



BOBP



Norway



Preparing the Ground for Planning and Implementing EAFM in Sri Lanka

**Stakeholder Workshop, Field Visit to FMU's and
Capacity Development Course on EAFM**

15-27 May 2025





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Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO)
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Report Preparation

This report on the “Preparing the Ground for Planning and Implementing EAFM in Sri Lanka Stakeholder Workshop, Field Visit to FMU’s and Capacity Development Course on EAFM” is prepared by BOBP-IGO.

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Executive Summary

Under the Bay of Bengal Large Marine Ecosystem project phase II (BOBLME II), the Bay of Bengal Programme Inter-Governmental Organisation has rolled out implementation of Ecosystem Approach to Fisheries management (EAFM) in its member countries, namely Bangladesh, India, Maldives and Sri Lanka. For fostering implementation of EAFM in Sri Lanka, the BOBP-IGO selected (i) Sea Cucumber Fishery in Northern Sri Lanka, (ii) Fishery in Puttalam Lagoon, and (iii) Small Pelagic Fishery in Southwest Sri Lanka in consultation with the government of Sri Lanka and experts. While EAFM in the first two fisheries will be directly implemented under the project, the third fishery will be implemented by getting support from the Ministry of Fisheries, Government of Sri Lanka.

To prepare the ground for initiating the process of planning and implementing EAFM in the first two selected Fishery Management Units (FMUs), a BOBP Mission undertook a Start-Up task by conducting Scoping Consultations & Capacity Development Course in Sri Lanka. The Start-Up consisted of the following tasks:

- Consultative Workshops with stakeholders, and field visits and meetings with the project partner, namely, the University of Jaffna (UoJ) in Jaffna for sea cucumber fishery during 14-16 May 2025;
- Consultative Workshops with stakeholders, and field visits and meetings with the project partner, namely, National Aquatic Resources Research and Development Agency (NARA) for Puttalam Lagoon Fishery in Kalpitiya during 17-19 May 2025;
- Capacity Development Course for practitioners of EAFM in the two FMUs in NARA, Colombo during 20-23 May 2025.

The broad objectives of the Mission were to:

- i. Identify the specific FMUs and understand their characteristics for planning and implementing EAFM in the two areas selected;
- ii. Coordinate with the EAFM team and other relevant agencies and establish partnerships;
- iii. Help the partners by clarifying their roles and responsibilities, and the next steps to be taken; and
- iv. Develop practical skills of the project partners to plan and implement EAFM in the two FMUs.

Stakeholders were identified and informed of the programme through the project partners/coordinators, requesting for their participation. Engagement with the local partners with similar/common mandate and insights in fisheries, who will be executing the project in the two FMUs was considered as ideal to make the campaign effective.

The Mission's campaign brought out the issues and opportunities as well as identifying the stakeholders for implementing EAFM in the two FMUs.

Considering the issues in the sea cucumber fishery and farms in Northern Sri Lanka, and in the Puttalam Lagoon fishery, it is clear that proactive steps need to be taken up for sustainability in the BOBLME project.

- Potential interventions identified for sea cucumber fishery in the project are:
- Implement EAFM in the appropriate sea cucumber FMU (provisionally, Jaffna Lagoon has been selected in the Consultation, but will be finalized after the scoping study);
- Develop SoP for sea cucumber capture fisheries, capture-based culture fisheries and processing;
- Prepare Sea Cucumber Fishery Improvement Plan;
- Explore Certification of Capture-based Culture Fishery of Sea Cucumbers;
- Establish co-management committee involving stakeholders.

Potential interventions identified for Fishery in Puttalam Lagoon in the project are:

- Update the Fisheries Development and Management Plan for the Puttalam lagoon by incorporating EAFM principles
- Develop effective implementation framework for the Plan
- Implement EAFM in the appropriate Puttalam Lagoon FMU (provisionally, Shrimp Fishery in the Lagoon has been selected in the Consultation, but will be finalized after the scoping study);
- Prepare Shrimp Fishery Improvement Project (FIP) leading to Certification
- Strengthen opportunity for improving the income of fishers.

The Capacity Development Course (CDC) on EAFM consisted 8 modules, delivered by three resource persons. The core trainees were those who participated in the Scoping Consultations on Sea Cucumber Fishery and Puttalam Lagoon Fishery in Jaffna and Kalpitiya respectively, as it was expected that they will be involved in the preparation of scoping report and EAFM plan in the two FMUs in the BOBLME project. The course ran seamlessly and at a good pace throughout. The CDC will be instrumental in building rapport among the EAFM practitioners in Sri Lanka and encouraging them to exchange ideas and experiences regarding fisheries management. The main outcomes from the CDC are:

- The Course facilitated emergence of more capable and effective practitioners of EAFM. The trainees can potentially serve as Trainers in future capacity development courses.
- The trainees can potentially serve as Trainers in future capacity development courses.
- The Course is highly relevant to the participants, as many of them will be actively involved in preparing the scoping report and preparation of AFM plan in the two FMUs.
- The Course agenda, materials and delivery were aligned to the specific needs of implementing EAFM in the two FMUs.
- The CDC served as a platform to connect the trainers, trainees and the project team involved with the two FMUs.
- The trainers' team, with its experience, adapted to the requirements of the trainees, considering the characteristics of the two FMUs.

The BOBP-IGO Mission served as a launchpad for initiating EAFM planning and implementation in the two FMUs; helping the project partners by defining their roles and responsibilities, the next steps to be taken; developing practical skills of the project partners and related agencies to plan and implement EAFM; and encouraging them to exchange ideas and experiences regarding fisheries management.

Abbreviation and Acronyms

| | |
|---------|--|
| AFM | Adaptive Fisheries Management |
| CDC | Capacity Development Course |
| DDG | Deputy Director General |
| DFAR | Department of Fisheries and Aquatic Resources |
| DG | Director General |
| DoE | Department of Environment |
| DoF | Department of Fisheries |
| EAFM | Ecosystem Approach to Fisheries Management |
| EEZ | Exclusive Economic Zone |
| FAO | Food and Agriculture Organization of the United Nations |
| FIP | Fishery Improvement Project |
| FMC | Fisheries Management Committee |
| FMU | Fishery Management Unit |
| GEF | Global Environment Facility |
| IUCN | International Union for Conservation of Nature |
| LME | Large Marine Ecosystem |
| NAQDA | National Aquaculture Development Authority |
| NARA | National Aquatic Resources Research and Development Agency |
| NORAD | Norwegian Agency for Development Cooperation |
| PLFMA | Puttalam Lagoon Fisheries Management Area |
| SAP | Strategic Action Programme |
| SEAFDEC | Southeast Asian Fisheries Development Center |
| SoP | Standard Operating Procedure |
| TDA | Transboundary Diagnostic Analysis |

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1. Background

Bay of Bengal Large Marine Ecosystem (BOBLME) is one of the largest LMEs of the world with an area of about 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 home to rich biodiversity and critical habitats. The natural resources are of considerable social and economic importance to the bordering countries. Fisheries and aquaculture contribute immensely to food security, employment, and trade in the region.

The Transboundary Diagnostic Analysis (TDA) and Strategic Action Programme (SAP) phase of the BOBLME project phase I (2009-2015) identified three priority transboundary concerns and their proximate causes in the region. 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 is being implemented 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” (2023-2028). The project is funded by the Global Environment Facility (GEF) and the Norwegian Agency for Development Cooperation (NORAD). It is implemented by the Food and Agriculture Organization of the UN (FAO). The International Union for Conservation of Nature (IUCN), Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO, for its member-countries, namely, Bangladesh, India, Sri Lanka and Maldives), and Southeast Asia Fisheries Development Center (SEAFDEC), for countries part of BOBLME project and members of SEAFDEC) are the executing agencies 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. Implementing Ecosystem Approach to Fisheries Management (EAFM) is one of the key sub-components of the project. BOBP-IGO will implement the project in its member countries viz., Bangladesh, India, Maldives and Sri Lanka. National execution partners include Ministries of Fisheries and Agriculture, Ministries of Environment, and other national agencies of the participating countries.

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 were:

- At least 2 EAFM plans implemented in each country;
- National and regional platforms established or strengthened to involve grassroots stakeholders in management decision-making; and

2. Ecosystem Approach to Fisheries Management (EAFM)

The need to apply an Ecosystem Approach to Fisheries Management (EAFM) is now globally accepted and has been endorsed in several international fora. Introduction of EAFM, as a holistic concept and alternative way to manage fisheries started after the Rio +20 conference in 2012 and several countries have adopted the concept for their national fisheries management. While support for EAFM has been in place through a range of global declarations and policy instruments, progress in the implementation of an EAFM at national and regional levels has been slow, partly due to the practitioners lacking the relevant skills and experience to apply such an integrated and holistic approach.

For implementing EAFM in Sri Lanka,

- Sea Cucumber Fishery in Northern Sri Lanka
- Fishery in Puttalam Lagoon
- Small Pelagic Fishery in Southwest Sri Lanka

were selected as Fishery Management Units (FMUs) by the experts in a National Workshop conducted by the BOBP-IGO in Sri Lanka (*BOBP-IGO, 2024. National Workshop on Scoping EAFM Planning and Implementation Process in Sri Lanka's Bay of Bengal Region – Event Report. Bay of Bengal Programme Inter-Governmental Organisation, 55 pp*) and approved by the Government of Sri Lanka.

While EAFM in the first two fisheries will be directly implemented under the project, the third fishery will be implemented by getting support from the Ministry of Fisheries and Aquatic Resources, Government of Sri Lanka.

With the overall objective of promoting EAFM in Sri Lanka, University of Jaffna (UoJ), Jaffna, and National Aquatic Resources Research and Development Agency (NARA), Colombo were identified as project partners to prepare a Scoping Report and EAFM Plan for Sea Cucumber fishery in Northern Sri Lanka and Fishery in Puttalam Lagoon, respectively.

3. Purpose and Objectives of BOBP-IGO Mission to Sri Lanka

The scope of EAFM planning and implementation need to be properly understood by all those involved in project execution. To prepare the ground for initiating the process of planning and implementing EAFM in the two selected FMUs, a BOBP Mission consisting Dr E Vivekanandan, International Consultant, BOBLME, BOBP-IGO and Dr T Velumani, Project Scientist, BOBP-IGO undertook a Start-Up task by conducting Scoping Consultations & Capacity Development Course in Sri Lanka. The Start-Up consisted of the following tasks:

Consultative Workshops with stakeholders, and field visits and meetings with the project partner, namely, the University of Jaffna (UoJ) in Jaffna for sea cucumber fishery during 14-16 May 2025;

Consultative Workshops with stakeholders, and field visits and meetings with the project partner, namely, National Aquatic Resources Research and Development Agency (NARA) for Puttalam Lagoon Fishery in Kalpitiya during 17-19 May 2025;

Capacity Development Course (CDC) for practitioners of EAFM in the two FMUs in NARA, Colombo during 20-23 May 2025.

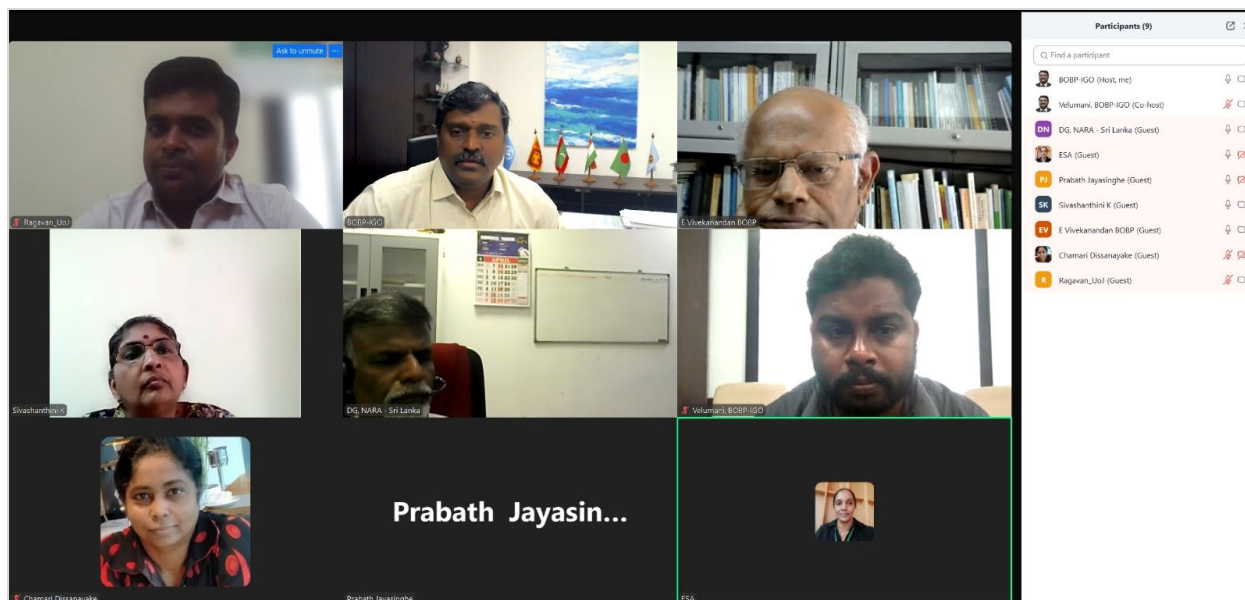


Figure 1. Virtual meeting was conducted with project partners to discuss the preparing the ground for planning and implementing EAFM in Sri Lanka

The broad objectives of the Mission were to:

- (i) Identify the specific FMUs and understand their characteristics for planning and implementing EAFM in the two areas selected;
- (ii) Coordinate with the EAFM team and other relevant agencies and establish partnerships;
- (iii) Help the partners by clarifying their roles and responsibilities, and the next steps to be taken; and
- (iv) Develop practical skills of the project partners to plan and implement EAFM in the two FMUs.

4. Approach

The BOBP Mission undertook the following tasks in Sri Lanka to accomplish the tasks:

Table 1. Table showing the programme agenda

| Phase | Date | Agenda | Organisations |
|-----------------------------|---------------|--|--|
| Jaffna Campaign (14-16 May) | 14.05.2025 FN | Arrival of BOBP team* in Jaffna from Chennai; Stay in Jaffna | <u>Local Coordinator</u> UoJ & BOBP |
| | 14.05.2025 AN | Visit landing centres, sea cucumber hatchery, pen farms in | UoJ, DoF, BOBP |

| | | | |
|---|----------------------------|--|---|
| | | the lagoon & processing plants around Jaffna | |
| | 15.05.2025 10.00-16.00 | Project Partners & Stakeholder Consultation meeting on sea cucumber fishery in UoJ, Jaffna (31 participants) | DoF, DoE, UoJ, UoSJ, NARA, NAQDA, BOBP, fishers & other stakeholders |
| | 16.05.2025 FN | Meeting with project partners (UoJ, UoSJ) | UoJ, UoSJ, BOBP |
| Puttalam Campaign (16-19 May) | 16.05.2025 AN | Arrival of BOBP team* in Kalpitiya from Jaffna; Stay in Kalpitiya | <u>Local Coordinator</u> NARA & BOBP |
| | 17.05.2025 10.00-16.00 | Project Partners & Stakeholder Consultation (17 participants) | Meeting in Kalpitiya; DoF, DoE, NARA, UoJ, BOBP, fishers & other stakeholders |
| | 18.05.2025 FN | Visit landing centres around Kalpitiya | NARA, DoF & BOBP |
| | 18.05.2025 AN | Meeting with project partner (NARA) | Meeting in Kalpitiya; NARA, BOBP |
| Capacity Development Course (CDC) (19-23 May) | 19.05.2025 AN | Arrival of BOBP team* in Colombo from Kalpitiya | <u>Local Coordinator</u> NARA & BOBP |
| | 20.05.2025 – 23.05.2025 | Capacity Development Course (4 days) (23 participants) | NARA Participants: DoF, DoE, NARA, NAQDA, UoJ & other organisations <u>Resource Persons:</u> BOBP team, Sunil Mohamed, Sewandi Jayakody |
| | 22.05.2025 (Forenoon) | Meeting of BOBP team** with Secretary and Ministry of Fisheries officials | <u>Local Coordinator</u> DoF & BOBP |
| | 24.05.2025 AN | Departure from Colombo to Chennai by BOBP team | |

*BOBP team: Dr E Vivekanandan, International Consultant, BOBLME; Dr T Velumani, Project Scientist, BOBP-IGO

** BOBP Team: Dr P Krishnan, Director, BOBP-IGO; Dr E Vivekanandan, International Consultant, BOBLME

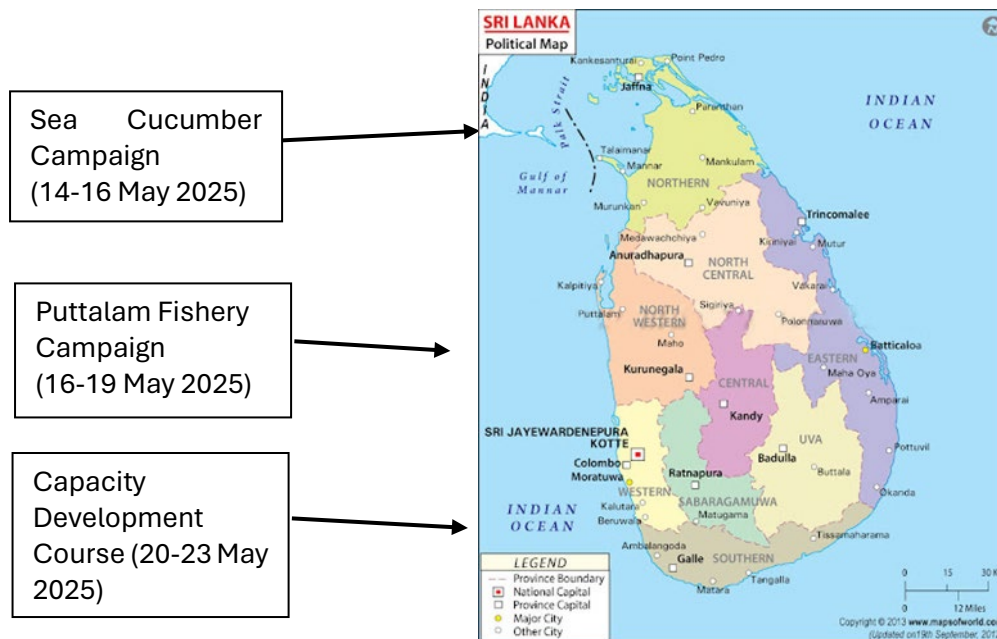


Figure 2. BOBP Mission tasks in Sri Lanka during May 2025

All the stakeholders for the events were identified and informed of the programme through the project partners/coordinators, requesting for their participation. Engagement with the local partners with similar/common mandate and insights in fisheries, and who will be executing the project in the two FMUs, were considered as ideal to make the campaign effective.

Prior to the travel to Sri Lanka, the BOBP team conducted two online meetings with the project partners (UoJ and NARA) on 02 May 2025 and 07 May 2025 for coordination and to prepare the groundwork for the events.

On 11 May 2025, the BOBP team conducted an online meeting with the Resource Persons of the Capacity Development Course (CDC), namely Dr Sunil Mohamed, Former Principal Scientist, Central Marine Fisheries Research Institute, Kochi and Prof Sevandi Jayakody, Professor (Chair), Department of Fisheries and Aquaculture, Wayamba University, Colombo and discussed about the conduct of the CDC, its Agenda and sharing of responsibility among the Resource Persons.

5. Proceedings of the Campaign for Sea Cucumber Fishery in Northern Sri Lanka

5.1 Field Campaign

On 14 May 2025, the BOBP team, along with project partners from UoJ, and collaborators National Aquaculture Development Authority (NAQDA) and other stakeholders visited the following places of importance of sea cucumber fishery, hatchery, farming and processing located around Jaffna Lagoon:

- Suganth Seafood Exports
- Backyard Sea Cucumber Processing Unit

- Landing sites of Sea Cucumber
- Sea Cucumber Pen farms in the lagoon.



Figure 3. The project team visited a sea cucumber hatchery, rearing and culture pens, a processing plant, and a seafood trader's house in the Jaffna region, and held discussions on the fishery

The team interacted with a number of stakeholders to gain an insight into the sea cucumber fisheries and farm characteristics, and issues and opportunities to improve the fisheries in the lagoon.

5.2 Consultative Workshop

On 15 May 2025, the BOBP organized a Consultative Workshop in association with University of Jaffna in the Mini Boardroom of the Vice-Chancellor, University of Jaffna for Scoping Sea Cucumber Fishery in Northern Sri Lanka.

The specific objectives of the Workshop were to

- Initiate the process of EAFM plan preparation;
- Discuss the work plan for implementing EAFM in the sea cucumber fishery;
- Identify potential collaborators and stakeholders and connect them with the process; and
- Identify the capacity development needs for implementing EAFM.

The Agenda of the Workshop is placed in Annex I.



The Workshop was attended by 31 participants representing government departments, faculty members from University of Jaffna and University of Sri Jayewardenepura, non-government Organisations, resource users and other stakeholders, and BOBP-IGO. The list of participants is placed in Annex II.

The Workshop was conducted in English and Tamil.

5.3 Meeting with Project Partners

On 16 May 2025, the BOBP team discussed with the project partners, namely Prof. Dr Sivashanthini Kuganathan, Mr N Ragavan, Department of Fisheries, University of Jaffna, Ms Jinthusha, UoJ and Prof D C T Dissenayake, University of Sri Jayewardenepura in the Department of Fisheries, UoJ (online). In the meeting, the BOBP team de-briefed the immediate steps to be taken up under the project. The assignment on conducting scoping survey, preparation of scoping report and EAFM plan need to be completed within four months by interviewing and consulting the stakeholders. The template for collecting scoping data, and the handbook explaining the methodology for planning and implementing EAFM, both prepared by the BOBP, were shared with the project partners.

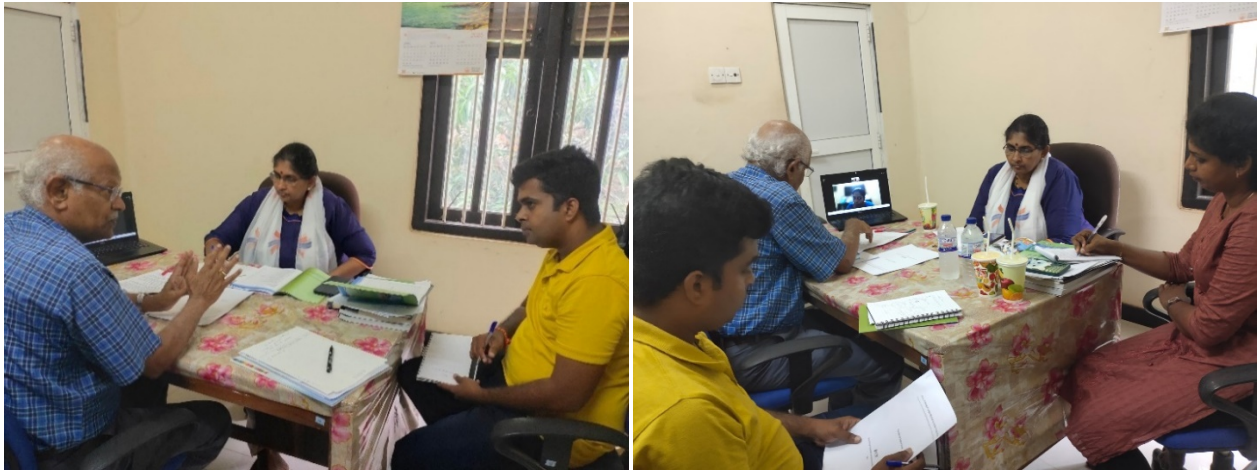


Figure 4. Interaction with project partners and discussed on immediate steps to be taken up under the project

The findings from the field visit and stakeholder consultative meeting on the previous two days were discussed, leading to clarity of the tasks to be undertaken through improved communication and better decision making.

5.4 Observations for Scoping the Sea Cucumber Fishery and Farming in Northern Sri Lanka

From the Field Campaign, Consultative Workshop and meeting with the Project Partners, the following observations are made:

- Sea cucumber fishery is a **smallscale fishery** practiced by scuba diving, snorkeling and gleaning by using traditional motorized boats along the northern Sri Lanka, particularly in Jaffna, Kilinochchi, Mannar and Mullaitivu. It is estimated that about 10,000 people are engaged in the fishery directly or indirectly. The mangrove ecosystem in the lagoon supports the fishery by providing a suitable environment for sea cucumbers.
- Among the nine species available now, *Holothuria scabra* is targeted as it is a high-value species. It is reported that **the catch of high-value species is reducing, and a few low-value species and previously unexploited species are increasing**. Fishers have to travel long distances in the sea and undertake deep-diving to catch high-value species.
- In the last three years, large number of pens have been erected for fattening *H. scabra* in the Jaffna lagoon and Kilinochchi and Mannar regions, and the number of pens is increasing, as **fattening of sea cucumbers yields good profit**.
- Consequent upon the increasing number of pens, the space for fishing has reduced in the lagoon, leading to **conflict between the fishers and farmers**.
- A few hatcheries are operating, but the production of seeds/juveniles is hardly sufficient to meet the demand of the farms. Juveniles for fattening are collected mostly from the wild, and hence, the present system could be termed as **'capture-based culture' fisheries**. Large number of under-sized individuals are exploited from the wild, but there is scarcity of juveniles for stocking in the pens. **More hatcheries with mass production facilities and technology are required**.



Figure 6. Sea Cucumber Farming and Hatchery

6. Observation of sea cucumber farming and hatchery in Jaffna region

- The **entire area needs to be mapped** for locating hatcheries, nurseries, farms and fishing, and Environmental Impact Assessment is necessary.
- **Training and awareness raising** at different levels on the sustainability of sea cucumber fisheries is imperative.
- **In business-as-usual scenario**, sustainability of sea cucumber fishery and farm will be a serious concern in 10-15 years.

7. Summary

Considering the issues in the sea cucumber fishery and farms in Northern Sri Lanka, it is clear that proactive steps need to be taken up for sustainability. Potential interventions in the BOBLME project are:

- Implement EAFM in the appropriate sea cucumber FMU (in the Consultation, Jaffna Lagoon has been selected provisionally, but will be finalized after the scoping study);
- Develop SoP for sea cucumber capture fisheries, capture-based culture fisheries and processing;
- Prepare Sea Cucumber Fishery Improvement Plan;
- Explore Certification of Capture-based Culture Fishery of Sea Cucumbers;
- Establish co-management committee involving stakeholders

8. Proceedings of the Campaign for Puttalam Lagoon Fishery

8.1 Consultative Workshop

BOBP organized a Consultative Workshop in association with NARA in the Wind Beach Resort, Kalpitiya for Scoping the Puttalam Lagoon Fishery on 17 May 2025.



Figure 7. Interaction with the fisheries stakeholders

The specific objectives of the Workshop were to

- i. Initiate the process of EAFM plan preparation;
- ii. Discuss the work plan for implementing EAFM for the Puttalam Lagoon Fishery;
- iii. Identify potential collaborators and stakeholders and connect them with the process; and
- iv. Identify the capacity development needs for implementing EAFM.

The Agenda of the Workshop is placed in Annex III.

The Workshop was attended by 17 participants representing government departments, namely, NARA and NAQDA, resource users and other stakeholders, and BOBP-IGO. The list of participants is placed in Annex IV.

The Workshop was conducted in English and Sinhalese.

8.2 Field Campaign

On 18 May 2025, the BOBP team, along with project partners from NARA, and representatives from DoF visited six landing centres, fish drying yard, mangrove plantation sites and mudcrab fattening farm around Kalpitiya, the northern part of Puttalam Lagoon.



Figure 8. The project team visited different fish landing centers and interacted with different stakeholders

The team interacted with a number of stakeholders to understand the fisheries characteristics, and issues and opportunities to improve the fisheries in the lagoon.

8.3 Meeting with Project Partners

On 18 May 2025, the BOBP team conducted a meeting with the project partners from NARA, namely Dr. R P Prabhath Jayasinghe, Principal Scientist, Dr. A A S H Athukoorala, Senior Scientist, Ms. H M Udari Ayesha, Scientist and Ms. Kaumi Piyasi, Scientist. In the meeting, the BOBP team de-briefed the immediate steps to be taken up under the project. The assignment on conducting the scoping survey, preparation of scoping report and EAFM plan need to be completed within four months by interviewing and consulting the stakeholders. The template for collecting scoping data and the handbook explaining the methodology for planning and implementing EAFM prepared by the BOBP were shared with the project partners. The findings from the field visit and

stakeholder consultative meeting on the previous two days were discussed, leading to clarity of the tasks to be undertaken through improved communication and better decision making.

8.4 Observations for Scoping the Puttalam Lagoon Fishery



Figure 9. Puttalam lagoon (Source:

<https://openknowledge.fao.org/server/api/core/bitstreams/25fc8293-b2f8-4906-894a-d2252b6ad59d/content>)

From the Field Campaign, Consultative Workshop and meeting with the Project Partners, the following observations are made:

Puttalam Lagoon is a high-biodiversity and high-productive basin estuary with **diverse habitats** like mangrove forests, seagrass meadows, seaweeds, salt marsh and mud flats. Bar reef marine sanctuary is on the northwest of the lagoon and the land-based Wilpattu National Park is on the northeast.

While fishing is one of the major occupations, shrimp aquaculture, salt production and tourism are the other occupations for people living in 88 villages around the lagoon. **Fishing is smallscale** of multispecies and multigear nature, operated by 1,618 non-mechanized traditional boats employing small-mesh and large-mesh gillnets, bottomset gillnets and trammelnets. Shrimps, crabs, finfish, bivalves and gastropods contribute to the fisheries.

The Puttalam Lagoon Fisheries Management Area (PLFMA), at present called as **Puttalam Lagoon Fisheries and Co-Management Committee**, was declared by the Government of Sri Lanka under the Fisheries Act of 1996 with the primary objective of implementing co-management practices among stakeholders under a single management plan. Twelve Fisheries Management Committees (FMCs) have been established and registered for the PLFMA, with one member from each committee representing the Puttalam Lagoon Fisheries Management Coordinating Committee. Various stakeholders including representatives from DoF, NARA and NAQDA serve as committee members. This committee oversees fisheries management in the PLFMA by issuing operating licenses, controlling illegal fishing, and preventing habitat destruction. Additionally, stakeholders actively participate in decision-making and the drafting of fisheries management policies. Amendments to the Fisheries and Aquatic Resources Act, No. 2 of 1996 provide for the integration of fisheries management with environmental conservation. As required by the Act, the **Fisheries Development and Management Plan for the Puttalam lagoon was developed by DFAR in 2013** with financial support from the FAO to conserve the lagoon environment and support sustainable development of fisheries in the lagoon. However, **implementation of the Plan remains a challenge.**

Proper monitoring and assessment of fisheries including **monitoring and review of the Fishery Development and Management Plan need to be undertaken.**

The management of lagoon fishery is treated under Inland Fisheries Management, and there is a view that it should be brought under Marine Fisheries management.

Fishers complain of decreasing fish catch and reducing income. Fishing by unlicensed fishers, and use of prohibited monofilament gillnet and fyke net are prevalent. Bycatch of low value fishes and juvenile exploitation are major issues. Ban on fishing practices need to consider providing alternate livelihood to the affected fishers.

Large number of commercial shrimp farms are operating around the lagoon for more than 30 years. Majority are small-scale of < 1 ha. While many farms are affected by repeated disease outbreaks, uncontrolled expansion exceeding carrying capacity and deterioration of water quality are reported. Effluents of shrimp farms are released into the lagoon, often without proper treatment, leading to poor water quality in the lagoon. **In addition to effluents from shrimp farms, effluents from industries also impact the lagoon, leading to threat to biodiversity.**

Sea cucumber farming is initiated by farmers, but being objected by the fishers. Low salinity is also an issue to promote sea cucumber farming in the lagoon.

Fishers complain about mangrove plantation, leading to reduction in the water spread area and obstruction their navigation channels. **Habitat degradation and fragmentation are key issues.**

Fishers demand improved infrastructure of fish landing sites.

9. Summary

Considering the issues in the Puttalam Lagoon fishery, it is clear that proactive steps need to be taken up for sustainability. Potential interventions in the BOBLME project are:

Update the Fisheries Development and Management Plan for the Puttalam lagoon by incorporating EAFM principles

Develop effective implementation framework for the Plan

Implement EAFM in the appropriate Puttalam Lagoon FMU (in the consultations, Shrimp Fishery in the Lagoon has been selected provisionally, but will be finalized after the scoping study);

Prepare Shrimp Fishery Improvement Project (FIP) leading to Certification

Strengthen the opportunity for improving the income of fishers.

9. EAFM Capacity Development Course (CDC)

9.1 Objectives and Approach to the CDC

To plan and implement EAFM in the two FMUs, the BOBP-IGO conducted a Capacity Development Course (CDC) to the prospective practitioners of EAFM in Sri Lanka.

The broad objectives of the CDC on EAFM were:

- To enhance understanding of EAFM;
- To develop practical skills of fisheries practitioners to implement EAFM in Sea Cucumber Fishery in Northern Sri Lanka and Puttalam Lagoon Fishery; and
- To enhance understanding of multidimensional issues and find effective solutions to address them by following an expanded ecosystem approach.

The Course was strategically placed as a refresher and skill development course to elevate the practitioners who have basic familiarity with the governance issues to engage in effective consultation with experts and other stakeholders with scientific insights and novel thinking.



Figure 10. Inaugural Sessions and Engagement with participants

The course content and materials were developed from BOBLME Phase I EAFM training resources, but the focus was shifted towards requirements of the specific FMUs. The Course provided hands-on experience in developing EAFM plan. The course comprised lectures by

resource persons and a large part of the program was devoted to group exercise. The training course was conducted by the BOBP-IGO from 20.05.2025 to 23.05.2025 at NARA, Colombo (04 days). The Agenda of the CDC is placed in Annex V.

The target group was participants from DoF, DoE, NARA, NAQDA, UoJ and others, who will be involved in EAFM scoping and plan preparation in the two selected FMUs. To finalise the target group, a request was sent to the organisations prior to the CDC to nominate officials who participated in the Scoping Consultations on Sea Cucumber Fishery and Puttalam Lagoon Fishery in Jaffna and Kalpitiya, respectively, as it was expected that they will be involved in the preparation of scoping report and EAFM plan in the two FMUs in the BOBLME project. The final list of 31 participants is placed in Annex VI. The rapid assessment on day 1 revealed a very broad spectrum of experience ranging from five people with more than 15 years' experience at one end, to 3 people with one year experience at the other.

The CDC was conducted in English.

9.2 Review of the Course

The opening address was made by **Dr. K. Arulanathan**, DG, NARA. **Dr. E. Vivekanandan**, International Consultant, BOBLME, BOBP-IGO gave a brief background of BOBLME project and the context of EAFM training in the work promoted by BOBLME.

The course was delivered entirely by three trainers: **Dr. E. Vivekanandan**, International Consultant, BOBLME, BOBP-IGO, **Dr. K. Sunil Mohamed**, Former Principal Scientist, Central Marine Fisheries Research Institute, Kochi, India, and **Dr. Sevandi Jayakody**, Professor (Chair), Department of Fisheries and Aquaculture, Wayamba of University, Sri Lanka, and supported by **Dr. T Velumani**, Project Scientist, BOBP-IGO. At the end of each day, the training team of 4 members had a feedback session and detailed planning of the following day.

The Course consisted eight Modules:

Module 1. Overview of EAFM

Module 2. Define & Scope the Fishery Management Unit (FMU)

Module 3. Identify & prioritise stakeholders

Module 4. Identify & prioritise Issues and goals

Module 5. Establishing co-management arrangement

Module 6. Develop EAFM plan

Module 7. Implement the plan

Module 8. Monitor, evaluate and adapt

On Day 4, sessions were held on Theory of Change, Capacity Development Need Assessment, Quiz and Course Evaluation.

The course ran seamlessly and at a good pace throughout. The participants actively participated in the entire Course. About half of the time of the Course was allotted to group exercises that generated lot of interest, and were found to promote better understanding, active involvement and real-world application. The participants had hands-on experience of preparing EAFM model plans for the two fisheries, and more importantly, got an insight into the procedure for preparing the plan. The participants took great interest in the role play on conflict resolution for the two FMUs.



Figure 11. Participants presenting their group activity outcome and also role play session

Participants presenting their group activity outcome and also role play session

The presentations by resource persons, results of group activities by the participants and images of the event are placed in Google Drive

(https://drive.google.com/drive/folders/1ayQNbKqIn3luxCFTJm3tu1VpM_hodOyd?usp=sharing).

Guidance materials such as EAFM Handbook and Template for scoping survey prepared by the BOBP-IGO are also placed in the Google Drive. In addition, relevant reference materials on Sea Cucumber Fishery and Puttalam Lagoon Fishery can be found in the Google Drive.

The Course concluded with feedback from the participants, next steps to be taken up, and closing remarks by Dr. K. Arulananthan, DG, NARA and Dr. K. H. M. L. Amaralal, DDG, NARA.

9.3 Performance in the Quiz and Course Evaluation and Feedback

At the end, the participants evaluated the Course by answering a questionnaire on their learning experience, course design and course delivery. Post-course evaluation and feedback shows that participants rate the administration of the course as good.

Result of Course evaluation

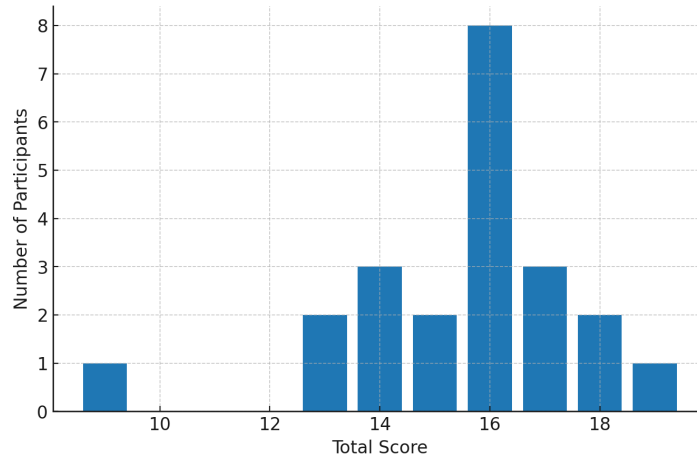


Figure 12. Score distribution of participants in bar chart

They also answered 20 questions in a Quiz. Their performance was overwhelmingly good; 17 participants scored > 15 out of total score 20.

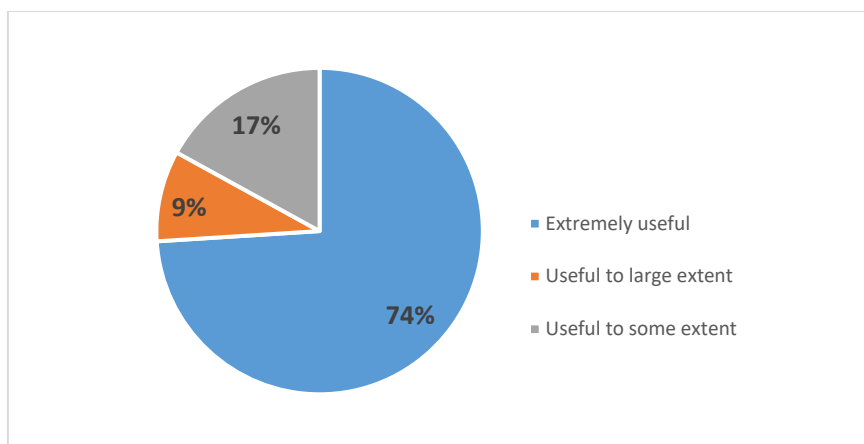


Figure 13. Usefulness of the course

Feedback

All of the participants appreciated the course. Many of them, who are working with different stakeholders including fishers and aquaculture farmers, mentioned that this training will help them in identifying problems and engaging in participatory discussions with these stakeholders.

They found both the theory and activity sessions highly engaging, and the role-play exercise on the last day of the workshop helped them to think from different stakeholders' perspectives and to understand problems from those viewpoints. Many participants also agreed to apply the knowledge they had gained and to disseminate it further among fishers and aquaculture farmers.

9.4 Administrative and Logistics Support

Ministry of Fisheries and Aquatic Resources, Government of Sri Lanka, NARA, NAQDA and University of Jaffna provided administrative support by nominating the right participants for all the events. Logistics support was also provided by UoJ and NARA in arranging hotels, transport and meeting halls for the events in Jaffna, Kalpitiya and NARA (Colombo).



Figure 14. Certificate distribution and group photo of participants with organizing team

9.5 Outcomes from the CDC

The CDC resulted in a number of key outcomes and lessons learnt, that are pivotal to implementing EAFM in the two FMUs in Sri Lanka.

Outcome 1. Emergence of more capable and effective practitioners of EAFM

As the main focus of the CDC was on developing practical skills, the trainees developed skill for scoping, stakeholder engagements, developing EAFM planning, implementation, and assessment of capacity development initiatives in the two specific FMUs. The trainees can potentially serve as Trainers in future capacity development courses.

Outcome 2. Relevance of the Course to the participants

Many participants in the CDC were the right target audience, as they will be directly involved in the preparation of Scoping Report, EAFM Plan and Implementation. The audience was a mix of middle-level officials and researchers and their younger colleagues, with the prospect of providing the required experience as well as field-level data collection and interaction with the stakeholders. The participants learnt a lot personally, and will be able to apply the learning in implementing EAFM in the two FMUs.

Outcome 3. Platform to connect of the trainers, trainees and the project team to the FMUs

Two members of the BOBP team visited the FMUs in the previous week, conducted field visits, stakeholder consultations and meetings along with the team that will be engaged with the project to implement EAFM. These field campaigns have facilitated proper understand of the characteristics of the selected FMUs, issues, potential management actions, and prospects of stakeholder engagement. The CDC served as a platform to connect the trainers, trainees and the project team involved with the two FMUs.

Outcome 4. The training team defined the success of the Course

Trainers are responsible for not only delivery of content, but also the whole planning and organisation of delivery on a daily basis. The training team consisted members (Dr E Vivekanandan (India), Dr. Sunil Mohamed (India) and Dr. Sewvandi Jayakody (Sri Lanka)) who have conducted many EAFM trainings in multiple countries in the past in the region. The training team worked together closely and planned meticulously beforehand everyday (content, delivery as well as logistics of each session). The team adapted to the requirements of the trainees, considering the characteristics of the two FMUs. Their experience, supported by Dr T Velumani (India) enabled good delivery style, approach and preparation, and success of the course.

Outcome 5. Aligning the course agenda, presentation materials and group activities to the specific needs

Aligning the training course agenda with requirements ensures that the training effectively addresses the needs of the project and its implementers. For the CDC, the course content, delivery methods, communication with examples were prepared considering the course objectives in the specific FMUs. The agenda and contents developed in the CDC can serve as a model for similar CDCs to be conducted in other countries in the BOBLME project.

Programme Agenda for Consultative Workshop in Northern Sri Lanka

Bay of Bengal Programme Inter-Governmental Organisation**Bay of Bengal Large Marine Ecosystem Project Phase II (BOBLME II)****Consultative Workshop for
Scoping the Sea Cucumber Fishery in Northern Sri Lanka**

Venue: University of Jaffna, Jaffna

Date: 15 May

2025

Agenda

| Time | Agenda | Resource |
|------------------|--|---|
| 0930-1145 | <i>Session 1: Opening & EAFM Overview Session</i> | |
| 0930-1000 | Registration | |
| 1000-1010 | Welcome & Opening remarks | Prof Sivashanthini Kuganathan, Senior Professor (Chair), Fisheries Science, UoJ |
| 1010-1025 | Self-Introduction | Participants |
| 1025-1045 | BOBLME Project & Workshop Context | E Vivekanandan, BOBP |
| 1045-1120 | Overview of EAFM | E Vivekanandan, BOBP |
| 1120-1145 | Sea Cucumber Fishery in Northern Sri Lanka | Prof D C T Dissenayake, University of Sri Jayewardenepura |
| 1145-1515 | <i>Session 2: Scoping the Fishery Management Unit</i> | |
| 1145-1200 | Interaction | Participants |
| 1200-1245 | Issues and Opportunities for intervention (Views of each organisation/participant) | Participants |
| 1245-1300 | Special Address | Prof Ravi Rajan, Dean, Faculty of Science, UoJ |
| 1300-1400 | Lunch Break | |
| 1400-1445 | Identifying stakeholders & their roles; Establishing Co-management Arrangement | Participants |
| 1445-1515 | Assessing Capacity Development Needs | Participants |
| 1515-1530 | <i>Session 3: Concluding Session</i> | |
| 1515-1530 | Way Forward & Closing Remarks | BOBP-IGO |
| 1530-1545 | Parting Coffee | |

List of Participants Consultative Workshop in Northern Sri Lanka

Bay of Bengal Programme Inter-Governmental Organisation
Bay of Bengal Large Marine Ecosystem Project Phase II (BOBLME II)

Consultative Workshop for
Scoping the Sea Cucumber Fishery in Northern Sri Lanka

Venue: Mini Board Room, University of Jaffna

Date: 15 May 2025

| No | Department / Institutes | Participants | Mobile/Email |
|----|---|--|---|
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|-----|---|---|---|
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| 17. | University of Jaffna | Prof. P. Ravirajan, Dean, Faculty of Science, University of Jaffna, Jaffna -90000. | pravirajan@univ.jfn.ac.lk |
| 18. | | Prof. Sivashanthini Kuganathan, Senior Professor of Fisheries (Chair), Department of Fisheries, Faculty of Science, University of Jaffna, Jaffna -90000. | Tel: +94 0774006669 sivashanthini@univ.jfn.ac.lk |

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Programme Agenda for the Consultative Workshop in Puttalam Lagoon Fishery

Bay of Bengal Programme Inter-Governmental Organisation

Bay of Bengal Large Marine Ecosystem Project Phase II (BOBLME II)

**Consultative Workshop for
Scoping the Fishery in Puttalam Lagoon**

Venue: Wind Beach Resort, Kalpitiya

Date: 17 May 2025

| Time | Agenda | Resource |
|------------------|--|---|
| 1030-1200 | <i>Session 1: BOBLME Project & EAFM Overview Session</i> | |
| 1030-1045 | Registration | |
| 1045-1100 | Welcome & Opening remarks | Dr Prabhath Jayasinghe, Principal Scientist, NARA |
| 1100-1110 | Self-Introduction of participants | |
| 1110-1150 | BOBLME Project & Workshop Context | Dr E Vivekanandan, BOBP |
| 1150-1200 | Overview of EAFM | Dr E Vivekanandan, BOBP |
| 1200-1215 | Coffee Break | |
| 1215-1400 | <i>Session 2: Scoping the Fishery Management Unit</i> | |
| 1215-1230 | Puttalam Lagoon Fishery | Dr R P Prabhath Jayasinghe, Principal Scientist, NARA |
| 1230-1330 | Issues and Opportunities for intervention | Participants; Moderated by Assistant Director, DoF, Puttalam |
| 1330-1400 | Identifying stakeholders & their roles; Establishing Co-management Arrangement; Assessing Capacity development Needs | Participants; Moderated by Assistant Director, DoF, Puttalam |
| 1400-1500 | Lunch Break | |
| 1500-1530 | <i>Session 3: Concluding Session</i> | |
| 1500-1530 | Way Forward & Closing Remarks | Dr E Vivekanandan, BOBP |

List of Participants for the Consultative Workshop in Puttalam Lagoon Fishery

Bay of Bengal Programme Inter-Governmental Organisation
Bay of Bengal Large Marine Ecosystem Project Phase II (BOBLME II)

Consultative Workshop for
Scoping the Fishery in Puttalam Lagoon

Venue: Wind Beach Resort, Kalpitiya

Date: 17 May 2025

| S. No | Department / Ministry | Participant List | Mobile / Mail ID |
|-------|--|--|--|
| 1. | National Aquatic Resources Research and Development Agency (NARA) | Dr. R. P. Prabath K. Jayasinghe, Principal Scientist, National Aquatic Resources Research and Development Agency Colombo – 01500. | Tel: +94 71448 78807 prabathj@nara.ac.lk |
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| | | | |
|-----|--|---|--|
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| 21. | Dr. T. Velumani, Project Scientist, Bay of Bengal Programme – Inter Governmental Organisation, Chennai – 600 018. | | Tel: +91 8928507760 velumani7694@gmail.com |

Course Curriculum for the Capacity Development Course in Sri Lanka

Bay of Bengal Programme Inter-Governmental Organisation**Bay of Bengal Large Marine Ecosystem Project Phase II (BOBLME II)****Capacity Development Course on
Ecosystem Approach to Fisheries Management in Sri Lanka**

Venue: NARA, Colombo

Date: 20-23 May 2025

Course curriculum

| Time | Day 1. 20.05.2025 (Tuesday) | Resource |
|-----------|--|---|
| 0930-1000 | Registration | |
| 1000-1110 | Inauguration | |
| 1000-1005 | Welcome | Dr A A S H Athukoorala, Senior Scientist, NARA |
| 1005-1020 | Participants introduction | |
| 1020-1050 | BOBLME project & Course overview | Dr E Vivekanandan, BOBP |
| 1050-1110 | Special Address | Dr. K. Arulananthan, Director General, NARA |
| 1110-1130 | Group photo & Tea Break | |
| 1130-1630 | Module 1. EAFM Overview | |
| 1130-1300 | <ul style="list-style-type: none"> - Fisheries Management & Ecosystem Approach - Why EAFM? | Presentation: Sunil Mohamed Group Activity: Discuss the issues that can be and cannot be addressed by the existing fisheries management |
| 1300-1400 | Lunch | |
| 1400-1630 | <ul style="list-style-type: none"> - Principles and steps - How much EAFM you are already doing? | Presentation: Sevandi Jayakody Group Activity: <ul style="list-style-type: none"> - Identify the EAFM principles which you are already doing - Identify gaps in your EAFM practices and suggest ways to improve |
| 1630-1645 | Closure of Day 1 with Tea | |
| | Day 2. 21.05.2025 (Wednesday) | Resource/Group Activity |
| 0900-1500 | Module 2. Define & Scope the Fishery Management Unit (FMU) | |
| 0900-1015 | <ul style="list-style-type: none"> - Steps of EAFM - Defining the FMU | Presentation: E Vivekanandan Group Activity: <ul style="list-style-type: none"> - Create a map of ecosystem supporting your fisheries - In two groups, select the exact FMU that will be suitable for EAFM planning and implementation in the two fisheries - Demarcate the potential FMU for implementing EAFM |

| | | |
|------------------|--|--|
| | | <ul style="list-style-type: none"> - Make presentation by giving reasons for the selection of FMU |
| 1015-1100 | Special Talk: Sea Cucumber Fishery of Northern Sri Lanka | Prof. D C T Dissenayake, University of Sri Jayewardenepura |
| 1100-1115 | Tea Break | |
| 1115-1200 | Special Talk: Fishery in Puttalam Lagoon | Dr R P Prabhath Jayasinghe, Principal Scientist, NARA |
| 1200-1500 | <ul style="list-style-type: none"> - Scoping the FMU - Preparation of scoping report | Presentation: E Vivekanandan Group Activity: <ul style="list-style-type: none"> - Identify the data to be collected in the FMU and method of collection for preparing the scoping report |
| 1300-1400 | Lunch | |
| 1400-1500 | Module 3. Identify & prioritise stakeholders | |
| | <ul style="list-style-type: none"> - Stakeholder categories - Prioritise stakeholders - Role of stakeholders | Presentation: Sevandi Jayakody & Sunil Mohamed Group Activity: <ul style="list-style-type: none"> - List all possible FMU stakeholders. - Draw a 2 x 2 matrix with 'Importance' on Y axis and 'Influence' on X axis - List the stakeholders into one of the 4 boxes |
| 1500-1630 | Module 4. Identify & prioritise issues and goals | |
| | <ul style="list-style-type: none"> - Identify FMU-specific issues - Prioritize issues - Define vision & goals | Presentation: E Vivekanandan & Sevandi Jayakody Group Activity: <ul style="list-style-type: none"> - List all issues - Take the issues and plot them on a 2x2 risk matrix and then identify the ones that are high risk. - Take the Hi/hi risks problems and group them up under the 3 EAFM components - Develop the vision - Group the effects within each of the 3 components - Set a goal for each component by looking at the effects |
| 1630-1645 | Closure of Day 2 with Tea | |
| | Day 3. 22.05.2025 (Thursday) | Resource/Group Activity |
| 0900-1100 | Module 5. Establishing co-management arrangement | |
| | <ul style="list-style-type: none"> - Understanding & fostering participatory management | Presentation: Sunil Mohamed & Sevandi Jayakody |

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| | <ul style="list-style-type: none"> - Advancing towards gender equality - Case study on co-management (Clam Fishery in Ashtamudi Lake, Kerala, India; Bar Reef Fishery in Sri Lanka) | |
| 1100-1115 | Tea break | |
| 1115-1300 | Module 6. Develop EAFM plan | |
| | <ul style="list-style-type: none"> - Develop management objectives - Develop management actions - Develop indicators and benchmarks - Include finance mechanisms - Formalize the plan | Presentation: Sewvandi Jayakody Group Activity: <ul style="list-style-type: none"> - Develop management objectives - Develop management actions - Develop indicators and benchmarks |
| 1300-1400 | Lunch | |
| 1400-1430 | Module 7. Implement the plan | |
| | <ul style="list-style-type: none"> - Prepare implementation plan - Communicate and engage - Align to EAFM principles | Presentation: E Vivekanandan |
| 1430-1500 | Module 8. Monitor, evaluate and adapt | |
| | <ul style="list-style-type: none"> - Monitor and evaluate performance - Review and adapt the plan | Presentation: Sunil Mohamed |
| 1500-1630 | Role Play (Co-Management Committee Meeting) for conflict resolution | Participants in two FMU groups |
| 1630-1645 | Closure of Day 3 with Tea | |
| | Day 4. 23.05.2025 (Friday) | Resource/ Group Activity |
| 0900-0945 | Recap: Role Play of Day 3 | Participants |
| 0945-1100 | EAFM plan presentation by 2 groups | Participants |
| 1100-1115 | Tea Break | |
| 1115-1215 | Introduction to Theory of Change | Presentation: E Vivekanandan Activity in 4 Groups: <ul style="list-style-type: none"> - Prepare Theory of Change for the 2 FMUs |
| 1215-1245 | EAFM Capacity Development Requirements | Presentation: E Vivekanandan Activity in 4 Groups: <ul style="list-style-type: none"> - Assess the Capacity Development Needs in the two FMUs |
| 1245-1315 | Quiz | Participants |

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| 1315-1330 | Course Evaluation | Participants |
| 1330-1430 | Lunch | |
| 1430-1530 | Closing | |
| 1430-1445 | Feedback | Participants |
| 1445-1500 | Course certification distribution | |
| 1500-1510 | Way Forward | Dr E Vivekanandan, BOBP |
| 1510-1520 | Closing Remarks | Dr K H M L Amaralal, DDG, NARA |
| 1520-1530 | Closing Remarks | Dr K. Arulananthan, DG, NARA |

List of Participants for the Capacity Development Course in Sri Lanka

Bay of Bengal Programme Inter-Governmental Organisation
Bay of Bengal Large Marine Ecosystem Project Phase II (BOBLME II)
Capacity Development Course on
Ecosystem Approach to Fisheries Management in Sri Lanka

Venue: NARA, Colombo

Date: 20-23 May 2025

Participants List

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