



Bay of Bengal Large Marine Ecosystem Project Phase II

National Consultation Workshop

27-29 February 2024 | Dhaka, Bangladesh



Food and Agriculture
Organization of the
United Nations



Norad



Bay of Bengal Large Marine Ecosystem Project Phase II

National Consultation Workshop

27-29 February 2024 | Dhaka, Bangladesh

CONTENTS

1.	Overview of BOBLME Project	1
	1.1. <i>Background</i>	1
	1.2. <i>Project Partners</i>	1
	1.3. <i>Objective and approach of the Project</i>	1
	1.4. <i>Project Details</i>	2
2.	Objectives of the National Consultation Workshop	3
3.	Workshop Methodology	3
4.	Participants	3
5.	Key Deliverables of the Workshop	4
6.	Agenda (Provisional)	5
Annexures		
	Annex I: Overview of Ecosystem Approach to Fisheries Management (EAFM) and Marine Managed Area (MMA)	9
	Annex II: Methodological Framework for Selection of Suitable FMUs and MMAs	12
	Annex III: Identifying issues & threats	16
	Annex IV: Identifying stakeholders	17
	Annex V: Assessing National Capacity Needs	19
	Annex VI: Identifying Institutions & Individuals for Constitution of National Working Group	22
	Annex VII: Combatting IUU Fishing	23
	Annex VIII: Management of Coastal and Marine Pollution	25
	Annex IX: Improved Livelihoods	27

1. Overview of BOBLME Project

1.1 Background

Bay of Bengal Large Marine Ecosystem (BOBLME) is one of the largest LMEs, covering 6.2 million km². About 66 percent of the BOBLME lies within the exclusive economic zones (EEZ) of BOBLME countries - Bangladesh, India, Indonesia, Malaysia, Maldives, Myanmar, Sri Lanka, and Thailand. The remainder is the high seas area. The BOBLME is an area of high biodiversity and important critical habitats, and the natural resources are of considerable social and economic importance to the bordering countries. Fisheries and aquaculture contribute immensely to food security, employment, and national economies.

The Transboundary Diagnostic Analysis (TDA) and Strategic Action Programme (SAP) phase of the BOBLME program (BOBLME Project Phase I, 2009-15) identified three priority transboundary concerns and their proximate causes. These include 1) overexploitation of marine living resources, 2) degradation of critical habitats, and 3) pollution and water quality.

In order to address these issues, the countries jointly developed the Strategic Action Programme (SAP), which BOBP-IGO is all set to implement under the BOBLME Phase II project titled, ***“Sustainable management of fisheries, marine living resources and their habitats in the Bay of Bengal region for the benefit of coastal states and communities”***.

1.2. Project Partners

The project is funded by Global Environment Facility (GEF) and Norwegian Agency for Development Cooperation (NORAD) and is implemented by the Food and Agriculture Organisation (FAO) of UN, in partnership with three executing agencies viz., International Union for Conservation of Nature (IUCN), Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO, for its member-countries), and Southeast Asia Fisheries Development Center (SEAFDEC, for countries part of BOBLME project and member of SEAFDEC).

1.3. Objective and Approach of the Project

The project objective is to contribute to the sustainable management of fisheries, marine living resources, and their habitats in the Bay of Bengal region, to reduce environmental stress and improve environmental status for the benefit of coastal states and communities.

This will be achieved through interlinked project components based on the SAP themes by undertaking country-led and adopting a participatory, bottom-up, integrated focus area approach to planning and implementation at community, sub-national, national, and regional levels to ensure the greatest impact.

1.4 Project Details

Component	Outcome	Executing Agencies for South Asia
1. Sustainable Management of Fisheries	1.1 EAFM institutionalized at the national level, including targeted transboundary fish stocks	BOBP-IGO
	1.2 IUU catch in the BOBLME reduced	
2. Restoration and conservation of critical marine habitats and conservation of biodiversity	2.1 Coastal and marine managed areas (MMAs) contribute to the conservation of biodiversity	IUCN
	2.2 National MMAs established or strengthened, resulting in improved MMA management effectiveness at the national level: (CCM Bangladesh)	
	2.3 Regional consensus and agreements reached on reduction of threats to marine biodiversity in coastal and open waters	
3. Management of coastal and marine pollution to improve ecosystem health	3.1 Improved waste management practices in fishing harbours	BOBP-IGO
	3.2 Marking of fishing gears and the development and dissemination of corresponding regional guidelines	
4. Improved livelihoods and enhanced resilience of the BOBLME	4.1. Enhanced resilience and reduced vulnerability to natural hazards, climate variability, and change in selected coastal communities	IUCN
	4.2 Enhanced sustainable livelihoods and diversification for selected coastal communities	
5. Regional mechanism for planning, coordination, and monitoring of the BOBLME	5.1 Strengthened institutional mechanisms at regional and national levels for planning, coordination, and monitoring of the BOBLME	IUCN & BOBP-IGO
	5.2 Adaptive results-based management and sharing of information and lessons learned	

2. Objectives of the National Consultation Workshop

To initiate the process of planning and implementing the BOBLME Phase II Project in Bangladesh, it is planned to conduct a National Consultation Workshop during 27-29 February 2024.

The Objectives of the National Workshop are to:

- (i) Share information on the BOBLME Project;
- (ii) Identify potential MMA and EAFM sites and scope the sites to develop plans and implementation While considering national integrated coastal management / Marine Spatial Planning interests/ policies.
- (iii) Initiate planning for reducing IUU fishing and management of coastal & marine pollution;
- (iv) Initiate planning for enhanced livelihoods and resilience of the BOBLME;
- (v) Establish partnerships with and amongst stakeholders for future collaboration.

The Workshop is expected to contribute to initiating the activities of the Project in Bangladesh as well as building linkages, which will be further strengthened during the project period.

3. Workshop Methodology

The workshop is organized for three days during 27-29 February, 2024, at Hotel Six Seasons, Dhaka. The program will focus on the objectives mentioned above and will serve as a forum to apply the perspective and experience of the participants to initiate the project.

The workshop will have presentations by resource persons, and a significant time will be allotted for interactions and break-out group activities and presentations.

The workshop will be conducted in English.

4. Participants*

The Workshop will be attended by about 50 participants from different Ministries and Departments of the Government of Bangladesh, Academic and Research & Development Organizations, Non-Governmental and Community Organizations, International Organizations, and IUCN & BOBP-IGO.

Organization	
Government agencies	
1.	The Prime Minister's Office, Government of Bangladesh
2.	Maritime Affairs Unit, Ministry of Foreign Affairs
3.	Economic Relations Division, Ministry of Finance
4.	Ministry of Fisheries & Livestock
5.	Ministry of Environment, Forests and Climate Change
6.	Ministry of Commerce

7. Blue Economy Cell, Mineral and Energy Division, Ministry of Power, Energy and Mineral Resources

Departments

8. Department of Fisheries (HQ & Coastal Districts, Blue Economy)

9. Department of Environment

10. Forest Department

11. Bangladesh Navy

12. Bangladesh Coast Guard

13. River Police of Bangladesh Police

14. Bangladesh Fisheries Development Corporation

15. Department of Shipping

Academia, R&D Institutions

16. Bangladesh Fisheries Research Institution (BFRI)

17. Bangladesh Oceanographic Research Institute (BORI)

18. Universities

Community Organizations and NGOs

19. Representatives of fisher communities from coastal areas, NGOs and CBOs

International Organizations

20. Food and Agriculture Organization (Regional and country office)

21. GIZ

22. USAID

23. Wildlife Conservation Society (WCS)

24. WorldFish

BOBLME Project

25. PSC Members and National Coordinator

26. BOBP-IGO (Including GCM members)

27. IUCN (Regional and country office)

**BOBLME Project encourages participation of women wherever found suitable.*

5. Key Deliverables of the Workshop

Reports with the following contents:

- Prioritized sites for planning and implementing MMA and EAFM in Bangladesh;
- Provisional scope for preparation of plan action to reduce IUU fishing and manage coastal & marine pollution, taking into consideration the work programme of the project;
- Direction for taking the livelihood component forward.

Agenda (Provisional)

Date & Time	Agenda Item	Person/Venue
Day 1	Date: 27 February 2024	
0930 - 1140	Session 1: Inaugural Session / BOBLME Overview	
0930 - 1000	Registration	
1000 - 1010	Welcome address	Maeve Nightingale, Senior Programme Officer Coastal and Marine, IUCN & A B M Sarowar Alam, Programme Manager, Species and Habitats, IUCN Bangladesh
1010 - 1025	Workshop Context & Overview of the BOBLME Project	Dr. P Krishnan, Director, BOBP-IGO
1025 - 1040	Address by Guest(s) of Honour	Guest(s) of Honour
1040 - 1050	Chief Guest Address	Dr. Farhina Ahmed, Secretary, Ministry of Environment, Forest and Climate Change, Government of Bangladesh
1050 - 1105	Address by Chair	Md Selim Uddin, Secretary, Ministry of Fisheries and Livestock, Government of Bangladesh
1105 - 1110	Vote of Thanks	Chair, BOBP-IGO
1110 - 1140	Group Photograph/Refreshments	
1140 - 1155	Self-Introduction of Participants	
1155 - 1715	Session 2: Overview & Identifying Potential MMA & EAFM Sites in Bangladesh	
1155 - 1220	Marine Managed Area (MMA) – Overview History and background of MPA in Bangladesh	IUCN IUCN Bangladesh
1220 - 1245	Ecosystem Approach to Fisheries Management (EAFM) – Overview	BOBP-IGO
1245 - 1300	Approach to the Workshop	IUCN/BOBP-IGO
1300 - 1400	Lunch	
1400 - 1425	Site selection for MMA & EAFM - Criteria	IUCN/BOBP-IGO
1425 - 1520	Site selection for MMA & EAFM – Group Exercise	4 Breakout Groups
1520 - 1600	Presentation of Group Reports	Breakout Groups
1600 - 1630	Refreshments	
1630 - 1715	Finalising Potential Sites for MMA & EAFM	All
Day 2	Date: 28 February 2024	
0945 - 1400	Session 3: Scoping MMA & EAFM Plan Development & Implementation in Selected Sites	
0945 - 1000	Recap of Day 1	IUCN/BOBP-IGO
1000 - 1045	<ul style="list-style-type: none"> • Identifying & Prioritising Issues and Threats - Group Exercise (2 Groups) 	4 Break-out groups

Date & Time	Agenda Item	Person/Venue
	<ul style="list-style-type: none"> Identifying Stakeholders (2 Groups) 	
1045 - 1115	<ul style="list-style-type: none"> Presentation of Group Reports 	
1115 - 1145	Refreshments	
1145 - 1230	<ul style="list-style-type: none"> Assessing Capacity Development Needs and Training – Group Exercise (2 Groups) Identifying Institutions & Individuals for Constitution of Working Groups – Group Exercise (2 Groups) 	4 Break-out Groups
1230 - 1300	<ul style="list-style-type: none"> Presentation of Group Reports 	
1300 - 1400	Lunch	
1400 - 1615	Session 4: Reducing Catch from IUU Fishing	BOBP
1400 - 1415	Combatting IUU Fishing - Overview	BOBP-IGO
1415 - 1445	Status Report on Combatting IUU fishing in Bangladesh	Department of Fisheries, Government of Bangladesh
1445 - 1515	<ul style="list-style-type: none"> National Actions & Tools to combat IUU Fishing 	4 Break-out groups
1515 - 1545	<ul style="list-style-type: none"> Presentation of Group Reports 	
1545 - 1615	Refreshments	
1615 - 1645	<ul style="list-style-type: none"> Assessing National Capacity Needs & Constitution of Working Group 	4 Break-out groups
1645 - 1715	<ul style="list-style-type: none"> Presentation of Group Reports 	
1715 - 1730	Consolidation of 2 days' Workshop Output	IUCN/BOBP-IGO
Day 3	Date: 29 February 2024	
0945 - 1200	Session 5: Management of Coastal and Marine Pollution	
0945 - 1000	Improving waste management practices in fishing harbours & fishing gear marking – Project Objectives & Activities	BOBP
1000 - 1030	Status report on harbour management practices and gear marking in Bangladesh	Department of Fisheries, Government of Bangladesh
1030 - 1100	<ul style="list-style-type: none"> Selection of sites for assessing waste management practices & Ways to promote good waste management practices (2 Groups) Selection of gear types for loss assessment & Ways to promote gear marking (2 Groups) 	4 Break-out groups
1100 - 1130	<ul style="list-style-type: none"> Presentation of Group Reports 	
1130 - 1200	Refreshments	
1200 - 1300	Session 6: Improved Livelihoods	
1200 - 1215	Scope of Work	IUCN
1215 - 1245	Status report on livelihood concern for coastal communities in Bangladesh	Expert
1245 - 1300	Plenary	
1300 - 1400	Lunch	

Date & Time	Agenda Item	Person/Venue
1400 - 1420	Regional coordination, Communication and Project sustainability	IUCN
1420 - 1500	Bangladesh's stake in BOBLME & need for regional cooperation	BOBP-IGO
1500 - 1530	Panel discussion on building regional cooperation and effective communication	
1530 - 1630	Session 7: Concluding Session	
1530 - 1550	Summary & Next Steps	IUCN
1550 - 1620	Closing Address	<ul style="list-style-type: none"> - Chief Guest - Guest(s) of Honour - Chair
1620 - 1630	Vote of Thanks	Director General, Department of Fisheries, Government of Bangladesh
1630 - 1700	Refreshments	

ANNEX I

Overview of Ecosystem Approach to Fisheries Management (EAFM) and Marine Managed Area (MMA)

Ecosystem Approach to Fisheries Management (EAFM)

Ecosystem Approach to Fisheries Management (EAFM) offers a practical and effective means to manage fisheries more holistically. EAFM is an extension of the conventional principles for sustainable development in general, and sustainable fisheries development in particular, to cover the ecosystem as a whole.

EAFM aims finding a balance between human well-being and ecological well-being through good governance for future generations

The seven principles of EAFM are:

- Good Governance,
- Appropriate Scale,
- Increased Participation,
- Multiple Objectives,
- Cooperation and Coordination,
- Adaptive Management, and
- Precautionary Approach.

This concept, which is relatively new to the region, needs to be adopted by the fisheries and develop management plans that not only work locally, but also fits into broader fishery/ecosystem strategies.

EAFM would typically begin with Start-up task for preparing the ground to (i) identify the project team and facilitators, (ii) identify the management area, (iii) coordinate with other agencies and government, (iv) identify stakeholders and organisations, (v) establish key stakeholder group, and (vi) determine legal basis for ecosystem approach. After the Start-up, the Approach follows 5 steps:

- 1) Define and scope the Fishery Management Unit (FMU) and geographical area;
- 2) Identify and prioritise threats and issues in the FMU;
- 3) Develop EAFM plan;
- 4) Implement the Plan; and
- 5) Monitor, evaluate and adapt.

As co-management is enshrined in the principles of EAFM, and the two approaches are complementary, increased participation by stakeholders in managing and conserving the resources and ecosystems is critical.

In BOBLME Phase II Project, the expected outcome of implementing EAFM in the member countries is that by the end of the project period, EAFM will be institutionalized at national level, including targeted transboundary fish stocks.

The expected outputs are:

- i. At least 2 EAFM plans implemented;
- ii. National and regional platforms established or strengthened to involve grass-root stakeholders in management decision-making, and
- iii. EAFM training embedded in national and regional training institutions.

Marine Managed Area (MMA)

Marine Managed Area (MMA) is an area of ocean, or a combination of land and ocean, where all human activities are managed toward common goals. MMAs are a form of ecosystem-based management, where all elements—biophysical, human, and institutional—of a particular system are considered together. There are several overarching principles under which MMAs should be developed:

- All human uses and their subsequent impacts on the defined area should be considered and their management integrated.
- All stakeholders in the defined area should be consulted and fully involved in the policy and management development and implementation processes concerning the MMA's conditions and uses.

Effective development and implementation of an MMA involves the following important characteristics: Boundary definition, participatory and transparent process, incorporation of scientific and traditional knowledge across ecological and social considerations, and adaptive management.

MMA will not automatically result in a new, overarching policy and management authority, but it will rely on the integration and coordination of existing management regimes for such typical uses as subsistence and commercial fishing, shipping, mineral extraction, and tourism.

MMAs can take many forms, addressing many different issues and objectives. Some are multiple-use areas; others ban all extractive uses. Still others restrict certain areas to one specific use that is judged to be the most beneficial use of that area, to the exclusion of other uses.

BOBLME Phase II Project will lead to improved management and status of degraded, vulnerable and critical coastal and marine habitats and Endangered, Threatened and Protected (ETP) species in selected Marine Managed Areas (MMAs), and Vulnerable Ecosystems (VEs). The project will support national, provincial, and local government resource managers, private sector partners, non-governmental organizations, and local resource users to strengthen the management of existing MMAs and establish new MMAs where agreed. Regional and national capacity development programs will be established.

By the end of the project, the following key outputs are anticipated:

- At least two MMA strengthened in each country to address issues related to climate change, transboundary fisheries, Vulnerable Ecosystems (VEs), biodiversity and/or Endangered, Threatened and Protected (ETP) species;
- In priority areas of these MMAs, conservation of coral reefs, associated biodiversity and ETP species
- Regional capacity development programme promoting best practices in management and evaluation of MMAs and training of practitioners at all levels, using IUCN Green List process; and
- Gender mainstreamed into MMA planning and management.

To support the implementation of effective MMAs, the project will support development of national standards and guidelines for representative MMA selection, assessment and monitoring standards. It will also support adaptation of the IUCN Green List Standard for protected and conserved areas, which will help set criteria and indicators suitable for benchmarking progress of protected and conserved areas.

How are EAFM and MMA related/different?

While MMAs are clearly defined areas that are afforded greater protection than the surrounding waters for biodiversity conservation or fisheries management purposes, they may include fish sanctuaries or refugia, Marine Protected Areas, and no-take zones. MMAs will rely on the integration and coordination of existing management regimes for uses as subsistence and commercial fishing, shipping, mineral extraction, and tourism. MMAs are typically embedded in broader and more comprehensive national, regional, or global governance systems, such as exclusive economic zones or international agreements. From an EAFM perspective, MMAs are an important tool for managing fisheries, but do not equate to EAFM as they cannot address all issues/elements that EAFM includes, with particular reference to fisheries management. EAFM is an extension of the conventional fisheries management paradigm. Some key elements of fisheries management which MMAs do not usually address include control of fishing capacity, management of an area beyond the boundary of the MMA; and impacts of other uses on fisheries and/or the marine ecosystem.

With the move of fisheries management towards an EAFM, as well as increasing the application of spatial management tools, an integration of EAFM and MMA can be an effective measure to achieve the protection of ecosystem structure, function, key processes, accounting for the interconnectedness within and among systems, and integrating across scales (*Pomeroy et al., 2013; USAID Coral Triangle Support Partnership, www.coraltriangleinitiative.org*). Many of the FAO's guidelines for EAFM are similar to those guiding the development of co-managed or locally-managed marine resource management areas, and so there is a great deal of overlap between activities oriented to spatially managed areas and those oriented to EAFM. In line with the principles of EAFM and MMA, it will become beneficial to designate MMA within, or that overlaps, the FMU; or the FMU that is within or overlaps the MMA. The best results will be achieved when spatial management approaches, such as MMAs and EAFM are integrated in a balanced way to maximise the benefits.

Annex II

Methodological Framework for Selection of Suitable FMUs and MMAs

Sites prioritised in the Project Document

Selecting the right EAFM Units (FMUs) and MMAs is a strategic step towards demonstrating their benefits and facilitating national adoption. The chosen Units/sites will be showcasing the effectiveness of achieving sustainable fisheries management and biodiversity conservation goals. This approach, grounded in stakeholder engagement, ecological significance, governance structures, socioeconomic considerations, and feasibility, will pave the way for a successful and scalable models.

The identification of EAFM Units and MMAs was considered during the project preparation grant phase of BOBLME II (in 2019) and the provisional list of potential FMUs and MMAs are outlined in the project document.

The provisional list of potential priority FMUs and activities mentioned in the BOBLME Project Document are:

Priority FMUs	Activity
Nijhum Dip at Noakhali District	<ul style="list-style-type: none"> • Support existing local and national management committees • Support regional committee for transboundary Hilsa stock. • EAFM capacity development should include awareness raising and training for policy makers and managers
Swatch of No Ground (SoNG), including Hilsa shad and ETP species	
St. Martin’s Island at Cox’s Bazar including Hilsa shad and lobster fisheries	

The above list is provisional, and the FMUs will be finalised during inception of the Project.

The provisional list of potential priority MMAs and activities mentioned in the BOBLME Project Document are:

Priority MMAs	Activity
Nijhum Dwip at Noakhali District	<ul style="list-style-type: none"> • Priority habitat management specification • MMA planning applies EAFM • Include design of ecological corridors of critical habitats, migratory species and fisheries exclusion zones in MMA designation • Agency harmonisation and coordination of management
Swatch of No Ground (SoNG)	
St. Martin’s Island at Cox’s Bazar	

The above list is provisional, and the MMAs will be finalised during inception of the Project.

The above two lists show that the provisional sites are the same for the FMUs and MMAs. For EAFM, target fisheries has been identified.

The options for selection of sites for planning and implementing EAFM and MMA in Bangladesh under the Project are:

- (i) Select two sites from the three sites in the list and synergise EAFM and MMA in the selected sites; and within each MMA, identify fisheries for EAFM implementation; or
- (ii) Identify alternate sites/fisheries for synergising EAFM and MMA; or
- (iii) Identify sites separately for EAFM and MMA.

Method for selection of potential sites for finalisation

The potential sites for implementing EAFM and MMA will be prioritised in consultation with the participants in the National Workshop. During the National Workshop, the participants will be divided into 4 groups comprising different category of stakeholders. Each group will undertake the exercise independently and the final normalized outcome will guide the selection of prioritized pilot sites for implementation of EAFM and MMA.

Criteria for selection

In an earlier (December 2023) Experts’ Consultation Workshop conducted by the BOBP-IGO, six criteria were short-listed along with weightage for selection of sites. The six criteria along with weightage and application criteria for selection of site is given in the Table below:

#	Criteria	Weightage	Application of criteria for prioritization
1	Stakeholder participation	0.374	In FMUs where stakeholders are highly receptive and willing to participate in the initiatives to improve management measures may be prioritized. For e.g., in FMUs/sites where a formal or informal co-management arrangement already exists, the implementation would be fairly smoother and successful.
2	Government participation	0.312	FMUs with high levels of government interest and investment will be acceptable to the governments for implementing EAFM have a priority
3	Technical & Institutional capacity	0.180	FMUs, where institutions are already working and have good knowledge and capacity, it will provide an impetus to the entire process have a priority
4	Scale	0.064	FMUs have to be prioritized based on the potential of the project to implement within practical scales and boundaries
5	Issues in the FMU	0.044	Potential of the project to find solutions to the issues and implement considering the limited human and monetary resources and time availability need to be considered.
6	Information/Data availability	0.026	FMUs having enough data/information are in an advantageous position to begin action. They have priority over others.

Pairwise comparison of FMUs/Sites

Utilizing the criteria given in the Table above, each Unit/Site will be compared against every other, on their adherence to each criterion. Analytical Hierarchal Process (AHP) Tool will be used for selecting the FMUs/Sites.

A matrix as under will be created using the AHP tool, to compare each site with every other, against every criterion individually, in a fundamental scale of 1-9 so as to facilitate a comprehensive evaluation.

[1- Equally important; 3- Moderately more important; 5- Strongly more important; 7- Very strongly more important; 9- Extremely more important]

(Saaty and Kearns, 1985; Forman and Peniwati, 1996; Hartwich and Janssen, 2000).

CRITERIA 1

	FMU 1	FMU 2	FMU 3	FMU 4	FMU "N"
FMU 1	1				
FMU 2		1			
FMU 3			1		
FMU 4				1	
FMU "N"					1

CRITERIA 2

	FMU 1	FMU 2	FMU 3	FMU 4	FMU "N"
FMU 1	1				
FMU 2		1			
FMU 3			1		
FMU 4				1	
FMU "N"					1

.....

CRITERIA "n"

	FMU 1	FMU 2	FMU 3	FMU 4	FMU "N"
FMU 1	1				
FMU 2		1			
FMU 3			1		
FMU 4				1	
FMU "N"					1

An excel file with pre-fixed formula will be used for the purpose.

In the matrix, the participants will assign scores (odd numbers – 1, 3, 5, 7, 9) to each pair of sites against the particular criteria, based on their relative importance to the success of the EAFM project.

The relative element compared with itself is 1; therefore, diagonal of matrix (upper left to lower right cells) contains 1's. The judgment values will be given by the experts by consensus. In case of disagreement, intermediate values (2,4,6,8) shall be given.

Geometric Mean (GM) of each row is called estimates of eigenvector component (Saaty, 1980), it is normalized to the unity by dividing each entry (GM of each row) by the sum of all entries (sum of GM of all rows). The normalized value thus obtained is relative weight or local priority or normalized priority vector of each element.

Measures of inconsistency derived from relevant statistical analyses (i.e., estimation of maximum eigen value; consistency index; consistency ratio) will provide information on violation of numerical (cardinal) and transitive (ordinal) consistency of the inferences.

The consistency ratio (CR) provides a measure of the probability that matrix was filled in purely at random; it is a comparison between current matrix and a purely random answering of questions. Acceptability of CR is 0.1 (Harker, 1989), in some cases it can be tolerated up to 0.2, but never more than that (Saaty and Kearns, 1985). If CR is not acceptable then the judgments values may need to be revised through more careful analysis.

Annex III

Identifying issues & threats

Issues and threats in each selected site will be identified under three components, namely, Ecosystem well-being, Human well-being and Good governance. The definition and impacting issues are given in the Table below:

EAFM Components	Definition	Impacting Issues
Ecosystem well-being	All ecological assets relevant to the fishery (stocks, biodiversity, habitats)	Unsustainable fishing, pollution, habitat loss, climate change
Human well-being	Social and/or economic “outcomes” currently being generated by the fishery, both the good (e.g., food security and economic development) and the bad (e.g. conflicts and injuries)	Unprofitable fishing, gender issues, poor human health infrastructure, conflicts, climate change related issues and natural disasters, aspirations to adopt technological advances
Good governance	Management and institutional “systems” in place, to deliver the wanted outcomes (e.g. access and tenure systems, compliance, democratic processes, conflict resolution, institutional arrangements)	Weak resource management, open access regimes, economic development vs conservation, lack of proper planning, negative consequences of subsidies, lack of decentralisation, stakeholder participation and co-management, weak institutional capacity and infrastructure, poor compliance and enforcement

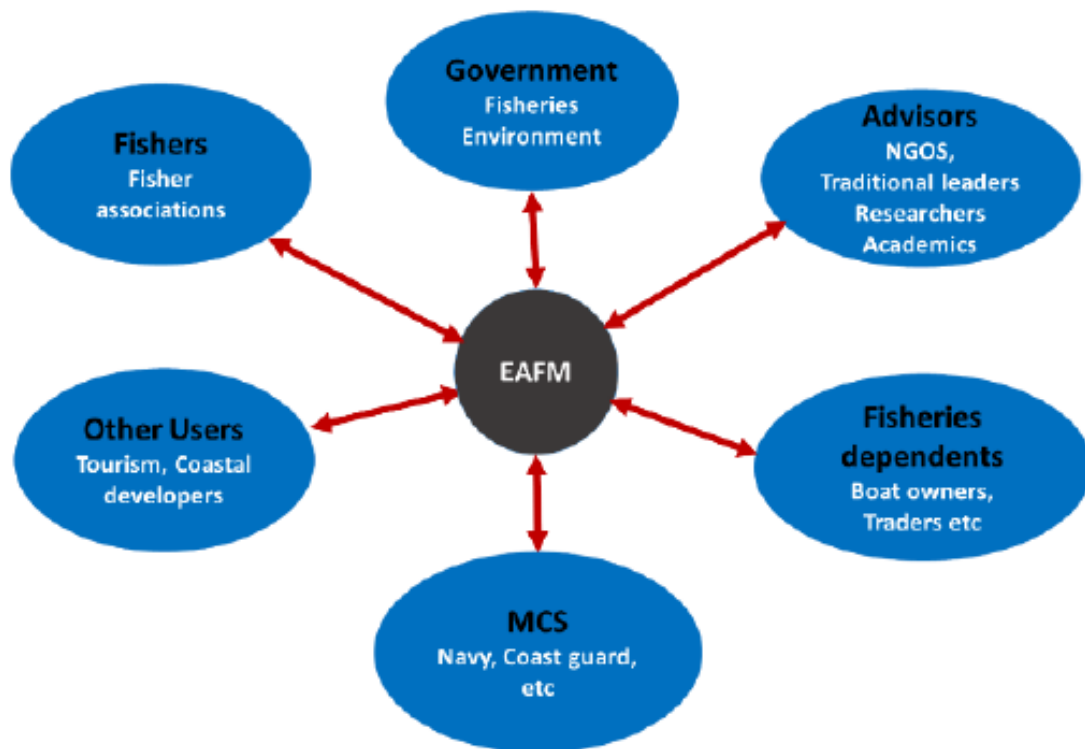
Annex IV

Identifying stakeholders

A stakeholder is any individual, group or organization which has an interest in or which can affect or is affected, positively or negatively, by the EAFM process.

Stakeholders are individuals, groups or organizations of men and women, old and young, who are in one way or another interested, involved or affected (positively or negatively) by a particular process. They may be motivated to take action based on their interest or values. Stakeholders may include groups affected by the management decisions; concerned about the management decisions; dependent upon the resources to be managed, with claims over the area or resources; with activities that impact on the area or resources; and with, for example, special seasonal, geographic or cultural interests.

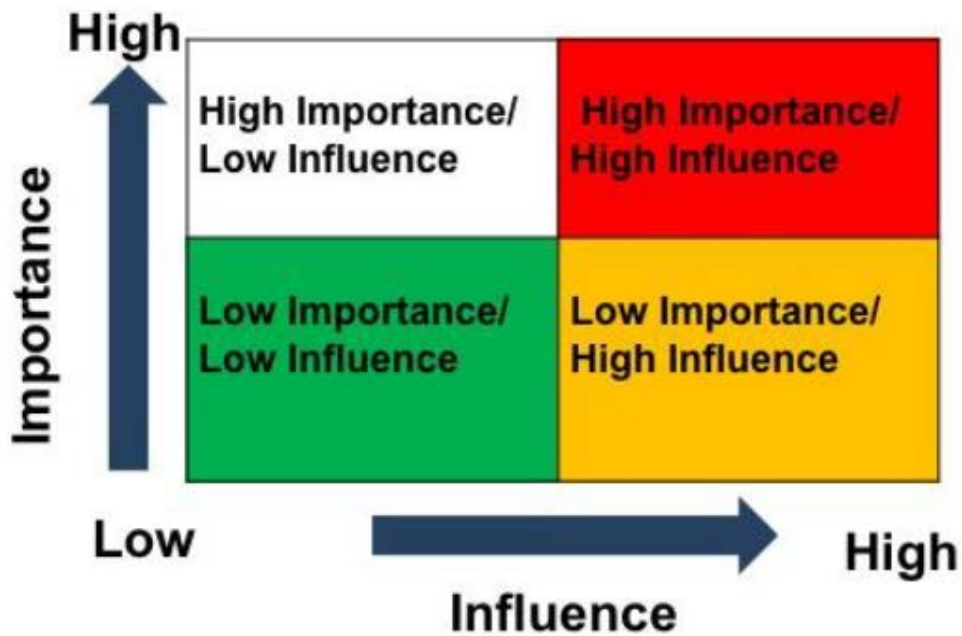
Example of stakeholders (source: FAO)



Support or lack of support by stakeholders can lead to the success or failure of an EAFM. Stakeholder analysis is conducted to identify potential partners for an EAFM, to explore possible approaches in relating to a particular person or group who can be supportive or potentially hostile to an EAFM, and to provide insights into the dynamics and relationships of individuals and groups with various interests in a particular resource or project.

One form of stakeholder analysis is 2x2 matrix where stakeholders are plotted according to (i) how important the stakeholder is to the EAFM process on one axis (Y axis) and how much influence (power) they have over the EAFM process on the other axis (X axis).

A 2x2 matrix importance and influence stakeholder analysis (source: BOBLME handbook)



Those in the red box are key stakeholders for EAFM success; they need to be kept motivated and on board as they are 'allies'. They do not need convincing about the importance of EAFM- they already know. Those in green box are not interested and have little influence; they need to be kept informed and involved, with minimal effort and monitoring. Those in yellow boxes require active strategies. High influence + low importance: these need to be moved along to the red box, they need to 'buy in' into the EAFM process, as they could be potential supporters and could use their influence to support the process.

Annex V

Assessing National Capacity Needs

Need for capacity development

Capacity development is to provide training and other resources to create, enhance and develop the capacity of stakeholders at the national and sub-national levels to effectively plan and implement EAFM and deliver and sustain the expected outcomes. Relevant state agencies are expected to adopt and operationalize the plan and continue to implement this plan beyond the duration of the project. The key objectives of the capacity development plan are to create, enhance and develop capacity to effectively plan and implement EAFM and MMA.

The capacity development provides trainees with the skills that will help them to develop a plan to more sustainably manage capture fisheries. This course will equip trainees to:

- *manage fisheries more holistically;*
- *better resolve fisheries issues and challenges;*
- *reduce user group conflicts;*
- *work cooperatively with other stakeholders;*
- *and help unlock financial resources and increase political will.*

Participants of capacity development program will learn about the concepts of EAFM and MMA and work with a template to develop a draft plan for their area. They will understand the principles of EAFM and MMA and co-management and how to foster cross-sector coordination and will also practice the crucial skills of effective communication, facilitation, and conflict management. They will learn skills and knowledge to develop, implement and monitor the plan to more sustainably manage capture fisheries.

Categories of stakeholders

The categories of stakeholders with different levels of interest and influence to be considered for capacity development include representatives from National and Provincial Governments, Non-Government Organisations, research institutions and academia. To some capacity development is synonymous with workshops and training, to senior managers it can mean organizational development, to non-governmental organizations (NGOs) it is associated with empowering individuals and grassroots organizations and to international agencies and to donors it is about national institutions, governance and economic management. Some activities are for strengthening the capacity of individuals while others strengthen the organizational capacity.

Different audiences require different approaches to capacity development and also different materials. The main target for mid-level managers and fishery and environment staff, as well as related economic development and planning staff, at the provincial/state and district/local levels who are responsible for administering or managing fisheries and the marine environment in which they operate. The training will be designed in a way which should make local adaptation in different countries easy by including local, context-specific case studies, possibly sourced from the participants. A major strength of the training is that it allows participants to develop an EAFM plan that can be taken away from the course and, with some further work, be implemented either in the participant's country or as a transboundary plan.

The closely related training for leaders, executives, and decision makers aims to provide senior-level leaders with an understanding and forum for discussion of the why, what and how to implement the plan from national to local levels. A concise overview PowerPoint presentation on the EAFM, supported by a one-pager providing information on “Essential EAFM in a nutshell” and its course content and objectives will also be used to address the top level decision-makers. Local fishing communities could be made aware of EAFM and MMA and trained in sessions.

Phases of capacity development

UNDP and FAO have identified the following five strategic phases of capacity development:

- Phase 1 establishes the baseline and addresses the basic question - *where are we now?*
- Phase 2 looks ahead to the future desired state, the vision of what capacity is required in the future and asks the question - *where do we want to go?*
- Phase 3 compares the present situation and future desired state, identifies the capacity gaps and plans strategies and actions designed to fill these gaps and achieve the desired goals - *how do we get there?*
- Phase 4 is the implementation phase, fulfilling the strategies and undertaking the planned capacity development activities in order to meet the defined objectives - *what actions do we take?*
- Phase 5 is monitoring and evaluation to feedback experiences into the planning phase - *how do we stay there?*

Analytical process of assessing the need for capacity development

UNDP makes the case for capacity assessment as a structured and analytical process, whereby the various dimensions of capacity are assessed within the broader socio-economic environment, as well as evaluated for specific organizations and individuals. The UNDP model for needs assessment based on three levels of capacity provides the basis for the first three phases of capacity development (given in the matrix below). These are assessing existing capacities, identifying possible future capacity, estimating the gaps and defining possible strategies. The capacity levels are expanded to include a number of sub-levels or dimensions that need to be considered in the assessment.

Matrix for assessing capacity for planning and implementing EAFM and MMA*

Capacity	Enabling system	Organizations	Individuals
Knowledge			
- Knowledge base			
- Use of knowledge			
- Access to knowledge			
Decision-making			
- Evidence-based?			
- Involvement of stakeholders			
- Uptake of advise			
- Transparency			
Implementation			
- Attitude			
- Cooperation			
- Communication			

**Score of 1 to 3; 1 = Poor, 2 = Moderate; 3 = Good*

Annex VI

Identifying Institutions & Individuals for Constitution of National Working Group

The Working Group is a small number of stakeholders (perhaps four or five depending on the prioritization process) representing the community, institutions and management agencies who will work with the Project Team to guide the EAFM and MMA process after the Startup. The WG is crucial as it engages with, gives responsibility and power to the community members, and works through the planning and implementation process. The WG can serve to:

- Develop dialogue and stimulate EAFM and MMA discussion;
- Facilitate community organization;
- Help stakeholders understand EAFM and MMA;
- Identify problems, issues, and opportunities in engaging stakeholders;
- Assist in decision-making within an EAFM and MMA process;
- Identify other stakeholders and stakeholder groups; and
- Gather and spread information among community members.

Annex VII

Combating IUU Fishing

Illegal, Unreported and Unregulated fishing (IUU fishing) is known to contribute to overexploitation of fish stocks and is a clear hindrance to the management and recovery of overexploited fish populations and ecosystems. A wide range of influencing factors are known to influence the level of IUU fishing, such as fishing vessels, fishery types, and factors relating to the flag, coastal, port and market aspects of a country. Illegal fishing related to fishing in the EEZ of another country, spatio-temporal closures, illegal harvest/possession of protected species, illegal transshipment, landing of catch in unauthorised foreign ports, use of prohibited gear are some common types of illegal fishing.

FAO has defined the terminologies of Illegal, Unreported and Unregulated fishing (FAO, 2002) in the following way:

Illegal fishing refers to fishing activities:

- (1) Conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations;
- (2) Conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organization but operate in contravention of the conservation and management measures adopted by that organization and by which the States are bound, or relevant provisions of the applicable international law; or
- (3) In violation of national laws or international obligations, including those undertaken by cooperating States to a relevant regional fisheries management organization.

Unreported fishing refers to fishing activities:

- (1) Which have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations; or
- (2) Undertaken in the area of competence of a relevant regional fisheries management organization which have not been reported or have been misreported, in contravention of the reporting procedures of that organization.

Unregulated fishing refers to fishing activities:

- (1) In the area of application of a relevant regional fisheries management organization that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organization, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organization; or
- (2) In areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law.

In BOBLME Phase II, the expected Outcome from Sub-Component 1.2 is to reduce the catch from IUU fishing in the BOBLME.

By the end of the project, the following key outputs are anticipated under this Outcome:

- 20% reduction in IUU fishing from the BOBLME phase 1 baseline estimate for selected fisheries.
- Implement and as necessary prepare Regional Plan(s) of Action (RPOA) to address IUU fishing in the BOBLME.
- National Plan of Action (NPOAs-IUU) and national IUU Monitoring, Control and Surveillance (MCS) systems and Vessel Monitoring Systems (VMS) strengthened.
- Tools for promoting best practices, such as MCS, Port State Measures (PSM) and traceability of fish and fisheries products (including catch documentation schemes), policies and national actions, to combat IUU fishing developed and implemented in national pilot/investment projects. Countries supported in acceding to the PSMA.
- Regional capacity development programme on port inspections, MCS and traceability implemented with 20 national fisheries staff trained in each country.
- Gender is mainstreamed into actions to combat and eliminate IUU Fishing in BOBLME.

Recent improvements in fisheries management in the region like introduction of Port State Measures, expansion of VMS and AIS in fleet management and measures to address excess and unrecorded fleet capacity, better governance and management may have positive effects on reducing the level of IUU fishing in the region, but their effects have to be measured.

In the Workshop, the participants will discuss the broad actions needed to prepare and support IUU fishing in break-out sessions:

- *Assessing IUU fishing*
- *Action needed for addressing Illegal and Unregulated fishing*
- *Action needed for addressing Unreported fishing*
- *Legal & Policy needs*
- *Technology needs*
- *Identifying the agencies*
- *Human capacity development needs*

Annex VIII

Management of Coastal and Marine Pollution

Improving waste management practices in fishing harbours

The health of the BOBLME is threatened by wastewater and solid waste from upriver and coastal cities and settlements, industrial zones, ports and shipping, and excessive nutrient application in agriculture and high nutrient loads in rivers and water courses. The Transboundary Diagnostic Analysis (TDA) of BOBLME Phase I has identified the following major sources of pollution and water quality issues:

- Sewage-borne pathogens and organic load
- Solid waste/marine litter
- Increasing nutrient inputs
- Oil pollution
- Persistent organic pollutants (POPs) & Persistent toxic substances (PTSs)
- Sedimentation
- Heavy metals.

Dissemination and adoption of improved waste management practices in fishing harbours will contribute to improved hygiene, waste disposal and public health, and include sharing of the experiences. Fishing harbours need to be upgraded to international standards of hygiene and fish quality assurance.

This initiative will focus on improving environment at fishing ports, such as water quality standards, personal hygiene, sewage treatment and waste reception facilities and disposal. A best practice guide will also be developed.

In BOBLME II Project, the activities identified to improve waste management practices in fishing harbours or selected hotspots include:

- Study / assessment of waste management practices in fish landing sites / fishing ports / selected hotspots
- Development and dissemination of guidelines, action plan or good practice document
- Promotion of implementation of good waste management practices in selected fishing activities or hotspots.

In the Workshop, the participants will discuss the ways to strengthen management and reducing pollution in fishing harbours in break-out sessions:

- *Selection of sites for assessing waste management practices*
- *Upgrading infrastructure and sanitation*
- *Strengthening management*
- *Capacity building needs & methods*

Fishing gear marking

The abandonment and discarding of commercial fishing gear is one of the most problematic types of marine debris. It can remain in the oceans for years continuing to entangle fish and marine animals in its nets and killing them – a phenomenon known as ‘ghost fishing’. Over time, fishing nets left in the ocean may break down into microplastic pieces, which become accessible to a wide range of organisms, including small fish and plankton, and may cause serious toxicological harm to marine wildlife.

Fishing gears are marked to establish and inform origin, ownership and position. It also contributes to combat illegal fishing. Gear marking for location provides quicker retrieval of the gear, reduce gear conflict, and improve safety at sea. It aids in capacity control, reduce marine litter due to abandoned, lost or otherwise discarded fishing gear (ALDFG).

Traditionally, physical marking, inscription, writing, color, shape, and tags have been used for ownership and capacity purposes. Buoys, lights, flags, and radar reflectors are used for marking of position. More recently, electronic devices are installed on marker buoys to enable easier relocation of the gear by owner vessels. Promotion of marking of fishing gears and the development and dissemination of corresponding International Guidelines will further contribute to the reduction of marine litter.

Potential national priorities and activities include:

- Capacity development of the relevant national and regional authorities and the fishing sector to implement effective gear marking systems
- Preparing and disseminating studies identifying best practices including incentives to enhance the uptake of gear marking systems
- Supporting countries in implementing best practices

BOBLME II project will develop and promote good practice among the fishing communities. The national activities to promote marking of fishing gears and reduce related marine litter in the Project are:

- Study on lost fishing gear and fishing gear marking;
- Developing and disseminating guideline / action plan or good practice document;
- Promoting fishing gear marking in selected fishery.

In the Workshop, the participants will discuss the ways to initiate and implement gear marking in break-out sessions:

- *Selection of geartype for marking*
- *Implementation mechanism for gear marking*
- *Issues and challenges in gear marking*
- *Considerations for awareness building and capacity development needs*

Annex IX

Improved Livelihoods

Improved livelihood of coastal communities will lead to positive changes in the overall well-being of coastal people and their involvement in both fisheries management and biodiversity conservation, which is expected to lead to both enhanced ecosystem resilience of the BOBLME and of local livelihoods and food security. Vulnerability to natural hazards, and climate variability and change will be reduced and livelihoods diversified for selected coastal communities, with a particular focus on women.

The anticipated Outcome in this Component of BOBLME II project is “Enhanced sustainable livelihoods and diversification for selected coastal communities” Under this Outcome, the anticipated Outputs are:

- Livelihood diversification for women piloted in at least one site per country;
- Access to innovative financial services and insurance mechanisms to enhance resilience and improve livelihoods promoted;
- A regional capacity development programme for selected coastal communities on alternative livelihoods, promoting decent work opportunities, including social protection for empowerment and enhanced participation in coastal and marine resource management and conservation.

Executed by IUCN the scaling up of sustainable and more resilient livelihood options will be promoted through enhanced access to financial services and insurance mechanisms, including micro-finance, and training on alternative livelihoods with a focus on women. There will also be a special focus on women in the piloting of livelihood diversification.

The national activities proposed are:

- Target locations identified in the country
- Capacity development program established for target locations
- Alternate livelihood strategies implemented in target locations
- Value chain improvement analyses undertaken in vulnerable coastal communities and opportunities for expanded role by women identified
- Establish women’s small-scale processor networks
- Provide sharing of experiences opportunities

The overarching activities at national level are:

- Analysis of status of capacity development needs of partners in each focus area
- Capacity development programs established for alternate/diversified livelihoods
- Capacity development program established for decent work principles
- Implementation of national capacity development strategy in focus areas.

Bay of Bengal Large Marine Ecosystem (BOBLME)

The Bay of Bengal Large Marine Ecosystem Project II (BOBLME-II: 2023-28) builds on the success of BOBLME-I (2009-15).

It strives to promote sustainable management of fisheries and marine life while conserving their habitats in the Bay of Bengal, with ecosystem services of approximately USD 240 billion over the next 25 years that will be protected and sustained. Funded by the Global Environment Facility (GEF) and the Norwegian Agency for Development Cooperation (NORAD), the project is being implemented by the Food and Agriculture Organization of the United Nations (FAO). The International Union for Conservation of Nature (IUCN), the Southeast Asian Fisheries Development Center (SEAFDEC), and the Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO) are the executing partners.

The BOBP-IGO is executing the project in South Asia for the benefit of its member countries.

