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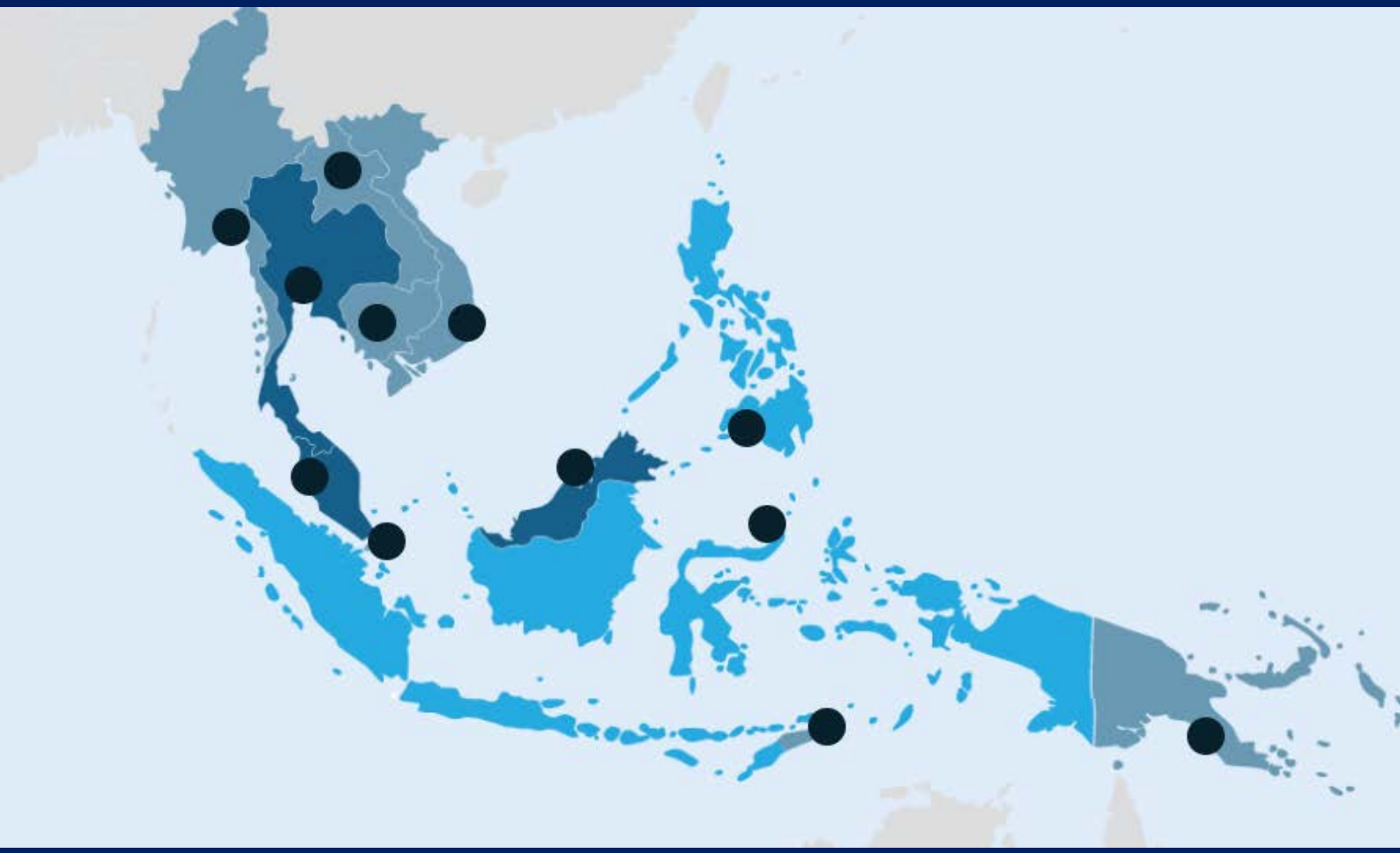
The USAID Oceans and Fisheries Partnership (USAID Oceans)

Southeast Asia Fisheries Management Planning Workshop:
Taking the Sub-Regional Approach

Meeting Report | 23-25 August 2017, Bangkok, Thailand



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ACRONYMS AND ABBREVIATIONS

ACDS	ASEAN Catch Documentation Scheme
ADB	Asian Development Bank
AFMA	Agriculture and Fisheries Modernization Act
AMS	ASEAN Member States
ARD	Associates in Rural Development (Tetra Tech)
ARMM	Autonomous Region of Muslim Mindanao
ASDP	Agriculture Strategic Development Plan
ASEAN	Association of Southeast Asian Nations
ASIC	Asian Seafood Improvement Collaborative
AVA	Agri-Food and Veterinary Authority of Singapore
AW-CITES-WEN	ASEAN Working Group on CITES and Wildlife Enforcement
BAS	Bureau of Agricultural Statistics
BFAR	Bureau of Fisheries and Aquatic Resources
BIMP-EAGA	Brunei-Indonesia-Malaysia-Philippines East ASEAN Growth Area
BoatR	Boat Registration
CBCRM	Community-based coastal resource management
CCRF	Code of Conduct for Responsible Fisheries
CDS	catch documentation scheme
CDT	catch documentation and traceability
CDTS	Catch Documentation and Traceability System
CEPA	Conservation and Environment Protection Authority
CFIs	community fisheries
CI	Conservation International
CNFIDP	Comprehensive National Fisheries Industry Development Program
COASTFISH	Sustainable Coastal Fisheries and Poverty Reduction Initiative
COM	Council of Ministers
CSO	civil society organization; Committee of Senior Officials
CTC	Coral Triangle Center
CTI-CFF	Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security
CTIP	Counter Trafficking in Persons
DENR	Department of Environment and Natural Resources
DFA	Department of Foreign Affairs
DG-MARE	Director General for Maritime Affairs and Fisheries-European Commission
DICT	Department of Information and Communications Technology
DOF	Department of Fisheries
DOI	Department of the Interior
DTI	Department of Trade and Industry
EAF	ecosystems approach to fisheries
EAFM LEAD	EAFM for Leaders, Executives and Decision-makers
EAFM	Ecosystem Approach to Fisheries Management
E-EAFM	Essential EAFM
EEZ	exclusive economic zone
EM	Electronic Monitoring System
ERS	Electronic Reporting System
EU	European Union
FAD	fish aggregating device
FAO	Food and Agriculture Organization
FARMC	Fisheries and Aquatic Resources Management Council
FGD	focus group discussion
FIP	Fishery Improvement Project; forward inspection point
FIS	Fisheries Information System
FMA	Fisheries Management Area
FMC	Fisheries Management Committees
FMP	fisheries management plan
GDP	gross domestic product
GEF	Global Environment Facility

GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GOT	Gulf of Thailand
GVA	gross value added
GWG	Governance Working Group
HCR	harvest control rule
IOTC	Indian Ocean Tuna Commission
IRFiM	Implementation of Reef Fish Management
ISSF	International Seafood Sustainability Foundation
IUCN	International Union for Conservation of Nature
IUU	illegal, unreported, and unregulated (fishing)
IUUF	illegal, unreported, and unregulated fishing
JTF	Japan Trust Fund
KDE	Key Data Element
KHM	Cambodia
KII	key informant interview
Lao PDR	Lao People's Democratic Republic
LAO	Lao People's Democratic Republic
LGBTI	Lesbian, Gay, Bisexual, Transgender and Intersex community
LGC	Local Government Code
LGN	Local Government Network
LGU	Local Government Unit
LMMA	locally managed marine area
M&E	monitoring and evaluation
MAFF	Ministry of Agriculture, Forestry and Fisheries
MARINA	Maritime Industry Authority
MCPD	Marine Catch Purchasing Document
MCS	monitoring, control and surveillance
MCSCOC	Monitoring Control and Surveillance Coordinating and Operations Centers
MCTD	Marine Catch Transshipment Document
MDG	Millennium Development Goal
MDPI	Yayasan Masyarakat dan Perikanan Indonesia
MECC	Maritime Enforcement Coordination Center
MECDM	Ministry of Environment, Climate, Disaster Management and Meteorology
MFF	Myanmar Fisheries Federation
MFFA	Myanmar Marine Fisheries Association
MFRD	Marine Fisheries Research Department
MFRDMD	Marine Fishery Resources Development and Management Department
MMAF	Ministry of Marine Affairs and Fisheries
MMR	Myanmar
MOSTI	Ministry of Science, Technology and Innovation
MOU	memorandum of understanding
MPA	marine protected area
MRC	Mekong River Commission
MSC	Marine Stewardship Council
MYS	maximum sustainable yield
NAFC	National Agriculture and Fisheries Council
NAMRIA	National Mapping and Resource Information Agency
NCC	National Coordinating Committee
NCIE	National Committee on Illegal Entrants
NCPO	National Council for Peace and Order
NFARMC	National Fisheries and Aquatic Resources Management Council
NFRDI	National Fisheries Research and Development Institute
NGA	national government agency
NGO	non-governmental organization
NMCC	National Maritime Coordinating Centre
NOAA	National Oceanic and Atmospheric Administration
NPCI	National Plan of Control and Inspection
NPOA	National Plan of Action
NTIC	National Tuna Industry Council
OCAG	Office of the City Agriculturist

PCAMRD	Philippine Council for Aquatic and Marine Research and Development
PFDA	Philippine Fisheries Development Authority
PIPO	Port In-Port Out
PNG	Papua New Guinea
PPA	Philippine Ports Authority
PPP	public-private partnership
PPS	Processing Statement System
PSM	Port State Measures
PSMA	Port State Measures Agreement
RA	Republic Act
RAFMS	rapid appraisal of fisheries management system
RDMA	Regional Development Mission for Asia
REBYC II-CTI	Bycatch Reduction Project Phase II
RETA	Regional Technical Assistance
RFMO	Regional Fisheries Management Organisation
RGC	Royal Government of Cambodia
RPOA	Regional Plan of Action
RPOA-IUU	Regional Plan of Action to Promote Responsible Fishing Practices including Combating Illegal, Unreported and Unregulated Fishing in the Region
RS III	Rectangular Strategy for Growth, Employment, Equity and Efficiency Phase III
SCS	South China Sea
SDG	Sustainable Development Goal
SEA	Southeast Asia
SEAFDEC	Southeast Asian Fisheries Development Center
SEI	Stockholm Environment Institute
SFMP	sustainable fisheries management plan
SIMP	Seafood Imports Monitoring Program
SIOFA	Southern Indian Ocean Fisheries Agreement
SOACAP-IFM	Strengthening Organizational and Administrative Capacity for Improved Fisheries Management
SOCCSKSARGEN	South Cotabato, Cotabato, Sultan Kudarat, Sarangani, General Santos City
SPF	Strategic Planning Framework
SSF	Sustainable Small-Scale Fisheries
SSME	Sulu-Sulawesi Marine Ecoregion
SSS	Sulu Sulawesi Seas
TBD	to be decided
TD	Training Department
TED	turtle excluder device
THA	Thailand
TIHPA	Turtle Islands Heritage Protected Area
TNC	The Nature Conservancy
TOR	Terms of Reference
ToT	Training of Trainers
TWG	technical working group
U.S.	United States
UNEP	United Nations Environment Programme
UNSRAT	Universitas Sam Ratulangi
USAID Oceans	USAID Oceans and Fisheries Partnership
USAID	United States Agency for International Development
USG	United States Government
VC	value chain
VCA	value chain analysis
VMS	vessel monitoring system
WCPFC	Western and Central Pacific Fisheries Commission
WID	women in development
WinFish	National Network on Women in Fisheries in the Philippines
WLF	Women Leaders' Forum
WOC	World Ocean Council
WoCAN	Women Organizing for Change in Agriculture and Natural Resource Management
WWF	World Wide Fund for Nature

EXECUTIVE SUMMARY

On 23-25 August 2017, the Oceans and Fisheries Partnership (USAID Oceans) and partner, the Southeast Asian Fisheries Development Center (SEAFDEC), held a workshop in Bangkok, Thailand, to help strengthen fisheries management in Southeast Asia through a sub-regional and ecosystem approach. The workshop, entitled the "Southeast Asia Fisheries Management Planning Workshop: Taking the Sub-Regional Approach," was attended by 92 participants from 10 member-states of SEAFDEC and the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI-CFF) and several organizations undertaking fisheries management work in the Southeast Asia region.

Objectives

The workshop had four specific objectives, as follows:

1. Determine the status of fisheries management implementation modalities with a focus on an ecosystem approach to fisheries management (EAFM) in the Southeast Asia region at national, sub-regional and regional levels;
2. Share experiences and lessons of fisheries management implementation in the Southeast Asia region
3. Develop, revisit, finalize and agree sub-regional fisheries management framework and modalities; and
4. Strengthen human and institutional capacity of regional organizations to conserve marine biodiversity, including actions to combat illegal, unreported and unregulated (IUU) fishing.

The workshop was planned alongside and held immediately after a two-day USAID Oceans Gender Strategies Implementation Workshop (21-22 August 2017) to allow gender experts to participate in and contribute to the workshop, ensuring attention would be given to the human welfare dimension of fisheries management.

Summary of Proceedings

The workshop started and ended in plenary session, but substantially consisted of breakout sessions focused on developing a framework plan for each of three sub-regions in Southeast Asia identified for management, namely, the (1) Andaman Sea Sub-region; (2) South China Sea-Gulf of Thailand Sub-region; and (3) Sulu-Sulawesi Sea Sub-region.

Broadly, the workshop was divided into three main parts, as follows:

- Plenary presentations of fisheries management initiatives by the participating countries and invited international/regional organizations and programs;
- Parallel group discussions to develop draft EAFM framework plans for the three sub-regions in focus; and
- Plenary presentations of group report-outs.

Day 1

The workshop opened with welcome and introductory remarks from Mr. Geronimo Silvestre, USAID Oceans Chief of Party, who underscored the significance of understanding EAFM. The core of USAID Oceans' work is to develop a catch documentation and traceability (CDT) system for the region to help combat IUU fishing. "We have to be able to understand the EAFM infrastructure to make the CDT system more robust to protect the integrity of the inputs into that system so that it does not result in the reverse, which is legitimizing IUU-sourced fish."

Also speaking during the opening session were Ms. Aurelia Micko, Deputy Director of USAID Regional Development Mission for Asia (RDMA) Regional Environment Office, and Dr. Kom Silapajarn, Secretary-General of SEAFDEC.

Ms. Micko affirmed Mr. Silvestre's point, noting that while CDT is the driving force behind USAID Oceans, EAFM "is what makes everything else work." She said, "EAFM is that basic premise of a system that is well integrated, that accounts for not just the ecosystem and resource values, but integrates as well with the social values and resources, including labor and others."

Dr. Silapajarn noted the significance of the Workshop: "[This] Workshop provides us with a precious opportunity to discuss and address appropriate fisheries management especially in the transboundary areas between the countries in Southeast Asia and the Coral Triangle," he said, thus signaling the official start of the workshop.

The bulk of the day was spent in a four-hour plenary session listening to presentations from the member countries and six regional fisheries management initiatives in Southeast Asia, namely, the Food and Agriculture Organization (FAO); SEAFDEC; SEAFDEC-Sweden; CTI-CFF; the Asian Development Bank (ADB) Coral Triangle Initiative-Southeast Asia (CTI-SEA); and the U.S. National Oceanic and Atmospheric Administration (NOAA).

Member countries presented fisheries information and challenges to preface breakout planning sessions.

The presentations covered not only management actions but also issues and threats, lessons learned and opportunities. They highlighted differences in scale and approaches, institutional arrangements, and sometimes priorities, but also revealed many commonalities between countries that set the tone for the rest of the workshop.

The last session of the day was the first of the workshop's three breakout sessions aimed at developing a fisheries management framework plan for each of the three sub-regions in focus. Participants broke into their sub-regional groups and did not reconvene in plenary session until the next day.

Participants work in breakout sessions to identify primary drivers of the regions' key challenges.

Day 2

Day 2 was held as breakout sessions except for the opening recap, which was done in plenary session, and a short plenary sharing session after the lunch break to address the questions: What are reasonable targets at the sub-regional level and what can effectively be done to achieve those targets without infringing on national sovereignty?

The idea was put forward of "nested concepts" as a way for countries to reach agreement on common vision, goals and objectives, and that, on matters of human welfare and governance, the plan "should be mindful of the national context."

Day 3

Participants spent the first half of Day 3 in their respective breakout groups finishing their discussions. On returning to plenary, the three groups presented in summary form their "draft framework plans," which reinforced how closely the countries are linked in terms of fishery resources and the issues they face.

A progress review and feedback session followed the report-outs. The facilitators provided their assessment of the progress achieved by the workshop towards key objectives, after which each of the delegations gave their feedback. Overall, the room agreed that the workshop met everyone's expectations and was productive and applicable to the countries' fisheries concerns.

SEAFDEC's Dr. Somboon Siriraksophon remarked: "We now have a lot of plans. What is important now is cooperation to implement. "

The Closing Session included remarks from Mr. Silvestre, USAID RDMA Regional Environment Office Director Angela Hogg, and Dr. Silapajarn.

Mr. Silvestre assured the countries of continued assistance from the USAID Oceans Partnership, saying, "You can expect to hear from us on the follow-up actions, in coordination, of course, with our SEAFDEC colleagues… We have every intention to get the sub-regional plans to action and implementation and we look forward to your cooperation on our next steps to be able to bring that about."

Ms. Hogg took the occasion to announce a new USAID Oceans' partnership with the UK satellite telecommunications company Inmarsat. "Inmarsat has been connecting the maritime world for more than 30 years. Through this new partnership, USAID Oceans and Inmarsat will work together to bring cutting edge technology to fishing vessels to support the capture and transmission of critical traceability data," she said.

And, finally, Dr. Silapajarn declared the workshop "officially closed," but not before thanking participants for their contributions, and noting that "such contributions will ensure the sustainability of EAFM in our region."

Outputs

The workshop outputs were as follows:

- Report based on presentations by the ASEAN delegations of the status of fisheries management in their respective countries complemented by presentations from international/regional organizations and programs;
- Synthesis of the experiences and lessons learned; and
- Three regional framework plans for the Sulu-Sulawesi Sea, South China Sea-Gulf of Thailand and Andaman Sea.

Next Steps

<table>
<tr><th>Sulu-Sulawesi Sub-Region</th><th>South China Sea-Gulf of Thailand Sub-Region</th><th>Andaman Sea Sub-Region</th></tr>
<tr><td>• Sep 2017 – Share updated draft of Sulu-Sulawesi Seascape EAFM sub-regional plan
• Sep/Oct 2017 – National-level review and comment on updated draft
• Sep-Nov 2017 – Present revised version of Sulu-Sulawesi Seascape EAFM sub-regional plan to CTI-CFF; explore option for US Department of the Interior/CTI-CFF Program to convene another workshop to refine and finalize the plan
• Early mid-2018 – Convene 3rd Sulu-Sulawesi Seascape EAFM sub-regional planning workshop</td><td>• Develop Draft Sub-Regional EAFM Framework Plan
• Consultation/meeting – not only at the TWG level, a higher-level committee to review the plan
• Plan implementation</td><td>• Develop the Bay of Bengal Large Marine Ecoregion and Andaman Sea Sub-Regional Programs/ Projects
• Replicate the methodology/process used in this Workshop
• Use outcomes from this Workshop at the next Andaman Sea Sub-Regional Meeting (c/o SEAFDEC)
• Apply lessons learned
Consider marine survey plan to increase knowledge of the fisheries resources in the Andaman Sea Sub-region and gain support for fisheries management action</td></tr>
<tr><td></td><td colspan="2">• Craft the framework plans and circulate for comments</td></tr>
<tr><td colspan="3">• Circulate draft reports from this Workshop for edits and finalize
• Report Workshop outputs to the Asia Pacific Fisheries Commission Regional Consultative Forum in May 2018
• EAFM 101: Linking EAFM to CDT: Workshop participants invited to comment</td></tr>
</table>

1. INTRODUCTION

The Southeast Asia Fisheries Management Planning Workshop: Taking the Sub-Regional Approach was successfully conducted by the Oceans and Fisheries Partnership (USAID Oceans) and the Southeast Asian Fisheries Development Center (SEAFDEC), 23-25 August 2017 at Jasmine City Hotel, Bangkok, Thailand. The workshop was attended by 92 participants composed of 39 delegates and 10 countries from SEAFDEC and Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI-CFF) member countries, representatives of the implementing and technical partners of USAID Oceans and other international/regional organizations undertaking fisheries management work in the Southeast Asia region.

USAID Oceans is a five-year program, May 2015 – May 2020, working in partnership with SEAFDEC, CTI-CFF and USAID's Regional Development Mission for Asia (USAID/RDMA) in a mission to help strengthen regional capacity to combat illegal, unreported and unregulated (IUU) fishing and seafood fraud, promote sustainable fisheries, and help conserve marine biodiversity. The regional program engages a total of 13 SEAFDEC and CTI-CFF member countries, namely, Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Solomon Islands, Thailand, Timor-Leste and Vietnam.

The project is supported by USAID's Regional Development Mission for Asia (USAID/RDMA) working in close coordination with U.S. Government agencies, specifically, the National Oceanic and Atmospheric Administration (NOAA), Department of the Interior (DOI), and Department of State. Implementation is undertaken by three "implementing partners," namely, Tetra Tech ARD, the prime contractor for USAID Oceans; SSG Advisors; and the global non-profit Verité, with "technical partners" that include, among others, the Food and Agriculture Organization (FAO) of the United Nations (UN), FishWise, The Government of Sweden, Government of Japan through the Japan Trust Fund (JTF), International Seafood Sustainability Foundation (ISSF), Marine Stewardship Council (MSC), and Yayasan Masyarakat dan Perikanan Indonesia (MDPI).

Figure 1. Participants at the Southeast Asia Fisheries Management Planning Workshop

1.1 Context

The Asia-Pacific region hosts some of the world's richest fisheries and accounts for more than half of the world's marine capture fisheries production. But tremendous pressure from various factors has caused many of the economically important fish stocks in this region to become overfished. Among them, IUU fishing has been particularly damaging. In 2000-2003, annual losses to IUU fishing in the Asia-Pacific region were estimated at 3.4-8.1 million tons of fish valued at between US$3.1 billion and US$7.3 billion per year, or

roughly 7-16% of the reported 48 million tons of catch from the Pacific Ocean in recent years.[1, 2] This poses a grave threat to the food security and well-being of the region's more than 630 million people[3].

There are many efforts to address the problem but, in many cases, the legal, institutional and regulatory frameworks lag behind current thinking on sustainable development in that they are still largely focused on fisheries management based primarily on concerns about decreasing fish production or overexploited fish stocks.

USAID Oceans aims to assist the countries to adapt to at least the minimum requirements of sustainable fisheries through an Ecosystem Approach to Fisheries Management (EAFM) that "strives to balance diverse societal objectives, by taking account of the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions, and applying an integrated approach to fisheries within ecologically meaningful boundaries."[4] This means encompassing "the bio-ecological, social, economic and governance dimensions of the fishery,"[5] as stipulated (albeit non-mandatorily) by the Code of Conduct for Responsible Fisheries (CCRF). The CCRF was unanimously adopted by the FAO Conference in 1995 and has been adapted to the Southeast Asian context through a regionalization program initiated by SEAFDEC in 1998.

The USAID Oceans mission is to combat IUU fishing and seafood fraud, promote sustainable fisheries and conserve marine biodiversity. Its EAFM work stream characterizes in an integrated manner the condition of the fisheries, identifies the associated threats and issues to the fisheries, prioritizes fisheries management objectives and develops EAFM plans to address these threats and issues. A traceability system can be successful in tracking marine resources but not necessarily promoting sustainability and biodiversity unless data is being actively used for management purposes. Hence, USAID Oceans supports the development and implementation of EAFM plans that include: the use of CDTS/FIS for monitoring fisheries, labor practices, and gender and to make decisions that improve the sustainability of the fisheries and safety of their workers.

The "sub-regional approach" to fisheries management was endorsed by the 49th Meeting of the SEAFDEC Council on April 3-7, 2017 as a platform to enable the countries to discuss and address fisheries management issues, including IUU fishing, in transboundary areas. This workshop was designed to help enable the SEAFDEC countries to respond to such endorsement by focusing on transboundary fisheries in the following three "sub-regions:"

1. Sulu Sulawesi Seas (Indonesia, Malaysia, and the Philippines);
2. Gulf of Thailand (Malaysia-Thailand; Cambodia-Vietnam) and South of China Sea (Brunei Darussalam, Indonesia, the Philippines and Singapore); and
3. Andaman Sea (Indonesia, Malaysia, Myanmar and Thailand)

1.2 Workshop Objectives and Expected Results

The Southeast Asia Fisheries Management Planning Workshop was designed to strengthen regional fisheries management and lay the foundation for sustainability and replication of fisheries management initiatives in Southeast Asia. Specifically, it was intended to:

1. Determine the status of fisheries management implementation modalities with a focus on EAFM in the Southeast Asia region at national, sub-regional and regional levels;

[1] Agnew DJ, Pearce J, Pramod G, Peatman T, Watson R, et al. (2009) Estimating the Worldwide Extent of Illegal Fishing. PLoS ONE 4(2): e4570. doi:10.1371/journal.pone.0004570
[2] FAO. 2016. The State of World Fisheries and Aquaculture 2016. Contributing to food security and nutrition for all. Rome. 200 pp.
[3] "Report for Selected Countries and Subjects". *World Economic. IMF.* Outlook Database, October 2016
[4] Garcia, S.M.; Zerb, A.; Aliaume, C; Do Chi, T.; Laserre, G. 2003. The ecosystem approach to fisheries. Issues, terminology, principles, institutional foundations, implementation and outlook. FAO Fisheries Technical Paper, No. 443. Rome, FAO. 71p.
[5] Cochrane, K.L.; Garcia, S.M. 2009. A Fishery Manager's Guidebook. 2nd ed. FAO and Blackwell Publishing. Singapore. 518p.

2. Share experiences and lessons of fisheries management implementation in the Southeast Asia region
3. Develop, revisit, finalize and agree sub-regional fisheries management framework and modalities; and
4. Strengthen human and institutional capacity of regional organizations to conserve marine biodiversity, including actions to combat IUU fishing.

To ensure that considerations of human well-being and individual and collective gender and labor rights were addressed during the discussions, the Workshop was held immediately following and included participants from the two-day USAID Oceans Gender Strategies Implementation Workshop (21-22 August 2017).

The expected outputs were as follows:

1. Report on the status of fisheries management implementation modalities with a focus on EAFM in the Southeast Asia region (national, sub-regional and regional initiatives);
2. Updated sub-regional fisheries framework plan for Sulu-Sulawesi Seas;
3. Key elements of framework plan to support harmonized fisheries management in national and sub-regional areas (South China Sea-Gulf of Thailand and Andaman Sea plans) for future initiatives; and
4. Documentation of the experiences and lessons in fisheries management in the Southeast Asia region (envisioned to be a SEAFDEC Regional Technical publication).

2. PROCEEDINGS

The workshop was divided into three main parts, as follows:

1. Plenary presentations of fisheries management initiatives by the 10 member countries and invited regional organizations and programs;
2. Parallel group discussions to develop draft EAFM framework plans for the three sub-regions in focus; and
3. Plenary presentations of group report-outs.

Participants spent most of their time in breakout sessions, where the country delegates split up for more focused discussions on their respective sub-regions of interest.

The conduct of the sessions was facilitated by Dr. Lily Ann Lando of WorldFish and a team of co-facilitators from USAID Oceans, SEAFDEC and WorldFish that included Mr. John Parks, Dr. Michael Pido, Mr. Len Garces, Dr. Arlene Satapornvanit and Mr. Paul Joseph Ramirez.

The plenary proceedings are reported below as they transpired, edited with reasonable interpretation where needed for clarity or concision.

There was a side event at the end of the Workshop to launch a new USAID Oceans partnership with the UK satellite telecommunications company Inmarsat. This is reported at the end of the main proceedings report.

2.1 Day 1 Proceedings

Agenda:

- Opening Session
- Workshop Orientation, Agenda and Objectives
- Participant Introductions and Expectations
- Session 1A: Presentation of national Fisheries Management in Southeast Asian Countries
- Session 1B: Presentation of Regional Fisheries Management Initiatives in Southeast Asia by Regional Organizations and Programs
- Session 2: Definition and Scope of the EAFM Area (Parallel Group Discussions by Sub-region)

Following the workshop opening, Session 1 was held as a plenary session that included 17 presentations from the 10 SEAFDEC and CTI-CFF member countries and invited regional organizations and programs. Session 2 followed, held as breakout discussions.

2.1.1 Opening Session

The Workshop opened with a panel of remarks by Mr. Geronimo Silvestre, USAID Oceans Chief of Party; Ms Aurelia Micko, Deputy Director of USAID/RDMA's Regional Environment Office; and Dr. Kom Silapajarn, Secretary-General of SEAFDEC.

Below are highlights of their remarks; the full text can be found in Annex V.

Welcome and Introductory Remarks: Geronimo Silvestre, Chief of Party, USAID Oceans

Mr. Silvestre reminded the room of USAID Oceans' mission: Increasing regional capacity and collaboration to combat IUU fishing and improve the sustainability of fisheries and marine biodiversity in the region. This is why EAFM is "a very important part of our work," he said, explaining that the core of USAID Oceans' work is to develop a CDT system appropriate for each of the countries involved in the program.

"It is imperative for us to understand the EAFM system that you have and the infrastructure that you have in place for EAFM for us to be able to put in the CDT system and ensure that it does combat IUU fishing," he stressed. "The last thing you would like to happen is for the CDT system to be used as an instrument for

legitimizing IUU-sourced fish. As they say for most databases, garbage in, garbage out. We have to be able to understand the EAFM infrastructure to make the CDT system more robust to protect the integrity of the inputs into that system so that it does not result in the reverse, which is legitimizing IUU-sourced fish."

Message: Aurelia Micko, Deputy Director of USAID/RDMA's Regional Environment Office

Ms. Micko echoed Mr. Silvestre's reminder about "garbage in, garbage out," saying catch documentation and traceability is only as good as the data and the work behind it. "For us it is imperative that we link our work on catch documentation and traceability with the underlying systems in place, and the systems that you have in country to protect and utilize resources to the best abilities. Those systems are what make the catch documentation and traceability system work."

Although the driving force behind USAID Oceans is catch documentation and traceability, EAFM "is what makes everything else work," Ms Micko agreed. "EAFM is that basic premise of a system that is well integrated, that accounts for not just the ecosystem and resource values, but integrates as well with the social values and resources, including labor and others. There are quite a few folks here from the Gender Working Group as well I understand, so I want to welcome you to the discussions because those are very important."

She added: "We are living at a time when the pressure on fishery resources is immense, and … many of you are in positions of being stewards of those resources. I think it will require a lot of your work and a lot of your attention, so thank you for that."

Welcome Remarks: Kom Silapajarn, Secretary-General, SEAFDEC

Dr. Silapajarn, while also focusing on the theme of sustainable fisheries through EAFM, underscored that EAFM is a concept that FAO has been promoting since 1995 with the adoption of the CCRF, which states that, rather than focus only on the fishery resources, fisheries management "could be enhanced with inputs relevant to the social component to address human well-being issues."

He reiterated the USAID Oceans' objective to develop a "financially sustainable regional catch documentation and traceability system to combat IUU fishing and seafood fraud," and the previous speakers' views of what that means. "To be effective, a CDT system needs to be based on sustainable fisheries management plans which provide the direction for achieving the desired multiple as well as short-term and long-term fisheries management objectives," he said.

"[This] Southeast Asia Fisheries Management Planning Workshop provides us with a precious opportunity to discuss and address appropriate fisheries management especially in the transboundary areas between the countries in Southeast Asia and the Coral Triangle," Dr. Silapajarn concluded, urging participants to "earnestly take part" in the discussions.

2.1.2 Workshop Orientation, Agenda and Objectives

Mr. Garces presented the Workshop overview "on behalf of our colleagues from the EAFM team of SEAFDEC." The presentation started with an explanation of USAID Oceans, pointing out that:

- USAID Oceans is a SEAFDEC project that operates under a partnership of the 10 member countries;
- USAID Oceans has four major components – CDT, EAFM, Human Welfare, and Public-Private Partnerships – that work together and in parallel to support the development of "a financially sustainable regional CDT system to combat IUU fishing and seafood fraud in areas where sustainable fisheries management is being applied";

- The EAFM Workstream is anchored on the FAO CCRF and has been regionalized for Southeast Asia through SEAFDEC's leadership. The EAFM approach described in a 2003 FAO publication[6] and a Plan of Action for Sustainable Fisheries and Food Security adopted by the ASEAN through a resolution of the SEAFDEC Council, which encourages the use of a sub-regional approach to strengthen the management of transboundary fisheries and fish stocks;
- USAID Oceans is also building on the EAFM work of CTI-CFF, particularly the "Draft EAFM Plan" that came out of the June 2015 Sulu-Sulawesi Seascape EAFM Implementation Planning Meeting in Manado, Indonesia;
- USAID Oceans has two Learning Sites – General Santos City in the Philippines and Bitung, North Sulawesi in Indonesia – where it is actively working on actual implementation of certain EAFM interventions in the local area and linked to national and sub-regional EAFM frameworks; and
- USAID Oceans intends to apply learnings from the two sites "to other areas in expansion countries and the three Pacific countries of the CTI-CFF."

The Workshop overview underscored the below points (as well as explaining the agenda, flow and objectives):

- This workshop was originally conceptualized "to advance the discussions on developing the sustainable fisheries management plan for the Sulu-Sulawesi sub-region, but we were advised by SEAFDEC that we should expand the discussion to also include other sub-regional areas as part of our goal of strengthening regional capacity for fisheries management and planning;"
- The workshop was now focused mainly on "developing sub-regional EAFM framework plans for Sulu-Sulawesi, the Gulf of Thailand and maybe South China Sea, and Andaman Sea"; and
- The workshop was scheduled back to back with the Regional Gender Workshop that was held earlier during the week "for us to be able to incorporate human welfare, gender and labor aspects in the sub-regional EAFM framework plans."

2.1.3 Participant Introductions and Key Expectations

Dr. Lando led the introductions around the room by asking a member of each delegation to do the individual introductions for his or her group. In all, there were 10 countries represented, and roughly the same number of regional organizations and programs undertaking fisheries management work in the Asia-Pacific region.

Participants were requested to fill out a pre-workshop assessment form that included a question on participants' workshop expectations. Participants expected to learn the country approaches to and experiences on EAFM implementation. In addition, they also wanted to learn about fisheries management methods and the subregions. On what they expected to share, participants said that they expected to share their country's experiences in EAFM management, and in developing fisheries management plans.

2.1.4 Session 1: Fisheries Management in Southeast Asia

This session was held in two parts. Presentations from the member countries on their fisheries management programs made up the first part, and presentations from regional organizations and programs comprised the second part. All told there were 11 country presentations (Malaysia had two) and six presentations on regional initiatives.

[6] Garcia, S.M.; Zerb, A.; Aliaume, C; Do Chi, T.; Laserre, G. 2003. The ecosystem approach to fisheries. Issues, terminology, principles, institutional foundations, implementation and outlook. FAO Fisheries Technical Paper, No. 443. Rome, FAO. 71p.

1A: Fisheries Management Initiatives by Country

The country presentations were largely organized around the below outline prescribed by the Workshop organizers. The presentations are detailed below in alphabetical order.

a. Fisheries profile
b. National fisheries management legislation
c. Fisheries management programs
d. Fisheries management issues and problems
e. IUU measures and fisheries management interventions
f. EAFM initiatives
g. Lessons learned and opportunities

➢ *Brunei Darussalam*

Presented by Mr. Irwan Haji Mohammad Noor, Head of Surveillance and Control Section, Department of Fisheries, Ministry of Primary Resources and Tourism

Figure 2. Brunei Darussalam location map and EEZ

Fisheries Profile

Located at the northwestern part of Borneo island, Brunei has a 130km coastline fronting the South China Sea, a total area of 38,600km^2 of marine territorial waters and exclusive economic zone (EEZ) extending to 200nm from the territorial sea baseline. (Figure 2)

Marine capture fish production is estimated at 21,300 MT valued at B$112 million per year, consisting of a variety of species, including Red snapper, Sardinella, Spanish mackerel, shrimp, squid, skipjack, and others, mostly from trawl, purse seine and longline fisheries.

The fishing industry is relatively small, with a commercial fishing fleet of 31 vessels (Table 1) and a total of 294 fishers. Fishing grounds are divided into four zones for use by certain sizes of fishing vessels and gear, as shown in Figure 3.

National Fisheries Management Legislation

The national legal system supporting the fisheries sector in Brunei Darussalam includes the following laws and regulations:

- Fisheries Order of 2009 – provides for the management and conservation of fisheries resources in Brunei Darussalam
- Brunei Darussalam Fishery Limits Act, Chapter 130 – states that the fishery limits "extend to 200 miles from the baselines from which the breadth of the territorial sea adjacent to Brunei Darussalam is measured"
- Fisheries Regulations (Fish Culture Farms) 2002
- Fisheries (Fish Processing Establishments) Regulations, 2002
- Fisheries (Fish Landing Complexes) Regulations, 2002
- Fisheries Regulations, 1984 (Subsidiary Legislation - Regulations under Section 5)

The Department of Fisheries is considering amendments to the legislation "to cover some current initiatives."

Fisheries Management Programs

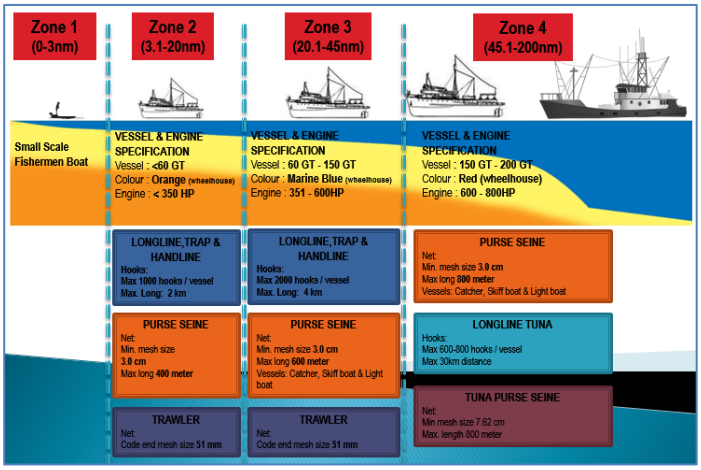
These include:

- Licensing – Fishing gear licenses issued annually
- Fisheries zoning system
- Moratorium on the issuance of new fishing licenses
- Moratorium on new applications for trawlers (in place since 2000)
- Moratorium on some small-scale fishing activities in Zone 1 (since 2008) to:
  - Increase fishery resources and breeding grounds especially in Zone 1
  - Promote recovery and sustainability of marine fishery resources
  - Reduce fishing pressure in Zone 1
- Enforcement of new mesh size regulations limiting mesh size to 51mm for the trawl cod end of all commercial trawlers
- Establishment of a network of marine protected areas (MPAs) to:
  - Conserve marine diversity
  - Ensure sustainability of marine fishery resources
  - Promote marine ecotourism activities (diving)
- Enforcement of regulation banning the catching, landing, and trading of all shark species (since 2015)
- Coral Conservation, Awareness, Rehabilitation and Enrichment (C.A.R.E) Programme
- Trawl Ban to be implemented beginning 2021 to:
  - Ensure recovery of fishery resources
  - Promote long-term food security
  - Encourage the use of non-destructive fishing gear to meet both livelihood needs and the requirements for conservation of marine resources and the environment
  - Maintain fishing effort at sustainable levels

Table 1. Commercial fishing fleet, Brunei Darussalam

Main gear types	Total fishing Vessels
Trawlers	20
Purse Seine	9
Longline	2

Figure 3. Fishing vessel and gear specifications by fishing zone, Brunei Darussalam



Fisheries management issues and problems

See Table 2.

Table 2. Major fishery issues and problems, Brunei Darussalam

Components	Issues/Problems
Ecological Well-being (Fisheries & Habitats)	• fishing with prohibited gears, mesh sizes and fishing techniques; • fishing with cyanide and blast fishing.
Human Well-being (including gender, labor, livelihoods)	• selection of jobs by local youth;
Governance & Institutions	• Limited human resources and assets for MCS activities.

Lessons learned and opportunities

Brunei Darussalam's fisheries management program offers both lessons and opportunities for managing fisheries for sustainability, particularly in terms of:

- Adoption of measures consistent with international fisheries instruments
- Continuous participation in fisheries-related regional organizations
- Sustained monitoring and assessment of fisheries resources and fishing capacity
- Strengthening of the national inter-agency coordination for monitoring, control, and surveillance (MCS) purposes through National Maritime Coordinating Centre (NMCC) under the Prime Minister's Office.
- Strong commitment to active collaboration with other countries in the region in assessing the status of fishery resources, combating IUU fishing, developing appropriate regional and bilateral MCS measures, and sharing fisheries-related information.

➢ *Cambodia*

Presented by Mr. You Chan Praseth, Deputy Director of Fisheries Conservation Department

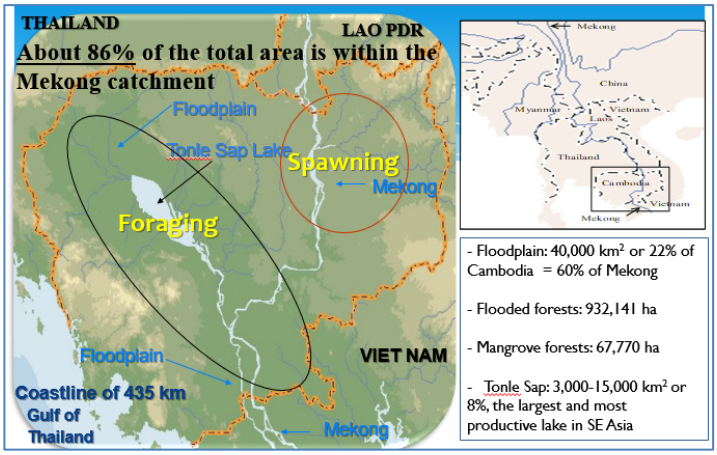
Fisheries profile

Cambodia's fisheries industry is divided into two major sectors, namely, marine fisheries and inland fisheries. Inland fisheries are mostly focused in Mekong River and the Tonle Sap Lake (Great Lake), while marine fisheries are located mostly along the coastal area in the Gulf of Thailand.

Cambodia's inland waters are also among the most diverse in the world: At least 500 fish species have been recorded in Cambodia's Mekong River, and 296 fish species are known to occur in Tonle Sap Lake. In the coastal area, major species include squid, Blue swimming crab, shrimp, and mackerel and various other pelagic species.

Data from the Fisheries Administration (FiA) show that wild capture fish production was around 629,450 MT in 2016, 81% of which (508.850 MT) came from inland fisheries, and the rest (120,600 MT or 19%) from marine fisheries. With an extensive river system covering 2.7% of its total surface area, Cambodia ranks No.4 in the world in inland fisheries production behind China, India and Bangladesh. The Tonle Sap Lake (Great Lake), a seasonally inundated fresh water lake that varies considerably in surface area over the course of a year from 3,000km^2 to 15,000km^2, is regarded as the largest and most productive lake in Southeast Asia, accounting for more than 60% of total fish production in the country.

Figure 4. Inland and marine waters, Cambodia



Total fisheries production including aquaculture was around 800,000 tons in 2016, valued at about US$1.25 billion, representing about 8-10% of Gross Domestic Product (GDP), or 26.4% of the total share of agriculture in GDP. Fisheries account for 81.5% of total animal protein intake, and six million Cambodians are involved in fishing and fishing-related activities, or 45.5% of the total population of around 15 million. Of these, 23% are full time fishers, and the rest are part-time fishers; 87% percent are engaged in small scale fishing, 9% in medium scale fishing especially in marine waters, and 4% in large-scale fishing. Trawls, trap nets and gill nets are the major fishing gear types used.

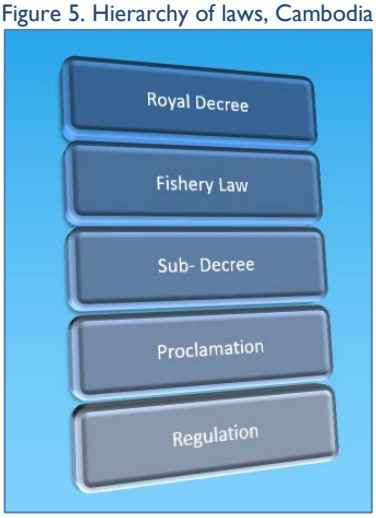
Table 3. Fisheries production (2009-16), Cambodia

SOURCE	2009	2010	2011	2012	2013	2014	2015	2016
Inland Production	390,00	405,000	445,000	509,000	550,000	505,005	487,905	508,850
Marine Production	75,000	85,000	91,000	99,000	100,000	120,250	120,500	120,600
Aquaculture	50,000	60,000	72,000	74,000	80,000	120,000	143,141	172,500
Total	515,000	550,000	608,000	682,000	730,000	745,255	751,546	801,950

National fisheries management legislation

In Cambodia, the highest law is the royal decree, and below it is the Fisheries Law[7], the sub-decree (document supporting the Fisheries Law), then the proclamation, and, finally, the regulation, which defines how the law should be implemented.

Figure 5. Hierarchy of laws, Cambodia



Fisheries management programs

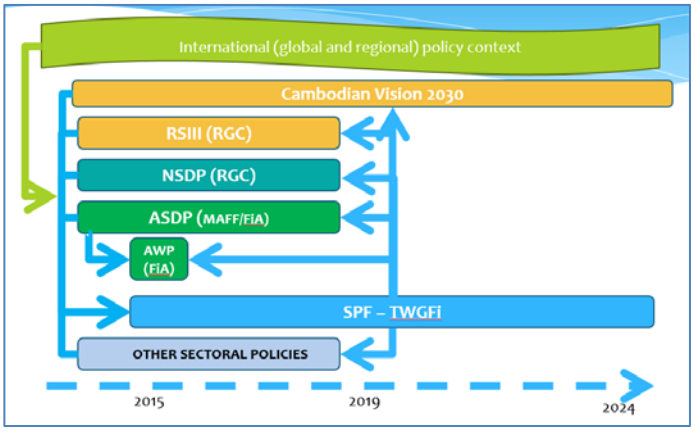
Cambodia has a 2015-24 Strategic Planning Framework (SPF) for the "management, conservation and development of sustainable fisheries resources to contribute to ensuring people's food security and to socioeconomic development in order to enhance people's livelihoods and the nation's prosperity."

The SPF takes a long-term view of the sector and is influenced by, and contributes to, global policy developments such as the United Nations Sustainable Development Goals (SDG), CCRF, Sustainable Small-scale Fisheries (SSF) Guidelines and others. It informs, and is informed by, the "Cambodia Vision for 2030"[8] through the Rectangular Strategy for Growth, Employment, Equity and Efficiency Phase III (RS III) of the Royal Government of Cambodia (RGC) that includes an overall National Strategic Development Plan and sectoral plans, one of which is the Agriculture Strategic Development Plan (ASDP) covering agriculture, forestry and fisheries. The ASDP guides the development of the Annual Work Plan for Fisheries detailing the fisheries management activities to be undertaken every year. A TWG for Fisheries meets every month to review the implementation of the fisheries plan and other fisheries management concerns. (Figure 6)

[7] Adopted 21 May 2006 – The purpose of the Fisheries Law is to ensure the management of fisheries and fishery resources, to boost development of aquaculture, and production and processing of aquaculture products. The Law consists of 17 Chapters divided into 109 articles: General provisions (1); Fishery administration (2); Fishery domains (3); Sustainability of fishery management (4); Fishery protection and conservation (5); Management of mangroves and inundated forests (6); Management of fishery exploitation (7); Inland fishery exploitation (8); Marine fishery exploitation (9); Aquaculture management (10); Fishery communities (11); Transport and trade of fishery products (12); Licensing (13); Procedures for solving fishery offences (14); Penalties (15); Enforcement of the court judgement (16); and Final provisions (17). *Source: ILO NATLEX,* http://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=93364&p_country=KHM&p_count=183. *Retrieved 13 September 2017.* Amended recently (25 August 2017) "to limit the use of narrow fishing nets and introduce licenses for some mechanized equipment… empower provincial departments of agriculture to crack down on fishing offenses, ban three-centimetre fishing nets to stop the killing of baby fish and prohibit the use of fishing devices longer than 300 metres," and require people "to obtain a license to use fishing machinery, or risk being fined and having the equipment confiscated." *(Source: Khmer Times, 28 August 2017;* http://www.khmertimeskh.com/5080127/changes-make-fishing-sustainable/. *Retrieved 13 September 2017)*

[8] Cambodia's vision is to become an upper middle income country by 2030. *(Source: UNDP in Cambodia;* http://www.kh.undp.org/content/cambodia/en/home/countryinfo.html. *Retrieved 13 September 2017)*

Figure 6. Policy and implementation framework for fisheries management, Cambodia



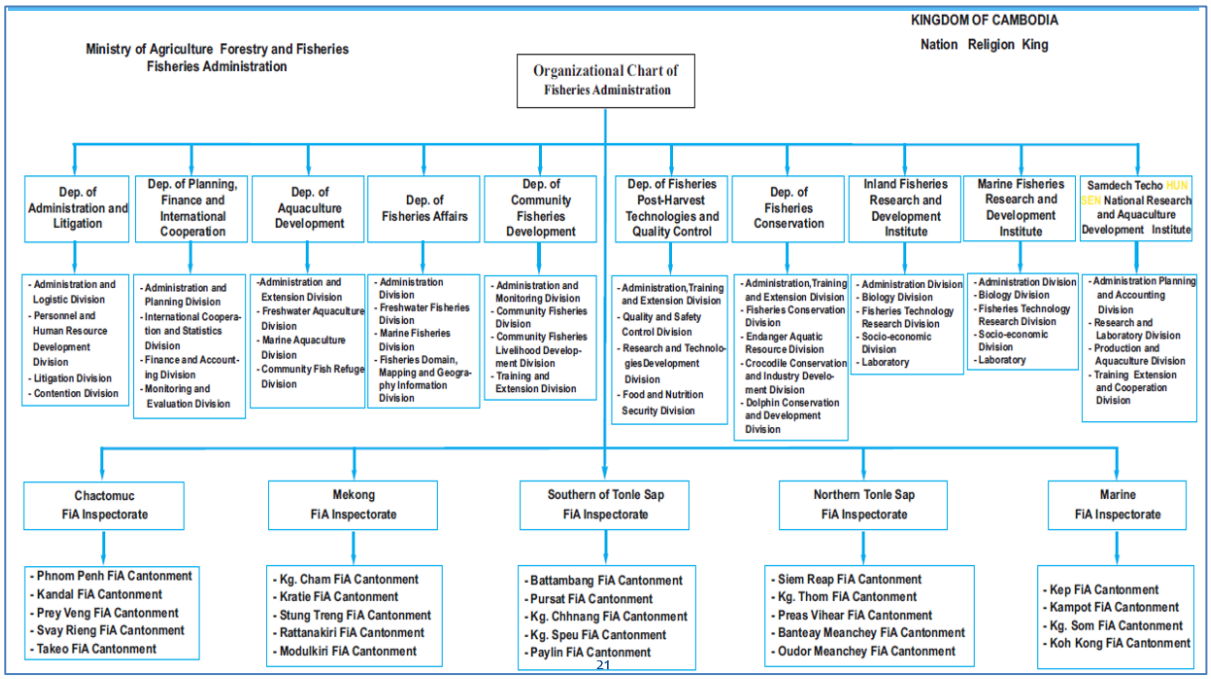
There are four "pillars" that support the implementation of the SPF: (1) Capture fisheries management; (2) aquaculture and inland fisheries management; (3) fisheries value chain; and (4) regulatory and other services. (Table 4) Implementation is through a multi-level governance structure administered from the top by the RGC through the Ministry of Agriculture, Forestry and Fisheries and Fisheries Administrators at regional (inspectorate) and local (cantonment) levels.

Table 4. Four pillars to support implementation of fisheries management in Cambodia

Pillar and Result	Indicators	Targets
Pillar 1. Capture fisheries and management	1.1 Capture fisheries production from all sources -- Baseline: 600,000 MT	2017 -600,000 MT 2020-600,000 MT 2024-600,000 MT
	1.2 Number of effective operational Community Fisheries (CFi's) -- Baseline: 50 CFi's (2014)	2017- 100 CFi 2020-200 CFi 2024-300 Cfi
	1.3 Total area under effective conservation (using area specific criteria) -- Baseline: 26,674ha (2014)	2017-116,262 ha 2020-142,135 ha 2024-172,746 ha
Pillar 2. Aquaculture: inland and marine	2.1 Aquaculture production (20% annual increase) -- Baseline: 120,000 MT (2014)	2017- 207,000 MT 2020-360,000 MT 2024-740,000 MT
	2.2 Number of registered, medium/ large scale commercial aquaculture operators that have adopted Good Aquaculture Practices -- Baseline: 8 (2014)	2017-20 2020-35 2024-65
	2.3 Aquaculture farm gate production value in USD -- Baseline: $240 million (2014)	2017- $414 million 2020- $716 million 2024- $1,486 million
Pillar 3. Fisheries value chain	3.1 Contribution of fisheries sector to national GDP Baseline: 8% to GDP (2014)	2017-8% of GDP 2020- 8% 2024- 8%
	3.2 Increase in the export of regulated fisheries and aquaculture fish/products -- Baseline: 17,500 MT (2014)	2017-30,000 MT 2020-50,000 MT 2024-100,000 MT
	3.3 Increase in number of medium/large-scale fish processing companies that have been certified to comply with Good Hygiene Practices -- Baseline: 1 company (2014)	2017- 10 2020- 20 2024- 30
Pillar 4. Regulatory and services	4.1 Aquaculture and fisheries are increasingly seen as desirable technical careers -- Baseline: 40 students enrolled at key fisheries-related institutions (2014)	2017- 10% ↑ over baseline 2020- 30% ↑ over baseline 2024- 50% ↑ over baseline
	4.2 Number of incoming official letters from line ministries to the DG of FiA, providing information or requesting FiA inputs, in relation to decisions, laws etc. with potential impact on/from fisheries sector -- Baseline:436 (2014)	2017- 20% ↑ over baseline 2020- 50% ↑ over baseline 2024- 70% ↑ over baseline

Pillar and Result	Indicators	Targets
	4.3 Improvement in private sector/ community stakeholders' perception of fisheries policy and legislation implementation and impact -- Baseline: 2015 M&E perception survey.	2017- 20% ↑ over baseline 2020- 50% ↑ over baseline 2024- 70% ↑ over baseline

Figure 7. Fisheries governance and administrative structure, Cambodia



Fisheries management issues and problems

Table 5. Fisheries management issues and problems, Cambodia

Components	Issues/Problems
Ecological Well-being (Fisheries & Habitats)	• Destruction fishery habitats (land grabbing, climate change) • Unsustainable development • Destructive fishing (IUU) • Building Dike within the flooded forest area • Destruction of Flooded Forest • Clear flooded forest areas for crop cultivation • Removing flooded forest for agriculture development in Tonle Sap
Human Well-being (including gender, labor, livelihoods)	• Limited capacity and resources • Limited of livelihood opportunity support • Limited Implementation of Gender Mainstreaming Policies • Child Labor still occurred • Poor Knowledge and skill
Governance & Institutions	• Lack of effectiveness of good governance of the sector • Lack of HR and institutional capacity and resources • Lack of the resources to implement the law enforcement
Others	• Limitation on inter agencies coordination and management of the cross cutting issues • Overlap/gap on the institutional mandate

Current status of fisheries management and planning

The RGC has undertaken a fisheries reform program to support fishing communities that includes the following measures:

- Cancellation of the fishing lots
- Encouragement of the fishing communities in managing the natural resources
- Establishment of an efficient fish market mechanism
- Strengthening of the national resource conservation
- Promotion of aquaculture

The program has so far gone through two phases. In October 2000, during the first phase ("First Reform"), the RGC abolished and released about 56.74% (541,206 ha) of the total area of privately held "fishing lots"[9] in Tonle Sap Lake so that they could be used by artisanal fishers. The establishment of "community fisheries"[10] (CFi's) was encouraged throughout the country for both freshwater and coastal areas, thereby promoting active participation by the local people, local authorities, government institutions, and local and international NGOs.

A second, "deeper" reform program started in 2012, when the RGC abolished all remaining fishing lots totaling 415,218 ha, of which 76.50% (317,715 ha) were released to local fishers for their sustainable use and management, and the rest (23.50% or 97,503 ha) kept for conservation of fish broodstock. During this second phase, the government also increased the number of allowable fishing gears and the gear length.

As a result of the reform, CFi's now occupy about 89% of Tonle Sap Lake, with the remaining area used for fisheries conservation. Resource management has evolved from a centralized, top-down process to a decentralized and deconcentrated, top-down and bottom-up, community-based co-management process.

For marine fisheries, the RGC has a management plan covering the period 2014-19, and established an MPA in the coastal areas of Preah in Sihanouk Province. The management plan articulates the following vision and goals that can be linked to the three components of EAFM:

Vision: A model marine fisheries management area for conservation of marine biodiversity, sustainable fishing and tourism, contributing to poverty reduction

Goal 1: [Biophysical] Marine biological diversity sustainably protected and restored

Goal 2: [Socioeconomic] Livelihood and food security of local community and relevant stakeholders enhanced and diversified

Goal 3: [Governance] Management model established and strengthened, and legal framework effectively implemented

Fisheries resource conservation activities in both inland and marine areas include:

- Information campaign to increase awareness and appreciation of the significance of fisheries habitats to communities
- Replanting of flooded forests and mangrove areas
- Improvement of the marine fisheries management areas
- Improvement of new fisheries conservation areas released from fishing lots
- Protection of endangered species
- Management of Tonle Sap Lake conservation area
- Establishment of community fish refuge in inland and marine areas
- Conservation of freshwater biodiversity in deep pools

[9] "Fishing lots" were a water resource licensing system used in Tonle Sap Lake since the colonial period until they were abolished. Fishing lots were a prized asset – a fishing lot license could cost as much as US$35,000. *(Source:* https://www.iucn.org/content/cancelling-fishing-lots-tonle-sap*. Retrieved 13 September 2017)*

[10] Community fisheries were initially introduced into Cambodia in the late 1990s as a means to improve the management of local fisheries and ensure local food security. *(Source:* https://opendevelopmentcambodia.net/topics/community-fisheries/#ref-74494-1*. Retrieved 13 September 2017)*

IUU measures and fisheries management interventions

These include:

- Registration and Licensing – Census of vessels, registration and licencing of all coastal vessels, development of fisheries database (supported by SEAFDEC)
- Review Legal Framework – Development of a new Marine Fisheries Law on licensing, seasonal/area closures, conservation and protection zones and CFis[11]
- Development of NPOA-IUU (ongoing)
- Response to the requirement of the Directorate-General for Maritime Affairs and Fisheries of the European Commission (DG MARE), including a quarterly progress report
- Development of National Plan of Control and Inspection (NPCI) and Marine Fisheries Management Policy and Plan

EAFM initiatives

Through the SEAFDEC training, Cambodia has acquired some knowledge and capacity for EAFM. There is a plan to integrate EAFM into the Fisheries Management Plan, but implementation is constrained by a lack of budget. The government has requested SEAFDEC support to initiate implementation.

Lessons learned and opportunities

Technical interventions are still limited, with no effective plan and regulations in place for the implementation of EAFM. Opportunities exist to promote collaboration and information sharing across agencies and with stakeholders to harness the important role that each of the key players -- government, NGOs and relevant stakeholder – play in addressing the many issues facing, and caused by, fisheries. But these roles need to be clarified.

➢ *Indonesia*

Presented by Dr. Reny Puspasari Ramli, Researcher, Ministry of Marine Affairs and Fisheries

Fisheries profile

Indonesia's marine waters are divided into 11 regions called Fisheries Management Areas (FMAs). (Figure 8) Some FMAs are dominated by small pelagic fisheries, e.g. FMA 571 (Malacca Strait). Others are dominated by demersal fisheries, such as FMA 711 (South China Sea and Karimata Strait), and still others by large pelagic fisheries, including Banda Sea (FMA 714) and Sulawesi Sea (FMA 716). Total capture fisheries production was more than 6.2 million tons in 2015. (Figure 9) The value of production rose steady from 2011 to 2015, mostly from fishes and crustaceans. (Figure 10)

More than 550,000 fishing boats were registered in 2015, about 96% were vessels under 5 GT. (Table 6) The number of full-time fishers, placed at around 1.2 million in 2015, showed no major changes since 2011. The total number of fishers, including both part-time and full-time fishers, was about 2.3 million. (Figure 11)

[11] The Fisheries Law was amended recently (25 August 2017) "to limit the use of narrow fishing nets and introduce licenses for some mechanized equipment… empower provincial departments of agriculture to crack down on fishing offenses, ban three-centimetre fishing nets to stop the killing of baby fish and prohibit the use of fishing devices longer than 300 metres," and require people "to obtain a license to use fishing machinery, or risk being fined and having the equipment confiscated." *(Source: Khmer Times, 28 August 2017;* http://www.khmertimeskh.com/5080127/changes-make-fishing-sustainable/. *Retrieved 13 September 2017)*

Figure 8. Fisheries Management Areas (FMAs), Indonesia

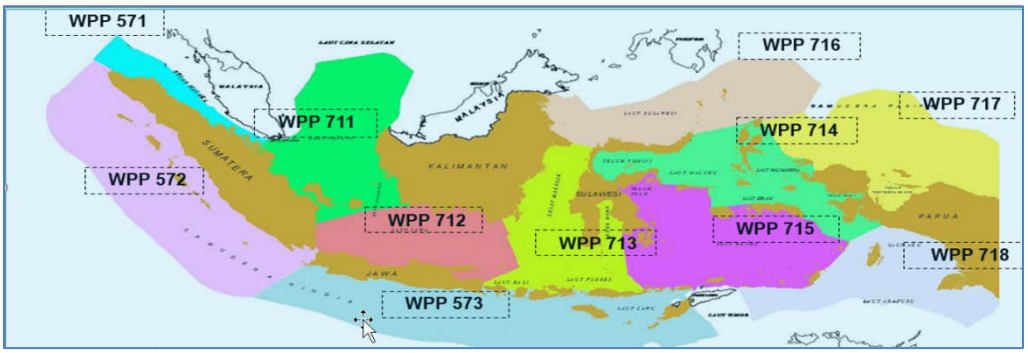


Figure 9. Production of major fish species (2015), Indonesia

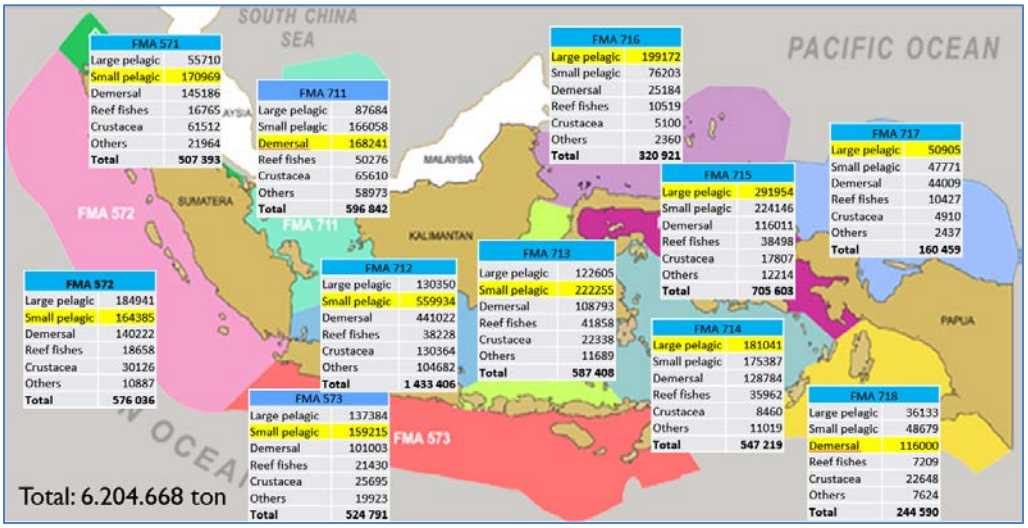


Figure 10. Fisheries production value trend (2011-15), Indonesia

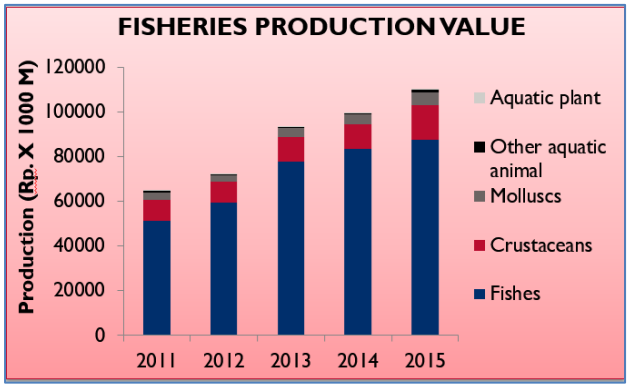


Table 6. Number of fishing vessels by vessel type, Indonesia

Vessel Type	No. of Fishing Vessels											
	FMA 571	FMA 572	FMA 573	FMA 711	FMA 712	FMA 713	FMA 714	FMA 715	FMA 716	FMA 717	FMA 718	Total
Inboard Motor	7,681	8,481	23,470	11,387	4,234	13,704	40,029	791	16,821	5,305	11,069	142,972
Outboard Motor	6,626	16,569	83,900	9,792	34,920	42,258	1,145	1,145	31,650	4,387	2,798	235,190
< 5 GT	18,062	9,210	19,651	17,675	17,658	28,333	4,077	552	5,471	213	511	121,413
5-10 GT	4,534	5,317	7,201	2,831	11,110	6,029	1,239	486	2,689	255	369	42,060
10-20 GT	819	2,347	3,868	96	2,358	960	517	351	442	246	184	12,188
20 - 30 GT	618	674	2,023	158	2,418	933	312	316	323	95	101	7,971

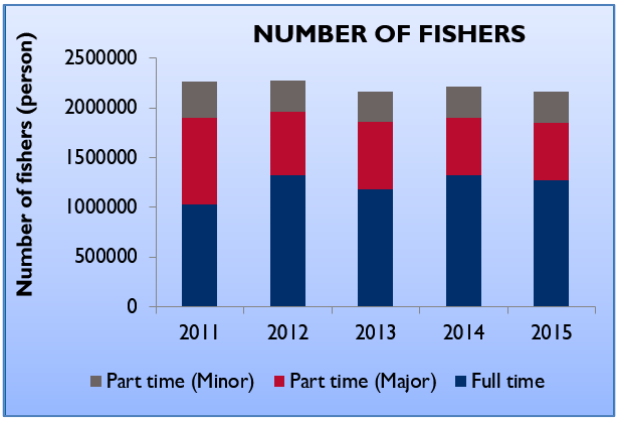
Vessel Type	No. of Fishing Vessels											
	FMA 571	FMA 572	FMA 573	FMA 711	FMA 712	FMA 713	FMA 714	FMA 715	FMA 716	FMA 717	FMA 718	Total
30 - 50 GT	19	383	54	344	70	67	20	218	105	17	179	1,476
50 - 100 GT	46	43	199	540	250	279	5	136	35	30	203	1,766
100 - 200 GT	9	207	281	39	7	7	2	5	12	11	176	756
> 200 GT	0	239	1	5	-	-	-	-	-	-	3	248
Total	38,414	43,470	140,648	42,867	73,025	92,570	47,346	4,000	57,548	10,559	15,593	566,040

Fisheries management program and legislation

Indonesia's Strategic Plan for 2015-2019 provides the direction for all fisheries and marine regulations within the Ministry of Marine Affairs and Fisheries (MMAF), lead agency for fisheries in the country. The strategic plan establishes the enabling environment for implementing EAFM, particularly in the following areas:

- Reducing IUU Fishing
- Developing business climate conducive for sustainable capture fisheries
- Developing business climate conducive for sustainable aquaculture
- Developing better post-harvest handling and network for marine and fisheries products marketing
- Empowering outer islands and conservation areas
- Establishing self-sufficient industrial salt
- Developing human resources capacity and innovation through research & Development

Figure 11. Number of fishers (2011-15), Indonesia



For purposes of management, Indonesian marine waters are divided into two zones: The 0-12-mile zone is under responsibility of the provinces; beyond 12 miles up to 200 miles, the national government has the main authority. In similar manner, the fishing vessel licensing authority is also divided between the province (0-30 GT) and the national government (>30 GT).

The fisheries sector is governed by several laws, rules and regulations, including a Ministerial Decree for each of the 11 FMAs that contains the strategic and action plans, as well as the regulations, for the area:

- FMA 571: Ministrial Decree Number 75/KEPMEN-KP/2016
- FMA 572 : Ministrial Decree Number 76/KEPMEN-KP/2016
- FMA 573: Ministrial Decree Number 77/KEPMEN-KP/2016
- FMA 711 : Ministrial Decree Number 78/KEPMEN-KP/2016
- FMA 712 : Ministrial Decree Number 79/KEPMEN-KP/2016
- FMA 713 : Ministrial Decree Number 80/KEPMEN-KP/2016
- FMA 714 : Ministrial Decree Number 81/KEPMEN-KP/2016
- FMA 715 : Ministrial Decree Number 82/KEPMEN-KP/2016
- FMA 716 : Ministrial Decree Number 83/KEPMEN-KP/2016
- FMA 717 : Ministrial Decree Number 84/KEPMEN-KP/2016
- FMA 718 : Ministrial Decree Number 54/KEPMEN-KP/2014

Regulations include fishing quota allocations for certain species, temporal measures (e.g. seasonal closures and moratoriums) and prohibitions or restrictions on some gear types, such as trawls, mini-trawls, and fish aggregating devices (FADs). The government aims to establish a target number of conservation areas, in addition to the many conservation areas it has already established. The practice of local wisdom-based

conservation is being promoted in some areas, for example, *awig-awig*[12] in North Lombok, *Panglima Laot* (Aceh's traditional fishing authority)[13], and *sasi* (traditional resource management practices rooted in eastern Indonesia). And management plans have been adopted specific to endangered, threatened and protected species or other important species, including, Blue swimming crab, Humphead wrasse (Napoleonfish), Glass eel, lobsters, sharks, and neritic tuna.

Interventions aimed specifically at IUU fishing have also been introduced. These include:

- Establishment of a task force to control IUU fishing
- Requirement of Vessel Monitoring System (VMS) for vessels over 30 GT
- Prohibition on transshipment of fish at sea to ensure reporting of catch information
- Implementation of logbook standards to improve fisheries data quality

Fisheries management issues and problems

These are presented in below: Table 7 shows the fisheries issues and problems that affect Indonesia in general; Table 8 lists only those issues and problems that affect FMA 716, the area of particular interest in this Workshop.

Table 7. Fisheries management issues and problems, Indonesia

Components	Issues/Problems
Ecological Well-being (Fisheries & Habitats)	• Destructive fishing almost everywhere in Indonesia • Slow process of deciding quota allocations in FMAs • Fish stocks fully exploited • Lack of information/data in terms of both quality and quantity • Stock degradation • Lack of/weak management of FADs
Human Well-being (including gender, labor, livelihoods)	• Poor welfare conditions of fishers • Erosion of local wisdom-based conservation practices • Lack of insurance protection for fishers and fish workers • Limited diversification • Gender equality issues: Lack of women's participation in some fishery activities; lack of women in authority roles in the fisheries sector • Social/resource use conflicts, especially between local fishers and *andon* (migrant fishers) • Foreign labor domination especially in commercial fishing vessels over 30 GT • Fish workers not provided formal contracts by fishing operator/fishing vessel owner
Governance & Institutions	Governance: • Weak coordination among related institution • IUU fishing • Weak law enforcement Institutions: • Lack of capacity (human resources, expertise) • Slow process of initiating/setting up FMA authority • Stakeholder not fully compliant regulation
Others	• Limited Budget

[12] *Awig-awig* is a special custom law which regulates the management of natural resources from the forest and springs. *(Source:* http://oxfamblogs.org/indonesia/keeping-the-peace-with-awig-awig/*. Retrieved 13 September 2017)*

[13] *Source:* https://www.adb.org/sites/default/files/publication/27845/mapping-sea.pdf*. Retrieved 13 September 2017*

Table 8. Fisheries management issues and problems, FMA 716 (Sulawesi Sea, North Halmahera)

Components	Issues/Problems
Ecological Well-being (Fisheries & Habitats)	• Destructive fishing almost everywhere in Indonesia • Lack of information/data in terms of both quality and quantity
Human Well-being (including gender, labor, livelihoods)	• Social/resource use conflicts, especially between local fishers and *andon* (migrant fishers) • Poor or limited post-harvest handling capacity
Governance & Institutions	• FAD management not fully effective at controlling the proliferation of FADs in the area

EAFM initiatives

There are a number of ongoing projects in Indonesia that apply EAFM. Some of these are area-based, and others are based on species. A number engage stakeholders at both national and district level through the coordination of the National TWG on EAFM. Some examples:

- Initiative on Blue Swimming Crab Sustainable Management in East Lampung waters;
- Management of Reef Fisheries in Nusa Tenggara Barat Province; and
- Implementation of Reef Fish Management (IRFiM) in FMA 715 (Maluku Sea) and FMA 718 (Arafura Sea)

EAFM is also the approach mandated by fishery regulations for the management of the following species:

- Blue Swimming Crab: Ministrial Decree Number 70/KEPMEN-KP/2016
- Flying fish: Ministrial Decree Number 69/KEPMEN-KP/2016
- Bali Strait Sardine: Ministrial Decree Number 68/KEPMEN-KP/2016
- Tuna, Neritic Tuna, Skipjack: Ministrial Decree Number 107/KEPMEN-KP/2015

At FMA 716 specifically, the following EAFM initiatives are in place:

- EAFM Learning Center established, linking the central government, provincial government and a university in Manado (Sam Ratulangi University)
- Fisheries Management Plan for FMA 716 incorporated into Ministrial Decree Number 83/KEPMEN-KP/2016
- Data collection improved at Bitung Fish Port (the main fish port at FMA 716)
- Regulation implemented prohibiting transshipment at sea by purse seine vessels
- EAFM demo site established in Tarakan Island for Bombay duck fish management, which includes:
- Appropriate fishing gear arrangement
- Establishment of conservation area
- Seaweed aquaculture providing alternative livelihood for fishers

Lessons learned and opportunities

The following provide opportunities to expand the application of EAFM across Indonesia:

- Stakeholder engagement through FGD, workshops, data verification, and endorsement of FMA;
- Researchers, University, NGOs, fisheries association providing technical assistance to fishers and fishing communities;
- Active involvement of NGOs in fisheries management in the country

Some lessons:

- Different stakeholders have different roles to play in initiating EAFM planning:
  - The role of government is to coordinate, facilitate, provide funding, collect data, and establish policy and legislation that create the enabling environment for EAFM;
  - NGOs play an important role in terms of supporting data collection and providing alternative funding; and

- The fishing communities' participation in FGDs and planning is crucial to verify data collected and promote acceptance and adherence to management measures
- Planning should be both short-term (annual) and long-term (5-10 years)
- Annual monitoring and evaluation promotes compliance

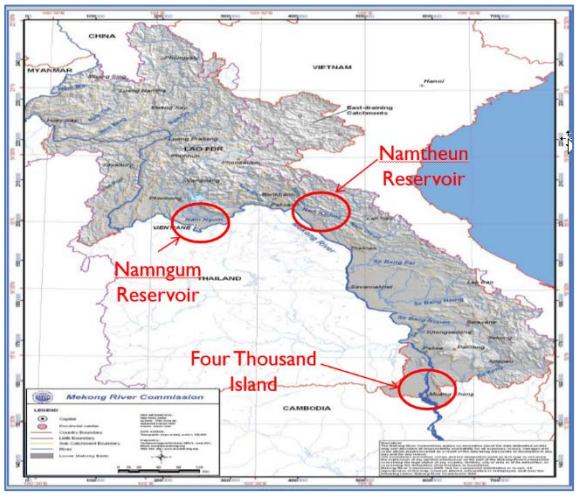
➢ *Lao PDR*

Presented by Ms Vonsamay Dalasaen, Chief of Fisheries Inspection Section, Division of Fisheries, Department of Livestock and Fisheries, Ministry of Agriculture and Forestry

Fisheries profile

About 95% of fisheries in Lao PDR are small-scale and mainly for household consumption, although some fishers may sell their catch during the peak season. Being land-locked, the country has only inland fisheries, which are concentrated mostly in Namngun Reservoir, Namtheun Reservoir, and the Four Thousand Island. (Figure 12)

Figure 12. Major fishing areas, Lao PDR



(Figure 13) shows fisheries production from 2012 to 2016. The major fishing gears used are lift net, gill net, scoop basket, scoop net, cast net and horizontal cylinder trap. Fishery species include Hemibagrus wyckioides, *Epalzeorhynchus chrysophekadion, Cirrhinus microlepis, Barbonymus gonionotus*, and many others.

No data on the number of vessels and fishers are available but, according to the Agricultural Statistics Survey, there were about 526,300 fishing households in 2010-11.

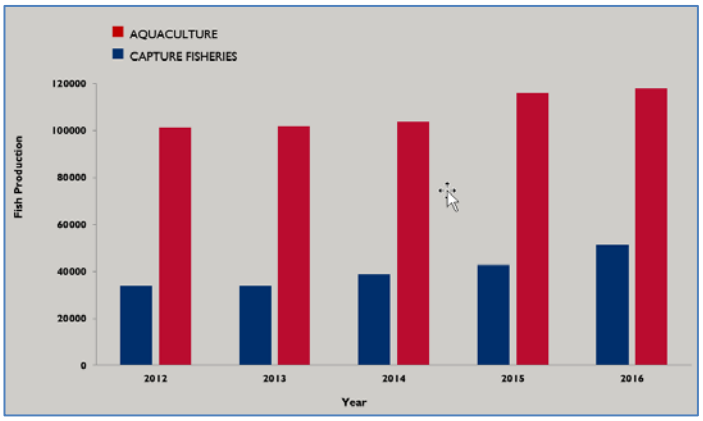
National fisheries management policy and legislation

Fisheries in Lao PDR are governed by a National Fisheries Law endorsed in 2009 and various regulations covering, for example, fisheries management and prohibitions on certain gears. Implementation is administered by the Department of Livestock and Fisheries, which is also responsible for policy-making and implementing the national fisheries plan called "Strategic Implementation Plan for the Fisheries Sector in Lao PDR to Manage, Conserve and Develop Sustainable Fisheries Resources for Food Security."

Fisheries management issues and problems

See Table 9.

Figure 13. Fisheries production (2011-15), Lao PDR



Current status of fisheries management and planning

Efforts are underway to establish a fisheries licensing and permitting system, control IUU fishing, and organize a fishers' association.

Some capacity for EAFM is available through a group of trainers who participated in the Essential EAFM training provided by SEAFDEC. An initiative to incorporate EAFM in the Strategic Implementation Plan is constrained by lack of budget.

Lessons learned and opportunities

A key lesson learned is that stakeholder engagement, a management plan that includes a plan of action, and capacity building are all essential ingredients for fisheries management to even happen. Lao PDR has achieved to a certain extent a strengthened institutional framework and organization for fisheries, enforcement of fisheries laws, and some progress in promoting fisheries co-management and responsible fishing practices

involving local fisheries communities – all of which present opportunities for improving the status of fisheries and fishers through a sustainable fisheries framework like EAFM.

Table 9. Fisheries management issues and problems, Lao PDR

Components	Issues/Problems
Ecological Well-being (Fisheries & Habitats)	• Declining fisheries production • Loss of habitats due to climate impacts such as flooding, drought and water flow changes
Human Well-being (including gender, labor, livelihoods)	• No law to specifically protect fishers' welfare (while Lao PDR's Labor Law broadly covers all labor sectors, it is not sufficient to address the specific needs of fishers and fish workers) • Lack of women's participation in decision-making • Lack of fisheries management plans (requires capacity building) • Limited implementation of gender mainstreaming policies • Poor knowledge and skills preventing fishery workers (particularly women) from diversifying income sources
Governance & Institutions	• Lack of resources to implement law enforcement
Others	• Overlaps/gaps in institutional mandates

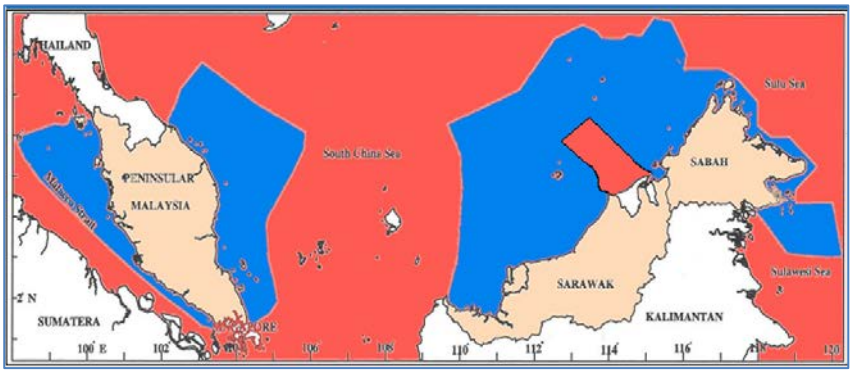
➢ *Malaysia*

Presented by Dr. Alias bin Man, Senior Research Officer, Planning and Development Division, Department of Fisheries

Fisheries profile

Figure 14 shows the extent of Malaysia's fisheries areas across its 453,183 km^2 EEZ comprising parts of Andaman Sea, Straits of Malacca, South China Sea, Sulu Sea, and Sulawesi Sea. The country has a 4,492-km coastline that includes the mainland Peninsular Malaysia, Sabah and Sarawak.

Figure 14. Fisheries areas in Malaysia



Total fisheries production was 1.99 million MT in 2015, representing 1.1% of national GDP. Nearly 1.50 million MT tons valued at RM9.32 billion came from marine capture fisheries, with coastal fisheries contributing about 1.15 million MT valued at RM7.66 billion. (Table 10)

Table 10. Fisheries production (2015), Malaysia

Sector	Production							
	Quantity (in million MT)		% of Total Volume		Value (in RM billion)		% of Total Value	
Aquaculture		0.506		25.402		3.30		26.15
Marine capture		1.486		74.598		9.32		73.85
Coastal	1.145		57.480		7.66		60.70	
Offshore	0.341		17.118		1.66		13.15	
Total		**1.992**		**100.000**		**12.62**		**100.00**

Malaysia has a total of 140,949 fishers in capture fisheries, and 56,211 licensed fishing vessels. Some 25,060 people are engaged in aquaculture.

National fisheries management legislation

Fisheries in Malaysia are managed according to the Fisheries Act of 1985 (Act No. 317, or the *Akta Perikanan 1985*). In addition, the following laws and policies also apply to fisheries (or aspects of fisheries):

- Laws of Malaysia (*Undang Undang Malaysia*) governing the International Trade in Endangered Species Act of 2008 (Act 686, or *Akta Perdagangan Antarabangsa Mengenai Spesies Terancam 2008*)
- National Agrofood Policy for 2011-2020 (*Dasar Agromakanan Negara 2011-2020)*
- Malaysian Department of Fisheries Strategic Plan 2011-2020 *(Pelan Strategik Jabatan Perikanan Malaysia 2011-2020)*
- Malaysian Capture Fisheries Management Strategic Plan 2015-2020 *(Pelan Strategik Pengurusan Perikanan Tangkapan Malaysia 2015-2020)*

Fisheries management issues and problems

Table 11. Fisheries management issues and problems, Malaysia

Components	Issues/Problems
Ecological Well-being (Fisheries & Habitats)	• Demersal fishery overfishing • IUU fishing
Human Well-being (including gender, labor, livelihoods)	• High fuel price affecting fishers • Shortage of local boat crew posing a threat to sustainability
Governance & Institutions	The above issues require governance and institutional responses, such as: • Rezoning to address overfishing • Trawl mesh size regulation to reduce bycatch • Subsidized fuel for certain categories of fishers, specifically to address human welfare issues • Recruitment of foreign crew to work on fishing vessels

EAFM initiatives

Malaysia's fisheries management program includes two main components: (1) MCS; and (2) conservation.

The *Monitoring* component includes the following activities:

- Monitoring of fish landing and fish biomass – This involves routine mandatory sampling during the fish landing process and periodic fish resource surveys that provide the latest estimates on demersal (up to 200-meter depth) and pelagic fish stocks in the coastal and offshore waters of Malaysia. Figure 15 and Figure 16 show the demersal and pelagic study areas, respectively. Some of the recent surveys were conducted using the research vessel MV SEAFDEC 2.
- Reporting on catch and operations;
- Analysis of catch and fishing effort, reporting comparison with VMS, verification of accuracy of the landing report; and
- Data collection and measurement and analysis of fishing activities, looking at species composition, fishing effort, bycatch and discards, and area of operation.

Figure 15. Monitoring: Demersal study areas, Malaysia (The yellow dots represent coastal stations; green dots are offshore stations).

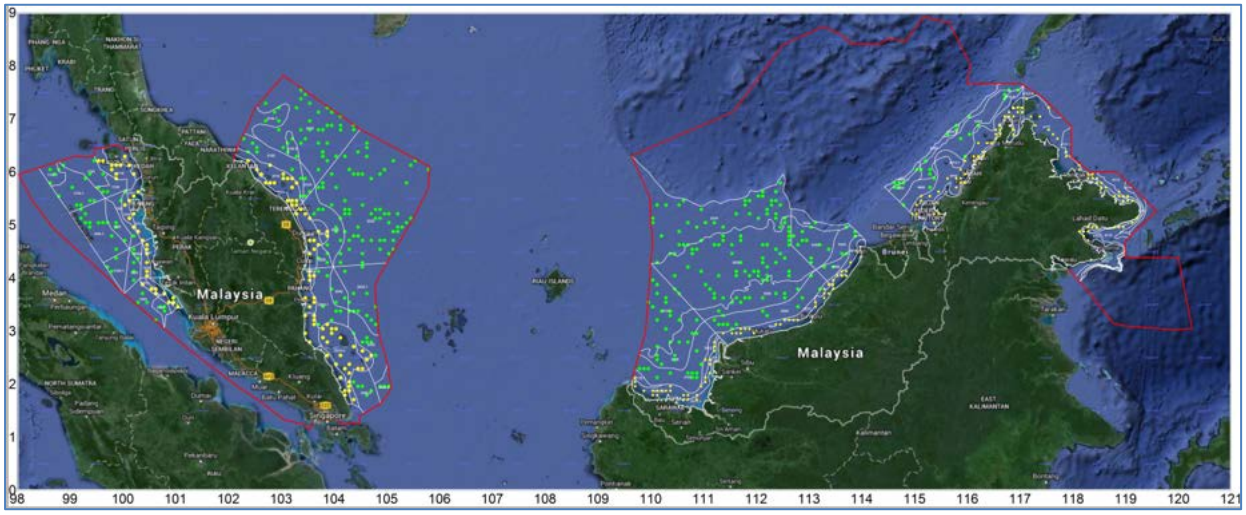
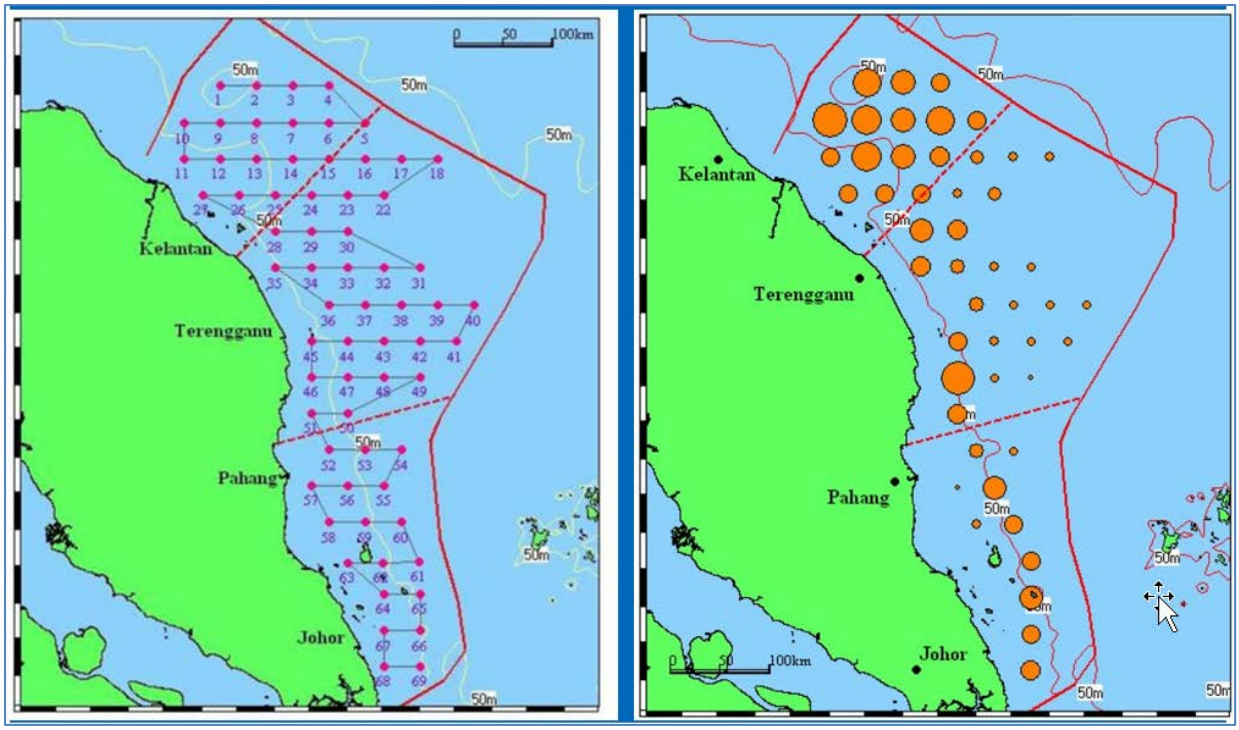


Figure 16. Monitoring: Acoustic mapping of pelagic fish distribution (undated), Malaysia

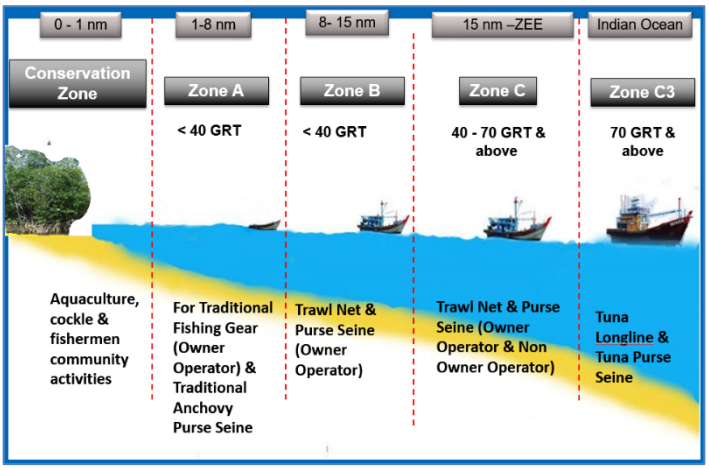


Control rules and procedures are defined in the Fisheries Act of 1985, and further detailed in the DOF's *Basic Rules and Procedures: Licensing vessels, fishing equipment and fishing registration* (*Buku Dasar dan Prosedur: Pelesenan vessel, peralatan menangkap ikan dan pendaftaran nelayan*). They include:

- Control of fishing effort through licensing of fishers and fishing gears;
- Registration of fishing vessels;
- Use of permanent markings on fishing vessels;
- Regular specifications inspection of fishing vessels;
- Regular specifications inspection on fishing gears;
- Control of landing ports/sites (landing is only permitted at designated sites);
- Prohibition on fishing gears and methods of fishing;
- Control of transshipment;

- Fishermen Registration Programme and Issuance of Fishermen Card;
- Establishment of fishing zones and MPAs; and
- Zoning management, primarily to achieve equitable allocation of resource and to reduce conflict between traditional and commercial fishers – This includes the establishment of fishing zones through a limited licensing scheme, with zones designated for specific fishing gears, vessel classes, and types of ownership (e.g. Zone A and Zone B for owner-operated vessels). Figure 17 shows an example of a zoning scheme.

Figure 17. Zoning scheme in the West Coast of Peninsular Malaysia encompassing Kedah, Perak and Selangor



Surveillance procedures are provided in the *Penggunaan Sistem Pemantauan Vesel di Atas Vesel Penangkapan Ikan* (Guidelines on the Use of VMS on Fishing Vessels (), including:

- Inspection by Fisheries Officer/ Authorized Officer and other enforcement authorities at sea;
- Air, sea and land surveillance;
- VMS; and
- Law enforcement.

Figure 18. Types of artificial reefs used in Malaysia

Conservation initiatives are currently guided by several National Plans of Action (NPOA) the covers ETP species, bycatch and fishing capacity:

- Malaysia NPOA for Conservation and Management of Dugong
- Malaysia's NPOA to prevent, deter and eliminate IUU Fishing (Malaysia's NPOA-IUU)
- National Plan of Action for the Management of Fishing Capacity (Pan 2)
- Malaysia NPOA for the Conservation and Management of Shark (Plan 2)
- Malaysia NPOA for Conservation and Management of Sea Turtles

The government is now moving toward the development of a fisheries management plan (FMP) based on EAFM. The FMP includes an exit plan, mesh size regulation, rehabilitation, and area/seasonal closures. The use of artificial reefs (AR) as a reef rehabilitation strategy has been in place since 1975, when the first AR module was deployed at Pulau Telur, Yan, Kedah. Over the years, the AR's have evolved from "junk" materials such as tires and old boats to especially designed AR's engineered to meet specific conservation objectives. (Figure 18) Relative specifically to Malaysia's zoning scheme, AR's serve the following objectives:

- To create fishery resource areas in zone A
- To stop trawlers encroaching into zone A (traditional fishing area) and other areas including turtle nesting beaches
- To create an area for recreational fishing activities
- To enhance fishery resources around the artificial reefs

Malaysia also has a turtle conservation program focused on the protection of marine turtles and nesting beaches, regulation of egg collection, and the establishment of hatcheries and sanctuaries in critical areas.

The effort to promote EAFM is currently mostly concentrated in pilot sites in the USAID Oceans Learning Site of Sabah (Figure 19), with several activities planned through August 2017, in addition to activities that have already been completed (Table 12). But the nationalization EAFM has started as well, and two activities to develop the FMP were completed (Table 13).

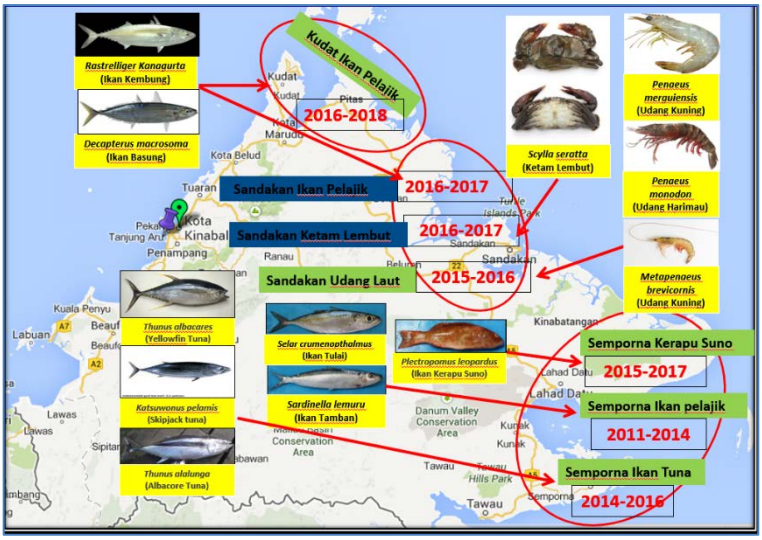


Figure 19. EAFM implementation in Sabah, Malaysia

Table 12. Activities to promote EAFM in Malaysia

Year	EAFM Activities
2012	National EAFM Course for Leaders, Executives and Decision Makers (LEAD) 10-11 December 2012, Putrajaya
2013	Regional EAFM Training of Trainees and Trainers (Malaysia, Indonesia & Philippines), Kota Kinabalu, Sabah
	National EEAFM Training Course (Officers)
2014	National EEAFM Training Course (Stakeholders)
2015	National EAFM Training of Trainers (ToT) Course, Sandakan, Sabah (24-26 August 2015)
2016-2017	National EEAFM Training Course (Officers)
2016-2017	National EEAFM Training Course (Stakeholders)
2017	Workshop on EAFM for Leaders, Executives and Decision Makers (EAFM-LEAD), Kota Kinabalu, Sabah (9-12 August, 2017)

Table 13. Activities to nationalize EAFM, Sabah, Malaysia

Year-Month	FMP Development Activities
2017-02	Fishery Managers Workshop on Fishery Status and Way Forward, 16 February, 2017, Putrajaya
2017-04	Fishery Managers Training Workshop on Development of Fisheries Management Plans, 19-21 April, 2017, Langkawi, Kedah.

➢ *Malaysia - Sabah*

Presented by Mr. Lawrence Kissol Jr., Assistant Director, Department of Fisheries-Sabah

Fisheries profile

Separated from West Malaysia by the South China Sea (Figure 20), Sabah is a state government with some level of autonomy in governance. It is surrounded by three, highly biodiverse seas (Sulawesi Sea, Sulu Sea and South China Sea), has coastline that extends to 1,600km^2 and fishing areas spanning 51,360m^2, and hosts 75% of all coral reefs and 60% of all mangroves found in Malaysia.

The fishing area is divided into three zones: West Coast, East Coast and Tawau. (Figure 21) Two-thirds of Sabah's fishers operate in the East Coast Zone.

Sabah has the biggest number of fishers in Malaysia, 95% of whom are artisanal. Total landed fish in 2016 was 165,760 MT, nearly half of which was exported. The state is a net exporter of fish products, with imports amounting to only about 19% of exports in terms of volume. (Table 14)

Figure 20. Location of and key features around Sabah, Malaysia

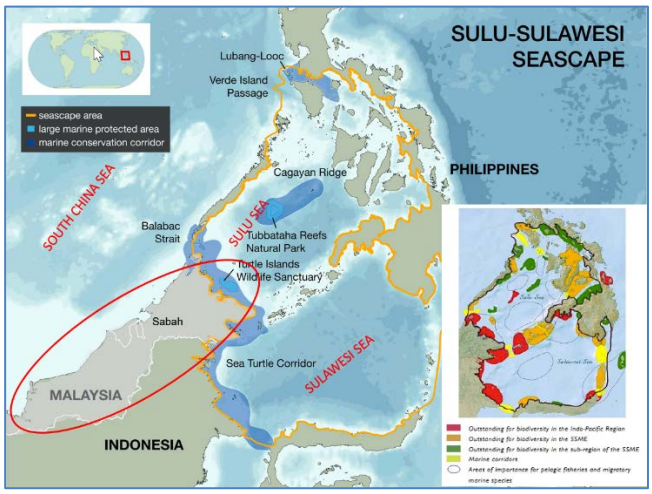
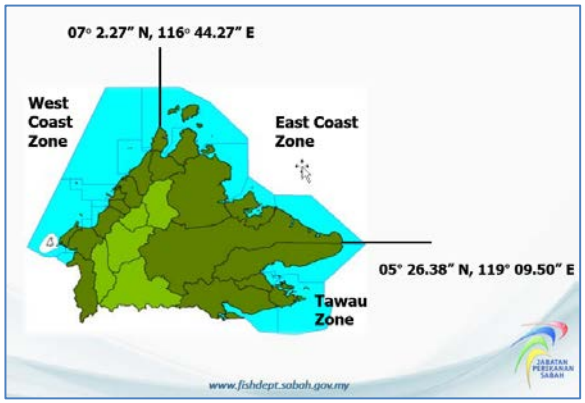


Figure 21. Fishing zones of Sabah, Malaysia



Sabah is also Malaysia's biggest producer of cultured fish. Total aquaculture production (excluding seaweeds) is about 20,000 MT per year, of which 80% comes from marine aquaculture. Sabah is also the biggest producer of seaweed in Malaysia, producing nearly 261,000 MT in 2015.

Table 14. Fisheries statistics (2016), Sabah, Malaysia

	Number
Fishers	29,820
Fishing gears	36,035
Vessels	16,483

	Volume (MT)	Value (in RM million)
Landed fish	165,760	858.0
Exports	80,565	762.0
Imports	15,091	127.9

National fisheries management legislation

Sabah has its own agricultural policy, the 3rd Sabah Agricultural Policy (2017-2026), but like the rest of the country, the state is guided by the National Agrofood Policy for 2011-2020 (*Dasar Agromakanan Negara 2011-2020)*, NPOAs and other national laws, including Malaysia's law on trade in endangered, threatened and protected species.

Fisheries management programs

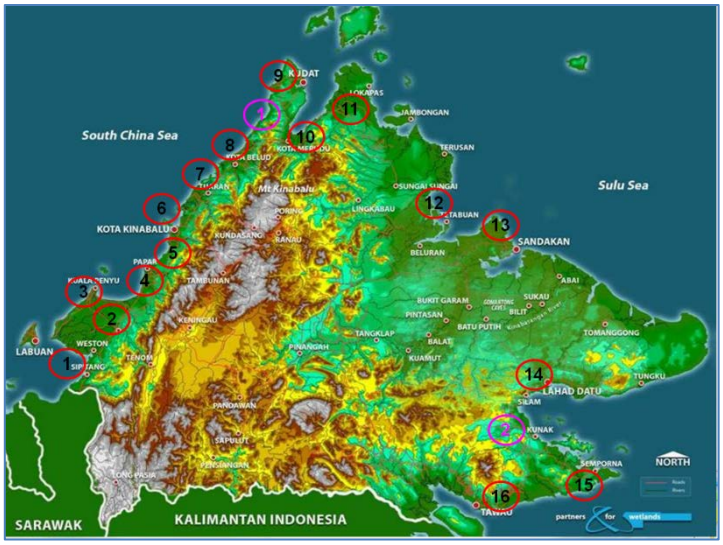
Sabah uses a number of control measures to regulate fish catch. These include:

- Gear/fishing licensing/import-export permit control
- Export control on CITES-listed species:
    - Conducted *Non-Detriment Finding* (NDF) Study on humphead wrasse (2008), sea horses (2012) and hard corals (Semporna,2012)

    - Imposed "zero quota" on export of Appendix II sharks and rays (which translates to an export ban)
- Deployment of AR's – 829 units deployed in 16 sites between 2008 and 2016 to provide safe areas for artisanal fishers to fish (**Figure 22**)
- Turtle by catch reduction through the use of turtle excluder devices (TED's) or circle hooks (C-hooks) – not mandatory but promoted and recommended
- Prohibition on the selling/consumption of sea turtle eggs
- Ban on serving shark's fin soup during official government functions (but the selling of shark's fin is still allowed)
- At least six MPAs designated as shark sanctuaries (2016) -- Tun Mustapha Park; Pulau Penyu Park; Tunku Abdul Rahman Park; Tun Sakaran Park; Pulau Tiga Park; and Pulau Sipadan Park

In addition, beginning by the end of 2017, seasonal closures for small pelagic fishing (by purse seines) would be implemented in the West Coast to coincide with the monsoon season (based on recently concluded studies on pelagic fish stocks).

Figure 22. Deployment sites for AR's in Sabah, Malaysia



Jurisdiction on fisheries management in Sabah is shared by several agencies. To improve the enforcement of laws, regulations and programs, trainings are provided in various areas of significance to fisheries management, e.g. sharks and rays species identification (2014-2015), handling of marine mammal stranding (2015), and coral propagation (2016). Coral propagation is seen as a strategy to reduce and eventually stop the harvesting of corals for export, which is allowed under current rules.

To inform fisheries management planning and decisions, periodic national fish stock assessments are conducted covering four components: demersal fish, small pelagics, shrimp and tuna. Results from the most recent assessments are targeted for publication by end-2017. Another tuna research will be undertaken this year through 2019 in the Sulu-Sulawesi Seas. It will cover three countries (Indonesia, Malaysia, Philippines), and will cover stocks, genetics and spawning grounds.

Already ongoing are efforts to amend the 1985 Fisheries Act to include an export ban on certain species on which public consultations have been conducted. The species covered are as follows:

- Hammerhead sharks
    - *Sphyrna mokkaran* (Great hammerhead shark)
    - *Sphyrna zygaena* (Smooth hammerhead shark)
    - *Eusphyra blochii* (Winghead shark)
- 2 species of manta rays
    - *Manta alfredi* (Reef manta)
    - *Manta birostris (*Giant oceanic manta*)*

- *Carcharhinus longimanus* (Oceanic whitetip shark)

Being within the scientific boundary of the Coral Triangle, Sabah has been the focus of EAFM initiatives in Malaysia since 2011under CTI-CFF. This work involves mainly stakeholder consultations to increase community awareness, understanding and acceptance of EAFM interventions. (Figure 23)

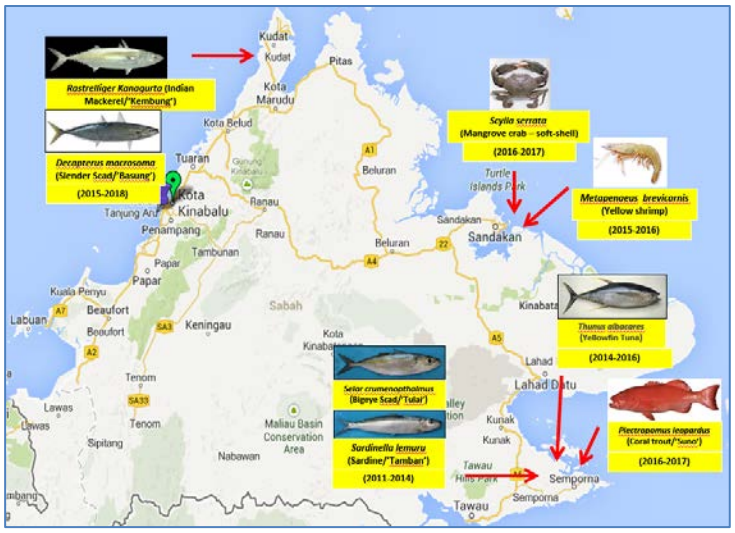


Figure 23. EAFM initiatives (2011-17), Sabah, Malaysia

Plans for the rest of the year through next year will include three programs in the West Coast, focusing specifically on anchovies and shark conservation and the management of Mantanami Island at Kota Belud. The objective is to expand the EAFM work to other parts of Malaysia.

Table 15. EAFM initiatives (2017-18), Sabah, Malaysia

Projects	Districts	Activities
Training	Sandakan	Training
Anchovies Management	Tawau	Consultations on project and training.
Mantanani Island Management	Kota Belud	Consultations on project and training.
Sharks Conservation	Sandakan	Consultations on project, training and public awareness.

Fisheries management issues and problems

Table 16. Fisheries management issues and problems, Malaysia

Components	Issues/Problems
Ecological Well-being (Fisheries & Habitats)	• Transboundary crime (encroachment, poaching & smuggling) • Blast Fishing (using detonators brought in from neighboring countries) • Cyanide Fishing • Pollution • Habitat destruction • Seasonal red algal bloom ("red tide") mostly on the west coast, which limits the aquaculture industry
Human Well-being (including gender, labor, livelihoods)	• Security threat at the east coast of Sabah • High dependency on foreign workers especially to work in commercial fishing
Governance & Institutions	• Limitations in enforcement capacity • Conflict between coastal development and fisheries • Continuous increase in demand for fish

Lessons learned and opportunities

There are two key lessons:

- EAFM is an important tool and the way forward in fisheries management; and

- Fish does not recognize international borders: Regional and international cooperation is crucial to successfully managing transboundary fisheries

Malaysia is involved in a number of regional initiatives that allow Sabah representatives to discuss and address transboundary concerns with their counterparts from neighboring countries. These include:

- ASEAN Working Group on CITES and Wildlife Enforcement (AWG CITES-WEN)
- CTI-CFF
- Brunei Darussalam, Indonesia, Malaysia, Philippines – East ASEAN Growth Area (BIMP-EAGA)-Environment Cluster
- SEAFDEC-JTF Projects
- The Regional Plan of Action – Illegal, Unreported and Unregulated Fishing (RPOA-IUU)

In addition, the cooperation between Malaysia and the Philippines on the Turtle Islands Heritage Protected Area (TIHPA), which has been dormant for some time, will be revived through the Joint Management Committee. A key agenda item is the management of *bagang* (stationary lift net), specifically with regard to its impact on sea turtles.

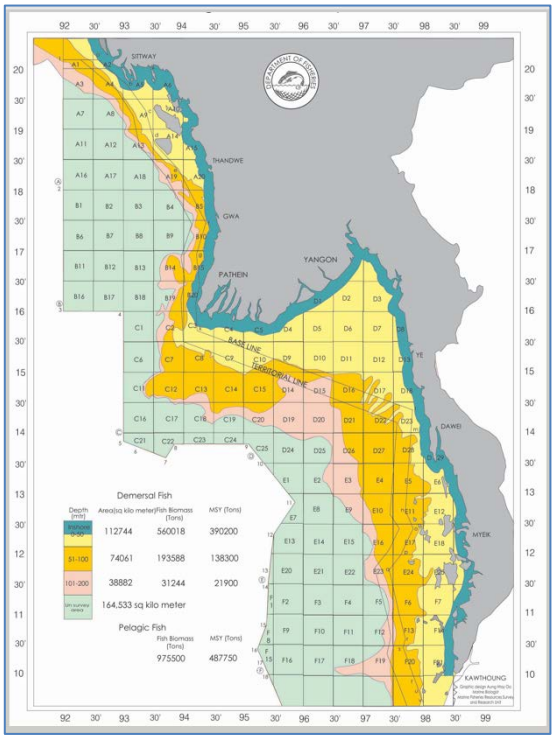
➢ *Myanmar*

Presented by Mr. Than Chaung, Director, Department of Fisheries (DoF), Mon State

Fisheries profile

Myanmar has a coastline measuring 2,832km, along which four major fishing grounds can be found, i.e., in the states of Mon, Rakhine, Tanintharyi, and Ayeyawady. For purposes of administration and monitoring, Myanmar's waters are divided into 140 grids of fishing grounds.

Figure 24. Administrative divisions of Myanmar's fishing grounds



There are two types of marine capture fisheries:

- Inshore (small-scale) fisheries involving the use of non-mechanized fishing vessels not more than 30 feet in length, which may be engine-powered up to 25HP; and
- Offshore (commercial) fisheries using fishing vessels longer than 30 feet and powered with engines of more than 25HP

About 88% of Myanmar's fishing fleet in 2016 (**Table 17**) were small-scale vessels operating in inshore fisheries areas within 10 nautical miles from the shoreline; beyond this demarcation line up to the EEZ limits is the offshore fisheries area.

Total marine production was 2.9 million tons in 2015, mainly from fisheries involving trawl, purse seine, drift net, trap, squid falling net, stow net, and longline. The major species were Ribbon fish, Tiger shrimp, Pink Shrimp, Big eye croaker, Hilsa, mud crab, grouper, sea Bass, and pomfret.

National fisheries management legislation

Fisheries management in Myanmar is governed by several laws, rules and regulations, including the following:

- Myanmar Marine Fisheries Law (1990)
- The law relating to the fishing rights of foreign fishing vessels (1989)

- Law amending the Myanmar Marine Fisheries Law (1993)
- Law amending the law relating to the fishing rights of foreign fishing vessels (1993)
- Aquaculture law
- State and regional freshwater fisheries laws (14)
- Related rules and regulations and licensing criteria issued periodically by the DOF

Fisheries management issues and problems
See Table 18.

Fisheries management programs
Fisheries management planning in Myanmar involves several government agencies, specifically the DoF, Customs, Trade, Navy, Maritime Police, regional and state authorities, in consultation with various fisheries associations, particularly the Myanmar Fisheries Federation (MFF) comprised of several associations representing different seafood sector stakeholders, such as Myanmar Marine Fisheries Association (MFFA); as well as other fishers associations, including, Drift Net Fishing Vessel Owner Association, Stow Net Fishing Vessel Owner Association, etc.

Table 17. Number of fishers and fishing vessels (2016), Myanmar

Type	Number	% of Total
Fishing Vessels		
• Offshore	3,085	10.60
• Inshore	26,019	89.40
Total	**29,104**	100.00
Fishers		
• Full-time	254,000	17.85
• Part-time	252,000	17.71
• Occasional	917,000	64.44
Total	**1,423,000**	100.00

The DoF is the lead agency responsible for implementing fisheries programs based on a policy of "ensuring food security, food safety and sustainable development of fisheries sector by conservation of fisheries resources in accordance with the fisheries laws." EAFM is officially number three out of six objectives of the DoF, stated as "systematic implementation of fisheries co-management and ecosystem approach to improve fisheries management," and there are three plans to achieve it:

- Plan No. 5 – Establishment of accurate operational framework for systematic improvement and implementation of fisheries co-management and ecosystem approach to fisheries management;
- Plan No. 6 – Implementation of fisheries co-management and ecosystem approach to fisheries management by promoting community fisheries organizations and their fisheries co-management committees, capacity building, gender promotion (women's empowerment) and provision of technical assistance to fisheries sector; and
- Plan No. 7 – Implementation of National Plan of Action for Combating Illegal, Unreported and Unregulated (IUU) Fishing.

The NPOA-IUU includes measures to address such issues as fishing without a license, deployment of excessive number of stationary units or non-compliant gears encroaching on inshore waters or protected areas, incursions of foreign unlicensed fishing vessels into Myanmar waters, etc. Current measures include licensing and registration controls, controls on the construction and importation of new fishing vessels, sanctions against non-compliant fishing vessels, limitations on the number of trawl fishing vessels, and measures to encourage compliance by fishing vessel operators/owners.

Measures for conservation are also in place. For 2017, DoF declared May, June and July as a closed season for fishing, using a check-in check-out system to promote compliance. A review of regulations on the size of fishing boats, netting and limitations on fishing gear was also undertaken.

To inform planning and decision-making, a socioeconomic survey was conducted on 19-20 Jul 2017 in two fishing villages at Thaton Township in Mon State. The results are shown in Table 19.

Table 18. Fisheries management issues and problems, Myanmar

Components	Issues/Problems
Ecological Well-being (Fisheries & Habitats)	• Trawl fishing vessel dominant • Using unregulated fishing gears • Fishing in prohibited area • Using prohibited fishing gear (Baby trawl fishing vessel in inshore fisheries)
Human Well-being (including gender, labor, livelihoods)	• Low opportunities of alternative livelihood • Low income due to Low market price • Conflict between inshore fisheries and offshore fisheries • Low value fisheries product
Governance & Institutions	• Low interest of policy makers and decision maker in fisheries sectors • Specific fisheries management plan for the specific area • Compliance of fishery stakeholders • Ineffective law enforcement in diverse area • Staff capacity and financial resources

Table 19. Results of socioeconomic survey of two villages in Mon State, Myanmar

SURVEY SITES	Lake Inn Quarter, Paduak Myaing Village	Aung Kan Thar Village
NO. OF HOUSEHOLDS	100	168 (pop. 1,032)
OCCUPATION	Fishers – 80% (small-scale) Farmers, carpenters, etc. – 20% 2 middlemen (for crab only)	Fishers – 100% (small-scale)
FISHING GEARS USED	Hook and line – 37-40 ft. main line length, 3-5 ft. branch line length; 50-80 hooks; bait is small earthworm; 80 to 100 pcs. total lines Small Cast net Eel trap -- 40 to 60 cm height, 60-140 mm widest diameter; bait is dog(?), small snail, dry coconut and small shrimp Sounding net (Beach seine net) – >500 ft. length, 25-30 ft. depth, 3mm mesh size Drift net – 5,800-6,500 ft. length, 9-12 ft. depth, 2-3 inches inner mesh/14-18 in. outer mesh	
TARGET SPECIES –SELLING PRICE	Croaker (*Otolithes sp.)* Tongue sole (*Cynoglossus lingua*) –28000 bath/viss[14] Swamp eel (*Monopterus albus*) –280000 bath/viss Soft-shell mud crab (*Scylla serrata*) –160000-360000 bath/pc Engraved catfish (early winter) –240000 bath/viss Snake head (*Channa striata*) –32000-720000 bath/viss River catfish (*Mystus cavasius*) –20000-320000 bath/viss Boal (*Wallago attu*) –180000-320000 bath/ viss Carplet (*Osteobrama alfredianus*) –16000-32000/bath/viss Butter catfish *(Ompok bimaculatus)* –32000-48000 bath/viss	Mullet (*Mugil cephalus*) –75000-140000 bath/viss Giant sea perch (*Lates calcarifer*) –120000-320000 bath/viss Brushtooth lizardfish (*Saurida undosquamis*) –5200-68000 bath/viss River catfish (*Mystus cavasius*) –280000-320000 bath/viss Croaker (*Otolithes sp.)* –160000-800000 bath/viss India thread fin (*Polynemus indicus*) –320000-400000 bath/viss
AVERAGE MONTHLY INCOME FROM FISHING	150000 kyats	125000 kyats
FISH PRODUCT	Fish paste, ngapi made by fermenting fish or shrimp that is salted and ground then sun-dried	

[14] "Viss" is a unit of measurement unique to Myanmar; approximately 1.633 kg or 3.6 lbs

FISHERS' ORGANIZATION		Fishing committee organized with 19 committee groups and 120 members
GAPS AND NEEDS		Infrastructure, technology and financing for dried brushtooth lizardfish product

EAFM initiatives

Myanmar's EAFM plan includes:

- Establishment of Locally Managed Marine Areas (LMMA) toward development of an MPA network in three sites in Tanintharyi Region in the southern part of Myanmar bordering the Andaman Sea;
- Implementation of EAFM with SEAFDEC and USAID assistance; and
- Establishment of crab and lobster protected area and mangrove transplanting (assisted by SEAFDEC and AusAID)

These EAFM activities will require site-level implementation and capacity building, specifically:

- Site selection, looking at areas where illegal fishing has been a long-term problem that poses a threat to fisheries sustainability and the LMMA initiative toward developing an MPA network.
- Institutional arrangement, involving the MCS Unit of DoF and other concerned departments, regional authorities, local fisheries organizations and the MFF, and local Fisheries Management Committees (FMCs)
- Capacity building for MCS team members and DoF staff, fishers and fisheries stakeholder
- Awareness building and law enforcement for the fisheries stakeholders and fishers
- Establishment of annual work plan

Lessons learned and opportunities

The following factors are viewed as essential to improving fisheries management in Myanmar and ensuring its success:

- Specific fisheries management plan for each target area
- Rapid appraisal of fisheries management systems in fisheries management area (FMA)
- Review of maximum sustainable yield (MSY), and status of exploitation in FMA
- Strong stakeholder engagement
- Effective fisheries management work plan
- Capacity building for staff
- Close collaboration among the government agencies and fisheries stakeholders

Opportunities exist for:

- Strengthened institutional framework and organization of fisheries stakeholder
- Effective law enforcement
- Initiatives of three LMMA sites to improve the fisheries co-management and responsible fishing practices in cooperation with local fisheries communities
- Promotion of Inspection at sea by the Navy
- Planning for patrol operation sof Maritime police in inshore areas

➢ *Philippines*

Presented by Mr. Ronnie O. Romero, OIC, Monitoring and Evaluation Section, National Fisheries Research and Development Institute

Country profile

The Philippines is an archipelago with more than 7,100 islands,[15] a coastline stretching nearly 22,500 km and about 2.20 million km^2 of archipelagic waters (88% of national territory) consisting of 266,000 km^2 of coastal

[15] The number of Philippine islands has been updated to 7,641 islands, based on an IFSAR (Interferometric Synthetic Aperture Radar) survey by the Philippine Islands Measurement Project of the National Mapping and Resource Information Authority (NAMRIA). *(Source:* http://cnnphilippines.com/videos/2016/02/20/More-islands-more-fun-in-PH.html*. Retrieved 15 September 2017)*

waters and 1.934 million km^2 of oceanic waters that contain what has been reported as "the center of the center of marine shorefish diversity."[16] With nearly 52,177 described species and possibly many more species still unknown to science, the country is well regarded for its overall biological richness described as "Galapagos Islands times ten,"[17] ranking among 17 megadiversity countries that together contain 70-80% of global biodiversity.[18] Major fishing grounds are found throughout the archipelago. (Figure 25)

Table 20. Philippine biodiversity

NO. OF DESCRIBED SPECIES	52,177
NO. OF RECORDED WILDLIFE TERRESTRIAL VERTEBRATE SPECIES	1,130 (≈50% endemic)
NO. OF VASCULAR AND NON-VASCULAR PLANTS (INCLUDING FUNGI)	10,000-14,000 (>50% endemic)
CORAL REEF AREA	27,000 km^2
NO. OF CORAL SPECIES	500 (≈60% of global total)
NO. OF FISH SPECIES	>2,000
NO. OF MANGROVE SPECIES	40 (≈74% of global total)
NO. OF SEAWEED SPECIES	1,062
NO. OF SEAGRASS SPECIES	16

Figure 25. Major fishing grounds in the Philippines

Marine capture fisheries in the Philippines are categorized into two main sectors:

- Municipal fisheries – refers to fisheries within municipal waters (up to 15 km from the coastline) using fishing vessels of not more than 3 GT, or fishing not requiring the use of fishing vessels
- Commercial fisheries – refers to fisheries using active gear for trade, business or profit beyond subsistence or sports fishing or fishing vessels of more than 3 GT, and permitted only beyond the 15-km boundary of municipal waters except under conditions outside allowed by law, in which case they may be allowed operate in municipal waters within 10.1-15 km from the shoreline.
    - Commercial fisheries are further divided into three sub-sectors based on scale of operations:
    - Small-scale commercial fisheries – using active gear or fishing vessels of more than 3 gross GT up to 20 GT
    - Medium-scale commercial fisheries – using active gear or fishing vessels of more than 20 GT up to 150 GT
    - Large-scale commercial fishing – using active gear or fishing vessels of more than 150 GT

Nearly two million people are engaged in marine capture fisheries in the Philippines, and more than 97% of them are in the municipal sector (Table 21), contributing more than 50% of total marine capture fisheries production (Figure 1). In 2015, the fisheries sector overall (including aquaculture) contributed 17.8% of GVA of the agriculture sector, and about 1.5% of GDP at current prices. Per capita consumption of fish and fishery products in 2013 was 109 grams, 70% of which came from fresh and chilled fish, followed by processed and dried fisheries product.

[16] Carpenter, K.E. & Springer, V.G. (2005) The center of the center of marine shore fish biodiversity: the Philippine Islands. Environmental Biology of Fishes 72: 467. doi:10.1007/s10641-004-3154-4

[17] Heaney, L. R. and J. C. Regalado, Jr. 1998. Vanishing Treasures of the Philippine Rain Forest. The Field Museum, Chicago. 88 pp.

[18] Mittermeier RA, Robles Gil P, Mittermeier CG. 1997. Megadiversity. Mexico City (Mexico): CEMEX.

In 2015, the value of fishery exports fell nearly 30% from the previous year and, although still a net exporter in value terms, the Philippines became a net importer in terms of quantity. About 227,000 MT of fish and fishery products valued at US$909 million were exported from the country, while fishery imports amounted to more than 400,000 MT valued at US$414 million. (Figure 26)

Table 21. Number of fishers and fishing vessels in marine capture fisheries, Philippines (undated)

Sector	No. of Fishing Vessels	No. of Fishers
Municipal (NMT 3GT)	245,404	1,792,755
Commercial Fishing Boat (>3GT)	7,434	46,870
Total	**252,838**	**1,839,625**

Figure 26. Fisheries production (2006-15), Philippines

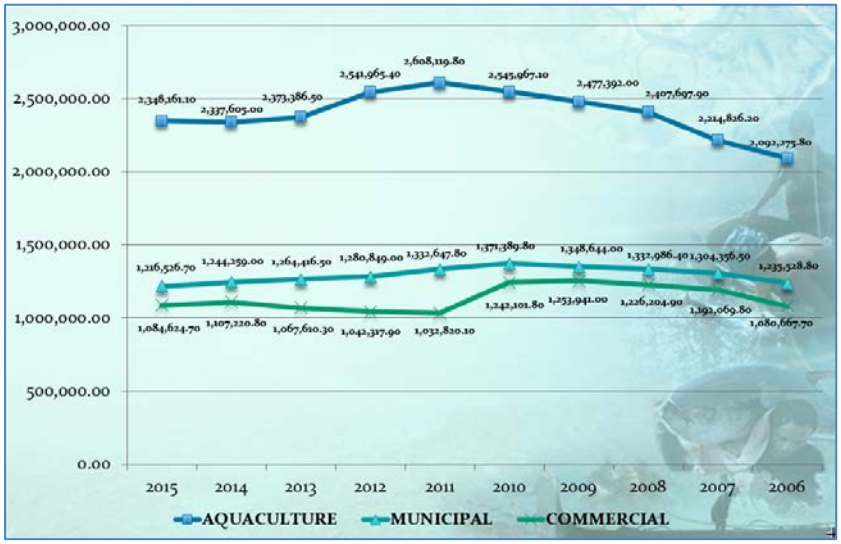


Table 22. Number of fishers and fishing vessels in marine capture fisheries, Philippines (undated)

	2015			2014		
	Quantity (MT)	FOB Value		Quantity (MT)	FOB Value	
		(Php M)	(US$ M)		(Php M)	(US$ M)
Fishery exports	226,821	41,401	909	316,863	56,349	1,274
Fishery imports	403,840	18,790	414	302,333	14,288	320
Trade balance	**(177,019)**	**22,611**	**495**	**14,530**	**42,061**	**954**

National fisheries management legislation

EAFM is mandated under Republic Act (RA) 10654, "An Act to prevent, eliminate and deter illegal, unreported and unregulated fishing," which states that fisheries and aquatic resources should me managed "in a manner consistent with the concept of an ecosystem-based approach to fisheries management and integrated coastal area management. RA 10654 was enacted in 2015 to amend the 1998 Philippine Fisheries Code (RA 8550). Following this, the Comprehensive National Fisheries Industry Development Plan from 2015-2020 included the following targets for the different fisheries sectors:

- Capture fisheries – 1% annual growth in Municipal fisheries and 5% annual growth for commercial fisheries
- Aquaculture – Increase in production of Seaweeds, crustaceans, mollusks and finfish

- Post-Harvest – 10% reduction in post-harvest losses and 100% compliance with hygiene and sanitation standards
- Marketing – Increase in quantity and value of traded fish and fishery products

Fisheries management is also supported by the following laws that address certain aspects of fisheries:

- The Wildlife Conservation and Protection Act of 2001 (RA 9147) – An Act providing for the conservation and protection of wildlife resources and their habitats
- Agriculture and Fisheries Modernization Act (AFMA) (RA 8435) – An Act prescribing measures to modernize the agriculture and fisheries sectors in order to enhance their profitability
- Local Government Code (LGC) (RA 7160) – Not a fisheries law, but defines "municipal waters" and gives municipalities "the exclusive authority to grant fishery privileges in municipal waters and impose rentals," issue licenses for municipal fishing vessels, enforce fishery laws, and conserve mangroves

In some parts of southern Philippines under the jurisdiction of the Autonomous Region of Muslim Mindanao (ARMM), a special organic law, RA 6734, applies, providing the basic structure of the ARMM government and governing its operations, including fisheries and matters related to fisheries.

Fisheries management issues and problems

Table 23. Fisheries management issues and problems, Philippines

Components	Issues/Problems
Ecological Well-being (Fisheries & Habitats)	• Depleted fishery resources due to excessive fishing effort and open access regimes. • Degraded fishery habitats due to destructive fishing methods • Need for a sustained and long-term implementation of law enforcement program to solve resource degradation and depletion
Human Well-being (including gender, labor, livelihoods)	• Poverty • Insufficient livelihood support targeting municipal fishers who are among some of the "poorest of the poor" in the Philippines. • Intensified resource use competition and conflict among fishers group and other economic sectors, especially between municipal fishers and commercial fishers • Post-harvest losses in terms of physical, nutritional and values
Governance & Institutions	• Uncompetitive products due to inferior quality and safety standards – This is being addressed the Philippine National Standards for fish and fishery products. • Limited institutional capabilities at all levels of governance • Inadequate/inconsistent fisheries policies to promote conducive environment for sustainable development • Weak institutional partnerships among concerned government agencies, civil society organizations and private sector due to sometimes conflicting interests • Weak fishery law enforcement – MCS in Philippine waters has increased but needs to be improved further and sustained. • Lack of science and research studies – The lead agency for fisheries research, the National Fisheries Research and Development Institute (NFRDI), does not have sufficient human resources to do the required research.
Others	• Vulnerability to climate change • IUU Fishing • Weak information and education campaign

Current status of fisheries management and planning

All plans and programs are anchored to CNFIDP targets, focusing on efforts to, for example, manage fishing vessels and fishing in the high seas, undertake structural reforms, and build capacity for government at all levels and NGOs, along with the private sector, to more effectively work together to improve fisheries management and sustainability. The overall approach, as mandated by RA 10654, is EAFM, so looking not only at ecological targets, but also at the other components of EAFM, particularly the provision of alternative

livelihood for people who might be displaced by the implementation of, for example, fishing controls (Table 24). The effort will necessarily involve, and will be coordinated among, multiple agencies, including:

- Agencies responsible for the protection of fish habitat, management of fish ports, registration of fishing vessels, regulation of fish trade, and fisheries negotiations:
    - Department of Environment and Natural Resources (DENR)
    - National Mapping and Resource Information Agency (NAMRIA)
    - Maritime Industry Authority (MARINA)
    - Philippine Fisheries Development Authority (PFDA)
    - Philippine Ports Authority (PPA)
    - Department of Trade and Industry (DTI)
    - Department of Foreign Affairs (DFA)
- Research and policy support agencies
    - National Fisheries Research and Development Institute (NFRDI) and
    - Bureau of Agriculture Statistics (BAS)
    - Department of Information and Communications Technology (DICT)
- Enforcement agencies given the responsibility to enforce fisheries laws
    - Philippine Coast Guard
    - Philippine Navy,
    - Philippine National Police Maritime Group, and
    - Philippine Air Force
- Coordinating bodies
    - National Agriculture and Fisheries Council (NAFC)
    - Fisheries and Aquatic Resource Management Councils (FARMCs)
    - Philippine Council for Aquatic and Marine Research and Development (PCAMRD)
    - National Committee on Illegal Entrants (NCIE)
    - Monitoring Control and Surveillance Coordinating and Operations Centers (MCSCOCs)
    - *Bantay Dagat* (Sea Watch) Program
    - National Tuna Industry Council (NTIC)

Table 24. Current fisheries management activities and institutions responsible, Philippines

Fisheries Management	Institutions Concerned
Mainstreaming EAFM	BFAR, LGUs, NAMRIA, national government agencies (NGAs), civil society organizations (CSOs), academe, law enforcement agencies, Fisheries and Aquatic Resource Management Councils (FARMCS), people's organizations (POs), fisherfolk organizations, private sector
• National Demarcation of FMAs	
• Identification of Reference Points (RPs) o TRP (target reference point), TRRP (trigger reference point), LRP (limit reference point)	
• Establishment of Harvest Control Rules (HCRs)	
Establishment of MPAs	
Fisheries Observer Program (putting fisheries observers on board fishing vessels, especially those plying international waters)	BFAR, fishing boat operators
Implementation of Vessel Monitoring Measure (VMM)/VMS	BFAR, fishing boat operators
Provision of incentives (e.g. greenest coastal area award, which comes with alternative livelihood programs)	BFAR
R&D Support	BFAR, NFRDI
E-CDTS (this is being developed in partnership with USAID Oceans and will be pilot tested in General Santos City)	BFAR, DICT, Oceans Project, LGUs, Other Stakeholders
Provision of alternative livelihoods	BFAR, LGUs

IUU measures and fisheries management interventions

One example of a specific intervention that has gained acceptance in the Philippines is the introduction of seasonal closures in some of the country's most important fishing grounds: (Figure 27)

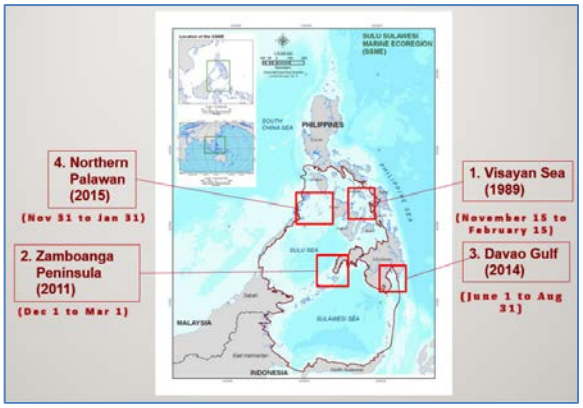
- Visayan Sea – sardines (November 15 to February 15)
- Davao Gulf – small pelagics (June 1 to August 31)
- Zamboanga Peninsula – sardines(December 1 to March 1)
- Northern Palawan – round scad (November 31 to January 31)

In the Visayan Sea, the closed season was actually initiated by the private sector and, in Zamboanga Peninsula, by fisheries organizations, while that in Northern Palawan was an initiative of a group of individuals.

Specific measures being implemented to address IUU fishing are as follows:

- Banning of destructive fishing methods
- Export ban on protected corals
- National Tuna Management Plan
- National Plan of Action for the Conservation and Management of sharks (NPOA-Sharks)
- National Plan of Action to Deter Illegal, Unreported and Unregulated Fishing (NPOA-IUUF)
- National Tuna Fish Aggregating Device (FAD) Management Policy
- National Plan on Blue Swimming Crabs
- Demarcation of Fishery Management Areas (FMA)
- Sardine management plans
- Round scad Management Plan
- Management of long distance fishing
- Intensified law enforcement, fisheries management and regulatory mandates
- Unified and inter-relational MCS
- Municipal Fisherfolk Registry (FishR) and Boat Registration (BoatR)
- Dismantling of illegal structures in bay and inland water bodies

Figure 27. Fishing grounds in the Philippines with closed seasons



EAFM initiatives

EAFM is now mainstreamed in government through mandate of law, and various activities are underway to ensure that it is actually applied. These include:

- E-EAFM trainings
- Localization of M-EAFM Modules (modules were adapted to the Philippine LGU context)
- Mainstreaming of EAFM (M-EAFM)
- Institutionalization of FMAs, reference points, HCRs
- Demarcation of FMAs and production of topographical map

Lessons learned and opportunities

- The various stakeholders and players in the fisheries value chain all play a significant role in planning, implementation, monitoring and adaptation, so it is important that they are able to participate in the whole EAFM cycle.
- The role of the LGU is key
- Consistent support from BFAR Regional Field Offices is essential.
- Knowledge gained through the EAFM training is more likely going to be applied when the training is localized – The use of Philippine-specific modules and process for M-EAFM, for example, has played an important role in the integration of alternative livelihood in the fisheries management plans of the Regional Field Offices.

- Strong cooperation between government and the industry/fishing community (e.g. on establishment of closed seasons) has opened opportunities for further cooperation on fisheries co-management.
- Process is important: The planning process brings out important information from stakeholders on how best to address resource depletion and poverty to achieve long-term sustainable development.
- Fisheries management systems must be comprehensive in order to achieve the objectives of EAFM.
- Pilot-testing is needed to develop successful livelihood activities
- Institutional capacity building for industry stakeholders is needed to sustain their engagement in fisheries management

➢ *Singapore*

Presented by Ms Valerie Chia, Manager, Fisheries Management and Compliance, Agri-Food and Veterinary Authority of Singapore

Country profile

Singapore is very small, with very little sea space, only four fishing vessels operate there. The vessels are all locally and privately owned, registered with the Agri-Food and Veterinary Authority (AVA) and licensed to fish only within Singapore's territorial waters. Three of the vessels are otter trawls, and the fourth is a gillnet boat. They are all small, less than 21 meters, with up to five crew members per vessel (the gill net boat has a one- to two-man crew). In 2016, they caught 590 tons of seafood, mainly demersal species such as grouper, snapper, etc. that was all consumed locally.

Singapore's per capita seafood consumption is 21kg annually, and most of it come from imports.

Because the fishing vessels are very small, and because the fishing fleet is small, local fishing activities have minimal impact on Singapore's marine biodiversity and environment.

Table 25. Fisheries profile, Singapore

OWNERSHIP	Locally and privately owned
REGISTRATION	AVA, licensed only to fish within territorial waters
LENGTH OVERALL	14 – 21m
GT	8 – 46 GT
GEAR USED	3 otter trawls, 1gill net

SPECIES	Regional species such as grouper, snapper, mullet, mackerel, threadfin, sea bream, scads, sea bass, crabs, and prawns.
FISHERMEN (INCLUDING MASTER)	Up to 5 crew per vessel
FISHERIES PRODUCTION	590 ton in 2016. All fisheries production consumed locally.

National fisheries management legislation

Fisheries management in Singapore falls under the Fisheries Act, which was enacted in 1969. Fisheries legislations and regulations are administered by AVA.

The Fisheries Act is currently under review to update its scope and enhance AVA's power, for example, to combat IUU fishing.

Fisheries management issues and problems

Table 26. Fisheries management issues and problems, Singapore

Components	Issues/Problems
Ecological Well-being (Fisheries & Habitats)	• Lack of fisheries stock information.
Human Well-being (including gender, labor, livelihoods)	– Not applicable. • Equal opportunities for both genders across the fisheries/ fishing industry.
Governance & Institutions	– Not applicable.

IUU measures and fisheries management interventions

These include:

- Licensing of fishing vessels and fishing gears, and fishing crew
- Reporting and recording of catch data (fishing operators are required to declare their monthly catch)
- Advance notification of vessels entering port – All foreign fishing vessels are required to submit an advance notification of arrival before they enter our port limits. This allows authorities to carry out the risk assessment on whether to allow or deny a vessel's access into port, and also to determine if a vessel requires inspection.
- Work with shipping agents to discourage them from representing IUU fishing vessels.
- Inspection of IUU fishing vessels if they enter port. Denial of port services and unloading.
- All fishing vessels installed with transponders which are monitored by the Maritime Port Authority to ensure that they do not fish in areas that they are not supposed to

Note: Singapore does not have any fishing activities in the Sulu-Sulawesi Sea, Gulf of Thailand, South China Sea, or Andaman Sea.

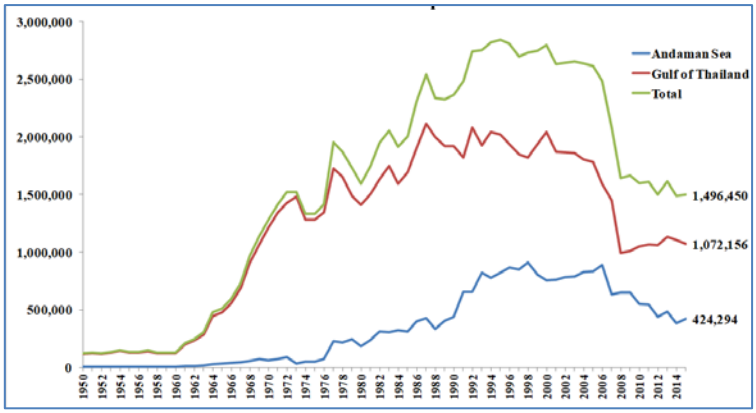
➢ *Thailand*

Presented by Ms Sansanee Srichanngam, Head of Ranong Marine Fisheries Research and Development Station, Department of Fisheries

Country profile

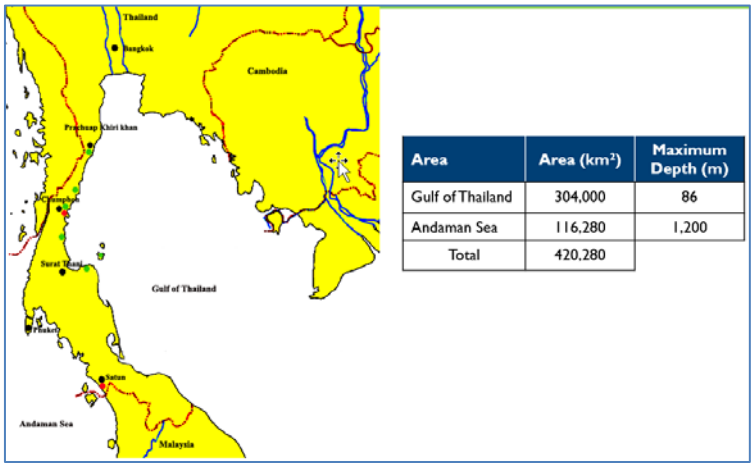
Fisheries production in Thailand increased steadily between 1980 and 1995, and then started to decline and decreased sharply in 2008. There were two reasons for this downward trend: (1) overexploitation; and (2) a change in the reporting system for overseas fisheries. Currently, fisheries production is around half of the peak production achieved in 1995. (Figure 27) According to the 1995 Census of Marine Fishery, there were 109,635 fishing households in Thailand in 1995.

Figure 28. Fisheries production (1950-2014), Thailand



In 2015, fisheries and aquaculture contributed 0.76% of Thailand's GDP of 13,672 billion Baht. Seafood exports was valued at 220.547 billion Baht in 2016, a slight decrease (1%) from the year before.

Figure 29. Fishing areas, Thailand



Area	Area (km²)	Maximum Depth (m)
Gulf of Thailand	304,000	86
Andaman Sea	116,280	1,200
Total	420,280	

Thailand's main marine fishing grounds are the Gulf of Thailand and Andaman sea, which together cover more than 420,000 km^2. (Figure 29) The major fishing gears are: Pair trawl, otter board trawl, beam trawl, anchovy purse seine, Thai purse seine with sonar and sounder, Thai purse seine with light luring, squid cast net with light luring, anchovy lift net, Indo-Pacific mackerel gill net, cuttlefish traps, crab gill/entangle net, and crab traps.

Fishing vessels are categorized according to capacity in gross tonnage and engine power in HP.

Table 27. Fishing vessel categories, Thailand (FMP 2015)

Fishing Vessel Category	Tonnage (GT)	Engine Capacity (HP)
Artisanal		
• Small	< 5 GT	<180
• Large	5 to < 10 GT	180-220
Commercial		
• Small	10 to < 20 GT	220-380
• Medium	20 to 60 GT	>380
• Large	>60 GT	
Transshipment	**Tonnage (GT)**	**Storage/Preservation**
• Operating in Thai waters	>30 GT	Ice
• Operating outside Thai waters	>60 GT	Freezing system

According to a recent survey (May 2017), 10,616 fishing vessels are licensed to operate in Thai waters, and 16 vessels outside Thai waters.

National fisheries management legislation

It is the policy of the Thailand Government to manage resources for sustainable utilization by reforming and modernizing the fisheries sector in compliance with international rules, and transforming fisheries from open access to limited access. The Royal Ordinance on Fisheries B.E. 2558, which came into force in November 2015, provides the mandate for sustainable resource management, defines what illegal fishing is, prescribes penalties proportionate to the offense or estimated value of illegal catch or damage to natural resources, and prescribes compliance with international laws and regulations. It was amended in June 2017 to close some legal loopholes and to improve implementation and enforcement.

Other fisheries-related laws and regulations:

- National Council for Peace and Order (NCPO) Notification, e.g. NCPO Order No. 10/2558: Actions against Illegal, Unreported and Unregulated Fishing
- Ministerial Notifications on various fisheries aspects
- Royal Ordinance on Thai Vessels
- Royal Ordinance on the Navigation

Fisheries management plan

Thailand's fisheries policy is being implemented based on a five-year FMP published in the Royal Gazette in December 2015 and runs through 2017. Applying EAFM to reduce fishing capacity, promote sustainable fisheries, and ensure full protection of marine resources, the FMP integrates the legal framework and fisheries policy into an operational process linked to specific fisheries management laws, regulations and, including, The Royal Ordinance on Fisheries (2015 and 2017); NPOA-IUU; MCS; National Plan of Control and Inspection (NPCI); and traceability.

A nationwide survey of existing Thai-flagged fishing vessels was developed into an up-to-date ("real time") vessel database called "Fishing Info" that provides Thailand with clear and accurate picture of its fleet structure that guides the implementation of the FMP and fleet reduction measures. An electronic fishing license system based on MSY has been developed, and allowable catches and fishing days, also based on MSY, was introduced to manage fishing effort.

Table 28. Allowable catches and fishing days for 2016, Gulf of Thailand and Andaman Sea, Thailand

Species Groups	Gulf of Thailand		Andaman Sea	
	Allowable Catches (MT)	Allowable fishing days	Allowable catches (MT)	Allowable fishing days
Demersals	54,616	101,627	14,789	16,989

Pelagics	26,499	28,815	6,850	4,321
Anchovies	23038	21,932	3,104	4,277
Total	**104,153**	**152,374**	**24,743**	**25,587**

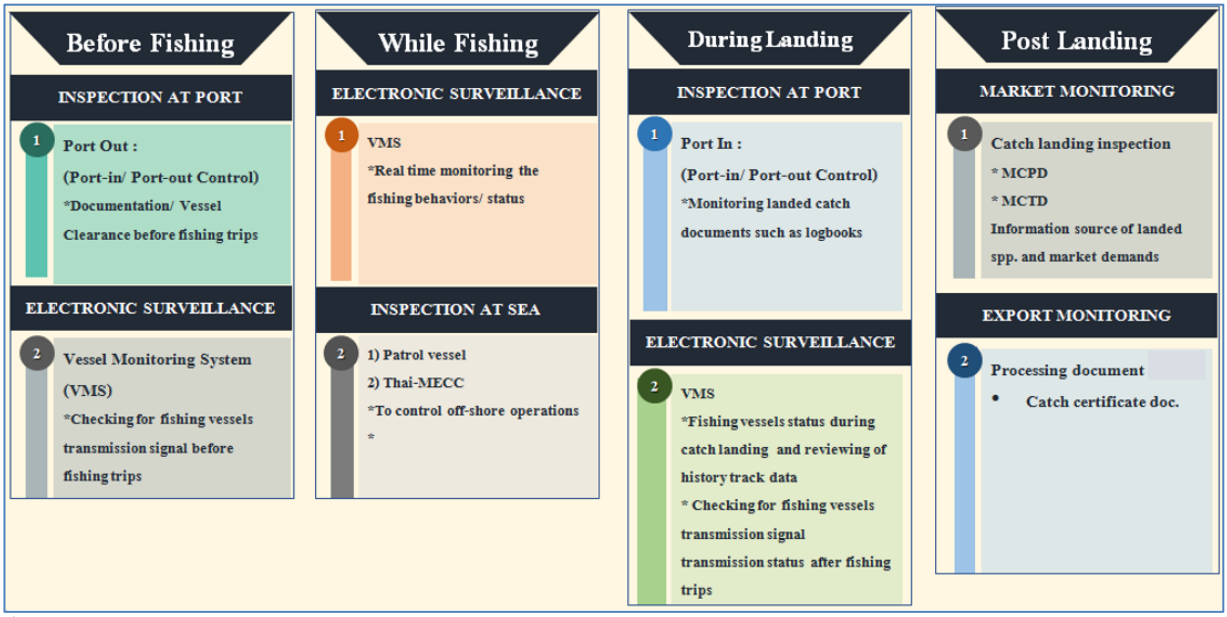
Traceability

Thailand has developed a "National Traceability System" designed to trace the origin and movement of both catches from Thai-flagged vessels and imported fish and fishery products. To increase the level of accuracy, the system uses two electronic databases to cross-check information before the Catch Certificate and Processing Statement are issued. These databases are the "Thai-flagged Catch Certificate System" and "PSM-linked and Processing Statement System (PPS)."

MSC systems and VMS

MCS measures are being implemented in order to ensure that fishing activities comply with the new fisheries laws and regulations. These include: Updating the VMS by linking it to inspections at port and at sea through the Fisheries Monitoring Center (FMC); and improving the coordination mechanism (Figure 30) among agencies involved in MCS, such as labor, fisheries, maritime, immigration, customs, navy, Maritime Enforcement Coordination Center (MECC).

Figure 30. MCS components in Thailand



*MCPD -- Marine Catch Purchasing Document; MCTD -- Marine Catch Transshipment Document

VMS is required for all fishing vessels above 30 GT. It must be sealed to prevent removal from the vessel, and switched on at all times. If signal is lost, the FMC is required to take action at once, and SMS or call the vessel owner or fish master immediately.

For Thai-flagged vessels operating overseas, a new electronic surveillance system has been developed that includes an electronic reporting system (ERS) and electronic monitoring system (EM). The system is designed to automatically send a signal as needed to FMC staff, as well as report back to the vessel owner.

Thai-flagged vessels operating outside Thai waters are also required to have a fisheries observer on board.

Inspection at port has been facilitated by the establishment of 32 Port In-Port Out (PIPO) Centers and 19 forward inspection points (FIPs) along the coasts of the Gulf of Thailand and Andaman Sea. Landed fish data are verified against the fishing logbook, fishing gears and MCPD or MCTD. (Figure 31)
To facilitate inspection at sea, the fisheries department and MECC have integrated their operations into three zones, with each zone having its own dedicated patrol units.

Figure 31. PIPO Centers and FIP's at the Gulf of Thailand and Andaman Sea, Thailand

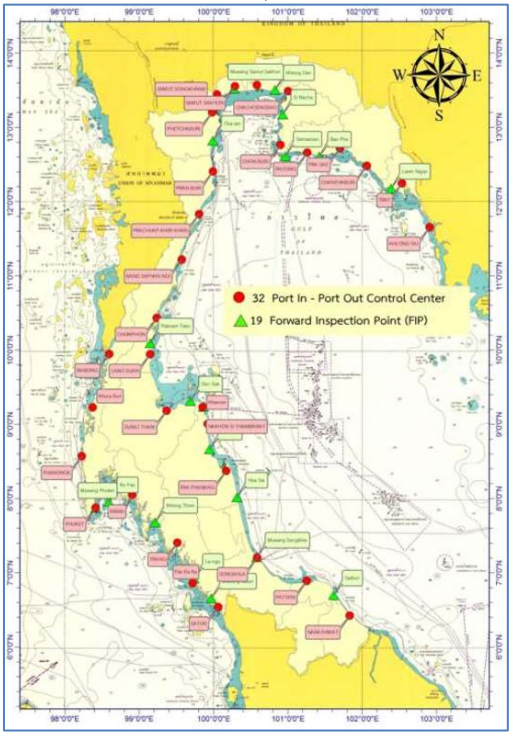
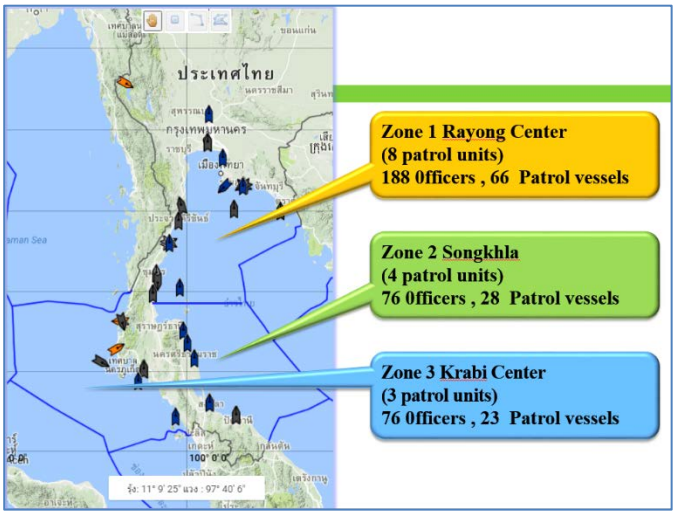


Figure 32. Thai waters divided into three zones to facilitate inspection at sea



National and International Cooperation

Thailand has signed cooperation agreements on combating IUU fishing with Fiji, South Korea, the Philippines, Myanmar and Japan, with many other agreements in draft form or in the drafting stage. The country is a member of the Indian Ocean Tuna Commission (IOTC), and the Southern Indian Ocean Fisheries Agreement (SIOFA).

➢ *Singapore*

Presented by Mr. Tran Nam Chung, Vice Manager of the Vessel Monitoring Division, Department of Fisheries Resources Surveillance and Control

Figure 33. Number of fishing vessels (2010-16), Vietnam

General introduction

Vietnam has a 3,260-km coastline, with diverse coastal ecosystems, including mangrove forests, seagrasses, and coral reefs that provide the right conditions for fisheries development. The country has a fleet of 110,000 fishing vessels, divided broadly into two categories based on engine capacity: those under 90 HP, and vessels of 90 HP or higher.

Major fishing gears are trawl, gillnet, purse seine, long line, and traps, with gillnets vessels numbering almost 40,000. Vietnam's fisheries are mostly small-scale and multi-species. In general, the educational level of fishers is low.

Fisheries policy and management

The main law governing fisheries in Vietnam is the Fisheries Law of 2003 (Law No. 17/2003). It is supported by other legal documents for sustainable fisheries development.[19] The law generally requires a license to fish, technical safety certificate for fishing vessels, and diploma or "certificate of captain or chief mechanic. Inspection and monitoring is done by the Fisheries Monitoring Center (FMC).

The law also provides for co-management as an approach to fisheries management, incorporating elements of EAFM.

The government started implementing in 2014 its "Fisheries Plan to 2020 with a Vision to 2030," focusing on the following strategies to achieve certain targets for the fisheries sector:

- Reorganization of production in capture fisheries by groups, fishing grounds and sea areas;
- Combining fishing with the protection and development of fisheries resources,
- Reducing exploitation of resources and the environment;
- Development of environment-friendly selective fishing gears

A key target is to reduce by 1.5% per year the total number of fishing vessels until 2020. This translates to a 10% reduction in the number of fishing vessels between 2014 and 2020, and another 15% by 2030. For nearshore fishing vessels, the target is 30%.

There is also a plan to regulate trawl fisheries, which includes the following objectives:

- Manage the building of new fishing vessels in the locality
- Prioritize development of "environment-friendly jobs"
- Suspend the building of fishing trawlers and conversion of vessels from other trades into trawls
- Reduce the number of licenses issued to trawl fishers, and eventually stop issuing licenses for trawl fishing.

EAFM and co-management

Vietnam has established 50 models of fisheries co-management across its coastline, and 71 National Protected Areas, 16 of which are MPAs.

With respect to combating IUU fishing, the government is looking at the following strategies:

[19] Decree No. 33/2010/ND-CP of March 31, 2010, on the management of fishing activities in sea areas by Vietnamese organizations and individuals

- Development of software/electronic system for fishery certification to reduce confirmation time
- Integration of license data into fishery certification
- Use of VMS for better control of fishing operations
- Adoption of NPOA-IUU

Vietnam has taken several actions to discourage Vietnamese fishing vessels from encroaching on other countries' EEZ's, including:

- Training fishers who engage in offshore fisheries fishermen who often conduct offshore fisheries on the boundary of Vietnam with neighboring countries
- Continuing negotiations with neighboring countries to resolve overlapping territorial claims
- Building awareness among Vietnam's fishing community of fisheries agreements signed between Vietnam and other countries in the region
- Convincing owners of big boats fishing offshore to sign commitment to comply with national and international laws.

1B: Regional Fisheries Management Initiatives by Regional Organizations/Programs

The presentations are detailed below in the order that they were presented and include presentations from FAO, SEAFDEC, SEAFDEC-Sweden, CTI-CFF, ADB CTI-Southeast Asia (CTI-SEA)-RETA 7813, and NOAA.

➢ *FAO*

Presented by Ms Cassandra De Young, Fisheries Planning Analyst, FAO

About FAO and FAO programs in the region

FAO is a specialized UN agency, born in 1945, that has 194 member-nations plus the EU. It has three strategic goals: (1) Eradication of hunger, food insecurity and malnutrition; (2) elimination of poverty and advancement of economic and social progress for all; and, (3) sustainable management and utilization of natural resources, including land, water, air, climate and genetic resources for the benefit of present and future generations. FAO agencies help countries meet these goals through the agriculture sectors, by providing technical advice and neutral fora for discussions.

FAO's global program on FM is led by the Code of Conduct for Responsible Fisheries. The main programs under the Code, include, among others, (1) Support to Regional Fishery Bodies, whether or not they are the Secretariat in the FAO or not; (2) Development of Binding Agreements such as the Port State Measures Agreement (PSMA); (3) Development of International Plans of Action and Technical Guidelines/Manuals; (4) Programmes supporting knowledge dissemination, global databases and information networks; and (5) Programmes supporting management and conservation along the value chains and across fisheries, within EEZ and in the high seas.

The work is quite vast and, at the national level, it is demand-driven most of the time, depending on what the country needs or asks for.

FAO also hosts the Secretariat for the Asia Pacific Fisheries Commission (APFIC), which has 21 members, including most of the AMS's.[20] APFIC's work include:

- Promoting the ecosystem approach to fisheries (EAF)
- Managing fishing capacity and combating IUU fishing
- Supporting fisheries livelihoods and blue growth
- Understanding and managing the implications of climate change for fisheries

[20] APFIC includes Australia, Bangladesh, Cambodia, China, France, India, Indonesia, Japan, Malaysia, Myanmar, Nepal, New Zealand, Pakistan, Philippines, Republic of Korea, Sri Lanka, Timor-Leste, Thailand, United Kingdom, United States of America, and Vietnam.

- Managing trash fish/low value fish/bycatch
- Supporting certification of fisheries
- Strengthening assessments to support fisheries management
- Promoting the role and potential of inland fisheries, especially the food security role that they represent in the region (information on the contributions of inland fisheries is often quite scarce)

FAO has several regional fisheries programs in Southeast Asia. Figure 34 shows the locations of a few of their recently concluded work, along with some newly initiated programs, that support EAFM. They include:

- The Bay of Bengal Large Marine Ecosystem (BOBLME) Project Initiatives I and II – Through this program, FAO has been working with SEAFDEC and other partners on developing the EAFM relevant to the region, providing background scientific knowledge for management planning as well as moving toward joint management of transboundary species. The 2nd phase, which is expected to start soon, would be more on the implementation of management plans and supporting the countries' efforts against IUU fishing.
- EAF Nansen Project – The EAF Nansen research vessel was recently in Myanmar, and is planning a return to the Bay of Bengal in 2018. They had a regional planning meeting last week, with Thailand, Myanmar and Malaysia also in attendance and there are discussions for the vessel to also move into the Gulf of Thailand to supplement SEAFDEC's and the other countries' research.
- Indonesian Seas Large Marine Ecosystem Project – This project has just started. It aims to develop a strategic action plan that will deal with not only EAF but also habitat, pollution, and transboundary management issues.
- Bycatch reduction project (REBYC II-CTI) – This project has just closed. It supported fisheries management plan development and the ecosystem approach in the region as well.
- Blue Growth Initiative – This includes APFIC country support to legal frameworks, trainings from across the board in IUU, doing stock assessments, etc.

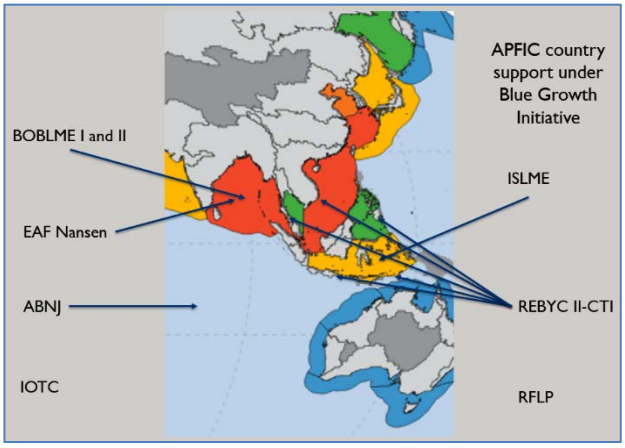


Figure 34. Some of key FAO regional fisheries programs in Southeast Asia

Case study: Samar Sea Fisheries Management Plan (SSFMP) development (FAO GEF REBYC II-CTI)

Development objective: Effective public and private sector partnership for improved trawl and bycatch management and practices that support fishery dependent incomes and sustainable livelihoods.

Major interventions:

- A systematic participatory process was adopted based on Ecosystem Approach to Fisheries Management (EAFM)
- The central and provincial level officers who were trained on EAFM by the FAO REBYC II CTI project were the facilitators
- The Samar Sea Fisheries Management plan was developed and approved for implementation

Vision of the plan: Sustainable and Equitably-shared Samar Sea Fisheries through Dynamic Management

Goal: Improve food security and reduce poverty of fishers through sustainable fishing industry development and management

Specific objectives:

- Implement an EAFM-SSFMP to sustain the fisheries of Samar Sea

- Introduce fishing effort controls to improve fish biomass / or maintain sustainable production of Samar Sea.
- Implement a rational monitoring, control and surveillance system (catch monitoring, regulatory/governance and fisheries law enforcement)
- Improve livelihood support/assistance to fisherfolk, and particularly to those that will be affected by the plan
- Reduce conflict among fishers/resource users
- Provide support to science as basis for the management of the fisheries of Samar Sea

Approach:
The project applied an ecosystem approach, and was guided by the following seven principles that distinguish the ecosystem approach from existing or conventional fisheries management:

- Good governance: designing rules and regulations and ensuring compliance with these through improved transparency and accountability;
- Appropriate scale: management takes into account spatial and temporal scales and delivers at the appropriate scale for the issue: political, geographic, multi-sectoral;
- Increased participation: Stakeholders need to work together in management planning and implementation (co-management);
- Multiple objectives: Takes account of the different objectives of different stakeholders and considers trade-offs;
- Cooperation and coordination: Needed horizontally across sectors and agencies and vertically across levels of government;
- Adaptive management: Learn through controlled trial and error; and
- Precautionary approach: Don't delay action because of a lack of information and be risk averse when there is uncertainty

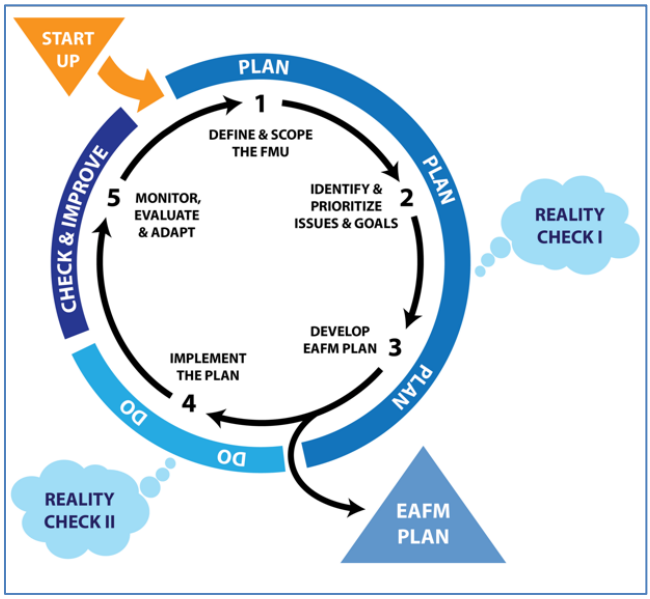
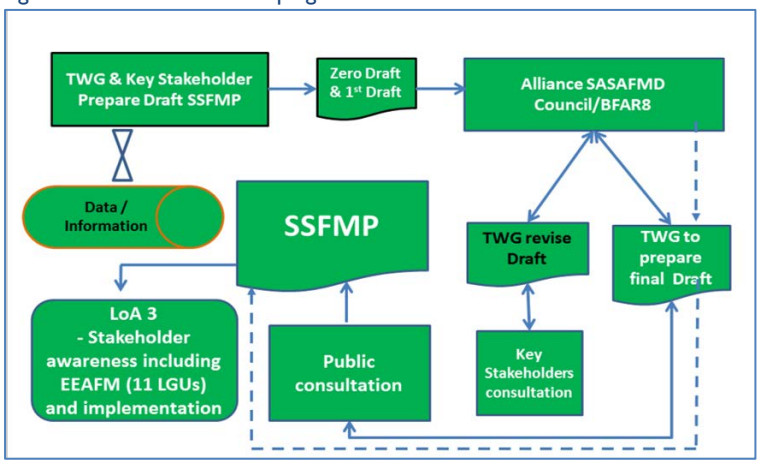


Figure 35. EAFM cycle

Implementation was set within national policy frameworks, in particular, the Fisheries Code of 1998 (Republic Act 8550) as amended by RA 10654; Local Government Code of 1991 (RA 7160); and the Agriculture and Fisheries Modernization Act of 1997 (RA 8435).

Process:
Developing the SSFMP involved extensive information gathering, trainings and getting stakeholders to participate in a planning process based on the generic management cycle of plan – do – check – improve. (Figure 35) The resulting plan went through several reviews by different stakeholders. (Figure 36)

Figure 36. Process of developing SSFMP



Key stakeholders identified and involved

The process involved many different stakeholders and stakeholder groups, as listed below. (Table 29) The LGU, in particular, was a key element in the local area management planning.

Table 29. Stakeholders and stakeholder groups involved in EAFM planning through FAO GEF REBYC II-CTI, Samar, Philippines

Fishers	NGAs	LGU	Academe	Private Sector	CSO's
Municipal and Commercial trawl operators Fishers from other sectors in the region	Bureau of Fisheries and Aquatic Resources-Central Office Regional Fisheries Office No. VIII Philippine National Police/PNP-Maritime Philippine Coast Guard	Province of Samar Samar Sea Alliance of Local Government for Fisheries Management	Samar State University	Fish Dryers/ Processors Fishing Companies Fish Vendors Fisherfolk Aquaculture	NAPC PAFC FARMC

Major issues identified based on which management actions were developed:

- Problems of bycatch and discards
- Conflicts with other resource users
- Demand from aquaculture for trash fish
- Role of trash fish/low value fish to food fish consumption
- Lack of socioeconomic data to support fisheries management

Elements of success:

- Thorough capacity building on EAFM at various levels from the doers to the decision makers – Take the time really to explain the concept, why it's important to people, what's different about it
- Management Plan adhering to international guidelines on bycatch management and the reduction of discards
- SSFMP finalized after its presentation to stakeholders, including, the Technical Working Group (TWG), BFAR Regional Fisheries Office staff, general public, members of the Samar Sea Alliance of Local Government Units and the National Advisory Group.
- Implementation guidelines of the SSFMP developed – Take the extra step to develop guidelines for how to actually implement the plan so the plan does not end up being just another document that stays on the shelf gathering dust.
- Socioeconomic studies carried out under project, used in determining local level management measures and featured as a chapter in the SSFMP
- Provision of alternative livelihood being explored and in progress

- Livelihood/training needs assessment for displaced fishermen during proposed closed season
- Fisheries Administrative Order 237, the regulation on use of Juvenile and Trash Fish Excluder Device (JTED) in place and complied with by commercial trawler operators in the Samar Sea pilot area
- Unified ordinance for the four-month closed season (April-July) approved by 11 coastal municipalities
- Establishment/integration of local management council (Alliance of Samar Sea LGUs) for Samar Sea management
    - Co-management system put in place at Samar Sea
    - Establishment of monitoring scheme incorporated in the SSFMP (management plan)

Lessons on Fisheries Management

- There is no one approach to EAFM – In the Philippines, they were trained on the concepts, principles and some of the processes to help in the management planning but they decided to adapt the process for themselves, which is how it should be.
- EAFM will depend on who is in the room, so the idea of making sure that stakeholders from across the disciplines participate will make a difference.
- Often the 1st EAFM may look like a conventional management, which could be a good thing, meaning what's conventional to you is considered modern fisheries management elsewhere, whether or not you use the same terminology. It could be that the first step to full integration of the ecosystem approach is broader stakeholder involvement, and the process could be slow, step by step, and the management plan itself remain a fairly conventional management plan.
- It takes time to build trust between the different ministries, between private sector and the government, or other stakeholders, so take the time to build that trust and make sure that stakeholders are involved in the implementation of the plan.
- Humility in fisheries management planning – this is something we're not that good at, but we have to be honest that this is learning experience for all. We make a lot of mistakes but we make them together which is already a good thing.
- Ideally – and the Philippines is going into this nicely – there should be a series of nested management plans at different scales, feeding into each other supported by legal frameworks.
- The more manageable the actions are in the management plan, the more likely they will happen.
- It is possible to manage without perfect information – we're still stuck in a world where we depend on very in-depth stock assessments. It is great when we have them but we also have to learn to move forward even when we don't have them.
- EAFM is part of the ecosystem approach, so it is building towards something bigger, supporting the sector to take part in the broader work. As mentioned in the Philippines, you also need the other sectors to help you implement your own plan.
- Don't forget the rest of the value chain – We are seeing management plans that are taking pre-harvest and post-harvest and the value chain into account, which is essential.
- Build stakeholders' capacity to take part in management planning – it is slow but it's a very important part of the process. Never underestimate the power of process.

Upcoming APFIC Event

The 7th Regional Consultative Forum Meeting "Sustainable development for Blue Growth of fisheries and aquaculture in the Asia-Pacific", General Santos, Philippines, May 2018 (before the 35th Session of APFIC, General Santos, Philippines, May 2018) – Topics will include fisheries management implementation, gender, small-scale fisheries guidelines, aquaculture, what does Blue Growth means to people.

➢ *SEAFDEC*

Presented by Ms Rattana Tiaye, Fisheries Management Scientist (FMS)/SEAFDEC

SEAFDEC Background on EAFM

In April 2009, upon the endorsement of the 41st Meeting of the SEAFDEC Council, SEAFDEC was given a revised mandate "to develop and manage the fisheries potential of the region by rational utilization of the

resources for providing food security and safety to the people and alleviating poverty through transfer of new technologies, research and information dissemination activities." The Council also requested SEAFDEC to incorporate the revised mandate into the SEAFDEC Program Framework, and endorsed the Framework to be further used in the formulation and implementation of SEAFDEC programs/projects. [21]

Following that, SEAFDEC developed a Plan of Action (PoA) that included activities related to fisheries management. PoA 10, in particular, specifies EAFM, and PoA 11 is about co-management:

- PoA 8. Accelerate the development of fisheries management plans based on an Ecosystem Approach
- PoA 10. Establish and implement comprehensive policies for an Ecosystem Approach to Fisheries Management
- PoA 11. Adopt Co-management at all levels
- PoA 12. Strengthen the Capacity of Fisheries Communities and the capability of fisheries-related organizations, NGOs and the private sector

This paved the way for SEAFDEC to embark in 2014 on a training program based on Essential EAFM (E-EAFM),[22] a training course targeted at mid-level fisheries managers and staff working with fisheries, environment, economic development and planning departments who are responsible for managing fisheries and the associated marine environment, and fisheries extension officers, junior-level staff or students at fisheries research institutes and colleges. For member-countries, SEAFDEC developed a Training-of-Trainers course, and another, much more condensed material called "EAFM for Leaders, Executives and Decision-makers" (EAFM LEAD).

SEAFDEC has since become the lead provider of the E-EAFM training course in Asia.

About E-EAFM

Essential EAFM is designed and intended to make participants:

- Understand the concept and need for ecosystem approach to fisheries management
- Acquire necessary skills and knowledge to be able to develop, implement and monitor an EAFM plan for better management of capture fisheries

Training duration is five days, structured according to specific learning objectives as follows:

- Day 1: Understand what EAFM is and why it should be used
- Day 2: Understand what moving towards EAFM entails
- Day 3: Work through the EAFM planning process (5-step process)
- Day 4: Work through implementing EAFM plans
- Day 5: Present and receive feedback on group EAFM plans

c. SEAFDEC activities to promote E-EAFM and ToT

SEAFDEC has conducted four regional E-EAFM trainings involving a total 86 participants. In addition, there were two regional ToT's, attended by 35 participants.

At the national level, the E-EAFM training was conducted nine times, involving 232 participants. The ToT was conducted two times, with 17 participants. This puts the total persons trained to-date in E-EAFM at 318. For the ToT, the total currently stands at 52. Three EAFM LEAD sessions have been completed so far, one in Haiphong, Vietnam and two in the Philippines, specifically, in Catbalogan City and Calbayog City, both in Samar Province.

[21] SEAFDEC. 2009. Report of the Forty-First Meeting of the Council of the Southeast Asian Fisheries Development Center, Southeast Asian Fisheries Development Center, Bangkok, Thailand. 188 pp.

[22] Staples, D.,Brainard, R., Capezzuoli, S., Funge-Smith, S., Grose, C., Heenan, A., Hermes, R., Maurin, P., Moews, M., O'Brien, C. & Pomeroy, R. 2014. *Essential EAFM. Ecosystem Approach to Fisheries Management Training Course. Volume 1 – For Trainees.* FAO Regional Office for Asia and the Pacific, Bangkok, Thailand, RAP Publication 2014/13, 318pp.

SEAFDEC is also implementing an EAFM pilot project in Myanmar to understand how the training translates and applies to real world settings.

The Essential EAFM and EAFM LEAD course materials are freely downloadable at www.eafmlearn.org.

Lessons Learned

- Learning by doing is key to adult learning, e.g. E-EAFM training participants learn best from doing actual interviews with real fishers and community members, so it is important that trainings include actual field exercises.
- Review learning progress against learning plan, always allowing for flexibility to improve the participants' learning experience.
- When doing national-level E-EAFM and ToT, it may be useful in some countries to deliver the content in the local language.
- Housing participants in the same place will give them more time to interact and learn from each other and with their trainers.
- The training is only effective if participants retain the knowledge they acquire during training and actively use it to develop, implement and monitor an EAFM plan for better management of capture fisheries.
- ToT should be encouraged to ensure that EAFM knowledge is properly transferred to and applied by local implementers. In particular, E-EAFM trainees involved in relevant work who demonstrate an ability and willingness to engage in this field should be offered the opportunity to do the ToT.
- The ToT should be done after (but not too long after) E-EAFM

➢ *SEAFDEC-Sweden*

Presented by Ms Saisunee Chaksuin, GOT Sub-Region Coordinator, SEAFDEC Secretariat

Project goal

The goal of the SEAFDEC-Sweden Project is to achieve "sustainable use of aquatic resource and reduced vulnerability to climate change by fishing communities in the ASEAN region."

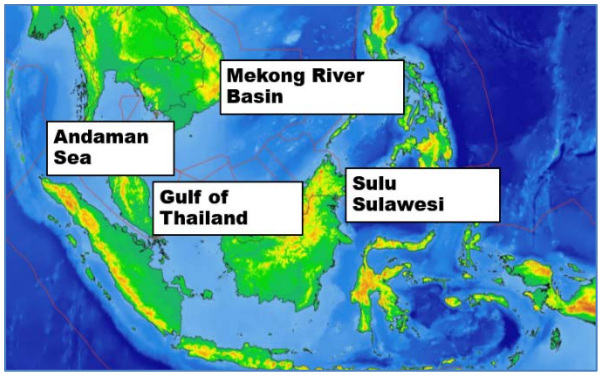
Two bridging objectives contribute to this goal:

- Bridging Objective 1: Implementation of regional and sub-regional aquatic resources management by national institutions and organizations
- Bridging Objective 2: Establishment of regional and sub-regional fisheries and habitat management, agreements and action plans

Under these are three output objectives that also contribute directly to the goal:

- Output Objective 1: Capacity built for integration of habitat and fisheries management and adaptation to climate change
- Output Objective 2: Capacity built and systems improved for the management of fishing capacity (monitoring; record and control)
- Output Objective 3: Capacity built and policy development processes improved for the drafting and implementation of regional and sub-regional agreements

Figure 37. SEAFDEC-Sweden sub-regional management areas



Implementation is at both at the regional and sub-regional level and at the local level because, while the management of fishery resources and habitats happens at the local level, SEAFDEC is mandated to work at the sub-regional level to address issues at that level as well.

Management areas

Like USAID Oceans, the project covers Andaman Sea, Gulf of Thailand, and Sulu-Sulawesi Seas, but in addition, it is also working in the Mekong River Basin (MRC). (Figure 37) MRC is the key river supporting food security for people in at least five countries in this region and it also supplies nutrients to the Gulf of Thailand, so it is an important part of also supports for the nutrients and other sediments to the GOT. It is an important part of the ecosystem that cannot be ignored, which is why the project also includes Lao PDR. There are many areas of concern at the different that the project is working on and supporting through linkage with other organizations

Table 30. Regional agreements and arrangements among ASEAN Member-States supported by the SEAFDEC-Sweden Project

ASEAN-wide	Sub-regional	Local
• RPOA-Neritic Tunas • RPOA-Capacity • Regional Approach on SSF guidelines • Joint Declaration to Combat IUU Fishing • E-ACDS • Crossing cutting issues integrated (e.g. gender, human rights and labor aspects, climate change	• Gulf of Thailand (3 Bilateral Dialogues: THA-MYS, THA-KHM, and KHM-VNM) – THA-VNM bilateral dialogue also possible. • Andaman Sea (2 Bilateral Dialogues) • Mekong River (1 Bilateral Dialogue): including LAO through the MRC Commission • Sulu Sulawesi Sea (mainland cooperation)	• Gulf of Thailand -- 3 Sub-districts implemented in KHM; and 4 Sub-Districts in Trat, THA • Andaman Sea -- 1 Village in Kaw Thaung, MMR • Mekong River -- 5 sub-districts in Tonle Sap in KHM

Case study: Sub-regional fisheries management in the Gulf of Thailand

Sub-regional initiatives in the Gulf of Thailand focus on three areas of cooperation:

- Integration of fisheries and habitat management and management of transboundary stock
- Promotion of effective management of fishing capacity to reduce illegal and destructive fishing in the Gulf of Thailand
- Strengthening the policy platform for sub-regional fisheries management

During their 6th meeting in March 2017, the countries took note of the importance of the bilateral dialogues and suggested additional dialogues. Priority was given to strengthening cooperation on the assessment of stocks and the management of the utilization of Anchovies; Indo-Pacific mackerel; and Blue Swimming Crab (AIB). The possibility of looking into a sub-regional focus on neritic under the RPOA-Neritic Tuna was also addressed. The countries agreed that coordinated effort was needed to monitor and control fishing capacity and increase attention on landings across boundaries.

Although not a migratory species, Blue Swimming Crab is a priority for the Gulf of Thailand countries because it is a shared stock between borders, and like the other two priority species, it is important for food security at all levels in the value chain.

Cooperation on management of fisheries and habitats, including inter-agency collaboration within and between the countries, was also emphasized. The meeting agreed to establish regional task forces to work on regional cooperation for strengthening capacity and sub-regional cooperation on monitoring, surveys and control of fishing effort and landings of catches.

The countries also considered increasing the effort to establish cooperative arrangements through memorandums of understanding (MOU) or other suitable instruments.

Joint Management Plan for Transboundary Species in the Gulf of Thailand Sub-region

The key features of this plan are as follows:

- Countries: Cambodia, Malaysia, Thailand, and Viet Nam
- Sub-regional cooperation on the management of trans-boundary species of AIB-species, initiated through bilateral dialogue between Vietnam-Cambodia, and Cambodia-Thailand agreed under their annual work plan of activity

- Discussed at the Gulf of Thailand meetings, where agreement was reached among all four countries to cooperate in developing the management plan for AIB-species
- Information sharing on stock status and biological aspects of AIB-species resources among the countries through technical consultations ongoing since 2015

Looking forward, the countries agreed to continue to monitor the progress of activities as agreed in the joint management plan, and share regular update and information on the status of transboundary fishery resources and relevant critical habitats in the sub-region.

An important outcome of sub-regional cooperation so far is that it has built capacity and improved policy development processes for the drafting and implementation of regional and sub-regional agreements involving other partners and sub-regions, including:

- Policy dialogue at sub-regional and bilateral consultations are facilitated in Gulf of Thailand and Andaman Sea sub-region
- Collaboration with IUCN/SEI/SEAFDEC on Regional Gender Study
- Continued dialogue with ILO to address ILO conventions related to fisheries
- Participation and collaboration with other organizations (ASEAN, FAO, IUCN, ILO, RPOA-IUU, UNEP, USAID, etc)

➢ *CTI-CFF*

Presented by Jasmin Mohd Saad, Governance Working Group and Cross-cutting Themes, Senior Manager, CTI-CFF

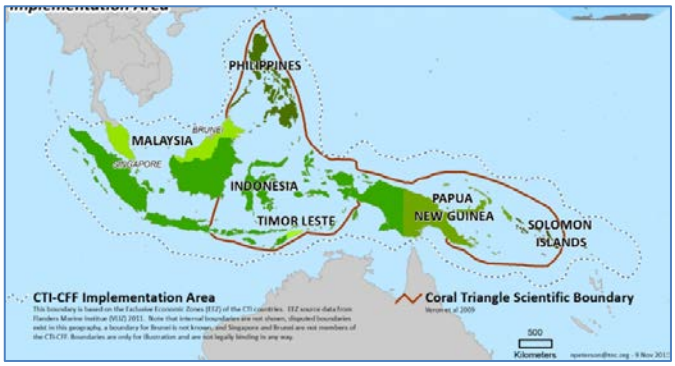


Figure 38. The Coral Triangle scientific boundary and CTI-CFF implementation area

The Coral Triangle

The Coral Triangle is small, just 2% of the world oceans, but it is the global center of marine diversity. With more than 76% of the world's coral species and 37% of coral reef fish species, it has more coral reef diversity than anywhere else in the world. Six out of seven of the world's marine turtle species are found within this area.

The Coral Triangle also contributes nearly US$ 1 billion in tuna exports, and provides for nearly 2.25 million fishers who depend on healthy marine ecosystems for livelihood.

CTI-CFF

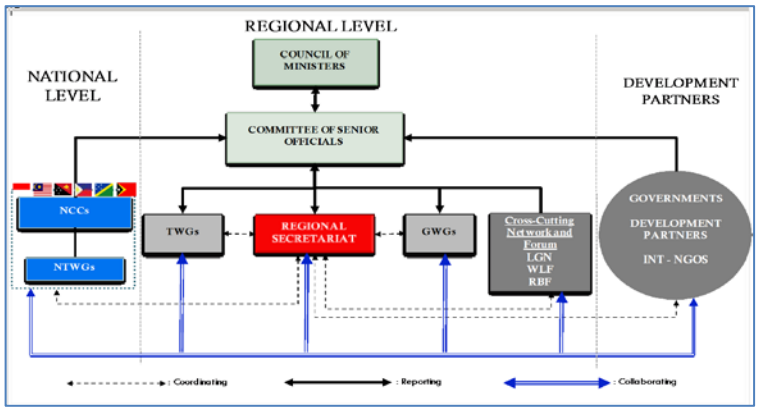
CTI-CFF was established in 2009, with support from the heads of state the six countries that together form the core of the Coral Triangle, namely, Indonesia, Malaysia, Papua New Guinea (PNG), Philippines, Solomon Islands and Timor-Leste. (Figure 38) Cooperation between these six countries is anchored a Regional Plan of Action (RPOA) containing five goals on seascapes, EAFM, MPA, climate change adaptation and threatened species.

Member-countries each have their own National Coordinating Committee (NCC) chaired by their respective lead ministries for CTI-CFF, as follows:

- Indonesia: Ministry of Marine Affairs and Fisheries (MMAF)
- Malaysia: Ministry of Science Technology and Innovation (MOSTI)
- PNG: Conservation and Environment Protection Authority (CEPA)
- Philippines: Department of Environment and Natural Resources (DENR)

- Solomon Islands: Ministry of Environment, Climate, Disaster Management and Meteorology (MECDM)
- Timor-Leste: Ministry of Agriculture, Forestry and Fisheries (MAFF)

Figure 39. CTI-CFF governance structure



CTI-CFF is supported by a group of development partners composed of USAID, Australian Agency for International Development (AusAID), Asian Development Bank (ADB), Global Environment Facility (GEF), World Wide Fund for Nature (WWF), The Nature Conservancy (TNC), Conservation International (CI) and Coral Triangle Center (CTC).

Through MOUs, CTI-CFF also has cooperation agreements with SEAFDEC, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Secretariat of the Pacific Regional Environment Programme (SPREP) and U.S. Department of the Interior (DOI), and universities in Malaysia, Indonesia, Australia (Queensland University and James Cook University), and, soon, Solomon Islands (Solomon Islands University).

CTI-CFF's governance structure is headed by the Council of Ministers (COM), who meet every two years – the last meeting was held in 2016 in PNG. Below the COM is the Committee of Senior Officials (CSO) who meet annually – this year the Senior Officials' Meeting (SOM) is going to be held on 6-10 November in Quezon City, Philippines. Then there are the regional Technical Working Groups (TWGs), one for each of the five goals, and three Governance Working Groups (GWG) focused on coordination mechanisms, financial resources, and monitoring and evaluation (M&E).

Working alongside the WGs is a Cross-cutting Network and Forum working on gender issues through the Women Leaders' Forum (WLF), PPP through the Regional Business Forum focused on marine tourism, and local governance through the Local Government Network (LGN).

Regional activities are facilitated and coordinated by a Regional Secretariat based in Manado, Indonesia. The Regional Secretariat is still quite young; it was officially established with the appointment of the first Executive Director in April 2015. Prior to this, an Interim Regional Secretariat based at the MMAF office in Jakarta provided facilitation and coordination support.

EAFM initiatives

Under the EAFM Goal (RPOA Goal 2), CTI-CFF has three targets:

- Target 1. Strong legislative, policy and regulatory frameworks in place for achieving EAFM;
- Target 2. Improved income, livelihoods and food security in an increasingly significant number of coastal communities across the region through a new Sustainable Coastal Fisheries and Poverty Reduction Initiative ("COASTFISH"); and
- Target 3. Effective measures in place to help exploitation of shared tuna stocks is sustainable, with tuna spawning areas and juvenile growth stages adequately protected.

Achievements toward this goal include, broadly:

- Completed Terms of Reference (TOR) of the EAFM TWG, EAFM Framework, M&E indicators
- Conducted EAFM trainings at regional and local levels, annual regional exchanges
- Adoption by countries of EAFM training modules
- Contributed to strengthening of national fisheries policies and legislations

Two recent EAFM-related events include the 3rd Fishers Forum and Tuna Governance Workshop; and the CTI-CFF COASTFISH Workshop and EAFM Meeting.

Regarding the 3rd Fishers Forum, discussions are still ongoing on the merits of establishing an informal regional tuna governance mechanism, so the report from this event is still in process. The objectives (outlined below) are very similar to what USAID Oceans is trying to achieve, so this is where CTI-CFF will likely link its partnership with USAID Oceans:

3rd Fishers Forum and Tuna Governance Workshop, 4-7 July 2017, Iloilo, Philippines

Objectives (3rd Fishers Forum:

- Share information and experiences in the Coral Triangle and regional fisheries on IUU reduction, catch documentation and traceability in support of sustainable coastal fisheries, identifying obstacles, key issues and priorities.
- Profile and demonstrate successful examples of industry-fisherfolk partnerships on: i) Best practices for IUU reduction, catch documentation and traceability; ii) Expanding anti-IUU and traceability measures through Fishery Improvement Projects (FIPs).
- Identify opportunities for scaling up effective models and expanding collaborations by identifying specific sites and concrete projects for investment and action; and,
- Develop a 'roadmap' identifying relevant enabling policies, programs and sustainable funding opportunities, including value-adding strategies for these programs and how fisherfolks and industry players can help influence and implement these.

Objectives (Tuna Governance Workshop): Provide opportunity for member countries, development partners and other stakeholders to discuss the establishment of a platform for collaboration on the sustainable management of tuna as well as other important fishery resources that are shared and/or straddling in the Coral Triangle region. Specifically:

- Bring together key decision makers and stakeholders to discuss the merits of establishing an informal regional tuna governance mechanism;
- Define general function, scope and objectives of this informal governance body;
- Identify pathway and process.

CTI-CFF COASTFISH Workshop and EAFM Meeting, 1-3 August 2017, Tagaytay City, Philippines

Objectives (CTI-CFF COASTFISH Workshop):

- Design a region-wide CTI COASTFISH Initiative Framework with focus on livelihoods linked to EAFM
- Provide venue for CT6 to share experiences and lessons learned on livelihood program related to EAFM and "scale up" and expand successful models.
- Draft a roadmap to develop the CTI COASTFISH Initiative

Objectives (EAFM TWG Meeting):

- Recall the recommendations outlined in the study entitled, Evaluation of Options for a Consultative Forum on Live Reef Food Fish Trade (LRFFT) in the Coral Triangle Region and Adjacent Areas, and assess the current status and identify the next steps
- Review the outputs of the COASTFISH Workshop
- Review and finalize the EAFM monitoring and evaluation indicators
- Review of Goal 2 of the RPOA and the EAFM Framework

The EAFM TWG is planning to organize another workshop by the end of 2017, or after the COASTFISH Framework is approved by SOM, to develop a work plan to operationalize the Framework.

USAID/DOI "Strengthening Organizational and Administrative Capacity for Improved Fisheries Management" (SOACAP-IFM)

This work plans to align with the CTI-CFF RPOA Goal 2, and also a decision from SOM11 to look into prevention and eradication of IUU fishing.

RPOA Goal 2: Ecosystem Approach to Management of Fisheries (EAFM) and Other Marine Resources Fully Applied

SOM11, Decision 14: Cooperation Arrangement. Point 4. Acknowledged results of the 1st Regional Workshop on Combating IUU Fishing and Sustainable Fisheries Exercise that intensifying prevention and eradication IUU fishing as crime that requires further cooperation, including the CTI-CFF Member States

SOACAP-IFM Goal: Strengthen **CTI-CFF** in EAFM through advancing a regional CDT system to combat IUUF and promote sustainable fisheries for livelihoods and food security in the Asia and Pacific region by mid of 2019.

Objectives:

- Improve application of EAFM (5 Activities)
    - CTI-CFF/USAID Inception Workshop
    - Learning exchange of CT6 Countries to USAID Oceans priority area (General Santos City and Bitung)
    - Workshop on CDT system design and development based on EAFM
    - Planning meeting for the establishment Regional Scientific Advisory Group (SAG) meeting on EAFM in Manado
    - Series of CTI-CFF countries consultative visit by CTI-CFF and Oceans for CDT/EAFM implementation
- Strengthen collaboration among key CTI-CFF organizations and partners through a series of cross-cutting activities designed to promote country-to-country engagement, build professional networks, and leverage private sector funding. (2 activities focused on PPP)
    - CTI-CFF PPP Preparation: Expert-Consultation Meeting on PPP design and arrangement
    - CTI-CFF PPP Dialogue/Forum

Timeline:

2017	
25-26 Sep	Activity 1.1: CTI-CFF/USAID Inception Workshop: Building-Up A Regional Catch Documentation and Traceability (CDT) System and Advancing Fisheries Management for Strengthening Food Security in Coral Triangle Region, Manado, Indonesia
2018	
Feb-Mar	Activity 2.1: CTI-CFF PPP Preparation: Expert-Consultation Meeting on PPP design and arrangement (in preparation for the PPP dialogue in 2019), Jakarta, Indonesia
Apr-Sep	Activity 1.2: Learning exchange of CT6 Countries to USAID Oceans priority area (General Santos City and Bitung), Bitung, Indonesia and General Santos, Philippines
Jul-Sep	Activity 1.3: Workshop on CDT system design and development based on EAFM, Honiara, Solomon Islands
Oct-Dec	Activity 1.4: Planning meeting for the establishment Regional Scientific Advisory Group (SAG) meeting on EAFM in Manado, Manado, Indonesia
2018-19	
Jun-Jul	Activity 1.5: Series of CTI-CFF countries consultative visit by CTI-CFF and Oceans for CDT/EAFM implementation, Indonesia, Malaysia, Papua New Guinea, Philippines, Solomon Islands, Timor-Leste
2019	
Mar	Activity 2.2: CTI-CFF PPP Dialogue/Forum, Bali, Indonesia

Additional details on Inception Workshop (Activity 1.1)

Event Name:	CTI-CFF/USAID Inception Workshop: Building-Up A Regional Catch Documentation and Traceability (CDT) System and Advancing Fisheries Management for Strengthening Food Security in Coral Triangle Region
Date & Place:	25-26 Sep 2017, Manado, Indonesia
Objectives:	Introduce the USAID/RDMA support program to CTI-CFF on the development of a traceability system, to exchange information on existing traceability system among member countries, and to build better understanding on the benefit of introduced traceability system in fisheries management (EAFM) and in international market.
Outputs:	(1) Identification of countries existing traceability system and the need of the country on traceability system development; (2) Recommendation on development of countries-specific CDT System; (3) TOR and List of Members of EAFM Task Force on CDT System
Outcomes:	(1) Country profile on the need of traceability system development for meeting: what are the gaps, what do they need, what support do they need from us; international market requirements; (2) Establishment of CDT Task Force; (3) Strengthening capacity of EAFM TWG in the effort of combatting IUUF through CDT; and (4) Scheme development.

Resource persons from USAID RDMA, NOAA, USAID Oceans, SEAFDEC and EAFM TWG are expected to attend the workshop.

GIZ – Sulu-Sulawesi Seascape (2016-18)

Objectives for Focal Areas:

- Support the effective management of marine protected areas and establish a regional protected area network for sea turtles;
- Promote EAFM in selected marine managed areas; and
- Climate change adaptation planning

Implementing Partners – The project is jointly implemented by the CTI Regional Secretariat; MMAF in Indonesia; MOSTI, DOF-Sabah and Sabah Parks in Malaysia; DENR and BFAR in the Philippines; and Conservation International.

Target Groups – CTI-CFF and its organs, government agencies of the three countries, local population in marine protected areas and fishermen, and other stakeholders in biodiversity management and fisheries

Volume & Timeframe – 7 Million Euro (2012-2018)

Results of Sulu-Sulawesi Seascape Planning Meeting, May 2016, Philippines:

- The Philippines shared their recent accomplishments in their MPA network (El Nido/Taytay, Tubbataha, Balabac and Turtle Islands) and EAFM sites (Turtle Islands and Balabac).
- Indonesia's focus is on its priority area (Berau and Sebatik) and support sites (Minahasa and Tarakan)
- Malaysia's focus of implementation lies on the newly gazetted Tun Mustapha Park (TMP) and replication of EAFM demonstration sites based on the success of a pilot site in Semporna.

The group has also identified regional/bilateral activities based on EAFM, MPAs, and cross cutting issues such as capacity building, research and knowledge management, and priority knowledge exchange:

- EAFM:
    - Cross-visits to successful demonstration sites of EAFM;

    - Sharing of experiences from implementation of monitoring, controlling and surveillance (MCS) programs
- MPA:
    - Development of a database and data sharing on sea turtles – For the ADB RETA 7813 program there is also a recommendation for the development of MPAs for sea turtles, which could be complementary to this project because the ADB RETA is closing out this year
    - Presentation of the Network Effectiveness Assessment Tool (NEAT) developed by the Philippines
    - Enforcement collaboration (Tun Mustapha Park and Balabac) or the development of a transboundary communications network on enforcement
    - Exchange of experience on vulnerability assessments (VA)
- Capacity building, research and KM:
    - Conduct of a meeting of sea turtle experts on, for example, DNA mapping – GIZ has recently completed this data mapping with the help of Dr. Nick Pilcher
    - Sharing of research findings
    - Analysis of turtle excluder device (TED) methods and LED lights to prevent sea turtle bycatch
    - Socio-economic assessments of seascape communities
- Priority knowledge exchange
    - Compilation of existing capacity building materials
    - Development of knowledge materials
    - Regional exchange sharing workshops on MPA and EAFM related topics
    - Exchange of experiences in monitoring and evaluation and how to integrate results into local and national policies
    - Compilation of lessons learned and their dissemination in the Sulu-Sulawesi Seascape, CTI-CFF member countries and beyond

The last activity (priority knowledge exchange) involves a lot of data production, so there is a question about where to store the data. CTI-CFF has an online database system called CT Atlas that was originally developed under the US CTSP program and now needs technical and financial support, if there are partners who might be interested to continue its maintenance and operation.

➢ *CTI-SEA*

Presented by Elvira Ablaza, President/Pacific Rim Innovation & Management Exponents, Inc. (PRIMEX)

About CTI-SEA

CTI-SEA was originally a four-year project that started in August 2012 and would have ended in July 2016, but it was extended to November 30, 2017.

Figure 40. ADB CTI-SEA pilot sites for EAFM

The Project covers three countries in Southeast Asia, namely, Indonesia, Malaysia and the Philippines. The Regional Project Management Office is headquartered in Manila at the office of PRIMEX (the Project contractor), and there is a regional project management unit in each of the three countries.

In Indonesia, the Project has partnered with the PT Trans Intra Asia, one of Indonesia's older consulting firms, and, in Malaysia, with WorldFish. CTI-SEA works directly with DOF-Sabah.

CTI-SEA is funded by ADB and GEF, with some co-financing from the participating governments. There is a separate small program funded by the Japan Fund for Poverty Reduction outside the PRIMEX contract but still under the umbrella of CTI-SEA. There was also some co-financing from the US CTSP, before that project ended.

The CTI-SEA project has three main outputs:

- Policy and institutional framework for coastal and marine resource management (CMRM) enhanced
- Ecosystem approach to CMRM pilot-tested
- Effective project management established in ADB and the governments of Malaysia, Indonesia and the Philippines

EAFM actually falls under two outputs, i.e., under policy and institutional framework, and under ecosystem approach to CMRM. Under the first output, the Project is mandated to develop national guidelines for policy makers and managers specific for ecosystem approach to resource management.

EAFM is being piloted in three sites within the Sulu-Sulawesi area. These sites are:

- Dumanquillas Bay, Zamboanga del Sur and Zamboanga Sibugay (Philippines), Sulu Sea
- Semporna Priority Conservation Area in the Sulu-Sulawesi Marine Ecoregion (Malaysia), Sulu Sea
- Kwandang Bay (Indonesia), Sulawesi Sea, covering two districts in Gorontalo Province

Fisheries management issues and problems

Table 31. Fisheries management issues and problems in CTI-SEA Project sites (Kwandang Bay, Indonesia; Semporna, Malaysia; and Dumanquillas Bay, Philippines)

Components	Issues/Problems
Ecological well-being (Fisheries and Habitats)	• Overfishing • Habitat destruction • Pollution of coastal waters
Human well-being (including gender, labor, livelihoods)	• Gender – Generally, women in the region enjoy high social status and, in some cases, may be more empowered than the men but there are still some pockets of women especially in the rural areas that are not being given equal opportunities as men. Where gender inequality exists, it is important to address it. • Labor – There are many small-scale fishers and fish workers in the coastal areas that have no access to health insurance and other benefits normally accorded by law to regular workers. • Livelihoods threatened by resource degradation – In Dumanquillas Bay, a closed season for sardines has been established to address some of the impacts of overfishing.
Governance and institutions	• Capacity limitations – Institutional strengthening needed especially with respect to EAFM

EAFM initiatives

Kwandang Bay, Indonesia: EAFM for Sustainable Management of the Coral Reef Fisheries

The project covers two districts of Gorontalo Province and the MMAF and its provincial offices. The EAFM initiatives involve: (1) Biophysical and socioeconomic profiling of target areas in Kwandang Bay; (2) preparation of an EAFM Plan for implementation of sustainable management of coral reef fisheries, especially groupers; and (3) conduct of EAFM training.

In most of the projects that are implemented under the ADB RETA, the scheme is to sub-contract universities or NGOs to implement the sub-projects, so the PRIMEX team is not directly implementing but provides technical assistance and support during the implementation through MOUs and contracts with universities. In Indonesia, the implementing partners is the University of Hasannudin (UNHAS) and the state university of Gorontalo.

The EAFM action plan has been prepared and is now being implemented following the conduct of several EAFM training courses, including training in taxonomy and monitoring of grouper landings in March 2017.

Semporna, Malaysia: Fisheries Management

In the Semporna priority conservation area, the partners are the DOF-Sabah and local fisheries associations. One interesting aspect of the project's work in Malaysia is that the government – DOF Sabah and DOF Malaysia – have leveraged funds and co-sponsored activities in order to increase the number of training participants, or to replicate the training courses in other areas of the country.

The EAFM training involved a variety of stakeholders, including, for example, dive operators, some of the traders themselves, and the fisheries associations. The Universiti Sultan Zainal Abidin is an implementing partner and participated in some of the training courses as well.

The EAFM plan for Semporna included the following activities:

- Baseline assessment of groupers on coral reefs – There were six sites surveyed and sampled to determine the baseline condition of the groupers, looking mainly at fish abundance and quality of the live coral cover. The study found low abundance of *Plectropomus leopardus (suno)* around the reefs in Semporna but there were good live coral cover areas that are potential nursery grounds for this and other related species.
- Study on the population genetic structure of *P. leopardus* – This was a composite study, involving sampling sites in east Sabah, Indonesia and the Philippines (specifically, Palawan). The initial findings of the study show that there is a very close linkage in terms of genetic structure between the east Sabah and the Palawan strains. There is a potential for further study in this area.
- EAFM training – A total of 148 fishers were trained in E-EAFM in Malaysia, and, in one of the training courses, there was a proposal to establish a cooperative for cage culture operators to create more financial and economic benefits for stakeholders, as well as promoting sustainable fisheries management.

Dumanquillas Bay, Zamboanga Sibugay and Zamboanga del Norte, Philippines: Fisheries Management

In the Philippines, the management institutions involved are BFAR, the DENR, PAMB and the LGU, and interventions under the EAFM program include:

- E-EAFM training for 35 participants
- Baseline studies to inform the EAFM planning process – This involved rapid resource appraisal of habitats and socioeconomic profiling of communities in six municipalities. The Dumanquillas Bay General Management Plan was formulated with inputs from the resource appraisal.
- Stock assessment focusing on small pelagics – Assessment results were presented to the Protected Areas Management Board (PAMB) in July 2017. The EAFM Workshop to formulate the EAFM Plan is scheduled for September 2017.
- Creation of Bay-wide Law Enforcement Alliance
- EAFM planning
- Fisheries management interventions, including mangrove reforestation, livelihood support to qualified people's organizations and former illegal fishers who have become project partners, and strengthening of other stakeholders' participation.

One activity implemented in the Philippines (especially in Palawan) under CTI-SEA that is not implemented in the other countries involves the participation of the youth in youth camps and other activities involving the national high schools, such as the "Heroes of the Environment" campaign to raise awareness of the importance of environmental and marine protection. In Dumanquillas Bay, the project has engaged the national high schools in the planning and implementation of the EAFM Plan.

Lessons learned and opportunities

The lessons learned and opportunities in the three countries are very similar. They include:

- The need for the participatory process. The importance of the participatory process in getting the different stakeholders involved cannot be discounted. If small fishers who comprise the majority of the population in the coastal area are not engaged in the planning, the plan is not going to work.
- EAFM planning should not be a solely government-led process. CTI-SEA has KBA (Key Biodiversity Area) coordinators working with local site coordinators who work directly with the community to get the locals to be involved in the process. The locals are involved from the conduct of rapid resource assessments by the universities and through the whole process. For example, in Dumanquillas, a draft General Management Plan was prepared many years ago but was never implemented. CTI-SEA saw the opportunity of updating the plan and getting it passed through the whole group of stakeholders. In this case, where resources are shared by many LGUs bordering the bay, the key thing was to get local government officials to agree on implementing a common plan. Through CTI-SEA's intervention, the GMP was subsequently approved in separate sessions by the PAMB. Former BFAR Director Malcolm Sarmiento, who is now the CTI-SEA's MCS specialist, was a key person in the formulation of the Dumanquillas Bay GMP – he led the drafting of an ordinance that was signed by the different mayors that really facilitated the process.
- EAFM needs not only a good engagement, but full and active engagement of all stakeholders from government, private sector and the community of stakeholders, including illegal fishers whom you try to get on your side.
- EAFM planning should be at the appropriate scale – Of course, it should consider the ecosystem and should be bay-wide, and the national input is necessary for policy and regulation. But even with EAFM plans, the focus should be the local level because that is where the action is. Rules and regulations may be set at the national or regional level, but the real implementation happens at the grassroots level, so you have to really go down to the grassroots level and get the fishers, even the illegal fishers, involved.
- Let local stakeholders tell their own story -- In Palawan, the Project produced a book called *Tales of the Coral Triangle* written by high school students. Some of the stories were written by students whose parents are involved in dynamite fishing. One of them was invited to the book's launch at the ADB headquarters, where she told her story before an audience composed of high-level ADB students, saying this Project had awakened her and because of her, her father had decided to stop illegal fishing.
- The youth can be effective agents of change -- They can influence their parents, just by telling them "You better stop because it's our future at stake."
- The academe is a rich resource for technical assistance delivery – CTI-SEA has been partnering with universities in the Philippines, Indonesia and Malaysia on planning and implementation, particularly in those activities that require research, surveys and profiling, which are better undertaken or conducted by academe or research institutions.

➢ *CTI-SEA*

Presented by Michael Abbey, NOAA Fisheries (Asia and Pacific Islands), U.S. Department of Commerce, NOAA National Marine Fisheries Service

How NOAA Fisheries partners with the countries

As the lead marine agency for the U.S. Government, NOAA covers a lot of international work. In Asia, the agency has an agreement with USAID that runs from 2014 to 2019 and allows any USAID mission in Asia and the Pacific Islands to fund NOAA technical assistance bilaterally or regionally based on an agreed work plan.

This is the 2nd such agreement after CTI-CFF, where NOAA was the lead technical partner. Under the current agreement, NOAA is a technical partner, but not a lead one, which allows the agency to step back and partner as equals with counterparts in the countries who are the subject matter experts, learning from them as well as providing its own experiences.

The agreement provides three levels or scales of engagement:

1. Oceans and Fisheries Partnership
2. Direct requests to NOAA to do projects that are not part of the Oceans Fisheries and Partnership, such as port state measures
3. Other multilateral projects, e.g. such as USAID missions to Timor-Leste

This arrangement is in addition to the work that NOAA directly engages in through other funding mechanisms, including RFMOs, or partnerships with NGOs like WWF.

NOAA's work with USAID Oceans

In the U.S., NOAA's mandate covers everything from the national weather service to the national oceans service, to climate and of course fisheries. It is not NOAA Fisheries that writes the Fisheries Management Plans of the U.S. There are Fisheries Management Councils made up of fishermen, academics, appointees by the state governments that write the Plans, based partly on data that NOAA and state partners collect but, more importantly, based on an ecosystem approach.

Internationally, NOAA works to strengthen regional cooperation to combat IUU fishing, promote sustainable fisheries and conserve marine biodiversity. With respect to USAID Oceans specifically, all the work that NOAA does has to map back to CDT. CDT is the key driver of the Oceans and Fisheries Partnership, so no matter if the activity is EAFM or stock assessment, it has to all come back into the CDT focus area.

NOAA has other engagements in the region, such as:

- FishPath, a harvest control strategy model authored by NOAA with Conservation International and many others that is being rolled out in Indonesia; and
- Port State Measures/Combatting IUU

Fisheries management issues and problems, and response

- Lack of data – The response is often, we have to wait, get a budget and collect more data, and, three years down the road, we're still waiting for data. But EAFM is about adaptive management. While it is scary to just go into the wilderness without having data, it is never really going to be possible to have all the data that you want. You might have to defer some of the big decisions, but often, you already have a lot of what you need to make good decisions under an EAFM program. The key is to just go forward, and then practice adaptive management, adjust as new information becomes available.
- Lack of coordination of marine uses – A lot of the conversations are away from the discussion of EAFM into MSP. However, MSP is very similar to EAFM in that it is not so much the outcome that is important but the process, which means the stakeholders, the funding, the legal authority, and the delegation of responsibilities.
- Empowerment of communities – This is key, and with respect to questions about the empowerment of women, and whether or not women are more empowered than the men, imbalance is OK if it gets you to where you want to go.
- Institutionalization and developing a conduit for sharing information – There is so much turnover in a lot of the agencies that are responsible for fisheries management, so it is important to identify a place, such as a training department, where lessons learned or knowledge products can be institutionalized, but in order to share the lessons learned, it is equally important to invest as a region in a conduit or vehicle for information sharing, and SEAFDEC is a great partner for that.

Fisheries management initiatives

NOAA is involved in several fisheries-related projects in the region, working with Indonesia under USAID, for example, as well as working under the USAID Oceans Partnership. A project on mainstreaming EAFM has just concluded in the Philippines, including EAFM peer-to-peer exchanges between US and Philippine experts. All of these are activities supported by USAID, to which NOAA has an ability to contribute as well.

Generally, NOAA's technical support and cooperation targets core management and strategies that can be applied anywhere.

Table 32. NOAA's involvement in fisheries management in Southeast Asia

SEA Project (USAID Indonesia)	USAID RDMA/Oceans	Philippines
• Marine Spatial Planning efforts undertaken by Indonesian MMAF • Stock assessment/harvest control strategies and implement Port State Measures	• Implementation of the US Seafood Import Monitoring Program (SIMP) • Catch Documentation & Traceability, • PSMA (Port State Measures Agreement) • EAFM • Fisheries Information Systems • Marine Debris and Plastics Pollution	• Mainstreaming of EAFM (applied) • EAFM peer-to-peer exchanges between US and Philippine experts

Lessons learned and opportunities

- Partnerships work best when they are well-conceived and well-connected work best.
- There is plenty of room – and opportunities – for improvement:
    - More thorough discussion on goals and objectives in the beginning (before the start of trainings) help create better indicators and management actions – Without solid goals, it is easy to miss targets.
    - Opportunities across programs – There is a lot of great work being done in every country that other countries can benefit from knowing about. Projects need to do a better job at sharing information.
    - Identify talented people – All countries have their own subject matter experts that should be more aggressively recruited into a ToT program and then supported.
    - Piloting ideas is a great way to start a project.
    - Information materials are key to be able to share lessons learned – Localizing materials is also important.

2.1.5 Session 2: Definition and Scope of the EAFM Area

This session started as a plenary session to set the stage for the breakout planning sessions for the three sub-regions. To broadly explain the mechanics of the planning sessions, Dr. Lando presented the groupings recommended by the workshop organizers (Table 33), and noted that participants were free to join other groups if they wished. As the instructions in each group would differ slightly, further instructions would be given by the group facilitators, she added.

Table 33. Workgroup groupings for sub-regional planning sessions

Andaman Sea Sub-Region	Gulf of Thailand/ South China Sea Sub-Region	Sulu Sulawesi Sub-Region
Indonesia Malaysia Myanmar Thailand SEAFDEC Sweden SEAFDEC	Brunei Cambodia Indonesia Lao PDR Malaysia Philippines Singapore Thailand Vietnam SEAFDEC-UNEP-GEF/ SEAFDEC	Indonesia Malaysia Philippines ADB-SEA CTI-CFF GIZ-SSME SEAFDEC

2.1.6 Regional Fisheries Management Issues

Throughout the national presentations given on the morning and afternoon of Day 1, Dr. Michael Pido and Mr. John Parks (co-facilitators) listened to and recorded the fishery management issues/problems that each speaker presented on behalf of their national delegation. Dr. Pido and Mr. Parks collated this information and then created summary tables of the reported fisheries management issues/problems across all 10 ASEAN member nations, by type: ecological issues/problems; socioeconomic issues/problems; and governance issues/problems. These results are presented in the following three tables.

Table 34. Summary list of ecological issues/problems relating to national fisheries management as identified and reported by each of the ASEAN member countries during Day 1.

	Brunei	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
1. Illegal/destructive fishing methods	X	X	X		X	X	X		X	X
2. Depleted fishery resources or overfishing			X	X	X	X	X		X	X
3. Degraded coastal/fishery habitats		X		X			X		X	X
4. Climate change		X					X			

Table 35. Summary list of human (socioeconomic) issues/problems relating to national fisheries management as identified and reported by each of the ASEAN member countries during Day 1.

	Brunei	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
1. Lack of alternative livelihoods		X	X			X	X			X
2. Resource use conflicts and competition		X		X	X	X	X			
3. Human welfare (labor, gender issues)	X	X	X	X	X					
4. Poverty (including low income)						X	X			
5. Uncompetitive/poor quality products						X	X			
6. Post-Harvest Losses							X			
7. High cost of fuel					X					

Table 36. Summary list of governance issues/problems relating to national fisheries management as identified and reported by each of the ASEAN member countries during Day 1.

	Brunei	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
1. Limited Institutional Capabilities (including overlaps or gaps in mandates)		X	X	X		X	X			X

	Brunei	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
2. Weak enforcement of fishery laws/regulations		X	X	X		X	X		X	
3. Weak Institutional Partnerships	X	X	X				X			
4. Lack/Limited Community/Public Participation (including limited awareness and compliance)		X	X	X		X				
5. Inadequate/ Inconsistent Fisheries Policies					X		X		X	
6. Lack/limited science, research or studies			X				X	X		
7. Lack or Limited CDT									X	X
8. Poor decision-making capabilities				X						
9. Conflicting/overlapping maritime jurisdiction claims with neighboring countries (boundary disputes)										X

2.2 Day 2 Proceedings

Day 2 started in plenary with a recap of the first day and an overview of Day 2, and there was a brief unscheduled plenary sharing session before the start of the afternoon sessions. Participants spent the remainder of the day in their small group discussions on the sub-regional plans.

2.2.1 Plenary Sharing Session: Goals vs Objectives vs Indicators

Before the afternoon breakout sessions resumed from lunch, participants reconvened in plenary for a brief session led by Mr. John Parks. Mr. Parks explained that the Sulu Sulawesi Seas group initially struggled with distinguishing between goals, objectives, and indicators, adding that "Mike Abbey shared some useful thinking that helped us work through this." Subsequently there was a request from the co-organizers for Mr. Abbey to share his thoughts in plenary with the rest of the participants.

Dr. Michael Pido, who co-facilitated the Sulu Sulawesi Seas breakout discussion with Mr. Parks, noted that there appeared to be "some misunderstanding" of what the sub-regional plan should address relative to a "higher level regional plan such as the RPOA" and the "lower level" plans of the individual countries, and Mr. Abbey "shared with us a simple way of going about" goal-setting and objective-setting.

Mr. Abbey then described how he distinguished goals from objectives: "The situation we were having in our group was we were kind of stuck at this point of national sovereignty. What I tried to do was just trying to address what I saw was a non-issue issue. I didn't see it as an issue of sovereignty because when I think about goals, objectives, indicators and management actions, they're all nested, and to me they broke very cleanly between your goal and objectives which you define together and agree on as a region on the one hand, and, on the other hand, the indicators, or how you measure success, and the actions that you're going to take, which are very intrinsic to the nation.

"So, I worked it out as an example. For example, the goal could be "improved long-term outlook for pelagic fisheries." The objectives could be "to reduce IUU fishing" and "increase use of seasonal or temporal no-fishing zones." Not very controversial, right? These are things that most countries could generally agree to. But when it comes to the point of what your countries will do to respond to these objectives, that's a very

national decision to make because you have to justify that to your government authorities for funding or some other support. For example, a country might choose as indicator "30% increase in enforcement control in five months," and the management action might be "hiring more enforcement officers or buying more boats." These things are very local to your country.

"The only contribution I provided really was to move the conversation away from the sticking point that we had that this is a sovereignty issue and we cannot agree on a regional plan, because there are components that are clearly regional, and others that are clearly local or national. And that seemed to be able to get us to move on to really discussing the meat of the issue and thinking about what we can agree on at the goal/objective level, without getting tied up in matters that can only really be decided at the national level."

Mr. Purwanto responded that the case may be slightly different for human well-being and governance. "Objectives for issues relating to human well-being and governance could be different from country to country, because governance is very much influenced by political decisions, which are different for every country, and human well-being is very much influenced by the socioeconomic conditions in each country."

Mr. Garces concluded the session by stating, "What I'm hearing is that it's easier to get a consensus on ecological objectives, but on human welfare and governance, consensus among countries may be more difficult to reach. The key message here is we should be mindful of the national context when we talk about the human well-being and governance aspects of the plan."

The rest of the day was spent in the breakout discussions.

2.3 Day 3 Proceedings

On Day 3, participants went directly to their breakout sessions, followed by group report-outs, workshop review and feedback, and the closing session.

2.3.1 Sub-regional Presentations

This session included plenary reports by presenters from the breakout sessions, and a short open forum discussion. Mr. Garces co-facilitated the session with Dr. Lando.

1: Sulu-Sulawesi Sub-Region

Presented by: Mr. Lawrence Jr. Kissol, Assistant Director, DOF-Sabah, Malaysia; Efren V. Hilario, Aquaculturist II/Alternate Focal Person for EAFM, BFAR, Philippines; Ms Eva Suryaman, MMAF, Indonesia

Note: In their presentation, the group made several references to a draft EAFM Plan that they used to guide their discussion. The document was developed by the CTI-CFF EAFM TWG and can be downloaded from the CTI-CFF website.

Biodiversity Conservation Rationale

The Sulu Sulawesi Seas (SSS) sub-region is considered the epicenter of global marine biodiversity, with the highest number of coral reef, marine fish, seagrass, and mangroves species in the world. The sub-region is characterized by a tropical climate and complex and wide-ranging biophysical characteristics and oceanography that contribute to its exceptionally abundant marine biodiversity.

The deterioration of environmental conditions in the ecoregion during the past several decades indicates that resource extraction rates have exceeded the natural capacity of the marine ecosystems to recover naturally. Shared boundaries, sub-regional ecosystem dynamics and transboundary fishery resources, and shared environmental issues (including human migration) justify taking an ecoregional approach to conserve the globally-unique marine biodiversity of the SSS sub-region. Several important benefits arising from the effective conservation of marine biodiversity in the Sulu Sulawesi Seas include:

- Food security
- Sustainable fisheries
- Economic security
- Recovery/restoration of depleted marine/fishery resources
- Preservation of the intrinsic, unique value of the sub-region
- Enhanced human well-being and happiness

Planning Area

Countries: Indonesia, Malaysia, and the Philippines

Planning Area: (See Figure 41) The group reviewed, discussed, confirmed, and adopted the proposed geographic scope of the Sulu-Sulawesi Seascape as the sub-regional EAFM planning area (see Figure 41), with the addition of three areas (requiring review/approval by senior national officials):

- The waters of the Northern Philippines;
- The waters enclosed within Tun Mustapha Park, Malaysia – This area on the outskirts of the Sulu-Sulawesi Seascape was designated as an MPA in 2016; and
- The waters within the coastal zone of Brunei Darussalam.

All three proposed additions to the sub-regional EAFM planning area are believed to be linked through ecological corridors. For example, it can be shown that small pelagics found in Brunei Darussalam come from the same genetic stock as small pelagics in the Sulu-Sulawesi Seascape.

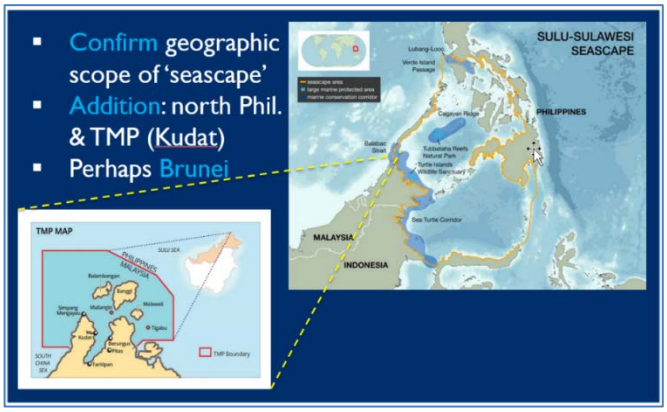


Figure 41. Proposed EAFM Planning Area: Sulu-Sulawesi Sub-region

Vision

"By 2030, the transboundary fisheries of the Sulu-Sulawesi Seas are ecologically healthy and deliver ecosystem services that provide equitable benefits to our people through collaborative, safe, and legal regional fisheries management."

Five small pelagic species (Table 34) were chosen for management because of their importance as an affordable protein source for a large population in the three countries. Large pelagic, neritic tuna, and coral reef transboundary fish species were also considered as being included within the 2030 vision.

Table 37. Small pelagic species targeted for management, Sulu-Sulawesi Sub-region

Common name	Species	Image
Indian mackerel	*Rastrelliger kanagurta*	
Round scad	*Decapterus macrosoma*	
Japanese mackerel	*Decapterus maruadsi*	
Sardine	*Sardinella lemuru*	
Short-bodied mackerel	*Rastrelliger brachysoma*	

Goals *(Revised from text offered under the 2015 draft)*

Ecological well-being: "Improved long-term health of living marine resources and their habitats through responsible regional fisheries management for optimal benefits to our communities."

Human well-being: "Resilient, self-reliant, and empowered communities who benefit from inclusive, just, responsible, and economically- and socially-equitable fisheries management."

Good governance: "Improved governance and transboundary fishery policy capacity through a coordinated regional framework that is effectively implemented through a participatory, responsive, transparent, and adaptive process."

Objectives

Ecological well-being:

EO-1: Maintain optimal exploitation rates
EO-2: Maintain suitable water quality
EO-3: Restore habitat & conserve marine biodiversity
EO-4: Control by-catch
EO-5: Minimize negative fishery impacts
EO-6: Increase science & information

Human well-being

SO-1: Enhance income
SO-2: Improved human welfare
SO-3: Strong livelihoods
SO-4: Gender equity[23]
SO-5: Enhanced and stable consumption (food security)
SO-6: Improved seafood safety, traceability, and markets along the supply chain

Good governance:

GO-1: Reduce IUU fishing
GO-2: Strengthen capacity
GO-3: Climate adaptation
GO-4: Support regional MCS
GO-5: Improve judicial and enforcement capacity
GO-6: Enhance stakeholder participation
GO-7: Strengthen regional coordination

Management Actions

The group agreed that, as a matter of national sovereignty, the specific actions will be decided by each country, and that it is understood that each country's management actions will contribute to sub-regional goals and objectives.

The group also agreed that the management actions can include current national and multinational (e.g. CTI-CFF) management and proposed (new) management actions.

Proposed Next Steps

Sep 2017:	Share updated draft of Sulu-Sulawesi Seascape EAFM sub-regional plan
Sep/Oct 2017:	National-level review and comment on updated draft
Sep-Nov 2017:	Present revised version of Sulu-Sulawesi Seascape EAFM sub-regional plan to CTI-CFF
Early mid-2018:	Convene 3rd Sulu-Sulawesi Seascape EAFM sub-regional planning workshop

Open Forum Discussion

J. Parks – The group agreed that Brunei might be invited to become be part of the sub-regional EAFM planning team. The three current countries expressed an interest to formally invite Brunei to the next planning workshop because of the genetic connectivity of their regional fish stocks with Brunei.

L. Garces – That will go to a footnote, or a text in the documentation for this workshop. Do we have the Brunei delegation here to perhaps provide some comments? *(No comment from Brunei Darussalam delegation)*

[23] The exact language the group agreed on was "Strengthened equity and social benefits…"

Dr. Alias (Malaysia) – I understand that ASEAN is to be divided into these sub-regions, but we need to properly delineate the sub-regions otherwise there will be an issue of overlapping management. So, if Brunei is part of the South China Sea/Gulf of Thailand sub-region, and you include Brunei in Sulu-Sulawesi Sub-region, where does Brunei belong to now? I think the delineation has to be consistent.

E. Hilario – We included Brunei because migratory species from Philippines and Malaysia also go to Brunei, and *vice versa*. The group felt it is important for Brunei to be included in the discussion.

Dr. Alias – I suggest you do it through inter-sub-regional management or coordination. You need to calculate the area by resource type and so on, so you need to be consistent on the delineation. You cannot have overlapping areas of management.

L. Garces – I think that's a good suggestion – coordination between sub-regions. I have a question to the group: I noticed that your vision statement includes the small pelagics only. Is that your intention, or is the vision supposed to include other pelagic species?

L. Kissol – At this point in time, our focus is on small pelagics. Of course, eventually we will address other species, including the large pelagics and coral reef species. But we want to do it in stages. We don't want to engage with so many groups all at once.

2: South China Sea and Gulf of Thailand Sub-region

Presented by: Mr. Ronnie O. Romero, OIC, Monitoring and Evaluation Section, NFRDI, Philippines; Mr. Tran Nam Chung, Vice Manager of the Vessel Monitoring Division, DOF, Vietnam; Mr. Kihua Teh, Senior Executive Manager, Fisheries Port and Management Department, AVA, Singapore; Mr. Dr. Alias bin Man, Senior Research Officer, DOF, Malaysia

Background & Current Situation

Planning Area: See Figure 42.

- Fisheries in the South China Sea, including the Gulf of Thailand, are characterized by high levels of small-scale fishing effort with increasing fishing pressure (Paterson et al, 2012)
- High small-scale fishing pressure and declining fisheries resources have contributed to the adoption of unsustainable fishing methods in the region (UNEP, 2008)
- EAFM provides a broader framework for managing marine resources to achieve sustainable development through ecological well-being, human well-being and good governance
- A sub-regional approach can be adopted to enable resource management at the appropriate scale

Current situation:

Status of fisheries management

- Lack of transparency/ lack of data and information sharing
- Limit of cooperation and communication among the countries
- Marketing complexity
- Lack of human resources and capacity for M&E
- No ACDTS
- No standardized fishing gear
- Use of destructive fishing gear
- Fishing in unauthorized zone
- Lack of management of high seas fishing
- Poor law enforcement
- Conflict at sea, IUU fishing activities
- No common sub-regional policy on fisheries management

Figure 42. Proposed EAFM Planning Area: South China Sea-Gulf of Thailand Sub-region

Status of fisheries resources and utilization

- High exploitation of small pelagics, neritic and oceanic tunas
- Decrease in production/decline in resources/smaller fish (biological overfishing)/reduction in fish species diversity
- Demersal stock in bad shape/habitats damaged
- Multi-gear and multi-species fisheries (very apparent in this area)
- No regional stock assessment (stock assessments have been conducted in some countries, but only sporadically)/lack of research-based evidence
- No study of commodity flows

Why We Need to Conserve Biodiversity in the South China Sea and Gulf of Thailand Sub-region

Together as a sub-region, we declare that our future depends on fish, and that there is a really high demand for protein in our countries:

- Food and food security: Fish is our food and we need to sustain this food supply for our children, as well as for future generations to enjoy. We need to maintain food security in the region.
- Income and Livelihoods: Fish is a major source of income and livelihood. We must sustain the resource in order to secure the economic well-being of those who rely on fishing and related livelihoods
- Ecosystem Balance: We need the genetic diversity from the variety of species to ensure healthy stocks, and a healthy and balanced ecosystem
- Sustainability of marine environment: When we take care of the fishes and other marine species, we will need to sustain their environment and thus secure for ourselves other benefits of prospering this ecosystem.
- The SCS-GOT is our common property: The SCS-GOT is our common property and we must manage it together, govern it for equitable access, and seek support and engage partners for its management.

Process of Developing Our Framework Plan

- Delineated the sub-region scope – The group also agreed to use the term "South China Sea-Gulf of Thailand" sub-region, or SCS-GOT

- Agreed vision for our sub-region
- Identified our resources and why we should conserve them – You cannot manage something that you don't know
- Described the current status (identified issues, threats, opportunities, etc.)
- Identified enablers and barriers to the vision
- Agreed targets and management actions
- Reviewed and validated the draft framework plan
- Identified/agreed next steps

Our Shared Vision (draft)
"In 2027, the fisheries resources in SCS-GOT sub-region will be sustainably managed, *conserved*, and equitably shared *through mutual cooperation among ASEAN member states,* ensuring people's food security and socio-economic development."

Target Fisheries Resources for Conservation and Preservation
The group agreed to prioritize the following species groups for management: South China Sea: small pelagics, neritic tuna and oceanic tuna; and Gulf of Thailand: small pelagics and neritic tuna.

Major Issues, Targets and Management actions
Table 38. Ecological well-being targets and management actions for South China Sea-Gulf of Thailand Sub-region based on identified major threats and issues

Threats/Issues	Targets	Management Actions	Countries/ Programs
Low production	Increase small pelagics by 5-10% (production)	• Collection of baseline data • Regional stock assessment • Closed season • Manage/control fishing capacity/ effort	All countries for which the threat/issue is relevant. The specific targets will be determined by each country.
Depleted stock	Improve stock (increase biomass by %)	• Identify fish refugia – very important especially for transboundary issues • Restore fish refugia • Create networks • Organize TWG (in the ASEAN) • *Fish refugia network established & managed*	
Destructive fishing practices, IUU Trawlers are also catching small pelagics	50% of trawlers in each country using by-catch reduction devices (e.g. TED)	• Regional R&D to reduce bycatch • Develop regional policy guidelines to reduce bycatch	
Overfishing	Reduce capacity (by _% based on country specific data and sustainable levels)	• Consultation with SEA member countries – need to negotiate because every country wants to increase the number of their fishing boats • Develop regional technical guidelines – What type of boats/gears? How many? Where should they be allowed to operate? This will require information on stocks • Communication/ information sharing strategies • Manage capacity by TAC (Vietnam) • Develop harvest control rules	
Lack of communication/	Create AMS TWG on fisheries management	• TOR • Partnership with funding agencies	

Threats/Issues	Targets	Management Actions	Countries/ Programs
information across the sub-region No uniform regulation/ standards	(closest is the ASEAN Fisheries Committee)		

Table 39. Human well-being targets and management actions for South China Sea-Gulf of Thailand Sub-region based on identified major threats and issues

Threats/Issues	Targets	Management Actions	Countries/ Programs
Lack of awareness (e.g. CCRF, Market demand, livelihood skills, Fisheries Resources Mgt, Gender and Development)	• Increased awareness in the identified topics	• Campaigns, events, publication – fishery laws, etc. • Start early, schools – integrate in curriculum/ education on fisheries resources and other related fields among children and youth	All countries for which the threats/issues are relevant. Specific targets will be set by the countries.
Lack of knowledge on/ access to info on fisheries, marketing, financing	• Access to information increased	• Mass media, improve IT in the fishing communities, market information (Species, price, direct selling) • Develop a website to share materials and info	
Poverty	• Poverty decreased (based on country level poverty) • Incomes increased (by a certain $$ depends on country) • Skills increased	• Provide skills other than fishing so fishers & family have alternative sources of income (country-specific) • Develop aquaculture • Provide training to men and women on aquaculture, marketing, pre- and post-harvest, repairing fish-related equipment, information systems, CDT and other technologies, food safety/quality, value-added products	
Lack of access to capital resources	• Access to financing esp. micro-finance increased	• Government/financial institutions to provide financing with low interest or fisher-friendly financial policies • Encourage fishers to establish fishers cooperatives/ groups to access financing or to market their products (more bargaining power in a group than individual) – different for youth, women, fishermen, fishing family, senior citizens, other vulnerable groups	
Socio-economic inequity/ injustice (fishers getting less than middlemen and middle-women)	• Benefits of fishers from fishing increased (can get higher price) • Fishers able to obtain real market info such as price and not at the mercy of the traders	• Refer to actions on group formation (4.3) • Improve marketing system by directly selling, social networking (Facebook, online biz) • Local governments → guidelines / documents on rights of stakeholders (fishers, whoever is there) • Refer to EAFM on topics/checklists	

Threats/Issues	Targets	Management Actions	Countries/ Programs
Anthropogenic activities			
Use and discharge of chemicals from agriculture (pesticides), aquaculture, households	Chemical discharge / contamination reduced	• Zoning areas according to activities (agricultural, aquaculture) • Develop government policies, guidelines on this matter	Cambodia
Coastal development (tourism/ hotel construction, seaport/fish port (Cambodia, Vietnam)	EAFM plans are developed and implemented	• Conduct EIA and EHIA before construction • Enforcement of regulations for environmental protection	Cambodia Vietnam
IUU esp use of illegal fishing gears	Illegal fishing and fishing gears reduced / eliminated	• Government to develop short- and long-term plans to implement NPOA/RPOA against IFF → enforcement at all levels. • Strengthen governance • Awareness raising/campaign/ education to change mindset of people to follow laws and regulations and not resort to illegal ways. • Heavier penalties on violators • Provide incentives/recognition to those who are compliant or fishing legally • Inspection at sea/FMC set-up • "Soft" policies to help fishers to follow rules/fisher-friendly rules/ laws	Malaysia Vietnam

Table 40. Good governance targets and management actions for South China Sea-Gulf of Thailand Sub-region based on identified major threats and issues

Threats/Issues	Targets	Management Actions	Countries/ Programs
Overexploitation Over capacity Destructive fishing gear	• Bring back the catch to maximum sustainable yield (MSY)	• Collect and standardize catch data* • Regional Stock Assessment • Adapt fishing effort to get stock to MSY level • MCS to maintain MSY level • Reduce fishing effort concurrent with stock assessment → precautionary approach	Singapore Thailand Malaysia Brunei Darussalam SEAFDEC TD/ SEAFDEC Sweden Indonesia
IUU Fishing	• Reduced IUUF with the intent of eradicating IUUF in the future, for example, by reducing illegal gears	• Port State Measures • ACDT (linked with FMP regulations and CDT/ACDS roadmap/guidelines) • Sub-Regional Plan of Action (S-RPOA) for Combating IUU Fishing that includes Joint Patrolling and Joint VMS (so everybody sees where everybody's vessels are)	All countries
Lack of Management coordination/ cooperation of shared stocks	• Agree on single management plan • Co-management	• Establishment of regional management body to look after in terms of governance as well not just fish stocks	All countries

Threats/Issues	Targets	Management Actions	Countries/ Programs
It's good to have data, but we don't want to wait for stock assessments. We need to make sure we reduce fishing effort using possibly a precautionary approach.			

Enablers and Barriers

Table 41. Identified barriers (major issues and threats) to sustainable fisheries in the South China Sea-Gulf of Thailand Sub-region

Ecological Well-being	Human Well-being	Good Governance	Cross-cutting
• Destructive fishing gear • Open/unlimited access • Over exploitation • Alien species • Pollution	• Lack of awareness on CCFR • Lack of awareness of demand side (ACDTS is about strengthening the demand side requirement, so that should improve on the demand side)	• Poor governance • Sedimentation due to poor land use • Lack of funding (funding can be an enabler as well as barrier) • Policy Trade offs • High market demand • Lack of common policy; Lack of political will (more on the sub-regional aspect)	• Climate change effects

Table 42. Identified enablers (strengths and opportunities) of sustainable fisheries in the South China Sea-Gulf of Thailand Sub-region

Ecological Well-being	Human Well-being	Good Governance	Cross-cutting
Conservation Zones (can improve management) Science-based information and harvest strategies (may need to strengthen for collaboration) Strategic plan for fishery management	Livelihoods (fish-based & alternative) Gender empowerment/ mainstreaming Gender-responsive programs → equal access		SDG commitments, targeting to be achieved in 2020 as well as 2030, when the policy is already there, we can tap that policy in terms of funding since it is a commitment by many countries, so we can tap that commitment
		One sub-region: One Plan/Law – this could be the enabling factor to improve regional governance	Human & institutional resources
		Institutionalize EAFM, ACDTS	Collaborative R&D
		Standardized vessel registration throughout the sub-region	Capacity building of all stakeholders, esp in stock assessment regionally
		Sub-regional fishery management council – need to have a platform to oversee all the activities within sub-region	Stakeholder participation and engagement
		Multilateral fishing agreement	Comms/outreach program - many programs have been implemented on EAFM, maybe we need to go on sub-regional level

Ecological Well-being	Human Well-being	Good Governance	Cross-cutting
		Awareness of demand side looking for sustainable product	Funding

Proposed Next Steps

- Develop Draft Sub-regional EAFM Plan
- Consultation/meeting – not only at the TWG level, a higher-level committee to review the plan
- Plan implementation

3: Andaman Sea Sub-region

Presented by: Nur Fadhlina Chan Mahadie Chan, Fishery Officer, DOF-Malaysia

Background & Current Situation

Andaman Sea is located south of Myanmar, west of Thailand, and east of Andaman Island, India. For this discussion, the group agreed to extend the area up to the Strait of Malacca which separates the peninsula of Malaysia and the island of Sumatra in Indonesia. Based on this, the discussion included the following four countries: Myanmar, Thailand, Indonesia and Malaysia.

Figure 43. Proposed EAFM Planning Area: Andaman Sea Sub-region

Fisheries resources

- Catch/landed approx. 4.7 million MT
- Effort approximately 61.4k vessels (excluding Thailand because they don't have a current estimate of how many of their fishing vessels operate in Andaman Sea)
- Major Species: small pelagic, demersal, neritic tuna

Fisheries utilization

- Fresh/ chilled mainly for local, domestic and partly for international markets
- Processing for export
- Frozen for export

Fisheries management

- Regulation of number of vessels and gear specifications
- Gear restrictions
- Implementation of closed season
- Rehabilitation of habitats, e.g. artificial reefs
- Establishment and development of conservation areas, and zoning systems
- MCS
- Vessel identification system

Why We Need to Conserve Biodiversity in the Andaman Sea Sub-region

- To maintain natural resources and ensure that future generation get to enjoy sustainable resources (e.g: protection of fisheries resources, rehabilitation of resources for sustainability, protect nursery/spawning ground, limit exploitation of some species).
- To increase fish production, and to ensure food security, livelihoods, and economic and social well-being, Maintaining biodiversity means maintaining sustainable food supply for people.

- To protect endangered, threatened and protected species for sustainability.

The Group's Shared Vision

"Ten years from now, the Andaman Sea is a globally-recognized biodiversity-rich ecosystem capable of sustainably contributing to world seafood security and improving the well-being and resilience of fisheries-dependent local communities through a concerted and collaborative fisheries management effort among countries and organizations in the sub-region."

The group decided to use the word "communities" instead of "men and women" because "we don't want to get into the gender issue here."

The following concerns and desired outcomes were considered in developing the vision statement:

Ecological health

- Rich of biodiversity
- Clean & healthy ecosystem in the Andaman Sea
- Sustainable resources of fish
- More productive area (high CPUE)

Human welfare

- Source of seafood in the world
- High value area for food production (high value)
- Better welfare of fisherfolks and fisheries-dependent players
- High social economic condition in the Andaman Sea's households
- Resilient communities

Fisheries governance

- Globally recognized managed fisheries
- Clear mechanism of collaboration among countries in managing the sub-region
- Roles of each country in the collaboration
- Finding common targets
- Lead organization → Regional management body
- Active participation of countries and other organizations
- Joint plan of action among member countries (existing: Regional Plan of Action of Fishing Capacity)
- Regional management body (which will exist 10 years from now)
- Lead the harmonization of fisheries management in the Andaman region
- Utilize existing organization body, not to establish new body
- Joint management plan (e.g. transboundary species)

Fisheries Resources We Want to Preserve

Small pelagics, neritic tuna and demersal fish

Major Issues, Targets and Management Actions

For this topic, the group referenced the Bay of Bengal Strategic Plan, as well as the four countries' programs, and agreed that they should align their activities to the approved Bay of Bengal plan.

Table 43. Ecological well-being targets and management actions for the Andaman Sea Sub-region based on identified major issues, threats and constraints

Issues/Threats/Constraints (Prioritized)	Targets	Management Actions	Countries/programs
Declining fish catch / fish stock • Small-pelagic	(Heads of State have already agreed on targets of BOB Strategic Action Plan	• Collaborative Research program (among countries and organizations involved) for stock assessment and more	• All countries

Issues/Threats/Constraints (Prioritized)	Targets	Management Actions	Countries/programs
• Demersals (most not transboundary) • Neritic tuna	which we should align with and refer to) • Increase abundance in biomass of selected national and transboundary fish stocks by 5% by 2025 • Maintain species composition through regulation, zoning, fisheries management plans and marine survey programs	• Effort control (in some cases, maintaining number of vessels) • Control the number of trawl fishing vessels (fix the number of license / no new license) • Habitat rehabilitation (TH: coastal zone management, depending on provincial committee; ID: zoning, seagrass conservation; MM: seagrass, mangrove programs) • LMMAs: Local managed marine areas (on going in TH, MM, ID)	
IUU fishing, partially causing declining fish stock	• Managing Andaman sea fisheries (i.e. preventing IUU fishing)	• Sharing information to reduce IUU fishing such as regional fishing vessel record, currently an incentive under SEAFDEC • Regional cooperation to support implementation Port State Measure (on-going) • Transshipment o ID & MM - No transshipment for Indonesia. o TH – specific control on transshipment at sea - overseas only but must have on-board observers • Establish a regional MCS network in the Andaman sea • Bi- and/or multi-national agreements/dialogues to strengthen arrangements	• All countries & regional organizations
Water pollution • External • Internal to fisheries (contributed by the fisheries sector)	• Reduce water pollution, both from external and internal sources	• Internal - Gear marking to address gear loss • External – Develop fishing gear for ecosystem friendly (avoid ghost fishing)	• All countries

Table 44. Human well-being targets and management actions for the Andaman Sea Sub-region based on identified major issues, threats and constraints

Issues/Threats/Constraints (Prioritized)	Targets	Management Actions	Countries/programs
Gender and labor conditions • Human trafficking • Processing plant • Labor condition issues • Low salary • Underage and foreign crew in large fishing vessels • Policy & technical issues	• Address existing gender and labor condition issues	• Alternative livelihood • Work certificates • Regulators	For all countries

Table 45. Good governance targets and management actions for the Andaman Sea Sub-region based on identified major issues, threats and constraints

Issues/Threats/Constraints (Prioritized)	Targets	Management Actions	Countries/programs
Interest/ priority of decision makers in fisheries sector/ management	• Increase understanding of decision makers on fisheries management	• Production materials to summarize fishery management for decision makers -- Interest/priority of decision makers – hard to get support from top management who produce the policy, so we plan to produce materials for them to understand better • Capacity building for senior leaders (high participation)	• All countries except Thailand
Limited resources (human & financial)	• Increase by three times the funds allocated to support fishery management efforts and human resources requirements (all countries except Thailand)	• Increasing awareness on importance/ value of fisheries sector • Involvement of private sector in fisheries management (PPP) • Capacity development for human resources (Myanmar) • Leading organization's role – capacity development, M&E • Joint management plan for member countries	• All countries (except Thailand)

Enablers and Barriers (Major threats and issues)

Table 46. Enablers of and barriers to ecological well-being in the Andaman Sea Sub-region

Enablers (Opportunities)	Barriers (Issues, Threats, Constraints)
• Establish eco-friendly fishing gears • Identify and manage the usage of non-ecofriendly fishing gears • Expand habitat rehabilitation/ Expand area for rehabilitation of artificial reef, seagrass, and mangroves • Marine Survey Program to provide necessary information • Support and collaborate with MCs for using MV SEAFDEC 2 on marine research survey • International and national marine survey program • Stock enhancement – e.g. Release local juvenile marine species for resource enhancement, brood stock • By-catch management for all species (especially marine mammals and sea turtles) • Increase environmental awareness and information/education: strengthen the women to be home educator and role model regarding sustainable fisheries	• Water pollution from industries, commercial, settlements • IUU fishing – destructive fishing • Climate change – fish habitats, migration areas, fish stock • Increase the number of offshore oil digging businesses • Development in coastal areas

Table 47. Enablers of and barriers to human well-being in the Andaman Sea Sub-region

ENABLERS (OPPORTUNITIES)	BARRIERS (ISSUES, THREATS, CONSTRAINTS)

• Gender awareness program / livelihood – on-going in Myanmar • Improve handling method to have a good quality fish • Increase opportunities for fishers to negotiate on prices • Alternative livelihood • Product diversification of fish • Fish Adapt project – launched in Myanmar – 5-year project under GEF focusing on resilience • Group insurance system for fishers / fishers' insurance system	[Market forces (e.g. trade restrictions, CITES, ecolabels, price) which can be both enablers and barriers] • Long Value chains, e.g presence of redundant players, middlemen We see market forces (EU trade restrictions, ecolabels, prices, etc.) as both market enablers as barriers

Table 48. Enablers of and barriers to good fisheries governance in the Andaman Sea Sub-region

Enablers (Opportunities)	Barriers (Issues, Threats, Constraints)
• Concerted effort/enforcement to combat IUU fishing • Technological advancement to address issues e.g. in Thailand VMS tracking, also in Malaysia we have the VMS • Existing management plans • Efficient channels/ways to convey information between community and government • Compliance of fishery stakeholders • Bay of Bengal Strategic Action Programme as it applies to the Andaman Sea	• Inadequate skills of staff / financial resources (budget) – Myanmar, Indonesia, • Following the management plan • Cooperation with lead organization • Political will / leaders and decision makers with high (or low) interest in fisheries management o Thailand – High, Myanmar – Low, Indonesia – High, Malaysia – High o (can be both enablers and barriers) • Ineffective law enforcement in remote (diverse) areas – linked to previous point

Table 49. Cross-cutting enablers of sustainable fisheries in the Andaman Sea Sub-region

Enablers (Opportunities)	Barriers (Issues, Treats, Constraints)
• Andaman sea-wide EAFM plan (all species) and implementation • Increased EAFM awareness (with next step = management planning) • Advancements in fisheries management among different countries • Existing management plans (e.g. RPOAs) • Information sharing between government and communities	

Proposed Next Steps

- Develop the BOBLME and Andaman Sea Sub-Regional Programs/ Projects
- Replicate the methodology/process used in this Workshop -- Methodology used in this workshop is good and information can be useful to other aspects of work
- Use outcomes from this Workshop at the next Andaman Sea Sub-Regional Meeting (SEAFDEC)
- Apply lessons learned
- Consider marine survey plan to increase knowledge of the fisheries resources in the Andaman Sea Sub-region and gain support for fisheries management action

2.3.2 Review of Progress

The closing of the workshop was preceded by a review of progress made by the participants against the originally intended objectives. This review included three parts: (1) a summary of the activities and sessions completed during the 3-day meeting; (2) a review of the progress made by all participants against the originally intended workshop objectives; and (3) a "Group Synthesis" of closing feedback and perspectives offered by each of the

country delegations in reflection of the progress made during the workshop. This progress review and feedback session was led by Mr. Parks and Dr. Pido.

Mr. Garces opened the session and informed participants that they would receive draft versions of the three sub-regional EAFM planning outputs from the co-hosts, and that they would be invited to review and share any comments or proposed edits on the outputs prior to them being finalized.

Mr. Parks then reviewed a summary of the workshop activities and sessions completed over the past three days. He then noted, "This may be the first time for the countries of the South China Sea and Andaman Sea sub-regions to spend time together and think at length about taking an ecosystem approach to fisheries management for each of the two sub-regions. One advantage that the Sulu-Sulawesi group had coming into this week was that they have had more than a decade of time to work together on issues relating to transboundary fisheries." Mr. Parks then went on to add that as was heard from the South China Sea and Andaman Sea sub-regions, significant progress was made during the week's discussions and that they had "broken new ground."

Next, Dr. Pido presented his "review of progress made against workshop objectives," and concluded that the five documentary outcomes expected from the workshop were "at this stage at varying forms of draft." He outlined these outcomes as follows:

- Report based on presentations by the ASEAN delegations of the status of fisheries management in their respective countries;
- Synthesis of the experiences and lessons learned "through the years"; and
- Three regional framework plans – For the Sulu Sulawesi Seas Sub-region, the original (2015) draft of the sub-regional EAFM plan was updated as a result of the week's meetings, with the revised draft to be circulated in the next few weeks. For the other two sub-regions, the framework plans will be crafted and duly circulated.

Dr. Pido also thanked participants who participated in the discussion on the draft *EAFM 101: Linking EAFM to CDT,* and invited others to submit any additional comments for consideration.

Finally, Mr. Parks initiated a lengthy "Group Synthesis" discussion by inviting each national delegation to offer their overall feedback and any closing thoughts as to the progress made during the workshop. A summary of the feedback provided by each national delegation and a few of the regional partner teams is presented below as Participant Feedback.

Participant Feedback

Brunei Darussalam – We gained valuable knowledge and information that we expect that we can use in Brunei, so, of course, the workshop is useful to, and we are glad that we had the opportunity to join. We expect to report from this workshop that we are developing a plan for us to be able to work together to manage our fishery resources and marine biodiversity.

Cambodia – I'm very happy that I have joined this workshop. I think that it was fruitful and that we can apply what we have learned in our country, but we need more information from SEAFDEC so we can upgrade our national efforts.

Indonesia – This is very valuable for us in Indonesia. From the beginning, we were told that this was just an exercise and not binding, but we have some good inputs and recommendations for our officials to consider.

Lao PDR – Even though we don't have a sea, we gained a lot of knowledge that we can apply in implementing EAFM in our country. But we need some support from you especially in terms of information and technical assistance.

Malaysia – I agree that this is big achievement for USAID Oceans, and a step forward for EAFM in the region. We have made great progress towards a management plan, and we have delineated our big ASEAN region into three sub-regions, and we identified the issues and constraints and what sort of management actions we need to implement. But before we can go to the next step, which is to flesh out the management plan, we need to form a coalition of concerned managers – the Director Generals or other decision-makers – from each country. I hope the project will continue to move this forward and take that next step that needs to be done before we can implement the management plan. My wish is for the countries to have the capacity to do M&E, which is key to developing, implementing and revising the plan.

Myanmar – We learned about the fisheries management measures that the other countries are implementing, the good as well as the bad. In Myanmar, our marine survey plan was conducted in 2015/14. Based on what we've learned here, maybe we can adopt some of what the other countries are doing or modify some of our own management measures to improve fisheries management in our country. Also, we have a plan that we are implementing in 2018 and we are initiating a gender training workshop through USAID Oceans, so we can share a little bit more in the next Oceans meeting.

Philippines – This workshop has been really fruitful and productive for us. It gave us a better understanding and appreciation of the unique roles of the countries particularly in addressing IUU fishing. Moving forward, we hope and expect that the plans will be completed and approved, and implemented.

Singapore – I personally I think, from the sharing, that the commonalities within the region were brought out, in terms of the issues faced by the countries, the difficulties in terms of enforcement, and the stakeholder engagement which is common within the region. Which leads me to my second point that it is encouraging to see the enthusiasm of the different ASEAN member-countries in terms of having common issues, and having a common direction. I think this is a good starting point. We're moving forward like Dr. Alias has said, but we have lots more work to do so I guess I'll be seeing more of you soon in future meetings.

Thailand – We learned a lot of useful things that we can apply to fisheries management in the future, and we know that there is more we can learn from the other countries in terms of the tools and actions that we need to implement to achieve our management targets.

Vietnam – In Vietnam we already had the training from SEAFDEC, but I think this workshop was very interesting. We liked the way it was organized, and we learned a lot of things – what EAFM means at the community level, and what it means at the provincial, national and regional levels. Today we discussed our goals on ecological well-being, human well-being and governance. We hope we will have a plan that we can implement at the sub-regional and regional levels and that in 10 years our fisheries will increase.

ADB CTI-SEA – My expectations were met 100%. Excellent facilitators during the plenary and breakout groups. I had a basic EAFM training back in 2014, and my memory badly needed an upgrade. I will have a training in Zamboanga in a couple of weeks and my involvement here has become an excellent refresher course for me. I would also like to note that, in 2015, during the Manado workshop, there were about 60 of us who attended that event, and most participants were biologists and fisheries people, which was not a very good mix. I could say in this event, there was a very good mix of people – there are biologists, of course, engineers, social scientists. In our Sulu-Sulawesi group, we had a colorful discussion on social and economic well-being, about gender sensitivity that we never really dwelt on during the 2015 workshop. And you come out of this discussion feeling better informed, so for that reason, I would consider this a very good takeaway from this event. What more is needed from here? John told me there was a long list of to-dos in the 2015 workshop, and he told me – and I was so surprised – that none of those really materialized. I really hope that will not happen in this workshop, so the follow-up activity is very important. And I think, when we go back to

our agencies/countries, a very important step would be to sell this to our agency heads and get their support for the national, tri-national and sub-regional EAFM plans that we have been discussing here.

CTI-CFF – Expectations met, yes. I received a lot of clarification in terms of what USAID Oceans is trying to do and how it connects to CTI. Useful – yes, again clarification on our work. What is needed from here is communication between the different programs. Even with those programs that have ended, we can take recommendations from them and complement each other rather than reinventing the wheel.

SEAFDEC – Thank for coming up with the sub-regional EAFM framework plans. We have identified the three sub-regions in our region, which is very important for future management. Frankly, this is what I was trying to do before, to come up with the sub-regional management areas, so it's a good starting point. I believe we still need to continue the work in order to come up with concrete activities to manage each sub-regional area. Please take note that the EAFM plans that were developed in this workshop are alive, they are living documents that should be linked to the CCRF-SEA adopted by the Joint ASEAN-SEAFDEC and also the ACDTS that were already committed by all ASEAN Member States. I believe that by working with Oceans, we will come up with a useful management plan that will get the endorsement of the countries. And although the three sub-regions do not cover Lao PDR, I do believe that there is much that Lao PDR can learn that they can apply in the Mekong River so it is not a waste of their time. We now have a lot of plans. What is more important now is cooperation to implement.

Mr. Garces concluded the "Review of Progress" session with an assurance of the USAID Oceans' commitment to pursue the work that has been started. Mr. Garces announced that the revised draft of the Sulu Sulawesi Seas Sub-regional EAFM plan generated out of the workshop would be presented formally to the CTI-CFF Regional Secretariat during a meeting in September. Mr. Garces said, "perhaps we can have a conversation about having another workshop as part of the CTI-CFF Program, to refine and finalize the Sulu Sulawesi Seas sub-regional EAFM plan, and from there submit it through the Regional Secretariat to the CTI-CFF EAFM TWG."

For the other sub-regions, the possible "next steps" would be to report the outputs to the APFIC Regional Consultative Forum in May 2018. "That will be a venue for us to communicate the outputs," Mr. Garces added.

2.3.3 Closing Session

Following the "Review of Progress" session, closing remarks were delivered by Mr. Silvestre for USAID Oceans; Regional Environment Office Director Angela Hogg for USAID RDMA; and Dr. Silapajarn for SEAFDEC.

Mr. Silvestre highlighted the achievements of the workshop, and assured especially the countries of continued assistance from the USAID Oceans Partnership. He said: "We have taken the very first steps in putting together the plans. The main objective is to be able at the sub-regional scale to ensure that there is complementarity in management actions and directions at the national and at the finer scales of implementation within our respective institutional hierarchies. With the sub-regional plans, we've cleared the first steps to getting there, and you can expect to hear from us on the follow-up actions, in coordination, of course, with our SEAFDEC colleagues."

"We will appreciate your cooperation and collaboration as we move forward to implementation of the three sub-regional work plans," Mr. Silvestre added. "Like you, we also would like to continue the capacity building, and the approach we've taken in this workshop is learning by doing with you so that you see how this can be actually put together and operationalized and put to implementation. We have every intention to get the sub-regional plans to action and implementation and we look forward to your cooperation on our next steps to be able to bring that about."

Ms. Hogg also remarked on the workshop's success, saying: "We walk away having advanced fisheries management plans that will help to protect the region's resources and that is a tremendous accomplishment.

Regional cooperation and progress are not possible without a dedicated group of partners. And in addition to the commitment and contributions that each of you have made to the USAID Oceans Project, we're also grateful to our partners in the private sector, non-governmental organizations and academia who harness the region's best experts, technology and resources to protect our marine resources, and I want to thank all of you for that work."

Ms. Hogg then took the occasion to announce a new USAID Oceans' partnership with the UK satellite telecommunications company Inmarsat. "USAID Oceans and Inmarsat will work together to bring cutting edge technology to fishing vessels to support the capture and transmission of critical traceability data," she said.

Dr. Silapajarn echoed the other speakers' appreciation of the success of the workshop, and again emphasized the importance of EAFM as an approach that incorporates social considerations, "rather than only focus on the fisheries resources perspective." He thanked participants for their contributions, noting "such contributions will ensure the sustainability …of EAFM in our region," before declaring the workshop "officially closed."

Note: The closing session was immediately followed by the USAID Oceans-Inmarsat Partnership signing ceremony. On hand for the signing from Inmarsat was Maritime Chief Sales Officer Gerbrand Schalkwijk, who talked about the company's connectivity technology and how "costs have gone down so much it's now become accessible to the fishing community in Southeast Asia." The partnership is focused on providing the technology needed to help advance the CDT workstream, mainly in the Thailand and Indonesia pilot sites. Inmarsat's Fleet One, for example, can be integrated with the CDT system that USAID Oceans and SEAFDEC are developing to improve the transmission of CDT data from fishing vessels at sea.

Mr. Silvestre added that, as well as supporting the CDT system, there is potential for the technology to also improve labor conditions on board fishing vessels. "We can do a lot of progress in improving labor conditions by giving the fishing crew easy and reliable access to communication," he said. "When we pilot this technology, we will also explore its potential for improving the crew's access to their families, and hopefully improving compliance with fisheries and labor laws."

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ANNEX II. AGENDA

The below agenda was provided at the beginning of the USAID Oceans Southeast Asia Fisheries Management Planning Workshop held on 23-25 August 2017 in Bangkok, Thailand. It does not reflect agenda or schedule changes made during the workshop.

23 August 2017 (Wednesday): Opening and Review of Fisheries Management Interventions in Southeast Asia Region			
0830-0900	Registration		
0900-0930	Opening ceremony, speeches ▪ Welcome and Introductions (Mr. Geronimo Silvestre, Chief of Party, The Oceans and Fisheries Partnership) ▪ Message from USAID RDMA (Ms. Angela Hogg, Director, Regional Environment Office, USAID RDMA) ▪ Opening Remarks (Dr. Kom Silapajarn, Secretary General, SEAFDEC)		Co-organizers (USAID Oceans and SEAFDEC)
0930-0945	Workshop orientation, agenda, and objectives		Len Garces/Isara Chanrachkij
0945-1000	Participant introductions and key expectations		John Parks/Lily Ann Lando
1000-1030	Group Photo and Coffee break		c/o SEAFDEC/ Melinda
1030-1230	**Session 1A: Presentation of National Fisheries Management in Southeast Asian Countries** Brunei Darussalam; Cambodia; Indonesia; Lao PDR, Malaysia; Myanmar, Philippines; Singapore, Thailand; Vietnam		Plenary Presentations by Country Representatives Guidelines c/o Len Garces & Facilitators
1230-1330	Lunch		
1330-1530	**Session 1B: Presentation of Regional Fisheries Management Initiatives in Southeast Asia** Regional Organization/Programs: FAO; SEAFDEC (Japanese Trust Fund, UNEP/GEF Refugia; SEAFDEC Sweden); CTI-CFF; GIZ-SSME; ADB-SEA; NOAA; USAID Oceans; other organizations.		Plenary Presentations by organization Representatives Guidelines c/o Len Garces & Facilitators
1530-1545	Coffee break		
1545-1730	**Session 2: Definition and Scope of the EAFM Area** Parallel Workshop Sessions by Sub Region (Sulu Sulawesi Seas; Gulf of Thailand and Andaman Sea)		
	Gulf of Thailand and Andaman Sea Sub Regions Fishery management unit - Issues and threats - Vision statement	***Sulu Sulawesi Sub Region*** Fishery management unit - Issues and threats - Vision statement	Facilitators: ▪ John Parks/Mike Pido + SEAFDEC Staff (Sulu Sulawesi Seas) ▪ Lily Ann Lando/Len Garces + SEAFDEC staffs& Paul Ramirez (Gulf of Thailand and Andaman Sea)

1800	Welcome Dinner		Hosted by SEAFDEC
24 August 2017 (Thursday): Sub-Regional Workshop Discussions			
0900-0920	Recap of Day One		Lily Ann Lando
0920-1030	**Session 3: Identifying Critical Components of the EAFM Plan** Parallel Workshop Sessions by Sub Region (Sulu Sulawesi Seas; Gulf of Thailand; Andaman Sea)		
	Gulf of Thailand and Andaman Sea Sub Regions	***Sulu Sulawesi Sub Region***	
	Identifying Constraints, Opportunities, Goals, Objectives, and Linking ecological, socioeconomic and governance goals	**Revisiting** Constraints, Opportunities, Goals, Objectives, and Linking ecological, socioeconomic and governance goals	Facilitators is same as Day 1
1030-1045	Coffee break		
1045-1230	***Identifying*** Constraints, Opportunities, Goals, Objectives, and Linking ecological, socioeconomic and governance goals	***Identifying*** Indicators and Benchmarks for the Objectives; Indicators and Benchmarks for the Objectives	Facilitators is same as Day 1
1230-1330	Lunch		
1330-1500	Management Actions	Stakeholder engagement strategies (coordination, partnership, co-management, etc.)	Facilitators is same as Day 1
1500-1515	Coffee break		
1515-1700	Management Actions	Management Actions	
25 August 2017 (Friday): Sub Regional Workshop Discussions (continuation)			
0900-0920	Recap of Day Two		Lily Ann Lando
	Session 4: Finalizing EAFM draft plan, defining role, responsibilities and schedule; Future Planning Parallel Workshop Sessions by Sub Region (Sulu Sulawesi Seas; Gulf of Thailand; Andaman Sea)		
	Gulf of Thailand and Andaman Sea Sub Region	***Sulu Sulawesi Sub Region***	
0920-1030	Finalizing EAFM draft plan - Identify data and information needs and potential sources - Discussion and refinement of draft plan	Finalizing EAFM draft plan - Financial mechanisms - Decide how to monitor and evaluate performance of management actions - How plan will be communicated	Facilitators is same as Day 1
1030-1045	Coffee break		
1045-1230	Next Steps Linking plan to regional organizations, programs and projects (SEAFDEC, others)	Next Steps Linking plan to regional organizations, programs and projects (CTI-CFF, SEAFDEC, others)	
1230-1330	Lunch		
1330-1500	**Sub Regional Presentations** (Plenary Presentations by Representative of each Sub-region) ▪ Sulu Sulawesi Seas ▪ Gulf of Thailand and South China Sea ▪ Andaman Sea		(Guidelines c/o John Parks/ Lily Ann Lando)

1500-1515	Coffee break; distribute workshop evaluation forms	
1515-1600	**Group Synthesis** – shared across the sub-regions ▪ Shared constraints and opportunities ▪ Shared aims (goals, objectives, actions) ▪ Shared measures of success (indicators, performance evaluation)	John Parks/ Lily Ann Lando
1545-1630	**Closing/Signing Ceremony** ▪ Review of progress made against intended workshop objectives and outputs ▪ Closing Remarks o Dr. Kom Silapajarn, Secretary General, SEAFDEC o Mr. Geronimo Silvestre, Chief of Party, USAID Oceans o Ms. Angela Hogg, USAID RDMA	Co-organizers Review of progress facilitated by John Parks/ Lily Ann Lando

ANNEX III. USAID OCEANS PARTNERS

The Oceans and Fisheries Partnership is a USAID-funded activity, implemented by Tetra Tech ARD. USAID Oceans is a collaboration between USAID and the Southeast Asian Fisheries Development Center (SEAFDEC) and the Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security (CTI-CFF). The program works with a wide range of partners that bring additional expertise and experience to the mission.

USAID

USAID's Regional Development Mission for Asia (USAID RDMA), located in Bangkok, Thailand, implements programs and forges partnerships with government, civil society, private sector and regional institutions across 24 Asian nations. RDMA's regional programs that address cross-border issues, including environmental issues, which are among the chief impediments to Asia's long-term development success. Rapid economic growth has led to dramatic increases in the use of natural resources and wrought unprecedented damage on Asia's forests, fisheries, wildlife and vulnerable ecosystems in response to these threats.

SEAFDEC

Partner organization, the Southeast Asian Fisheries Development Center (SEAFDEC), is the technical and operational arm for fisheries matters in the region, and is engaged in the ASEAN-SEAFDEC Strategic Partnership (ASSP). ASSP works to enhance cooperation between ASEAN, SEAFDEC, and ASEAN member countries and recognizes USAID Oceans as an official ASSP program. SEAFDEC facilitates regional engagement and supports Activity work streams through the Oceans/SEAFDEC Technical Working Group. SEAFDEC also bring tremendous technical expertise to the Activity, in support of capacity building activities in the learning and expansion sites. SEAFDEC is working closely with national fisheries agencies on the implementation of the ASEAN Catch Documentation Scheme, which complements Ocean's regional approach and supports traceability objectives.

CTI-CFF

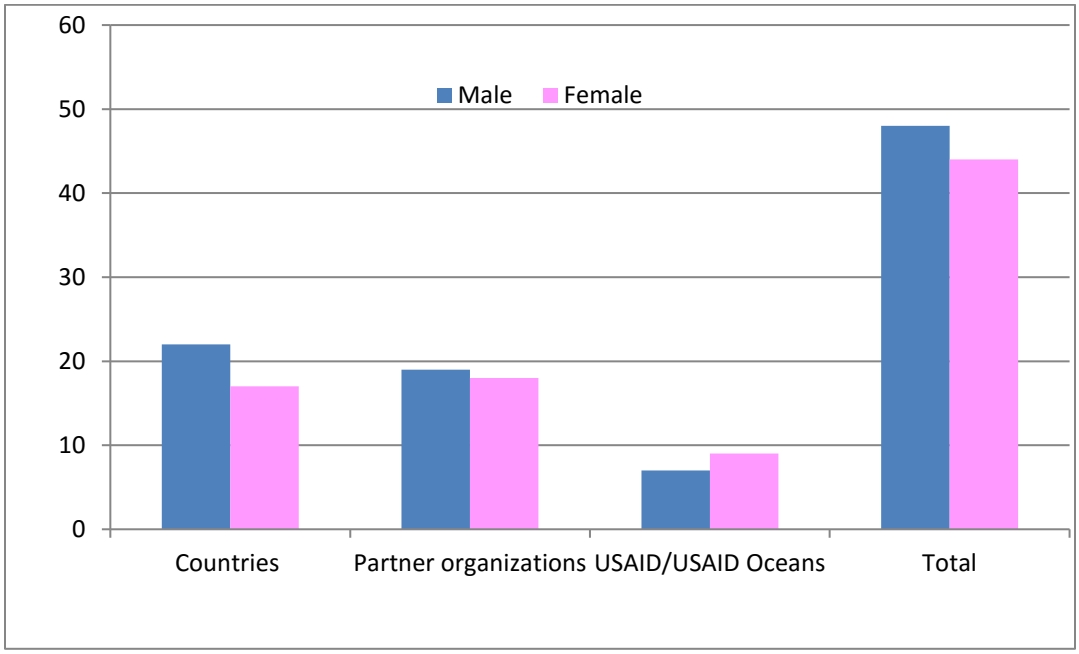
The Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI-CFF) is a multilateral partnership of six countries (Indonesia, Malaysia, Papua New Guinea, the Philippines, Solomon Islands and Timor-Leste), formed in 2007 to address the urgent threats facing the coastal and marine resources of one of the most biologically diverse and ecologically rich regions on earth. CTI-CFF seeks to sustain the region's extraordinary marine and coastal resources in the face of climate change and other anthropogenic threats by improving conservation of the Coral Triangle coral reefs and associated ecosystem functions, goods, and services. CTI-CFF has performed extensive work in regional fisheries management planning, and complements Oceans' objectives to establish enhanced national and regional Sustainable Fisheries Management Plans using an Ecosystem Approach to Fisheries Management.

USAID OCEANS NATIONAL TECHNICAL WORKING GROUP

USAID Oceans aims to strengthen the capacity of regional and national governance bodies and institutions. In support of this goal, the USAID Oceans National Technical Working Group (TWG) was established in 2016, and is comprised of individual members appointed at the regional, national and local level that mirror the USAID Oceans team structure. The TWG is a network and mechanism to facilitate regional collaboration. A TWG has been established for each member country and for SEAFDEC's technical leads, with each team coming together to work collectively to further regional engagement and implementation. Technical leads within the TWG will work directly with USAID Oceans' work stream specialists in the areas of catch documentation and traceability, fisheries management, human welfare, and partnerships.

ANNEX IV. PARTICIPANTS BREAKDOWN BY GENDER & ORGANIZATION

Category	Male	Female	Total
SEAFDEC AMS	22 (56%)	17 (44%)	39 (42%)
Partner Organizations/ Programs	19 (51%)	18 (49%)	37 (41%)
USAID / USAID Oceans	7(44%)	9 (56%)	16 (17%)
Total	48 (52%)	44 (48%)	92 (100%)



ANNEX V. Opening Remarks, USAID Oceans Southeast Asia Fisheries Management Planning Workshop, 23 August 2017

Welcome and Introductions: Geronimo Silvestre, Chief of Party, USAID Oceans

It's nice to see the community of EAFM practitioners in the region together in one room to talk about the progress we are making and be able to chart out areas of collaboration and management directions so that we could improve the flow of benefits from the marine sector, fisheries sector in the region.

My ASEAN brothers and sisters, welcome to Bangkok and welcome to this regional planning workshop. I'm glad that glad that you could take time off from your very busy schedules so that you can join us in the next several days. We at Oceans have our ecosystem approach to fisheries management as a major plank of the work. As you well know, Oceans is intended to increase regional capacity and collaboration to combat IUU fishing in the region and therefore in the process improve the sustainability of our fisheries and in the course of that improve marine biodiversity. So EAFM is a very important part of our work. As you also know, the core the work is to develop a catch documentation and traceability system for the region. And because of this work, it's very difficult to come up with an appropriate and financially sustainable CDT system without taking into consideration the larger framework of EAFM systems that you have in place on the ground.

We have to be able to factor in the management infrastructure for improving fisheries management in the region, look where the capture can happen, how transmission can more efficiently be done for the key data elements for you catch documentation and traceability system. Moreover, we need to understand the EAFM frameworks that you have so that we will be able to take a look at data validation, verification, auditing for the CDT system among others.

It is imperative for us to understand the EAFM system that you have and the infrastructure that you have in place for EAFM for us to be able to put in the CDT system and ensure that it does combat IUU fishing. The last thing you would like to happen is for the CDT system to be used as an instrument for legitimizing IUU-sourced fish. As they say for most databases, garbage in – garbage out. We have to be able to understand the EAFM infrastructure to make the CDT system more robust to protect the integrity of the inputs into that CDT system so that it does not result in the reverse, which is legitimizing IUU-sourced fish.

On to the objectives for this workshop over the next three days: I understand from our facilitators and our program committee that we will be reviewing the status of implementation of fisheries management in the region, particularly those using an EAFM approach. We would be eliciting contributions in terms of lessons and experiences that you have both in EAFM planning as well as in EAFM implementation. We would like to be able from those to lead to drafting EAFM framework plans for three sub-regions, one for the Sulu-Sulawesi Marine Ecoregion, another for the Gulf of Thailand and South China Sea, and then the Andaman Sea area.
We have our work cut out for us. It's going to be a very busy three days. We look forward to your cooperation and your active participation during the course of the workshop towards fulfilment of its objectives.

Meanwhile I trust that everybody is comfortable and if there's anything we can do to make your stay in Bangkok more productive and comfortable please do let the Secretariat know or approach anyone of the Oceans team members.

Message from USAID RDMA: Aurelia Micko, Deputy Director, Regional Environment Office

On behalf of the U.S. Agency for International Development. I have had the pleasure of meeting many of you in the previous working group meetings and, of course, welcome to SEAFDEC who are co-hosting this workshop with us, and so thank you very much for their partnership as well.

I don't think I have to remind you just how important the work you do is. The fisheries in this region are an amazing resource. They're an amazing resource for the world really. It is not only a great fisheries resource, it is the seat of the region's biodiversity, and the coral reefs in this region – you can't see them anywhere else -- and obviously the sector itself, the industry itself that is also benefiting from it, and all those things come together in the work that you do on ecosystem based fisheries management. And obviously the Oceans project which we support has a mandate to help support a lot of that work but they are really – the driving force behind that project is really catch documentation and traceability.

Unfortunately, catch documentation and traceability, as Gerry has so nicely put it, you know, garbage in, garbage out, which means that it is only as good as the data and the work behind it. And for us it is imperative that we link our work on catch documentation and traceability with the underlying systems in place, and the systems that you have in-country to protect and utilize resources to the best abilities. Those systems are what make the catch documentation and traceability system work.

EAFM is that basic premise of a system that is well integrated, that accounts for not just the ecosystem and resource values, but integrates as well with the social values and resources, including labor and others.
And there are quite a few folks here from the gender working group as well I understand, so I want to welcome you to the discussions as well because those are very important.

But, that system is what makes everything else work. We are living at a time when the pressure on fishery resources is immense, and I don't need to remind any of you that, it's on the front page of every newspaper almost daily these days, and many of you are in positions of being stewards of those resources.

I want to say thank you for your amazing partnership, and your amazing partnership moving forward. I think it will require a lot of your work and a lot of your attention, so thank you for that. And I very much look forward to the discussions and the ideas that you come up with and we will be sharing with each other. The thing is, fish don't know our national borders and our national boundaries so they do and are a shared resource in many ways and it takes a regional approach, a regional collaboration, to make sure that those resources will be here to stay and that we can utilize them.

Opening Remarks: Dr. Kom Silapajarn, Secretary General, SEAFDEC

Ladies and gentlemen, as we are aware, the fisheries resources of the Southeast Asia and Coral Triangle have been harvested by commercial and small-scale fishing. The depletion of fishery resources and destruction of marine habitats caused by human activities, such as illegal fishing, uncontrolled fishing and destructive fishing practices are -- together with habitats and coastal environment being destroyed by expansion and competition from other sectors such as industry, tourism, urbanization, as well as issue on climate change – increasingly of major concern for the long-term sustainability of resource utilization in the region and impact biodiversity, food security, and people's livelihoods.

In order to mitigate the various threats and issues in the fisheries of our region, we need to apply appropriate fisheries management mechanisms through enhanced national fisheries management frameworks with the incorporation of various requirements for sustainable fisheries development with the sustainable development goals calling for balance among various factors that contribute to development of communities, various concepts of fisheries management such as Community-based fisheries management, Co-management, and Integrated Coastal Zone Management (ICZM).

Ecosystem Approach to Fisheries Management or EAFM is one of the management concepts promoted by the Food and Agriculture Organization or FAO since 1995 through the adoption of the Code of Conduct for Responsible Fisheries or CCRF. It could be enhanced with inputs relevant to the social component to address human well-being issues in a certain fisheries management area rather than only focus on the fisheries resources perspective.

As you are aware, one of the Objectives of USAID Oceans and Fisheries Partnership (USAID Oceans) as a SEAFDEC project, is to develop a financially sustainable regional catch documentation and traceability system (CDTS) to combat IUU fishing and seafood fraud. To be effective, a CDT system needs to be based on sustainable fisheries management plans (SFMPs) which provide the direction for achieving the desired multiple as well as short-term and long-term fisheries management objectives. Hence, SEAFDEC supports taking EAFM approach to ensure sustainable, slave-free and safe seafood products.

Ladies and gentlemen, the Southeast Asia Fisheries Management Planning Workshop, therefore, provides us with precious opportunity to discuss and address the appropriate fisheries managements especially in transboundary areas among countries in Southeast Asia and Coral Triangle which would be included the significant sub-regional of Sulu and Sulawesi Sea, Gulf of Thailand, and Andaman Sea, in order to support the development and revision of the fisheries management frameworks suitable to each country.

I encourage all participants to earnestly take part in all the activities of the Workshop. Your active involvement will lead to the achievement of the objectives of the Workshop.

With that ladies and gentlemen, I am pleased to declare this Regional Workshop open.

ANNEX VI. CLOSING REMARKS

Closing Remarks: Mr. Geronimo Silvestre, Chief of Party, USAID Oceans and Fisheries Partnership

It's nice to see you still smiling at the end of three days. When we opened with much enthusiasm the program for this workshop last Wednesday what we set out to do was to take a look at the sharing from the individual ASEAN Member States, about the status of fisheries management in your respective countries. I think the reports have shown that we have accomplished that to a large extent. We did set out also to accomplish a second objective which is to share lessons and experiences to inform the individual countries about the EAFM experiences in your respective areas of jurisdiction and I think we have done most of that also and our facilitators have assured you that the reports would come out.

On a personal level, I really appreciated the reports about the status of the implementation and the sharing of the experiences and lessons and programs from our regional projects and initiatives. I am a fisheries management practitioner and the last review we did about the status of fisheries management in the Southeast Asian region was in mid-1995, so I was very happy to note the positive developments and the gains that have been made since then. Thank you very much for your inputs and for your informative contributions to this workshop.

Our third objective was to come up with draft EAFM framework plans for three sub-regions, and I think we have largely accomplished that. There is much to do to be able to move forward with optimizing and subsequently sustaining the host of benefits that we enjoy from our fisheries. I think there is much to do to improve productivity, efficiency of production and the level of benefits from our fishery resources. We've seen the main challenges to that. It's still the traditional, conventional requirement of our fishery management systems to be able to match the harvesting capacity out there to the productive capacity of the natural resource base upon which it depends. So that remains a central issue to fisheries management in the region and in the three sub-regions we are working in and I'm glad to see that there are measures in the three sub-regional plans to be able to address this.

We also have to be able to improve equity and equality in the enjoyment of benefits that we generate from the fisheries sector. There are many challenges in those fronts, and we did hear at least in the case of gender equity during Monday's and Tuesday's Workshop on Gender Mainstreaming in the Fisheries Workplace positive measures of how we can do that, and how we can mainstream gender equity in the action programs that we have. There is much that we still need to do about protecting environmental integrity of the natural resource base that sustains and generates the catches that we harvest from the sea with the trend of degradation of critical coastal habitats like mangroves and reefs and the potential threats that we face from climate change. We do need to take positive action as a region to be able to advance environmental integrity in our sector.

Most of all, the productivity, efficiency, equity and environmental integrity objectives that we often have for the fisheries sector require that we are able to establish institutional effectiveness. The institutions that we have are the main means of society to be able to attain the productivity, the equity and environmental integrity that are needed in this sector. Mandates need to be reexamined and streamlined, capacities must be improved in human and financial terms, and the like.

But we have taken the very first steps in putting together the plans. I think the main objective is to be able at the sub-regional scale ensure that there is complementarity in management actions and directions at the national and at the finer scales of implementation within our respective institutional hierarchies. I think with the sub-regional plans we've cleared the first steps to getting there, and you can expect to hear from us on the follow-up actions with of course our SEAFDEC colleagues.

I heard the messages of appreciation from the ten countries and from our key development partners in the region. It's heartwarming to hear after some very hard work that people appreciate the efforts that you put in. On behalf of the Oceans team, it is an honor and a privilege for Oceans to be able to be part and to help orchestrate and facilitate the workshop over the past three days.

We will appreciate your cooperation and collaboration as we move forward to implementation of the three sub-regional work plans. Like you, we also would like to continue the capacity building, and the approach we've taken in this workshop is learning by doing with you so that you see how this can be actually put together and operationalized and put to implementation. We have every intention to get the sub-regional plans to action and implementation and we look forward to your cooperation on our steps to be able to bring that about.

Closing Remarks: Ms Angela Hogg, Director, Regional Environment Office, USAID RDMA

I want to thank all of our TWG members who have been with us this week, our partners at SEAFDEC, our colleagues from NOAA, partners from FAO, the Coral Triangle Initiative and other regional partners.
As we close our final day, I'd like to thank each of you for your individual contributions to this workshop and your continued engagement and support for the USAID Oceans and Fisheries Partnership.

Leaving this week's activities and exchanges, we walk away having advanced fisheries management plans that will help to protect the region's resources and that is a tremendous accomplishment. Regional cooperation and progress are not possible without a dedicated group of partners. And in addition to the commitment and contributions that each of you have made to the USAID Oceans Project, we're also grateful to our partners in the private sector, non-governmental organizations and academia who harness the region's best experts, technology and resources to protect our marine resources, and I want to thank all of you for that work.

Today I'm also pleased to announce the launch of USAID Oceans' newest partnership, one with Inmarsat, a leading provider or global mobile satellite communication services. Inmarsat has been connecting the maritime world for more than 30 years. Through this new partnership, USAID Oceans and Inmarsat will work together to bring cutting edge technology to fishing vessels to support the capture and transmission of critical traceability data.

As someone who recently arrived in the region – last month – I arrived looking forward to having an opportunity to work with you all of you in the future and learn more about this critical work that we're doing to support the sustainability of fisheries in the region.

Closing Remarks: Dr. Kom Silapajarn, Secretary General, SEAFDEC

On behalf of SEAFDEC, I would like to extend my sincere gratitude and appreciation to all of you for your active participation and cooperation during the workshop. Your efforts have indeed led to the success of the workshop and I would also wish to thank those who have worked hard for the smooth arrangements of this workshop.

Ladies and Gentlemen, I would like to emphasize again that EAFM is one of the management concepts which could be enhanced with inputs relevant to the social component to address human well-being issues in a certain fisheries management area rather than only focus on the fisheries resources perspective. I do hope that during three-day workshop, you have gained a lot of experienced and lesson learned on the Ecosystem Approach to Fisheries Management (EAFM) from other countries and the relevant EAFM experts from the regional organizations and NGO. And the result during the 3 sub-region group discussions, Sulu Sulawesi Seas, Andaman Sea, and South China Sea - Gulf of Thailand, would be useful for you to apply for the fisheries management plan and strategies in your country and fruitful for our regions in the future.

In addition, I wish to extend my sincere thanks again to all SEAFDEC Member Countries, USAID Oceans, the organizations, resource persons and collaborating agencies for the contribution to the Workshop. Without your support, the Workshop would have not achieved and successful. Such contribution will ensure the sustainability of the application of EAFM in our region.

Lastly, I would like to reiterate my gratitude to all of you again for your valuable time and your active participation during the Workshop. I would expect that the achievements of this Workshop can support and facilitate EAFM plan in your country. Ladies and Gentlemen, as I now declare the Workshop closed, I wish you safe journey back to your home.

ANNEX VII. LIST OF PRESENTATIONS

1. National Fisheries Management in Southeast Asian Countries
    a. Brunei Darussalam
    Mr. Irwan Haji Mohammad Noor, Head of Surveillance and Control Section, DOF, Department of Fisheries, Ministry of Primary Resources and Tourism
    b. Cambodia
    Mr. You Chan Praseth, Deputy Director of Fisheries Conservation Department
    c. Indonesia
    Dr. Reny Puspasari Ramli, Researcher, Ministry of Marine Affairs and Fisheries
    d. Lao PDR
    Ms Vonsamay Dalasaen, Chief of Fisheries Inspection Section, Division of Fisheries, Department of Livestock and Fisheries, Ministry of Agriculture and Forestry
    e. Malaysia
        i. DOF-Malaysia
        Dr. Alias bin Man, Senior Research Officer, DOF, Planning and Development Division
        ii. DOF-Malaysia
        Lawrence Jr. Kissol, Assistant Director, DOF-Sabah
    f. Myanmar
    Than Chaung, Director (Department of Fishery, Mon State), Department of Fishery , Mon State
    g. Philippines
    Ronnie O. Romero, OIC, Monitoring and Evaluation Section, National Fisheries Research and Development Institute
    h. Singapore
    Valerie Chia, Manager, Fisheries Management and Compliance, Agri-Food and Veterinary Authority of Singapore
    i. Thailand
    Sansanee Srichanngam, Head of Ranong Marine Fisheries Research and Development Station, DOF
    j. Vietnam
    Tran Nam Chung, Vice Manager of the Vessel Monitoring Division, Department of Fisheries Resources Surveillance and Control
2. Regional Fisheries Management Initiatives in Southeast Asia of Regional Organizations/Programs
    a. FAO
    Cassandra De Young, Fisheries Planning Analyst, FAO
    b. SEAFDEC
    Rattana Tiaye, Fisheries Management Scientist (FMS)/SEAFDEC
    c. SEAFDEC-Sweden
    Saisunee Chaksuin, GOT Sub-Region Coordinator, SEAFDEC Secretariat
    d. CTI-CFF
    Jasmin Mohd Saad, Governance Working Group and Cross-cutting Themes, Senior Manager

e. ADB SEA (RETA 7813)
Elvira Ablaza, President/CEO, Pacific Rim Innovation & Management Exponents, Inc. (PRIMEX)

f. NOAA
Michael Abbey, NOAA Fisheries (Asia and Pacific Islands), U.S. Department of Commerce, NOAA National Marine Fisheries Service

3. Recap of Day 1 and Overview of Day 2
Dr. Lily Ann Lando, Lead Facilitator

4. Reports from Sub-Regional Workshop Discussions

a. Sulu-Sulawesi Sub-region (SSS)
Presenters: Lawrence Kissol (Malaysia), Efren Hilario (Philippines), Eva Suryaman (Indonesia)

b. South China Sea and Gulf of Thailand Sub-region (SCS/GOT)
Presenters: Ronnie O. Romero (Philippines), Tran Nam Chung (Vietnam), Kihua Teh (Singapore) and Alias Bin Man (Malaysia)

c. Andaman Sea
Presenter: Nur Fadhlina Chan Mahadie Chan

5. Review of Progress
John Parks (USAID Oceans) and Michael Pido (USAID Oceans)

6. Defining Connectivity at Sea
Gerbrand Schalkwijk, Chief Sales Officer, Inmarsat Maritime