman Sea is one of the important sub-regional and semi-enclosed seas in the Southeast Asian region. The Andaman Sea is well-recognized for its important habitats, biodiversity and abundance of aquatic resources providing a wide variety of fisheries products and other aquatic resources in addition to employment opportunities for the peoples of the countries around the Andaman Sea. The uniqueness of the area has prompted WWF and others to promote the "Andaman Sea Eco-region". However, the resources and the sustainability of the fisheries and biodiversity are being threatened by a high fishing pressure and competition with other users of the coasts and the sea leading to a state of overfishing and degradation of habitats.

The Andaman Sea dialogue on developing mechanisms for regional cooperation was, with Swedish support in cooperation with the BOBLME Project, initiated in October 2009 by the conduct of the "**First Meeting of the Andaman Sea sub-region**". The first meeting was able to have participation from India (Andaman and Nicobar Islands) thanks to the cooperation with the BOBLME Project. **The 2nd Meeting of the Andaman Sea Sub-region** was held in Phang Nga in August 2012. There is an understanding among the Andaman countries on the need to cooperate on matters such as management and utilization of trans-boundary stocks, conservation and protection of important habitats and to build resilience and capacity for climate change adaptation. Furthermore, the importance to improve management of fishing capacity, including the initiation of sub-regional MCS Networks together with development of port monitoring capacity and coordinated efforts to combat illegal (IUU) fishing is well recognized. In addition to the two Andaman Sea meetings there has also been three bilateral meetings for Northern Andaman (Myanmar and Thailand) and one tri-lateral meeting (Indonesia, Malaysia and Thailand) for Southern Andaman.

The sequences and timing of Andaman Sea meetings have not been as frequent as for the Gulf of Thailand (that reports to the RPOA-IUU Coordinating Committee) or the Sulu-Sulawesi Seas (that reports to the CTI-CFF and the RPOA-IUU). Activities have, nevertheless, been ongoing within and among the countries of the Andaman Sea linked to the program and working groups of the BOBLME (that include working groups for mackerels and MPA's, genetic studies on mackerels and promotion of EAFM) and the ASEAN-SEAFDEC programs (such as work on the RPOA-Neritic Tuna, RPOA-Fishing Capacity and promotion of EAFM) with the active involvement of all Andaman Sea countries (including India through the BOBLME).

To maintain momentum of activities that has been made available to the Andaman countries through the mechanisms provided through BOBLME and ASEAN-SEAFDEC the organization of **the 3rd Andaman Sea** is important, particularly since the present phase of BOBLME ended in 2015. There is a risk that working groups, results and experiences gained will be lost and the challenge ahead is for the Andaman countries (with support from SEAFDEC and others) to engage designated institutions and strengthen cooperation around the Andaman Sea. In the process Andaman countries are also requested to indicate ambitions and priorities for continued bilateral dialogue (Northern Andaman) trilateral dialogue (Southern Andaman) thereby building upon a continuation of a process that has been deemed

essential by all involved parties at regional, national and local level.

To move forward and build upon results generated so far recommendations given during the previous sub-regional meeting should be highlighted as well as efforts to strengthen collaborative efforts with other related international organizations and initiatives (building upon BOBLME working groups, initiatives generated through Mangroves for the Future/IUCN and others). *Annex 1 provides the recommendations from the 2nd Andaman Sea Meeting*. In addition, priority interventions and strategies addressing various fisheries related issues in the sub region should be discussed with an aim to become more action oriented. The integration of habitat management into fisheries management (building upon EAFM) should be given more emphasis in considering efforts for better management of coastal environments and resources in the Andaman Sea.

Priority areas and progress in promoting regional cooperation in and around the Andaman Sea

Progress has been made since the 2nd Andaman Sea Meeting under different parallel initiatives (BOBLME, SEAFDEC, IUCN/MFF, etc.) with the involvement of Andaman Sea Countries in terms of capacity building and improved knowledge on traditional knowledge and in the process to advance sub-regional cooperation on priority species as well with regards to ASEAN region-wide initiatives of relevance to the Andaman Sea.

Ecosystems Approach to Fisheries Management (EAFM): Both SEAFDEC and BOBLME together with FAO, NOAA and others have embraced the ecosystems approach to fisheries management (EAFM) as a tool for planning, monitoring and management. Teams from the ASEAN countries have had EAFM training and at national level teams in Myanmar and Malaysia have been receiving EAFM training. Options could be explored to introduce the concept has a planning tool for provincial/cross-border capacity-building, planning and management.

Mackerels (Rastrelliger spp.) and mackerel working groups: During the earlier Andaman Sea Meetings, it was shown and recognized that the (eastern) Andaman Sea feature two distinct loops, one from Phuket down into Melaka Straits (Indonesia, Malaysia and Thailand) and the other from Phuket into the waters of Myanmar (Thailand and Myanmar). Recommendations have emphasized the importance of improved monitoring of spawning season, migration patterns of the trans-boundary and (highly) migratory fish species such as *Rastrelliger spp*, and related species. The work to promote coordination and increased understanding on mackerels and the movement of mackerels has been supported through the setting up of an Indian Mackerel Working Group (BOBLME) and a genetics working group. SEAFDEC MFRDMD has been involved in the conduct of a study on mackerel genetics. There is also a BOBLME Working Group on *Hilsa* that could provide useful references.

RPOA-Neritic Tuna: The ASEAN/SEAFDEC Scientific Working Group has met during 2015 and 2016 and further advanced the process of increasing the knowledge on the status of neritic tunas in the ASEAN region. Information is now also available on stock status of Kawakawa and Tonggol Tuna including the status in the Andaman Sea. Based on present information options could be assessed on the relevance to test the ASEAN Catch Documentation Scheme (ACDS) on neritic tuna in the Andaman Sea (including related traceability systems).

MPA's, protected areas and fisheries refugia (BOBLME Working Group on MPA's)
Through BOBLME an MPA working group was established and training has been provided to select and to build upon the work being done. It would be useful to seek summary updates on the status of work of the (BOBLME) MPA Working Group. Earlier meetings (BOBLME, SEAFDEC, etc.) have discussed options to establish "larger fisheries resources conservation areas" including an aggregate of existing and effective smaller management areas (i.e. MPA's, other refugia, etc.) encompassing critical habitats of important trans-boundary fish species. A comprehensive sources of reference is available through the BOBLME in the publication **BOBLME (2011) Status of Marine Protected Areas and Fish Refugia in the Bay of Bengal Large Marine Ecosystem. BOBLME-2011-Ecology-10**. To better understand functions of critical habitats. MPA's and fisheries *refugia*, the relevant information on important habitats in the sub-region may also be sourced from relevant international organizations and projects (*e.g*. FAO, IUCN, MFF, Wetlands International, UNEP/GEF South China Sea Project, etc.) and from Member countries.

MCS Networks: Limited further steps have been taken to establish MCS networks among Andaman Sea Countries. Similar to what have been done between Cambodia and Thailand advances could be made by reviewing available mechanisms for sub-regional and bilateral cooperation together with comparative reviews of laws, regulations and institutional responsibilities (to establish key institutions to be involved). A step in this direction was done following the recommendations from the 1st Meeting for Andaman Sea Sub-region that suggested that an initial activity to initiate sub-regional cooperation should focus on information sharing, identify key activities related on M, C and S and indicate responsible national institutions on such activities. Importantly the activities to be undertaken should be within the legal framework of Member countries involved. Furthermore, the 1st and 2nd Meetings emphasized that efforts to improve management of fishing capacity were a critical element in combating illegal (IUU) fishing.

RPOA-Fishing Capacity: SEAFDEC Council (April 2016) and ASWGFi have now recognized the RPOA-Fishing Capacity. The task ahead is to explore the relevance – and interest – of the Andaman Sea countries in being a target sub-region for the RPOA-Fishing Capacity. The work that has been done with teams from Malaysia and Thailand (facilitated by TD and MFRDMD) to assess numbers of fishing vessels in the Gulf of Thailand could be replicated in the Andaman Sea.

Bi-lateral and tri-lateral dialogue meetings have been organized in promotion of the sub-regional cooperation in the Andaman Sea**.** In promotion of joint management approaches among neighboring countries sub-regional consultative meetings have been conducted in the Northern Andaman Sea (Myanmar and Thailand) with three/four events, 2011 to 2013, and in the Southern Andaman Sea (Indonesia, Malaysia and Thailand) with one event in 2011 through cooperation between SEAFDEC and BOBLME. The meetings brought together officers from different relevant agencies to share and exchange the information with an aim to strengthen dialogue on possible sub-regional cooperative management arrangements. For the Northern Andaman Sea the outline of a "Planning and Management Committee" is available together with a work plan based on priority issues as defined by participants to the dialogue meetings. To activate the Committee and revise/update the work plans the two countries need to reappoint Committee Members (institutional changes in the two countries have included a turnover in available personnel). For the Southern Andaman Sea, the process needs to be reinitiated given the continued/renewed interest to be expressed by the three countries.

Training/capacity building: Teams from Myanmar and Thailand (together with Viet Nam and Cambodia) have been trained in fish larvae identification and in sampling techniques and methodologies for stock assessments during the first half of 2016. Teams from all the eastern Andaman Sea countries have attended training on EAFM in Bangkok and a team from SEAFDEC TD and SEC has provided EAFM training in Myanmar while further training has been provided through the BOBLME

Traditional knowledge/local practices and responses to climate change: The 2nd Andaman Sea Meeting emphasized the importance of local knowledge in effective coastal resource management schemes and in adaptation/responses to climate variability and climate change. Some examples were provided on how local knowledge and customary institutions (i.e. Indonesia and Thailand) are vital in resource management. Local knowledge is essential in establishment of local MCS, resource management and in building up capacity for climate change adaptation. Measures and ways to mitigate effects of climate variability and climate change should be seen as a cross cutting matter and in relation to fisheries and habitat management have a strong basis in social development. Following the request from the 2nd Andaman Sea Meeting SEAFDEC contracted the Prince of Songkla University to prepare a report on "Local Ecological Knowledge and Benefit Sharing Approaches for Small-island Fishery/Tourism Management on Lipe Island, Andaman Sea, Thailand (the full report is available together with a Technical Guideline).

2. Rationale and Objectives of the Third Meeting of the Andaman Sea Sub-region

The intention with this the **Third Andaman Sea Meeting** is to reactivate/revive some of the momentum created during earlier sub-regional, sub-sub-regional and on-site events held up to date through support by SEAFDEC, BOBLME, MFF/IUCN, IOC/Westpac as well as national departments involved in fisheries, aquatic/coastal environment and safety at sea (vessel registration). Since the present phase of the BOBLME ended in December 2015 it is of specific importance to seek to capitalize on the advances made through the work supported by the BOBLME and to seek to have the Andaman members of Working Groups (mackerels, MPA's, etc.) maintained in an implementation framework that would be supportive of sustainable fisheries in the Andaman Sea sub-region.

The aim is to seek guidance from the four countries with priority action-oriented recommendations for the development of joint approaches and agreements to address problems/issues common to all four countries in the Andaman Sea (check if it feasible to include Andaman and Nicobar Islands/India). The event should build upon common ambitions of Indonesia, Malaysia, Myanmar and Thailand with a focus on looking beyond planning and move into action. This could involve key elements of both national and regional concern that have been raised as priority areas during national, sub-regional and regional events.

Objectives:
With the objective to support the development of the Andaman sub-regional agreements/arrangements based on an ecosystems approach to fisheries through the integration of fisheries and habitat management, the meeting should look for action-oriented recommendations for the development of joint approaches and agreements to address problems/issues common to all four countries in the Andaman Sea, including options for a management plan for the whole Andaman Sea and related water bodies.

The Meeting Objectives include:

1) To review and assess the continued relevance of the recommendations from the 2nd Andaman Sea Meeting (August 2012) and report on progress of activities since the previous meeting of the Andaman Sub-region, including activities by partners organizations (BOBLME, MFF/IUCN, etc.) through bilateral dialogue events and the development and implementation of joint work plans and cooperative agreements (MOAs, etc.)
2) Review steps taken to strengthen cooperation on trans-boundary fisheries and habitat management – options for joint approaches to assess the availability and migration of priority species (Mackerels, Neritic Tuna and Hilsa) and related species including suitable actions for continued work at the sub-regional level and/or bi/trilateral level with an aim to regulate/manage fishing effort and conserve fish stocks to the benefit of the people in the area.
3) To facilitate implementation of activities in priority areas an initial set of collaborative (thematic) working groups which should be agreed upon/confirmed and established and as feasible build upon existing (BOBLME and others) Working Groups. Recommended areas include:
   - **Trans-boundary and migratory species** (*e.g.Rastrelliger spp.* Neritic Tuna, Hilsa) - link to BOBLME working group on mackerels.
   - **Managing fishing capacity and monitoring of vessels encroaching in coastal waters**
     Links to the development of RPOA-Fishing Capacity, MCS-networks including Port monitoring, encroaching vessels, double flags, landing across boundaries and ASEAN Catch Documentation Scheme.
4) To reactivate the platforms for the development of Sub-Andaman Agreements/arrangements based on ecosystems approach to fisheries (EAFM) through the integration of fisheries and habitat management and reconfirm continued bilateral/multilateral dialogues between Indonesia-Malaysia-Thailand and Thailand-Myanmar in the Andaman Sea Sub-region as well to establish working teams

The Consultation should indicate suitable action items, time-lines and target, as possible, for continued work and cooperation at the sub-regional level.

3. Expected Outputs

- An update on actions taken in priority areas (by SEAFDEC, BOBLME, MFF/IUCN, Andaman Sea Countries and other partners as/if information is available) provided as a basis for decisions on continued action and feedback on suggested steps ahead
- Draft Andaman Sea Action Plan/Work Plan for 2017 on the expansion of cooperation on shared stocks (as suitable covering the Andaman Sea Gulf or more bilateral), restoration of habitats, the management of fishing capacity and combating illegal practices, including links to related bilateral and regional Work Plans (RPOA-Neritic Tuna, RPOA-Fishing Capacity) with indications on relevant follow-up for the Andaman Sea Sub-region
- Presentation of the report on “Local Ecological Knowledge and Benefit Sharing Approaches for Small-island Fishery/Tourism Management on Lipe Island, Andaman Sea, Thailand
- Report of the 3rd Meeting of the Andaman Sea Sub-region including recommendation and suggested action/work plans

Implementation plans should include efforts to strengthen the capacity of communities and local organizations to more responsibly use and manage resources and habitats (including perspectives of diversified household incomes to reduce pressure on resources).

4. Expected Outcomes

- Awareness raised among participating institutions from around the Andaman Sea on benefits of regional/sub-regional cooperation and inter-sectoral cooperation to promote appropriate fisheries and habitat management (based on EAFM) to achieve sustainable development.
- Strengthened commitment to continued and expanded cooperation and coordination among various sectors and fisheries-related national agencies. Improved structure and involvement in the continued implementation of activities in the Andaman Sea by building upon the progress of the implementation of activities so far (by SEAFDEC, BOBLME, MFF/IUCN, Andaman Sea Countries and other partners), experiences shared among the countries and by incorporating feedback from the meeting in the suggestions for steps ahead
- Andaman Sea countries start to develop sub-regional action plans (working groups, etc.) as a follow-up for the Andaman Sea Sub-region to the RPOA-Neritic Tuna and the RPOA-Fishing Capacity and where applicable incorporate (members) of existing working groups (mackerel, MPA's, etc.)
- The Andaman Sea Work Plan for 2017 will be implemented, including links to related bilateral, trilateral and regional Work Plans
- Common priority areas confirmed and the Report of the 3rd Meeting of the Andaman Sea Sub-region is summing-up the progress made in sub-regional cooperation and development of action plans as a basis for reporting to SEAFDEC, RPOA-IUU Coordinating Committee (with the RPOA-IUU to include the Andaman Sea as a target sub-region) and other coordination mechanisms such as the RPOA's for Neritic Tuna and Fishing Capacity

TIMETABLE AND AGENDA

Time	Contents	Facilitator/ Presenter
17 October (Mon)		
	Arrival of all participants to the venue of the meeting	
18 October 2016 (Tue)		
08.30-09.00 hr	Registration	
09.00-09.10 hr	**Agenda 1**: Opening of the Meeting	*Secretary-General of SEAFDEC*
09.10-09.30 hr	**Agenda 2**: Background, Introduction, Objectives and Adoption Agenda of the Meeting	*SEAFDEC/SEC (Dr. Taweekiet A.)*
09.30-10.00 hr	*Group photograph session and Coffee break*	
10.00-11.00 hr	**Agenda 3:** Review of recommendations of the previous meeting and updates on progress and results of actions, by 3.1 2nd Andaman Sea Meeting, Recommendations (*Dr. Taweekiet A.)* 3.2 BOBLME and partners(*Mr. Rudolf Hermes*) 3.3 SEAFDEC and partners *(Ms. Pattaratjit K.)* 3.4 Corin Asia – Myanmar 3.5 Others: IUCN/MFF	*SEAFDEC, FAO, BOBLME and Partners*
11.00-12.30 hr	**Agenda 4**: Promotion of the Integration of fisheries and habitat management and the importance of trans-boundary stocks and habitats (EAFM) 4.1 Country update on Current status of the Management of Shared stocks, Indo-Pacific Mackerel, Indian Mackerel, etc (4 *Andaman Sea Countries)* 4.2 Trans-boundary/migratory stocks by projects/working groups • *Rastrelliger* spp. (*SEAFDEC/MFRDMD*) • *RPOA*-Neritic Tuna (*SEC-Dr. Somboon Siriraksophon*) 4.3 Discussion on establishment of fisheries resources management plan in the Andaman region/sub-regions and options to move forward for sub-regional cooperation on conservation and management	*4.1 Presented by Indonesia, Malaysia, Myanmar and Thailand (Time will be allocated for 15 minutes/country) 4.2 MFRDMD, WG representative and SEAFDEC/SEC 4.3 Facilitated*
12.30-14.00 hr	*Lunch break*	
14.00-15.00 hr	**Agenda 5**: Promotion of more effective management of fishing capacity and to reduce illegal and destructive fishing in the Andaman Sea including port monitoring/landings across boundaries 5.1 Country presentation updates on Management of Fishing Capacity and combating illegal (IUU) fishing and Law and Legislation and issues around the Andaman Sea	*5.1 Presented by Indonesia, Malaysia, Myanmar and Thailand (Time will be allocated for 15 minutes/*

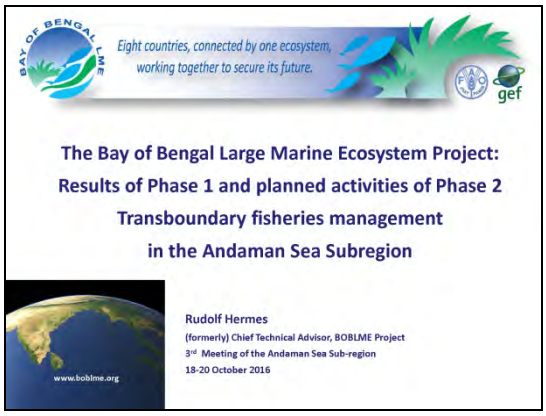
Time	Contents	Facilitator/ Presenter
	(4 Andaman Sea Countries)	*country)*
15.00-15.15 hr	*Coffee break*	
15.15-16.30 hr	*Continue onto* 5.1 Country presentation updates on Management of Fishing Capacity and combating illegal (IUU) fishing and Law and Legislation and issues around the Southern Andaman Sea	
18.00 hr	*Reception dinner hosted by SEAFDEC*	
19 October 2016 (Wed)		
09.00-10.15 hr	*Continue onto***Agenda 5:** Promotion of more effective management of fishing capacity and to reduce illegal and destructive fishing in the Andaman Sea including port monitoring/landings across boundaries 5.2 Advances in the development of RPOA-Fishing Capacity, RPOA-IUU, MCS networks *(SEC-Dr. Somboon Siriraksophon)* 5.3 Port Monitoring (tools to implement Port State Measures (PSM) and landings across boundaries (small and large scale) *(FAO-Dr. David Brown, SEAFDEC- Mr. Kongpathai S.)* 5.4 Directions and recommendations on common priorities and approaches to joint action	*5.2 by SEAFDEC/ SEC, RPOA-IUU/ SEC* *5.3 FAO and SEAFDEC-TD* *5.4 Facilitated*
10:15-10:30 hr	*Coffee break*	
10.30-12.30 hr	**Agenda 6:** **6.1 Group discussion on the work plan development** **Group 1**: Trans-boundary fisheries resources management ❖ Identify issues and challenges, target, possible action plans, time lines and expected outcomes by 2018, ❖ Establish working groups for the sub-region as/if possible build upon and incorporate (members) of existing working groups **Group 2**: Promotion of more effective management of fishing capacity and to reduce illegal and destructive (combat IUU) fishing in the Andaman Sea ❖ RPOA-Fishing Capacity as an instrument for the management of fishing capacity in the Andaman Sea Sub-Region ❖ Identify possible actions for monitoring control and surveillance networks, port monitoring and monitoring landings by "neighboring vessels"	*6.1 Introduction by SEAFDEC-SEC (Dr. Somboon S.)* *Group 1 facilitated* *Group 2 facilitated*

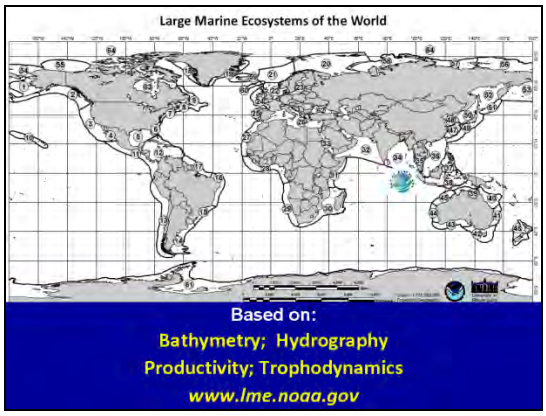
Time	Contents	Facilitator/ Presenter
	❖ Strengthen institutional cooperation initiate the building of MCS network and revisit the MCS Institutional matrix indicating (providing a baseline on) key institutions, functions and legal framework among MCs for the establishment of a MCS Network for the Andaman Sea ❖ Establish working groups for the sub-region as/if possible build upon and incorporate (members) of existing working groups	
12.30-14.00 hr	*Lunch break*	
14.00-16.30 hr	*Continue onto* **Agenda 6:** **6.2 Group presentation**	
20 October 2016 (Thu)		
09.00-10.30 hr	**Agenda 7**: Discussion on the Andaman Sea Fisheries Management Mechanism and reporting/Proposals on bilateral/multilateral dialogues between Indonesia-Malaysia-Thailand and Thailand-Myanmar in the Andaman Sea Sub-region as well to establish working teams	*7 facilitated*
10.30-10.45 hr	*Coffee break*	
10.45-12.00 hr	**Agenda 8:** Summary and Way forward/other matters	*8 SEAFDEC/ SEC (Dr. Somboon S.)*
12.00 hr	**Agenda 9:** Closing of the Meeting	*Secretary-General of SEAFDEC*

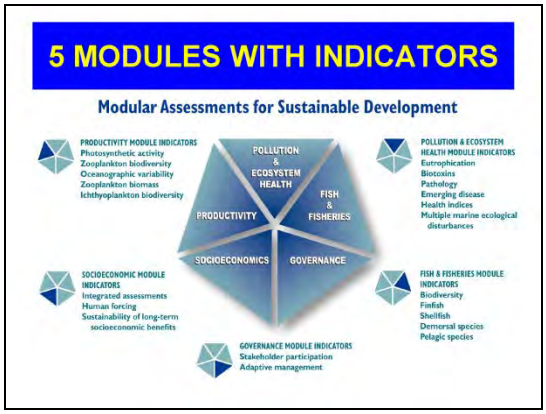
Annex 4

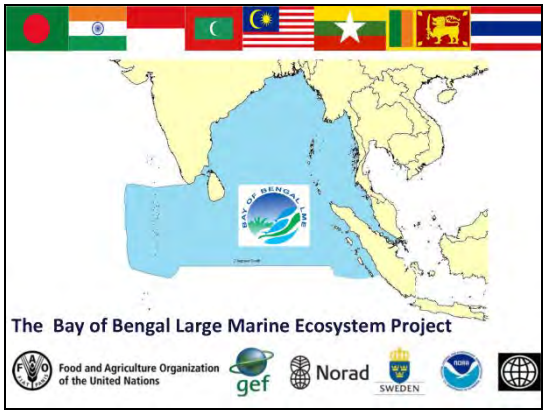
The Bay of Bengal Large Marine Ecosystem Project

By *Mr. Rudolf Hermes*, the representative from the BOBLME Project









Areas of work

- Ecosystem based management -
  Integrated Coastal Management, Critical habitat management, Marine Protected Areas
- Policy Harmonisation
- Fisheries resources assessment and management
- Ocean dynamics, productivity and climate change
- Ecosystem Health, Land-based sources of pollution
- Training: Science communication, ICM, EAFM, SocMon

Fisheries Resources Assessment and Management (hilsa shad, Indian mackerel, sharks)

- Stock status reviews and assessments; NPOAs Sharks
- Review of fisheries statistics; capacity development
- Research programmes (incl. stock structure; molecular genetics)
- Stock assessment capacity development
- Regional Fisheries Management Advisory Committee
- Essential EAFM Training Course development
- Performance indicators for fisheries management

Indian mackerel and hilsa shad

- *R. kanagurta* is a migratory species; the transboundary population in the Andaman Sea of Thailand belongs to one large population
- *R. kanagurta* in Malacca Strait (Tanjung Balai) is significantly different from the two other Indonesian populations (Banda Aceh and Sibolga)
- Pattern of east-west geographic stock structure across the Bay of Bengal where western populations (Indian) are most genetically distant from eastern populations (Malaysia-Indonesia-Thailand)
- Reduction of fishing effort, gear restrictions, minimizing fishery for juveniles, awareness building, improvement of data collection, policy development

NPOAs and RPOA Sharks

- Guidance document for NPOA Sharks (Myanmar, with FFI)
  - Identification and conservation training; field guide; status and economic importance; assessment of efficacy of shark reserves
- Draft NPOA Sharks (Thailand, DoF)
  - Study of heavy metal contamination; taxonomy and database of sharks and rays
- Review and update of existing NPOA Sharks (Malaysia, SEAFDEC MFRDMD)
  - Stakeholder consultations; data collection; awareness building
- Promotion of revision of existing NPOA Sharks (Indonesia, MMAF)
- Draft BOBLME RPOA for Conservation and Management of Sharks in line with FAO IPOA Sharks

Marine Managed Areas / MPAs

- Collaboration with IUCN, FFI and SocMon (Myanmar); Project IMPAACT, University of Victoria, Canada and DoF (Thailand); Universiti Sains Malaysia and DMP (Malaysia); and MMAF DG MSM (Indonesia)
- Resource, habitat, and socio-economic assessment
- Capacity development in management effectiveness monitoring
- Status of Marine Protected Areas and Fish Refugia in the Bay of Bengal Large Marine Ecosystem
  www.boblme.org/documentRepository/BOBLME-2011-Ecology-10.pdf
- Regional MPA atlas and database (with WorldFish Penang)
  http://boblme.reefbase.org/
- MPA factsheets and policy advisories; ecosystem characterization

Ecosystem Approach to Fisheries Management, Illegal, Unregulated and Unreported Fishing

- Essential EAFM Training Course development with partners
- E-EAFM materials translated to Bahasa Indonesia and Melayu, Thai and Myanmar languages,
- SEAFDEC TD becomes EAFM training provider
- EAFM LEAD materials developed
- Website www.eafmlearn.org established
- Review of Impacts of IUU Fishing on Developing Countries in Asia
  www.boblme.org/documentRepository/BOBLME-2015-Governance-15.pdf
- Assessment of transboundary governance architecture for the Bay of Bengal
  www.boblme.org/documentRepository/BOBLME-2015-Governance-07.pdf

BOBLME was a foundational Project

- **based on the need to lay the <u>foundations for change</u>,**
  - including demonstrations of transboundary cooperation,
  - before implementing a second phase action programme
  - that will lead to the long-term goal relating to
    - an improvement in the health of the Bay of Bengal and its fisheries.

BOBLME focused on:

(i) increasing capacity in natural resources management
(ii) increasing knowledge about the ecosystem
(iii) developing indicators for tracking changes and
(iv) starting to improve ecosystem health through transboundary demonstration activities.

BOBLME Project achievements

Overall the BOBLME Project has:

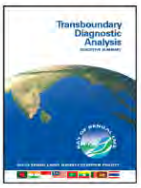
- Achieved the Project objectives and targets
- Developed and practiced regional and collaborative approaches to resource management and technical exchange
- Developed and practiced national resource management approaches
- Increased understanding of the ecological, human and governance dimensions of the BOBLME
- Supported capacity development aimed at institutional strengthening

Major outputs

1. Status reviews
2. Assessments
3. Studies
4. Activity, training and workshop reports
5. Web-based portal (MPA atlas)
6. A Transboundary Diagnostic Analysis (TDA)
7. A Strategic Action Programme (SAP)

Two major outputs

1. **A Transboundary Diagnostic Analysis - TDA**
   - *A report on the major transboundary issues and their causes*
2. **A Strategic Action Programme - SAP**
   - *A (strategic action) plan for addressing the major transboundary issues and their causes*



Strategic Action Programme - development

The BOBLME Strategic Action Programme contains over 400 priority transboundary and national actions to support:

- Institutional arrangements, legal and policy reforms
- Management measures
- Knowledge strengthening, awareness and communication
- Human capacity development

Strategic Action Programme aims

Marine Living Resources

1. Restore fishery resources that have declined
2. Restore and maintain species composition
3. Reduce the proportion of juvenile fish caught
4. Restore biodiversity

Strategic Action Programme aims

Critical habitats

1. Protect, manage and restore mangroves habitats to increase mangrove coverage and improve biodiversity
2. Restore, protect and sustainably manage existing coral reef ecosystems, habitats and associated biodiversity, and prevent pollution and destructive activities
3. Protect and manage seagrass habitats and associated biodiversity

Strategic Action Programme aims

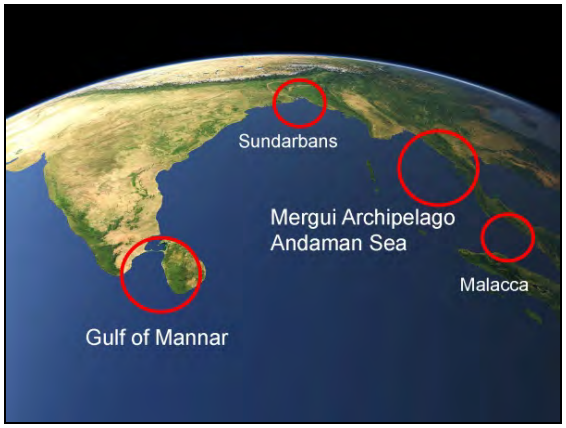
Water quality

1. Reduce or minimize the discharge of untreated sewage and waste water into river, coastal and marine waters
2. Reduce and minimize solid waste and marine litter
3. Reduce and control nutrient loading into coastal waters

Strategic Action Programme aims

Social and economic considerations

1. Reduce vulnerability to natural hazards, climate variability and climate change, and increase climate resilience
2. Improve the living and working conditions of coastal fishing communities
3. Empower coastal people to participate in and benefit from sustainable development practices



BOBLME Phase 2 PIF

- Part I: Project Information (A-F)
- Part II: Project Justification
  - II.1 Project Description
  - II.2 Stakeholders
  - II.3 Gender Equality and Women's Empowerment
  - II.4 Risks
  - II.5 Coordination
  - II.6 Consistency with National Priorities
  - II.7 Knowledge Management
- Part III (A-C) Approval/Endorsement

BOBLME Phase II:SAP Implementation

Component 1: **Sustainable management of fisheries** SAP Theme 1

Component 2: **Restoration and conservation of critical marine habitats and protection of biodiversity** SAP Theme 2

Component 3: **Management of coastal and marine pollution to improve ecosystem health** SAP Theme 3

Component 4: **Improved livelihoods and enhanced resilience of the BOBLME** SAP Theme 4

Component 5: **Regional mechanism for coordination, monitoring and assessment**

Project Component 1:
Sustainable management of fisheries (SAP Theme 1; IW, BD)

Outcome 1.1 The ecosystem approach to fisheries management (**EAFM**) institutionalized at national level; leading to increased abundance and biomass of targeted transboundary fish stocks by 5% of 2014 baseline

- ***EAFM training, EAFM Plans, Co-Management***

Outcome 1.2 **IUU** catch in the BOBLME reduced by 20% of 2014 baseline

- ***NPOAs and RPOA-IUU, MCS, PSM, capacity development***

Project Component 2:
Restoration and conservation of critical marine habitats and protection of biodiversity (SAP Theme 2; IW, BD, CCM)

Outcome 2.1. Coastal and **marine managed areas** (MMAs) contribute to conservation of biodiversity and blue carbon

- ***National and transboundary MMAs, ETPs, VEs, Blue Carbon*** *(opportunities for BD and CCM STAR allocation to national activities)*

Outcome 2.2 Regional consensus and agreements on **reduction of threats to marine biodiversity** in coastal and open waters

- ***RPOA ETP, legislative frameworks***

Project Component 3: Management of coastal and marine pollution to improve ecosystem health (SAP Theme 3; IW, CW)

Outcome 3.1 Pollution from discharge of **untreated sewage and wastewater; solid waste and marine litter**; and nutrient loading from **non-industrial sources** reduced or minimized in river, coastal and marine waters at X hotspots applying ICM approaches

- ***Coordination, monitoring, awareness, innovative technology***

Outcome 3.2. Regional platform of Global Partnership on Nutrient Management (**GPNM**) strengthened

- ***Information sharing, regional protocols, hotspots***

Outcome 3.3. Coastal and marine pollution from **industrial sources** reduced by 10% from baseline at hotspots applying ICM approaches (opportunities for CW funding)

- ***UNIDO TEST integrated approach, best practices***

Project Component 4: Improved livelihoods and enhanced resilience of the BOBLME (SAP Theme 4; IW, BD?)

Outcome 4.1. Enhanced **resilience** of the BOBLME and **reduced vulnerability** to natural hazards, climate variability and change of selected coastal communities (BD STAR?)

- ***Ecosystem services valuation, resilience plans, empowerment, gender considerations, VG-SSF implementation***

Outcome 4.2. Enhanced **sustainable livelihoods and diversification** for selected coastal communities

- ***Value chain analysis, alternative livelihoods, financial services, capacity development***

Project Component 5: Regional mechanism for planning, coordination, and monitoring of the BOBLME (SAP Crosscutting Theme; IW)

Outcome 5.1. Strengthened **institutional mechanisms** at regional and national levels for planning, coordination and monitoring of the BOBLME

- ***Consortium for the Conservation and restoration of the BOBLME (CCR-BOBLME), partnership arrangements; inter-sectoral coordination, consultation, base line data***

Outcome 5.2. **Dissemination** of project findings and lessons learned contribute to the LME community of practice

- ***Regional information sharing, lessons learnt, IW & LME Learn***

Outcome 5.3. Project implementation based on **adaptive results-based management**

- ***Project monitoring and evaluations***

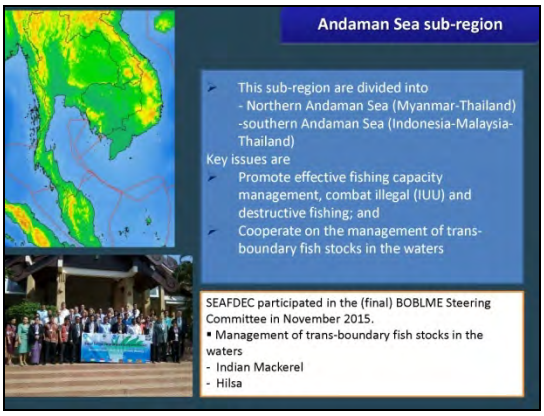
BAY OF BENGAL LME

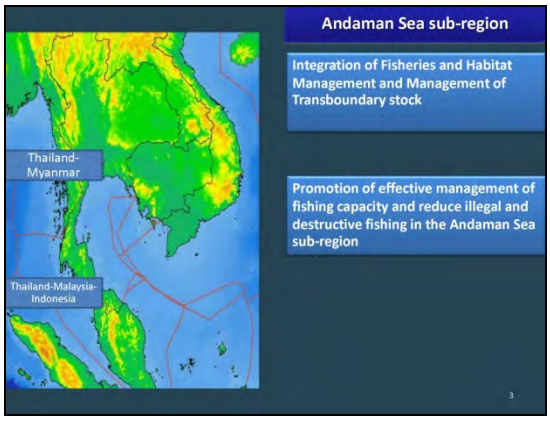
www.boblme.org

Annex 5

Fisheries and Habitat Management, Climate Change and Social Well-being in Southeast Asia

By *Ms. Pattaratjit Kaewnuratchadasorn*, SEAFDEC Secretariat





Building the Capacity at provincial level

- Awareness raised at provincial and local level on the need to promote integration of fisheries and habitat management, reduce illegal fishing, diversified livelihoods and alternative income opportunities to reduce poverty and to reduce pressure on fisheries resources.
- Livelihood diversification initiatives – based on a **gender** balanced approach - supported through sub-contracts with locally-based organizations.
- Sub-contracts namely: CORIN-Asia Myanmar

Sub-contracts

Andaman Sea			
Subject	**Institution**	**Focus Area**	**Duration**
Fisheries resources and habitat management towards building change-resilient communities in the coastal areas of Myeik archipelago, Myanmar	CORIN-Asia Myanmar	Kaw Thong, Myanmar	1 July 2014 to 31 December 2017

Regional issues/concerns

- Provided financial support to Fisheries Officers (AMS) to participate the 2nd Regional Meeting on the Protection of Migrant Fishers: ASEAN Review of Guidelines on Flag State Inspection of Working and Living Conditions onboard fishing vessels, 28-29 April 2015, Jakarta, Indonesia
- ASEAN Guidelines on Labor aspects to be developed in 2017
- Regional Cooperation on the Management of Neritic tuna for the Southeast Asian Waters: on-going
- Regional Plan of Action on Management of Fishing Capacity (RPOA-Capacity) was finalized in 2015 : to be endorsed at ASWGFi 2016
- Regional programs in line with VGSSF (FAO) will be developed in 2016
- Collaboration work with IUCN/MFF and SEI on the A baseline study on gender and coastal resource management and fisheries (in the process of consultation with partners)

7

Annex 6

The Meeting of the Andaman Sea Sub-region
(Indonesia, Malaysia, Myanmar and Thailand)
By *Mr.Win Naing*, the representative from CORIN Asia-Myanmar

The Meeting of the Andaman Sea Sub-region (Indonesia, Malaysia, Myanmar and Thailand)

Win Naing (Director)
CORIN-Asia Myanmar

18-20 October 2016
Novotel Sukhumvit 20, Bangkok, Thailand

Indian Mackerel Fisheries Assessment in Bay of Bengal (Myanmar):

- There are both inshore and offshore fisheries that occur on these species in these areas. Both drift gillnet and purse seine techniques are also used on the species fished in these areas. Catches are mostly prevalent between November and February (Rakhine) and November to April (Tanintharyi).

Indian Mackerel (Pla Tu, Pla Lan)

Indian Mackerel Fishing Season Myanmar

- There are large constraints in the management of fisheries in Myanmar stemming from the capacity to collect useful scientific data and analyzing the data to assess the resource potential correctly. There is limited funding as well. Nonetheless, Myanmar has implanted both time (June through August) and area closures (near-shore 5 miles on Rakhine and 10 miles off Ayerwaddy and TaninThary coasts) to select trawl gear.

Develop a fishery management plan for the region in Indian Mackerel

- All countries expressed concerns of unilateral implementation of management recommendations that were not standardized in other areas if this were a common shared stock for the region. Using a standardized time area closure mechanism as well as standardized gear regulations will be better for the stock if it is a common stock. Enforcement must be an integral part of this approach if it is to succeed. In addition standardized regulations as well as standardized data assessment programs need to be developed for this region.

Indian Mackerel Fisherman Life

PSM procedure of Myanmar Fisheries Management.

1. Department of Fishery Checking the Fishing License
2. Marine Department checking the ship particulars and period of permission.
3. Port Authority checking the port clearance
4. Custom Department checking permit only Government Rules and Regulations
5. Immigration Department checking the Crews passport, Fishery Card and National Identity card

Myanmar Port State Measurement Agreement

- the Port State Measures Agreement (PSMA), the world's first international treaty designed specifically to tackle illegal, unreported and unregulated fishing.
- Under this new agreement, parties are obliged to ensure that any fishing vessel that comes to its port, even for refuelling, must announce that it is doing so and submit to an inspection of their log book, licences, fishing gear and, to be sure, their actual cargo. Port state authorities agree to share information on violations, thus making it harder for rogue fishers to shift their practices elsewhere.

Port State Measures

Port State Measures

CORIN-Asia Myanmar

- CORIN-Asia Myanmar will carry out activities which comprise with the overall objective of building capacity of local level government agencies and local authorities towards sustainable management of fisheries resources and important coastal habitat to protect coastal resources. Specifically, it will work closely with local level government agencies and local authorities to enable them to work more effectively with local communities in the sustainable utilization, protection and conservation of fisheries resources and important habitats by focusing on the following objectives:

Activities/Objectives of CORIN-Asia Myanmar

- To strengthen institutional and staff capacity of local agency/authority in Kaw Thaung in the area of sustainable and participatory fisheries management, particularly in data collection and management as well as in local strategic planning;
- To contribute to the establishment of a reliable and accessible data and fisheries information system for the area and consequently, to the country in general; and
- To link Project activities with other initiatives conducted by other organizations in the area.
- To achieve above objectives, major activities conducted during the inception year shall be conducted in the new target village in addition to other new activities. Thus, 8 activities are planned to be implemented for the second year of the Project.

CORIN-Asia Myanmar Activities Photos

Gathering Data Information Activities

Trans-boundary and migratory species

Hilsa

Hilsa

Trans-boundary and migratory species

Local Tuna

Export Tuna

Double Flag Fishing Vessels

Thailand Fishing Vessel

Thailand Fishing Vessels were permitted in the Myanmar Waters as the fishing right systemLast 31 March 2014.
Five Thailand Fishing vessels were being permitted in Myanmar Waters as the joint venture fishing system until now.

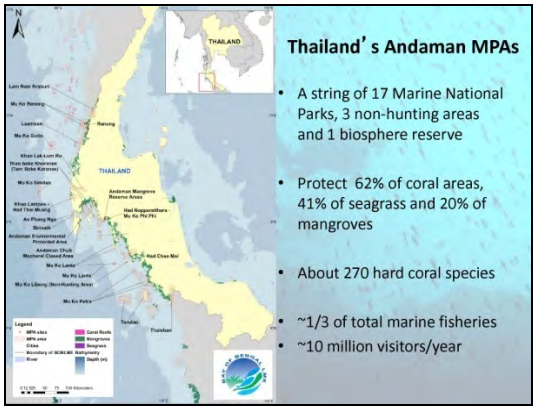
Taiwan Tuna Long Line Fishing Vessel

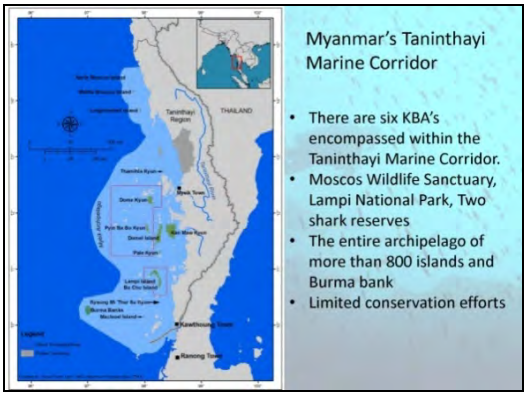
Taiwan Tuna Long Line Fishing Vessels are being permitted in the Tuna Season.

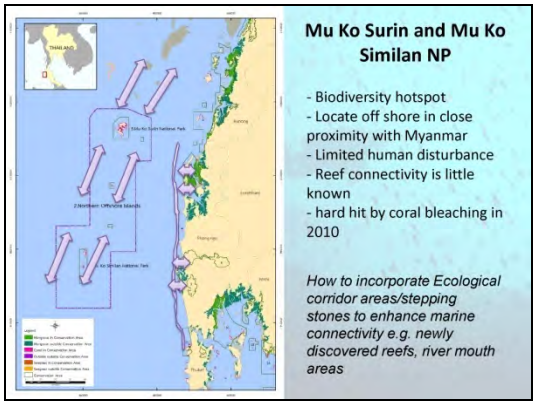
Annex 7

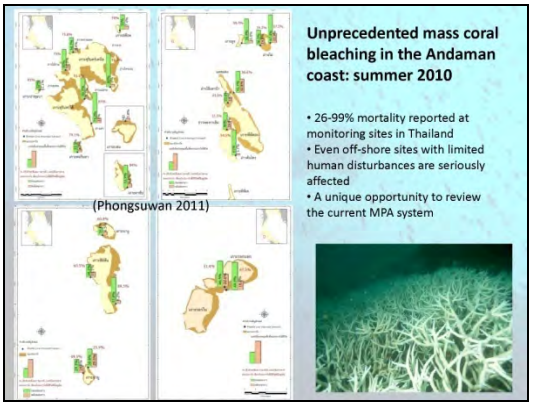
Tranboundary Marine Conservation Myanmar and Thailand

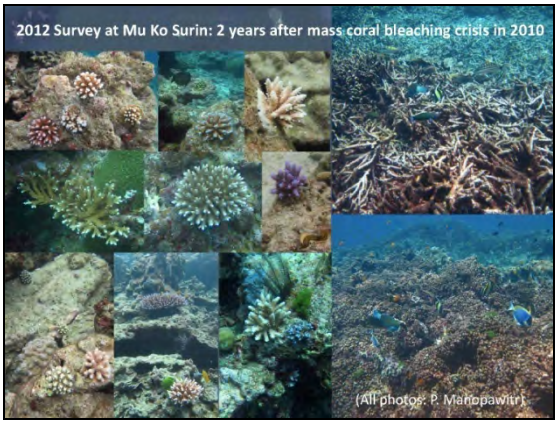
By *Mr. Petch Manopawitr*, the representative from IUCN/MFF

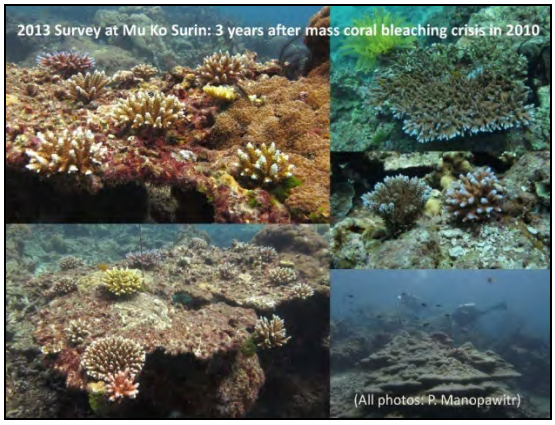




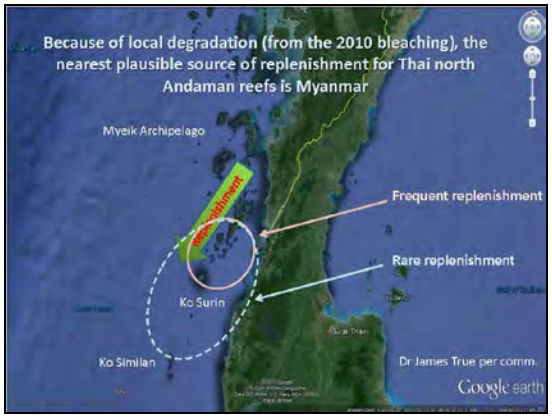


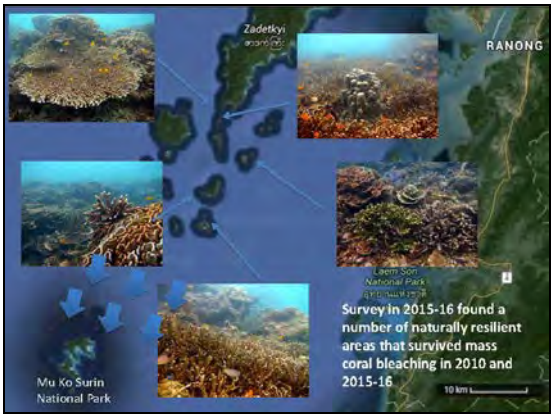


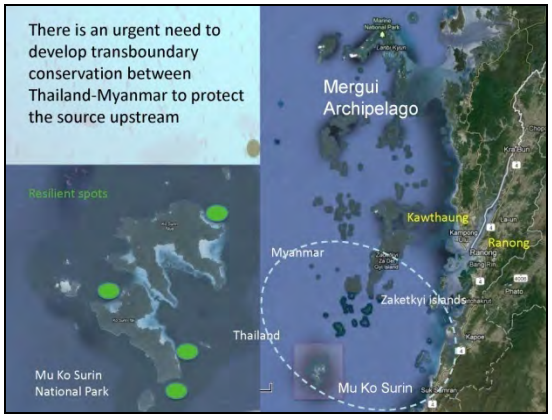

2012 Survey at Mu Ko Surin: 2 years after mass coral bleaching crisis in 2010
(All photos: P. Manopawitr)


2013 Survey at Mu Ko Surin: 3 years after mass coral bleaching crisis in 2010
(All photos: P. Manopawitr)


(All photos: P. Manopawitr)
2015 Survey: 5 years after mass coral bleaching crisis in 2010


Because of local degradation (from the 2010 bleaching), the nearest plausible source of replenishment for Thai north Andaman reefs is Myanmar
Myeik Archipelago
Frequent replenishment
Rare replenishment
Ko Surin
Ko Similan
Dr James True per comm.
Google earth


Zadetkyi
RANONG
Survey in 2015-16 found a number of naturally resilient areas that survived mass coral bleaching in 2010 and 2015-16
Mu Ko Surin National Park
10 km


There is an urgent need to develop transboundary conservation between Thailand-Myanmar to protect the source upstream
Mergui Archipelago
Resilient spots
Kawthaung
Ranong
Myanmar
Zaketkyi islands
Thailand
Mu Ko Surin National Park
Mu Ko Surin

Existing resource use: shallow water hand collection

Existing resource use: deep dive, target spear fishing

Threats: removal of key ecologically-important species for maintaining reef health e.g. parrotfish and rabbitfish

Existing resource use: dynamite fishing, trawlers

Threats: 'trash fish' problem

Threats: Oversea market driven exploitation

Table 3 Priorities, relevance and action statement of responsive management actions to the sustainable management of marine resources

Management Interventions	Strategic Actions	Priority Importance	Relevance	Action statement
Socio-Ecological Profiling	Coastal profiling and baseline data – biophysical and socio-economic	H	N	P
	Research and monitoring programs	H	L,R,N	D
	Habitat and resource mapping	H	L,R,N	D
	Traditional knowledge on resource use and conservation	LM	L	P
	Center of Excellence e.g. coastal and marine research center	LM	N	P
	Information sharing mechanisms and communication channels for dissemination of environmental messages and education	LM	L	P
Community-based Conservation Initiatives	Integration of community participation into the management and monitoring of resources and conservation	LM	L	D
	Capacity development and empowerment	H	L	P
	Better education and awareness	H	L,R,N	P
	A sense of ownership and responsibility for resources	H	L	D
	Establishment of local governance and representation	LM	L	D
Planned and Regulated Marine Tourism	Tourism planning, management guidelines and regulations	H	N	P
	Lessons learned from the Maldivian tourism management model	LM	N	P
	Tourism as a tool for the conservation of species and natural habitats and the alternative income generation for local communities	H	L,R,N	D
	Collaboration of hotelier with MoHT, DoF, FD and Navy in habitat protection	H	N	D
Fisheries management	EAFM – Ecosystem-based Approach to Fisheries Management	H	L,R,N	D
	Regulations to control fishing gears and methods for both local and commercial fishers	H	L,R,N	D
	Enhanced capacity of line departments in patrolling and law enforcement to combi	H	N	D
	Organization of local fishery cooperative or fisher association	LM	L	D
	Transboundary cooperation between Myanmar and Thailand	H	N	D
Management of Marine Ecosystems	Identification of gaps in the marine protected area network and land-use policy	H	N	P
	Capacity building	H	L,R,N	P
	Sustainable financing of MPAs	LM	N	D
	Involvement of local population in the management of local resources and conservation in and outside MPA boundaries	LM	L	D
	Establishment of protected area network including areas of regional and global conservation importance and integrating a holistic planning framework such as resilience, ICM, MSP, and ridge to reef concepts	H	N	D
	Transboundary marine ecosystem management to support habitat connectivity and migratory fish species	H	N	D
Good Governance and Effective Enforcement	Clear legislation identifying the governing authority responsible for managing coastal and marine resources and the enforcement authority to prosecute and punish illegal practitioners/poachers (inside & outside MPAs)	H	N	D
	Clear roles and responsibilities among line agencies for the effective implementation of marine-related plans and regulations	H	N	D
	Cooperative actions between regulatory and enforcement agencies	H	L,R,N	D
	Partnerships and collaboration of all stakeholders, particularly DoF, FD and Navy	H	N	D
Alternative Livelihood Generation	Equity on benefit sharing of fishery products	H	L,N	D
	Value-added marine fishery products	LM	L	P
	Self-reliance and self-dependency through home grown agriculture, small-scaled gardens and animal raising	H	L	P
	Livelihood diversification e.g. well-managed aquaculture and mariculture	H	L,R,N	D

MPA Network Design

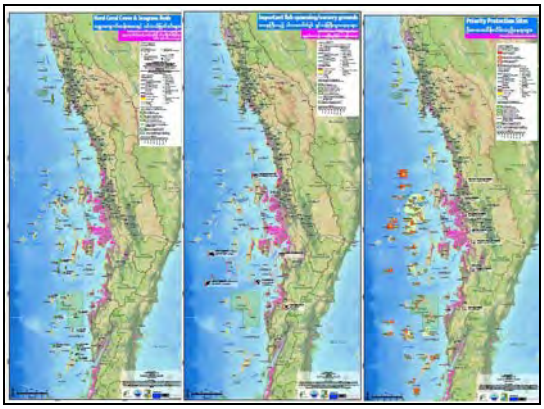
Petch Manopawitr
Deputy, IUCN SE Asia Group
petch.manopawitr@iucn.org

Goal

Securing biodiversity of Myeik Archipelago and ensuring food security and sustainable livelihoods for people

Liveaboard Surveys

1. Fish Taxonomy
2. Invertebrate taxonomy
3. Coral Disease
4. Sponge Diversity
5. Anthropogenic affects on coral reefs
6. Reef Resilience
7. Reef Check Surveys



Dive tourism development to enhance transboundary conservation and ecological connectivity between Thailand and Myanmar

Petch Manopawitr[1,2] Philip Dearden[2] Prarop Plang-ngan[3], Niphon Phongsuwan[4]

[1]IUCN [2]University of Victoria
[3]Department of National Parks, Wildlife and Plant Conservation
[4]Department of Marine and Coastal Resources

IUCN University of Victoria

Marine tourism at the southern end of Myeik Archipelago

- Access from Ranong in Thailand for day trip
- Gaining popularity for unseen destination 'Myanmar islands'
- Increase boat traffic and financial flow
- Timely to incorporate sustainable tourism principle before becoming 'mass' and overly developed destinations

Marine tourism development at the transboundary areas

S
- Prime destination 'Unseen' & 'Resilient reef'
- Well developed facilities on Thai side: piers, speed boats, airport
- Available capital for foreign investment

O
- Promote transboundary cooperation
- Create sustainable finance for conservation and management
- Foster the sense of stewardship
- Research and monitoring site for coral ref connectivity and resilience studies

W
- Low capacity and awareness for tour operators on sustainable tourism
- Presence of illegal fisheries
- No plan for overall development and conservation

T
- Overly developed infrastructure
- Pollution
- Increase transportation/logistic for illegal fisheries
- Increase physical damages to the reef due to human activities

Current observed threats

- Signs of discard trawls and illegal fishing activities such as dynamite fishing
- Signs of coral bleaching
- Signs of coral debris

Key recommendations for marine tourism development in Transboundary Thailand-Myanmar area

- Work with current tour operators and concessioner to develop sustainable tourism guideline and zoning
- Protect natural resilient reef areas as core zone with minimal disturbances
- Further investigate the natural linkages and reef connectivity with Thailand
- Form a local management advisory committee consists of local stakeholders and private sector to develop fair benefit-sharing and use a portion of revenue for conservation activities
- Develop transboundary management committee between Thailand – Myanmar to address joint key challenges e.g. illegal fisheries and long-term development plan

Annex 8

Country Report of Indonesia

By *Mr. Duto Nugroho*, Senior Researcher from the Agency for Marine and Fisheries Research and Development of the Ministry of Marine Affairs and Fisheries (MMAF)

COUNTRY REPORT

INDONESIA

SMALL PELAGIC FISHERY IN MALACCA STRAIT
IFMA - 571

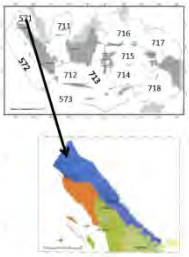
THE 3RD MEETING OF THE ANDAMAN SEA SUB-REGION
18-20 OCTOBER 2016, BANGKOK, THAILAND

I. INTRODUCTION

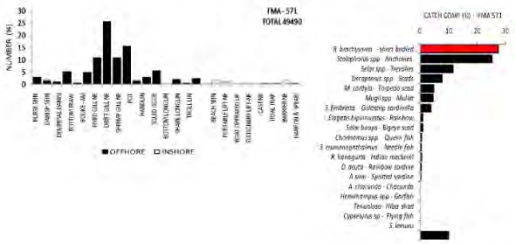
- As a tropical archipelagic country, Indonesia has vast marine waters (6.1 million km²) with fish resources that can be utilized as a potential source to support national sovereignty, sustainability and prosperity.
- In 2014, the marine capture fishery production reached approximately 6.0 million tons with a value of approximately 7.6 billion US$.
- Group of small pelagic fish were the main contributor (30%) of the landing followed by large pelagic fish (28%), demersal fish (26%), coral fish (4%), crustaceans (6%), 4% mollusks, 0.8% other aquatic animal and 1.2% aquatic plant.
- The catches were landed by more that 35 types of fishing gears. Estimated number of people engaged on marine capture fisheries at around 2.2 million. The fishing fleet comprises 625 thousands boats (36% had engine) (DGCF, 2015)
- Short body & Indian mackerels (*R. brachysoma* & *R. kanagurta*) contribute at around 354 thousands tons (6% of total catches) at national level and 46 thousands tons were landed in IFMA 571 in 2014.

11 IFMA's (MR. No. 18/PERMEN-KP/2014) IFMA 571

- Malacca Strait geographically located between north and east Sumatera with relatively shallow waters of less than 100 m in SE part and > 200 m in North eastern part and hydrographically connected to Andaman Sea.
- The area of IFMA – 571 approximately 133,500 km². The coastal are administratively within Aceh and North Sumatera provinces
- The water sis one of productive fishing grounds for small pelagic fish resource in the country (DGCF, 2015).
- IFMA - 571 Landing of small pelagic fish group at about 165 thousands tons with total fish landing of 374 thousands ton (2014)

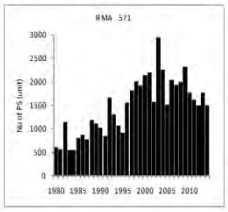


NUMBER OF FISHING GEAR and SMALL PELAGIC FISH COMPOSITION IN IFMA – 571

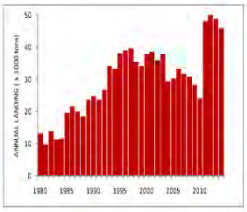


NUMBER OF PURSE SEINE AND ANNUAL LANDING OF Rastrelliger spp. In MALACCA STRAIT– 571

FLEETS



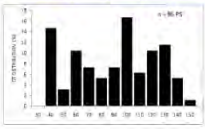
LANDING



FLEET STRUCTURES (571)

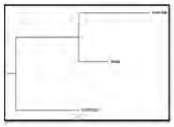
571

SIZE OF BOAT	YEAR		2006	2007	2008	2009	2010	2011	2012	2013
	TOTAL		193185	370044	366273	346502	369675	334372	339172	402899
	SUB TOTAL		7883	6278	9024	7634	4724	6420	8737	8400
NON POWER BOAT	DUG BOAT		116	199	351	187	134	197	199	696
	PLANK BUILT	SMALL	5134	5883	5634	3853	1972	2705	2734	3307
		MEDIUM	2485	2796	2621	3067	2181	2500	3271	2817
	BOAT	LARGE	228	410	418	427	427	1027	487	580
OUTBOARD MOTOR			24853	33161	38823	33865	47141	39911	62286	74330
INBOARD MOTOR	SUB TOTAL		24410	24440	23880	23276	21535	22495	26589	27269
	BOAT SIZE	>5	18222	19439	18996	18473	17487	18856	21823	21221
		5-10	4230	3293	3408	2990	2746	3146	3249	4254
		10-20	1047	889	897	588	472	594	699	1095
		20-30	715	564	554	482	580	647	660	424
		30-50	160	80	7	160	94	93	82	67
		50-100	123	95	44	80	92	89	55	53
		100-200		80	83	83	91	80	64	63



BIOLOGICAL INFORMATION

area	year	growth L_∞	growth K	mortalities Z	mortalities M	mortalities F	mortalities M/F	exploitation E=F/Z	
Belawan	1984 - 1986	38.2	0.8	3.88	1.53	2.34	1.52	0.58	Tampubolon, 1988
	1995 - 1997	36.4	0.75	3.07	1.12	1.95	1.49	0.64	Merani et al., 2001
	2005	29.8	0.98	5.61	1.44	4.17	1.47	0.74	Merani et al., 2018
	2012	27.2	0.74	4.38	1.29	3.05	1.66	0.71	Merani et al., 2014
	2014								



Dendrogram kinship of Indian mackerel (*R. kanagurta*)

Tanjung Balai population different from the population of Banda Aceh and Sibolga.

As is well known that Sibolga and Banda Aceh, including the Indian Ocean west of Sumatra is directly adjacent to the waters of other countries.

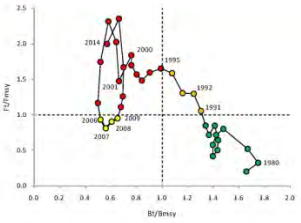
dendrogram kinship between populations showed that the population of Banda Aceh have the same origin with the stock of the population of Sibolga.

Source : Suwarso et al., (201??)

ESTIMATED STOCK STATUS - 571

Small Pelagic group	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014 ref
Est. MSY (x 10^3 tons)										79
Est. TAC (x 10^3 tons)										63
Current catch (x 10^3 tons)*	109	115	1105	106	1106	105	178	186	176	165
Est. optimum effort (unit)										2,017
Est. current standard effort (unit)	2166	2896	2761	2845	3300	2518	2297	2622	2514	2136
Est. status	1.1	1.4	1.4	1.4	1.6	1.2	1.1	1.3	1.2	1.1

SHIFTING FISHING MORTALITY AN EXAMPLE on SCADS (*D. MACROSOMA*) IN JAVA SEA



Atmaja *et al.*, (2016)

IN-HOUSE RESEARCH SUPPORTING FISH STOCK ASSESSMENT

LABORATORY
- OTOLITH ??
- GENETICS
- GONAD

EXPLORATORY
- ACOUSTICS SURVEYS

PSM
- REGULAR SAMPLING FOR IMPORTANT SPECIES
- MEGA SPAWNERS → < 20%

MANAGEMENT MEASURES FOR PURSE SEINE FLEETS

FLEET SIZE (GT)	< 10	10-30	30-100
Single boat purse seiner			
Mesh size (inch)	≥ 1	≥ 1	≥ 1
Length (m)	≤ 300	≤ 400	≤ 600
Light (watt)	≤ 4,000	≤ 8,000	≤ 16,000
Fishing lane	I, II & III	II & III	III
Two boat purse seiner			
Mesh size (inch)	-	≥ 1	≥ 1
Length (m)	-	≤ 600	≤ 800
Light (watt)	-	≤ 8,000	≤ 16,000
Fishing lane	-	II & III	III

Capture Zone	Fishing Area (nm)	Vessel Specification (GT)	Management Otority
ZONE I	4 nm	5-10 GT	Prov. Gov.
ZONE II	12 nm	10-30 GT	
ZONE III	200 nm	> 30 GT	Central Gov.

MANAGEMENT MEASURES

Baseline of Fisheries management in Indonesia referred to (in free translate):

1. **The 1945 Constitution of the Republic Indonesia**, article 33, Para (2) states that all production sectors that are important for the state and affect the livelihood of people shall controlled by the state. Para (3) the land and water and the natural resources contained therein shall controlled by the state and shall used for the greatest prosperity of the people.

2. **Fisheries act No. 31/2004 jo 45/2009** which states that fisheries management should be carried out with the aim of :
   a) Improve the lives of fishermen and small fish;
   b) Increase revenue and foreign exchange;
   c) encourage the expansion and employment opportunities;
   d) Increase the availability and consumption of fish protein;
   e) optimize the management of fish resources;
   f) Improve the quality, productivity, value added and competitiveness;
   g) Increase the availability of raw material for fish processing industry;
   h) achieve utilization of fish resources, fish farming land, and fish resources in an environmentally friendly; and
   i) Ensure sustainable of fish, fish farming land and spatial planning.

MANAGEMENT MEASURES (continued)

Management, utilization and conservation in Indonesia waters stipulated in various laws and regulations such as:

a) Act No. 5 of 1983 on the Indonesian Exclusive Economic Zone;
b) Law No. 32 Year 2004 on Regional Government;
c) Act No. 6 of 1996 on Indonesian Waters;
d) Law No. 21 Year 2009 on the ratification of Agreement for the implementation of the provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks
e) Law No. 17 / 2008. On the voyage regulation;
f) Government Regulation No. 54 /2002 on Fisheries Business;
g) Government Regulation No. 60 of 2007 on Conservation of Fish Resources;
h) Ministry Regulation No. 30/MEN/2012. On Fisheries Business.
i) MR. 56/2014 on Foreign Building Fishing Vessels
j) MR. 10/2015 on Moratorium Fishing Licenses

THANK YOU

Prepared by

Directorate General of Capture Fisheries &
Agency for Marine and Fisheries Research and Development

Duto Nugroho, Bima Priyo Nugroho, Munawar, Parlinggoman Tampubolon

Email : dutonugroho@gmail.com

Annex 9

Country Report of Malaysia

By *Mr. Richard Rumpet*, representative from Malaysia

COUNTRY UPDATE ON CURRENT STATUS OF THE MANAGEMENT OF SHARED STOCKS, INDO-PACIFIC MACKEREL, ETC ALONG THE WEST COAST OF PENINSULAR MALAYSIA

The 3rd Meeting of the Andaman Sea Sub-region
18-20 October 2016, Novotel Sukhumvit 20,
Bangkok, Thailand

RICHARD RUMPET,
FISHERIES RESEARCH INSTITUTE, SARAWAK
DEPARTMENT OF FISHERIES MALAYSIA

Research Projects

1. Spawning Areas and Seasons for Indian Mackerel along the West Coast of Peninsular Malaysia (2013-2014)
2. Genetic Stock Identification of Indian mackerel Across the BOBLME Region Using Microsatellite Markers (2012-2015)
3. Resource and Biology of Neritic Tuna Species in Malaysian Waters (2014-2015)
4. Spawning Areas and Seasons for selected species along the West Coast of Peninsular Malaysia (2016 -)

1. Spawning Areas and Seasons for Indian Mackerel along the West Coast of Peninsular Malaysia

- This project was one of the projects aimed at **updating and synthesizing stock assessments of Hilsa and Indian mackerel into regional (sub-regional) assessments.**
- The FAO through BOBLME funded the fifteen months (15) project in Malaysia (SEAFDEC/MFRDMD) for conducting the project starting January 2013.

The objectives of this project are:

(1) **to improve understanding of spawning areas and seasons for Indian mackerel along the west coast of Peninsular Malaysia;**

(2) to facilitate better assessment of the stocks and ultimately better management of the fisheries that depends on them.

Figure 1: Sampling sites (1) Kuala Perlis, Perlis, (2) Bagan Panchor, Perak and (3) Hutan Melintang, Perak

Methodology

- Fish samples were collected from **purse seiners** (40-70 GRT), operating in areas of more than 30 nautical miles at three selected landing ports, namely **(1) Kuala Perlis, Perlis, (2) Bagan Panchor, Perak and (3) Hutan Melintang, Perak** (Figure 2).
- A total of 600 individuals (200 tails/ landing port) of Indian mackerel were collected during each sampling month from **January 2013 to March 2014.**
- All measurement on length, weight and gonad determinations were carried out at laboratory.

Conclusion

- Spawning areas would be better determine and verify through **larval surveys.**
- There appears to be **two peaks of spawning season** throughout the year that is in **September to February.**
- **Oocyte development confirmed** that the two peaks are the spawning season of *R. kanagurta.*
- It was recommended that some of the findings from this project can be utilized as an input for determining potential areas of **refugia.**
- There should be an **extention** of this project to collect more data and to verify the results.

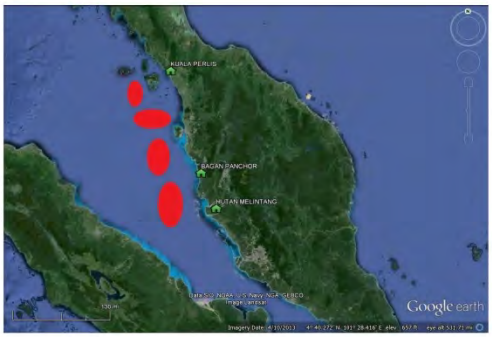


Figure 2: Four main fishing areas for *Rastrelliger kanagurta* on the west coast of Peninsular Malaysia

2. Genetic Stock Identification of Indian mackerel Across the BOBLME Region Using Microsatellite Markers

- The Indian Mackerel Working Group Meeting held in Colombo, Sri Lanka from 28 to 29 May 2012, came out with a **sampling plan for implementation of the stock structure study on Indian Mackerel in the Bay of Bengal Region** and established standardized procedures for marker use, identification and analysis.
- Conducting a one-year activity starting **September 2012 to September 2013**.
- The project had been **extended to February 2015**
- DOF Malaysia was appointed to carry out sampling programme for the **genetic test and the maturity analysis of specimens of Indian mackerel; and undertake the genetic testing by using microsatellite method and report on the results**.

- The need to harmonize the genetic data among the BOBLME region, **a regional training and standardisation workshop, The Indian Mackerel Genetics Harmonisation Training Workshop was held on 20 to 27 August 2013 at the genetics lab in the National Bureau of Fish Genetic Resources (NBFGR) Regional Research Station, Kochi, Kerala, India, Central Marine Fisheries Research Institute.**
- During this training **a standardized protocol on laboratory analysis of genetic stock identification of Indian mackerel across the BOBLME region using microsatellite markers was produced.**

- The objective of this project was:
- To improve **knowledge and understanding of the population structure of Indian mackerel** along the west coast of Peninsular Malaysia (BOBLME's area)

Implementation of Project
Tissue Sample Collection

- A total number of 300 samples were collected from Kuala Perlis, Bangan Panchor and Hutan Melintang following the Standard Operating Procedure (SOP) of Tissue Sample Collection provided by BOBLME.
- For each location, a total of 100 specimens were sampled in four sampling activities (Table 1). The list of samples collected for each sampling sites is provided in **Annex 1**.

Table 1: Sampling dates and locations

Location/Sampling	1st (1-25th)	2nd (26-50th)	3rd (51-75th)	4th (76-100th)
Kuala Perlis	10/04/2013	21/05/2013	03/09/2013	15/10/2013
Bagan Panchor	16/04/2013	15/05/2013	24/09/2013	22/10/2013
Hutan Melintang	17/04/2013	16/05/2013	25/09/2013	24/10/2013

- **3.2 Laboratory analysis**
- A total of 14 primers were used in this project.
- DNA from fin clip tissue was extracted and amplified according to SOP and the PCR products were sent for genotyping starting from July 2014. Overall 4,200 PCR products (300 samples x 14 loci) have been genotyped by SciGenom in Cochin, India for fragment analysis.
- The data were compiled by NBFGR and the overall analysis will be done by BOBLME's genetic consultant as agreed during BOBLME Genetics Working Group Meeting in Phuket on 17th and 18th February 2015.

4.0 Outcomes

- Improved knowledge and understanding of the population structure of Indian mackerel along the west coast of Peninsular Malaysia

5.0 Conclusion

- All the samples from Malaysia have been collected, labelled, processed and analysed accordingly. All genotype data have been sent to BOBLME for further analysis.

7.0 Recommendations

- Hopefully **BOBLME during its 2nd phase will initiate more projects on genetic and population study** involving all the member countries. It will not only give us the inside story of the specific species, but in a way, it will help us in facility and capacity building.
- The present study **provides baseline information on the genetic component of the Indian mackerel**. This genetic data can be integrated with population dynamic data to establish the extent of stock structure and composition for the effective management of the fisheries.
- **Sampling across temporal scales would be useful for monitoring genetic changes in the long-term**; **sampling over the full extent of the species range from Africa and the Red Sea** in the west to the Pacific islands and Japan in the east would yield a complete picture of any geographic genetic stock structure

3. Resource and Biology of Neritic Tuna Species in Malaysian Waters

- The present study was undertaken to **determine the status of stock and biology of neritic tuna in the Malaysian waters**.
- Catch effort, size distribution and biological data of the three species of neritic tuna *Euthynnus affinis*; *Auxis thazard* & *Thunnus tonggol* were collected from zone C2 purse seiners in **Kuala Perlis, Perlis and Tok Bali, Kelantan from 2014-2015 by the enumerators**.
- From these data, growth parameters and exploitation rate were analysed using FISAT II Computer software.
- Monthly gonad stage data were analysed using visual observation to determine the spawning season.
- **Historical data on the neritic tuna catch** were obtained from DoF's Fisheries Annual Statistic. From the catch and effort data, catch per unit effort (cpue) of purse seine vessels were analysed in 4 main sub areas; west and east coast of Peninsular Malaysia (PM), Sarawak and Sabah waters.

Conclusion

- The status stocks of KAW and FRI from all the sub areas in Malaysia waters are still at the safe level for further exploitation.
- For LOT, the stock in the west coast of PM seemed already reached the over exploitation level.
- It is recommended to carry out further study on the status stock of LOT in the west coast of Peninsular Malaysia using quality catch and effort data in the near future.
- Data collection and recording system for neritic tuna species need improvement.
- They are important for future stock assessment analysis which then provide good scientific information for sustainable management of the neritic tuna species Malaysian waters.

4. Spawning Areas and Seasons for selected species along the West Coast of Peninsular Malaysia

- This project was conducted by the Department of Fisheries Malaysia beginning 2016 until end of 2017.
- The study areas include Kuala Perlis & Kuala Sanglang in the west coast of Peninsular Malaysia.
- The targeted species were **Short-bodied mackerel *(Rastrelliger brachysoma)*, squids, Spanish mackerel, anchovies**
- The objectives of this project are:

(1) to improve understanding of spawning areas and seasons for Indian mackerel along the west coast of Peninsular Malaysia;

(2) to facilitate better assessment of the stocks and ultimately better management of the fisheries that depends on them.

- To implement close season

THANK YOU

Annex 10

Country Report of Myanmar

By *Mr. Soe Win*, Fishery Officer from the Department of Fisheries of Myanmar

The 3rd Meeting of the Andaman Sea Sub-region"

Novotel Bangkok Sukhumvit 20, Thailand
18-20 Oct, 2016

SOE WIN
Fisheries Officer
Department of Fisheries
Myanmar

Pelagic Fisheries

Resources and their distribution

- Pelagic fish dwell and feed at the surface or in the water column in schools in water of temperature ranging from 26º to 30ºC.
- The fishing grounds of pelagic are generally of muddy-sandy bottom and associated with rich biomass of plankton. The coastal small pelagic frequently inhabit the nutrient-rich inshore neritic waters, while the large pelagic inhabit offshore neritic and oceanic waters.
- The shallow-water fishing grounds are highly productive and account for much of the Gulf's total pelagic catch.
- The small pelagic are exploited mostly with shallow-water purse seines, surface and mid-water gillnets, lift nets and other surrounding nets.

Pelagic Fisheries

Mackerels

- The mackerels are caught mainly by the purse seines, encircling gillnets and occasionally by bottom trawls. Their fishing grounds extend widely from the inshore to the offshore of Myanmar coastal areas.

Rastrelliger kanagurta

Rastrelliger branchysoma

Pelagic Fisheries

Hilsa shad

- Hilsa is very important pelagic fish resource, contribute to the national economy by small-scale fishery and industry fishery. It is distributed widely entire coast of Myanmar as well as in the inland waters. The fish take anadromous migration through the river system, particularly, Ayeyarwady river complex for spawning.
- Two species of hilsa are observed namely, in Tanintharyi area *Tenualosa toli* (Toli shad) is common and *Tenualosa ilisha* (Hilsa shad) is mostly contributed in Ayeyarwady and Rakhine areas.
- Fishing season of the delta is from September to March with two peak seasons namely, August and September. The most effective fishing gears in previous days is encircling gill nets. Since last decade, the new fishing technology, purse seine was introduced to this fisheries to make more catching power.

Pelagic Fisheries

Sardines

- The sardines found in Myanmar waters belong to *Sardinell spp:*, *Amblygaster spp:*, *Dussumieria spp:* and *Herklotsichthys spp:*. Among them the goldstriped sardine (*Sardinella gibbosa*), fringescale sardine (*Sardinella fimbriata*) and spotted sardine *Sardinella* (*Amblygaster*) are the most common. However, they are group together in the Myanmar fisheries statistics as sardines (*Sardinella spp:*).
- Sardines are widely distributed with high concentration in the coastal areas. They are caught mainly by the purse seines, encircling gillnets and driftnets.

Pelagic Fisheries

Round Scads

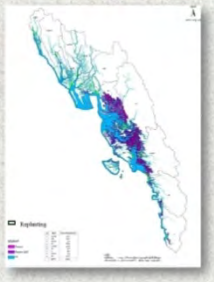
- The round scad found in Myanmar waters are represented by three species of *Decapterus*. Among them *Decapterus macrosoma* and *Decapterus marudsi* are more common in Myanmar waters. The round scads are widely distributed in the offshore waters.
- They are mainly caught by purse seines. The catches of all species of round scads are treated together as *Decapterus spp.* in the fisheries statistics

Pelagic Fisheries

Bigeye scad

- The bigeye scads (***Selar crumenophthalmus***) are abundant and widely distributed in the offshore waters as the round scads.
- They are caught together with the round scads in purse seines and also in trawls.

Hilsa Fishing Ground



Spawning Grounds and Migration Routes of Hilsa in Rakhine Coast
There are no Hilsa fishing ground and fishing activities in Myeik Archipelago

Season of the Hilsa Fishing

Area	Months											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rakhine	■	■	■	■	■						■	■

■ Fishing season

Indian Mackerel and Indo Pacific Mackerel Fishing Grounds

Rastriliger kurnagurta
(Indian Mackeral)

Rastrelliger brachysoma
(Short Mackerel)

Season of the Indian Mackerel Fishing

Area	Months											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rakhine	■	■									■	■
Tanintharyi	■	■	■	■							■	■

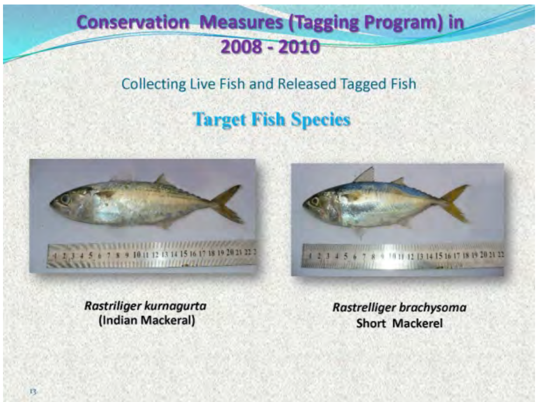
■ Fishing season

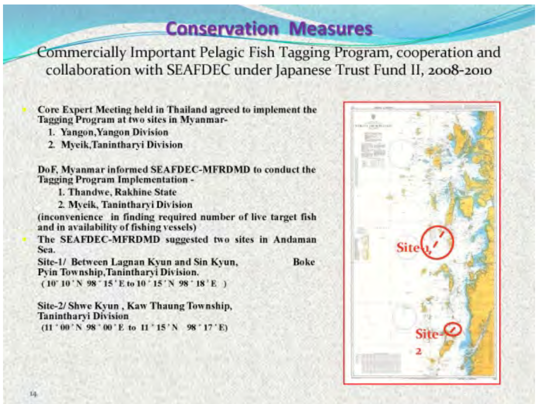
Production (Indian Mackerel) In Myeik Archipelago

(Metric tons)

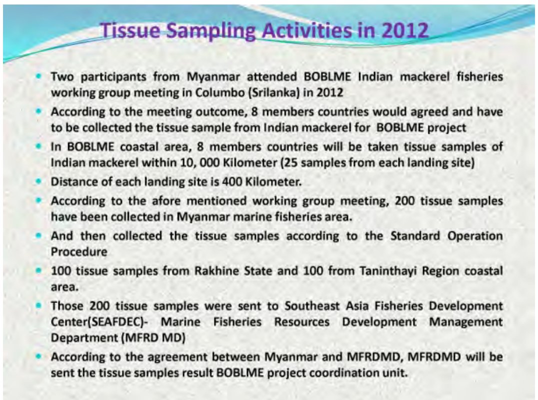
AREA	YEAR						
	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Tanintharyi Coastal	6682.75	11956.99	6774.13	22711.54	12495.67	10384.84	10518.77

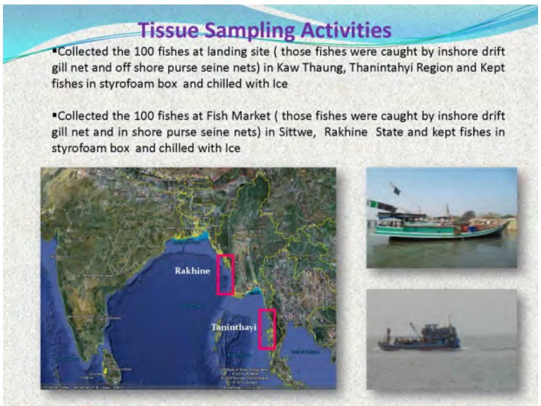
According to experience the production of Indian Mackerel were found in abundance during the period of November to February.


Conservation Measures (Tagging Program) in 2008 - 2010
Collecting Live Fish and Released Tagged Fish
Target Fish Species
Rastriliger kurnagurta
(Indian Mackeral)
Rastrelliger brachysoma
Short Mackerel
13


Conservation Measures
Commercially Important Pelagic Fish Tagging Program, cooperation and collaboration with SEAFDEC under Japanese Trust Fund II, 2008-2010
Core Expert Meeting held in Thailand agreed to implement the Tagging Program at two sites in Myanmar-
1. Yangon,Yangon Division
2. Myeik,Tanintharyi Division
DoF, Myanmar informed SEAFDEC-MFRDMD to conduct the Tagging Program Implementation -
1. Thandwe, Rakhine State
2. Myeik, Tanintharyi Division
(inconvenience in finding required number of live target fish and in availability of fishing vessels)
The SEAFDEC-MFRDMD suggested two sites in Andaman Sea.
Site-1/ Between Lagnan Kyun and Sin Kyun, Boke Pyin Township,Tanintharyi Division.
(10° 10 ' N 98 ° 15 ' E to 10 ° 15 ' N 98 ° 18 ' E)
Site-2/ Shwe Kyun , Kaw Thaung Township, Tanintharyi Division
(11 ° 00 ' N 98 ° 00 ' E to 11 ° 15 ' N 98 ° 17 ' E)
Site 1
Site 2
14


Tissue Sampling for Stock/population Identification In 2011
This study was conducted in cooperation with SEAFDEC/MFRDMD
This programme is supported by SEAFDEC/MFRDMD under Japanese Trust fund.
This study was carried out in November 2011.
Standard Operation Procedure was provided by SEAFDEC/MFRDMD
According to SEAFDEC/MFRDMD, Department of Fisheries could collected 35 samples at landing jetty in Yangon Region.
All collected tissue samples were sent to MFRDMD
15


Tissue Sampling Activities in 2012
Two participants from Myanmar attended BOBLME Indian mackerel fisheries working group meeting in Columbo (Srilanka) in 2012
According to the meeting outcome, 8 members countries would agreed and have to be collected the tissue sample from Indian mackerel for BOBLME project
In BOBLME coastal area, 8 members countries will be taken tissue samples of Indian mackerel within 10, 000 Kilometer (25 samples from each landing site)
Distance of each landing site is 400 Kilometer.
According to the afore mentioned working group meeting, 200 tissue samples have been collected in Myanmar marine fisheries area.
And then collected the tissue samples according to the Standard Operation Procedure
100 tissue samples from Rakhine State and 100 from Tanintha yi Region coastal area.
Those 200 tissue samples were sent to Southeast Asia Fisheries Development Center(SEAFDEC)- Marine Fisheries Resources Development Management Department (MFRD MD)
According to the agreement between Myanmar and MFRDMD, MFRDMD will be sent the tissue samples result BOBLME project coordination unit.


Tissue Sampling Activities
Collected the 100 fishes at landing site (those fishes were caught by inshore drift gill net and off shore purse seine nets) in Kaw Thaung, Thanintahyi Region and Kept fishes in styrofoam box and chilled with Ice
Collected the 100 fishes at Fish Market (those fishes were caught by inshore drift gill net and in shore purse seine nets) in Sittwe, Rakhine State and kept fishes in styrofoam box and chilled with Ice
Rakhine
Taninthayi


Collected tissue samples , counted gill rakers ,and measured length and weighted from target fishes and also determined weight and size of testis and gonad development stage), and then filled the data in form-1
Both teams (Taninthayi Region and Rakhine State) followed SOP exactly.

Summary

Tanintharyi

Offshore purse seine

- Standard Length
  - 6 Sizes of SL were found
  - majority of fishes size between 19-20 and 21-22 cm
  - 54 % amongst 39 tails (fishes)
- Weight
  - 14 category of weight were found
  - Most of the weight of fishes is between 181-190 gm
  - 15% amongst 39 tails (fishes)
- Sex Development
  - Most male and female gonad developments stages are three (Ripening) and four (Ripe)
  - 74 % amongst 39 tails (fishes)
- Nos. of Gill rakers
  - 10 categories of gill rakers were searched
  - Most of the fishes have 56 gill rakers
  - 23% amongst 39 tails (fishes)

Inshore drift gill net

- Standard Length
  - 6 Sizes of SL were found
  - majority of fishes size between 18-19 and 19-20 cm
  - 77% amongst 61 tails (fishes)
- Weight
  - 11 category of weight were found
  - Most of the weight of fishes is between 131-140, 141-150, 151-160 and 171-180 cm
  - 56 % amongst 61 tails (fishes)
- Sex Development
  - Most male and female gonad developments stages are two (Ripening) and three (Ripe)
  - 75 % amongst 61 tails (fishes)
- Nos. of Gill rakers
  - 11 categories of gill rakers were searched
  - Most of fishes have 53 and 54 gill rakers
  - 38 % amongst 61 tails (fishes)

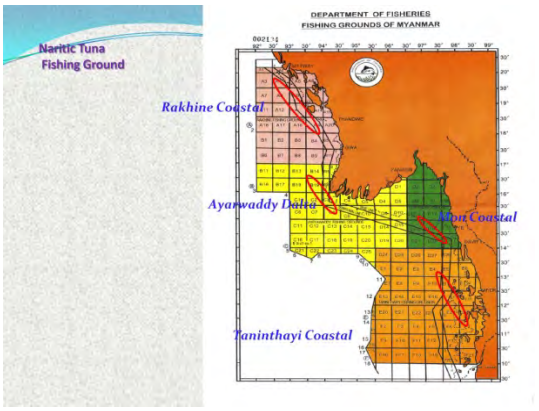
Rakhine

Inshore purse seine

- Standard Length
  - 5 Sizes of SL were found
  - majority of fishes size between 21-22 cm
  - 62.5 % amongst 48 tails (fishes)
- Weight
  - 6 category of weight were found
  - Most of the weight of fishes is between 181-190 gm
  - 33 % amongst 48 tails (fishes)
- Sex Development
  - Most of the females gonad developments stages are three (Ripening)
  - 92 % amongst 48 tails (fishes)
- Nos. of Gill rakers
  - 11 categories of gill rakers were searched
  - Most of the fishes have 44 and 46 gill rakers
  - 35 % amongst 48 tails (fishes)

Inshore drift gill net

- Standard Length
  - 7 Sizes of SL were found
  - majority of fishes size between 34-35 cm
  - 98 % amongst 52 tails (fishes)
- Weight
  - 6 category of weight were found
  - Most of the weight of fishes is between 71-80 gm
  - 33% amongst 52 tails (fishes)
- Sex Development
  - Most males gonad development stages are three (Ripening) (Difficult to find gonad development because fishes are small) 100 %
- Nos. of Gill rakers
  - 9 categories of gill rakers were searched
  - Most of the fishes have 43 and 44 gill rakers
  - 44 % amongst 48 tails (fishes)



Neritic Tuna Data collection for conservation in Myanmar

Frigate tuna
Auxis thazard

Longtail tuna
Thunnus tonggol

Bullet tuna
Auxis rochei

Eastern little tuna
Euthynnus affinis

Arrawaddy Fishing Ground

	Species	Catch(Tons)/year		Gear Type /total	Areas	Peack season	Kg/price (kyats)
1	*Auxis Thazard*	215.6	(2010)	3.5 ,4 inches Drift gill net,220	Upper Lake Island and near upper lighthouse (Arrawaddy Fishing Ground)	Sept to June	650-k
		200.65	(2011)	200			700
		201.7	(2012)	200			750
		199.6	(2013)	210			900
		197.5	(2014)	230			1000
2	*Scomberomorus guttatus*	123.75	2010)	3.5 ,4 inches Drift gill net,220	Upper Lake Island and near upper lighthouse (Arrawaddy Fishing Ground)	Sept to June	3000
		125.2	(2011)	200			3200
		243.0	(2012)	200			3000
		124.65	2013)	210			3000
		123.44	(2014)	230			3500
3	*Euthynnis Affinis*	187.6	(2010)	3.5 ,4 inches Drift gill net,220	Upper Lake Island and near upper lighthouse (Arrawaddy Fishing Ground)	Sept to June	500
		125.2	(2011)	200			550
		243.0	(2012)	200			680
		124.65	(2013)	210			720
		123.44	(2014)	230			800
4	*Auxis rochi*	-		-	-		

Rakhing Fishing Ground

"Sittwe" District

	Species	Catch(Tons)/year		Gear Type /total	Areas	Peack season	Kg/ Price (kyats)
1	*Auxis Thazard*	190.8	(2010)	5 inches Drift gill green net ,50	West "Phayonkar"Island and near oyster Island Sittwe District, (Rakhing Fishing Ground)	Jan to Mar	390
		187.0	(2011)	43			300
		110.0	(2012)	20			200
		193.0	(2013)	36			280
		170.0	(2014)	45			400
2	*Scomberomorus guttatus*	382.5	(2010)	3.5 ,4 inches Drift gill net,50	West "Phayonkar"Island and near oyster Island Sittwe District, (Rakhing Fishing Ground)	Nov To Jan	2500
		360.7	(2011)	45			2600
		278.3	(2012)	15			2000
		343.2	(2013)	30			2400
		350.1	(2014)	40			2600
3	*Euthynnis Affinis*	480.0	(2010)	3.5 ,4 inches Drift gill net,40	West "Phayonkar"Island and near oyster Island Sittwe District, (Rakhing Fishing Ground)	Sep to Jan	625
		451.0	(2011)	42			600
		270.0	(2012)	20			400
		312.0	(2013)	41			610
		410.0	(2014)	38			650
4	*Auxis rochi*	-		-	-		

Rakhing Fishing Ground

"Kyauk phyu" District

1	*Auxis Thazard*	276.0	(2010)	3 inches Small Purse Seine net, 75	SouthWest "Kyauk phyu"Tsp and near South East"Man aung" Island (Rakhing Fishing Ground)	Feb	
		276.0	(2011)	75			
		264.0	(2012)	76			
		229.8	(2013)	75			
		195.9	(2014)	74			
2	*Scomberomorus guttatus*	-		-	-	-	
3	*Euthynnis Affinis*	256.5	(2010)	3 inches Small Purse Seine net,75	SouthWest "Kyauk phyu"Tsp and near South East"Man aung" Island (Rakhing Fishing Ground)	Feb	
		256.5	(2011)	75			
		249.45	(2012)	76			
		224.45	(2013)	75			
		190.80	(2014)	74			
4	*Auxis rochi*	-		-	-		

Tanintharyi Fishing Ground

	Species	Catch(Tons)/year		GearType /total	Areas	Peack season	Kg/ price (kyats)
1	*Auxis Thazard*	967.68 977.76 781.33 899.26 104.31	(2010) (2011) (2012) (2013) (2014)	3,5 inches Drift gill net ,480 485 Purse Seine net 477 571 571	West "Lonloneboak, Maungmakanboak,Heinze boak"Islands, and near near Myeik Archipelago Islands (Tanintharyi Fishing Ground)	Sept to Dec	
2	*Scomberomorus guttatus*	101.8 996.03 979.02 763.68 111.51	(2010) (2011) (2012) (2013) (2014)	3, 6 inches Drift gill net,505 510Purse Seine net 518 551 571	West "Lonloneboak, Maungmakanboak,Heinze boak"Islands, and near near Myeik Archipelago Islands (Tanintharyi Fishing Ground)	Sept to Dec	
3	*Euthynnis Affinis*	539.280 529.20 497.70 410.76 409.50	(2010) (2011) (2012) (2013) (2014)	3 ,6 inches Drift gill net, ,285 280Purse Seine net 282 251 250	West "Lonlone boak, Maungmakanboak,Heinze boak"Islands, and near near Myeik Archipelago Islands (Tanintharyi Fishing Ground)	Sept to Dec	
4	*Auxis rochi*	-		-	-		

Mon Fishing Ground

	Species	Catch(Tons)/year		Gear Type /total	Areas	Peack season
1	*Auxis Thazard*	31.62 30.50 20.75 19.67 17.85	(2010) (2011) (2012) (2013) (2014)	[3,5 inches Drift gill net,] 294 [Store set net,passive net,] 311 292 280 273	D3,D7,D12,D17,D22 Mon ,Fishing ground	June to Sept
2	*Scomberomorus guttatus*	1623.2 1577.5 1490.0 9871.2 1318.9	(2010) (2011) (2012) (2013) (2014)	[3, 6 inches Drift gill net], [Store set net]	D3,D7,D12,D17,D22 Mon ,Fishing ground	June to Sept
3	*Euthynnis Affinis*	-		-	-	
4	*Auxis rochi*	-		-	-	

Fisheries Management Measure

-According to the Dr Fridjof Nansen research results fisheries resources has 90 percent declined. Therefore , 40 percent of the fishing vessels are allowed to operate within closed season of June to August this year. More % will be closed in coming years up to 100%.
- Local Management Marine Area that intend to maintain fisheries resources and habitat have been established .
- In-shore fishing area (10 nms from shore line) is only allowed for in-shore fishing vessels.
- Fishing gear restrictions (Trawl fishing and others)

Reef Check Surveys

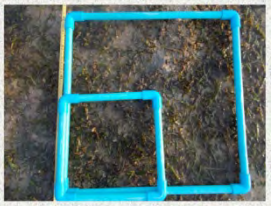


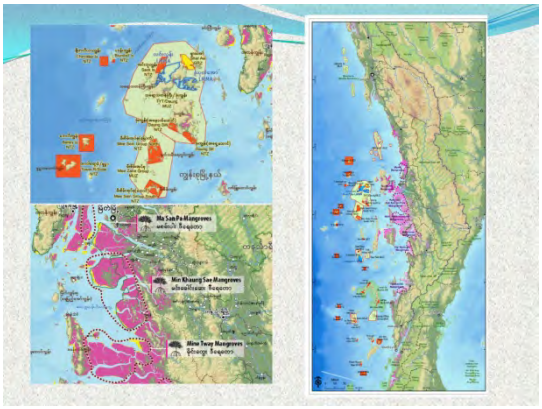
Liveaboard Surveys

1. Fish Taxonomy
2. Invertebrate taxonomy
3. Coral Disease
4. Sponge Diversity
5. Anthropogenic affects on coral reefs
6. Reef Resilience
7. Reef Check Surveys



Seagrass Surveys



Initial results from nearshore fisheries data collection to support marine spatial planning in Myanmar.

- ေရလုပ္သား စာရင္းသြင္းနည္းစနစ္ (Fishermen registration)
- ကမ္းနီးငါးဖမ္းေရယာဥ္မ်ား၏ လမ္းေၾကာင္းမ်ား (Tracks of near-shore fishing vessel)
- ျမန္မာငါးမ်ိဳးမ်ား စာရင္း (Fish species)
- သတင္းအခ်က္အလက္မ်ားျပဳစုျခင္း (Results of data analysis)

Tracks of In-shore fishing vessels

Constraints

- Lack of up-to-date data:
- Accuracy of data collection:
- Knowledge of scientific data collection: data collection is considered a science and gathering data has to follow scientific procedures.
- Marine fisheries cannot be successfully managed unless information on key aspects is known.
- Lack of Finical support .
- The migratory route and movement pattern, feeding ground, spawning ground, growth rate and reproductive biology should be conducted.

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Conclusion

- In this regards, Myanmar still needs good enough knowledge and technical expertise for genetic markers developed for stock identification and laboratories for Indian Mackerel.
- Develop methodologies and take measures for conservation and management, sustainable use and undertake studies on Indian mackerel.
- Encourage research and develop long-term monitoring programme, database and information sharing with international and regional conservation and management organizations such as FAO, SEAFDEC , BOBLME, etc. for technical and logistic support.
  - ➔ assessment of Indian Mackerel fishery resources.
  - ➔ development of appropriate technology.
  - ➔ Regarding stock assessment, training program for concerned institutions and stakeholders.
- More fund should be allocated for future research. Covering this, purchase equipment and other necessary things for biological studies and laboratories are needed.
- Apart from the government's in fisheries development, collaboration and cooperation together with International and Regional fisheries related agencies is required.
- Mackerel fishery resources still abundant in Myanmar ,we believed that Myanmar can implement and achieve properly if afore mentioned necessary things are fully support.

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Annex 11

Country Report of Thailand

By *Mr. Suchart Sangcha*, representative from the Department of Fisheries (DOF) of Thailand

❖ Chronological activities of Thailand on PSM

Year	Activity
2005	The entry in to force of IOTC Res.05/03 on Program of Inspection in Port
2008	FAO/APFIC/SEAFDEC Regional Workshop on Port State Measures to combat IUU fishing. Bangkok, Thailand, 31 March–4 April 2008
2009	1st Meeting of the Andaman Sea sub-region.
2011	The entry in force of the IOTC Res. 10/11 on PSM
2012	• FAO/APFIC Workshop on implementing the 2009 FAO Agreement on PSM to combat IUU fishing. Bangkok • 2nd Meeting of the Andaman Sea sub-region. Phang-Nga province, Thailand 28-29 August 2012

Recommendations from the 1st and 2nd meetings

❖ Port State Measure to combatting IUU fishing

- Application of PSM into actions;
- Setting-up of Regional (MCS) Network on information sharing;
- Specific steps in relation to the PSM such as bilateral agreements to inspect fishing vessels from other countries. Agreements must follow and include criteria (outlined in the PSM Agreement) for inspection on board foreign vessels;
- Training of trainers on inspection and protocols for inspection following the FAO PSM Agreement.

❖ Chronological activities of Thailand on PSM

Year	Activity
2013-2014	PSM Pilot project : Phuket Port
2015	• The entry in force of the Royal Ordinance on Fisheries B.E. 2558 • Notification on the list of 49 Designated Port of PSM
2016	• presented the Instrument of Accession to the PSMA to the FAO • Revision of the list of the Designated Port to 27 ports • Regional PSM Training on National Interagency Collaboration and Regional Cooperation. 4-7th October, 2016. Phuket THAILAND. Supported by IOTC

Port State Measure Pilot Project

Inspection: 130 Trips of 42 longliners

Month	Vessel entry (Trip)			Flag				
	FMO Port	Private Port	Total	Taiwan	Indonesia	Bolivia	Belize	India
Oct 2013	9	3	12	6	4	2	-	-
Nov 2013	2	9	11	3	5	1	2	-
Dec 2013	13	25	38	17	11	8	2	-
Jan 2014	21	12	33	15	13	4	1	-
Feb 2014	19	17	36	18	7	5	3	3
Total	64	66	130	59	40	20	8	3

Source: Fisheries Inspection Unit (Phuket)

❖ 27 Designated Port

10 ports in the ASCoT

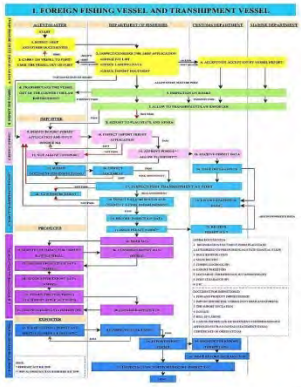
- 6 in Ranong
- 3 in Phuket
- 1 in Satun

17 ports in the GOT

- 3 in Bangkok
- 5 in Samutprakarn
- 2 in Samutsakorn
- 1 in chonburi
- 3 in Trad
- 1 in Songkla
- 2 in Narathiwat

Applicable to….

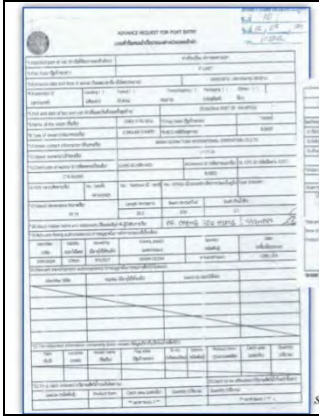
❖ Foreign Flag	❖ Thai Flag
• Fishing Vessels • Carriers	• Fishing Vessel/Carriers – RFMOs area – Coastal States – High Sea



Procedure :

1. Notify the port of entry (48 hr. in advance)
2. Inspection of the vessel, doc.
3. permit/deny
4. Inspect transhipment/import
5. Inspect the processing plant
6. Inspect the export process

Source: Fisheries Inspection Unit (Phuket), DOF, 2016



AREP Form

Source: Fisheries Inspection Unit (Phuket), DOF, 2016

IUU list

- Command Center for Combating Illegal Fishing (*CCCIF*), Thailand
- IOTC : http://www.iotc.org/vessels#iuu
- WCPFC: http://www.wcpfc.int/wcpfc-iuu-vessel-list
- IATTC: http://www.iccat.int/en/IUU.asp
- ICCAT: https://www.iattc.org//VesselRegister/IUU.aspx?Lang=en
- EU: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2015.199.01.0012.01.ENG

List of authorized vessel of RFMOs

- IOTC http://www.iotc.org/vessels/current
- WCPFC https://www.wcpfc.int/record-fishing-vessel-database
- ICCAT http://www.iccat.int/en/vesselsrecord.asp

External Inspection

Flag

Name, Registration number

Vessel name

Radio call sign

Source: Fisheries Inspection Unit (Phuket), DOF, 2016

Bridge Inspection

Source: Fisheries Inspection Unit (Phuket)

Source: Fisheries Inspection Unit (Phuket), DOF, 2016

Report of the Inspection

1. Flag States
2. RFMOS
3. Coastal State
4. Beneficial Owner
5. Relevant parties (e.g. state of Master's nationality)

Flag	Year 2015			Year 2016 (Jan-June)		
	No. of Vessels	No. of trips	No. of Inspections	No. of Vessels	No. of trips	No. of Inspections
TAIWAN	91	184	136	41	80	78
INDONESIA	35	89	71	3	5	5
BELIZE	8	16	11	0	0	0
BOLIVIA	5	12	6	0	0	0
INDIA	1	6	4	0	0	0
JAPAN	3	4	4	3	3	3
THAILAND	2	2	2	0	0	0
Total	145	313	234	46	88	86

Source: Phuket Inspection Unit, DOF, 2016

Future work and way forward

- ❖ Improving the efficiency of inspection: risk assessment
- ❖ Increasing Cooperation: flag states, coastal states, RFMOs
- ❖ MCS network of the Andaman Sea Sub-region
- ❖ Capacity building
  - Training course on e-PSM for Shipping Agency, DOF and PSM officials. 9-13 January, 2017 in Phuket & Bangkok. Supported by IOTC.

Future work and way forward

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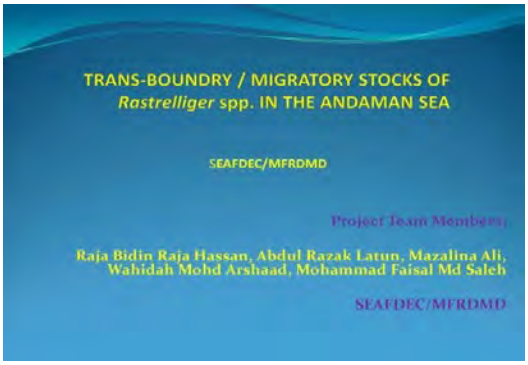
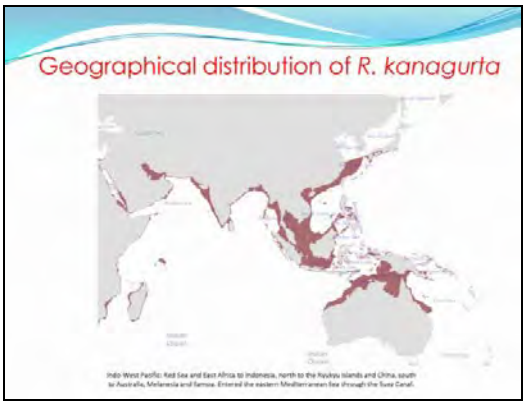
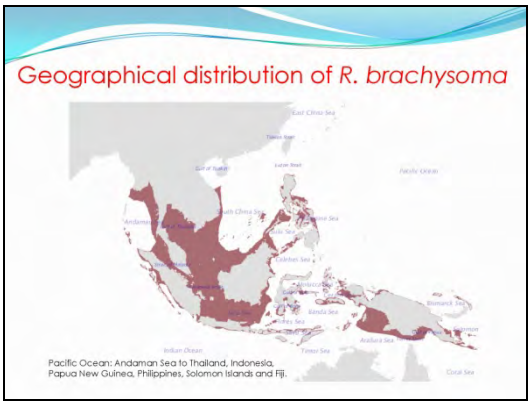
Annex 12

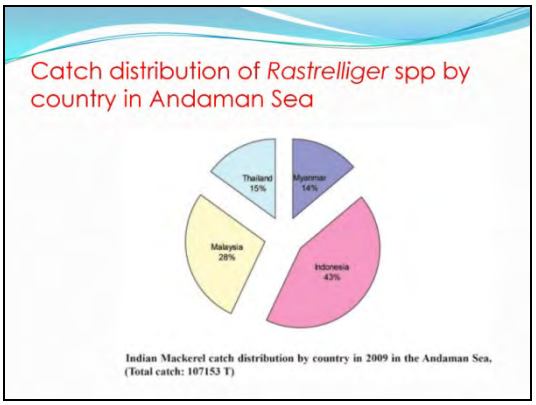
Trans-boundary/Migratory stocks of *Rastrelliger* spp. in the Andaman Sea

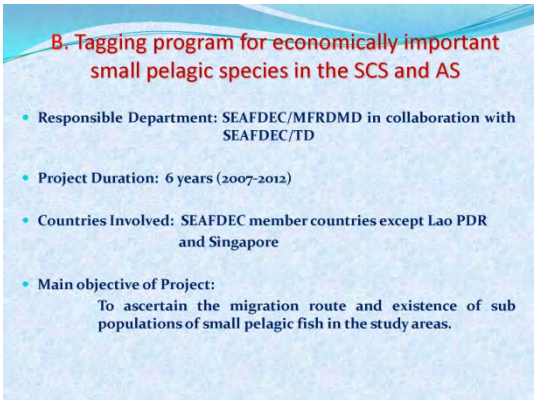
By *Mr. Raja Bidin Raja Hassan*, Chief of SEAFDEC/MFRDMD











B. Tagging program for economically important small pelagic species in the SCS and AS

- The project activities:
  - On-site training for tagging in each participating SEAFDEC member country
  - Tagging in the South China Sea and Andaman Sea.
  - Genetic survey for population structure of Indian mackerel (R. *kanagurta*) and Japanese Scad (*D. maruadsi*) in the SCS and AS
  - Assessment on the Indian Mackerel (R. *kanagurta*) fisheries in the Andaman Sea of Indonesia, Malaysia, Myanmar and Thailand
  - Local knowledge on small pelagic fisheries

The first activity and achievement:

- **On-site training for tagging program was conducted by SEAFDEC/MFRDMD at all participating SEAFDEC Member Countries.**

B. Major Findings for Tagging

- Most tagged fishes were recaptured within the vicinity of released location.
  - Within the EEZs
- Tagged fishes does not migrate too far from released site
- Information obtained are insufficient due to;
  - Unclear migration pattern
  - Low recovery rate of tagged fishes (< 2%)

B. Findings for Genetic survey (R. kanagurta and D. maruadsi) in the SCS and AS

- It shows that Indian mackerel in the Andaman Sea are shared or derived from the same stock with high genetic variation among the sampling sites.
- The use of mtDNA as molecular marker was able to provide detail results on variation among haplotype of selected samples.

B. Findings on assessment of Indian Mackerel (R. kanagurta) fisheries in the Andaman Sea of Indonesia, Malaysia, Myanmar and Thailand

- Indian mackerel is highly susceptible to being caught by the purse seine and trawls operating in Indonesia, Malaysia, Myanmar and Thailand.
- Stock status of Indian Mackerel despite its relative robustness there is evidence for considerable concern over the status of this species as it is over-fished throughout much of the region.
- The main issues with this fisheries is the poor stock status of other retained species landed together with Indian Mackerel, especially in trawl and purse seine fisheries.
- Management, legal and institutional structures mainly in place.

Findings for Local Knowledge on Small Pelagic Fisheries

- High catch season of *Rastrelliger* spp. in Andaman Sea

Species	Country	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
R. kanagurta	Malaysia												
	Thailand												
	Indonesia												
	Myanmar												
R. brachysoma	Malaysia												
	Thailand												
	Myanmar												

- High composition of spawners / big size fish of *Rastrelliger* spp. in Andaman Sea

Species	Country	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
R. kanagurta	Malaysia												
	Thailand												
	Indonesia												
	Myanmar												
R. brachysoma	Malaysia												
	Thailand												
	Indonesia												
	Myanmar												

C. Population Study of Indian Mackerel in the Bay of Bengal

- Countries Involved: Bangladesh, India, Indonesia, Malaysia, Maldives, Myanmar, Sri Lanka and Thailand
- Project Duration: 3 years (2012-2014)
- Involved seven laboratories: India (CMFRI & NBFGR), Indonesia (RMIF), Malaysia (FRI & SEAFDEC/MFRDMD), Sri Lanka (NARA) and Thailand (Chulalongkorn University)
- Each country will analyze samples collected in their waters except for Bangladesh, samples were analyzed by an Indian lab (NBFGR). For Maldives and Myanmar, their samples were analyzed by SEAFDEC/MFRDMD

- **Works by SEAFDEC/MFRDMD:**
  - a) Prepare Standard Operating Procedures (SOPs) for Tissue Collection and Preservation.
  - b) Sampling specimens of Indian mackerel in the South China Sea (Kuantan & Kudat) as out-group, analysed and report the results.
  - c) Analyzed specimens from Maldives (Male) and Myanmar (Yangon & Kawthaung) that collected by the national agencies concerned, and report on the results.

Findings:

- Report SEAFDEC/MFRDMD: www.boblme.org/documentRepository/BOBLME-2015-Ecology-28.pdf
- Report workshop: http://www.boblme.org/documentRepository/BOBLME-2015-Ecology-29.pdf
- Final Report: By BOBLME consultant ????

D. Comparative Studies for Management of Purse Seine Fisheries in the Southeast Asian Region

- **Responsible Department: SEAFDEC/MFRDMD**
- **Project Duration: 7 years (2013-2019)**
- **Countries Involved: SEAFDEC Member Countries except Lao PDR and Singapore**
- **Main objective:**
  to review available information including stock levels, and examine management strategies for sustainable purse seine fisheries in the region.

D. Comparative Studies for Management of Purse Seine Fisheries in the Southeast Asian Region

- **Activities:**
  - Comparative Studies for CPUE and TAC
  - Genetic Data Collection and Analysis on 'Stock Identification of *Amblygaster sirm* in Southeast Asian Region'
  - Meetings for Effective Program Implementation
  - Recommendations for Purse Seine Fisheries Management Measures in the Southeast Asian region

Annex 13

RPOA-Neritic Tunas in ASEAN Region

By *Dr. Somboon Siriraksophon*, SEAFDEC Secretariat

The 3rd Meeting of the Andaman Sea Sub-region
18-20 October 2016, Novotel Sukhumvit 20, Bangkok, Thailand

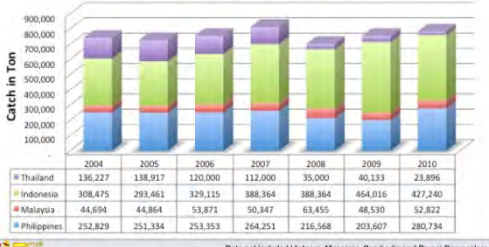
Regional Plan of Action for Sustainable Utilization of Neritic Tunas in ASEAN Region

SECRETARIAT IN COLLABORATION WITH MFRDMD

Agenda 4.2.3

TRENDS OF NERITIC TUNAS PRODUCTIONS

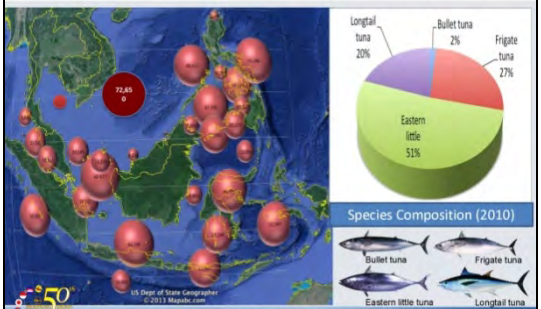
Neritic Tuna Productions from 2004-2010



	2004	2005	2006	2007	2008	2009	2010
Thailand	136,227	138,917	120,000	112,000	35,000	40,133	23,896
Indonesia	308,475	293,461	329,115	388,364	388,364	464,016	427,240
Malaysia	44,694	44,864	53,871	50,347	63,455	48,530	52,822
Philippines	252,829	251,334	253,353	264,251	216,568	203,607	280,734

Data not included Vietnam, Myanmar, Cambodia and Brunei Darussalam

PRODUCTION OF NERITIC TUNAS (2010)



DIRECTIVES FROM SEAFDEC COUNCIL & PROGRESS ON DEVELOPING THE RPOA

- At 45th Meeting of council (2012), recognized the need to develop a PoA for Regional Cooperation;
- In response, a series of Meeting on RPOA-Neritic tuna was held in Oct'2013, and June'2014;
- RPOA-Neritic Tunas is supported by
  - ✓ 47CM in April 2015;
  - ✓ 17 ASWGFi in June 2015;
  - ✓ In the process for SOM-AMAF's support

DEVELOPMENT OF RPOA-NERITIC TUNAS

EXPERT MEETING
PRIORITIZED ISSUES

EXPERT & POLICY MEETING (DRAFTING)

SEAFDEC COUNCIL FCG/ASSP & ASWGFI

SOM-AMAF

PRIORITIZED ISSUES RAISED BY COUNTRIES FOR DEVELOPING THE RPOA-NERITIC TUNA

At National Level

- ✓ Open access, management of fishing capacity
- ✓ Undetermined resources, status and trend
- ✓ Data collection systems should be improved
- ✓ IUU Fishing
- ✓ Transshipment of catch
- ✓ Double flagging, poaching
- ✓ Post-harvest losses
- ✓ Appropriate technology of fishing gears & devices
- ✓ Infrastructure of fishing port/landing sites
- ✓ Unfair benefits allocation, working conditions and labor issues should be settled
- ✓ Supporting policy from Government should be assured
- ✓ Need Capacity building

At Regional Level

- ✓ Need Sub-regional fisheries management for neritic tuna
- ✓ Establishment of working groups for long term status and trends Assessments
- ✓ Enhance the intra-regional trade through harmonized standard catch documentation systems
- ✓ Data & information sharing
- ✓ Seek cooperation with other sub-regional, regional, international organizations

6 OBJECTIVES: of RPOA-Neritic Tunas (1)

Objective I: Determining available data, improving data collection and developing key indicators

- ✓ Improve data collection and analysis, and
- ✓ Assess neritic tuna stock and develop resources key indicator.

Objective II: Improving sustainable fisheries management

- ✓ Promote management of fishing capacity
- ✓ Promote sustainable utilization of neritic tuna resources
- ✓ Enhance understanding of management and conservation measures, and
- ✓ Mitigate the impacts of climate change on neritic tuna stock

6 OBJECTIVES: of RPOA-Neritic Tunas (2)

Objective III: Improving sustainable interaction between fisheries and marine ecosystem

Objective IV: Improving compliance to rules and regulations and access to markets

- ✓ Combating IUU fishing that occurring in the region
- ✓ Improve infra-structures in fishing port/landing sites
- ✓ Improve post-harvest techniques and product quality
- ✓ Enhance intra-regional and international trade

6 OBJECTIVES: of RPOA-Neritic Tunas (3)

Objective V: Addressing Social Issues

- ✓ Improve the benefits for People involved in neritic tuna fisheries and industries
- ✓ Improve working conditions and labor issues

Objective VI: Enhancing Regional Cooperation

- ✓ Enhance/ develop sub-regional action plans for neritic tuna fisheries
- ✓ Assessment of the status and trends at sub-regional level, and
- ✓ Enhancing intra-regional and international trade

SUPPORT Implementation of RPOA-Neritic Tunas

- ✓ Scientific Working Group (SWG) for Stock Assessment & its TORs were established and endorsed by 47CM;
- ✓ Two SWG were organized in Malaysia (2014), Vietnam (2015), and Thailand (2016);
  - ❖ Reviews the status and trend of Neritic tunas
  - ❖ Developed the SOP for data collection, genetic study, stock assessment, etc.
  - ❖ Developed Work plan for:
    - ❖ Stock Assessment of Neritic Tunas
      - ❖ LOT and KAW in 2016
      - ❖ Seer fishes (Spanish Mackerel) in 2017
    - ❖ Genetic Study for LOT and KAW in 2016-8

Capacity Building to AMSs

- ✓ **Basic knowledge on Stock Assessment** and landing data collection to Selected AMS such as CAM, MM, TH, etc. (2016);
- ✓ **Stock Assessment Advance Training Course** for Specific Species using model used by RFMOs (selected AMSs such as MY, PH, ID, TH and VN) from 2016-17;
- ✓ **Improvement of landing data collection system** under the national framework and cost shared basis from 2016-18;



COLLABORATION WITH RFMOS & NGOs, PRIVATE SECTORS

① **WCPFC**
- Supporting SWG members from TH and MY to attend the Sustainable Management of Highly Migratory Fish Stocks in the West Pacific and East Asian Seas;

② **IOTC**
- Support the Working Party on Neritic Tunas;

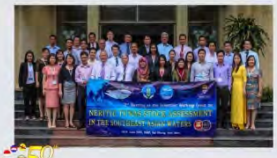
③ **ASEAN Tuna Task Force & ASEAN TWG**
- Sharing the SEAFDEC results to the ASEAN Meetings

④ **Other Organizations and NGOs** (*e.g.* SFP, WWF)

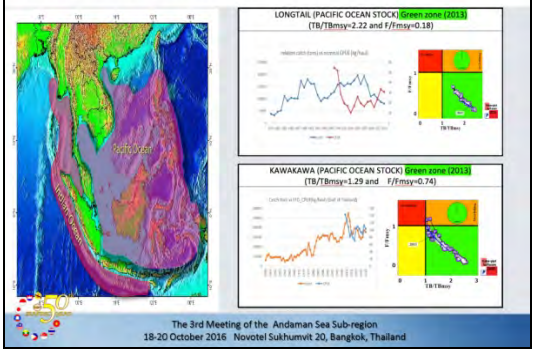
⑤ **Private Sectors**: Thai Union, Abba Seafood, etc.


TORs for SWG-NERITIC TUNAS

- ❖ TOR SWG-Stock Assessment endorsed by 47CM in 2015
- ❖ The main objective of ToRs is to ensure that the Regional Cooperation from AMS on the stock assessment of the neritic tunas can be effectively implemented by the SWG;

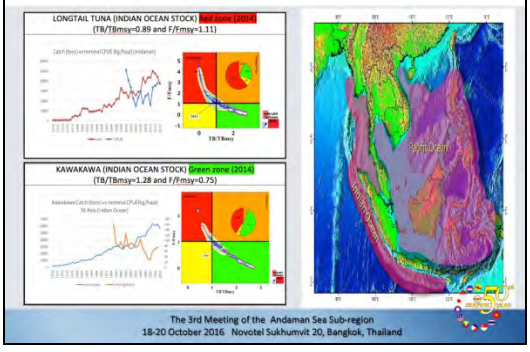



2016 STOCK ASSESSMENTS: PACIFIC O.



The 3rd Meeting of the Andaman Sea Sub-region
18-20 October 2016 Novotel Sukhumvit 20, Bangkok, Thailand

2016 STOCK ASSESSMENTS: INDIAN O.



The 3rd Meeting of the Andaman Sea Sub-region
18-20 October 2016 Novotel Sukhumvit 20, Bangkok, Thailand

WAY FORWARD

- Develop the management measures to Control of **fishing effort and capacity** at national level and sub-regional levels.
- Implementation of ASEAN Catch Documentation System for neritic tuna fisheries;
- Development of joint trade promotions within and outside the region through the ASEAN Tuna Working Group;
- Exchanging of information among AMSs on legal framework, policies & management, trade rules & regulations;
- Development of measures to refrain the conduct of business transaction with owners and vessels presumed to have carried out IUU fishing activities;
- Creation of platforms/fora to facilitate cooperation among scientists and managers;

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HOW'S STRATEGY & COMMON POLICY FOR ANDAMAN SEA FISHERIES MANAGEMENT

?

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18-20 October 2016 Novotel Sukhumvit 20, Bangkok, Thailand

THANK YOU

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SKYPE : somboon.siriraksophon

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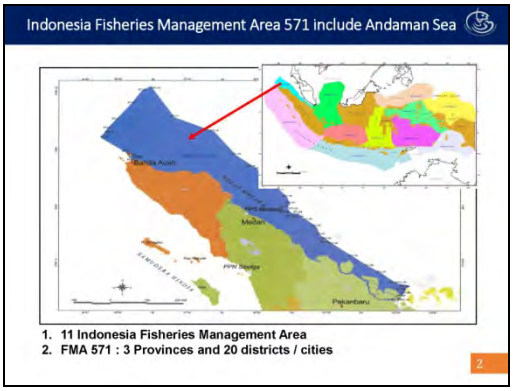
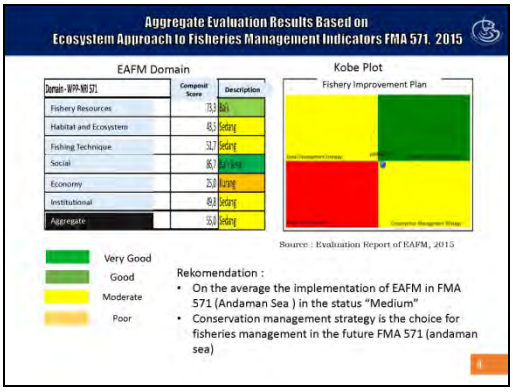
Annex 14

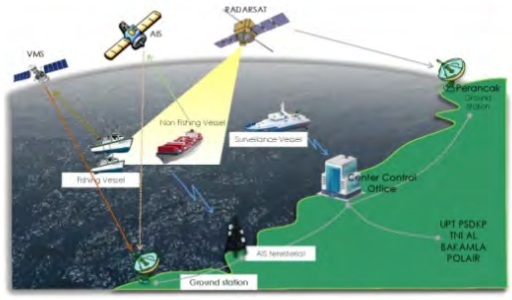
Update on Management of Fishing Capacity and IUU of Indonesia

By *Mr. Bima Priyo Nugroho*, Senior Scientist for Fishery Research Development

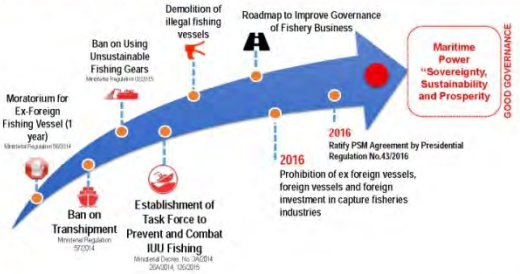




INTEGRATION SYSTEM OF FISHERIES AND MARINE SURVEILANCE



ACTIONS TO PREVENT AND COMBAT IUU FISHING
October 2014 – present



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IUU Fishing Activities in FMA 571

1. Use the prohibited fishing gear (Ex Trawl, Pair Trawl)
2. Incomplete fishing document
3. Fishing area are inappropiate of fishing licence
4. Foreign vessel entry to fishing illegally in national waters

9

LANDING ACROSS BOUNDARIES PROCEDURE

Entry Permit of Foreign Fishing Vessel

Check :
1. **Harbour Master**
2. **Fisheries Surveilance**
3. **Custom**
4. **Health Quarantine**
5. **Imigration**

Problem/ Finding ?

No / Clear

Landing / Loading / Docking

Yes

Investigation

10

Arrest of FV. Viking

was confirmed by Indonesian surveillance who sighted the FV *Viking* at 01°26.771 North, 104°35.879 East. The vessel is suspected to be loitering near Indonesian

Name	FV Viking
IMO number*	8713382
Flag State	Nigeria (claimed and confirmed as false by Nigeria)
Home port	Lagos (claimed)
International radio call sign	Unknown
Previous names	FV Octopus1, FV Barber, FV Snake, FV Pion, FV The Bird, FV Chu Lim, FV Yin Feng, FV Thor, FV Ulysse

Arrest Information

- Date : 25 February 2016
- Time : 17:26
- Location: 12,5 miles from teritorial of Tanjung Uban-Bintan, Riau Province (Part of FMA 571);
- Infringement : Shipping regulation, licence and fishing gear base on Law of Fisheries;
- Purple notice from interpol and listed as IUU Vessel at CCAMLR

Action :
Processed by Fisheries Law, Sinking

11

The modus operandi of foreign IUU Fishing Vessel

The modus operandi of foreign IUU Fishing Vessel :

- Falsification of Documents Vessel and Licensing;
- Using the ship's crew nationality of the target port;
- Eliminate evidence of fishing activities, including doing transhipment on the high seas;
- Entering the public ports and implemented at holiday time.

Follow up :

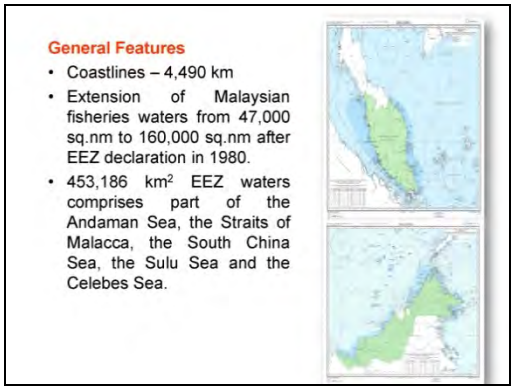
- Cross-agency coordination of national scope, including coordination with international law enforcement network;
- Strengthening RPOA-IUU MCS Network;
- Need to make the analysis of the movement of IUU vessel, based on information that has been circulated, to study the movement patterns of the vessel as a precaution in the early detection of IUU vessels in the waters of national.

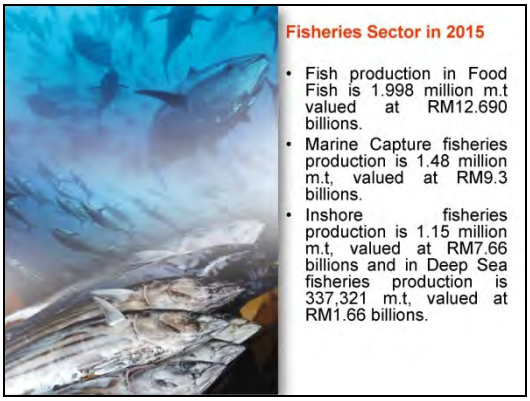
12

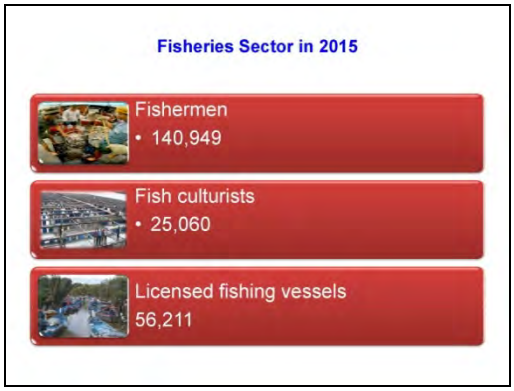
Annex 15

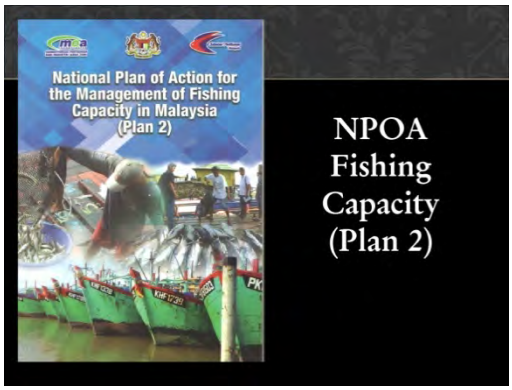
Update on Management of Fishing Capacity and IUU of Malaysia

By *Mr. Muhamad Abdul Rauf Abdullah*, Fishery Officer from the Resource Protection Division of the Department of Fisheries Malaysia (DOFM)



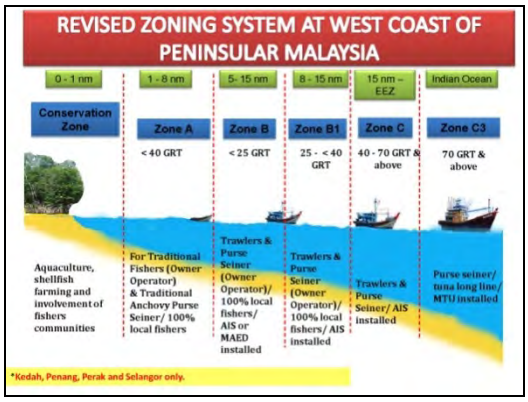


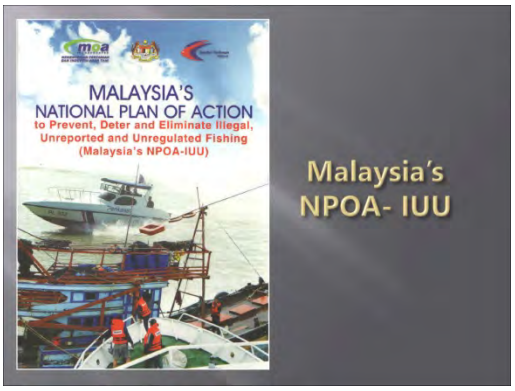




- Launched 2015
- Operational Period: 2014-2018
- To achieve an efficient, equitable and transparent management of fishing capacity
- 12 issues and challenges- identified
- 3 strategies
  - Review and implement effective conservation and management measures
  - Strengthen capacity and capability for monitoring and surveillance program
  - Promote public awareness and education program

- 37 Key Actions:
  - Moratorium on issuance of new license in the coastal zone except for poverty eradication program
  - Cancel license of non- performing fishing vessels
  - Revise zonation system
  - Mobile Tracking Unit installed on commercial vessels
  - Strengthen mechanisms for stakeholders participation in monitoring and reporting encroachment
  - Conservation and rehabilitation of marine ecosystems through establishment of MPA and deployment of artificial reefs
  - Prohibition of destructive fishing methods





- Launched 2013
- Strengthen Malaysia's commitment at international level in effort to combat IUU Fishing
- Several enforcement agencies in Malaysia have teamed up to handle case of IUU fishing vessels (13 agencies)
- No. of arrested foreign fishing vessels (2014)- 74 vessels, involving 611 foreign fishers

Port State Measures

- Appointed a total of 16 officers as Port Inspector to undertake the task for implementing the Port State Measures.

Legal Aspects

- The Fisheries Act 1985 provide the legislative framework for the conservation, management and development of the capture fisheries in Malaysia.

- Section 15. Fishing, etc., by foreign fishing vessel in Malaysian fisheries waters.
  - (1) Subject to subsection (2), no foreign fishing vessel shall do any of the following in Malaysian fisheries waters:
    a) fish or attempt to fish; or
    b) subject to subsection (1A), conduct any techno-economic research or survey of any fishery
  - (2) No foreign fishing vessel shall load or unload any fish, fuel or supplies or tranship any fish in Malaysian fisheries waters without the written approval of the Director-General.
- Section 16. Passage of foreign fishing vessel through Malaysian fisheries waters.

REVISED SOP IN MANAGEMENT OF FISHING CAPACITY AND COMBATTING IUU FISHING

ALLOW PURCHASE OF USED FOREIGN FISHING VESSELS

- BECAUSE:
- Limited dockyard capacity in Malaysia
- High cost of new vessels
- Long period to build new vessel (2 years)
- Limited numbers of used-fishing-vessel locally

PROCEDURES FOR LICENSED USED FOREIGN FISHING VESSELS

Vessel's Owner:

- Vessel Inspection by the Ship Surveyor;
- Original Sale and Purchase Documents;
- Copy of Vessel registration/License of Origin Country;
- Copy of Vessel De-registered from Origin Country;
- Letter of Free From IUU Vessels from the authorities;
- Copy of Document of Vessel Builder;
- Vessel must comply Hygiene On Board (HOB).

Department of Fisheries:

- Imposes strict control to deter IUU and dual-flagging vessel.
- Countercheck the authenticity of the documents with the origin country


Conclusion
Malaysia will continue to take action in combating IUU fishing at domestic, regional and international level as part of sustainable fisheries management and good governance towards securing the supply of fish as a food source for the country and the entire world.


thank you
danke
謝謝
ngiyabonga
teşekkür ederim
спасибо
dank je
gracias
tapadh leat
bedankt
hvala
mauruuru
dziękuję
mochchakkeram
go raibh maith agat
obrigado
sukriya
kop khun krap
takk
grazie
arigato
dakujem
terima kasih
감사합니다
merci
ευχαριστώ
мерси

Annex 16

Update on Management of Fishing Capacity and IUU of Myanmar

By *Mr. Nyunt Win*, Deputy Director for the Department of Fisheries (DoF) of Myanmar

The Republic of the Union of Myanmar
Ministry of Agriculture ,Livestock and Irrigation
Department of Fisheries

Fishing Licensing and Vessels registration and legal matters

MYANMAR

Objectives

- To allow to operate fishing systematically
- To manage the fisheries and to take action in accordance with the law
- To conserve the fisheries resources and habitat
- To conduct the fisheries research ,education and disseminate the fishing technique
- To be inline with the international rules and regulations

MCS component

- Sea (Myanmar Navy)
- Land (DOF, DMA, Custom, Police, Immigration, Port Authority, GAD)
- Satellite technology (VMS)

Inspection at Sea

Marking on Vessels

Easily to observation on fishing vessel at sea

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

Marking on Vessels

Easily to observation on fishing vessel at sea

Fishing vessel inspection at shore

(Check out)

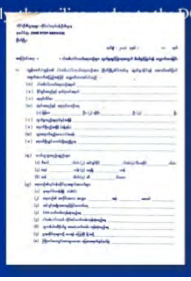
In the fishing Inspection Station, have to inspect one stop service (OSS) system.

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

Fishing vessel inspection at shore

When Fishing vessels want to go-out to the fishing ground, have to

appl DOF.




Fishing vessel inspection at shore

(1) Fishing License



Fishing vessel inspection at shore

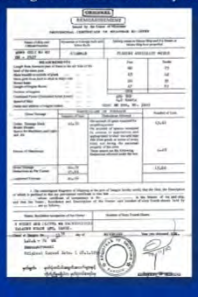
(2) Fisherman Registration Card.


Fishing vessel inspection at shore

(3) National Registration Card .


Fishing vessel inspection at shore

(4) Vessel Registration Certificate by DMA



Fishing vessel inspection at shore

(5) Life Saving Appliance (LSA)

Fishing vessel inspection at shore

(6) Communication Equipment License.

Fishing vessel inspection at shore

Fishing vessel inspection at shore

Sailing Order

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

Fishing vessel inspection at shore

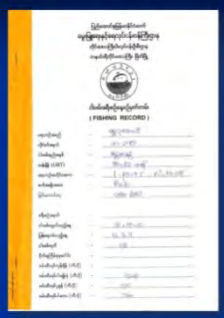
(Check in)

When the Fishing Vessels come back from the sea, 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.

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

(2) Check the Fishing Log Book



(3) Inspection the species of catching.

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

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.

MCS Training Themes

- Team-building activities

MCS Training Themes

- Safety fishing vessel

MCS Training Themes

- Collecting information on marine fish species and monitoring vessels

Prohibition of fishing Activities by DOF

Spawning Season
Jun- July-August (Started from1993-94)

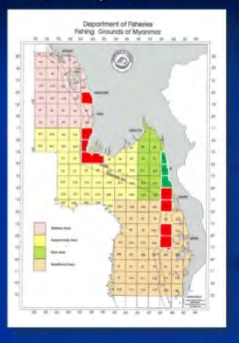
Indian Threadfin
Watt Phyu Thaung ,Tharmyami Island

Hard Clam (9/2008) Myeik, Palaw, Kyae chaung and Ta Bo chaung point. 20 Acre
Jan-Feb-Mar

Set Bag net (Bom Kyaung Pike)- (2/2013)
April- May

Whale Shark (2/2001)

Marine Shrimp with eggs (3/95)



DOF Activities for Sustainable Fisheries

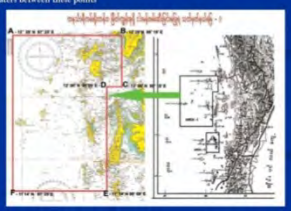
Shark Protected Area

- 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



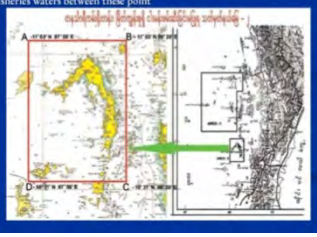
DOF Activities for Sustainable Fisheries

Shark Protected Area

Area (2)

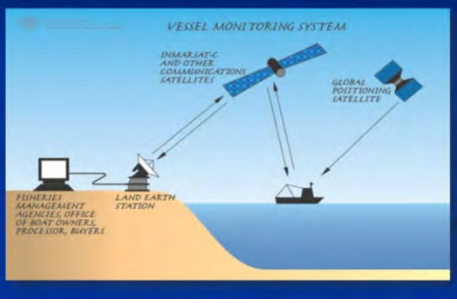
- Point (A) Lat 11° 03'(N) Long 98° 00' (E)
  Point (B) Lat 11° 03'(N) Long 98° 20' (E)
  Point (C) Lat 10° 36'(N) Long 98° 20' (E)
  Point (D) Lat 10° 36'(N) Long 98° 00' (E)

Marine fisheries waters between these point



(VMS)

DOF is trying to established the VMS system to effective MCS scheme



Awareness for Conservation Posters

Dugong conservation

Turtle conservation

Awareness for Conservation Posters

Pollution

Coral reef

Fisheries Laws

Legal Affairs

There are four relevant fisheries laws promulgated by the Government of Myanmar to management the fishery industry and protect the fishery resources more efficiently.

No	Year enacted	Name of Fisheries Laws
1	1989	Law relating to the fishing rights of foreign fishing vessels
2	1989	Aquaculture Law
3	1990	Myanmar Marine Fisheries Law
4	1991	Fresh Water Fisheries Law

After enacted these four Fisheries laws, the Government of Myanmar promulgated the two amending laws. These are as follows:-

No	Year enacted	Name of Amending Laws
1	1993	Law amending to the Myanmar Marine Fisheries Law
2	1993	Law amending the law relating to the fishing rights of foreign fishing vessels

Among four existing fisheries laws, have empowered fresh water fisheries law to respective regions and states authorities and combined Law relating to the fishing rights of foreign fishing vessels and Myanmar Marine Fisheries Law and amending to Union Fishery Law (Draft). Also amending draft of Aquaculture Law for modernization.

Catch Certification Scheme

- Myanmar catch certificate has been approved by EU Commission in 2010. Myanmar products which is attached with Catch certificate was started to export on 31-3-2010.
- Myanmar issued the Catch certificate for 8 companies to export 7 countries and the numbers of CC from 31-3-2011 to 30-4-2013 yearly is here under;

Year certificate	company	Country	Catch
2010-2011	7	7	49
2011-2012	8	7	42

Catch Certification Scheme

- When the states issue the Catch certificate ,they have responsibilities to verify as follows;
  - Follow the conservation measures in accordance with the adopted rules and regulations.
  - The fishing vessel which is expressed in Catch certificate is certified not from IUU fishing .

Catch Certification Scheme

1. EU consultant inspected the activities of Myanmar in MCS system and the Catch Certification Scheme from 25-7-2011 to 5-8-2011.
2. MCS and Catch Certification Scheme of Myanmar is reliable and the VMS system need to be implemented in fishing vessels.
3. Therefore, Myanmar has initiated installing the VMS in 2012. All foreign fishing vessels which are operating in Myanmar waters and local fishing vessels which offence the rules and regulations have to install the VMS.
4. 104 foreign fishing vessel and 35 local fishing vessels had been installed in December 2013.

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Future Plan

- To establish Comprehensive Union Fisheries Law
- To draft the procedure for Comprehensive Union Fisheries Law
- To strengthen the MCS system
- To develop National Plan of Action

Thank You!

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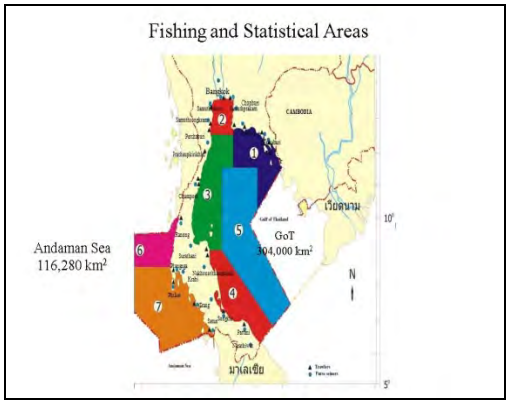
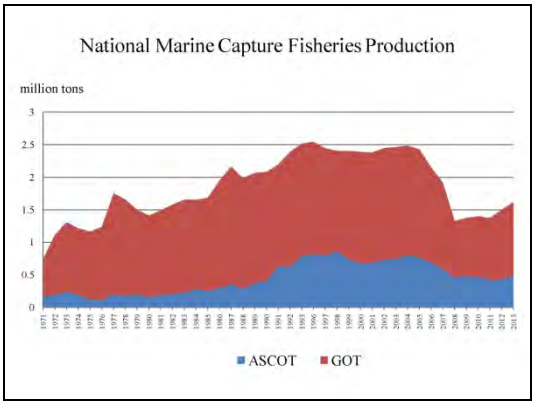
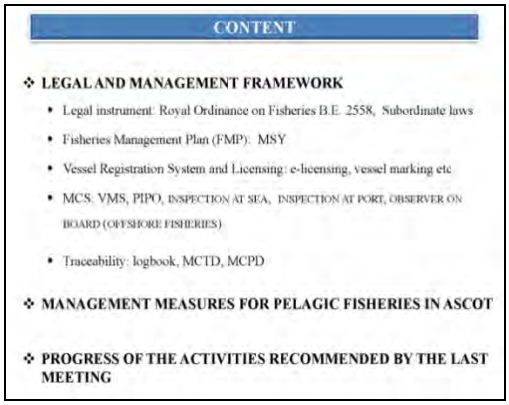
Annex 17

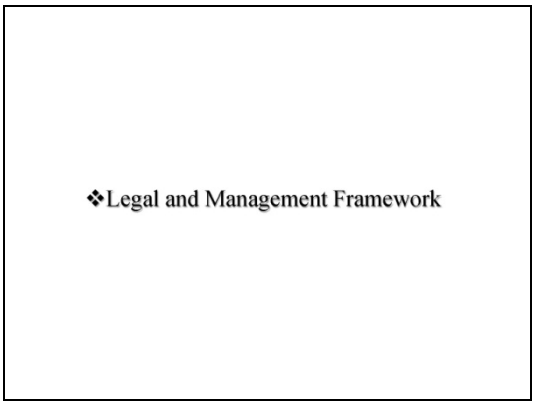
Update on Management of Fishing Capacity and IUU of Thailand

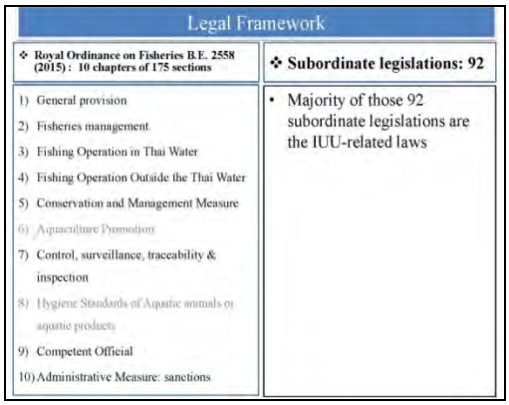
By *Ms. Sampan Panjarat*, representative from the Andaman Sea Fisheries Research and Development Center (Phuket) of DOF Thailand











Fisheries Management Plan (FMP)

1. Reducing fishing capacity and effort;
2. Rebuilding fish resources through artificial reefs and restocking programs;
3. Minimising IUU fishing of the marine resources through effective compliance and enforcement;
4. Reducing the catch of juveniles of the larger commercial species;
5. Resolving conflicts between artisanal and commercial fishers;
6. Restoring and maintaining critical habitats;
7. Improving fisheries data and information; and
8. Strengthening fisheries management capacity

Vessel Registration System and Licensing

- e-license system
- MSY basis
- 2 fishing year license
- Strictly required documents
- VMS (>30 GT)
- QR Code (in control room)
- Vessel Marking: zones, size, serial no., gears

Vessel Marking

❶ **Zone**
T=GoT
A=ASCoT
H=High sea

❷ **Vessel Size**
S=10<20 GT
M=20<60 GT
L=60<150 GT
X=>150 GT

❸ **Serial No.**

❹ **Gear**
A= trawl
B= Purse seines.....H=trap

❖Management Measures for Pelagic Fisheries in ASCoT

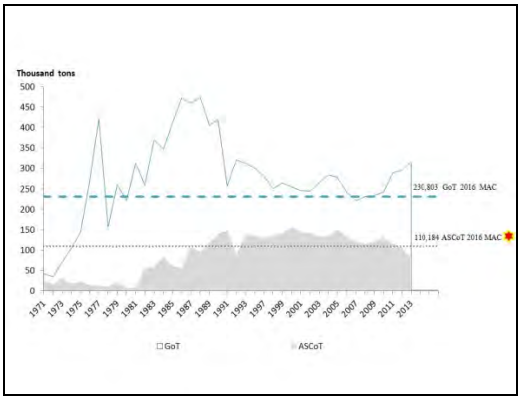
Number of Fishing Vessels and Licenses

Types of Vessel	Vessel Size (GT)	Fishing Areas		Total
		Andaman Sea	Gulf of Thailand	
Small scale	<10			27,413
Commercial	10 - <20	470	2,478	2,948
	20-<30	421	1,907	2,328
	30 - <60	555	2,625	3,180
	60 - <150	636	2,003	2,639
	>150	32	90	122
	Sub total	7,095*	9,103	11,217
Grand Total				38,630

Source: DOF E -licensing database, 2016

MSY & Maximum Allowable Catch

	ASCoT				
Species	MSY (mt)	Max. Allowance Catch (mt)	% MAC/MSY	Estimate catch (mt)	Balance (mt)
1. Demersal	240,519	216,467	90	214,169	2,298
2. Pelagic	118,477*	110,184*	93*	110,012	172
3. Anchovy	32,944	29,650	90	29,609	41
Total	**391,940**	**356,301**		**353,790**	**2,511**



Fishing Day Scheme

Type of Fishing gears		Fishing period per year	
		Gulf of Thailand	Andaman sea
1.Trawl nets	Pair Trawls net	220	250
	Otter board trawls	220	250
	Beam Trawls	220	Not applicable
2.Surrounding nets	Anchovy Surrounding	235	205
	Surrounding nets	220	235
3.Falling nets	Anchovy Falling nets	235	205
4. Others	-	Not defined	Not defined

Management Tools

- Fishing Capacity Management
- Spatial & Temporal regulation

  SCM

  -3 months: 1 Apr-30Jun, yearly

  -Prohibited: trawlers, purse seiners, gill nets (Ø < 4.7 cm)
- Monitoring, Control & Surveillance

❖ PROGRESS OF THE ACTIVITIES RECOMMENDED BY THE LAST MEETING

Scientific Aspect

a. Study on Indian mackerel and Indo-pacific mackerel particularly on mtDNA

"The representative from Thailand cited the aforesaid activity as one of the priority steps and requested support from. The Meeting was informed of the support of Thailand for the conduct of assessment in the four present Andaman Countries"

The study was carried out by supporting of *BOBLME* and published in the Report on BOBLME Indian mackerel genetic data analysis including final workshop 17-19 Feb. 2015 Phuket, THAILAND

http://www.boblme.org/documentRepository/BOBLME-2015-Ecology-29.pdf

Management Aspect

Port State Measure

b. Bring back the agreements from the First Andaman Sea Meeting i.e. Application of Port State Measures, etc. into action;

c. Setting-up of Regional (MCS) Network on information sharing;

d. Specific steps in relation to the PSM such as bilateral agreements to inspect fishing vessels from other countries Agreements must follow and include criteria (outlined in the PSM Agreement) for inspection on board foreign vessels;

e. Training of trainers on inspection and protocols for inspection following the Attachments of the FAO PSM Agreement.

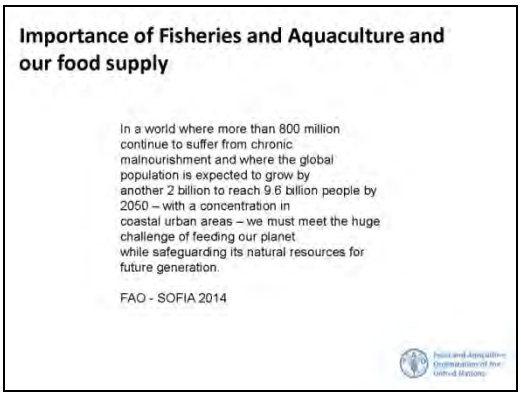
Challenges & way forward

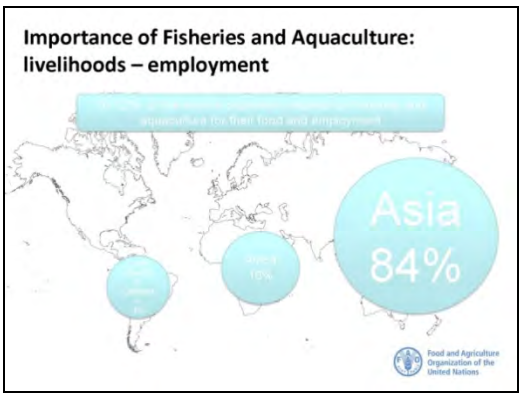
- Multidiciplinary approach
- Scientific & Participatory base: monitoring
- Traceability: PIPO, logbook, marine catch perchasing document (MCPD), port observation, observer onboard of fishing vessel, PSM
- Adaptive management

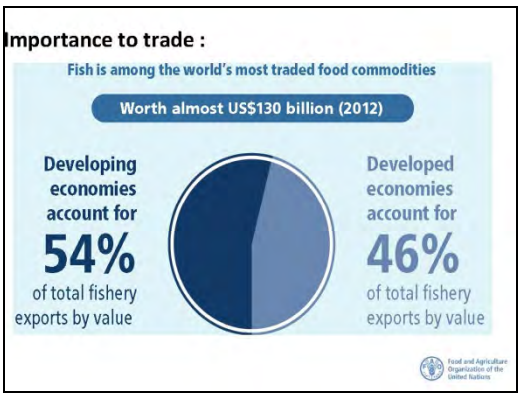
Annex 18

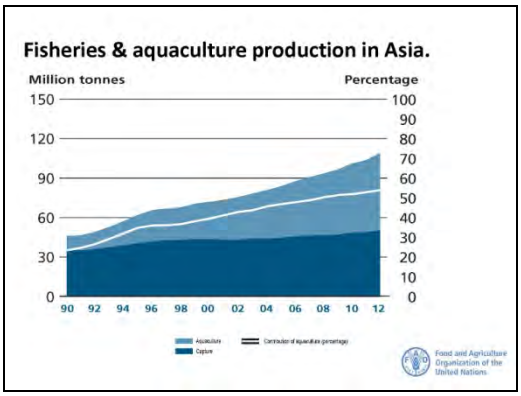
FAO's role and initiatives in supporting countries to address IUU fishing and implement the PSMA in Asia Pacific

By *Dr. David Brown*, representative of FAO









Important role of women and small scale fisheries in the region

- In the region women play a key roles in the sector.
- Small scale fisheries and those who depend on the sector for livelihoods.
  - SSF guidelines developed to address the

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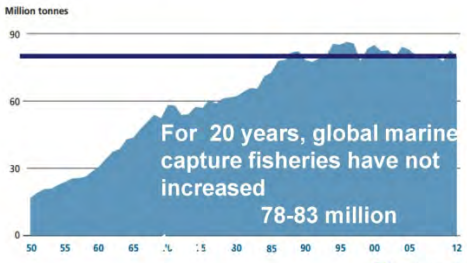
State of World Fisheries



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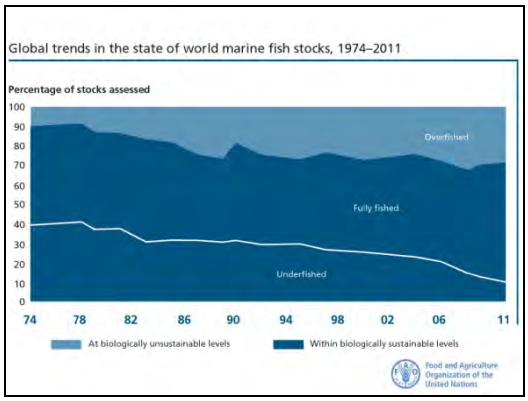

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What are some of the main threats to fisheries in the region ?

- Overexploitation of the marine environment and overfishing (overcapacity etc)
- Environmental degradation of marine habitats
- Pollution and water quality
- Climate change
- Small scale fisheries, tenure and rights

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What is IUU fishing and why is it important ?

- **Illegal**
  - Any fishing in violation of national laws or international obligations
    - that undermines (RFMO or national) fishery management measures
    - including those undertaken by cooperating States to a relevant regional fisheries management organization.
- **Unreported**
  - Fishing which is not been reported, or is misreported, to the relevant national authority, in contravention of national laws and regulations;
- **Unregulated**
  - Fishing in a manner that is not consistent with or contravenes the conservation and management measures of that country or organization,
  - vessels that are not controlled by the flag state

Definitions on FAO website at this IPOA - IUU:

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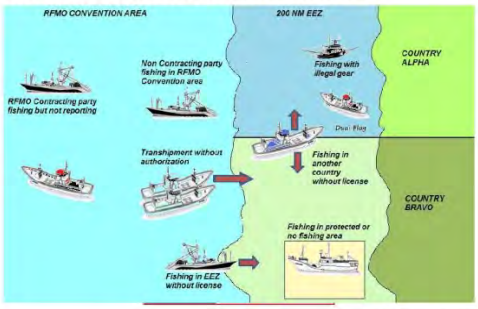
Different forms of IUU in marine fisheries



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Why the Rise in IUU fishing ?

IUU fishing is not new
- Become more visible
- More valuable in the past 20 years
- It is observed in all capture fisheries

IUU fishing involves a wide range of activities
- Unauthorized fishing in EEZs and in RFMO convention areas
- Taking juvenile and protected species
- Using prohibited gear
- Failing to report catches, etc

IUU fishing is motivated by economic gain
- In industrial fisheries often associated with organized crime

IUU fishing exploits weak management & governance
- takes advantage of developing countries

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Impact of IUU fishing ?

Undermines national and regional efforts to manage fisheries
- Inhibits stock rebuilding efforts
- Speeds up the decline of many fisheries

Increases costs for fishery administrations
- lost fishing revenue, funds spent combating it, MCS

It is unfair
- Disadvantages honest "authorized" fishers
- Potentially affects food and livelihood security for poor coastal communities in developing countries

IUU is now considered a trans-boundary environmental crime (links to organised crime)
- Environmental crime
- Also links to forced labour and work conditions

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What forms of IUU fishing do we have in the Asia Pacific region?

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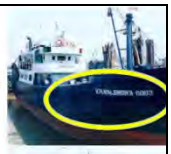
Typical IUU activities



- **Unauthorized fishing**
  - Fishing in neighbouring country waters, high seas
  - Fishing without a license
- **False documentation/markings**
  - Fishing with falsified license
  - False/duplicate vessel registration
  - False vessel markings
- **Illegal transhipment or landings**
  - Landing of fish in an area other than the authorized port of landing
  - Non-reporting, misreporting, under-reporting of catch

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Typical IUU activities (2)

- **Non compliance with technical management measures**
  - Fishing in a restricted zone(s), seasons
  - Trawling in nearshore artisanal zone
  - Fishing in protected areas or closed season
- **Unauthorized gears & methods**
  - Small mesh sizes, lights, unlicensed gear
  - Use of destructive methods (cyanide, blast-fishing)
- **Catching of prohibited/protected species**
  - CITES species, Sea turtles, Shark finning, grouper, live reef fish, coral etc.

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Other IUU fishing in the region include :

- International IUU related to RFMOs
- IUU in access agreements between Asian countries
- IUU by larger-scale vessels in neighboring EEZ
- IUU by smaller-scale vessels in neighboring Asian EEZ
- Domestic IUU fishing

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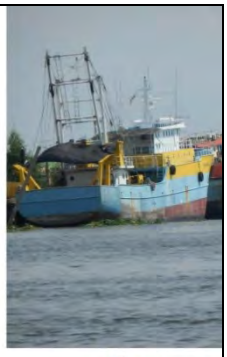
Costs of IUU fishing



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How much fish is this and what is the cost?

- **Estimated global cost of IUU (2009)**
  - **USD 10 - 23 billion per year**
- **Asia-Pacific Fishery Commission (APFIC)**
  - Estimate of illegal fish catch by foreign vessels in Asia
  - USD 3.7 - 5.2 billion per year
  - 2.1 – 2.5 million tonnes
- **Other estimates Asia and Pacific (2009)**
  - 3.4 – 8.1 million tonnes
  - 8 -16% of the total reported catch
  - USD 5.8 billion per year

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Drivers of IUU fishing in the region

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Huge numbers, complex governance

- **Over-capacity in fisheries**
  - particular medium scale trawlers, pushnetters, larger motorized vessels
- **Enormous numbers of vessels in the Asia Pacific region**
  - Over 1.94 million fishing vessels recorded
  - 80% small-scale, ~12 metres
- **General failure of centralized fisheries management measures**
  - limited enforcement/compliance
  - perceived as inflexible and not relevant to local context
  - local government may override national measures
  - political "interference" in technical/scientific decision making
  - Lobbying by sector and very large numbers of the artisanal sector.

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IUU fishing is opportunistic as well as calculated/deliberate

- **Taking a risk**
  - balance likelihood of income against the likelihood of penalty or capture
- **Economic opportunity**
  - fishers will do if they think they can get away with it
  - especially in the larger scale sector
- **Most coastal fisheries have limited MCS**
  - How to get evidence to the courts?
  - risk of capture/fines are relatively low
  - almost impossible to prosecute across provincial boundaries
- **Partly driven by a need to make a basic income**
  - poverty drives unsustainable fishing practices
  - traditional norms are ignored to feed families

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Measures to combat IUU fishing and trade in products from IUU

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IUU and FAO Agreement on Port State Measures (PSMA)

A key instrument in addressing IUU

Only part of the overall solutions

- Intended to remove the economic incentive of IUU through denial of port access/services
- Aims to prevent, deter, and eliminate IUU fishing through the implementation of effective port State measures
- Will ensure the long-term conservation and sustainable use of living marine resources and marine ecosystems.

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2009 FAO Agreement on Port States Measures

- **September 2007: Expert Consultation**
  - draft agreement elaborated by a group of international experts
- **June 2008-August 2009 (4 sessions)**
  - Technical Consultation negotiation of binding agreement
- **November 2009**
  - Agreement approved by FAO Conference
  - Opened for signature, remained open for 1-year, 23 countries signed
- **Agreement came into force 30 days after the deposit of the 25th instrument with the – FAO Director-General on the 5th June 2016.**

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Catch documentation and traceability

- CDS supports Port State Measures and Port inspections can be applied outside of PSM agreement already at work in RFMOs
- SEAFDEC/ASEAN, SEAFDEC/US Oceans

- **EU/ IUU regulation**
  - EU fisheries control system (The "IUU Regulation": establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing)
- **USA Presidential Task Force on IUU (Rule on traceability)**

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Vessel registers, Unique Vessel Identification

- Most of the developing Asian countries struggle to keep track of their vessels
- This is more effectively done with vessels which fish outside the EEZ
- Coordination between transport agency and fisheries agencies needed

Capacity management

- With over capacity in the fishery, knowing how many vessels you have is a pre-requisite to managing
- VMS offers an effective way to track the larger sized vessels in the fleet.

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What else could be done to tackle domestic IUU?

- **Strengthen Capacity of agencies, coordination**
- **Strengthen governance, policy and law**
- **Management and allocation of rights**
  - improved fishing boat registration
  - allocation of rights and zones
  - strengthening of fishers organizations
  - Introduce fisheries management plans (EAFM)
- **Anti - IUU measures**
  - deterrents: artificial reefs, trawl obstructions
- **Innovative MCS links to safety at sea as an entry point**

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Current status of PSMA (October 2016)

- Globally, 47 countries have deposited instruments.
- 11 countries in Asia Pacific region have deposited instruments (excluding the EU, France and UK territories).
  - Australia, Indonesia, Myanmar, New Zealand, Palau, ROK, Samoa, Sri Lanka, Thailand, Tonga and Vanuatu.
- Several other countries are expressing an interest to accede to the agreement and we are supporting this.
- FAO works very closely with regional bodies and partners in this regard.

Addressing IUU as part of implementation of Code of Conduct for responsible fisheries (CCRF)

- IPOA IUU and IUU Guidelines, Regional plans of Action – IUU (RPOA), National Plans of Action –IUU (NPOA)
- The Global Record , FLUX (data sharing)
- Voluntary guidelines on Flag state responsibilty
- FAO – Port Lex : database of countries regulations that support PSM
- Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication
- Certification, labeling and trade systems, Codex
- The High Seas Task force (WCPA).
- Areas Beyond National Jurisdiction (ABNJ) programme

Partnerships in the region to address IUU

All work by FAO carried out in partnership and coordination with regional organizations and governments, for example:

- SEAFDEC/ASEAN (including Sweden and Japan) : Several initiatives to strengthen fisheries management, address IUU, develop catch documentation traceability and implement PSMA.
- OCEANS Partnership , NOAA, USAID.
- Asia Pacific Fisheries Commission (APFIC)
- RFMO's , RPOA –IUU, Fisheries Commissions.
- Large Marine Ecosystems (LME's) GEF – International Waters, Coastal Fisheries Programme (CFP), Area Beyond National Jurisdiction (ABNJ).
- UN and GEF Agencies : UNEP, UNDP, UNIDO, WWF , IUCN,
- INGO's, NGO's, CSO;
- Private sector
- Many more

Specific FAO actions in support of PSMA-IUU

FAO Regional Asia Pacific Programme – IUU (and country support):

- FAO is in the process of initiating a global umbrella programme , Inter regional and regional programmes.
- Strengthen governance and legal frameworks
- Strengthen partnerships, Coordination and information sharing.
- Support partners in RPOA's and NPOA development and implementation
- Capacity Development (EAFM, Port Inspectors)
- Technical advice (legal frameworks and good practice)
- Focus on Voluntary Guidelines Small Scale Fisheries, gender and Tenure
- Decent work and labor conditions (with ILO/IMO)
- Integration into regional and country level capacity development projects and technical support (for example BOBLME-2 and 2, ISLME)
- Blue Growth Initiative

Closing thoughts

- FAO supports countries and regional partners in their efforts to address IUU and improve the management of their fisheries (EAFM, Co management) as a priority. The Andaman Sea region provides an opportunity for countries to work together to address these issues.
- Fishing communities, small scale fisheries have to be engaged in the solution.
- Gender and the role of women needs to be recognized.
- Consumers and value chains have an important role to play

Thank you

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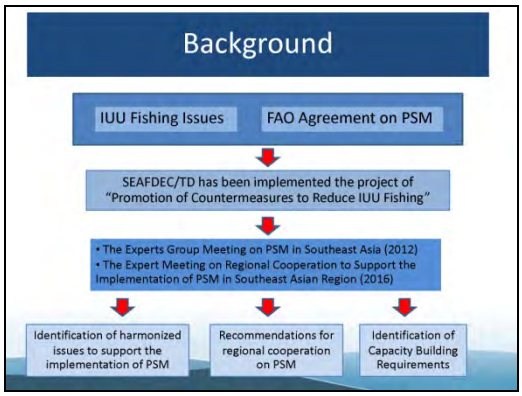
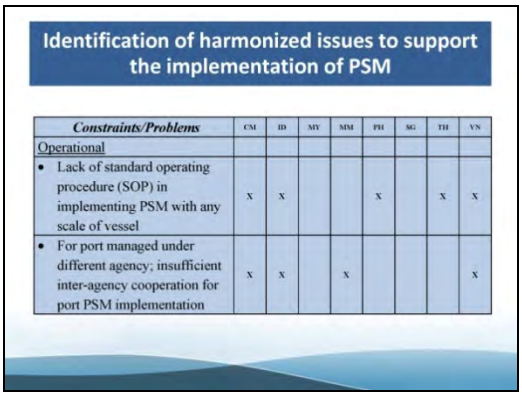
Annex 19

Regional Cooperation to Support the Implementation of Port State Measures in Southeast Asian Region

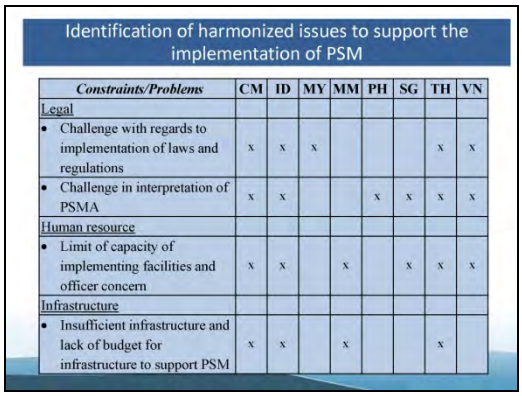
By *Mr. Kongpathai Saraphaivanich*, representative from SEAFDEC Training Department





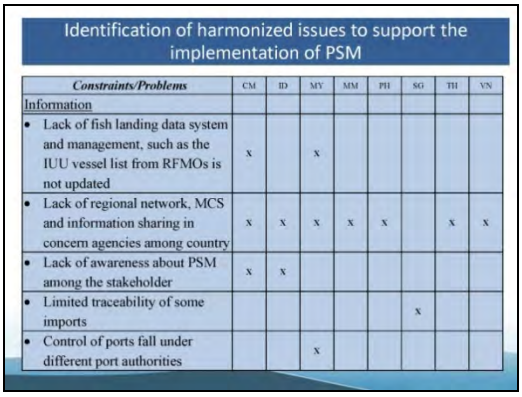
Identification of harmonized issues to support the implementation of PSM

Constraints/Problems	CM	ID	MY	MM	PH	SG	TH	VN
Operational								
• Lack of standard operating procedure (SOP) in implementing PSM with any scale of vessel	X	X			X		X	X
• For port managed under different agency; insufficient inter-agency cooperation for port PSM implementation	X	X		X				X



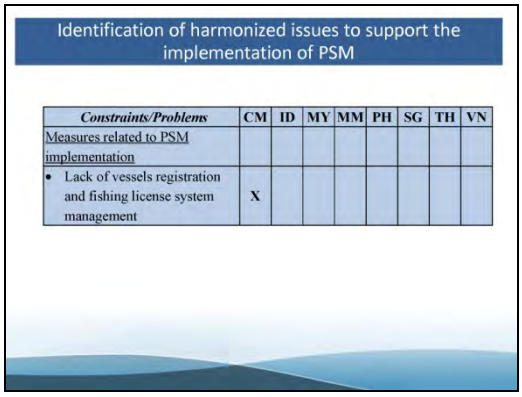
Identification of harmonized issues to support the implementation of PSM

Constraints/Problems	CM	ID	MY	MM	PH	SG	TH	VN
Legal								
• Challenge with regards to implementation of laws and regulations	X	X	X				X	X
• Challenge in interpretation of PSMA	X	X			X	X	X	X
Human resource								
• Limit of capacity of implementing facilities and officer concern	X	X		X		X	X	X
Infrastructure								
• Insufficient infrastructure and lack of budget for infrastructure to support PSM	X	X		X			X	



Identification of harmonized issues to support the implementation of PSM

Constraints/Problems	CM	ID	MY	MM	PH	SG	TH	VN
Information								
• Lack of fish landing data system and management, such as the IUU vessel list from RFMOs is not updated	X		X					
• Lack of regional network, MCS and information sharing in concern agencies among country	X	X	X	X	X		X	X
• Lack of awareness about PSM among the stakeholder	X	X						
• Limited traceability of some imports						X		
• Control of ports fall under different port authorities			X					



Identification of harmonized issues to support the implementation of PSM

Constraints/Problems	CM	ID	MY	MM	PH	SG	TH	VN
Measures related to PSM implementation								
• Lack of vessels registration and fishing license system management	X							

Recommendations for Regional cooperation to support the implementation of PSM

Part: Entry Into Port

- Article 7: Designated port
- Article 8: Advance request for port entry

Part: Inspections and Follow-Up Action

- Article 12: Levels and priorities for inspection
- Article 15: Transmittal of inspection results
- Article 16: Electronic exchange of information
- Article 17: Training of inspectors
- Article 18: Port State actions following inspection

Recommendations for Regional cooperation to support the implementation of PSM

Part: Entry Into Port

Article 7: Designated port

- Encourage AMS to identify designated ports for foreign fishing vessel and encourage not to allow foreign fishing vessel to unload fish and fishery products in non-designated ports.
- The list of designed ports should include information of the name of the port, address of location, contact person and his/her designation as well as official website in English version.
- SEAFDEC shall publicize the information of AMS' s designated ports.

Recommendations for Regional cooperation to support the implementation of PSM

Part: Entry Into Port

Article 8: Advance request for port entry

- AMS shall require, as a minimum standard, the information requested in **Annex A** or relevant document to be adopted by AMS to be provided before granting entry to a vessel to its port.
- To support the implementation by port State, database module of the list of vessels shall be expansion developed based on the existing Regional Fishing Vessels Record (RFVR).

Recommendations for Regional cooperation to support the implementation of PSM

Part: Inspections and Follow-Up Action

Article 12: Levels and priorities for inspection

- Adopt the Standard Operating Procedures (SOP) on the risk assessment and inspection of vessels through the harmonization/consultation workshop.
- AMS may consider minimum levels for inspection of vessels through, as appropriate, agreement among all AMSs.
- To support inspection of the vessels, the historical data/information of vessel are required in the database module of vessels.

Recommendations for Regional cooperation to support the implementation of PSM

Part: Inspections and Follow-Up Action

Article 15: Transmittal of inspection results

- AMS shall transmit the results of each inspection to the flag State of the inspected vessel
- AMS shall submit SEAFDEC the total number of inspection annually.
- When AMS flagged vessel has been denied entry, denied the use of port or denied the landing of fish, the port State needs to share the summary report of inspection to SEAFDEC.

Recommendations for Regional cooperation to support the implementation of PSM

Part: Inspections and Follow-Up Action

Article 16: Electronic exchange of information

- To facilitate implementation of this Regional Cooperation, each AMS, where possible, establish a communication mechanism that allows for direct electronic exchange of information, with due regard to appropriate confidentiality requirements. In addition, AMS should cooperate to establish an information-sharing mechanism by SEAFDEC to facilitate the exchange of information with existing database for this cooperation.

Recommendations for Regional cooperation to support the implementation of PSM

Part: Inspections and Follow-Up Action

Article 17: Training of inspectors

- Request FAO, RFMOs, ASEAN, SEAFDEC and relevant agencies on training of trainer for port inspections including legal and operational aspects with an emphasis on practical hands-on component
- Develop a network/team among AMSs on training of trainer for port inspections
- Consider an existing training module developed by RPOA-IUU in collaboration with the Australian Maritime on port inspections to support the TOT programs.

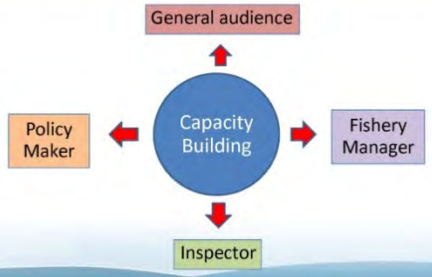
Recommendations for Regional cooperation to support the implementation of PSM

Part: Inspections and Follow-Up Action

Article 18: Port State actions following inspection

- Publicize and awareness building on standard inspection procedure

Identification of Capacity Building Requirements



Way forward to support PSM in the region

- Workshop on Regional Cooperation for Implementation of PSM to Improve Fisheries Management and Reduce IUU Fishing in Southeast Asia (7-10 November 2016)
- Technical Workshop for the SOP on Vessel Inspection at Port and Information Sharing for Database System (2017)
- Development of the Database System (2017-2018)
- The Regional Training on PSM Implementation in Southeast Asia (2017)
- On-site Training to Support Implementation on PSM for Inspector (2018-2019)

"Strengthen Malaysian and Thai partnership in support of joint fisheries planning and management in the Western Gulf of Thailand"

July 2014 – Dec 2015

Implement by: Working team from Thailand and Malaysia

- **Facilitated by :** TD and MFRDMD

Project Activities Implementation

- **Objectives:**
  - To support the dialogue between Malaysia and Thailand by conducting a survey and documentation of baseline information relevant to the monitoring and control of fishing effort and landings;
  - To gather information on fishing effort in areas of Malaysia and Thailand; and
  - To strengthen Malaysian and Thai in support of joint fisheries planning and management and the combating of IUU fishing.

Project Activities Implementation

- **Expected Outputs:**
  - ❖ An established working team composed of members from Malaysian and Thai government and independent institutions (local/central – mostly provincial) of relevance to implement the activities
  - ❖ A report on available information on fishing effort (vessels, gear and people) in areas of Malaysia and Thailand
  - ❖ Documented baseline information relevant to joint ambitions to improve monitoring and control of fishing effort and fish landings in the Southwestern Gulf of Thailand (Malaysia and Thailand)

Planning of Project Implementation

Establishment of working Team	TD, MFRDMD, TH, MH	July - Nov14
Meeting with the working team	Working team	Mar 15
Research and survey in TH, MH	Working team	Apr- Sep15
Data analysis	TD, MFRDMD	Oct –Nov 15
Working team meeting for result discussion	Working team	Mar 16
Sub-regional technical meeting between Thailand and Malaysia	TD, MFRDMD, TH, MH	2016

Activities Implementation

- Establishment of Working teams:
  - Malaysia (3 DOF; 3 FDAM)
  - Thailand (6 DOF; 3 FMO)
  - TD (7)
  - MFRDMD (5)
- Working team Meeting in Malaysia and Thailand (March 2015)


Activities Implementation

- **Baseline survey on fishing effort and landing in the Southwestern Gulf of Thailand (Apr-Sep 2015)**
  - Questionnaire design by working team
    - Part I: Vessels Information
    - Part II: Fishing Operation and Fish Landing Information
  - Survey areas

Malaysia (Zone C, C2)	Thailand (16 Meters and over)
Kelantan	Songkhla
Terengganu	Pattani
Pahang	Narathiwat

Activities Implementation

- **Internal meeting for data analysis (November 2016)**


- **On-site data verification in Malaysia and Thailand (February 2016)**


Activities Implementation

- **Working team meeting for result discussion (February 2016)**


- **Report on baseline survey on fishing effort and landing in the Southwestern Gulf of Thailand**

Annex 20

Group discussion on the work plan development

Group 1: Trans-boundary fisheries resources management

Fisheries/ themes	Key issues	Challenges	Possible actions/ plans to be developed	Priority (high- within 1 year, medium-within 2 years, low-within 3+ years)				Expected outcomes by 2018	Timeline (Ranking 1-5 = 2017, 6-8= 2018)	Ranking
				ID	MY	MM	TH			
Indian Mackerel Short Mackerel Hilsa shad Neritic tunas Sharks and rays	Information for fisheries management incomplete	management is needed even in data poor situation; limited human resource and financial capacity	improve fisheries management information (biological, economic, social, governance - as appropriate)	H	H	H	M	Updated information on biological , socio-economic, government aspect compiled to be used for developing management measures of target species; Management measure for Kawakawa and Longtail tuna developed taking into account information from activities under RPOA Neritic Tunas	2017	2
	migration patterns unclear		for Indian Mackerel - treat as one stock as precautionary approach					Initial analysis of migration pattern of target species based on information available in Andaman countries	2017	
	unknown stock sizes		stock assessment	M	H	H	L	Accurate data on fishing and effort of target species shared among Andaman countries for stock	2017	4

Fisheries/ themes	Key issues	Challenges	Possible actions/ plans to be developed	Priority (high- within 1 year, medium-within 2 years, low-within 3+ years)				Expected outcomes by 2018	Timeline (Ranking 1-5 = 2017, 6-8= 2018)	Ranking
				ID	MY	MM	TH			
								assessment		
	Insufficient knowledge on spawning seasons and areas		*e.g.* plankton survey	M	H	M	L	Spawning seasons and areas of some target species determined based on shared results of national plankton and larvae surveys	2017	5
	limited capacity to develop transboundary management actions		Expand multilateral *e.g.* Thailand-Myanmar working group (MoU under finalization) or Malaysia-Thailand GoT example to other countries and broader management issues, especially for data collection	M	M	M	M	Bilateral and /or tri-lateral arrangement among Andaman countries established for data collection and trans-boundary fisheries management though conduct of series of meetings among the countries	2017	5
	National management frameworks not harmonized among 4		generate political will to harmonize (if not joint) management	H	H	H	already done	Focal points of Andaman countries designated and empowered to convince policy-makers to harmonize management frameworks taking into consideration scientific on information on	2017	4

Fisheries/ themes	Key issues	Challenges	Possible actions/ plans to be developed	Priority (high- within 1 year, medium-within 2 years, low-within 3+ years)				Expected outcomes by 2018	Timeline (Ranking 1-5 = 2017, 6-8= 2018)	Ranking
				ID	MY	MM	TH			
	countries							the target species		
			focal points to write joint letter to DG to support management harmonization	H	H	H	H	Focal points become capable of convincing policy-makers to support management harmonization	2017	1
	No clear joint policy (or policy for joint action - no mandate - no call for joint management)		Establish joint management advisory council/working group/task force (*e.g.* comprising 1 fisheries manager and 1 scientist from each country)	M	M	M	M	Joint management advisory council to comprise one fisheries manager and one scientist from each countries in the Andaman countries Sub-region established	2017	5
	Standardized statistics framework exist but heterogeneous data collection (human and financial		improve fisheries statistics through capacity development	H	M	H	M	Funds become available for the conduct of training to improve compilation of fisheries statistical data	2017	3

Fisheries/ themes	Key issues	Challenges	Possible actions/ plans to be developed	Priority (high- within 1 year, medium-within 2 years, low-within 3+ years)				Expected outcomes by 2018	Timeline (Ranking 1-5 = 2017, 6-8= 2018)	Ranking
				ID	MY	MM	TH			
	capacities)									
	Coastal infrastructure (*e.g.* port development) impacting fisheries		improve cross-sectoral management (*e.g.* ICZM, EBM, EAFM, good governance)	M	M	M	M	Impact of coastal infrastructure development minimized by adopting cross-sectoral fisheries management tools	2017	5
	Management not inclusive of other stakeholders		formalize stakeholder involvement in management planning and implementation	M	done	H	M	Increased involvement of all stakeholders (at all levels) from planning stage to implementation of relevant activities	2018	6
	Insufficient M&E of management actions and outcomes (social, biological, economic, etc)		make mandatory and improve M&E capacities	L	L	H	L biodiversity/ M social especially SSF	M&E aspects integrated in planning stage of all activities and training conducted to improve capacity to conduct M&E and impact assessment	2018	7(Bio) 6(Socio)

Fisheries/ themes	Key issues	Challenges	Possible actions/ plans to be developed	Priority (high- within 1 year, medium-within 2 years, low-within 3+ years)				Expected outcomes by 2018	Timeline (Ranking 1-5 = 2017, 6-8= 2018)	Ranking
				ID	MY	MM	TH			
	Unclear understanding of climate variability and change on fisheries		improved knowledge and awareness	done	M	M	L	Knowledge and awareness on impacts of climate variability and change on fisheries enhanced through regular sharing of relevant experiences among the Andaman countries	2018	8
	Mackerel, hilsa, sharks (as applicable) working groups established under BOBLME inactive		new appointments of working group members	M	M (mackerel, sharks)	M (hilsa, mackerel)	M (sharks)	Working group for each target species designated and/or reactivated by the countries	2017	5
	Dependence on projects for activities (working groups, etc)		formalized/institutionalized working groups (as relevant)	M	M (mackere, sharks)	M (hilsa, mackerel)	M (sharks)	Function of established working group sustained by the countries	2017	5
	Cross-ministerial		Learn from Andaman countries where this	M	M	M	M	Cross-ministerial collaboration among	2017	5

Fisheries/ themes	Key issues	Challenges	Possible actions/ plans to be developed	Priority (high- within 1 year, medium-within 2 years, low-within 3+ years)				Expected outcomes by 2018	Timeline (Ranking 1-5 = 2017, 6-8= 2018)	Ranking
				ID	MY	MM	TH			
	collaboration (*e.g.* environment, tourism, natural resources) insufficient		is working					Andaman countries strengthened		
	Management at different scales (from local to national/international) may not always be coherent		Coherent action plans at different scales	M (from national to intl)	M (from national to intl)	H	M	Action plans are in line with management plans at various levels	2017	4
	Academic research is not necessarily fisheries management oriented		Promote research that supports fisheries management	M	done	M	L	Research activities on fisheries management are incorporated in academic program and results of academic research are used by policy-makers for sustainable fisheries management	2018	8

Observation - cross-cutting issues, like gender, information management missing

Working Groups	Existing?	Leadership
Hilsa	old BOBLME WG	IUCN
Neritic tunas		SEAFDEC/Sweden
MPA		IUCN/MFF
Sharks	old BOBLME WG	JPN trust fund
Indian mackerel	old BOBLME WG	SEAFDEC/Sweden
EAFM working group/task force	Malaysia and Indonesia existing, Myanmar and Thailand to learn	

Annex 21

Group Discussion: 2

Management of Fishing Capacity and to Improve/reduce Unregulated Fishing, to Avoid Unrecorded and Combat Illegal Fishing

Key issues	Need Action		Concerned Institutions (Regional)
	National	**Sub-regional**	
1. Assessment of fishing capacity			
- Limited data/Information (Double flag, number of fishing vessels)	Strengthening the local administration on data collection online (ID)	Data compilation and sharing	SEAFDEC/MFRDMD TD
- Unclear stock status	Capacity building	- Stock assessment (selected economically species) at sub-regional Andaman Sea; - Conduct the baseline survey for fishery dependent and independent	Research institution of ID, MFRDMD, TD
- Unclear area of spawning	Identify the spawning areas of some economically species	Working closely with Fish Refugia Project	SEAFDEC/UNEP/GEF project
- Methodology of assessment of active fishing capacity	Capacity building	Standardize/comparative Assessment	SEAFDEC and FAO and Involvement of relevant regional institutions
- Lack of human resource/Expert	Involvement of relevant national institutions Human resource development	Regional Training Program	Involvement of relevant regional institutions
- Effective Policy and Legal framework (reporting of catch, catch, changing of gear without authorization)	Amendment the existing national policy and legal framework	Compare the national laws between Member States	
2. Preparation and Implementation of National			

Key issues	Need Action		Concerned Institutions (Regional)
	National	Sub-regional	
1. Assessment of fishing capacity			
Plans			
- Lack of knowledge on development of the NPOA (national stakeholders consultation) (Myanmar)	Adapt the RPOA-Capacity	Technical assistance from Regional/International Org. Lesson learnt from relevant ASEAN Member States (such as DOF/MY)	SEAFDEC/FAO ASEAN Member state(s)
3. Required Urgent Measure for Regional Fisheries Management			
- Require Exchange data and information	Forming national working group	Require a bilateral/trilateral dialogue/joint working group	SEAFDEC
- Require Catch documentation for exportation to other AMS (including Catch Verification System)	Conduct the pilot testing system of the ACDS	Support the relevant AMS under the agreed framework	SEAFDEC
4. Mechanisms to Promote of the Implementation			
- Lack of implementation and network for M, C, and S.	Identify and build national network for M,C,S (including responsible institutions) Build the connecting national network to the existing shipping system (such as in Malacca Strait)	Extend national network to sub-regional network Establish the coordination mechanism including identify the focal point or contact person (s)	
- Lack of public awareness to improve fishing capacity to combat the IUU fishing	Information and educational campaign to understand international regional and national instruments,	Coordinate among the Andaman Countries for sharing of information at country level.	