



Indonesia and Timor-Leste join forces for ISLME’s sustainability

Experts from Indonesia and Timor-Leste made meaningful progress in ISLME Strategic Action Programme (SAP) development

During an intensive 2-day meeting in Bogor, Indonesia, 26–27 June 2023, fisheries and marine authorities and experts from Indonesia and Timor-Leste made meaningful progress in identifying feasible ideas and interventions with estimated targets and timeframe for the formulation of the ISLME Strategic Action Plan (SAP) to address the five primary environmental concerns identified by the findings of the Transboundary Diagnostic Analysis (TDA).

“The project made several good achievements such as the formulation of the harvest strategies for lobster, Blue Swimming Crab, snapper and grouper; and fisheries management plans for the fisheries management areas 712, 713, 714 and 573, and technical meetings for policy discussions. However, we still have some national activities pending due to COVID-19 and the finalization of the TDA and SAP. So hopefully we can receive continued support to finalize these strategic activities,” said Fery Sutiyawan MMAF Technical Coordinator. He was referring to the TDA, a core project document that identifies transboundary

threats to the ISLME sustainability. The TDA findings will be the basis for the formulation of the SAP that lists key initiatives to address the threats. Both TDA and SAP documents are currently under development in close consultation with a pool of national experts in Indonesia and Timor-Leste and with other key stakeholders; and are scheduled for completion in the third quarter of 2023.

The Bogor workshop is a follow up of the earlier regional workshop held in Bali on 25–27 May 2023 wherein the ISLME TDA document was finalised. The SAP formulation process is done in parallel with the finalization of the TDA. “This is positive progress achieved during this intensive discussion. I am optimistic that we can flesh out meaningful, innovative initiatives for the sustainability of the ISLME region,” said ISLME TDA/SAP guide and former Bay of Bengal LME Senior Technical Advisor Rudolf Hermes who guided the discussions.



One of the thematic group discussions



The ISLME region is known for its **mega marine biodiversity**. It is part of the Coral Triangle Initiative (CTI) with 2 500 species of marine fish, 500 species of reef corals, 13 species of sea grasses, 47 species of mangroves, 10.82 percent of the world's coral reefs and 0.76 percent of the world's seamounts (Sea Around Us, 2007). It has **high fisheries productivity** contributing over 1 percent of the total global production and is key for **global climate regulation** with the warm waters of the ISLME act as a 'heat engine' of global atmospheric circulation with complex ocean-atmospheric dynamics. The region offers huge ecosystem services and goods that are crucial for the wellbeing of 185 million people, relying on its resources for livelihood, food and transport among many others.

The meeting was participated by the Ministry of Marine Affairs and Fisheries (MMAF) of Indonesia, the Ministry of Agriculture and Fisheries (MAF) of Timor-Leste, expert members of the National Scientific Advisory Groups (NSAGs) of both countries, a team of experts from the Padjadjaran University and was facilitated by FAO ISLME Regional Coordinator CM Muralidharan. The discussion began with finalizing the visions, goals and objectives for SAP and then the expert participants broke into groups to discuss potential initiatives, innovations and opportunities for the five PECS, namely the (i) Unsustainable fishing and aquaculture practices, (ii) Degradation and loss of key marine habitats, (iii) Marine and land-based pollution, (iv) Decline and loss of biodiversity and key marine species and (v) Impacts of climate change.

Among key initiatives discussed were the need for improvements in various aspects, i.e. capacities of small-scale fishers/farmers and their compliance, capacity for responsible fishing and aquaculture practices, Monitoring-Control and Surveillance (MCS), effective Marine Protected Areas (MPAs) management, waste management, addressing Illegal, Unreported and Unregulated (IUU) Fishing, climate change mitigation and adaptation as well as traditional co-management. The meeting participants also agree to strengthen transboundary cooperation through joint activities on IUU fishing, MPA and other conservation matters. Improving the role of community-based fisheries watch (*Pokmaswas*) in Indonesia and *Tara Bandu* in Timor-Leste is also needed so they can help flag potential issues in their respective areas and address them.

The Timor-Leste delegation met separately on the third day to fine tune the general and specific objectives of the SAP for further elaboration into its National Action Plan in the near future in close consultation with Timor-Leste stakeholder.

Timor-Leste develops National Action Programme (NAP) to protect its north coast ecosystems



TDA Guide Rudolf Hermes (top left) and Timor-Leste fisheries and marine authorities and stakeholder.

Following the preparatory meeting for Timor-Leste National Action Plan (NAP) in Bogor, Indonesia, Timor-Leste with FAO support, held a wider stakeholder consultation workshop, part of the ISLME Strategic Action Programme (SAP) process and to develop its National Action Program (NAP). The workshop, held in Dili, Timor-Leste on 30 June 2023, was attended by 33 participants representing a wide range of stakeholders from key government agencies, NGOs, academia, other development partners, and FAO.

Ms. Paula Lopes da Cruz, Assistant Representative of FAO, recalled the background of the ISLME Project and stressed the importance of the SAP and NAP to guide efforts to protect the country's north coast ecosystems. The meeting was formally opened by Mr. Acacio Guterres, Director General of Fisheries, Aquaculture and Marine Resources (DG-PARM), MAF, followed by a brief presentation on the four meeting objectives, namely to inform the stakeholders on the status of completion of the TDA; to share information from the two regional meetings, held in Indonesia (Bali and Bogor) on the SAP formulation: the vision, goals, and objectives; to agree on key steps for the formulation of TL-NAP and the SAP; and to formulate actions for the NAP relevant to Timor-Leste based on the agreed objectives. The focus of the workshop was on the 4th objective, the drafting of local NAP action points.

Reporting the outputs of the two earlier Regional Workshops, the TDA-SAP Consultant Rudolf Hermes underlined that the three phases of the SAP development were progressing in parallel or simultaneously: (i) The "Strategic Thinking", the brainstorming of ideas and opportunities (informed by the earlier identified Leverage Points and other ISLME Project outputs and recommendations, as well as the drafting of vision, goals, and objectives; (ii) the "Strategic Planning", the setting of actions, timescales and priorities; and (iii) lastly the actual "SAP drafting". The workshop participants discussed the vision, goals and objectives and confirmed that these are suitable and acceptable.

For the action setting session, workshop participants were divided into two groups, with the first group discussing actions on fisheries, aquaculture and climate change, and the second group dealing with habitats, pollution and biodiversity objectives. The action planning matrix resulting from the preceding Regional Workshop in Bogor served as input for this session. Participants of the two breakout groups discussed the proposed actions, validated them, and provided valuable inputs in form of added detail, e.g. on locations and improved action formulation. For each SAP objective there will be corresponding actions to take place in both countries, some of these actions also are to be undertaken jointly or closely coordinated. Actions addressing eutrophication may not be undertaken in Timor-Leste, as they are not considered so relevant. The groups also examined indicators for monitoring and evaluation. The results of the breakout group work were then presented in plenary, and some additional information for the NAP was generated during this feedback session. Similar work is planned to take place in Indonesia in a few weeks, and then the NAP can be completed in parallel with the drafting and finalization of the ISLME SAP.

ISLME project highlights four years of accomplishments at its Learning Station booth at the GEF Asia Pacific Workshop in Bali

The ISLME project highlighted its experiences in strengthening fisheries policies, national capacity for ecosystem approach to fisheries management and aquaculture (EAFM-EAA) and transboundary cooperation at its project exhibition booth during the GEF-funded Asia Pacific Workshop and National Dialogue Indonesia event in Bali, Indonesia, 10–18 January 2023. At the event, ISLME project was selected as one of the eight learning stations to share project experience and expertise to event participants from Asia Pacific countries.

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Both TDA and SAP documents are currently under development in close consultation with a pool of national experts at Indonesia and Timor-Leste and with other key stakeholders; and are scheduled for completion in the third quarter of 2023.



Workshop participants joined the ISLME Learning Station presentation.

ISLME National Project Officer M. Lukman highlighted the need for small fishers’ empowerment for digital transformation as it contributes to improving their productivity, access to reliable data, evidence-based policy making and to protection of marine and fisheries resources. “The use of technology will also protect small fishers and their safety at sea,” he said. Both Fery and Lukman were presenters for ISLME Learning Station. The event was attended by Vice Minister of Ministry of Environment and Forestry, Alue Dohong, Global Environment Facility (GEF) CEO & Chairperson (former Minister of Environment and Energy, Costa Rica), Mr. Carlos Manuel Rodriguez, State Minister for Environment, Climate Change and Technology, Maldives, Mr. Ahmed Naseer and Permanent Representative of the Independent State of Samoa to the United Nations, Ambassador Aliioaiga Feturi Elisaia and around 400 participants representing governmental organizations, academia, private sector and I/NGOs.

The case for IMTA: learn, grow and inspire

At the event, ISLME’s community-based Integrated Multitrophic Aquaculture (CB IMTA) piloted in West Nusa Tenggara has sparked interests from visitors, including from the Pacific Islands, to learn from ISLME’s experience to explore possible IMTA adoption in their respective areas. The CB-IMTA initiative focuses on farming four commodities in one integrated facility. The four commodities are namely lobsters, silver pomfrets, seaweed and molluscs. The IMTA system allows the waste from lobsters and silver pomfrets to become nutrients for the seaweed and molluscs. The seaweed can be planted in cycles to ensure routine income for small farmers from seaweed harvest every 45 days.

“Best practices on IMTA such as these are very useful for replication in other areas of Indonesia and in other countries as well,” said Country Director of the

International Fund for Agricultural Development (IFAD) Indonesia Mr. Hani Elsadani Salem. Another visitor voiced similar comment. “This (IMTA) initiative is relevant and promising for adoption by the community and it increases (fisheries) productivity,” said Mr. Collin Beck from Ministry of Foreign Affairs, Solomon Islands. He expressed interest in conducting learning visit on IMTA in the future for adoption in his country. The MMAF, with FAO support, is developing a module highlighting i.e. IMTA techniques, financial analysis and permit/license. The module is developed to facilitate wider IMTA adoption by small farmers.

FAO, MMAF promote circular economy for marine plastic waste management at Morodemak Port, Central Java



Situation at the Morodemak Fishing Port

FAO and MMAF team up to promote economic circularity approach to waste management at Morodemak Port in Central Java. The intervention includes establishing a waste bank to maximizing value extraction of the waste through reuse and recycle; and dashboard development to facilitate waste data monitoring for proper management, including future policies. The Morodemak port generates around 128.4 kg of waste daily, including non-biodegradable (38.6kg), biodegradable (29.9kg), fish waste (57kg) and bulky waste (2kg). Some of the fish waste is reprocessed as fish feed, while the remaining fish waste is shredded and discarded to the sea above 12 Nautical Miles. The other types of waste however, have not yet been properly managed due to lack of resources (fund and manpower), public facilities and infrastructure (including waste bins, sites and transport), weak coordination with waste-related authorities, lack of innovation, weak ownership and engagement to the waste issue among stakeholders and local communities. Improved waste management should be a priority especially since the port receives huge amount of waste from various sources: from the port activities, fishing activities, from coastal communities and waste from the river.

Lukman Nur Hakim, Head of the Working Group for Fisheries Port Operation said that cleanliness in and around

the port is very important as it will determine the quality of the fish landed, processed, and sold in and around the port area. He added that waste management is key priority for the development of port with blue economy concept (stage V) that meet international standard. “FAO has been actively promoting the development of Blue Economy and Blue Fishing Port. It should be integrated into the marine spatial planning and the fishing port design, so that water quality and the status of fisheries and marine resources can be monitored properly. Clean water and clean port are closely linked to fisheries, environmental and community health. It will stimulate growth of local fisheries industry,” Lukman said during a hybrid meeting on 2 March 2023:

The waste management initiative was commissioned to a non-governmental organization Kibumi who conducted a series of activities, including waste data collection, stakeholder consultation and Focus Group Discussion (FGD) among others. From the findings, a Standard Operating Procedure was developed and proposed, covering waste sorting (separating fish waste, organic and inorganic waste), waste collection (distribute waste bins and set up designated community waste areas) and waste treatment. The latter includes sending the residual waste to final disposal sites or to the waste bank that the project helps establish for further handling and recycling.

Fery Sutyanawan, MMAF Coordinator for archipelagic water with related authorities to oversee plastic waste management on board of vessels, in and around port and waste removal, stressed the importance of raising awareness of fishers, authorities and fishing communities around the port to actively engage in the initiative. “We can also ensure that fish waste and plastic waste in each fishing vessel can be separated to facilitate proper management in land. We can learn from Kendari port and adjust this effort for bigger impacts.

Muhammad Lukman, ISLME National Program Officer: this is a key initiative that can be replicated at national and regional level to ensure clean port, which is necessary to protect the habitat, ecosystem and fisheries resources and concrete action to minimize and manage waste. ISLME Regional Coordinator C.M. Muralidharan said findings from the initiatives will be included in the Strategic Action Program (SAP) to ensure clear follow ups in the future.

Continuous efforts to raise awareness is needed and it should be designed to change local community behaviours. Behaviour change, said ISLME Communications Specialist Maria Endah Hulupi, can be achieved through a more systematic, intensive public campaign at various forums in and around the port and the surrounding communities/villages. The campaign needs to actively involve key community figures: public and religious leaders, fishers, *Pokmaswas*, etc to educate community on waste management for their meaningful engagement. “The public need to have ownership to the waste problem

and understand the serious implications of failures to address the waste problem to their health, livelihood and local economy,” she said.

FAO, MMAF set up a fisheries dashboard to facilitate decision making



Coaching sessions for data officials to update fisheries dashboard.

Access to reliable data and information is key to ensure well-targeted policy decisions. FAO and MMAF establish a data-info system to facilitate decision makers, planners, academia and public in general to access key data in ISLME region, including ISLME-supported commodities for various purposes.

Data related officials and staff from reporting units gathered in Bogor, Indonesia on 17 March 2023 to join a coaching session to ensure proper management and regular updating of the dashboard. Data presented include fish production, level of utilization, Total Allowable Catch and estimated fisheries potentials from the ISLME-supported Fisheries Management Areas 712, 713, 714 and 573. The coaching session was jointly conducted by MMAF Directorate of Fish Resources Management and FAO and it was commissioned to PT Mitra Asri Bayu Perkasa.

The government has issued Regulation No.11/2023 on Measurable Fisheries to improve capture fisheries management in Indonesia with a focus on implementing fishing zones and quota-based fisheries. This is aimed at protecting the ecology and biodiversity, increasing economic growth and fishers' welfare. Ensuring access to integrated, comprehensive and reliable data and information on fisheries resources is much needed to support sustainable management and is mandated by FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (VGSSF).

“This session equips data-related officials with the necessary skills to operate the system properly so that access to up-to-date reliable fisheries data is available. This will in turn support the sustainable management of the FMAs within ISLME region,” said Director of Fish Resources Management Ridwan Mulyana.

Improved coordination and intersectoral response needed to combat IUU fishing



Left to right: Mr. C.M. Muralidharan, Mr. Nilanto Perbowo, Mr. Tri Aris Wibowo and Mr. Didik Agus Suwasono.

Indonesia has shown its strong commitment to FAO Agreement on Port States Measures (PSMA) to combat the illegal, unreported and unregulated (IUU) fishing in its waters by demonstrating improvements in IUU Fishing-related regulations and Monitoring-Control and Surveillance (MCS), to name some of them. However, continuous efforts are needed to empower and foster compliance among small-scale fisheries (SSF), to ensure policy enforcement and to reinforce intersectoral coordination with strong participation of key stakeholder in order to enhance effectiveness of the on-going efforts.

ISLME Regional Coordinator Mr. C.M. Muralidharan said Indonesia is in the right direction. “However, more attention should be given to the small-scale fisheries. This includes improving monitoring of vessels size <10 Gross Tonnes and raising small fishers' awareness on fisheries regulations to promote adoption of responsible fishing practices in compliance to the regulation,” said Mr. Muralidharan. He commended Indonesia's commitment to continuously improve MCS to combat IUU fishing and explained that MCS implementation also applies to SSF. There are 2.22 million small fishers, making up over 90 percent of Indonesian fishers, according to MMAF data. Their compliance is key to further good progress.

Sharing a recent finding from FAO, MMAF-supported MCS stocktaking, under the ISLME project, Mr. Muralidharan differentiates fishing activities into four phases namely before fishing, during fishing, at landing and post landing. “It is more practical and cost efficient to focus on before fishing and landing phases,” Mr. Muralidharan said, citing the finding of MCS stocktaking. The “before fishing” phase, officials can check the fishing vessel registration, business permit/licence, the fishing gears, while at landing phase, officials can inspect the catch, types of fish and the accuracy of the logbook/elogbook report, among others.

Mr. Muralidharan appeared as a speaker at The Ministry of Marine Affairs and Fisheries (MMAF) talkshow programme entitled “The Road to 4th Meeting of the Parties to the FAO Agreement on Port State Measures” held in Jakarta, Indonesia, 5 May 2023. Two other speakers at the talkshow were Chairperson of the 4th Meeting of Parties to the PSMA Nilanto Perbowo and MMAF Director of Fishing Ports Tri Aris Wibowo.

Mr Nilanto explained Indonesia’s commitment to PSMA is reflected through the intersectoral cooperation to monitor activities in the Indonesian waters 24/7, make investment for technological adoption, including promoting Automatic Identification System (AIS) and Vessel Monitoring System (VMS) and take firm actions to IUU fishing, among others, to meet the agreement. “The government (MMAF) is continuously enhancing monitoring, control and surveillance (MCS) to meet the international standard,” he said. Mr. Aris, Director of Fishing Ports, explained that PSMA is a tool to improve port governance and has been adopted into national regulations from Presidential Decree, the Ministerial Regulations and to the subnational level policies for implementation throughout Indonesia. The Agreement is currently being implemented at three designated fishing ports, Nizam Zachman Ocean Fishing Port in Jakarta, Benoa Fishing Port in Bali and Bitung Ocean Fishing Port in North Sulawesi. “We will continuously improve services at the designated ports and also assess other ports with a plan to expand the implementation of PSMA in the future.” Nowadays, the international community has good awareness and stress the importance of responsible fishing, legal and environmentally friendly fishing operations. “Indonesia’s commitment to PSMA will improve competitiveness of fisheries products from Indonesia and generate revenue from the fisheries sector,” Mr. Aris explained.

MCS Roadmap development to strengthen measurable fisheries



Integrated MCS system

FAO and MMAF partner with Ocean Solutions Indonesia (OSI) for the MCS Roadmap development. This initiative is a follow up from the MCS stocktaking study that identified various challenges rooted from gaps between national and subnational responsibilities, the need for budget, human resources and lack of facilities at the subnational level as

the spearhead for MCS response. “The MCS stocktaking has provided the blueprint framework for the Roadmap development,” said Mr. Zulficar Mochtar founder of OSI during a hybrid meeting in Jakarta, Indonesia on 6 February 2023.

MCS activities are differentiated into the following phases:

- i. Before fishing phase: activity include monitoring license/permit, vessel crews, type of gears, type of vessels, fishing area and the use of transmitter.
- ii. During fishing phase: security patrol to detect and intercept, satellite monitoring and remote sensing: VMS, AIS, elogbook and Barata, and response to violations: case recording & reporting, sanctions: criminal charges and administrative sanctions.
- iii. During landing: monitoring compliance to catch reporting: volume, species and composition, monitoring self-reporting and monitoring vessel crews.
- iv. After landing: monitoring market and sales, processing, distribution and export process.

“Violations are commonly related to documents, fishing zones, fishing gears, species, unreported and unregulated (manipulation of fish catch reporting). Addressing the problems requires governance instruments: improvements in infrastructure, Human Resources, budget, policy, Standard Operating Procedure and institutional capacity,” Zulficar explained.

The roadmap development will include setting targets to measure the MCS performance, such as through: improved compliance, improved capacity for effective MCS, reduction of violations and improved fisheries governance. Optimizing the existing MCS requires: transforming national and subnational budget, harmonizing national and subnational policies, digital transformation and tech optimization, self-reporting, mainstreaming and integration of MCS to units, ministries/institutions and at subnational level, certification/performance appraisal/business actor compliance, education-awareness and participation.

There are many aspects to monitor, especially to support measurable fisheries in the ISLME supported FMAs 712, 713, 714 and 573. From budget perspective, it is more efficient to focus on before fishing and during landing. Monitoring during fishing phase requires a lot of investment as it involves mobilizing patrol vessels and crews, taking into account the number of days. Budget indeed determines effectiveness. However, with the right strategy, effective MCS efforts can still be achieved. Strengthening MCS is necessary and will directly contribute to maintaining sovereignty, fisheries resources sustainability, improved livelihood and business climate as well as enhancing state earning from fisheries sector.

Promoting IMTA adoption to boost fisheries productivity, small farmers livelihood.

Indonesia is an important fisheries producing country with high potential growth from both wild capture and mariculture. To enhance mariculture productivity in a sustainable manner, the FAO/GEF-supported Indonesian Seas Large Marine Ecosystem (ISLME) project initiated a pilot to promote the adoption of the Integrated Multitrophic Aquaculture (IMTA) in two villages in Lombok, East Nusa Tenggara, namely Gerupuk and Teluk Betok villages, based on a 2021 assessment findings, carried out by the Mataram University. "The result of water quality test and nutrient concentration in several sites in Lombok show that these areas, as in many sites across Indonesia, have huge potential and favorable climate. So, IMTA system can be developed and further promoted," said Nurliah from the Mataram University Learning Center for Ecosystem Approach to Fisheries Management (EAFM) on 6 June 2023.

Since September 2022, the university has established IMTA activity at the two villages, growing sand lobster (*Panulirus homarus*), silver pomfret (*Pampus argenteus*), abalone and seaweed, involving local community farmers. IMTA is a system where farmers can grow several different species, among others finfish, molluscs, seaweed in one facility. The species are selected to allow the waste from one species to become feed for the other species and therefore, help minimize the effects to the ecosystem. Seaweed requires 30-45 days to harvest and it can be planted in cycles to ensure periodic income for farmers until it is time for lobster and silver pomfret harvest in eight to 12 months. The first seaweed harvest was in early November 2022 and yield around 1 400 kg from 15 floating rafts, each size 10-metre by 10-metre in Teluk Betok village. Around 1 300 kg of the yield was used as new seeds and the remaining for dried seaweed. The initial harvest in Gerupuk village from 1.5 floating rafts of the same size was all used as new seeds to be farmed in four rafts belonging to local community farmers.



A 170-gram female sand lobster with eggs at one of the ISLME-supported IMTA facilities.

Nurliah explained that sand lobster seeds, initially weighing between 50-100 grams, showed good growth in the first three months, so did the silver pomfret. After seven months, the lobsters grew to around 170 grams on average and some female lobsters were found bearing eggs. Favorable climate, quality feed, good monitoring, farmers' knowledge, skill and diligence to provide proper care of the species and facility are necessary to ensure good growth and survival rate. High rainfall is especially not ideal for seaweed as it often leads to sedimentation.

Some of the main challenges include lack of access to good seeds and quality feed. Currently, quality feed is not easily available in smaller quantity and can only be purchased at a minimum quantity of 1 tonne per order. When the price of *ikan rucah* (anchovy-like fish, commonly used as feed) is also high, farmers use fresh water small fish as substitute. This particular challenge raises the need to produce alternative feed, providing balanced nutrients and at an affordable price. From this pilot, the Ministry of Marine Affairs and Fisheries with FAO's support, has developed a module on community-based IMTA, providing useful information on farming techniques, materials used, estimated budget, licence, etc, to facilitate wider adoption by community members. The IMTA system, she added, does not require high start-up capital, however to ensure success, community farmers' empowerment is needed to equip them with the necessary knowledge and basic skills to practice IMTA. "We also need to closely monitor and support farmers' activities. It is also useful to engage university students throughout the implementation process since they can help provide technical information and advise needed to guide community farmers," explained Nurliah.

Obituary



Muhammad Lukman

ISLME National Project Officer Muhammad Lukman, 51 years old, passed away on Saturday, 1 April 2023 in Jakarta and was buried in his hometown Makassar, South Sulawesi. A seasoned oceanographer and researcher, Lukman was instrumental in the planning and implementation of ISLME project initiatives at national and subnational level in Indonesia in close partnership with the Ministry of Marine Affairs and Fisheries. He is survived by his wife.

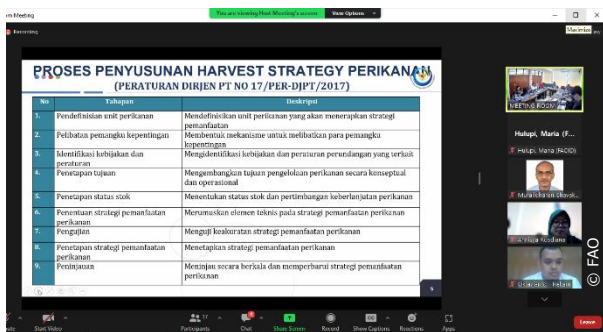
ISLME project support development of Harvest Strategy for sustainable Snapper and Grouper fisheries in FMA 573

Snapper and grouper are reef fishes with high economic values and Indonesia is a key global snapper and grouper supplier. Several Fisheries Management Areas (FMAs) in Indonesia including 573 have huge potentials for reef fisheries. In 2021, snapper and grouper production were around 24 227 tonnes or about 5 percent of national production with a total estimated value around IDR 761 billion. Around 90 percent of snapper and grouper catch is by small scale fisheries commonly using *rawai dasar* (set longlines), *bubu* (trap/pots) and *pancing ulur* (handline) as fishing gears. Production of both commodities, as reflected by MMAF data, shows an increasing trend. Both fisheries commodities also have good export market demands. The 2019 export value of snapper was around USD 8 million and grouper around USD 26 million. However, the utilization level of reef fisheries in FMA 573 has reached over exploitation level prompting the need to regulate catch effort to allow fisheries resources restoration.

MMAF's objective is to improve the status of snapper and grouper from over exploited to fully exploited in various FMAs, including 573 in a period of 5 year, ending in 2026. "Both snapper and grouper are priority commodities. It is urgent to regulate both fisheries using scientific approach to ensure sustainability," said Fery Sutiawan during the kick off meeting in Jakarta, Indonesia on 22 June 2023. To regulate market demands, MMAF sets legal minimum size for catch. "This is also challenging because the most popular demand is for plate size, which is below the legal size," he explained.

The Harvest Strategy targets six snapper species namely *Pristipomoides multidens* (white anggoli), *Pristipomoides typus* (red anggoli), *Lutjanus malabaricus* (red snapper/bambangan), *Pristipomoides sieboldii*, *Lutjanus gibbus* (red snapper/jenaha) and *Pistipomoides filamentosus* (kurisi Bali); and three grouper species, namely *Epinephelus areolatus* (kerapu macan), *Variola albimarginata* (ekor gunting) and *Cephalopholis miniata* (kerapu tomat). The six snapper species represent 72 percent of total snapper data in 2021, while the three grouper species make up 60 percent of total grouper data in 2021.

The process of Harvest Strategy development, commissioned to Rekam Foundation, will include review of data and information, conduct time series data collection, consolidation of available data from various sources, data analysis and interpretation and develop draft Harvest Strategy and Harvest Control Rules. There will be consultation meetings, including two technical stakeholder consultations to be conducted in Yogyakarta or Cilacap in Central Java and West Nusa Tenggara or Bali. The latter two are major fishing grounds in FMA 573.



Snapper and Grouper Harvest Strategy development meeting.

To protect snapper and grouper fisheries in FMA 573, MMAF, with FAO support, develops Harvest Strategy and the Harvest Control Rules for both commodities as a project priority.

From Bali, snapper and grouper are exported to China, Taiwan Province of China, Singapore, United States of America, China, Hong Kong SAR, Australia and Malaysia. From West Nusa Tenggara are exported to Taiwan Province of China, Singapore and China, Hong Kong SAR.

Jointly conducted with:



Ministry of Marine Affairs and Fisheries (MMAF) Indonesia



Ministry of Agriculture and Fisheries (MAF) Timor-Leste

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