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Project News:
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Strengthening coastal and marine resources management **GCP/RAS/289/GF**

MMAF, FAO set off ecosystem approach to Blue Swimming Crab (*Rajungan*) fisheries in Demak, Central Java

Blue swimming crab (*Portunus pelagicus*) is an important economic fishery resource. Java Sea Waters (FMA 712) as one of key producer areas, contributing around 44 percent of total national production, has seen a declining blue swimming crab stock and resources in nature due to continued harmful fishing practices.

To ensure the sustainability of blue swimming crab, the Directorate of Fish Resource Management (PSDI) MMAF through GEF/FAO-supported the Indonesian Seas Large Marine Ecosystem (ISLME) project set off ecosystem approach to fisheries management (EAFM) intervention for blue swimming crab fisheries in Demak Regency, Central Java Province. The intervention was driven from a long series of comprehensive EAFM assessment and discussions, considering effectiveness and appropriateness, since the project inception.

EAFM is one of the principles used in developing Indonesia Fisheries Management Plan (FMP or *Rencana Pengelolaan Perikanan*): area-based fisheries management - FMA (WPPNRI) and species-based fisheries management (commodity). The EAFM is specifically stated in the latest Minister of Marine Affairs and Fisheries regulation (PERMEN KP) No. 22/2021 on development of Fisheries Management Plan (RPP) and Fisheries Management Council *(Lembaga Pengelola Perikanan)* in the fisheries management areas of the Republic of Indonesia.

A woman in Purworejo village handling blue-swimming crab in a miniplant.

There are in total 11 FMAs, of which four (WPP 712, 713, 714 and 573) are priorities of the GEF/FAO ISLME project intervention. The EAFM interventions are focused on improving fisheries management of certain fisheries commodities including blue swimming crab, mud crab, lobster, snappers, and groupers.

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The path of ecosystem approach to blue swimming crab fisheries

During the 1st National Project Steering Committee meeting on 6 March 2019 in Bogor, West Java province it was determined that fisheries improvement interventions are to be implemented in selected pilot sites representing selected FMAs. A capacity needs assessment by PKSPL IPB University was then conducted in 2019 to recommend the best-fit sites and Demak Regency in Central Java province was selected as pilot site for EAFM intervention, particularly for improving blue swimming crab fisheries.

The EAFM Learning Center of IPB University carried out an EAFM Assessment for the Blue Swimming Crab fishery in Demak in 2020. The results were then mapped out as the basis for the management intervention to be implemented in Demak. To increase synergy of key stakeholders for improving fisheries management, a workshop on synchronization and harmonization of ISLME project activities for blue swimming crab, snapper and grouper commodities at FMA 712 was undertaken on 4–5 February 2021.

Afterwards, PSDI-MMAF carried out a mission to Demak (Purworejo village and Tambak Polo village) in Central Java Province on 5–9 April 2021 to prepare EAFM intervention for improving blue swimming crab at the ISLME project pilot site. The mission introduced the scope of proposed EAFM intervention to the provincial and regency governments to improve communication with target stakeholders and fishers in the designated villages of Demak, identify the best approach to implement the proposed EAFM intervention, undertake a rapid field assessment for risk analysis of potential factors that might affect the implementation including impact of COVID-19, identify other potential interventions of blue swimming crab fisheries habitat enhancement and gender empowerment in the blue swimming crab fishery.

The Demak government and the village communities welcomed the plan for the EAFM intervention. The PSDI-MMAF held coordination meeting during the mission, attended by the following: Head of Marine and Fisheries Agency of Demak Regency, Head of the Capture Fisheries Division, Head of the Morodemak Fishing Port (PPP Morodemak), Section Chief Control of Fishing, Directorate for Fishing Vessels and Gears, Head of the Strategic Planning Section of the Bonang District, Head of Purworejo Village, Fishermen from Purworejo and Tambak Polo villages, representatives of Indonesian Association for Blue Swimming Crab (APRI), fishery extension officers at the Marine and Fisheries Agency of Demak Regency, also sub-coordinator and staff for Inland Sea, Territorial and Archipelagic Waters of the SDI MMAF. The coordination meeting and mission successfully identified potential sites for the blue swimming crab EAFM intervention and verified the proposals for activities involving the community.

Actions for sustainability

Blue Swimming Crab is generally caught by fishermen with a vessel size of <10 GT and considered as small-scale fisheries. It must be managed properly for the sustainability of the resources. During the mission, the PSDI-MMAF team stressed the urgency of fishers' compliance to applicable regulations, including the MMAF Regulation No. 59 of 2020 on fishing tracks and fishing gears/lanes in the fisheries management areas of the Republic of Indonesia and the high seas. This regulation is about regulating fishing gears in certain zones/lanes.

One of the proposed interventions is to strengthen data collection by improving capacity of fishermen and fisheries extension officers as well as staff of the Marine and Fisheries Agency of Demak Regency as the main data collectors. The other intervention is to strengthen Community Group Surveillance (POKMASWAS) and joint patrols to improve compliance to applicable regulations and to strengthen fishing groups.

Recommended Priority Actions

- **Improved catch data collection and monitoring**
- **Habitat improvement by integrating climate change mitigation strategy**
- **Technical assistance for micro-economic aids and development for fishing community**
- **Minimize conflict among fishermen**
- **Increased stakeholder participation in blue swimming crab/rajungan fishery management**
- **Improved fishers' compliance to appropriate regulations; and their enforcement by authorities**

FAO-MMAF 2020 EAFM Assessment for Rajungan Fisheries, conducted by IPB University

Assessment recommendations steer efforts to sustainable fisheries and coastal natural resources management in Timor-Leste

Batugade, Beacou and Metinaro in Timor-Leste are pilot sites for the ISLME project. A needs-assessment was conducted early 2021 and the findings stress on improving coordination among relevant ministries and with stakeholders to enhance the implementation of ecosystem-based management for fisheries, aquaculture, and protection of coastal and marine ecosystems.

Strengthening coordination at various levels: structural, policy and regulatory, and with inter-sectoral stakeholders should be a top priority, the assessment said. A well-established communication and coordination mechanism between the Ministry of Agriculture and Fisheries (MAF) and Ministry of State Administration (MSA) of the current administration is necessary for decision making process and program implementation.

Building a better coordination with intersectoral stakeholders in the policy and regulation level in the fisheries, aquaculture and marine/coastal resources will improve policy formulation process in the sector's four major components: conservation and protection; food and nutrition security; sustainable diversification of livelihoods; and responsible management.

In addition, since the fisheries and marine/coastal programs are under the responsibility of the General Directorate of Fisheries at the municipality level, a well-established coordination mechanism between the General Directorate of Fisheries under MAF and the president's authority of the municipality under MSA is necessary. Furthermore, strong engagement of fisheries stakeholders, including government agency, donors, the United Nations organizations, international and local NGOs at coordination forums should be fostered to ensure robust partnership and facilitate well-targeted resource mobilization in the fisheries and coastal resource management.

The assessment also identified other recommendations to address the current program challenges:

- Invest in research and trainings. MAF has been focusing more on the operational aspect and not enough attention and resources given to research, training, organizational development, and cooperation.
- Develop a strategic plan to promote coastal community engagement. This should include trainings and educations to enhance coastal community awareness, skills and their participation for improved ISLME project implementation at the selected sites.
- Formulate favorable policies to protect and support the small fishing community and coastal community, in general.
- Establish a stakeholders coordination body within the Secretary of State for Fisheries need to be considered.

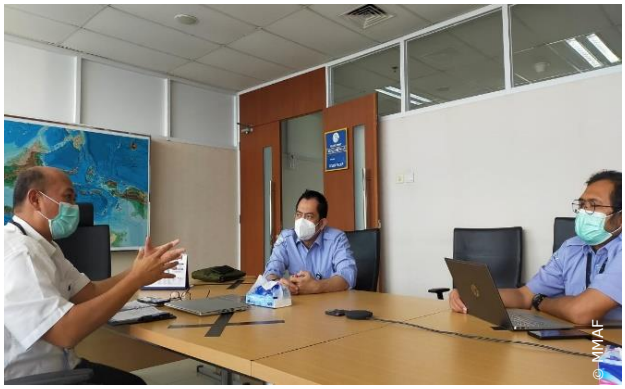
The ecosystem-based approach to fisheries is a way of managing fisheries and aquaculture that balance ecological and economic objectives. The ecosystem-based approach management includes Ecosystem Approach to Fisheries Management (EAFM), Ecosystem Approach to Aquaculture (EAA), Marine Protected Area (MPA), and Marine Spatial Planning (MSP).

Within the specific context of Timor-Leste, the existing fisheries and marine/coastal resource management such as conventional fisheries management, integrated coastal management, co-management, and MPA can be integrated into EAFM. The EAFM and EAA can be further integrated. The integration of EAFM and EAA operates within MSP, and this integration needs to be coordinated and harmonized with other development sectors.

The capacity needs assessment was initiated to (1.) get a thorough understanding on institutional capacity needs in Timor-Leste with a detailed assessment of enabling environment; existing policies and regulations and their implication at the grassroots level; key government organizations; their mandates and roles, organizational structure and coordination mechanism, including mapping of fisheries stakeholders. (2.) to propose best alternatives for an integrated ecosystems-based approach to fisheries and marine/coastal resource management such as Ecosystem Approach to Fisheries Management (EAFM), Ecosystem Approach to Aquaculture (EAA), Marine Spatial Planning (MSP), and Marine Protected Area (MPA) at the ISLME project sites.

Data and information used in this assessment were collected through a review of grey literature and stakeholder consultations both at the national, municipal and community levels.

MMAF aims to strengthen the capacity of regional fisheries surveillance



Meeting with MMAF Director of Fisheries Surveillance Mr Drama Panca Putra.

MMAF Director of Fisheries Surveillance Mr. Drama Panca Putra encourages intensifying capacity building program to strengthen regional fisheries surveillance (26/4).

"Support should be provided especially to the municipalities and districts to recruit fishery enforcers," Drama said in a meeting with GEF/FAO ISLME National

Project Officer, Muhammad Lukman and Communication Consultant, Kamaruddin Azis at MMAF.

This was a follow up on the ISLME project-supported National Coordination Meeting for Developing Alignment Surveillance Mechanism of Combatting IUUF and Improving Fisheries Regulation Compliances of the Indonesia Sea Part 1: Fisheries Management Areas (FMA) 713 for Snapper/Groupers and Mud Crab Fisheries in Balikpapan, 30th November – 2nd December 2020.

MMAF, Mr. Drama said, is currently focusing on overseeing the policies of the Minister of Marine Affairs and Fisheries on the implementation of the Law of Job Creation *(UU Cipta Kerja).*

“Currently, we focus on strengthening surveillance institutions to ensure good coordination and effective implementation of Job Creation Law, including its socialization. We focus on this because it relates to the surveillance of fisheries as permits are granted by the regions, both provincial and regional or municipalities and districts," he said.

"Therefore, building the capacity of regional fisheries surveillance enforcers is a must. The regulation or trainings from the Central Government alone cannot solve the problem. We must build the regions’ capacity for surveillance. Not all regions have enforcers unit nor are there sufficient regional regulations (PERDA) related to the surveillance of these resources," he explained.

“We hope that there will be provincial and district meetings regarding this capacity building issue where ISLME project could contribute. For example, focus on supervision in the Fisheries Management Area 713 or 714. Surveillance capacity is the key to managing our fishery resources,” he added.

Drama said that currently there is no significant and effective coordination hub between districts or municipalities and provinces. “The provincial government has the authority to provide guidance to districts and municipalities. So it is necessary to look at the current position of surveillance personnel to oversee the implementation of the mandate of the Job Creation Law," he concluded.

Meanwhile, Mr Muhammad Lukman, NPO for ISLME Project said that one of the recommendations from the national coordination meeting was the need for strengthening coordination of the provincial and district or municipalities governments with other relevant institutions, including the Ministry of Home Affairs (MOHA) to find better arrangement and support to fisheries surveillance operations.

“The ISLME project can support activities that are aimed at increasing the capacity of surveillance personnel in the regions, districts and municipalities. The project components require and promote good coordination, communication, and capacity of surveillance enforcers including, for instance, community-based surveillance group in villages in the ISLME project sites," he said.

The meeting highlighted the urgency to prepare a joint activity between the ISLME project team and Fisheries Surveillance of MMAF for capacity building.

Standardized multi-stakeholder data collection and consolidation needed for better fisheries management

The availability of reliable fisheries data to support management policies is one of the recommendations from the ISLME-supported EAFM Assessments on blue swimming crab in FMA 712 and snapper and grouper in the FMA 712 and 713. MMAF encourages the use of standardized, multistakeholder data collection and consolidation.

As an initial effort in mapping data-related challenges and solutions, the Directorate General of Capture Fisheries (DGCF) of the MMAF through the Directorate of Fish Resources Management (PSDI) under the ISLME project held a focus group discussion (FGD) on Consolidation of Fisheries Data for Blue-swimming Crab, Snapper and Grouper in Bogor City from 28th to 30th April 2021.

In her opening remark, Dr. Besweni from the PSDI-MMAF highlighted the strategic importance of the ISLME project EAFM intervention for Blue Swimming Crab, Snapper and Grouper and reliable data is needed for evidence-based, well-targeted fishery management and policies under the ISLME project.

“Data consolidation is needed to address gaps in data collection between MMAF, government, and partners,” she explained.

The FGD established a consolidated data matrix/format to standardize basic data collection for multi-stakeholders and aligned with data needed by SDI-MMAF. The format would be piloted as ISLME EAFM intervention in Demak regency for blue swimming crab fisheries and in Lamongan for the snapper and grouper fisheries in FMA 712.

The FGD participants represent various relevant data producers/organizations, including relevant MMAF institutions such as data and information center of the MMAF, DGCF data center, and Fishing Port Information Center (PIPP) DGCF MMAF, from National Commission on Fisheries Assessment (KOMNASKAJISKAN), and other

relevant MMAF partners including APRI (Blue Swimming Crab Association), ADI (Demersal Association), Yayasan Konservasi Alam Nusantara (YKAN), Environmental Defense Fund (EDF), Sustainable Fisheries Partnership (SFP), and Wildlife Conservation Society (WCS). The FGD was facilitated by Dr. Am Azbas Taurusman and Dr. Sugeng Hari Wisudo from IPB University.

Several gaps identified include among others, standardization of data format and methods required for management analysis such as for harvest strategy parameters i.e., CPuE, Spawning Potential Ratio (SPR), Reference Point (consisting Target Reference Point, Trigger Reference Point and Limit Reference Point), Maximum Sustainable Yield and Maximum Economic Yield. In addition, addressing gaps in data collection from both non-ports and at-ports sources will ensure access to comprehensive data.

Multisectoral coordination forums to be amped up for improved partnership, resource mobilization in grouper and snapper management in East Java

Meaningful sharing of field observation, experience and expertise is key ingredient to transform coordination meetings into a strategic forum to mine multistakeholder data, strengths and resourcefulness. It allows adaptive decision making to address the complex challenges in the grouper and snapper management in FMA 712.

Dr Besweni said various data and information can be shared and discussed in coordination forums and they are useful to update multisectoral actors and to understand the latest condition in grouper and snapper management in FMA 712.

"Moving forward, coordination forums can be amped up to optimally tap into stakeholder-MMAF collaboration for win-win solutions and sustainable fisheries. With strong collaboration, Lamongan in East Java Province will be at the forefront in (grouper and snapper) fisheries management with positive impacts on fishermen's welfare and protection of the environment," she said.

The MMAF through the Directorate General of Capture Fisheries, Directorate of Fish Resource Management held an East Java grouper and snapper management coordination meeting, on 21 May 2021. Lamongan Regency is a pilot project area for the management of snapper and grouper commodities in FMA 712.

FAO ISLME NPO Dr Muhammad Lukman stated that a visit to Lamongan is conducted to meet and consult with stakeholders. "We can learn from them. It was raised in the meeting that fishing vessels from East Java, fish in other FMAs in eastern Indonesia. We can find out why. We can gather stakeholders' ideas on how EAFM intervention can encourage better fish resource data collection in the future for policy making process," he said.

The coordination meeting was attended by the working unit of the Directorate General of Capture Fisheries, the Directorate General of Aquaculture, the Directorate General of Marine Spatial Management and the DG Surveillance including the Head of the Archipelago Fisheries Port (PPN) Brondong and the PSDI Coordinator for Inland Sea, Territorial and Archipelagic Waters. Additionally, the Indonesian Demersal Association (ADI), the Sustainable Fisheries Partnership (SFP), the Yayasan Konservasi Alam Nusantara (YKAN) and the GEF FAO ISLME project team participated.

In the meeting, data and information related to grouper and snapper fishing activities in Lamongan Regency were gathered. It was acknowledged that Brondong Fishing Port is a very active trade route for grouper and snapper. The report of YKAN shows that Brondong Fishing Port is one of the largest in Indonesia and is an active landing base for grouper and snapper. Grouper and snapper landing volume was sustained by 285 vessels fleet with a size of 10 to 20 GT, with an average trip of 10 days and could catch between 200-1 000 kg in a day. The area of operation is in FMA 712. Main buyers of grouper and snapper are PT Kelola Mina Laut and Bahari Nusantara Biru Laut companies.

One of the villages highlighted is Kandang Semangkon village with 42 boats targeting grouper and snapper. There are fishers operating 16 vessels ranging in size from 9 to 25 GT, who agree to participate in data collection. They fish around Makassar Strait and an average trip catch between 500 to 1 000 kg. It was agreed that grouper and snapper management assistance is provided to two villages in Paciran District, namely Kandang Semangkon and Belimbing; and another two in Brondong District, namely Brondong and Labuhan villages as grouper-based farming villages.

ISLME project launches a pilot initiative to better marine debris management at fishing ports and their surroundings

Marine debris, in particular marine plastic debris, is a huge challenge in capture fisheries. In fishing ports and its surroundings area, the use of plastic material, including plastic bags are still widespread in the fisheries supply-chain. Improving the capacity of around 500 fishing ports nationally to properly manage marine debris would be a strategic move to support national efforts to address the issue.

The Government of Indonesia released in 2018 a National Action Plan 2018–2025 (NAP) on handling marine debris endorsed by Presidential Regulation (PERPRES) 85/2018. The NAP marine debris consists of 5 strategies including, inter alia, strategy in increasing stakeholder awareness (strategy 1), and coping with coastal and marine debris (strategy 3).

The NAP 2018 emphasizes on the role of ministries, local government, and national institutions in sharing efforts and budget to set up activities. MMAF is encouraged to improve facilities and infrastructure of waste management at fishing ports, and if it is possible to get certification on the ISO 14001 for waste management at the fishing ports.

To introduce Standard Operating Procedure (SOP) for plastic waste management from fishing and aquaculture activities, among the suggested measures include increasing bilateral collaboration on transboundary marine debris and encouraging broader stakeholders to take a real action on beach cleaning. MMAF includes, as its priority, debris management and reduction as spelt out in MMAF strategic plan 2022 – 2024.

Aligning with MMAF plan, the ISLME project starts a pilot initiative, focusing on a fishing port and its surroundings for nationwide implementation. This initiative stresses on raising public awareness, fostering stakeholders' participation and facilitating joint effort to improve marine debris management. The use of economic incentives-based approach needs to be considered to boost motivation.

At the planning stage, the ISLME project team and MMAF meet to discuss possible interventions on marine debris management at fishing ports in ISLME pilot site. The discussion was attended by coastal fishing port (PPP) Morodemak as one of potential pilot sites. A series of activities to improve public awareness and foster active community engagement are designed and planned to ensure effectiveness.

FAO-supported scoping studies in Timor-Leste set directions for sustainable aquaculture and fisheries development

Two scoping studies were carried out in the pilot areas of Beacaou, Batugede and Metinaro on (1.) promoting sustainable coastal aquaculture and (2.) promoting sustainable fisheries with an ecosystem approach. The studies were led by Mr Horacio Guterres and Mr Celestino da Cunha Barreto, directors in the Ministry of Agricuture and Fisheries (MAF).

The aquculture scoping study looked into the initiatives made in the pilot areas before and after independence focussing on initiatives by the government, development agencies, donors and private sector.

Various trials with culture of milkfish, shrimp and crab in brakishwater ponds, seaweed culture and cage culture of fishes in coastal water were tried out at various points. Of this, seaweed culture showed better success and sustainability, with scope for better export market promotion and value addition. The brakishwater milkfish culture did not take off well owing to lack of hatchery-produced seeds. Shrimp farming, crab culture and other barkishwater and coastal aquaculture activities also need national level hatchery production of seed and locally-produced quality feeds for long-term support.

The scoping study also recommends to build on the existing seaweed culture for implementation in the pilot areas by organizing fishers especially women, and training and starting pilot seaweed culture units.

The scoping study for sustainable fisheries showed that the Timor-Leste fisheries predominantly consist of small-scale fishers. Sustainability, the study found, is very much dependent on protecting the natural habitats such as mangroves, coral reefs and sea grass beds. It highlighted the need for co-management integration into the ecosystem approach and promoting habitat management.

The study proposes to strengthen the existing and promoting new marine protected areas (MPAs) with some recommended measures for habitat enhancement.

Meeting with Director Agriculture Municipality

The Indonesian Seas Large Marine Ecosystem (ISLME) Transboundary Diagnostic Analysis (TDA) to build on thematic studies

The thematic study for the ISLME TDA for Indonesia is completed. It describes the features of the ISLME within Indonesian waters, covering Fisheries Management Areas: 712, 713, 714, 715 and part of 573. The thematic study covered the four thematic areas for the Indonesian waters of ISLME:

Environment - oceanography, productivity, climate, ecosystems/seascapes, habitats, biodiversity, marine resources, ecological connectivity and ecosystem health/status (biodiversity decline, pollution, over-exploitation, ecosystem health, and climate change).

Fisheries and aquaculture - fisheries/aquaculture (nearshore and offshore), resources, production, value, status of stocks, impacts, trends and fisheries management (co-management, illegal, unreported and unregulated [IUU], overcapacity, compliance, Ecosystem Approach to Fisheries Management [EAFM], and Ecosystem Approach to Aquaculture [EAA]).

Socio-economics - human development, key economic sectors and livelihoods (e.g. fisheries and aquaculture), socio-political and economic drivers, and gender analyses.

Governance - Ecosystem-Based Management (EBM), EAFM, and EAA governance, legal frameworks, institutions, key programs, gaps and priorities (including Marine Protected Areas [MPAs], Marine Spatial Planning [MSP], Integrated Coastal Management [ICM] and data management).

A similar thematic study for Timor-Leste and another on ecosystem services valuation (ESV) are close to completion. These thematic reports are forming the basis of the TDA under preparation.

An online ISLME stakeholder analysis and causal chain analysis are the immediate steps to be completed before the draft TDA is validated. Prof Karen Edyvane of Charles Darwin Unversity is leading the process. The National Scientific Advisory Groups (NSAG) are playing an important role in the process as well as regional and national stakeholder consultations.

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