



Project News:

The Indonesian Seas Large Marine Ecosystem

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ISLME project help Indonesia on improving the management of coastal and marine resources

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Summary

The FAO led GEF project “Enabling transboundary cooperation for sustainable management of the Indonesian Seas ISLME” brings out the first Newsletter Vol. 1/March 2020 highlighting the main activities during the implementation of ISLME Project, such as the initiative of FAO to support Indonesia to strengthen sustainable fisheries management through stakeholders meeting on harvest strategy and the inauguration of the board of Fisheries Management Areas (FMA), to support fishery survey in Timor-Leste and Timor-Leste aquaculture decree law. This edition also covers stories from the field such as the adoption of e-log book for small scale fisheries, FAO collaboration with UNRAM to assess lobster fisheries status in FMA 573, capacity assessment and also the result of ISLME project facilitation including EAFM training and workshops in East Kalimantan Indonesia and Dili Timor-Leste.

FAO supports MMAF to strengthen sustainable fisheries management

3 March 2020, Jakarta - The Ministry of Marine Affairs and Fisheries (MMAF) of Indonesia launched the new national “Harvest Strategy” for blue swimming crabs, snappers and groupers to improve fisheries management.

Minister Edhy Prabowo and the Director General of Capture Fisheries, M Zulficar Mochtar also inaugurated the operation of Fisheries Management Units of Fisheries Management Areas (WPPNRI). “The Harvest Strategy is important, and this is the first time that such a measure has been adopted in Indonesia. This is a new beginning and the key aspect is to manage fisheries sustainably,” Edhy said at the meeting on the Harvest Strategy, attended by more than 500 stakeholders from all across the country.



The inauguration of the Fisheries Management Units of Fisheries Management Areas (WPPNRI).

Fisheries resources have been exploited by coastal communities in Indonesia for many generations, and the economic potential supports the local-level employment of approximately 275 000 workers. Unfortunately, the volume and value of catches have been declining because of the high demand. “The size of catches is getting smaller

and viable fishing areas are getting farther from the shoreline. In addition, buyers now want to know the traceability of the fish,” said Director General of Capture Fisheries, M Zulficar Mochtar to the meeting participants.



Participants of stakeholders meeting on harvest strategy

The Directorate General of Capture Fisheries of MMAF with assistance from FAO is implementing a project on transboundary cooperation for sustainable management of the Indonesian seas, implemented within the Indonesian Sea Large Marine Ecosystem (ISLME). Large Marine Ecosystems (LME) are the coastal and marine areas with high productivity, as compared to open or high seas. The ISLME area contributes more than 1 percent of fisheries global production, and is an important part of world’s coral resources (500 species of coral, 2 500 marine fish species, 47 species of mangroves and 13 species of sea-grass). Around 185 million people live in the ISLME area and depend on the coastal and marine fishery industries including aquaculture, among other sectors. The five priority sites of the ISLME are North Jawa, East Kalimantan, East Flores, Lombok and the border of Batugede-Atapupu. This project implemented by both Indonesia and Timor-Leste covers 213 million hectare of territorial waters. Mr Stephen Rudgard, FAO Representative for Indonesia commented, “I am glad to see that FAO is able to support the Ministry in adopting an ecosystem approach to fisheries management building into Fisheries Improvement Programme and Harvest Strategy. Together we hope to ensure sustainable fisheries management in the Indonesian seas.” Furthermore, the stakeholders also signed Annual Work Plan (RKT) for blue swimming crabs between Government of South-east Sulawesi, South Sulawesi and Central Java along with supporting partners, the Sustainable Fisheries Partnership (SFP) and Director General of Capture Fisheries of MMAF. The participants from across the country also visited exhibition booths during the event, and examined products from blue swimming crabs, snappers and groupers.

The first fishery survey in northern waters of Timor-Leste

A systematic and scientific survey of Timor-Leste waters off the north coast was carried out in order to provide

data on the oceanographic conditions, primary and secondary production and assessment of the status and condition of pelagic fish stocks in the EEZ waters. The survey also focused on tuna and other pelagic species in order to understand the stock, species composition, distribution, catch ability of fish species and other specific species in the EEZ of the northern Timor-Leste waters.



Participants of fishery survey in Timor-Leste: Broadening perspective on fisheries issues.

The objectives of the survey was to study fisheries resources in order to understand the stock and biomass, species composition, distribution, and catch rate in the Exclusive Economic Zone of the northern and the southern Timor-Leste's waters, to study biological characteristics of some fish species, oceanography, and hydro-biological factors, to formulate the guidelines for protection and sustainable development of marine resources in the Timor-Leste's waters, its management measures and effective utilization of marine resources and capacity building as well.

The study also extended to analyse micro plastic pollution in aquatic environment and impact to food chains, oceanographic, hydro-biological factors, biological characteristics of some fish species and some other economically important species. There is also big concern from both Timor-Leste and Indonesia governments about illegal, unreported and unregulated fishing. Government of Timor-Leste and Indonesia are taking action. The survey will provide input to the ISLME Transboundary Diagnostic Analysis (TDA) which will be the baseline to the Strategic Action Plan (SAP) that the two countries will put together. The survey was carried out during 28 May to 27 July 2019 including cruising time to and from Thailand. The survey was conducted by R.V. Chulabhorn of Thailand, also participated by a number of Timor-Leste researchers and carried out both in the North and South Coasts.

Guiding the Timor-Leste aquaculture decree law

The goal of Aquaculture Strategic Plan of Timor-Leste 2011-2030 is to improve the food and nutrition security situation of the country, and in contributing to economic

activity and household incomes in rural areas. In support to achieve its strategic plan, ISLME project supported the Director General of Fisheries, Ministry of Agriculture and Fisheries (MAF) in hiring an international consultant to revise the draft aquaculture decree making it into a comprehensive law or other format as agreed with the relevant stakeholders and incorporating essential elements of Ecosystem Approach to Aquaculture.

The mission was conducted from 25 January to 1 February 2020. Several technical meetings were conducted with relevant stakeholders to seek information and inputs. All these inputs were integrated into the version of the draft decree that was presented during the one-day national workshop. More inputs were raised during the workshop, such as the scope of supervision over aquaculture and primary personnel responsible therefore.



Participants in e-Logbook socialization meeting in Cilacap, Central Java

On the ground, Destructive Fishing Watch (DFW) jointly with provincial and district fisheries services have conducted socialization and capacity building on use of fishing logbook and e-logbook. This activity was aimed at strengthening the capacity and capability of fishermen and local government staff in the application of fisheries e-logbook for small-scale fisheries in 6 selected pilot areas. This resulted in pilot program for the utilization of logbook for small-scale fisheries in the pilot area and supported by well-developed guidelines or manuals. It Improved compliance with the use of logbook through public consultation socialization and guided the fishermen to install and operate e-logbook in 6 pilot locations; Indramayu Regency (PPI Karangsong), Cirebon Regency (PPI Bondet), Probolinggo, Lamongan, Pati and Cilacap.



Sea weed farming contributes significantly in rural economy, livelihood solution for all to participate

The duration of the Aquaculture Business License and the creation of an Aquaculture Promotion Fund to be funded from portion of the collection of the Aquaculture Business Tariffs and the identification of prohibited acts and imposition of administrative sanctions were some important points discussed. The technical report and a draft decree law will be reviewed by the FAO legal division for any further input, after which it will be shared with MAF.

Working together to adopt e-logbook for small-scale fisheries

The FAO-ISLME Project in close collaboration with The Directorate General of Capture Fisheries, the Ministry of Marine and Fisheries (PSDI) and Destructive Fishing Watch (DFW) Indonesia – a marine based NGO - has conducted facilitation of the implementation of e- logbook for small scale fisheries in Indonesia during October–December 2019. This cooperation is based on the background that until September 2019 there have been 6 200 vessels registered and have activated the e- logbook. PSDI-MMAF was targeting that until the end of 2019, vessels that use e-logbook would reach 10 000. This helps systematic data collection, the base for a good fisheries management.

ISLME project collaborates with UNRAM to assess lobster status in FMA 573



View of coastal and marine of Lombok Island

Southern coast of NTB is part of Fisheries Management Area (FMA) 573. However, it is realized that the utilization of lobster resources has to be managed well, following the principles of sustainable fisheries. ISLME-FAO supported University of Mataram (UNRAM) to carry out assessment of lobster fisheries management based on indicators on Ecosystem Approach to Fisheries Management (EAFM) in Lombok Tengah District. This was also to identify the main problems in lobster fisheries and gaps in lobster fisheries management. Three bays in Lombok Tengah District which are the center of lobster fishing activities, namely Awang Bay, Bumbang Bay and Gerupuk Bay were assessed using

the 6 domain indicators of the EAFM to measure the current condition of lobster fisheries management in Lombok Tengah District.

The values of each domain can be seen in the following figure of the EAFM assessment. A lesser score of fish resource domain indicates that the fish resource is experiencing scarcity and high threat of extinction due to intense exploitation by catching seeds.

Domain	Description
Fish resources	Less ✓
Habitat and ecosystem	Good ✓✓
Fishing techniques	Medium ✓✓
Social	Medium ✓✓
Economy	Medium ✓✓
Institutional	Medium ✓✓
Aggregate	Medium ✓✓

Figure A: The values of each domain (Unram, 2019)

The low value of lobster resources is not as influenced by habitat conditions and aquatic ecosystems as it is by the activity of catching lobster of the size of seeds. Since the seeds have high economic value in international market, the fishermen tend to catch seed using simple fishing techniques compared to catching lobster of the size for consumption. The lobster resource management should be considered as priority intervention as its value is the lowest compared to the 5 other domains. However, it does not mean that the other domains are well-managed.

Some domains might influence the improvement and enhancement of the lobster resources, and some not. A more in- depth analysis to identify the impacts on the improvement of each indicator in each domain is further needed. These steps need to be taken so that the government can provide an effective and efficient program for the management of lobster fisheries in Lombok Tengah District.

Under ISLME project five locations and fishery commodities are identified for pilot interventions

PKSPL-IPB supported ISLME-FAO to carry out a capacity needs assessment for pilot fisheries areas in seven provinces of Indonesia. This assessment also aimed to formulate an integrated model of project intervention that would suit the need of stakeholders at its best in the proposed pilot sites. Intensive consultative processes were conducted at national level, particularly with Directorate of Fisheries Resources Management, Ministry of Marine Affairs and Fisheries, and others related institution (e.g. DG of Aquaculture, Marine Spatial Planning and Management, Surveillance), and in the 7 provinces; Banten, West Java, Central Java, East Java, West Nusa Tenggara, East Nusa

Tenggara and East Kalimantan related to 5 groups of fishery, i.e. blue swimming crab, snappers and groupers, small pelagic fish, lobsters, and mud crab.

The program of Ecosystem Approach to Management (EAFM), Ecosystem Approach to Aquaculture (EAA), and Marine Protected Area (MPA) management is strongly integrated in a certain marine area under Marine Spatial Planning (MSP). Those four components of the project intervention is implemented in frame of Ecosystem Approach which should harmonize with other economic activities in the ecosystem. The integrated general model for the project intervention is presented in Figure A.



Figure A: The integration general model for the project intervention in the priority sites (PKSPL, 2019)

This study recommended that the priority location for the 5 fishery commodities and sites are: snappers and groupers fisheries recommended to be developed in Lamongan and Bontang Regencies, blue-swimming crab fisheries in Demak Regency, lobster fisheries in East and Central Lombok, small pelagic fisheries in East Flores Regency, and mangroves crab fisheries in Kutai Kertanegara Regency. Furthermore, this study has also recommended the priority framework program in the sites and commodities presented in the Figure B.

Priority fisheries (commodity)	Priority locations	Priority recommended programs (umbrella/framework programs)
Snapperr and grouper	Lamongan District	Implementation of EAFM, Implementation of EAA, implementation of MCS, implementation of marine conservation
	Bontang Regency	Implementation of EAFM, implementation of MCS, implementation of MPA
Blue-swimming crab	Demak District	Implementation of EAFM, implementation of MCS, implementation conservation program
Lobster	East Lombok District Central Lombok District	Implementation of EAFM, Implementation of EAA, implementation of MPA (marine conservation)
Small pelagic	East Flores District	Implementation of EAFM, implementation of MPA, implementation of MCS
Mangrove crab	Kutai Kertanegara District	Implementation of EAFM, Implementation of MPA, (mangrove conservation), implementation of EAA, implementation of MCS

Figure B: Priority framework program in the sites and commodities (PKSPL, 2019)

Starting the ISLME transboundary diagnostic analysis (TDA)

Oceanography, marine environment/ecosystems, ecosystem status/impacts. Fisheries and aquaculture (resources, production, impacts, trends).

Socio-economics, livelihoods and gender. Governance, legal frameworks, institutions (EAFM/EAA, EBM, ICM). Ecosystem services valuation.

Component 1 of the ISLME project is on identifying and addressing threats to the marine environment including unsustainable fisheries. The overall objective of this component is to develop and seek the endorsement of a Strategic Action Programme (SAP) that will alleviate the pressures on the marine ecosystem (Outcome 1.2). The development of the SAP will be underpinned through a detailed Transboundary Diagnostic Analysis (TDA) to be endorsed by stakeholders and that will identify both transboundary and shared threats to the marine ecosystem within the ISLME (Outcome 1.1). The project is at this point in the process of engaging service providers and consultants to carry out the thematic studies for the TDA. The thematic studies are in the areas of:



Typical of coastal area in Indonesia

Inputs will be sought and taken from the National Scientific Advisory Group (NSAG) to be constituted both in Indonesia and Timor-Leste, and the Regional TDA technical working group (to be formed by the two NSAGs together) at different stages of TDA development starting from the thematic studies. The thematic studies will be done by service providers/consultants who will seek information and data from all Government and other reliable sources. Apart from taking inputs from NSAG and Regional TDA technical working group by mail exchanges, virtual meetings, direct workshops with these advisory bodies and wider stakeholder groups are proposed after the situation due to COVID-19 outbreak improve.

It will include developing a causal tree, analysing causal chains to identify direct and indirect drivers that lead to the loss of ecosystem goods and services; and analysing institutions, laws, policies and projected investments. The steps involved are: 1. determine the overarching drivers of ecosystem degradation and loss of ecosystem services; 2. for each sector, identify the indirect and direct biophysical, socio-economic, legal and political drivers of ecosystem degradation; and 3. link each sector to impacts on ecosystem.

A lead TDA writer takes the responsibility of putting the TDA together considering all inputs from all sources mentioned above for a final approval by both governments. All are encouraged to send any data or information that may be useful for the ISLME TDA to ISLME Regional coordinator, Muralidharan.ChavakatManghat@fao.org. The references that may be used will be duly acknowledged.

Developing capacity on the ecosystem approach to fisheries management in Timor-Leste

As part of the GEF/FAO Project “Enabling Transboundary Cooperation for Sustainable Management of Indonesian Seas (ISLME)”, the FAO in partnership with the IMA International organized and conducted an intensive training on the Ecosystem Approach to Fisheries Management (EAFM) in Dili, Timor-Leste.



Participants of EAFM training discuss about fisheries resources status in Timor-Leste

The 26 participants of this 5 day training were from relevant government institutions, NGOs, community members and academia from 25 November to 2 December 2019. ISLME project-EAFM training took place at the ETDA Training Center and was followed by Training of Trainers to 7 selected participants at FAO premises from 3 to 4 December 2020 in Dili, Timor-Leste. As follow up of the EAFM training, the project had delivered a EAFM training workshop from 18 to 20 March 2020 in Batugade Administrative Post. The participants were from fisher groups, women groups and conservation groups. A total of 25 (20 male & 5 female) participants attended this 3 day workshop training. The main objective was to ‘understand the concept and need for Ecosystem Approach to Fisheries Management (EAFM), and acquire skills and knowledge to develop, implement and monitor an “EAFM plan” to better manage capture fisheries’. A draft EAFM plan was also developed. The workshops in the remaining two locations will be conducted after the COVID-19 pandemic emergency situation is over.

EAFM workshop in Balikpapan: EAFM Learning Center of the University of Lambung Mangkurat (UNLAM) East Kalimantan conducted a FocusGroup Discussion related to Mangrove Crab Fisheries management in WPP 713. This FGD also successfully proposed Action Plan for Management Interventions in Fisheries Management Area (FMA/WPP) 713. This event was supported by the Provincial Marine and Fisheries Services of East Kalimantan Province and ISLME Project-FAO Indonesia. The FGD was attended by fisheries stakeholders of mud-crab in District of Kutai Kartanegara and takes place in Balikpapan, 4 March 2020.



Nursalam Nohong facilitates the EAFM Workshop

Nursalam Nohong, a member of UNLAM's EAFM Learning Center said that the reason why mud crabs are the focus of the FGD because of its status as the second largest potential fisheries of East Kalimantan Province compared with other provinces of Indonesia. "Secondly, also because of the existence of the Mahakam Delta area rich in mangrove. This is an important factor for the existence and survival of mud crabs. In addition, there is the need of its sustainable to maintain its potential, to maximize access to resources by fishermen or cultivators and maintain its sustainability," Nursalam added.

ISLME project highlights



Coastal area in FMA 714 of Indonesia

The Indonesian Seas Large Marine Ecosystem region covers an approximate total of 2.13 million km² (98 percent in Indonesia's territorial waters, and 2 percent in the territorial waters of Timor-Leste).

It is at the heart of the western IndoPacific marine bio geographical region, where species richness is greater than in any other location on earth including corals, fish, marine mammals, mangroves, sea grasses and seamounts. ISLME is a home for mega biodiversity and fisheries. Fisheries contribute significantly to livelihoods, food and nutrition security, and the local economies of coastal communities in both countries. In Indonesia, the capture fisheries production in the region reached 2.9 million tons or approximately 48 percent from national capture fisheries production (Capture Fisheries, 2016). Timor-Leste has envisaged the National Aquaculture Development Strategy (NADS) 2013-2030 to provide up to 40 percent of the country's fish production from aquaculture. Both countries have mega biodiversity richness of ISLME and are part of Coral Triangle Initiative (CTI). ISLME regions is rich with 2 500 species of marine fish, 500 species of reef corals, 13 species of sea grasses, 47 species of mangroves and 10.82 percent of the world's coral reefs. There are 5 big threats found so far, these are IUU Fishing, fishing pressure, habitat degradation, pollution and climate change. In dealing with the threats, GEF/FAO is implementing ISLME Project to enable transboundary cooperation for sustainable management of the Indonesian seas. The FAO led GEF project "Enabling transboundary cooperation for sustainable management of the Indonesian Seas" is designed to strengthen regional cooperation and support the effective and sustainable management of the ISLME region.



Sustainable fisheries management is a big issue in the ISLME region

This project will play a catalytic role in addressing transboundary concerns by assisting Indonesia and Timor-Leste to restore and sustain coastal and marine fish stocks and associated biodiversity. This will be achieved through collaborative development and subsequent implementation of a Strategic Action Programme (SAP). ISLME project covers three key components, namely, identifying and addressing threats to the marine environment including unsustainable fisheries, strengthening capacity for regional and sub-regional cooperation in marine resources management and thirdly, coordination with regional information networks, monitoring of project impacts, and dissemination and exchange of information. There will be an agreed upon and endorsed Transboundary Diagnostic Analysis (TDA) and Strategic Action Programme (SAP) for the ISLME region.

ISLME snapshots



Participants of the 2nd regional steering committee meeting



Dr Besweni (PSDI-MMAF) and Mr. Muralidharan ChavakatManghat (Regional Coordinator of ISLME project) addressing the national writeshop of ISLME



Minister Edhy Prabowo visits ISLME Project-FAO Indonesia booth during the stakeholders meeting on harvest strategy



Dr Muhammad Lukman, ISLME National Project Officer (Indonesia), delivers his presentation in the FGD on mud-crabs



Participants of the FGD on mud-crabs management in FMA 713, East Kalimantan, Indonesia



Field work of the EAFM training participants in Timor-Leste



Global Environment Facility



Ministry of Marine Affairs and Fishery (MMAF) Indonesia



Ministry of Agriculture and Fisheries (MAF) Timor-Leste

Contact information:

ISLME project - FAO office
Menara Thamrin 7th Floor Jl. MH Thamrin Kav. 3, Jakarta 10250,
Indonesia Telp. (+62) 021 298 0230 Fax. (+62) 021 390 0282
<http://www.fao.org>



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