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MARINE TENURE AND SMALL-SCALE FISHERIES: LEARNING FROM THE INDONESIA EXPERIENCE

TENURE AND GLOBAL CLIMATE CHANGE PROGRAM

MAY 2017

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MARINE TENURE AND SMALL-SCALE FISHERIES: LEARNING FROM THE INDONESIA EXPERIENCE

TENURE AND GLOBAL CLIMATE CHANGE PROGRAM (TGCC)

MAY 2017

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ACRONYMS AND ABBREVIATIONS

AMDAL	*Analisa Mengenai Dampak Lingkungan* (Environmental Impact Assessment [EIA] System)
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CTC	Coral Triangle Center
E3	USAID/Bureau for Economic Growth, Education, and Environment
EAFM	Ecosystem Approach to Fisheries Management
EBM	Ecosystem-Based Approach to Management
FAO	Food and Agricultural Organization of the United Nations
FMA	Fishery Management Area
FPI	Fisheries Performance Indicator
GDP	Gross Domestic Product
GOI	Government of Indonesia
GT	gross tons
IFAD	International Fund for Agricultural Development
IOTC	Indian Ocean Tuna Commission
IUU	Illegal, Unreported, and Unregulated
LIPI	*Lembaga Ilmu Pengetahuan Indonesia* (National Science Institute)
LMMA	Locally Managed Marine Area Network
MCA	Marine Conservation Agreement
MER	Misool Eco-Resort
MMAF	Ministry of Marine Affairs and Fisheries
MPA	Marine Protected Area
MSP	Marine Spatial Planning
NGO	Nongovernmental Organization
nm	nautical miles
OSH	Occupational Safety and Health
SEA	Sustainable Ecosystems Advanced
SKPT	*Sentra Kelautan dan Perikanan Terpadu* (Integrated Marine and Fisheries Centers)
SSF Guidelines	Voluntary Guidelines for Securing Small-scale Fisheries in the Context of Food Security and Poverty Eradication
TAC	Total Allowable Catch
TGCC	Tenure and Global Climate Change
TURF	Territorial Use Rights in Fisheries
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Program

UNEP	United Nations Environment Program
UNFSA	United Nations Fish Stocks Agreement
UPI	*Unit Pengolahan Ikan* (Fish Processing Unit)
USAID	U.S. Agency for International Development
USG	U.S. Government
WCPFC	Western and Central Pacific Fisheries Commission
WCS	World Conservation Society
WWF	World Wildlife Fund

EXECUTIVE SUMMARY

Through its commitment to addressing extreme poverty, the U.S. Agency for International Development (USAID) is integrating a deeper understanding of the importance of small-scale fisheries and the role marine tenure plays in achieving food security, inclusive economic growth, biodiversity conservation, and other priority development objectives. Small-scale fishing communities are among the poorest and most vulnerable groups in developing countries, highly dependent on wild fish stocks for food and livelihood. These communities are largely landless, residing in coastal areas vulnerable to threats, especially those related to climate change. Small-scale fisheries employ more than 90 percent of the world's capture fisheries workforce and receive few if any subsidies. With fish stocks declining globally due to open access and poor governance of both land and sea, small-scale fishers and their families continue to be marginalized to a life of extreme poverty.

In January of 2017, USAID's Tenure and Global Climate Change provided technical assistance on marine tenure and small-scale fisheries in support of the Indonesia Sustainable Ecosystems Advanced (USAID SEA) Project. The Indonesia field assessment, conducted from February 19 to March 3, 2017, contributed inputs to an overall strategy on marine tenure that will support the USAID SEA project's goal to improve the management and sustainability of small-scale fisheries. Under existing Indonesia law, small-scale fisheries are defined as fishers operating out of boats less than 10 gross tons (GT) in size. Through a combination of desk review, meetings, and a workshop, the field assessment helped clarify the viability, from a legal and institutional perspective, of pursuing marine tenure options within USAID SEA Project areas and identified customary marine tenure communities as focal areas for project interventions. Presentations to the Indonesia Marine Funder's Collaboration Meeting and the USAID SEA Project Partners Coordination Meeting emphasized the importance of focusing on small-scale fisheries and explicitly considering marine tenure in project design. A 1½-day workshop was conducted

in Jakarta attended by government agencies, nongovernment organizations (NGOs), and USAID SEA Project staff and partners. During the workshop, presentations by Indonesian experts highlighted the current customary marine tenure systems and co-management arrangements, and a case study in the territorial use rights in fisheries (TURF)-Reserve model. Participants tested the assessment tool that measures the implementation status of the Voluntary Guidelines on Sustainable Small-scale Fisheries. Key findings and recommendations based on the workshop output and meetings with USAID SEA Project staff and partners include:

- Mainstream small-scale fisheries as a sector.
- Improve information and data collection and analysis at national and provincial scales for the small-scale fisheries sector.
- Clarify policy and protocols for legal recognition of customary marine tenure claims.
- Develop a cohesive national policy on sustainable small-scale fisheries.
- Increase awareness of local stakeholders of existing legal and policy framework for marine tenure and small-scale fisheries.
- Characterize the existing socio-ecological systems in terms of existing claims, resource use patterns, and institutional arrangements in customary marine tenure systems.
- Strengthen capacity of customary marine tenure institutions combining traditional ecological knowledge and practices, science-based knowledge and management, and value chain and economic tools.
- Develop adaptive co-management arrangements to support customary marine tenure system in the context of an ecosystem approach to fisheries management (EAFM).
- Promote co-management of FMA 715 that spans multiple provinces with active participation of small-scale fishers.
- Delineate small-scale fishing grounds, customary marine tenure claims, and ecological designed marine reserve networks as an important first step in provincial marine spatial planning (MSP).
- Develop small-scale fisheries management plans based on MSP in provincial waters.
- Integrate small-scale fisheries into the Fisheries Management Plan for Fisheries Management Area 715.
- Mainstream small-scale fisheries into Provincial Mid-Term and Annual Development Plans.
- Build capacity of provinces to undertake mandate for coastal and small-scale fisheries management.

1.0 INTRODUCTION

Through its commitment to addressing extreme poverty, USAID is integrating a deeper understanding of the importance of small-scale fisheries and the role marine tenure plays in supporting food security, inclusive economic growth, biodiversity conservation, and other priority development objectives. There is growing evidence that tenure and property rights problems can contribute to political instability, population displacement, food insecurity, and environmental destruction significantly undermining or preventing successful implementation of development programs. Tenure over natural resources refers to the social relations, institutions, and rules that govern people's access to and use of land, water, and natural resources. Small-scale fishers and coastal communities with secure tenure over a given fishery, fishing ground, or territory have a strong interest in acting collectively to manage their resources sustainably.

1.1 BACKGROUND

The Tenure and Global Climate Change (TGCC) program of the USAID/Bureau for Economic Growth, Education, and Environment's (E3) Land and Urban Office is currently developing focused guidance designed to assist USAID staff and partners in considering the important role of management of small-scale fisheries and responsible governance of marine tenure in reducing extreme poverty. The *Marine Tenure and Small-scale Fisheries: A Sourcebook of Good Practices and Emerging Themes* (Sourcebook) draws on findings from scholarly research, policy documents, development projects, and publications by development practitioners, researchers, and nongovernmental organizations (NGOs) to explore good practices and emerging themes in marine tenure and small-scale fisheries. The Sourcebook is a companion document to *Looking to the Sea to Support Development Objectives: A Primer for USAID Staff and Partners* (Primer). The Primer is designed to help USAID integrate consideration of marine tenure explicitly into the design of programs and projects involving small-scale fisheries by providing tools based on good practices from the Sourcebook. Field assessments in the Philippines and Indonesia will help refine this guidance and tools based on lessons from the field.

Securing sustainable small-scale fisheries is an emerging global development agenda. "Small-scale fisheries" is a simple name for a complex and large category of the global fisheries sector. Men and women fishing in nearshore waters for both subsistence and commercial catch significantly contribute to social, economic, and ecological benefits among coastal communities in developing countries. Catching about the same amount of fish as industrial fisheries, small-scale fisheries employ 25 times the number of fishers and use an eighth of the amount of fuel annually. Small-scale fisheries have so far been invisible within the global fisheries sector, even though they play a pivotal role in meeting food needs and building local as well as global economies. As modern, large-scale fisheries have grown, they have come into conflict with small-scale fisheries for the same coastal resources. Other challenges to small-scale fisheries include population growth, the growing commercialization of the fisheries sector, outmigration, and technological growth. The 2015 Voluntary Guidelines on Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines) establishes a human rights-based agenda for small-scale fishers.

Responsible governance of marine tenure is a key dimension of this global agenda. Tenure over natural resources refers to the social relations, institutions, and rules that govern people's access to and use of land, water, and natural resources. Marine tenure establishes a set of rights and responsibilities as to who is allowed to use which resources, in what way, for how long, and under what conditions, as well as who is entitled to transfer rights to others and how. Small-scale fishers and coastal communities with secure rights over a given fishery, fishing ground, or territory have a strong interest in organizing and acting collectively to manage their resources sustainably. National legal and policy frameworks,

administrative and judicial systems, effective co-management arrangements, dispute resolution mechanisms, local participation and empowerment, and strengthened institutional capacity are all key ingredients of responsible governance of marine tenure.

The Indonesia field assessment assisted the USAID Indonesia Sustainable Ecosystems Advanced (USAID SEA) Project explicitly consider marine tenure as an integral part of the project's goal to improve the management and sustainability of small-scale fisheries in manner that contributes to the well-being of coastal stakeholder communities. Through a combination of desk review, meetings, and a workshop with stakeholders from government agencies, NGOs, and academia, the activity clarified the viability, from a legal and institutional perspective, of pursuing marine tenure options within USAID SEA Project areas and identified customary marine tenure communities as focal areas for project interventions.

1.2 OVERVIEW OF THE USAID SEA PROJECT

USAID Washington provided technical assistance on marine tenure and small-scale fisheries in support of the USAID SEA Project. The USAID SEA Project is a five-year (2016–2021) project that supports the Government of Indonesia (GOI) to improve the governance of fisheries and marine resources and to conserve biological diversity at local, district, provincial, and national levels. By using an ecosystem-based approach to management (EBM) and engaging key stakeholders, USAID SEA will enhance the conservation and sustainable use of marine resources by reforming fisheries management and promoting marine protected areas to enhance fisheries productivity, food and nutrition security, and sustainable livelihoods within the target area. USAID SEA will also strengthen the leadership role and capacity of the Ministry of Marine Affairs and Fisheries (MMAF) and local governments to promote conservation and sustainable fishing. Tetra Tech and a consortium of partners that includes the Wildlife Conservation Society (WCS), Coral Triangle Center (CTC), and World Wildlife Fund-Indonesia (WWF) implement USAID SEA.

The USAID SEA Project is predicated on an ecosystem approach to fisheries and marine resources management (EAFM) to conserve biodiversity and the ecosystem functions, goods, and services—from food security to livelihoods—upon which humans depend. Accomplishing this goal will require integrating ecological, biophysical, governance, and socioeconomic dimensions. USAID SEA will focus on small-scale fisheries. Under the Protection and Empowerment of Fishermen, Fish Farmers, and Farmers Salts Act (UU No. 7/2016), small fishers are defined as those who conduct fishing to meet the needs of everyday life, using no fishing vessel or fishing vessels less than 10 gross tons (GT). In addition, under the Local Government Law 23/2014, fisheries management was re-centralized from district to provincial levels of government for all fishing vessels less than 30 GT. USAID SEA will employ five strategic approaches to achieve the following high-level results by project completion:

1. At least six million hectares in the target Fishery Management Area (FMA) or sub-FMA under improved fisheries management, measured through the MMAF EAFM and Marine Protected Area (MPA) Effectiveness Index scores or other approved national or international standards, disaggregated by national, provincial, and district jurisdiction, and by whether target area is within or outside MPAs.
2. At least six policies, laws, regulations, and/or operational protocols in support of marine conservation and sustainable fisheries management created, strengthened, promulgated, and/or enforced at all levels.
3. Key drivers and highest rated pressures to marine biodiversity show a declining trend in the target areas.

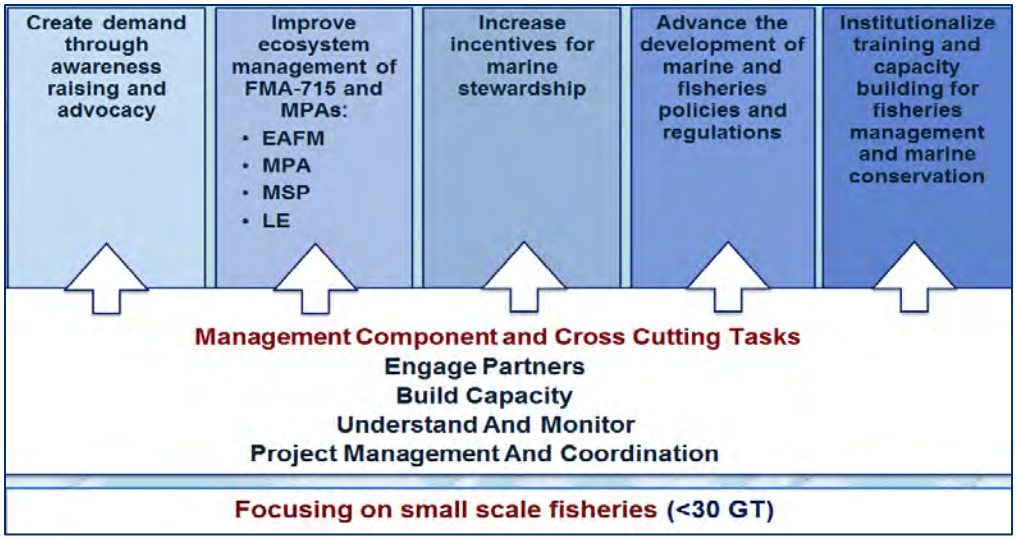


Figure 1. USAID SEA Project strategic approach

In addition to biodiversity conservation, the USAID SEA Project has a separate mandate under the Feed the Future Program to address the issues of food and nutrition security for fishing communities living in extreme poverty who are most at risk due to declining catches and marine resources. USAID SEA will focus on linking resources to market with the following objectives:

1. Improved marine resource management and conservation,
2. Improved social and economic benefits to local communities, and
3. Resource use rights for local resource users that will help ensure long-term access to marine resources for food and income.

With the framework shown in Figure 2, project interventions will assist to reduce pressures to the environment; and emphasize the importance of carrying capacity, sustainable yield, and access rights for local stakeholders for the medium to long term.

Figure 2. Feed the Future activity conceptual diagram for USAID SEA Project

The project will focus on small-scale fisheries with boat sizes less than 10 GT that operate largely within provincial waters that extend out to 12 nautical miles (nm). As such, USAID SEA activities target three levels of governance: the national level, the National FMA of the Republic of Indonesia, and three adjacent provinces in eastern Indonesia (West Papua, North Maluku, and Maluku) that lie within FMA 715, one of Indonesia's 11FMAs.

Figure 3. USAID SEA Project sites and FMA 715

2.0 FIELD ASSESSMENT OBJECTIVES AND APPROACH

Expectations on the part of USAID/Indonesia and the USAID SEA Project team are that this activity will contribute inputs to an overall strategy on marine tenure supporting the project's goal to improve the management and sustainability of coastal fisheries in a manner that contributes to the well-being of coastal stakeholder communities. Through a combination of desk review and workshops, the activity can help clarify the viability, from a legal and institutional perspective, of pursuing marine tenure options within USAID SEA Project areas. Finally, outputs from the tenure study could inform site-specific marine tenure strategies and interventions. Based on these expectations, the overall objectives of the proposed activity to provide technical assistance to the USAID SEA Project include:

- Summarize the current national and local legal and policy framework and co-management arrangements for responsible governance of marine tenure in small-scale fisheries in Indonesia based on literature review and recent assessments conducted by the Economic Development Foundation, the USAID SEA Project, and others.
- Describe customary marine tenure systems in Indonesia in terms of tenure rights, rules in use, and local institutional capacity with a focus on the USAID SEA Project areas.
- Identify direct and indirect threats to customary marine tenure systems and the marine and coastal resources upon which they depend.
- Describe strategies and interventions to protect or strengthen customary marine tenure systems supported by USAID SEA local partners and other organizations in the country with a focus on USAID SEA Project areas.
- Work with the USAID SEA team to develop a marine tenure strategy and interventions to strengthen responsible governance of tenure in small-scale fisheries based on a site-specific situation analysis and results chains for use in USAID SEA Project focal sites.

The field assessment was conducted over a two-week period from February 19 to March 3, 2017. The TGCC and USAID SEA Project teams worked together to plan and implement the field study approach which included:

- Conducting a background review on customary marine tenure systems and a legal and institutional framework for marine tenure and small-scale fisheries in Indonesia;
- Developing and testing tools that support consideration of marine tenure and small-scale fisheries in development programs;
- Organizing, participating in, and facilitating two half-day meetings and one 1 ½-day workshop with the Indonesia Donors Group, the Rights-based Fisheries Management Working Group, and USAID SEA Project staff and partners; and
- Working with USAID SEA Project staff to identify key findings and recommendations and develop draft and final reports.

The TGCC technical assistance team consisted of Dr. Catherine Courtney, Dr. Michael De Alessi, Dr. Robert Pomeroy, and Dr. Dedi S. Adhuri. Dr. De Alessi conducted background review on customary marine tenure systems and assisted with the workshop. Dr. Pomeroy conducted a desk review of the implementation status of the SSF Guidelines, using the tool developed by TGCC. Dr. Adhuri prepared a background on co-management in Indonesia. In addition, Ms. Christiana Yuni and Mr. Abdul Halim from the USAID SEA Project provided technical support on all aspects of the field assessment. Participants of the workshop represented government agencies and nongovernmental organizations in Indonesia.

Participants of the Marine Tenure and Sustainable Small-scale Fisheries Workshop in Jakarta, Indonesia, March 1 – 2, 2017

The goal of the 1½-day workshop held in Jakarta was to bring together representatives from national governmental, academic, and nongovernmental organizations to:

1) Develop a shared understanding of the current national legal and policy framework and institutions involved in marine tenure and small-scale fisheries.

2) Draw out the experiences and lessons working to strengthen customary marine systems in the country that can be used to inform USAID SEA strategies and interventions.

3) Test a country-level assessment tool designed to take stock of the implementation status of the SSF Guidelines.

The workshop was a combination of presentations and group activity. Dr. Courtney presented a global perspective of marine tenure and small-scale fisheries. Key entry points for development projects highlighted the need to strengthen or establish community-based institutions with preferential use rights, considering the bundle of marine tenure rights and responsibilities and institutional design principles in project design, embedding community-based management in an ecosystem-based management approach, building effective co-management arrangements, and developing clear and coherent policy on small-scale fisheries.

Dr. Adhuri presented the basic premise of co-management and the different types of co-management arrangements. He explored the range of customary marine tenure systems in the country, noting that co-management between community and government in Indonesia is weak or absent. Developing an

adaptive co-management approach was recommended to support the diversity of needs of existing customary marine tenure institutions and new community-based institutions.

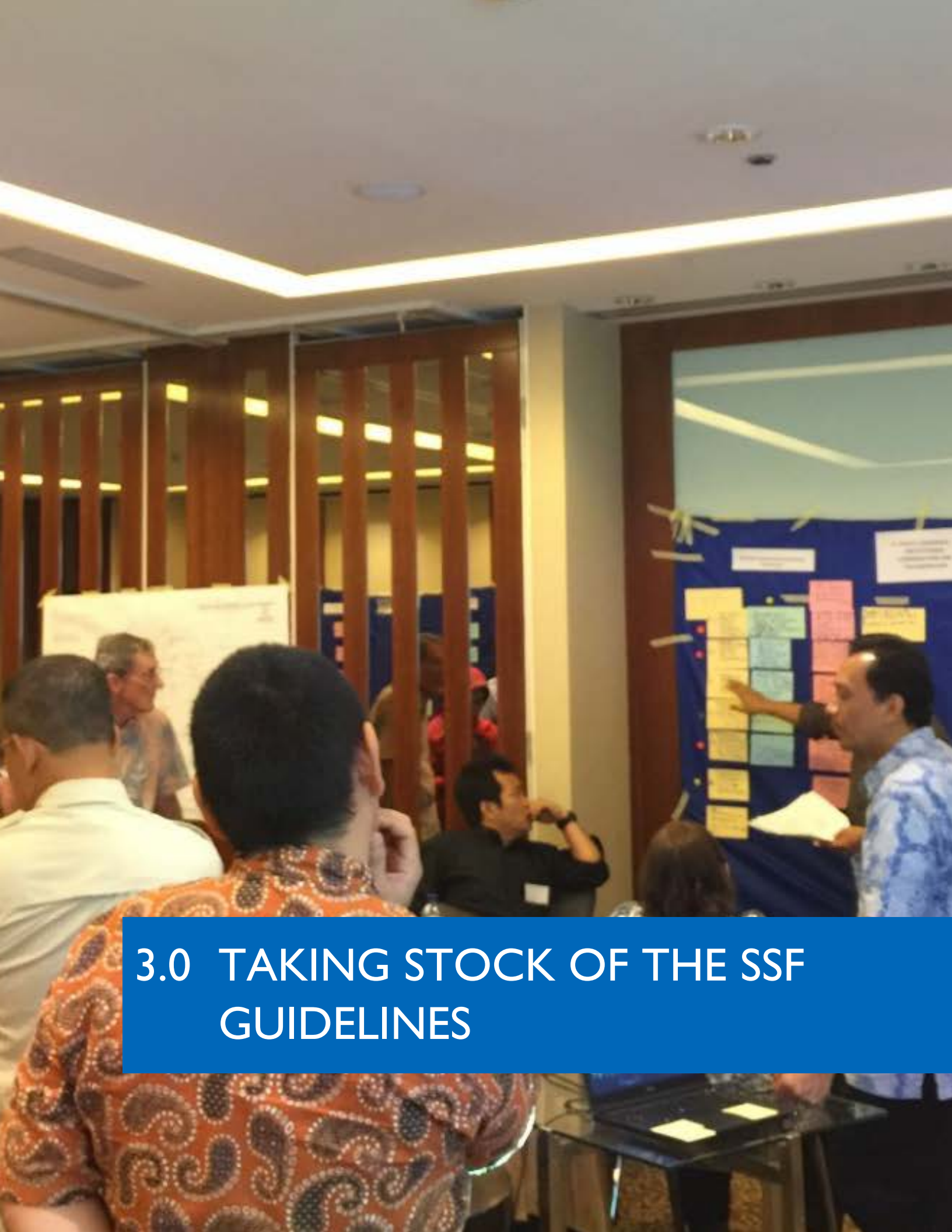
Dr. De Alessi examined the bundle of tenure rights and responsibilities across several types of customary marine tenure systems. He also highlighted some examples of private sector partnerships with local community management and brought attention to the need to consider how debt relationships may affect fishing practices. From previous work using fisheries performance indicators (FPIs), he noted that the right to exclude others correlates with ecological performance across a wide range of fisheries worldwide.

Mr. Halim explored the root causes of poverty in small-scale fisheries. He proposed strengthening customary marine tenure institutions by creating hybrid institutions incorporating scientific approaches with the values/norms of existing customary marine tenure systems. In addition, as customary marine tenure systems are few relative to the expansive coastline of Indonesia, he emphasized the need to create new socio-institutions to enable managed access to fisheries resources.

Mr. Taufiq Alimi from the nongovernmental organization, Rare, described the TURF-Reserve system approach they use to support marine tenure and small-scale fisheries and key accomplishments including defining clear territorial boundaries, introducing fisheries management measures, and supporting positive ecological results in terms of catch per unit effort.

A new tool was tested as part of the workshop to assess the implementation status of the SSF Guidelines in Indonesia. Dr. Umi Muawanah from the MMAF Research Agency provided an overview of the government's efforts to identify programs that support the SSF Guidelines.

In break-out groups, participants took stock of the status of implementation by reviewing the strategies and good practices in the SSF Guideline Assessment Matrix as well as relevant government programs, and by bringing to bear knowledge and experience at the national policy level and local implementation level.



3.0 TAKING STOCK OF THE SSF GUIDELINES

The SSF Guidelines Assessment tool is designed to help USAID staff and partners take stock of the status of implementation of the *Voluntary Guidelines on Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Alleviation* (FAO, 2015). The tool is organized into eight interconnected dimensions of securing sustainable small-scale fisheries based on the SSF Guidelines (Table 1). Two crosscutting themes in the SSF Guidelines, capacity development and implementation support and monitoring, were incorporated into the eight dimensions.

For each dimension, strategies and good practices were crafted based on the SSF Guidelines and put into a matrix to facilitate assessment and rating. An example of the assessment matrix and worksheet used during the workshop is provided in Table 2. The SSF Guidelines assessment tool is provided as Appendix B together with a desk review conducted to summarize background information for each dimension as well as Indonesia's National Plan of Action for Small-scale Fisheries Management.

Participants drew on presentations and background information to review the extent to which national laws and policies and local implementation were reflective of the SSF Guidelines. Participants identified accomplishments and gaps, developed ratings and rationale, and provided recommendations. The implementation status is ranked as high, medium, or low for each dimension and then a cumulative rating can be made by considering the status of both national and local status of implementation (Table 1).

Table 1. Key dimensions and strategies based on the SSF Guidelines, FAO (2015)[1]

A. Responsible governance of tenure

1. Recognize and protect legitimate tenure rights
2. Grant preferential and equitable access and use
3. Address competing and conflicting resource uses

B. Sustainable resource management

4. Promote responsible fishing practices and policies that ensure sustainable resource use
5. Strengthen the capacity of stakeholders to manage resource sustainably
6. Develop effective monitoring, control, and surveillance systems
7. Develop effective co-management arrangements

C. Social development, employment, and decent work

8. Improve working conditions and safety for small-scale fisheries workers
9. Develop human resource capacity of small-scale fishers and fishing communities
10. Diversify livelihoods and income-generating activities
11. Ensure access of children and youth in fishing communities to education

D. Value chains, post-harvest, and trade

12. Build capacity for small-scale fisheries to benefit from market opportunities
13. Improve the value chain for fish and fishery products for domestic and export markets
14. Reform national policies to minimize adverse impacts of domestic and international trade on small-scale fisheries

E. Gender equality

15. Mainstream gender equality as an integral part of small-scale fisheries development

F. Disaster risks and climate change

[1] See Appendix B for complete assessment matrix.

Table 1. Key dimensions and strategies based on the SSF Guidelines, FAO (2015)[1]
16. Recognize and address the differential impact of natural and human-induced disasters and climate change on small-scale fisheries and communities
G. Policy coherence, institutional coordination, and collaboration
17. Adopt national policies and laws that support an integrated, holistic, ecosystem-based approach to marine and coastal management
18. Establish mechanisms for institutional coordination and collaboration at international, regional, national, subnational levels
H. Information, research, and communication
19. Improve knowledge of social-ecological systems
20. Improve access to information and data needed for decision making

Table 2. Example worksheet used to take stock of the status of implementation of the SSF Guidelines	
A. RESPONSIBLE GOVERNANCE OF TENURE	
Overall Rating (circle one) 1 2 3 4 5	
1. Recognize and protect legitimate tenure rights a. Recognize, record, respect, and protect all forms of legitimate tenure rights, taking into account customary rights to aquatic resources and land and small-scale fishing areas enjoyed by small-scale fishing communities. b. Ensure that small-scale fishers, fish workers, and their communities have secure, equitable, and socially and culturally appropriate tenure rights to fishery resources (marine and inland) and small-scale fishing areas and adjacent land, with a special attention paid to women with respected to tenure rights. c. Recognize, respect, and protect local norms and practices, as well as customary or otherwise preferential access to fishery resources and land by small-scale fishing communities including indigenous peoples and ethnic minorities consistent with international human rights law. d. Ensure that small-scale fishing communities are not arbitrarily evicted nor their legitimate tenure rights otherwise extinguished or infringed.	
National Legal/Policy/Institutional Framework	**Local Implementation**
Rating (circle one) 1– low 2 – medium 3 – high	***Rating (circle one)*** 1– low 2 – medium 3 – high
To what extent do existing laws, policies, and institutions support the SSF Guidelines?	*To what extent are the SSF Guidelines implemented on the ground?*
What are recommendations to improve the legal/policy/institutional framework to better support the SSF Guidelines?	*What are recommendations to improve implementation of the SSF Guidelines?*
2. Grant preferential and equitable access and use a. Grant preferential access of small-scale fisheries to fish in waters under national jurisdiction, with a view to achieving equitable outcomes for different groups of people, in particular vulnerable groups, including the creation and enforcement of exclusive zones for small-scale fisheries. Small-scale fisheries should be given due consideration before agreements on resource access are entered into with other countries and parties. b. Adopt measures to facilitate equitable access to fishery resources for small-scale fishing communities. c. Restore access to traditional fishing grounds and coastal lands to small-scale fishing communities displaced by natural disasters and/or armed conflict, taking into consideration the sustainability of fisheries resources.	
National Legal/Policy/Institutional Framework	**Local Implementation**
Rating (circle one) 1– low 2 – medium 3 – high	***Rating (circle one)*** 1– low 2 – medium 3 – high
To what extent do existing laws, policies, and institutions support the SSF Guidelines?	*To what extent are the SSF Guidelines implemented on the ground?*

Table 2. Example worksheet used to take stock of the status of implementation of the SSF Guidelines	
A. RESPONSIBLE GOVERNANCE OF TENURE	
What are recommendations to improve the legal/policy/institutional framework to better support the SSF Guidelines?	*What are recommendations to improve implementation of the SSF Guidelines?*
3. Address competing and conflicting resource uses a. Recognize that competition from other users is increasing within small-scale fisheries areas and that small-scale fishing communities, in particular vulnerable and marginalized groups, are often the weaker party in conflicts with other sectors and may require special support if their livelihoods are threatened by development activities of other sectors. b. Consider the social, economic, and environmental impacts of large-scale development on tenure rights through impact studies, and hold effective and meaningful consultations with these communities, in accordance with national legislation. c. Provide small-scale fishing communities and individuals, including vulnerable and marginalized people, access through impartial and competent judicial and administrative bodies to timely, affordable, and effective means of resolving disputes over tenure rights. d. Establish mechanisms to support fishing communities affected by grave human rights violations to rebuild their lives and livelihoods, including the elimination of any form of discrimination against women in tenure practices in case of natural disasters and/or armed conflict.	
National Legal/Policy/Institutional Framework	**Local Implementation**
Rating (circle one) 1– low 2 – medium 3 – high	***Rating (circle one)*** 1– low 2 – medium 3 – high
To what extent do existing laws, policies, and institutions support the SSF Guidelines?	*To what extent are the SSF Guidelines implemented on the ground?*
What are recommendations to improve the legal/policy/institutional framework to better support the SSF Guidelines?	*What are recommendations to improve implementation of the SSF Guidelines?*

Table 3. Cumulative Rating Guide			
Local Implementation	**National Legal/Policy**		
	Low	Medium	High
Low (isolated examples)	**1**	**2**	**3**
Medium (several examples)	**2**	**3**	**4**
High (multiple examples)	**3**	**4**	**5**

3.1 ASSESSMENT RESULTS

Participants were able to review, evaluate, and rate six out of eight dimensions in the assessment matrix (Table 4 and Figure 4). Overall, Dimension D, Value Chains, Postharvest, and Trade received the highest cumulative score (5) of the six dimensions rated, bolstered by government investments in harbors and postharvest facilities. Dimension C, Social Development, Employment, and Decent Work received the next highest cumulative rating (4) as participants highlighted the various laws, regulations, and policies that have been put in place to promote livelihood diversification and income-generating activities for small-scale fishers. While many national laws promote sustainable resource management (Dimension B) the cumulative rating of 3 was assigned because on-the-ground implementation remains weak. Participants did recognize; however, that monitoring, control, and surveillance systems are largely in place for large-scale fishing vessels. The remaining dimensions rated, A, G, and E, received the lowest cumulative ratings (2) largely due to weak national policies and laws and/or implementation. A summary of the discussion for each dimension is provided below together with recommendations for improving implementation of each dimension evaluated. Finally, observations and opportunities for using the tool are discussed.

Table 4. Ratings of status of implementation of the SSF Guidelines based on the workshop assessment

Dimension	Rating		
	1 – low; 3 – high		1 – low; 5 – high
	National	Local	Cumulative
A. Responsible governance of tenure	2	1	2
B. Sustainable resource management	3	2	3
C. Social development, employment, and decent work	3	2	4
D. Value chains, postharvest, and trade	3	3	5
E. Gender equality	1	2	2
F. Disaster risks and climate change	-	-	-
G. Policy coherence, institutional coordination, and collaboration	2	1	2
H. Information, research, communication	-	-	-

*Dimensions F and H were not assessed

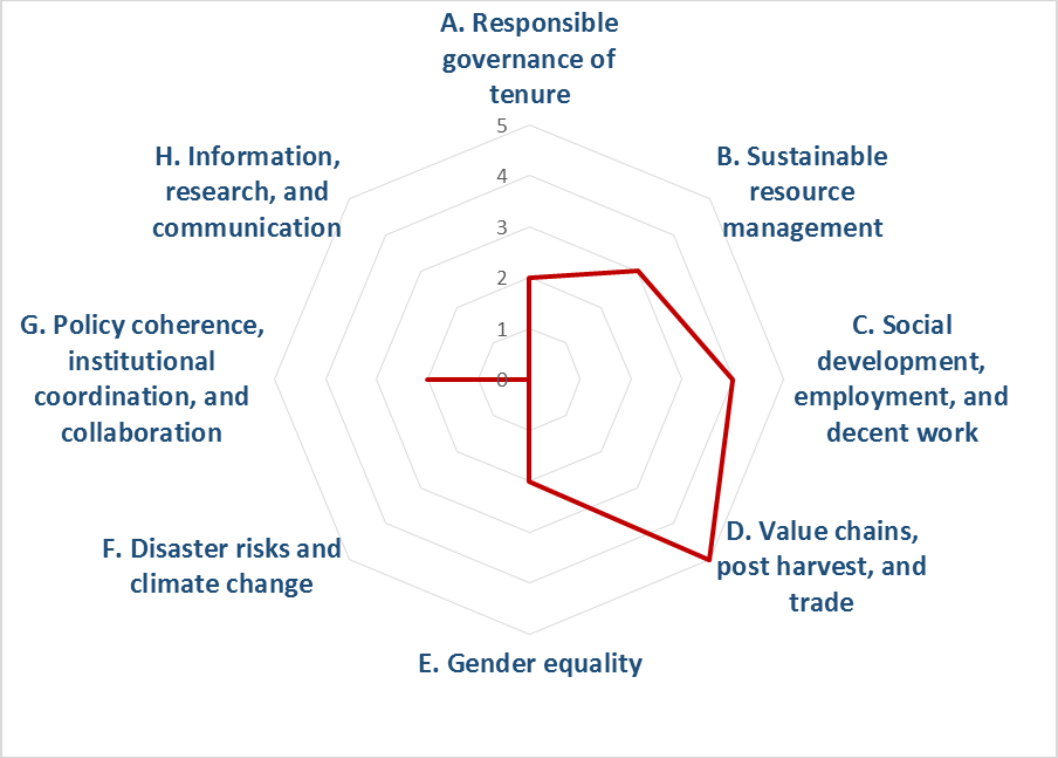


Figure 4. Cumulative rating of the status of implementation of the SSF Guidelines based on workshop assessment (Dimensions F and H were not assessed)

Responsible Governance of Tenure. The Indonesian constitution and several laws and regulations acknowledge, respect, and protect the rights of traditional communities including customary marine tenure rights; however, community organizations, NGOs, and government on the ground have initiated limited efforts to protect these rights. Further, there is limited legal precedence for granting preferential and equitable access and use rights to small-scale fishers. The MMAF focus on combatting illegal, unreported, and unregulated (IUU) fishing might indirectly protect small-scale fishing grounds from large-scale fishing operations. While new national guidelines on marine spatial planning (MSP) of provincial waters provide a policy framework for addressing competing and conflicting resource uses, implementation is just beginning. While some regulations, such as the environment review process (AMDAL), are designed to protect various stakeholders from possible marginalization from development, implementation is weak and inconsistent as evidenced by cases of land reclamation that have displaced and marginalized small fishers. Key recommendations include:

- Systematically and comprehensively map and record legitimate marine tenure rights.
- Hold a serious discussion on how to balance granting of equitable access to small-scale fishers and reducing open access in provincial waters.
- Implement existing policies more strictly to address competing and conflict resource uses of the nearshore waters that result in displacement of small-scale fishers or habitat degradation for fisheries.

Sustainable Resource Management. While many national laws promote responsible fishing practices, on-the-ground implementation remains weak. The recent recentralization of small-scale

fisheries management responsibilities from the district to the provincial level provides challenges in governance and capacity building. As part of this governance system, monitoring, control, and surveillance systems are largely in place for large-scale fishing vessels, and fish catch is recorded at local fishing ports and transferred to a national database. However, small-scale fishers that operate from boats less than 10 GT are not registered nor is their fish catch. Co-management arrangements are largely guided by top-down policies with little participation of small-scale fishers. Key recommendations include:

- Work on governance at the regional level (several provinces) and translate that to districts and communities.
- Budget for and get commitment from all stakeholders to implement the fisheries laws and good practices on the ground.
- Enhance provincial-level capacity to sustainable manage small-scale fisheries.
- Establish a nationwide registration system for all boats less than 10 GT.
- Evaluate and revise existing policies that have negatively impacted small-scale fisheries such as subsidies to large-scale fisheries that enhance fishing capacity, cost structure of fishing licensing that give preference to large-scale fishing operations, and the trawl ban in the north Java coast.
- Enhance participation of small-scale fishers and communities in fisheries management.

Social Development, Employment, and Decent Work. Several laws and policies are designed to improve the working conditions and safety of small-scale fisheries workers. The recent Ministerial Regulation (Permen) No. 2/2017 concerning Requirement and Mechanism for Fisheries Human Rights Certification protects fisheries workers from human rights abuse. Nevertheless, regulations to improve safety on the sea for small-scale fishers have yet to be implemented. The mandate of Permen No. 2/2017 that fisheries industries and businesses apply for human rights certification has not been realized. Various laws (fisheries, coastal management, etc.) and regulations (ministerial regulations) recognize the needs and mandate to develop the human resource capacity of small-scale fishers and fishing communities. A number of government programs and projects have addressed small-scale fishers' capacity development; however, most of these programs were in the form of short-term training with little follow-up in terms of extension services. Various laws, regulations, and policies are in place to promote livelihood diversification and income-generating activities for small-scale fishers. There are a number of government programs around livelihood and income-generating development programs throughout Indonesia. Various laws, including Law No. 7/2016, which concerns protection and empowerment of fishers, fish culture, and salt farmers, mandated that government provide support for education of small-scale fishers and their families. On-the-ground programs and support for education of children and youth in fishing communities are currently in place. Various institutions and agencies, including the education agency and local governments, provide these programs. Key recommendations include:

- Develop policy or a regulation to improve safety for small-scale fishers at sea, including a mechanism to report and respond to a case of fishers missing at sea.
- Develop relevant policy and a long-term strategy for capacity-building programs and empowerment of small-scale fishers, including deployment of extension workers to "nurture" small-scale fishers and community groups for a longer period.
- Design capacity-building programs relevant to the needs of small-scale fishers and in accordance with potential economic activities in a particular area.
- Develop a strategy for comprehensive new livelihood and income-generating activities with funding.
- Provide strategic follow-on support for small-scale fishers (group) engaged in new income-generating activities until new economic activity or business is profitable.
- Develop an education strategy to support for small-scale fishing families in remote areas with limited education facilities and services.

Value Chains, Post-harvest, and Trade. The Indonesian government recently committed to increase investments in port infrastructure and value chain improvements. Presidential Instruction No. 7/2016 (Inpres 7/2016) includes a mandate to improve the distribution and logistics of fishery products and to improve basic facilities and infrastructure to support the fishing industry "for the welfare of fishers … and processors." Just how much small-scale fishers will benefit from these investments will depend on a number of factors, most crucially how dependent they are on buyers and middlemen and thus in a position to capture gains from improved value chains. A basic value chain problem for fishers in Indonesia is the availability of ice; remote communities must often sell lower-value dried or salted fish rather than higher-value iced fresh fish. To take advantage of better markets for higher-quality products and more lucrative markets, fishers will need increased institutional capacity for marketing their products and increased physical cold storage capacity. Key recommendations include:

- Improve competitiveness and sustainability of fish and fish products of small-scale fisheries by building their capacity, increasing stakeholder involvement, improving data monitoring and evaluation and their management system, and promoting better utilization of infrastructure and facilities.
- Improve fish and fish product processing of small-scale fisheries by increasing investment in processing of fisheries product, monitoring and evaluating fish losses, working hand in hand with fish processing associations, inviting more investors, and conducting regular training and inspection.
- Ensure sustainability of the small-scale fisheries business and its competitiveness by promoting domestic fish consumption, improving marketing efficiency, meeting quality standards on export products, increasing value added and fish product diversification, and protecting as well as improving standard of living of small-scale fishers.

Gender Equality. Gender equality is mostly implicit rather than explicit in the existing laws, policies, and regulations. There are many fisheries programs and interventions targeted to fisherwomen as well as fishermen in the fishing community. However, in many instances, the roles of fishermen are still dominant in accordance with traditions and norms in Indonesian communities, including that of fishing communities. Key recommendations include:

- Explicitly incorporate gender equality in fisheries policy and regulations.
- Design programs and interventions to produce lasting impacts (rather than oriented to respond to short-term needs).

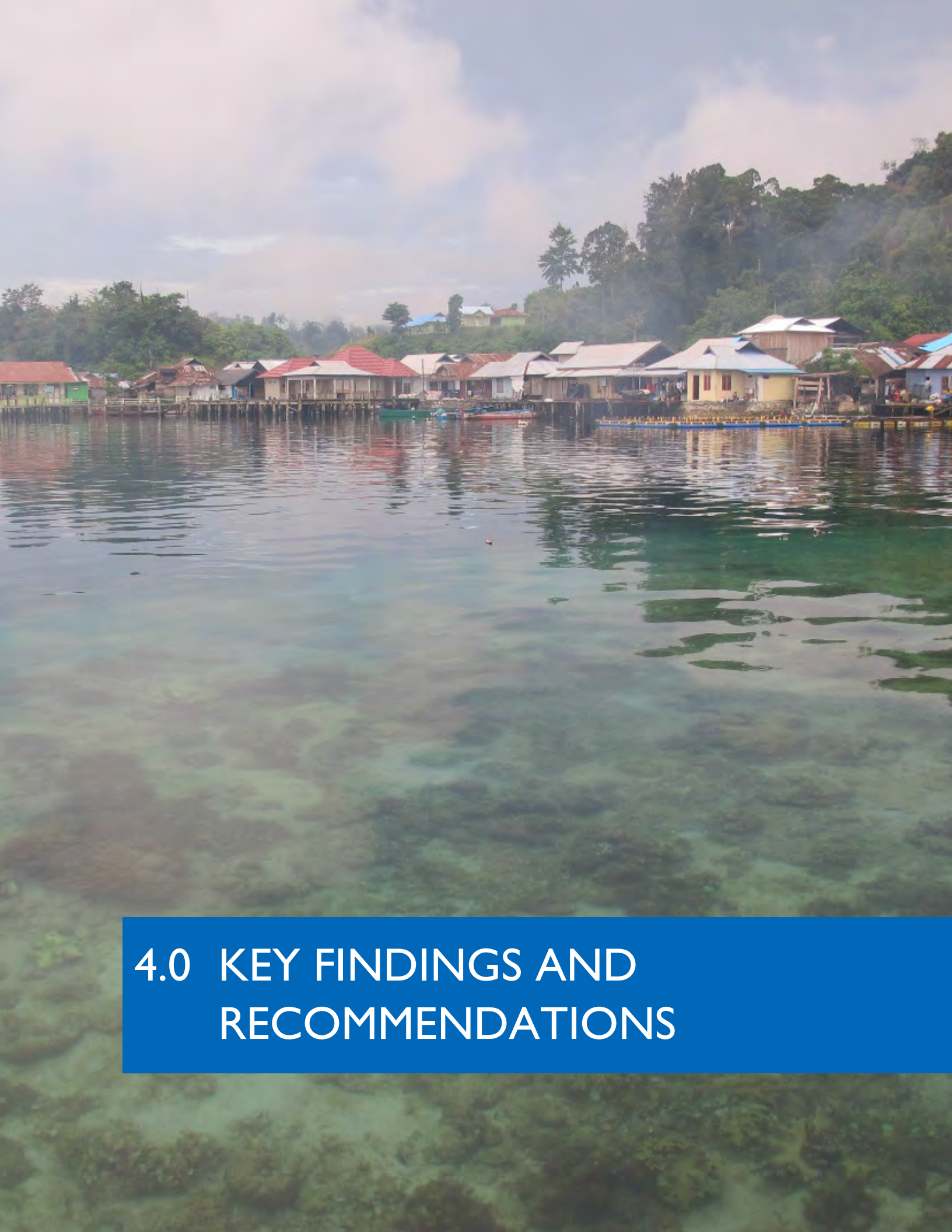
Policy Coherence, Institutional Coordination, and Collaboration. Existing national laws together with guidelines on MPAs and MSP provide elements of a policy framework that supports an integrated and ecosystem-based management approach for small-scale fisheries. The "one map policy" and MSP efforts provide a basis for addressing conflicting and competing uses of the nearshore waters. The government has prioritized support for infrastructure and facilities to support small-scale fisheries through the Framework for Protection and Empowerment of Fishermen, Fish Farmers, and Salt Farmers (Act No. 7/2016). However, complementary support is needed to ensure access of small-scale fishers to the intended benefits. In addition, the proposed establishment of Integrated Marine and Fisheries Centers (*Sentra Kelautan dan Perikanan Terpadu* [SKPT], formerly called Minapolitan as established under Ministerial Decree No. KEP.32/MEN/ 2010), is intended to develop and establish fisheries business/industrial centers throughout Indonesia. However, the involvement of the small-scale fisheries sector in these centers is not clear. The government's regulation on implementation of Local Government Law Act 23/2016 is currently being developed to clarify the role of the provinces, districts, and communities in marine and fisheries management. Overall, the interests and needs of the small-scale fisheries sector are not clearly defined or specifically discussed—especially in the proposed establishment of Fisheries Management Councils for each FMA in the country. Key recommendations include:

- Put in place a ministerial decree to require that guidance in establishing the Fisheries Management Councils explicitly consider small-scale fisheries and engage small-scale fishers in management decisions.
- Fully engage small-scale fisheries' stakeholders in the MSP process.

- Pay more attention to small-scale fisheries in the design of Integrated Marine and Fisheries Centers and integration of the small-scale fisheries supply chain.
- Develop implementing regulations as mandated by the Fisherman Act (Law 7/2016) and Local Government Act (Law 23/2016) with participation of small-scale fisheries stakeholders.
- Engage participation of small-scale fisheries' stakeholders more significantly in planning.
- Ensure a role for district governments in registration and small-scale fisher empowerment.

3.2 OBSERVATIONS AND OPPORTUNITIES

Participants felt that additional expertise was needed to fully assess the national and local status of implementation of some of the dimensions of the assessment. A broader cross-section of participants from relevant ministries, the private sector, and other organizations would provide the range of expertise needed for a more coverage of the topics. Further, information gaps were identified in evaluating the local implementation status of the various strategies and best practices in the assessment matrix. One approach to addressing this gap would be to use the assessment matrix in a specific location, such as at a provincial level or for a FMA. Using the assessment approach at a local level would serve multiple purposes: (1) gathering better information on local implementation to develop actions to improve implementation, (2) increasing awareness of local stakeholders about national laws and policies concerning small-scale fisheries, and (3) increasing awareness of local stakeholders about the SSF Guidelines.



4.0 KEY FINDINGS AND RECOMMENDATIONS

The Indonesia field assessment team developed key findings and recommendations based on the outputs of the workshop, and meetings and discussions with USAID SEA Project staff and partners. The entry points for development programming in marine tenure and small-scale fisheries identified by Courtney and Jhaveri (2017) (Figure 5) provide a useful framework in which to discuss the findings and recommendations. These entry points reinforce the need to:

- Recognize and characterize the multiple contributions of small-scale fisheries as a sector to rural development.
- Strengthen and establish new community-based marine tenure institutions considering the full bundle of tenure rights and responsibilities and design principles for successful community-based management.
- Improve the capacity, effectiveness, and direction of accountability of co-management arrangements among national and local government, communities, small-scale fisheries stakeholders, and other entities.
- Adopt an ecosystem approach to fisheries management that explicitly considers marine tenure rights in all management interventions based on knowledge of the social-ecological system and supported by effective co-management arrangements needed to address conflicting and competing use of the nearshore waters where small-scale fishers operate.
- Develop a coherent legal and policy framework that recognizes the importance of small-scale fisheries as a sector, and supports preferential use of nearshore waters and marine tenure rights and institutions for small-scale fishers embedded in an ecosystem approach to fisheries management with clearly defined co-management arrangements.

The USAID SEA Project was designed to incorporate many elements of this framework.

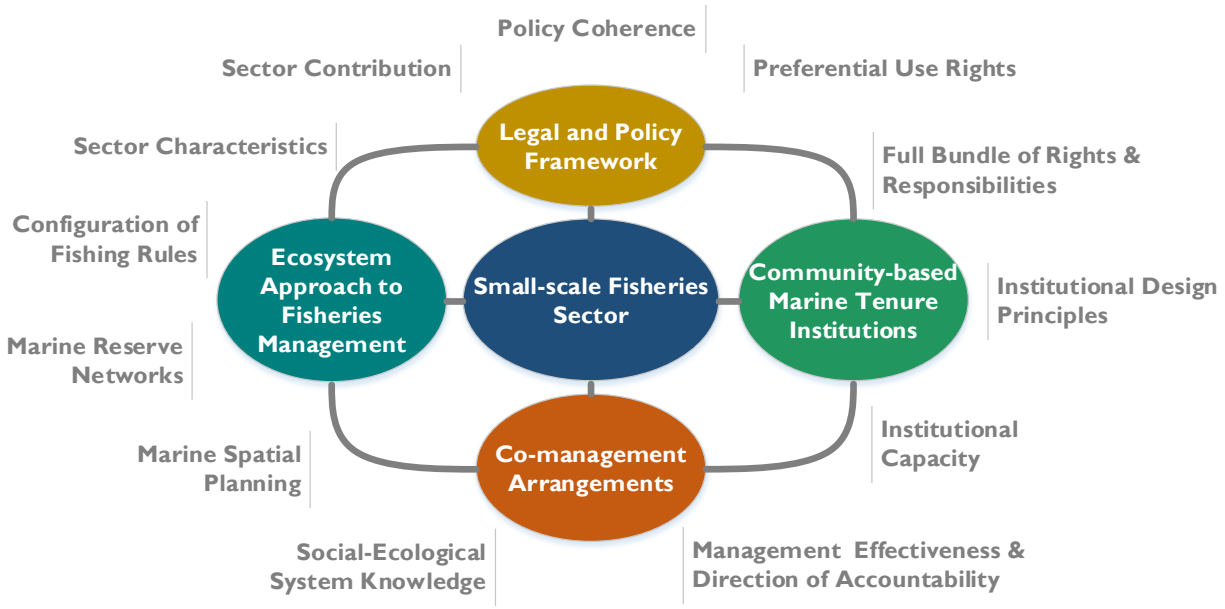


Figure 5. Key entry points for programming in marine tenure and small-scale fisheries

4.1 SMALL-SCALE FISHERIES SECTOR

Small-scale fisheries as a sector remains largely invisible in national economic terms due to its dispersed nature within the rural coastal landscape, its complexity along the entire value chain, and insufficient information and data along the entire supply chain to characterize the sector. The USAID SEA Project's focus on small-scale fisheries provides an opportunity to raise awareness of the important social, economic, and environment contributions of this sector and assist in developing information and data needed to sustainable manage small-scale fisheries.

Mainstream small-scale fisheries as a sector. There is a need to raise awareness of the importance of small-scale fisheries as significant socioeconomic sector in Indonesia. Indonesia has adopted the SSF Guidelines and has begun to align programs toward implementing the various provisions. Existing national laws and policies, however, do not recognize small-scale fisheries as a sector. The definition of small-scale fishers as fishers who conduct fishing to meet their daily needs without a fishing boat or with a fishing boat less than 10 GT (Law on the Protection and Empowerment of Fishers, Resources and Salt Farmers; No. 7/2016), provides no recognition of the sector's contribution to rural employment along the value chain (Figure 6).

A social marketing campaign could be developed to highlight the significant cultural, economic, ecological, social, food security, poverty reduction contributions of small-scale fisheries. Social marketing messages should highlight the important role of securing sustainable small-scale fisheries in the country's efforts to reduce IUU fishing but more importantly as an economic engine for robust rural development. Strengthening marine tenure in small-scale fisheries is recognized as critical to social, ecological, and economic performance. Using available information and data, development of communication materials, such as a booklet, infographics, and a social marketing campaign could put front and center the significance of small-scale fisheries both globally and in Indonesia.

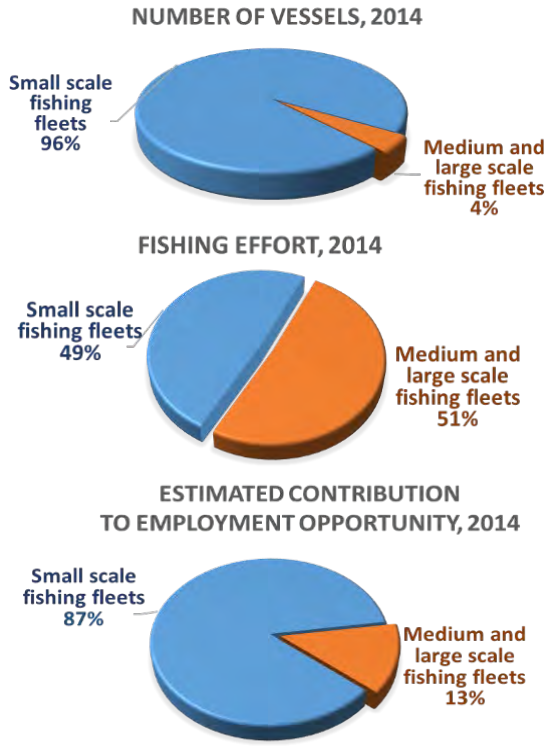


Figure 6. National contribution of small-scale fisheries to Indonesia's capture fisheries sector (Purwanto, 2017)

Improve information and data collection and analysis at national and provincial scales for the small-scale fisheries management. Information and data needed to understand and manage small-scale fisheries continues to be weak. A systematic information and data management system is needed to collect basic parameters such as number of registered and unregistered small-scale fishers, vessel size, gear, catch, and effort at provincial and national scales. In addition, fish stock and habitat assessments, gender-informed value chain studies, and other studies are needed to support sustainable management of the fisheries.

Review and realign existing subsidies and incentives in the fishing industry that could undermine the small-scale fisheries sector. The government has initiated a number of programs to help small-scale fishers. To ensure these programs support sustainable small-scale fisheries, all subsidies and incentives for the fishing industry (small, medium, and large) should be reviewed and aligned. The Law on the Protection and Empowerment of Fishers, Resources, and Salt Farmers (No. 7/2016) provides support for fishing facilities and infrastructure, processing and marketing infrastructure, and fishing families to support the fishing industry (Figure 7). While this law applies to small-scale and traditional fishers, it provides benefits to fishing vessels between 10 and 60 GT used by fishing businesses. Increasing the capacity of medium- and large-scale fishing operations by supporting an increased number of boats, and more efficient gears through various subsidies and incentives, could undermine small-scale fishers fishing for the same fish stocks. Further, the current cost structure for licensing appears to favor medium- and large-scale fishing operations.

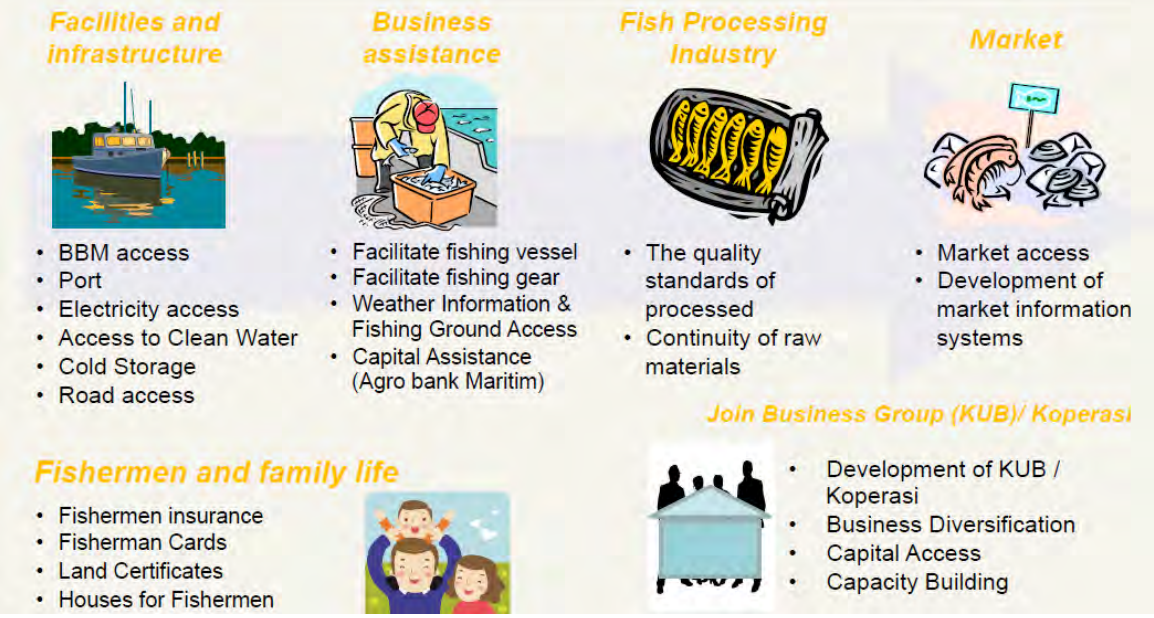


Figure 7. Framework for empowerment of the fishing industry (MMAF, 2016)

4.2 COMMUNITY-BASED MARINE TENURE INSTITUTIONS

A community-based marine tenure institution is a local governance body that determines rules about how key tenure issues such as access, use, management, and exclusion of a defined fishing area are developed and implemented. Ideally, these institutions promote socially inclusive decision making through representative and participatory processes. In Indonesia, customary marine tenure systems represent the traditional form of governance at the community-level, largely in place to implement *adat* law. Beyond customary marine tenure systems, community-based management efforts are largely informal and communities have little capacity to manage marine and fisheries resources sustainably with the many competing and conflicting uses of the nearshore waters, particularly in a changing climate.

Indonesia's Village Law (Law No. 6 of 2014) establishes a new institutional framework for community development in Indonesia's 74,091 rural villages. The law strengthens the legal status of villages, increases their authority and responsibility, and recognizes *adat*, (traditional village governance arrangements). The law substantially increases direct transfers to villages, which are to be used for administration, development, and community empowerment. This together with the Law on the

Protection and Empowerment of Fishers, Resources, and Salt Farmers (No. 7/2016), which recognizes small-scale and traditional fishers, could support the establishment and strengthening of community-based and customary marine tenure rights, responsibilities, and institutions. Implementing regulations could be strengthened to acknowledge the importance of local knowledge and wisdom and local community participation in coastal fisheries management and aquaculture.

The USAID SEA Project's Feed the Future activity, and provincial focus on North Maluku, Maluku and West Papua, provide an opportunity to strengthen customary marine tenure systems by supporting sustainable small-scale fisheries for food security and poverty alleviation. USAID SEA has engaged six Feed The Future focused partners that are focusing on small scale solutions in MPA sites such as community production and marketing of tourism products, and community-led fishing approaches like TURF and LMMA; and help to facilitate the harmonization of the framework between tourism and coastal resources management through common codes of conduct and best practices.

Hybrid systems that combine traditional ecological knowledge and practices with science-based knowledge and management can help indigenous peoples with enduring customary marine tenure systems preserve their culture in a changing world.

Explicitly consider marine tenure rights and responsibilities at the village level. From Indonesia's constitution to national laws and policies, the rights of indigenous people and their customary territories are protected. While relatively few customary marine tenure claims have been mapped, recorded, and recognized, the MMAF is leading mapping efforts as part of MSP. Further, there is a provision in the existing law for establishing MPAs that provide for the delineation of exclusive access privileges to fishing grounds for small-scale fishers. Rare has worked with communities to delineate TURFs and adjacent marine reserves, known as the TURF-Reserve model, to support sustainable small-scale fishing as part of MPA management. Outside of MPAs and customary marine tenure institutions, there are few examples of villages with exclusive fishing grounds managed by a local institution empowered with the bundle of marine tenure rights and responsibilities to exclude, access/withdraw, manage, enforce, and transfer/alienate marine and fisheries resources.

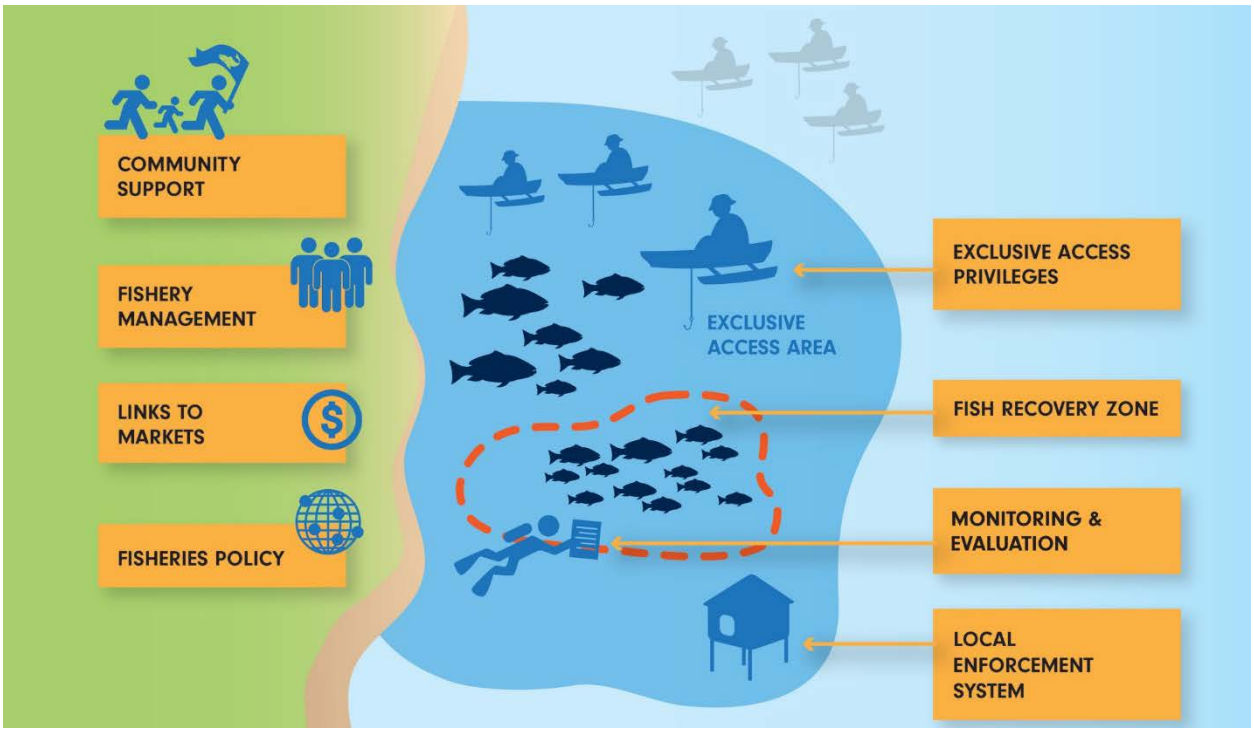


Figure 8. Rare's TURF-Reserve Model (Rare, 2017)

There is a need to increase local government and community awareness of the existing legal and policy framework that support marine tenure in small-scale fisheries. Development of an informational booklet could help clarify the legal basis for marine tenure and provide options for delineating customary marine tenure claims and establishing new community-based marine tenure systems as part of MPA management. There may also be a need to develop a new law or policy or conduct further research on existing laws and policies to enable the establishment of community-based marine tenure institutions with the tenure rights and responsibilities as part of an EAFM. MMAF is working to develop a system to record marine tenure institutions at the district level that can roll up to provincial and national levels.

Strengthen the capacity of customary marine tenure institutions combining traditional ecological knowledge and practices, science-based knowledge and management, and value chain and economic analysis. There is growing evidence that combining traditional and science-based knowledge and practices can strengthen long enduring customary marine tenure systems in light of emerging external pressures and drivers of change. Support is needed to map and characterize existing customary claims and practices, resource use patterns, and institutional arrangements and capacity for fisheries management. Existing organizations such as JKPP (Jaringan Kerja Pemetaan Partisipatif) and BRWA (Badan Registrasi Wilayah Adat) help indigenous people map their customary claims. Assessments of threats to marine tenure security should consider a range of social, economic, and environmental drivers. Assessments of the status of fisheries and catch trends should build on local knowledge as well as scientific surveys and modeling. Value chain analyses for existing customary marine tenure systems could identify opportunities for alternative livelihoods and value-added products as well as help better understand the role of the middleman in small-scale fisheries and the potential for establishing cooperatives. Further, there is a need to provide opportunities for youth in science and technology to support resource management and monitoring, possibly linking programs from both MMAF and USAID.

4.3 ECOSYSTEM APPROACH TO FISHERIES MANAGEMENT

EAFM strives to balance diverse societal objectives by taking into account the knowledge and uncertainties about biotic, abiotic, and human components of ecosystems and their interactions, and applying an integrated approach to fisheries within ecologically meaningful boundaries. Key elements of an EAFM require that (1) fisheries management interventions always consider a defined ecosystem boundary as a resource management unit; (2) the dynamics of marine ecosystems and how they respond to human-induced changes are needed, particularly to changes resulting from fisheries; and (3) a governance system that supports limits to fisheries resource exploitation activities and engages resource users in management decision making is crucial. The USAID SEA Project is applying key management tools that support EAFM, including fishing restrictions, MPA management, and MSP. The opportunity for the USAID SEA Project is to build the capacity and cooperation of national, provincial, and district levels of government together with small-scale fisheries organizations, fishing communities, and customary marine tenure institutions to support sustainable small-scale fisheries.

Delineate small-scale fishing grounds, customary marine tenure claims, and marine reserve networks as part of provincial MSP. MSP at the provincial level provides an important opportunity to support marine tenure and sustainable small-scale fisheries and to engage stakeholders in participatory mapping and planning on small-scale fisheries management. Participation of local stakeholders in MSP is essential. MSP efforts should delineate fishing grounds used by small-scale fishers and customary marine tenure claims as a first step in supporting the preferential use of provincial waters by small-scale fishers. These areas, combined with locally managed marine reserve networks—designed using ecological principles—could provide the foundation for sustainable small-scale fisheries. With preferential use areas and marine reserves delineated as a "baseline" of the marine spatial plan, other uses can be delineated with special attention given to the resolution of competing and conflicting uses both on land and at sea.

Build capacity of province to undertake mandate for small-scale fisheries management. With the recent recentralization of small-scale fisheries management from the district to the provincial level of government under Law No. 23/2014, there is an urgent need to build the capacity of provincial government to carry out their new mandate. In addition, co-management arrangements between national government, district governments, communities, and other stakeholders need to be specifically articulated in an EAFM context. Provincial government needs capacity to (1) develop a provincial coastal and fisheries management plan based on MSP, (2) integrate small-scale fisheries into the Fisheries Management Plan for Fisheries Management Area 715, and (3) establish budgets for small-scale fisheries management into provincial mid-term and annual development plans.

4.4 CO-MANAGEMENT ARRANGEMENTS

Co-management arrangements between national and subnational levels of government and communities have emerged as an important component of sustainable small-scale fisheries. Co-management approaches range across a spectrum from centralized management to autonomous community self-governance. In Indonesia, co-management roles and responsibilities are poorly defined. The USAID SEA Project has an opportunity to develop effective models of co-management between communities and national, provincial, and district levels of government.

Develop adaptive co-management arrangements to support customary marine tenure in the context of EAFM. Since 2004, when Fisheries Law No. 31 came into effect, the fisheries

management regime in Indonesia shifted. This shift has changed the emphasis from a top-down, centralized management regime to a bottom-up, decentralized regime (examples of customary marine tenure management systems include *Sasi Laut*, *Panglima Laot*, *Awig-awig,* detailed in Appendix A), as stipulated in Articles No. 2 and 6 of the Fisheries Law. These articles set out the principles of co-management and acknowledge the role of local/traditional management and ecological knowledge in managing fisheries. However, co-management arrangements between government and communities remains poorly defined and there is no specific law or policy in relation to fisheries co-management in Indonesia. The enabling conditions need to be stronger and provide legal clarification for using fisheries co-management and guidance for its use and its linkage to customary marine tenure systems. As there are few community-based coastal and fisheries management institutions, special attention is necessary to establish and strengthen these types of institutions that will support co-management.

The nature of co-management arrangements must be adapted to the capacity of community-based institutions. When community cohesion is strong and compliance is high, the community can take on significant obligations and authority for management. When community cohesion is low or other factors, such as conflicting and competing use of the resources, are beyond the capacity of the community to address, government can take more authority and obligations. Other things to consider in looking at ideal co-management types are the completeness or comprehension of existing management measures. If the community has a relatively complete and comprehensive management regime, it does not need to call for significant support from government. If community is limited, government can support as much as possible. For the latter, government might lead fisheries management. It should be noted, however, that the emergence of co-management is due to the legitimacy issues triggered by the lack of fishers' participation in fisheries management, thus instructive co-management should be the last option.

Promote co-management of FMA 715 that spans multiple provinces. Management should look at small-scale transboundary fishers who move from the waters of one province to another. FMAs could be divided into sub-FMAs whose specific fisheries management plans and governance systems could then be developed and tailored to more particular situations, including support for customary marine tenure systems and tenure rights. Each FMA should have an FMA council comprising representatives from local government, central government, and stakeholders. These councils should interact to support the overall management of fisheries in that particular FMA.

4.5 LEGAL AND POLICY FRAMEWORK

A coherent and integrated legal and policy framework is necessary to support marine tenure and small-scale fisheries. Protections for traditional rights and customary marine tenure are explicitly referenced in Indonesia's constitution. While Indonesia has a number of national laws, regulations, and programs that could contribute to sustainable small-scale fisheries, absence of a coherent policy has led to fragmented implementation. The USAID SEA Project could assist MMAF to develop a cohesive national policy on marine tenure and small-scale fisheries to guide the design and implementation of government-led programs as well as development assistance projects.

Clarify existing laws and policies for recognizing and recording customary marine tenure claims. Clarification of the process and protocols for recognizing and recording customary marine tenure claims is necessary. The *kabupaten* (district) has historically served as the local governance body for recording these claims. In the case of West Papua, customary claims were made through a Presidential Decree. Article 60 of Law No. 1 /2014, which recognizes the customary marine tenure over traditional fishing grounds, can be strengthened with more specific language on codifying existing marine

tenure systems at local levels and specifying the bundle of individual rights including access, withdrawal, management, exclusion, and transfer. This would create enabling conditions for the development of more specific implementation rules and regulations to strengthen customary marine tenure systems. The national indigenous peoples' alliance, *Aliansi Masyarakat Adat Nusantara* and the Indigenous Peoples Alliance of the Archipelago could provide insights into legal and policy changes needed to support customary marine tenure for sustainable small-scale fisheries.

Develop a cohesive national policy on sustainable small-scale fisheries. Indonesia has many laws, policies, and programs that pertain to marine tenure and small-scale fisheries; however, these policies are not aligned or coherent, contributing to weak and fragmented implementation. The development of a national policy on sustainable small-scale fisheries could provide an opportunity to formulate a vision of the role small-scale fisheries can play in food security and poverty alleviation; raise the importance of the sector in Indonesia; resolve conflicting terminologies and guidelines; and serve as a unifying legal, policy, and institutional guide for implementation.

Development of a cohesive national policy can address support for marine tenure and small-scale fisheries by (a) establishing clear legal mechanisms for communities to gain exclusive use rights and customary marine tenure institutions to register their territorial claims, (b) defining roles and responsibilities of community-based marine tenure institutions and government through adaptive co-management, (c) applying an EAFM approach to support sustainability in small-scale fisheries, and (d) defining government programs such as insurance and positive subsidies for small-scale fishers. This "policy" could be first developed as a working guide to help the USAID SEA Project communicate fragmented laws and policies to project stakeholders in a coherent manner. Over time, this working guide could be refined with the MMAF and put forth as a ministerial decree.

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APPENDIX A: OVERVIEW OF CUSTOMARY MARINE TENURE SYSTEMS IN INDONESIA

A-1. LEGAL AND POLICY OVERVIEW

Protections for traditional rights and customary marine tenure are explicitly referenced in the Government Indonesia's 1945 Constitution. The constitutional "rights" for coastal and marine resources are held by the national government for the benefit of the nation's citizens. Indonesia recognizes the right for the state to own (*hak menguasai negara*). This right, as stated at Article 2 (4) of Law No. 5 1960 on Basic Agrarian Law, authorizes local governments and communities to recognize traditional rights as needed as long as it is not against the national interest. The term *hak penangkapan ikan* (rights to catch fish) is found in Article 47 (2) of the Basic Agrarian Law No. 5; however, use of the term *hak* (right) in a natural resource management context has been controversial.

Customary fisheries management systems were not recognized during Suharto's "New Order Period" (1967–1998). Law 5/1979 called for uniform systems of village government throughout Indonesia, undermining traditional rights. This neglect of small-scale fishers and local marine resource management began to change in 1999 with the establishment of the Ministry of Marine Affairs and Fisheries (MMAF) and the enactment of Law 22/1999 on regional autonomy. After passage of this law, both provincial and district governments had a broader scope to pass laws as long as they did not contradict national law. Law No. 22/1999 included specific language devolving management of marine and coastal resources to district governments, and the law that replaced it in 2004, Law No. 31/2004, as amended by Law 45/2009, continued to devolve authority for nearshore fisheries management to the local level. Law 31/2004 defined small-scale fishers as "any person whose livelihood is undertaken to meet his daily needs" (Article 1, Chapter 1, Sec. 11) and included assistance for small-scale fishers, including recognition (but not formal *legal* recognition) of traditional fishing institutions. Law No. 32/2004 supplanted Law No. 22/1999 and strengthened provincial government authority. Until it was withdrawn in 2014, Article 18 explicitly assigned management rights for marine resources out to four nm to the district (*kabupaten*) government, and from 4 to 12 nm to the provincial government (Hartoto et al., 2009). Law No 23/2014 withdraws the authority of district government and hands the right to the provincial government.

A Ministry of Agriculture decree (392/1999) established a zonation of coastal waters intended to establish exclusive rights for traditional fishers in nearshore waters, but in doing so raised questions about small-scale fishers' rights to fish beyond six nm from shore. This was corrected in Fisheries Law 31/2004, which confirmed the rights of small-scale fishers to fish anywhere inside Indonesia's fisheries management area, including all coastal, territorial, and Exclusive Economic Zone waters. The revised Decentralization Law enacted that same year (Law 22/1999) also defined "small-scale fishers" as traditional fishers who use traditional fishing technology and who are not required to hold an enterprise certificate or to pay tax. Neither of these provisions addressed or acknowledged community property or management rights over coastal resources, or the rights of communities to exclude small-scale outsiders (i.e., those who do not live adjacent to the fishing ground) from fishing in areas under traditional or customary management and control (Satria and Adhuri, 2010).

The national framework and policy on integrated coastal management in Indonesia is stipulated in Law No 27/2007 concerning the Management of Coastal and Small Islands. This law confirmed the decentralization approach and offered wider public participation in the management of coastal and small islands. It also created concession rights in coastal waters known as HP-3 (*hak pengusahaan perairan pesisir*). These concession rights could be granted to individuals (Indonesian citizens), *adat* communities, and the private sector for up to 20 years, and could be used for extraction, conservation, and tourism. HP-3 concessions could not detract from the sustainability of coastal and small island ecosystems and

traditional communities, nor impede free navigation. Further legislation was required to specify exactly how concessions would be granted and who would have the authority to grant them. Article 62 of Law No 27/2007 recognized preexisting customary marine tenure and clarified that communities and the private sector have an equal opportunity to participate in the planning, implementation, and supervision of coastal and small island management (Satria and Adhuri, 2010). Article 9 (3) also mentions that zoning plans must include allocates for community space and access around coasts and small islands.

Law 27/2007 established a legal basis for long-term nearshore use rights. These use rights mirrored previously implemented concessions for Indonesian forests (*hak pengusahaan hutan*) and would have been valid from the surface of the water down to the seabed, suitable for such marine-based industries as tourism, aquaculture, pearl farming, and fishing. Although concessions were not in perpetuity, they were intended to be sufficiently long to shift the incentives of the concession holder toward long-term stewardship. However, in 2011, the Constitutional Court of Indonesia struck down the HP-3 nearshore concessions of Law 27/2007 out of concern that the concessions violated the 1945 Constitution, which states that natural resources shall be under the power of the state and managed for the maximum benefit of the people. In addition, there was concern that the requirement in the law for community participation in consultation was insufficiently clear. The court also decided that the law evinced a preference for "entrepreneurs" and other private entities over community control over concessions, despite language in the law mandating the protection of traditional livelihoods.

The court took a narrow view of rights (*hak kebendaan*), judging them to be ownership rights over resources rather than use rights. The court did not close the door on fishing rights altogether, holding that licensing is consistent with state control. The court also asserted the importance of sustained *adat* community interests in marine resources. The HP-3 experience demonstrates that any future proposals for fishing rights must clearly make the distinction between outright ownership rights and use rights to access government controlled resources. Any new proposal must also explicitly describe the means of participation for *adat* communities and the rationale for how it will benefit the nation's prosperity.

Law No. 27/2007 was amended by Law No. 1/2014 on the Management of Coastal Areas and Small Islands, creating coastal business licenses known as *izin lokasi. Izin lokasi* are vacated if not used for a period of two years, may be revoked at any time, and are limited to the following activities: salt production, marine pharmacology, marine biotechnology, use of sea water (but not for energy), coastal tourism, laying of pipes and cables, and wreck salvage (Article 19). *Izin lokasi* may not interfere with traditional livelihood and use of coastal resources (Article 20). Foreign investment in coastal resources must include public access, which in Law 27/2007 included fishing access (Article 26A).

The Law on Regional Governments (Law No. 23 of 2014, as amended by Law No. 9 of 2015), grants regional autonomy to regional governments, including for protection of the environment. Under Law No. 23/2014, authority to manage coastal/marine waters was transferred from the district to the provincial level, giving provinces jurisdiction from 0 to 12 nm. Over 12 nm remained under the national government. The MMAF and provincial governments were given authority to manage fishing within 11 Fishery Management Areas (FMAs). Government Regulation No. 60/2007, Article 17, authorizes no-take zones within certain marine protected areas (MPAs), but makes no mention of customary access rights.

No existing laws directly establish exclusive access rights to fisheries for local fishing communities (or anyone else). The very idea of exclusive use rights in Indonesia is contentious (as evidenced by the finding that HP-3 rights were unconstitutional). Article 60 of Law No. 1/2014 introduces exclusive access rights for communities with traditional rights (*masyarakat hukum adat*) and indigenous communities (*masyarakat tradisional*), but only to the extent that these two types of communities can

propose the inclusion of traditional/indigenous community access rights to fishing grounds in coastal and small islands zoning plans. The law does not fully recognize traditional marine territories, which are common particularly in eastern Indonesia in Maluku, Papua, and West Papua.

While a variety of customary laws and marine tenure practices are found throughout Indonesia, the principle of local customary marine tenure is not widely recognized by local laws. Papua is an important exception, with its own special autonomy legislation, passed by central government in an attempt to quell the Papuan independence movement. In 2002, Law No. 26 established the new regency of Raja Ampat, and a 2003 decree from the Bupati (head of the regency) to create a *kabupaten bahari* (sea regency) strengthened district government's ability to manage marine resources within Raja Ampat.

Customary marine tenure institutions face challenges in Indonesia's rapidly changing society, including population growth, urbanization, poor communication with resource managers at larger scales, and competing demands for marine resources historically controlled by some communities (Novaczek et al., 2001). The scope of these institutions is also not sufficiently broad to address Indonesia's rapid expansion in fishing pressure and resource depletion. *Adat* systems, for example, do not necessarily provide opportunities for people or groups who have not been longstanding members of a particular community. The variation in customary laws and their application means that using *adat* as a means to restrict outsider access to fishing grounds or to reduce fishing pressure is still a site-by-site strategy. Customary marine tenure systems must adapt to modern society and gain formal legal status or may cease to function at the operational level. There are various options for providing a legal basis for local management bodies, including decrees by the provincial governor, the district head, or the sub-district head, and promulgation of a provincial law. Great care must be exercised not to ignore the complexity of community structures and potential for new or revitalized tenure systems to magnify existing inequalities and power structures within communities (Bailey and Zerner, 1992).

A-2. TYPES OF CUSTOMARY MARINE TENURE SYSTEMS

Customary marine tenure systems exist in pockets spanning the width of Indonesia from Aceh in West Sumatra to West Papua at the far eastern edge of Indonesia. In each case, customary tenure systems have evolved over generations, and waxed and waned along with changes to the political, legal, and social climate in Indonesia. Because of these changes, most customary marine tenure systems in Indonesia are relatively weak. Even when the law recognizes systems, such as in West Papua, the extent of their authority over fisheries management is not clear. Most systems developed to avoid conflict or for economic or political reasons (Ruddle and Satria, 2010). Of course, conservation plays a part in preventing conflict, especially when prohibiting destructive fishing practices, but there is scant historical evidence of adaptive management (apart from total closure) or of any harvest limits (apart from a total ban) within customary marine tenure systems in Indonesia. Still, all of these systems set important precedents that put them at the center of efforts to strengthen marine tenure and to improve the performance of small-scale fisheries in Indonesia.

Sasi Laut (Petuanan Laut) **Maluku & West Papua**

In the academic literature, s*asi laut* is the most commonly cited example of customary marine tenure in Indonesia. *Sasi laut* is found in Maluku and West Papua, including the USAID SEA Project sites within FMA 715 (see Figure 3). Fundamentally, *sasi* describes a system of closing a nearshore area to fishing, either completely or for specific species such as trochus or sea cucumber. The term *sasi laut* is often used interchangeably with marine tenure, but *petuanan laut* more accurately describes the system of marine tenure in Maluku and Papua, of which *sasi* is one part (Satria and Adhuri, 2010). Village elders or

a village council commonly known as *kewang* sets the timing and area for *sasi*, as well as the punishments (often fines) for transgression (Syarif, 2009). Examples of s*asi laut* may include access rights, harvest regulations, and benefit distribution (Harkes & Novaczek, 2002), but these are isolated examples that are sometimes contested locally (Adhuri, 2013). In any case, access and regulation within *sasi* cannot be generalized beyond the right of closure.

Under *petuanan laut*, the authority of the *kewang* to lease marine areas outright appears to be widely recognized (Harkes, 1999; Novaczek et al., 2001), including a number of examples of both no-take zones and aquaculture leases in recent years. The ability to partially lease access, for example, by allowing a fishing company to harvest a certain species or to access a certain area, is less clear. Even among local fishing communities, the ability to exclude one group but allow access to another is not clear. In Kaimana, West Papua, for example, local communities claimed that only locals could fish on "their reefs," but when pressed, could not supply a definition of who counted as local and who did not. In some cases, notably the Kei Islands, attempts by one community to keep out another nearby community have led to conflict and even violence (Adhuri, 2013). Despite these challenges, *sasi* and *petuanan laut* are among the few legally recognized customary marine tenure rights and offer a solid building block for stronger, community-based conservation—albeit one that will require significant explication.

Rompong **South Sulawesi**

Rompong is a local word for a fish aggregating device (FAD) in South Sulawesi. FADs in this area are generally bamboo rafts and palm leaves that require an investment to build, maintain, and monitor. To encourage this investment, a system has developed between fishers and buyers to recognize the ownership of specific FADs. Fish buyers pay for the *rompong* and fishers who use them must give a portion (20 percent is the norm) of their catch to the buyer (Adrianto et al., 2009). The exclusive area around the *rompong* is roughly one hectare, and access is also given to small handline fishers without any obligation to the owners (Adrianto et al., 2009). *Rompong* owners may choose harvest times and impose some gear restrictions, but there is some question over the effectiveness of enforcement, and no evidence that owners take conservation measures. The primary motivation for this activity is economic.

Mane'e **North Sulawesi**

Mane'e is essentially a community agreement to cooperate on an activity, in this case to harvest fish from a previously closed reef area. Large catches of snapper and grouper are targeted for special village rituals and feasts. In Kakarotan Island in North Sulawesi, one of nine reef areas is closed for approximately six months each year (Cinner et al., 2005). The system is based on the ability to call for area closures similar to *sasi* known locally as *Eha* (Adrianto et al., 2009). The primary concern of *mane'e* is to provide fish for a social purpose, not conservation. Fishing is generally not the primary source of livelihood for the villages involved, and there are no restrictions on the harvest once it is opened. One study found that total biomass and average size of the fish increased inside the closed area (Cinner et al., 2005)—but it is not clear whether these effects remain after the reef area has been reopened.

Awig-Awig **Bali & Lombok**

Awig-awig extends as far as three miles offshore, and much like *sasi laut*, allows for closed seasons and areas to be declared. *Awig-awig* areas are generally managed by a council of fishers who can also prohibit destructive fishing (including bombs, poison, and trawling) and limit fishing gear to small-scale only. The literal translation of *awig*-awig is "local rule" and it is used not to limit the total catch but to make fish available to all members of the community (Satria and Adhuri, 2010). The primary concern is social, for which there are some environmental protections.

Bali and Lombok have different cultural traditions (Bali is predominantly Hindu and Lombok predominantly Muslim) and have been more recently revitalized in response to both an opportunity for more local control under decentralization in Indonesia (at the end of the New Order period in 1998) and the pressing problem of destructive fishing (Satria and Adhuri, 2010). Because of this recent emergence, it is difficult to generalize across *awig-awig*. In some cases, outside fishers are excluded, in other cases not. It may also derive from non-traditional sources, as in the case of Gili Indah where an *awig-awig*-based plan for coral reef conservation was formed not by a council of fishers but by tourism operators and development agencies with only minor input from local fishers, which led to initial resistance to a conservation program (Satria et al., 2006).

Panglima Laot **Aceh, West Sumatra**

Panglima laot literally means "sea commander" and refers to both the customary system and to the fishing community elder who controls fishing activities in an area extending far out to sea. *Panglima laot* is recognized by provincial law and exists in basically all of the coastal areas of Aceh. Under *panglima laot*, gear restrictions are common as are bans on bomb fishing and trawling. Other responsibilities may include resolving disputes between fishers and organizing rescues at sea (Wilson and Linkie, 2012).

In 2010, there were 173 active *panglima laot* covering about 400,000 fishers as members (Utomo, 2010). There are often environmental restrictions such as bans on mangrove cutting, but there are no limits on harvest levels or on who can fish as long as they are compliant with the local restrictions on fishing gear. The primary concern of *panglima laot* is dispute resolution and conflict avoidance.

A-3. CUSTOMARY MARINE TENURE SYSTEMS IN INDONESIA AND THE BUNDLE OF RESOURCE USE RIGHTS AND RESPONSIBILITIES

Customary marine tenure systems can be divided into a series of use rights and responsibilities first developed by Elinor Ostrom (1990). Figure 9 breaks this bundle down into the most important attributes of successful common property regimes. The legal, political, and social recognition of tenure rights is an important dimension of tenure security and durability.

Exclusion	Access/ withdrawal	Management	Enforcement	Alienation/ transfer
• Ability to exclude outside fishers from accessing marine resources or fishing grounds	• Rights of fishers to access/extract marine and fishery resources	• System of use rules and practices to achieve management goals	• Systems to enforce rules, resolve conflicts, and apply sanctions	• Rights to sell or lease resources or fishing ground to others

Figure 9. Bundle of resource use rights and responsibilities in marine tenure systems (Courtney & Jhaveri, 2017) based on Cinner et al. (2012) and Ostrom (1990)

The bundle of resource use rights and responsibilities in customary marine tenure systems in Indonesia varies in different areas (Table 4). In Maluku, some form of transfer or alienation rights may allow a particular part of a village sea estate (*petuanan laut*) to be transferred to an either individual or company. "Durability" of the tenure system was added to capture how resilient current systems are and to serve as a measure of how difficult it may be to formalize existing customary marine tenure under the law.

Table 5. Bundle of resource use rights and responsibilities in customary marine tenure systems in Indonesia

	Province	Bundle of resource use rights and responsibilities in marine tenure systems					
		Exclusion	Access/Withdrawal	Management	Enforcement	Alienation/Transfer	Durability
Sasi Laut (Petuanan Laut*)	N/S Maluku, W Papua	**NOT CLEAR** all or nothing is clear; ability to separate locals from outsiders not clear; even if "locals only", definition of "local" not clear	**YES, BUT** clearly defines when/where fishing is allowed	**YES, BUT** rules set by village elders or council; ability to set rules beyond open/closed not clear	**YES** Who has the power to enforce is clear; capacity to do so is questionable	**NOT CLEAR** Clear precedents for no-take zones & aquaculture; partial alienation less clear (kontrak petuanan, or contract for partial access, exists in some areas, but in other areas partial access has been contested)	**STRONG**
Rompong	S Sulawesi	**YES** access only for those with economic tie to rompong builder (fish buyer)	**YES** with stipulation that a share must be paid to the Rompong owner	**YES, BUT** owner sets harvest times and gear; no evidence of species selectivity	**YES** owner has enforcement authority; actual enforcement capacity questionable	**NOT CLEAR** rules about abandonement, but not transfer	**WEAK**
Mane'e	N Sulawesi	**YES** reserved for community feasts	**YES**	**YES, BUT** no apparent limits apart from open/closed	**YES**	**NO** may be possible, but no evidence	**WEAK**
Awig Awig	Bali & Lombok	**YES** defines local fishing areas	**YES**	**YES, BUT** gear restrictions and no destructive fishing: but no harvest limits	**YES**	**NO**	**MODERATE** threatened by population change and development
Paglima Laot	Aceh	**NO** anyone who abides by rules can fish	**YES** sets rules for extraction	**YES, BUT** gear restrictions and env. protection (no mangrove cutting), but no harvest limits	**YES**	**NO**	**STRONG**

A-4. MARINE TENURE AND CO-MANAGEMENT

FAO (2017) defines co-management as:

> a partnership arrangement between government and the local community of resource users, sometimes also connected with agents such as NGOs and research institutions, and other resource stakeholders, to share the responsibility and authority for management of a resource. There are no standardised approaches, but rather a range of arrangements, levels of sharing of responsibility and power, and ways of integration of local management mechanisms and more formalised government systems. The approach is gaining particular importance in small-scale fisheries, for which local management capacity and responsibility, combined with the support of formal legal frameworks and information/decision making systems may offer particular advantages. However, their potential depends on the existing policy and legal environment, local and national support for community-based initiatives, and the capacities of various partners.

The term co-management has been in common parlance since the early-1990s in Indonesia, and is generally accepted as a goal for small-scale fisheries management by Indonesian policymakers, academics, and NGOs. Fisheries Law No. 31 of 2004 includes Article 6, which mandates that fisheries management consider traditional law or practices (*hukum adat*), local knowledge, and community participation (UU 31/2004). Article 2 also lays out the guiding principles for fisheries management, namely benefit, fairness, partnership, equality, distribution, openness, transparency, efficiency, and sustainability, which are essentially the same as the principles of co-management (Adrianto et al., 2009). Law 31/2004 was later amended by Law 45/2009 to include three additional principles: togetherness, self-sufficiency, and sustainable development (UU 41/2009). However, the details as well as the capacity to implement fisheries management reform, especially at the local level, is problematic. As in the quote above, multiple definitions of co-management, let alone the social, political, and local government capacity to put co-management into practice have stymied implementation in Indonesia.

Indonesia has endorsed the FAO Code of Conduct for Responsible Fisheries, which even though it is voluntary and not enforced by international law, the code provides a strong template for sustainable fisheries management and co-management. The Indonesian MMAF has also adopted the Ecosystem Approach to Fisheries Management (EAFM) as a preferred option and best practice. While there are no EAFM laws or policies per se, many current laws and policies reference the principles of EAFM. These include Government Regulation No. 60/2007 concerning Fishery Resource Conservation, MMAF Regulation No. 20/2008 concerning Utilization of Small Islands and Surrounding Waters, MMAF Regulation No. 30/2010 concerning Management and Zonation Plan of Marine Protected Areas, Ministerial Regulation No. 18/2014 concerning Fisheries Management Areas, and MMAF Regulation No. 13/2014 concerning a Marine Protected Areas Network. MMAF is also using EAFM as a basis for developing new management plans for the 11 FMAs in the country.

Designating spatial areas within or overlapping FMAs is one of the principles of EAFM. These areas may include seascapes, multiple-use MPAs (including no-take reserves), MPA networks, and customary marine tenure areas. Managed areas such as these will serve multiple objectives, including fisheries management and conservation considerations. EAFM provides for a holistic and integrated resource-management framework that includes elements of fisheries management missing from MPAs, such as the recognition of customary marine tenure or assignment of fishing use or access rights, and co-management. EAFM can also provide the broader fisheries management framework needed to support

customary marine tenure and/or undertake a rights-based management approach to fisheries management.

Marine tenure, or some form of limited access is essential for successful co-management. There are a number of projects already underway or just starting in Indonesia that are using customary marine tenure and co-management to varying degrees, setting important precedents for future reforms and efforts to build capacity to create, monitor, and enforce marine tenure

A-5. PROJECTS IN INDONESIA THAT BUILD ON CUSTOMARY MARINE TENURE

WITHIN MALUKU AND WEST PAPUA BUT OUTSIDE OF FMA 715

Teluk Mayalibit **Waigeo Island, Raja Ampat, West Papua**

Teluk Mayalibit is a bay surrounded by the island of Waigeo in Raja Ampat. In 2007, the entire bay was designated a MPA by local government decree, subsequently reinforced by local government legislation in 2008 (Rumetna et al., 2011). In the original designation, roughly half of the 53,100 hectare MPA was a no-take zone and the other half open-access. As with most MPAs in Indonesia, the Mayalibit MPA focused on biodiversity and tourism more than fisheries management. Recently, the NGOs Rare and Conservation International integrated local, small-scale fisheries into the MPA zoning plan by working with local communities to designate managed access zones within and the near the mouth of the bay based on traditional clan and village boundaries. In February 2017, the *adat* councils of 12 Malaylibit Bay communities signed an agreement creating a network of 12 managed access areas and confirming the authority of these communities to close areas and to restrict fishing gear and harvests of certain species. Under the agreement, these communities have the authority for adaptive management and enforcement around the bay. Whether they have the capacity for adaptive management and enforcement is another matter, and the arrangement still needs government approval, but the agreement is an important precedent for using customary marine tenure to formalize managed access in Indonesia.

Koon Marine Conservation Agreement (MCA) **East Seram Island, Maluku**

In 2013, a MCA between WWF Indonesia and the King of Kataloka was signed to create a protected area around Koon Island, primarily to protect grouper spawning aggregations. The King has *Hak Petuanan Laut* (the right to a sea territory) over the islands of Koon, Grogos, Nukus, and a portion of Gorom Island at the far end of the East Seram Regency (Ruzuar and Syaputri, 2016). The agreement created a 2,500 hectare no-take zone for two years (2013-14), then reintroduced fishing with reduced effort thereafter, dropping the number of fishing vessels from 500 to 175 (WWF, nd). The agreement also included financing for the reductions in effort and short-term income effects, phased down as fish stocks recover. As of 2016, a program is in place to charge tourist boats that visit Koon, primarily for dive tourism, a payment for ecosystem services that goes to the *lembaga adat* (traditional body or institute) responsible for enforcing the agreement and distributing the benefits.

Misool Eco-Resort MCA **Misool, Raja Ampat, West Papua**

The Misool Eco-Resort (MER) opened in 2008, but created its first no-take zone through an agreement with the community owners of the island leased by the resort in 2005. That agreement created a no-take zone (apart from a traditional shellfish harvest once every two years) over roughly 20,000 hectares. The local *adat* council identified the family claimants to the island and authorities from the village,

district, and region signed the lease (Heinrich, 2008). A second no-take zone, known as Daram, was created in 2010 through a lease with two villages farther from the resort. The Misool Foundation (created by the resort) has since added a gear-restricted corridor between the two no-take zones, bringing the total protected area to 121,405 hectares. This large protected area lies within the larger, government-designated Southeast Misool MPA, which includes other, smaller no-take zones but little capacity to enforce them. A permanent staff of 15 rangers with base camps, however, patrols the MCA area, and the Misool Foundation and donations from guests at the dive resort pay for ranger stations spread throughout the protected area. This enforcement appears to be effective. One recent scientific study found 25 times the number of sharks inside the protected area (Jaiteh et al., 2016) and another survey found increases in biomass ranging from 250 to 600 percent over six years (Misool Foundation website, 2017).

Papua Diving Resort **Kri Island, Raja Ampat, West Papua**

In another part of Raja Ampat, the Papua Diving operation on Kri Island reached an agreement in 2004 with the surrounding communities to create a no-take zone around their house reef, to only allow pelagic fishing (no reef fishing) on nearby reefs, and to prohibit destructive fishing practices by community members (De Alessi, 2014). The effort appears to be working; the house reef holds the world record for number of species recorded in a single dive, 374 by marine biologist Gerald Allen in 2012 (Bergen, 2016).

Prior to this agreement, Papua Diving had a separate agreement to pay 12 nearby villages a small fee every time it took a group of divers to a village reef. According to Max Ammer, owner of Papua Diving, the system encouraged stewardship but lasted for only three years, ending when the district government instituted a tag program that collected a fee from all divers entering Raja Ampat. Those fees went into a general fund and displaced direct payments to villages.

Sea Sanctuaries MCA **Fam archipelago, Raja Ampat, West Papua**

Sea Sanctuaries is an NGO working around a small chain of islands West of Waigeo in Raja Ampat, including Penemu, Fam, and Bambu Islands. Sea Sanctuaries signed an agreement with local *adat* councils to create two no-take zones covering 70,000 hectares around Penemu and Bambu islands (Sea Sanctuaries, nd). The agreement was subsequently recognized by local legislation in 2012. At least one ranger station has been built, a research vessel commissioned, and as many as 19 local rangers have been employed to monitor the no-take zones.

Atlas Pearls **Alyui Bay, Waigeo, Raja Ampat**

Atlas Peals was one of the first to negotiate a lease with a local community in Raja Ampat, signing a 30-year lease in 1997 with two communities on Waigeo Island. The area leased is small, covering only a 500-meter radius around the pearl farm, although that area is a no-take zone. The farm has a large economic and social impact in the area, with over 80 percent of its staff coming from local villages, and much of the payment to the villages takes the form of services such as transportation and education. The ecological effect is probably quite small, but this set an important precedent for leasing marine space from a local *adat* council.

WITHIN MALUKU, WEST PAPUA, AND NORTH SULAWESI INSIDE FMA 715

Kaimana MPA zoning **Kaimana, West Papua**

The entire coastline of the Kaimana Regency, located at the southwest corner of the West Papua Province, is fringed by a 500,000-hectare MPA. There are few enforceable restrictions on fishing activities over such a wide area, although access to nearshore reefs appears to be restricted to local fishers. In Kaimana, Conservation International is spearheading an effort to integrate local *sasi* rights with managed access within the existing MPA network and zoning, beginning with a pilot project involving three villages in the Buraway district (Fox, 2016). This effort stems from a blueprint created by the largest environmental NGOs working in West Papua (Conservation International, WWF, and The Nature Conservancy) for management of MPAs within the Birds Head Seascape to "recognize and support traditional tenure and *sasi* in MPA management by aligning zoning and management plans with local community interests and aspirations" (Huffard et al., 2012).

Pulau Mas fishing company **Karas Island, West Papua**

Pulau Mas is a live reef fish buyer and exporter based in Bali that owns a series of *keramba* (fish collection stations) between Bali and West Papua. One of those collection sites is Karas Island near Fak Fak, West Papua. Live reef fish are high-value products, exported to places such as Hong Kong to be sold live at restaurants (Lee and Sadovy, 1998). Concerned with both overfishing and potassium cyanide fishing, the owner of Pulau Mas was able to arrange an exclusive agreement with the village head to be the exclusive live reef fish buyer for Karas Island. Individual fishers must sign an agreement with Pulau Mas and lose their ability to sell live reef fish if they are caught using cyanide or catching undersized fish (the agreement includes a minimum size). In return, Pulau Mas offers scientific advice on harvest limits and promises to pay a premium price when the fishery recovers.

Biak Locally Managed Marine Area **Padaido Islands, Biak, West Papua**

The Locally Managed Marine Area Network (LMMA) works throughout the Indo-Pacific region to strengthen community-based marine conservation efforts. Founded in 2000, one of their original sites lies within the Padaido Islands, Biak, West Papua. Suffering from illegal fishing, especially bomb fishing, communities around Biak organized to revive their *adat* councils and to use *sasi* to fight illegal fishing, with apparent success. In 2004, one of the local LMMA leaders received the *Kalpataru* ("Hero of the Earth") award from the President of Indonesia for his work to revive community-based resource management in Biak. Research that looked at two areas where local tenure was strengthened by LMMA activities in Biak found increases in coral cover from 2005-2010 (the study does not appear to have a control site) (Marlessy et al., 2012).

OTHER PARTS OF INDONESIA

Bali Seafood International **Sumbawa, Nusa Tenggara Barat**

Bali Seafood International is a seafood exporter based in Bali working to improve traceability and sustainability of the fish it sources from Sumbawa, an island east of Bali. Along with funding electronic data collection on a number of small-scale fishing vessels, Bali Seafood is building an ice plant on Sumbawa that will reduce losses due to spoilage of fish being shipped out of Sumbawa. With less spoilage, there will be better margins on fish sales, and Bali Seafood has a plan to use those margins to pay higher prices to fishers who adopt sustainable fishing practices. Without some form of limited access, however, improved fishing practices may not have much of an environmental impact. The

Wildlife Conservation Society (WCS) is also working in Sumbawa to strengthen community associations of fishers and to collect better landings data. Both Bali Seafood and WCS are exploring pathways to limiting access in Teluk Saleh, a bay similar to Mayalibit in Papua. If access can be successfully limited in Teluk Saleh, this would set important legal, social, and economic institutional precedents.

Wakatobi Dive Resort **Wakatobi, SE Sulawesi**

Wakatobi is a string of islands as well as a National Marine Park in the southeastern corner of Sulawesi. There is no discernable history of marine tenure in this area, but the Wakatobi Dive Resort, located next to the island of Tomia, began paying neighboring communities to protect the resort's house reef and to prohibit destructive fishing elsewhere at the same time the National Park was created (1996). The resort also pays for patrols to monitor the reefs. While the local tradition in Tomia is for open access fishing, these payments have established an informal system of managed access (De Alessi, 2014).

Gili Eco-Trust **Gili Islands, Lombok**

The Gili Islands are a popular tourist destination off the coast of Lombok and easily accessible from Bali. In the 1990s, the islands were suffering from bomb fishing and other destructive fishing practices and some local fishermen banded together patrol the reefs (Mariska et al., 2012). In 2000, a group of dive operators formed the Gili Eco-Trust to collect fees from dive tourists to help fund protection of the reefs and to compensate fishermen for the creation of some protected areas. Conflicts subsequently arose between local fishers and the Gili Eco-Trust when fishers did not feel included in decision making, likely a direct result of a lack of clear jurisdiction over marine space between the local government, NGOs, and fishing communities. The Gili Eco-Trust has become more inclusive, and conflict has waned.

A-6. STRATEGIES AND LESSONS FROM CUSTOMARY MARINE TENURE-RELATED PROJECTS IN INDONESIA

Each case above includes a local, often community-based response to the broad lack of capacity and at both the local and national levels to effectively and adaptively manage marine resources in Indonesia. Vast MPA networks have been designated, especially in West Papua, but the best examples of effective enforcement all rely on partnerships between communities and NGOs or businesses, or a combination of the two. The lack of local capacity is also evident in the prevalence of no-take zones over managed effort. No-take zones are far easier to monitor and enforce than species or gear-specific restrictions and require far less ongoing consultation than adaptive management. Communities in Teluk Mayalibit are now empowered to manage access and fishing with their territorial zones, but will rely on NGOs. The Teluk Mayalibit communities also benefited immeasurably from being within an enclosed bay with a narrow entrance; how similar agreements can be reached along open coastlines is not yet clear.

Sasi laut and *petuanan laut* are important building blocks to stronger tenure, but it must also be recognized that in many cases they have eroded over time and may be contested in some places. *Petuanan laut* and *sasi* rights to close areas have been successfully applied to larger area closures, but building on *sasi* to create managed access will be more difficult. In the Kei Islands, attempts to close an area to one specific group but not another led to violent conflict (Adhuri, 2013). This is another reason why the Mayalibit case is unusual and may be difficult to replicate.

Widespread tenure over marine territories and effective co-management will require significant increases in local capacity for monitoring, enforcing, and setting locally appropriate rules and regulations for managing access and harvest controls and for collecting ecological data. Governance structures will

have to allow for adaptation to changing ecological, economic, and social circumstances, and additional capacity built to collect and interpret scientific data for better information adaptation and prioritization. The Misool example raises another important point. The Misool Foundation has done tremendous work improving environmental conditions as well as involving local communities in the project. However, the Misool Eco-Resort provides an underlying vested interest in conservation and local livelihoods. For small communities without such a partner, there will have to be tangible benefits accruing to those communities from their efforts to negotiate, enforce, and manage marine resources within a system of managed access. This will require stronger management capacity as well as marketing capacity, whether for tourism or for sustainable fishing activities. Fishing cooperatives or associations may play a vital role in capturing value from sustainable fishing practices and distributing that value within communities.

There will also have to be capacity building within local government to help set protocols for data collection and to aggregate and disseminate data. Local government will have to build capacity for law enforcement to prevent illegal fishing and to enforce agreements and boundaries within and between marine territories. Government at the national level will also play a part, from clarifying the legality of marine tenure (especially in light of the rejection of HP-3 rights) to addressing wider-ranging overfishing (especially of far ranging species that small-scale, nearshore fishers often depend on). The Indonesian government has long viewed small-scale fisheries as an employment issue more than a conservation issue. That is changing under the new government, but limited access will face resistance from proponents of maximizing employment opportunities, which will have to be addressed.

One final threat to customary marine tenure and co-management is the elephant in the room—climate change. Ocean acidification, coral bleaching, and other forms of habitat loss, and changing or migrating life cycles of marine organisms could all severely undermine the resiliency of marine tenure.

RECOMMENDATIONS FOR FUTURE RESEARCH

- **Contractual agreements that build on customary marine tenure** to better understand legal precedents, how community authority is managed, and how benefits are distributed;
- **Supply and value chain assessments, including the role of middlemen** to better understand how fishing communities may capture higher returns from fishing more sustainably;
- **Upside or gap analysis**, using the value chain analysis and biological/ecological information, to estimate the value that could be generated by sustainable fishing which may be valuable in convincing communities and governments that transitioning to sustainable, small-scale fishing is worth the effort; and
- **Cooperative or fishing association (*kelompok nelayan*) formation** in other parts of Indonesia. (There are examples from Fair Trade USA Fishery Associations, Misool Foundation's work with shark and ray fishers in Flores, Blue Swimming Crab fishers in Lampung, Sumatra, and ornamental fishing communities working with traders and the Marine Aquarium Council in Bali that all may have some bearing on how to strengthen community associations that will be responsible for managing customary marine tenure areas.)

APPENDIX B: TAKING STOCK OF THE VOLUNTARY GUIDELINES ON SECURING SUSTAINABLE SMALL-SCALE FISHERIES: A DESK REVIEW OF INDONESIA

B-1. INTRODUCTION

The USAID Land and Urban Office's Tenure and Global Climate Change (TGCC) program is currently developing focused guidance designed to assist USAID staff and partners considering the role of sustainable small-scale fisheries and responsible governance of marine tenure in reducing extreme poverty. As part of this process, two documents are currently being drafted: a sourcebook that documents the state of knowledge and good practices and a primer that provides specific guidance and tools. Field assessments are being conducted in the Philippines and Indonesia, alongside a desk-based study in Bangladesh, to refine the guidance and tools based on lessons from the field.

With growing recognition of the significance of small-scale fisheries to food security, local and global economic growth, biodiversity conservation, and other development objectives around the world, the Food and Agriculture Organization (FAO), working with member states, developed the SSF Guidelines (FAO, 2015). The Guidelines are the first dedicated international instrument to directly address both small-scale fishers, fish workers, and their families. A tool under development and testing is the SSF Guidelines Assessment Tool. This tool was used to conduct a desk review of background information on the national legal, policy, and institutional framework in Indonesia that supports the SSF Guidelines.

B-2. SSF GUIDELINES ASSESSMENT TOOL

The SSF Guidelines Assessment Tool is designed to help USAID staff and partners take stock of the status of implementation of the Voluntary Guidelines on Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Alleviation (SSF Guidelines) (FAO, 2015). The tool is organized into eight interconnected dimensions of securing sustainable small-scale fisheries based on the SSF Guidelines. Two crosscutting themes in the SSF Guidelines, capacity development and implementation support and monitoring, were incorporated into the eight dimensions. For each dimension, strategies and good practices were crafted based on the SSF Guidelines and put in a format to facilitate assessment and rating. These strategies and good practices are provided as Tables 5–12 for each of the eight dimensions.

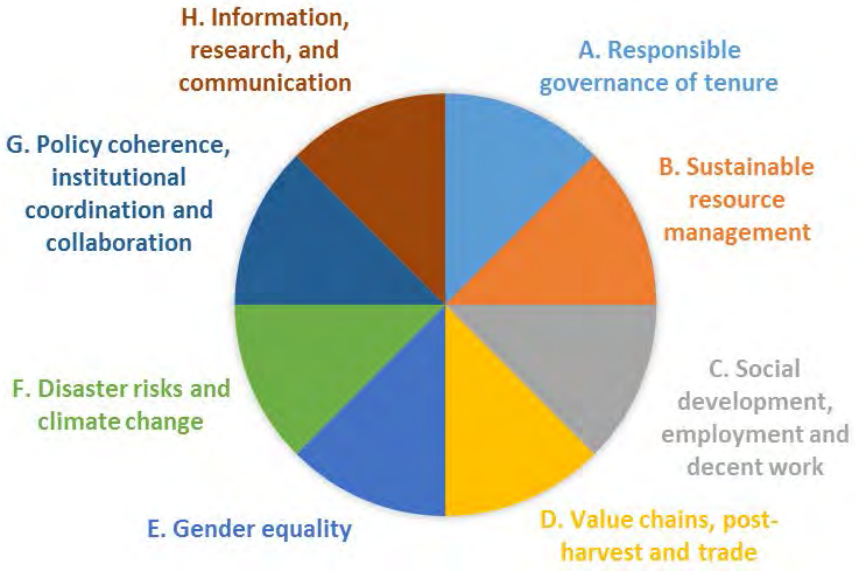

Figure 10. Eight interconnected dimensions of securing sustainable small-scale fisheries based on FAO (2015)

B-3. INDONESIA'S LEGAL, POLICY, AND INSTITUTIONAL FRAMEWORK SUPPORTING THE SSF GUIDELINES

This desk review provides an overview of each dimension of the SSF Guidelines Assessment Tool and a summary of Indonesia's legal, policy, and institutional framework that supports the SSF Guidelines.

B-3.1 RESPONSIBLE GOVERNANCE OF TENURE

SSF GUIDELINES OVERVIEW

Responsible governance of tenure forms a core theme in the SSF Guidelines and provides a springboard for strengthening national fisheries laws and policies and for recognizing and securing local community-based institutional platforms to manage coastal fisheries through an ecosystem-based management approach. National legal and policy frameworks, administrative and judicial systems, effective co-management arrangements, dispute resolution mechanisms, local participation and empowerment, and strengthened institutional capacity are all key ingredients of responsible governance of marine tenure. Responsible governance of tenure should be aligned closely with human rights, especially in small-scale fisheries (Charles, 2013).

The SSF Guidelines urge states to adopt national legislation to strengthen responsible governance of tenure of land, fisheries, and forests to ensure that small-scale fishers, fish workers, and their communities have secure, equitable, and socially and culturally appropriate tenure rights to fishery resources, fishing areas, and adjacent land (Table 5). Formal recognition of marine tenure provides communities with the security needed to invest in and manage their fishery resources for long-term sustainability. Granting preferential access to fish and water through the creation and enforcement of exclusive use zones and effective and transparent mechanisms, and addressing resource use conflicts are needed to protect the rights of small-scale fishers. Conflict resolution mechanisms are necessary to address competing and conflicting use of land and nearshore waters.

Table 6. Responsible governance of tenure strategies and good practices [adapted from FAO (2015)]

1.	**Recognize and protect legitimate tenure rights**
a.	Recognize, record, respect, and protect all forms of legitimate tenure rights, taking into account, where appropriate, customary rights to aquatic resources and land and small-scale fishing areas enjoyed by small-scale fishing communities.
b.	Ensure that small-scale fishers, fish workers and their communities have secure, equitable, and socially and culturally appropriate tenure rights to fishery resources (marine and inland) and small-scale fishing areas and adjacent land, with a special attention paid to women with respect to tenure rights.
c.	Recognize, respect, and protect local norms and practices, as well as customary or otherwise preferential access to fishery resources and land by small-scale fishing communities including indigenous peoples and ethnic minorities consistent with international human rights law.
d.	Ensure that small-scale fishing communities are not arbitrarily evicted and that their legitimate tenure rights are not otherwise extinguished or infringed.
2.	**Grant preferential and equitable access and use**
a.	Grant preferential access of small-scale fisheries to fish in waters under national jurisdiction, with a view to achieving equitable outcomes for different groups of people, in particular vulnerable groups, including the creation and enforcement of exclusive zones for small-scale fisheries. Small-scale fisheries should be given due consideration before agreements on resource access are entered into with other countries and parties.
b.	Adopt measures to facilitate equitable access to fishery resources for small-scale fishing communities.

Table 6. Responsible governance of tenure strategies and good practices [adapted from FAO (2015)]	
c.	Restore access to traditional fishing grounds and coastal lands to small-scale fishing communities displaced by natural disasters and/or armed conflict, taking into consideration the sustainability of fisheries resources.
3.	**Address competing and conflicting resource uses**
a.	Recognize that competition from other users is increasing within small-scale fisheries areas and that small-scale fishing communities, in particular vulnerable and marginalized groups, are often the weaker party in conflicts with other sectors and may require special support if their livelihoods are threatened by the development and activities of other sectors.
b.	Consider the social, economic, and environmental impacts of large-scale development on tenure rights through impact studies, and hold effective and meaningful consultations with these communities, in accordance with national legislation.
c.	Provide small-scale fishing communities and individuals, including vulnerable and marginalized people, access through impartial and competent judicial and administrative bodies to timely, affordable, and effective means of resolving disputes over tenure rights.
d.	Establish mechanisms to support fishing communities affected by grave human rights violations to rebuild their lives and livelihoods, including the elimination of any form of discrimination against women in tenure practices in case of natural disasters and/or armed conflict.

LEGAL, POLICY, AND INSTITUTIONAL FRAMEWORK

A brief legal and policy overview of marine tenure institutions appears in Appendix A, but it is worth noting again that protections for traditional rights and customary marine tenure are explicitly referenced in Indonesia's 1945 Constitution. Article 18B amendment of UUD 1945 states that "The State recognizes and respects the units of customary law community and its traditional rights as long as it still exists and in accordance with the development of society and principle of the Union State of the Republic of Indonesia that is governed by law." The national government holds these constitutional "rights" in coastal and marine resources for the benefit of the nation's citizens. Article 2 (4) of Law No. 5 1960 on Basic Agrarian Law authorizes local government and communities to recognize traditional rights as long as it is not against the national interest.

Customary fisheries management systems were not recognized during Suharto's "New Order Period" (1967–1998), which imposed uniform systems of rural government throughout Indonesia. That began to change with the establishment of the MMAF in 1999 and enactment of Law 22/1999 on regional autonomy. After the passage of this law, both provincial and district governments have authority to manage natural resources within their defined jurisdiction and could pass regulations as long as they did not contradict national law.

Fisheries Law 45/2009 defined small-scale fishers as "any person whose livelihood is undertaken to meet his daily needs" and included assistance for small-scale fishers, including recognition (but not formal *legal* recognition) of traditional fishing institutions. Small-scale fishers were further defined by Law No. 7/2016 regarding Protection and Empowerment of Fisheries as those who conduct fishing to meet their daily needs either without boats or with fishing boats less than 10 GT.

No existing laws specifically establish exclusive access rights to fisheries for local fishing communities, and in many places in Indonesia, even the idea of exclusive use rights is contentious (see Appendix A). Indonesia's new Village Law (Law No. 6 of 2014), however, strengthened the legal status of 74,091 rural villages, increased their authority and responsibility, and recognized customs, traditions, and the culture of the village, including traditional *adat* governance arrangements. Law No. 1/2014 on Coastal and Small Islands Management, states in Article 60 that in coastal and small islands management, the community

has the right to propose traditional fishing area into Coastal and Small Islands Zoning Plan (RZWP-3-K). Where conflicts over sea space and use of marine resources arise, Law No. 26/2007 on Spatial Planning and Law No. 27/2007 (amended by Law No. 1/2014 dated January 15, 2014) on Coastal Area and Small Islands Management may be applied to address competing and conflicting resource uses and tenure rights. Law No. 27/2007 concerning the Management of Coastal and Small Islands included concession rights known as HP-3 was subsequently struck down by the Indonesian Constitutional Court for violating the 1945 Constitution's mandate to manage resources for the greatest benefit to all Indonesians. The court recognized the importance of *adat* community interests in marine resources, but also the difficulties of legally recognizing these rights. The ruling highlighted the important distinction between outright ownership rights and use rights to access government-controlled resources.

Some local laws explicitly recognize customary tenure systems. Papua, for example, has its own special autonomy legislation, passed by the central government in an attempt to quell the Papuan independence movement. In 2002, Law No. 26 established the new regency of Raja Ampat, and a 2003 decree from the Bupati (head of the regency) to create a *kabupaten bahari* (sea regency) further strengthened the ability of the district government to manage marine resources within Raja Ampat. At the other end of the country in Aceh province, the *Panglima Laot* system was recognized by Aceh provincial government decree (Qanun) No. 10, 2008 regarding Customary Institution (*Lembaga Adat*) and Qanun No. 9, 2008 regarding Cultivation of Customary Life and Local Customs (*Pembinaan Kehidupan Adat dan Adat Istiadat*). Customary marine tenure systems must adapt to modern society and gain formal legal status or they may, at the operational level, cease to function. There are various options for providing a legal basis for local management bodies, including decrees by the provincial governor, the district head or the sub-district head, and promulgation of a provincial regulation.

Indonesia's environmental impact assessment system known as AMDAL (*Analisa Mengenai Dampak Lingkungan*) may also be used to address the social, economic and environmental impacts of large-scale development on tenure rights. The relevant environmental assessment law and regulations include:

- Law No. 32 Year 2009 on the Environmental Protection and Management;
- Minister of Environment Regulation No. 5/2012 on types of activities/projects requiring an environmental impact assessment (EIA);
- Minister of Public Works Regulation No. 10/PRT/M/2008 on types of public infrastructure/ facilities activities/projects requiring environmental management efforts (*Upaya Pengelolaan Lingkungan Hidup)* and environmental monitoring efforts (*Upaya Pemantauan Lingkungan Hidup);*
- Minister of Environment Regulation No. 16/2012 on the guidance for the preparation of environment documents; and
- Government Regulation No. 27/2012 on Environmental Permits.

B-3.2 SUSTAINABLE RESOURCE MANAGEMENT

SSF GUIDELINES OVERVIEW

The SSF Guidelines urge states to adopt and implement national legislation that supports responsible fishing practices and sustainable resource use. Secure tenure rights must be accompanied by the adoption at all levels of responsible fishing practices (Table 6). Government and local institutional capacity must be strengthened to participate in decision making and manage resources sustainably. Effective monitoring, control, and surveillance systems are needed to address IUU fishing. Co-management arrangements between government and local stakeholders need to be clearly articulated and upheld.

Table 7. Sustainable resource management strategies and good practices [adapted from FAO (2015)]	
4.	**Promote responsible fishing practices and policies that ensure sustainable resource use**
a.	Adopt measures for the long-term conservation and sustainable use of fisheries resources and to secure the ecological foundation for food production giving due recognition to the requirements and opportunities of small-scale fisheries.
b.	Recognize that rights and responsibilities come together and tenure rights are balanced by duties, and support the long-term conservation and sustainable use of resources and the maintenance of the ecological foundation for food production.
c.	Promote fishing practices that minimize harm to the aquatic environment and associated species and support the sustainability of the resource.
d.	Avoid policies and financial measures that may contribute to fishing overcapacity and, hence, overexploitation of resources that have an adverse impact on small-scale fisheries.
5.	**Strengthen the capacity of stakeholders to manage resource sustainably**
a.	Enhance the capacity of small-scale fishing communities to enable them to participate in decision-making processes.
b.	Develop knowledge and skills to support sustainable small-scale fisheries development and successful co-management arrangements.
c.	Facilitate, train, and support small-scale fishing communities to participate in and take responsibility for, their legitimate tenure rights and systems, and the management of the resources on which they depend for their well-being and that are traditionally used for their livelihoods, with special attention to equitable participation of women and vulnerable and marginalized groups.
6.	**Develop effective monitoring, control, and surveillance systems**
a.	Improve availability and access to information necessary for responsible small-scale fisheries and sustainable development, including on IUU fishing.
b.	Establish new or promote the application of existing monitoring, control, and surveillance systems applicable to and suitable for small-scale fisheries.
c.	Establish effective monitoring and enforcement mechanisms to deter, prevent, and eliminate all forms of illegal and/or destructive fishing practices having a negative effect on marine and inland ecosystems.
d.	Improve registration of small-scale fishers to support monitoring, control and surveillance systems and provide to the state fisheries authorities the information required for the management of the activity.
7.	**Develop effective co-management arrangements**
a.	Promote participatory management systems, such as co-management.
b.	Ensure clarification and agreement on co-management roles and responsibilities through a participatory and legally supported process.
c.	Encourage and support the role and involvement of both men and women, whether engaged in pre-harvest, harvest, or post-harvest operations, in the context of co-management and in the promotion of responsible fisheries.
d.	Address transboundary issues with shared waters and fishery resources, to ensure that small-scale fishing communities granted rights are protected.

B-3.3 LEGAL, POLICY, AND INSTITUTIONAL FRAMEWORK

Under President Joko Widodo, MMAF has prioritized sustainable resource use and responsible fishing practices through new laws and policies and a strong and active Fisheries Minister. MMAF has been particularly active in improving monitoring, control, and surveillance systems and addressing foreign illegal, unreported, and unregulated (IUU) fishing in Indonesian waters. There are, however, constraints

and problems at all administrative levels—national, provincial, district, and local—affecting sustainable fisheries and resource management, including:

- Overfishing and destructive fishing practices in both marine and inland fisheries waters;
- Low income for fishers;
- Low standard of living of fishers;
- Lack of financial support in for credit schemes;
- Weak fisheries management and governance, particularly concerning monitoring, surveillance, and enforcement;
- Degradation of coral reef ecosystems and other critical marine habitat types due to development and pollution;
- IUU fishing; and
- Climate change–related impacts, including sea level rise, shifting weather patterns, and ocean acidification.

MMAF estimates that demersal and shrimp fisheries either are over or fully exploited within nearly all of Indonesia's 11 FMAs, with the remainder unclassified due to a lack of data (see *Keputusan Menteri Kelautan dan Perikanan* No. 47/KEPMEN-KP/2016). Small and large pelagics are classified as moderately to overexploited across all FMAs where data are available (MMAF, 2009). Fishing in Indonesia is essentially open access. Vessels over five GT do require a license, and there are some gear restrictions (including a trawl ban) and size limits crab and lobster, but enforcement is weak and there are no hard total allowable catch limits (TACs).

Legislation exists to designate and manage MPAs. The Ministry of Environment and Forestry (MoEF) has almost 4.7 million hectares of MPAs under its jurisdiction, created before MMAF was established. After the creation of MMAF in 1999, all new marine-related conservation/protected areas, over 17 million hectares, are under its jurisdiction. These protected areas are supported by legislation including Act No. 5/1990 on the Conservation of Biological Resources and Their Ecosystems, Act No. 41/1999 on Forestry, and Regulation No. 28/2011 on the Management of Nature Reserves and Conservation Areas. Marine national parks are divided into four different types of zones: core (no-take), traditional use, general utilization, and other. There are few regulations to limit access beyond no-take zones within MPAs, and few catch limits or effort restrictions are used in nearshore waters.

MMAF's mission for marine affairs and fisheries development includes the following components:

- Improve the role of marine and fisheries sector as a source of economic growth.
- Improve prosperity for coastal fisheries and marine communities, especially fishermen and small-scale fish farmers.
- Increase fish consumption; maintain and improve the environmental quality of freshwater, coastal, small-island and marine ecosystems; and increase the role of marine and inland fisheries as a source of economic growth.

In September 2015, MMAF released Strategic Plan 2015-2019 to provide policy guidance on IUU fishing, unresolved maritime territorial disputes, lack of clear zoning regulations and low productivity in the aquaculture sector, low competitiveness and quality of fisheries products, tariff and lack of market access, and lack of access to capital and financing. MMAF is also focused on building national capacity to create fishery management plans for Indonesia's 11 fishery management areas (FMAs), implementing an ecosystem approach to fisheries management (EAFM), and strengthening its national system of marine

protected areas (MPAs). The national EAFM strategy follows the Coral Triangle Initiative's Regional EAFM Framework (Pomeroy et al., 2013).

Indonesia's economic growth has and continues to rely upon natural resource extraction, with a focus on mining, logging, agriculture, and fisheries. The government set a target for the fisheries sector to contribute seven percent of Indonesia's gross domestic product (GDP) during the 2015-2019 period, up from its previous share of approximately six and a half percent of GDP. While it still faces political pressure to increase national fisheries production, MMAF has recently emphasized sustainability and the livelihoods for small-scale fishers. Co-management is part of that strategy, including increasing community participation in surveillance through POKMASWAS, or community patrols.

Important fisheries laws and regulations include the following:

- **Law No. 31/2004 Concerning Fisheries (*Undang-undang Nomor 31 Tahun 2004 Tentang Perikanan*), Amended by Law No. 45/2009**. The overarching law regulating fisheries at the national level. It covers fisheries management; fishing vessels, gear, and licensing; fisheries value added; fisheries research and development; fisher empowerment and prosperity; fisheries court and arbitration; and fisheries enforcement and sanctions.
- **Law No. 5/1990 Concerning the Conservation of Living Natural Resources and Their Ecosystems (*Undang-Undang Nomor 5 Tahun 1990 Tentang Konservasi Sumber Daya Alam Hayati Dan Ekosistemnya*).** Establishes basic principles for the management, conservation, and use of biological resources, natural habitats, and protected areas.
- **Government Regulation No. 54/2002 Concerning Fisheries Business** (*Peratuan Pemerintah Nomor 54 Tahun 2002 Usaha Perikanan*). Regulates business participation in the fisheries industry.
- **Government Regulation No. 60/2007 Concerning Fishery Resource Conservation** (*Peraturan Pemerintah Nomor 60 Tahun 2007 Tentang Konservasi Sumber Daya Ikan*). Plays a key role in regulating the establishment and management of Water Conservation Areas (*Kawasan Konservasi Perairan*).
- **Presidential Decree No. 111/2008**. Puts forward a Negative Investment List, which forbids investment in the harvesting of certain fish species, of fish below a certain size, and from areas prohibited from fishing.
- **Ministerial Regulation No. 18/2014 Concerning Fisheries Management Areas**. Regulates FMAs or fisheries management area for capture fisheries, mariculture, conservation, research, and fisheries development.
- **Law No. 1/2014, Amending Law No. 27/2007 (Undang-Undang Nomor 1 Tahun 2014 Tentang Perubahan atas Undang-Undang Nomor 27 Tahun 2007 Tentang Pengelolaan Wilayah Pesisir Dan Pulau-Pulau Kecil)**. Concerns coastal and small island management. Although this law does not regulate fisheries specifically, Article 60 recognizes the rights of traditional communities to conduct traditional activities in coastal waters.
- **Law No. 23/2014 on Local Government**. Grants provinces the authority to manage natural resources in the sea, including exploration, exploitation, conservation, and management of marine resources other than oil and gas, from the coastline out to 12 nautical miles (nm) from shore.
- **Law No. 32/2014 Concerning the Oceans (*Undang-Undang Nomor 32 Tahun 2014 Tentang Kelautan*)**—Newly enacted law mainly governing the utilization of marine resources,

including fisheries in the waters of the Exclusive Economic Zone. It is supposed to harmonize other fishery and marine related laws.

- **Ministerial Decree No. 2/2015 Concerning Banning the Use of Trawls and Seine Nets within Indonesia's Fisheries Management Areas** (*Peraturan Menteri Kelautan Dan Perikanan Republik Indonesia Nomor 2/Permen-Kp/2015 Tentang Larangan Penggunaan Alat Penangkapan Ikan Pukat Hela Dan Pukat Tarik Di Wilayah Pengelolaan Perikanan Negara Republik Indonesia*).
- **Ministerial Decree No. 4/2015 Concerning the Banning of Fishing within Indonesia's Fisheries Management Area (FMA) No. 714** (Peraturan Menteri Kelautan Dan Perikanan Nomor 4/Permen-Kp/2015 Tentang Larangan Penangkapan Ikan Di Wilayah Pengelolaan Perikanan Negara Republik Indonesia 714). Bans the issuing of new fishing licenses in Water Conservation Area No. 714 covering the Banda and Arafura Seas to protect fisheries' spawning and breeding grounds.
- **Presidential Decree No. 115/2015**, **the Task Force on Prevention, Detention and Elimination of Illegal Fishing.** Created to investigate IUU fishing, develop policy recommendations, reform fisheries licensing, monitor and support enforcement operations, and strengthen coordination among enforcement agencies including the Indonesian Navy, the Indonesian Maritime Security Board or Coast Guard (Bakamia), the National (Water) Police, and the Maritime Council.

B-3.4 SOCIAL DEVELOPMENT, EMPLOYMENT, DECENT WORK

SSF GUIDELINES OVERVIEW

The SSF Guidelines urge states to create an environment free from corruption, crime, violence, abuse of authority, and other illegal activities (Table 7). Within the context of sustainable resource management and secure tenure, support for developing alternative income-generating opportunities that diversify livelihoods for economic resilience is necessary.

Table 8. Social development, employment, and decent work strategies and good practices [adapted from FAO (2015)]

8.	**Improve working conditions and safety for small-scale fisheries workers**
a.	Create conditions for men and women of small-scale fishing communities to fish and carry out fisheries-related activities in an environment free from crime, violence, mafia activities, piracy, theft, sexual abuse, corruption, and abuse of authority.
b.	Address occupational health issues and unfair working conditions of all small-scale fishers and fish workers by ensuring that the necessary legislation is in place and is implemented.
c.	Eradicate forced labor; prevent debt-bondage of women, men, and children; and adopt effective measures to protect fishers and fish workers, including migrants, with a view to the complete elimination of forced labor in fisheries, including small-scale fisheries.
d.	Improve sea safety, which includes occupational health and safety, in small-scale fisheries (inland and marine) through the development and implementation of coherent and integrated national strategies, with the active participation of the fishers themselves and with elements of regional coordination, as appropriate.
9.	**Develop human resource capacity of small-scale fishers and fishing communities**
a.	Promote investment in human resource development such as health, education, literacy, digital inclusion, and other skills of a technical nature that generate value addition for the fisheries resources as well as awareness-raising.

Table 8. Social development, employment, and decent work strategies and good practices [adapted from FAO (2015)]	
b.	Support the development of and access to other services that are appropriate for small-scale fishing communities with regard to, for example, savings, credit, and insurance schemes, with special emphasis on ensuring the access of women to such services.
c.	Recognize that capacity development should build on existing knowledge and skills and be a two-way process of knowledge transfer, providing for flexible and suitable learning pathways to meet the needs of individuals, including both men and women and vulnerable and marginalized groups.
10. Diversify livelihoods and income-generating activities	
a.	Recognize the economic and professional importance of the full range of activities along the small-scale fisheries value chain: pre- and post-harvest; in an aquatic environment or on land; undertaken by men or by women.
b.	Support existing, or the development of, complementary and alternative income-generating opportunities—in addition to earnings from fisheries-related activities—for small-scale fishing communities, as required and in support of sustainable resource utilization and livelihood diversification.
c.	Recognize and respect the role of migrant fishers and fish workers in small-scale fisheries, given that migration is a common livelihood strategy in small-scale fisheries.
11. Ensure access of children and youth in fishing communities to education	
a.	Provide and enable access to schools and education facilities that meet the needs of small-scale fishing communities and that facilitate gainful and decent employment of youth, respecting their career choices and providing equal opportunities for all boys and girls and young men and women.
b.	Recognize the importance of children's well-being and education for the future of the children and for society at large.

LEGAL, POLICY, AND INSTITUTIONAL FRAMEWORK

Indonesia has strong laws on occupational safety and health. MMAF Ministerial Regulation No. 35/2015 concerning Certification System for Human Rights on Fisheries Business requires all fisheries operations address human rights and occupational safety and health of workers. Actual implementation is weak. Livelihood diversification and other capacity development projects are undertaken on a project-specific basis, but efforts in general are limited. Education for children and youth is provided through the Ministry of Education.

The percentage of the population living below the national poverty line has steadily decreased in recent years from a high of almost 18 percent in 2006 to 12.5 percent in 2012 (IFAD, 2012). In spite of this progress, more than 32 million Indonesians currently live below the poverty line, most of them in rural areas. In addition, approximately half the population lives just above the poverty line (200,262 rupiah per month or about US $15). These "near poor" households are particularly vulnerable to shocks such as food price spikes and disease outbreak.

The primary Indonesian law on occupational safety and health (OSH) is the Work Safety Act (Law No. 1, 1970). This law covers all workplaces and explicitly states that workers have the right to occupational health and safety protection. Article 23 of the Health Act (Law No. 23, 1992) sets a standard for all workers to be able to work in good health without endangering themselves or their community. The Directorate of OSH Standards of the Ministry of Manpower and Transmigration (DEPNAKER) enforces that law and other regulations. In addition to safe workplaces, Indonesian law (Act 3, 1992, Article 3) mandates that creation of a social security network (*Jamsostek*) to provide for workers if they are injured; this has not yet been fully implemented.

Law No. 7/2016 deals specifically with protection and empowerment of fishers. This law describes various roles and responsibilities of government to protect and empower fishers, especially small-scale fishers. Law 7/2016 defines the terms: (a) fisher, (b) small-scale fisher, (c) traditional fisher, (d) fish worker, and (e) fishing vessel owner.

Human trafficking, smuggling, and modern slavery are an issue in Indonesia fisheries. Foreign captains and crew often do have proper immigration documents. Child labor, general working conditions, and contracts are also an issue. In 2015, Indonesian Minister of Maritime Affairs and Fisheries, Susi Pudjiastuti, prepared a ministerial regulation that requires fisheries operations to implement systems ensuring human rights are respected. Ministerial Regulation No. 2/2017 on Fisheries Human Rights Certification was signed in January 2017 and is based on the United Nations Guiding Principles on Business and Human Rights and the International Labor Organization (ILO) Work in Fishing Convention 2007 (No. C188). The regulation is applicable to all fisheries operations that possess fishing vessels, or that lease and/or manage fishing vessels whose permits are issued by MMAF.

The MMAF has issued several other acts, decrees and guidelines related to social issues for fishers:

- Protection and Empowerment of Fishermen, Fish Farmers and Farmers Salts Act UU No. 7/2016;
- Guidelines for framework Disbursement of the Government in the Ministry of Maritime Affairs and Fisheries Ministerial Decree No. 17/PERMEN-KP/2016;
- Warranty Risk Protection of the Fisherman, Fish Farmers and Farmers Salts Ministerial Decree No.18/PERMEN-KP/2016; and
- Fisheries Business in Fisheries Management Area Indonesia Ministerial Decree No. 26/PERMEN-KP/2013. Ministerial Decree No. Per.30/Men/2012.

A study by Verite (nd) also identified several predominant indicators that increase workers' vulnerability to forced labor or exploitation, including debt and low earnings (especially lack of access to capital), isolation at sea (especially on fishing vessels that spends long periods of time at sea), and health risks when fishing (especially when diving or fishing illegally using explosives or poison). The study also noted the lack of alterative employment for many fishers in remote areas.

The attention of MMAF is mainly confined to fishers, as well as fishing vessel operations, fishing gear deployments, and fish-handling activities on board, and rarely to labor issues. Fishing competence, recruitment, placement, and employment protection of fishers, for example, are not addressed by MMAF. Labor regulations administered by the Ministry of Manpower and Transmigration, in general, focus on labor arrangements on land or on board ships, and rarely, if ever, on fisheries. Further, Ministry of Manpower and Transmigration deals with sea-based commercial services such as transportation of goods and people, while DGI looks after the immigration needs of Indonesian fishers on board foreign fishing vessels in waters outside the national jurisdiction, and of foreign fishers within the Indonesian waters. MMAF deals with fishing vessels as a unit of production, and Ministry of Manpower and Transmigration with ships as a unit of service.

The Ministry of Education and Culture organizes early childhood education, elementary education, secondary education, and community education affairs and the management of culture within the Indonesian government. Law 7/2016 mandates the provision of scholarships to small-scale fishers and their families.

B-3.5 VALUE CHAIN, POST-HARVEST, AND TRADE

SSF GUIDELINES OVERVIEW

The SSF Guidelines highlight the central role of small-scale fisheries in the post-harvest sector and the fact that women should be recognized and supported as important contributors to the value chain (Table 8). Post-harvest actors may have unequal power relationships that require special support or attention. The value chain for fish and fishery products for domestic and export markets must be improved through investments in infrastructure and seafood handling at all stages.

Table 9. Value chains, post-harvest, and trade strategies and good practices [adapted from FAO (2015)]	
12. Build capacity for small-scale fisheries to benefit from market opportunities	
a.	Recognize the central role that the small-scale fisheries post-harvest subsector and its actors play in the value chain.
b.	Recognize the role women often play in the post-harvest subsector and support improvements to facilitate women's participation in work.
c.	Enable timely access to all relevant and accurate market and trade information for stakeholders in the small-scale fisheries value chain.
13. Improve the value chain for fish and fishery products for domestic and export markets	
a.	Recognize the traditional forms of associations of fishers and fish workers and promote that their organizational and capacity development is adequate in all stages of the value chain to enhance their income and livelihood security.
b.	Foster, provide, and enable investments in appropriate infrastructures, organizational structures, and capacity development to support the small-scale fisheries post-harvest subsector in producing good quality and safe fish and fishery products, for both export and domestic markets, in a responsible and sustainable manner.
c.	Avoid post-harvest losses and waste, and seek ways to create value addition, building on existing traditional and local cost-efficient technologies, local innovations, culturally appropriate technology transfers, and environmentally sustainable practices.
14. Reform national policies to minimize adverse impacts of domestic and international trade on small-scale fisheries	
a.	Facilitate access to local, national, regional, and international markets and promote equitable and non-discriminatory trade for small-scale fisheries products.
b.	Give due consideration to the impact of international trade in fish and fishery products and of vertical integration on local small-scale fishers, fish workers, and their communities. Ensure promotion of international fish trade and export production do not adversely affect the nutritional needs of people for whom fish is critical to a nutritious diet and their health and well-being and for whom other comparable sources of food are not readily available or affordable.
c.	Recognize benefits from international trade should be fairly distributed and that effective fisheries management systems are in place to prevent overexploitation driven by market demand that can threaten the sustainability of fisheries resources, food security, and nutrition.
d.	Adopt policies and procedures, including environmental, social, and other relevant assessments, to ensure that adverse impacts by international trade on the environment, small-scale fisheries culture, livelihoods, and special needs related to food security are equitably addressed.

LEGAL, POLICY, AND INSTITUTIONAL FRAMEWORK

Indonesia is one of the world's leading exporting countries of fisheries products. In 2015, the value of Indonesia's fisheries exports reached US $245 million, a number that has steadily risen in the last 20 years. About 56 percent of Indonesian fish production is consumed fresh. There are severe limits to the supply of ice and availability of refrigerated storage and transport facilities, so the balance is processed and consumed as dried and salted (18 percent), smoked, or fermented. There are about 10,000 small

fish processing operations, generally using traditional methods. Less than 2 percent of the catch is canned. Processing of fishmeal is not yet developed and takes place mostly in conjunction with processing/canning operations. About 16 percent of total production is frozen for export, mostly shrimp and tuna.

Due to poor infrastructure and handling, the supply chain for fish in Indonesia is usually short and to local markets. For seafood products from remote fishing villages, fishers generally sell their catch to primary local collectors who in turn bring the fish to local markets where they are sold by secondary collectors. Fish for national and export markets typically follow a similar pattern, except secondary collectors bring the fish to processing plants in major ports in places like Bali, Makassar, and Surabaya where modern processing units generally process product (including fresh frozen and value-added) for export. Commodities include shrimp, tuna and skipjack, fish fillets, tuna loin, and tuna steak.

Supply chain patterns change depending on location, species, and transportation systems. Most catches take between two and five days to go from fisher to fish processing plants in major cities, but catches transported by boat may take longer. Loss along the value chain is significant. Expert estimates of the percentage of fish lost over the course of the value chain range from 30 to 40 percent to as high as 60 percent, with the majority of loss occurring near the beginning of the value chain. Currently, many small-scale fishers are not aware of proper fish handling techniques required for high-quality fish to reach the next level of the supply chain. Moreover, most small-scale fishing boats in Indonesia—mostly boats below 5 GT—are not equipped with iceboxes.

Many small-scale fishers are part of the patron-client system, which has deep historical roots and is an important characteristic of small-scale fishing in Indonesia. Patrons provide gear and money advances in return for a guaranteed supply from indebted fishers (often at a lower price or with a cut to recover the advance). Patron-client systems have both negative (less money for their fish) and positive (access to loans and markets) aspects for fishers. Even fishers not indebted to middlemen rarely have access to auction markets.

A research study identified six main constraints to an economically sustainable fisheries value chain in Indonesia (Wilderness Markets 2015): data, management, market differentiation, infrastructure, finance and the lack of investable entities. MMAF previously established the National Fisheries Logistics System (*Sistem Logistik Ikan Nasional*) to improve fisheries value chains by enhancing connections between remote fish landing places (mainly in Eastern Indonesia) and fish processing plants (mainly in Western Indonesia). The program has constructed cold storage facilities and improved fish distribution systems. Since 2015, the National Fisheries Logistics System includes air transport and improved infrastructure along the supply line. The challenge for small-scale fishers is how to take advantage of these programs. Fishery Improvement Projects (FIPS), promoted and assisted by NGOs and overseas fishing industry groups, are one effort to use market access to overseas markets (especially the U.S.) to improve small-scale fishers' income and stock.

B-3.6 GENDER EQUALITY

SSF GUIDELINES OVERVIEW

The SSF Guidelines highlight the need for States to achieve gender equality as an integral part of small-scale fishery development strategies (Table 9). Gender equality means equal treatment of women and men in laws and policies, and equal participation, access to resources and services (e.g. justice, education, health) within families, communities and society at large (Arenas & Lentisco, 2011). Gender

equality results from applying gender equity principles which refers to the process of fair and just treatment of women and men. To ensure fairness and justice, measures must be put in place to compensate for the historical and social disadvantages that prevent women and men from sharing a level playing field. Gender equality in small-scale fisheries must be mainstreamed in compliance with international human rights law.

Table 10. Gender equality strategies and good practices [adapted from FAO (2015)]	
15. Mainstream gender equality as an integral part of small-scale fisheries development	
a.	Comply with obligations under international human rights law and implement the relevant instruments to which they are part.
b.	Secure women's equal participation in decision-making processes for policies directed toward small-scale fisheries.
c.	Establish policies and legislation to realize gender equality, and as appropriate, adapt legislation, policies, and measures not compatible with gender equality, taking into account social, economic, and cultural aspects.
d.	Encourage the development of better technologies of importance and appropriate to women's work in small-scale fisheries.

LEGAL/POLICY/INSTITUTIONAL FRAMEWORK

Indonesia laws support gender equality, although as a nation, Indonesia is still far from actually achieving it. The Indonesian constitution guarantees comprehensive rights for women, and the Ministry of Women~~'s~~ Empowerment and Child Protection supports women's rights. Indonesia ratified the International Convention on the Elimination of All Forms of Discrimination against Women in 1984, and encoded the convention in specific laws to protect women from violence. In addition, a presidential decree in 2000 made it mandatory to uphold the equality of men and women in all societal questions and in all sectors. Gender budgeting has been introduced to the planning of departmental budgets at all levels, and gender mainstreaming is part of the country's medium- and long-term development planning.

Regardless, Indonesia's socio-cultural landscape is a barrier to equal rights. The patriarchal value system and conservative religious leaders from the country's majority Muslim population ascribe traditional roles to women. Within the country's 250-plus ethnic groups, gender roles vary widely. The diversity of national, religious, and customary laws makes it difficult to enforce women's rights, as do secular marriage legislation and the valid canon of Islamic law. Indonesia has adopted a number of policies and strategies to combat violence against women, yet discrimination and the use of violence often remain hidden because women, especially poorer women, are frequently unaware of their rights. Despite Law No. 21 of 2007 on the eradication of the crime of trafficking in persons, trafficking and prostitution pose serious threats for Indonesian girls and women, as Indonesia remains a major source country and to a much lesser extent a destination and transit country for sex trafficking and forced labor.

In the 2014 Edition of the Social Institutions and Gender Index, Indonesia's score was 0.1532, placing it among countries with a medium level of discrimination in social institutions. It had low levels of discrimination in resources and assets, but higher levels in family code and son bias. Indonesia's Civil Code stipulates that men and women have equal ownership rights, including access to land and non-land assets. Officially, women also have equal access to financial services, including bank loans and credit, and have the right to independently sign contracts. However, Article 108 of the Civil Code creates a significant barrier to the acquisition of assets, as it prevents married women from entering into contracts on their own behalf and from receiving any payment from individual business activities. In a 2015 report on gender inequity (Cameron et al, 2015) the highest level of informal employment for

both males and females occurs in the agriculture and fisheries sector. In 2013 the agricultural/fisheries sector accounted for about 34.9% of total employment and 32.8% of total female informal employment.

Family relations in Indonesia are governed by a combination of civil, informal customary, and *Sharia* (Islamic) law. Indonesia's Marriage Law explicitly states that men are the head of the household, although men and women share parental authority equally. Under Indonesian civil law, women and men have equal rights to inheritance. Women in Indonesia have freedom of access to public space in general, but Islamic norms and values impose restrictions in certain areas that significantly affect women's freedom of movement. Freedom of speech, assembly, and association are generally respected in Indonesia, although the media do operate under certain restrictions. Freedom House reports that there are many active civil society organizations, and this would appear to include many working on women's rights, including a strong National Human Rights Mechanism dedicated to violence against women. There are no formal barriers to women's political participation, although traditionally, the political sphere is seen as the provenance of men. With the aim of increasing women's political participation, the Government of Indonesia adopted Law No. 2 of 2011 on political parties, establishing quotas for women in political party structures at the national and regional levels; and Law No. 8/2012, on general elections, in which provision is made for a quota for women candidates on the electoral lists of political parties for the general elections of regional legislative bodies.

B-3.7 DISASTER RISK AND CLIMATE CHANGE

SSF GUIDELINES OVERVIEW

The SSF Guidelines highlight the need for holistic approaches and cross-sectoral collaboration to address disaster risk and climate change in small-scale fisheries and fishing communities (Table 10). While coastal and island communities dependent on marine resources have a history of adapting and being resilient to change, ongoing pressures on global fisheries and the impacts of climate change are expected to cause unprecedented transformations that are difficult to predict. The impacts of climate change on coastal communities and small-scale fisheries must be assessed at multiple scales and through the whole value chain.

Table 11. Disaster risk and climate change strategies and good practices [adapted from FAO (2015)]

16.	**Recognize and address the differential impact of natural and human-induced disasters and climate change on small-scale fisheries and communities**
a.	Develop capacity of small-scale fishing communities to address disaster risks and adapt to climate change.
b.	Account for the impact that climate change and disasters may have on the post-harvest and trade subsector in the form of changes in fish species and quantities, fish quality and shelf-life, and implications with regard to market outlets.
c.	Understand how emergency response and disaster preparedness are related in small-scale fisheries and apply the concept of the relief-development continuum.
d.	Promote the role of small-scale fisheries in efforts related to climate change and encourage and support energy efficiency in the subsector, including the whole value chain—fishing, post-harvest, marketing, and distribution.

LEGAL, POLICY, AND INSTITUTIONAL FRAMEWORK

More than 65 percent of Indonesia's population of 250 million lives in coastal zones, and Indonesia's economy is heavily dependent on natural ecosystems. Climate change poses significant and well-documented threats to ocean and coastal ecosystems. Warming of sea surface temperatures causes extensive coral bleaching, and sea-level rise could mean a loss of homes and livelihoods for an estimated 42 million in coastal communities by 2050. Climate change also threatens to exacerbate the ongoing

problems of large-scale deforestation and wildfires, land conversion and habitat destruction, and overexploitation of marine resources.

A number of national laws, regulations and decrees address climate change:

- Law 31/2009, Concerning Meteorology, Climatology and Geophysics (2009);
- Law 32/2009 concerning Protection and Management of Living Environment (2009);
- Presidential Regulation, 46/2008 National Council on Climate Change (2008);
- President Regulation 71/2011, on the Implementation of a National Greenhouse Gases Inventory (2011); and
- Presidential Decree 61/2011, National Action Plan to reduce GHG emissions (RAN-GRK) (2011).

Indonesia also has a number of national plans, programs, and initiatives related to climate change:

- National Medium Term Development Plan 2015-2019 (RPJMN 2015-2019) (2015);
- National Action Plan Addressing Climate Change (NAP) (State Ministry of Environment) (2007)—a general guide for multiple Indonesian institutions to take a coordinated and integrated approach to addressing climate change (The NAP is referred to as a "dynamic policy instrument". It is supported by ministry policies, for example the Ministry of Public Works recently released National Action Plan on Mitigation and Adaptation to Climate Change specific to Public Works which includes policies, strategies and programs to lower impacts of climate change in the public works sector.);
- Indonesia Climate Change Sectoral Roadmap (ICCSR) (Republic of Indonesia) (2009);
- Climate Change Development Policy Loan (CC DPL) Program (World Bank) (2010);
- National Action Plan for Climate Change Adaptation (RAN-API) (2013), a planning document that describes the national development strategy and action plan for climate change resilience. It provides direction in the formulation of the National Medium Term Development Plan (*Rencana Pembangunan Jangka Menengah*) and the National Annual Plan (*Rencana Kerja Pemerintah*) (At the regional level, the National Action Plan for Climate Change Adaptation guides regional governments in formulating their respective climate change strategies and action plans.);
- UN REDD+ National Program in Indonesia (Indonesian Ministry of Forestry) (2009) (Under Presidential Decree No. 16/2015, the agency known as BP REDD+, along with the National Council on Climate Change, were absorbed into the Ministry of the Environment and Forestry's Directorate General of Climate Change Oversight.);
- Policy advice for environment and climate change (PAKLIM) (Indonesian State Ministry of Environment [MoE]) (2009); and
- The Indonesia Climate Change Trust Fund (ICCTF) (2009), which supports the government in achieving its mitigation and adaptation targets, through the implementation of national and local mitigation and adaptation actions (RAN/RAD-GRK and RAN-API). ICCTF only became a national trust fund in 2015, but has distributed funds for climate change programs in accordance with the 2015-2019 National Mid-term Program Plan.

The marine environment and fisheries feature prominently in the Indonesia Climate Change Sectoral Roadmap (2009), which warns that existing policies and regulations do not recognize the need for climate change adaptions, specifically identifying:

- Risks to ports and settlements from sea level rise, shifting fishing grounds, and weather patterns;

- Adaptation needs that will require engineering solutions, population management, infrastructure changes, and better scientific data and research;
- Development of regulations, policy, and institutional capacity in the marine and fishery sector to adapt to climate change in coastal areas;
- Development and socialization of real-time weather information systems; and
- Adjustments in aquaculture species and location.

MMAF does not yet have a fisheries sector-specific climate change policy, but it has developed national competency standards for Disaster Mitigation and Climate Change Adaptation (MBAPI) for village facilitators throughout Indonesia under the PDPT coastal resilience program, including a standard curriculum and training modules. The MMAF has also issued Fishermen Protection, Fish Farmers, and Farmers Salt People Affected by Natural Disasters Ministerial Decree No.22/PERMEN-KP/2014 jo. Ministerial Decree No.12/PERMEN-P/2014.

MMAF and provincial DKPs, under Law 27 for coastal zone planning, have developed the coastal resilience program (PDPT) to guide local governments to develop Coastal and Small Islands Zonation Plans incorporating climate change considerations into *perdas* (local regulations) to control spatial utilization for long-term sustainability of marine and coastal resources. MMAF runs the national Development of Resilient Coastal Villages Program in 22 districts throughout Indonesia and a national strategy is being implemented with site-level activities in villages.

Indonesia has 2.9 million hectares of mangroves and 0.3 million hectares of seagrass, making it the world's richest country in coastal blue carbon (biological carbon captured by coastal-marine living organisms). With a total storage of 3.14 billion tons of carbon in mangroves (Murdiyarso et al., 2015) and 0.39 billion tons in seagrass (Alongi et al., 2015), Indonesia holds great potential for climate change mitigation.

B-3.8 POLICY COHERENCE, INSTITUTIONAL COORDINATION, AND COLLABORATION

OVERVIEW

The SSF Guidelines urge states to adopt integrated, ecosystem, and holistic approaches to secure sustainable small-scale fisheries and address the many potential social, economic, and environmental factors that can threaten local management of tenure (Table 11). As such, there is an important role for government in creating the policy environment and space for tenure arrangements to succeed (Charles, 2013). International, regional, national, and subnational coordination and collaboration are needed to support a harmonized policy environment for securing sustainable small-scale fisheries that focus on the long-term vision of eradicating poverty and hunger.

Table 12. Policy coherence, institutional coordination and collaboration strategies and good practices [adapted from (FAO, 2015)]	
17. Adopt national policies and laws that support an integrated, holistic, ecosystem-based approach to marine and coastal management	
a.	Develop and use spatial planning approaches, including inland and MSP, that take due account of the small-scale fisheries' interests and role in integrated coastal zone management.
b.	Adopt specific policy measures to ensure harmonization of policies affecting the health of marine and inland water bodies and ecosystems and to ensure that fisheries, agriculture, and other natural resource policies collectively enhance the interrelated livelihoods derived from these sectors.
c.	Consider integrated, ecosystem, and holistic approaches to small-scale fisheries management and development that take the complexity of livelihoods into account.
d.	Recognize and address the underlying causes and consequences of transboundary movement of fishers and contribute to the understanding of transboundary issues affecting the sustainability of small-scale fisheries.
18. Establish mechanisms for institutional coordination and collaboration at international, regional, national, subnational levels	
a.	Establish and promote the institutional structures and linkages—including local-national-regional-global linkages and networks—necessary for achieving policy coherence, cross-sectoral collaboration, and the implementation of holistic and inclusive ecosystem approaches in the fisheries sector with clear roles and responsibilities and defined points of contact in government authorities and agencies for small-scale fishing communities.
b.	Promote collaboration among their professional associations, including fisheries cooperatives and civil society organizations, through networks and platforms for the exchange of experiences and information, and to facilitate their involvement in policy- and decision-making processes relevant to small-scale fisheries communities.
c.	Recognize and promote, as appropriate, local governance contributions to effective management of small-scale fisheries, taking into account the ecosystem approach and in accordance with national law.
d.	Promote enhanced international, regional, and sub-regional cooperation in securing sustainable small-scale fisheries.

LEGAL, POLICY, AND INSTITUTIONAL FRAMEWORK

Indonesia supports an ecosystem approach to marine and coastal management but has no laws or policies specific to EAFM. The Fishery Resources Directorate within MMAF spearheads the EAFM implementation through MMAF's Marine and Fisheries Research Agency, district and provincial fisheries agencies, universities, and NGOs. MMAF has an EAFM expert panel to help develop fishery management plans for the 11 FMAs in the country. Another MMAF directorate utilizes spatial planning approaches to address transboundary movement of fishers. There are established mechanisms for institutional coordination and collaboration at international, regional, national, and subnational levels, although inter-ministerial coordination at the sub-national level is weak.

Indonesia is party to several major international conventions that mandate policy coordination from the national to the local level on marine resource management, including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, enforced by MMAF for marine species), the Convention on Biological Diversity (CBD), the Ramsar Wetlands Convention, the United Nations Convention on the Law of the Sea (UNCLOS), and the UN Fish Stocks Agreement (UNFSA). Indonesia was one of the first countries to sign up to the Port State Measures Agreement. Additionally, Indonesia is active in FAO and a participant in the United Nations Conference on Sustainable Development (Rio+20).

Indonesia is a member of the following regional fisheries management organizations/agreements:

- Commission for the Conservation of Southern Bluefin Tuna (CCSBT);
- Indian Ocean Tuna Commission (IOTC);
- Western and Central Pacific Fisheries Commission (WCPFC);
- Brunei, Indonesia, Malaysia, Philippines – East Asia Growth Area (BIMP-EAGA);
- Indian Ocean Marine Affairs Cooperation (IOMAC);
- Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security (CTI); and
- Arafura and Timor Sea EA (ATSEA).

Despite these national commitments, as numerous mandates from other ministries to consider marine resource impacts, coordination at the district level is weak or nonexistent. MMAF runs a Communication Forum on Management and Utilization of Fisheries Resources (*Forum Komunikasi Pengelolaan dan Pemanfaatan Sumberdaya Ikan*) to coordinate management of FMAs, which often span multiple provinces. But districts and provinces without a strong MMAF presence also generally lack the capacity to implement policy. Moreover, local decision makers are often recruited based on nepotism rather than meritocracy. Another example is the Ministry of Environment and Forestry's ineffective efforts to ban the use of potassium to catch ornamental fish due to poor coordination with district governments.

Coastal resource management regulations in Indonesia are often flouted; intrusions on MPAs, destructive fishing, and IUU are commonplace. Responsibility for enforcement is distributed across numerous organizations: the maritime police and the navy are the most important units with the authority to arrest, but regencies and provinces have enforcement authority in their waters. MMAF has some authority for water patrols and apprehension, as do several other ministries. A fragmented approach to enforcement has resulted in poor coordination, insufficient funding, and agencies that are captured by those they are supposed to enforce.

Multilateral financial institutions and organizations like the World Bank and United Nations have invested in programs in Indonesia serving both small-scale fisheries and policy coordination. The World Bank and the Asian Development Bank have funded three iterations of the Coral Reef Rehabilitation and Management Project (COREMAP). U.N. agencies such as FAO, United Nations Development Program (UNDP), and United Nations Environmental Program (UNEP) have been involved in fisheries management and marine conservation in Indonesia. The United Nations International Fund for Agricultural Development (IFAD) funds projects with MMAF focused on community-based management of small-scale fisheries and USAID has supported several fisheries projects including the USAID SEA Project.

The private sector and NGOs—WWF, Conservation International, and The Nature Conservancy in particular—have also funded fishery projects including local and national coordination activities. Industry associations, including the Association of Fisheries Businessmen (*Gabungan Perusahaan Perikanan Indonesia*), Indonesian Tuna Longline Association, Indonesian Blue Swimming Crab Processors Association (*Asosiasi Pengelolaan Rajungan Indonesia*), Indonesian Pole and Line Association (AP2HI, *Asosiasi Perikanan Pole & Line dan Handline Indonesia)* are engaged in policy advocacy as well as working to improve value chains.

Environmental protection in Indonesia is principally regulated by Law No. 32 of 2009 on The Management and Protection of the environment ("Environmental Law"). The Environmental Law is primarily administered and enforced by the Ministry of the Environment and Forestry, Governors, and Regents/Mayors according to their respective authorities. Other institutions have also been established

to deal with specific issues related to protection of the environment, for example, the Regional Environmental Management Agency for regional control, AMDAL Appraisal Commission for administering environmental impact assessments, and a National Water Resources Board (*Dewan Sumber Daya Air*) for water resources control.

B-3.9 INFORMATION, RESEARCH, AND COMMUNICATION

SSF GUIDELINES OVERVIEW

The SSF Guidelines recognize the need for social, ecological, economic, and cultural information and data to support decision-making on sustainable management of small-scale fisheries (Table 12). Small-scale fisheries are complex social-ecological systems. Improved knowledge of the dynamics of these systems is needed as a foundation for providing appropriate and responsible support and to ensure that informal, indigenous, and customary knowledge, practices, and tenure systems are valued and protected.

Table 13. Information, research, and communication strategies and good practices [adapted from (FAO, 2015)]

19. Improve knowledge of social-ecological systems	
a.	Establish systems of collecting fisheries data, including ecological, social, cultural, and economic data relevant for decision making on sustainable management of small-scale fisheries.
b.	Ensure that the knowledge, culture, traditions, and practices of small-scale fishing communities, including indigenous peoples, are recognized, and as appropriate, supported, and that they inform responsible local governance and sustainable development processes.
c.	Encourage small-scale fisheries research and collaborative and participatory data collection, analyses, and research with funding.
d.	Promote research into the conditions of work, including migrant fishers and fish workers, health, education, and decision making, in the context of gender relations, to inform strategies for ensuring equitable benefits for men and women in fisheries.
20. Improve access to information and data needed for decision-making	
a.	Recognize the importance of communication and information, necessary for effective decision-making.
b.	Prevent corruption, particularly through increasing transparency, holding decision makers accountable, and ensuring that impartial decisions are delivered promptly and through appropriate participation and communication with small-scale fishing communities.
c.	Recognize small-scale fishing communities as holders, providers, and receivers of knowledge and the need for access to appropriate information to help them cope with existing problems and empower them to improve their livelihoods.
d.	Promote the availability, flow, and exchange of information, including on aquatic transboundary resources, through the establishment or use of appropriate existing platforms and networks at community, national, sub-regional, and regional levels, with appropriate approaches, tools, and media for communication with and capacity development for small-scale fishing communities.

LEGAL, POLICY, AND INSTITUTIONAL FRAMEWORK

Indonesia has an established system of collecting fisheries data, including ecological, social, cultural, and economic data relevant for decision-making on sustainable management of small-scale fisheries. Provincial and district-level fisheries agencies, however, often do not have the capacity to effectively collect these data, let alone use data to inform localized management.

Information, research, and communication on small-scale fisheries are undertaken through national government agencies, and academic and research institutions. MMAF is primarily responsible for collecting and overseeing fisheries data within the directorate known as the Research Agency. The

agency implements research programs based on a five-year research cycle in the 11 FMAs. An annual stock assessment report is prepared for the National Committee on Stock Assessment. This committee discusses validations on data and submits recommendations on stock status to the minister. MMAF cooperates with IOTC and WCPFC on programs linked to observer deployment and data collection. The main fisheries economics organization in Indonesia is the Research Center for Social Economics within the Research Agency. The organization's primary focus is in modelling and assessment of trade-related issues. Some costs and earnings data is collected, but on a sporadic basis, and is not coordinated or integrated with the stock assessment survey. The Indonesian national science institute (*Lembaga Ilmu Pengetahuan Indonesia* [LIPI]) is responsible for basic marine scientific research.

Universities offering an academic education and research in fisheries subjects include the Bogor Institute of Agriculture, Diponegoro University, University of Mataram, Pattimura University, and Hasanuddin University. Law 7/2016 mandates the provision of scholarships to small-scale fishers and their families for university.

Indonesia's primary oceanographic and marine resource research institutions are:

- National Coordinating Agency for Survey and Mapping (BAKOSURTANAL);
- Meteorological and Geophysics Institute of Indonesia (BMG);
- Agency for the Assessment and Application of Technology (BPPT);
- Indonesian Navy Hydrographic and Oceanographic Service (DISHIDROS TNIAL);
- Agency for Marine and Fisheries Research, Ministry of Marine Affairs and Fisheries (BRKP-DKP); and
- Research Centre for Oceanography, Indonesian Institute of Sciences (P2O -LIPI).

Fisheries data are collected through three different data collection schemes, depending on the size of the landing site:

- Daily reports from fishing ports and major landing sites, with total catches by month reported to the Directorate General of Capture Fisheries (MMAF) in Jakarta;
- Catch monitoring programs focused on IOTC area fishing ports: data sampling collected by enumerators from longline catch landings in port, including Jakarta, Cilacap, Benoa (since 2002), and Pelabuhan Ratu (since 2007); and
- Data from fishing villages collected by district offices, processed and reported by quarter to Directorate General of Capture Fisheries in Jakarta.

In the context of data collection, there are organizations and job duties of institutions involved both at national and local government levels, which involved, namely:

- The Directorate General of Capture Fisheries is responsible for designing survey methods, compiling and analyzing data, and publishing the National Capture Fisheries Statistics.
- Provincial fisheries departments are responsible for village-level sampling, district-level data aggregation and analysis, and publication of Provincial Capture Fisheries Statistics.
- District Fisheries Services are responsible for collecting and reporting statistical data on both fisheries and processing facilities.
- Fishing port authorities are responsible for collecting data on catch landed at specific ports.

B-4. NATIONAL PLAN OF ACTION FOR SMALL-SCALE FISHERIES

Following the endorsement of the SSF Guidelines by the FAO Committee on Fisheries in 2014, a regional workshop was held in 2015 in Bali, Indonesia to discuss implementation of the SSF Guidelines. The workshop was co-organized by MMAF and FAO in collaboration with the Southeast Asian Fisheries Development Center (SEAFDEC) and the FAO Bay of Bengal Large Marine Ecosystem (BOBLME) Project. Some 116 participants attended the workshop representing governments, regional and international organizations, fisherfolk organizations, civil society organization, NGOs, academia, and other relevant actors. During the workshop, MMAF discussed Indonesia's efforts to develop a National Plan of Action for Small-scale Fisheries Management in response to the SSF Guidelines. Key actions from the plan are summarized in Table 13.

Table 14. Summary of Indonesia's National Plan of Action for Small-scale Fisheries Management	
A. Responsible Governance of Tenure	
1)	***Securing Rights over Fisheries Area (Fishing Ground)***
a)	Secure small-scale fisheries area in marine and inland waters spatial plan.
b)	Regulate the utilization of coastal, marine and general terresterial waters for small-scale fisheries.
c)	Enforce small-scale fisheries zone.
d)	Implement Fisheries Management Plan for Fisheries Management Area (FMA) and sub-FMA in accordance with EAFM.
e)	Strengthen fisheries management institution at the FMA and sub-FMA levels in EAFM context.
f)	Strengthen small-scale fisheries management institutions.
B. Sustainable Resource Management	
2)	***Application of Sustainable Development Principles***
a)	Rehabilitate coastal, marine, and general terresterial water ecosystem.
b)	Rehabilitate fisheries resources.
c)	Control marine and coastal pollution and deterioration in fisher villages.
d)	Apply economic instruments friendly to small-scale fisheries.
e)	Strengthen the capacity for monitoring and surveillance of ecosystem conservation in coastal, marine and general terresterial waters.
f)	Regulate migratory fishers.
g)	Regulate the capacity of small-scale fisheries.
h)	Regulate the gears for small-scale fisheries.
i)	Integrate small-scale fisheries with tourism.
C. Social Development, Employment, and Decent Work	
1)	***Fishers Social Development***
a)	Increase fishers' land certification to strengthen their access to capital.
b)	Improve fishers village quality.
c)	Protect the Indonesian fishers that fish in cross-border area and presumed violating fisheries regulation in other countries.
d)	Develop fishers ID card program based-on SMS gateway system.
e)	Secure the health of small-scale fishers through fishers insurance program.
f)	Develop conflict resolution scheme that fits with the problem of small-scale fisheries.
g)	Guarantee the assets of small fishers through asset insurance program.
h)	Provide legal assistance for small-scale fisheries.
i)	Provide legal protection to small-scale fisheries (including their children, etc.).
2)	***Employment and Decent Work***
a)	Improve skill of fishers and mentoring.

Table 14. Summary of Indonesia's National Plan of Action for Small-scale Fisheries Management
b) Develop fishers ID card program and socialize its importance.
c) Build capacity for fishers to make them able to repair fishing motors.
d) Develop independent collective business group.
e) Socialize guideline for creating and developing the institution of capture fisheries business.
f) Improve capacity of small-scale fisheries on fisheries work safety in land and at sea (including capacity to search and rescue).
g) Develop independent business group through the independent "*Mina Bahari*" Business Develoment Program.
h) Secure rights of fisher worker and crew (wage, health, etc.).
i) Accelerate the alternative livelihood diversification program for small-scale fisheries.
j) Improve the small-scale fisher's education quality.
k) Improve small-scale fisher's safety.
l) Provide natural gas for fishers.
m) Relocate solar subsidy to natural gas for fishers.
n) Develop electrity connection facility program for fishers.
o) Develop water supply system infrastucture in fishers villages.
D. Value Chains, Post-Harvest, and Trade
1) ***Small-scale Fisheries Value Chain and Post-Harvest***
a) Strengthen the role of small-scale fishers in the value chain of fisheries product management and trade.
b) Improve role of women in fisheries product management.
c) Improve quality of fish processing units for small- and medium-scale fishers.
d) Improve cold storage of fish processing units (*Unit Pengolahan Ikan* [UPI]) for small- and medium-scale fishers.
e) Diversifiy product processing of small-scale fisheries.
f) Improve the capacity of wastewater management facility of small- and medium-scale UPI.
g) Improve the marketing of small-scale fisheries products by applying creative economy approach (e.g., fishing festival at port, etc.).
h) Mentor small-scale fisheries to get certification of vessel data and catch certificate.
i) Mentor small-scale fisheries to get kosher certificate.
2) ***Small-scale Fisheries Trade***
a) Revitalize fish market.
b) Develop market-based Minapolitan and fisheries product management.
c) Promote small-scale fisheries products.
d) Strengthen market information system for small-scale fisheries.
e) Apply the "from the fishers to the chefs" model.
E. Policy Coherence, Institutional Cooperation and Collaboration
1) ***Policy Coherence and Institution Coordination***
a) Integrate marine and inland waters spatial plan at national and local level that recognize and accomodate small-scale fisheries interest (including artisanal and subsistence fisheries).
b) Develop national marine spatial plan that secures the sustainability of small-scale fisheries with their specific characteristic in each area.
c) Integrate Minapolitan areas with the development of intergrated fisheries center as program focus.
d) Develop supporting infrastructure and facility that is important for small-scale fisheries.
e) Conduct integrated implementation of Law No. 23/2014 on Local Government, and Law No. 32/2014 on Oceans.
2) ***Collaborative Management***
a) Strengthen planning coordination among government institutions, private sector, and civil society organizations for small-scale fisher empowerment activity in the context of EAFM.

Table 14. Summary of Indonesia's National Plan of Action for Small-scale Fisheries Management
b) Coordinate the implementation of small-scale fisher empowerment programs in the context of EAFM.
F. Information, Research and Communication
1) ***Information and Communication***
a) Provide information system at small-scale fishers center/fish processor/marketers of result of marine and fisheries research and technology engineering (accurate information such as weather prediction, fish price, potential fishing ground, etc.).
b) Provide information access for fishers to support fish catch business activity.
c) Strengthen and provide information technology and communication to expedite community's access (fisher village location/fish processors/marketers that served with internet access).
d) Strengthen income data and information of fishers/fish processors/marketers.
e) Strengthen fish catch business basis data including fish processors and marketers.
f) Development of smart fishers information system at fishers center including fish processors and marketers.
2) ***Small-scale Fisheries Research***
a) Conduct sustainable small-scale fisheries research (related to stock, business, income, consumption, and institution).
b) Preserve small-scale fisheries local knowledge (such as *awig awig, sasi*, etc.).
c) Conduct participatory small-scale fisheries research.
d) Develop and strengthen science interface policy on small-scale fisheries.
G. Capacity Building
1) ***Individual Capacity of Small-scale Fishers***
a) Establish human resource development program for fishers, fish processors, and marketers including their families.
b) Improve business capacity and protection for fishers, including fish processors, and marketers.
i) Coaching and protection for fisherman,
ii) Improving access and business capital facilitation as well as investment development,
iii) Mentoring (business coaching and management),
iv) Development business diversification, and
v) Monitoring and evaluating fishers/fish processors/marketers.
c) Establish independent enterpreneurship coaching for family of fishers/fish processors/marketers to create creative economy.
d) Improve participation of small-scale fishers in EAFM-based fisheries management process.
2) ***Capacity of Small-scale Fisheries Business Group***
a) Provide business management coaching for small-scale fisheries business group (fishers/fish processors/marketers).
b) Provide coaching on fish catch business development and empowerment for fisher/fish processor/marketer group.
c) Build institutional capacity for capture fisheries business that covers: (1) creation and development of capture fisheries business group; (2) development of microfinance institution based on fish catch business (unit); and (3) monitoring and evaluation of business institution (joint business group)/ joint fish processor/marketer group.
3) ***Capacity Building of Empowerment Agent for Small-scale Fishers/Processors/Marketers***
a) Develop capacity of agent of MMAF and/or non-MMAF who empower fisher/fish processor/marketer.
4) ***Capacity of Small-scale Fisheries Business Group***
a) Provide business management coaching for small-scale fisheries business group (fishers/fish processors/marketers).
H. Support Implementation, Monitoring, and Evaluation

Table 14. Summary of Indonesia's National Plan of Action for Small-scale Fisheries Management
1) ***Small-scale Fisheries Monitoring***
a) Monitor the welfare of small-scale fisheries household with EAFM indicator.
2) ***Small-scale Fisheries Evaluation***
a) Evaluate small-scale fisheries with EAFM indicator.
3) ***Monitoring of National Action Plan Process***
a) Monitor and evaluate the implementation process of National Action Plan.
I. Regional and International Cooperation on Small-scale Fisheries
1) ***Cooperation with International Institution Partners in Small-scale Fisheries Development***
a) Implement cooperation with international institution partners in small-scale fisheries development.
b) Encourage Indonesia's participation at regional and international level including South to South and Coral Triangular cooperation.

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