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Indonesia



Assessment of the Enabling Conditions
for Rights-Based Management of Fisheries
and Coastal Marine Resources

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This paper assesses enabling conditions for community-driven, rights-based management approaches to coastal marine resources management in Indonesia. It is part of a series of country reports for six countries in the Western Pacific region. The objective of this assessment is to inform potential interventions that may accelerate the adoption of such management approaches. A full description of the rationale and the methodology used in these assessments can be found in the accompanying document, "Assessment of Enabling Conditions for Rights-Based Management of Fisheries and Coastal Marine Resources in the Western Pacific." This study represents the best professional judgment of California Environmental Associates and the Community Investment Forum (a project of the Trust for Conservation Innovation) based on our interviews and research. While we benefited enormously from the help of experts within the region, any errors in the report are ours alone. This project was supported by the David and Lucile Packard Foundation as part of an ongoing effort to inform long-term grant making.



COUNTRY REPORT

Indonesia

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for Rights-Based Management of Fisheries
and Coastal Marine Resources

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Acronyms

BLUD	Badan Layanan Umum Daerah (Local Public Service Agency)
DAK	Dana Alokasi Khusus (Specific Allocation Fund)
DAU	Dana alokasi umum (General Allocation Fund)
DG	Directorate General
DKP	Dina Kelautan dan Perikanan (Office for Marine Affairs and Fisheries)
EC	economic corridor
EEZ	exclusive economic zone
GDP	gross domestic product
GT	gross tonnage
HP-3	Hak Pengusahaan Perairan Pesisir (coastal water concessions)
IDR	Indonesian rupiah
IUU	illegal, unreported, and unregulated fishing
KKPD	Kawasan Konservasi Perairan Daerah (district marine or freshwater protected area)
KKPN	Kawasan Konservasi Perairan Nasional (national marine or freshwater protected area)
MMAF	Ministry of Marine Affairs and Fisheries
MoF	Ministry of Forestry
MPA	marine protected area
MP3EI	Master Plan for the Acceleration and Expansion of Indonesia Economic Development
MSY	maximum sustainable yield
NGO	nongovernmental organization
nm	nautical miles
RBM	rights-based management
TAC	total allowable catch

Executive Summary

Indonesia spans 17,480 islands and 81,000 kilometers of coastline, intimately linking it to the ocean. In addition to providing a steady stream of revenue to the government in the form of taxes and fees, marine resources are of vital importance for food, livelihoods, and traditional culture. More than 140 million Indonesians live in coastal areas and more than 2.62 million people are primarily employed in marine and inland capture fisheries in Indonesia. It is one of the most fish-dependent countries in the world yet also one of the most threatened; reefs in Indonesia face a myriad of threats, such as sedimentation from deforestation, coastal pollution, and thermal stress, but overfishing and destructive fishing are believed to be the most acute threats.

Indonesia has a long-standing marine conservation and management commitment as evidenced by the formal recognition of customary management systems, a large network of marine protected areas (MPAs), some fisheries management interventions, and its endorsement of the Manado Declaration. Looking forward, there is a need to secure the longevity and effectiveness of relevant fisheries management and protected area efforts. There is also a need to consider how rights-based fisheries and coastal marine resource management approaches may be relevant and scalable in Indonesia.

We reviewed the status of four key “top-down” enabling conditions that would support the use of fisheries and coastal marine rights-based management (RBM) approaches to safeguard coastal and marine resources in Indonesia.

Legal Conditions: According to the Indonesian Constitution, natural resources can be exploited for the greatest benefit of all. There is much debate about the

Rights-based Management (RBM) Approaches

An RBM approach provides an entitled entity (e.g., a community or cooperative) with the right to manage its fisheries and coastal marine resources. There are numerous forms of rights-based approaches to fisheries management, but essentially these approaches confer privileges and responsibilities that define the appropriate use of a fisheries resource. RBM approaches effectively replace the system dynamics of open access fisheries with a fundamentally different model.

Several features characterize a rights-based approach:

- Exclusive rights, or access privileges, are assigned to a particular entity or group.
- The term of the access privilege is sufficiently long and secure for the holder to realize long-term benefits.
- The defined privileged access area is sufficiently large such that management actions by the users are not undermined by activities outside the area.
- Management systems control mortality and fishing effort.

Use rights can generally be classified into three different categories:

- Access rights, which authorize access to a fishery (e.g., licenses)
- Effort rights, which authorize the right to a specific amount of fishing effort (e.g., days at sea)
- Output rights, which authorize the right to a specific amount of harvest (e.g., catch share)

Once access privileges are granted, a range of management options may be implemented, including spatial access limitations such as no-take zones, effort restrictions such as a reduction to the overall fishing effort allowed, or output controls such as catch limits. These management tools may be implemented by a range of management bodies—from local communities to government entities to “co-management” bodies.

appropriate interpretation of this statement, but fisheries and marine resources, especially within 4 nautical miles (nm) of the coast, are generally treated as open access resources. Whereas Indonesia does have regulations and procedures to regulate spatial distribution of fishing effort, these regulations have not yet resulted in control of the overall level of effort, nor have they been effective in abating overfishing. Legislation exists to designate and manage MPAs, and the country is divided into Fisheries Management Areas to guide fisheries interventions (e.g., governance, licensing systems, and gear restrictions). However, there are few effective regulations to limit access beyond no-take zones within MPAs, and few catch limits or effort restrictions are used in nearshore waters. Customary fisheries and marine management systems exist in certain places, but there are no common or scalable models. The overall consensus appears to be that while an RBM approach to managing local marine resources is possible in certain cases, there are enough legal hurdles to make widespread adoption unlikely in the short term.

Institutional and Implementation Conditions: While regencies (*Kabupaten*) have control over nearshore waters to the 4 nm point, provinces from 4–12 nm, and national government from 12–200 nm, jurisdictional overlap over nearshore fisheries and marine resources exists, particularly between subnational governments and the Ministry of Marine Affairs and Fisheries (MMAF). Rapid decentralization of the Indonesian government over the past decade has added to the confusion and uncertainty. Furthermore, enforcement is limited at all levels—national, provincial, and regency—due to a lack of resources, limited coordination, inadequate understanding of laws, and minimal prosecutorial intent. Subnational governments, responsible for nearshore fisheries and coastal resource management, have neither institutional nor infrastructure capacity to exercise their authority, nor do they have coordinated programs to manage their nearshore fisheries. At the national level, MMAF is characterized by “stovepiping,” and projects tend to be the “property” of one or another Directorate General, which precludes comprehensive solutions and investments.

Budgetary Conditions: Indonesia is in the midst of a period of rapid and consistent growth, and it has significant resources available to support public expenditures. However, overall allocation to coastal fishery and marine resources management, and especially the Marine, Coastal, and Small Islands Division within the MMAF and relevant subnational entities, remains small. This is especially true relative to other sectors (e.g., education, health, or agriculture). Several interconnected reasons underlie the limited financial allocation. Nearshore fisheries and coastal resource management is not perceived as a priority sector, and jurisdictional overlaps complicate efficient budget requests, absorption, and usage. The funding that does flow to fisheries is typically geared toward increasing production rather than improving management systems. The fisheries sector often lacks a clear vision and the steps to get there, and consequently fisheries management proposals are often weakly formulated and unable to project a rate of return that would make them a priority for those who control the purse strings. Recognition of the importance of managing nearshore fisheries and coastal resources to ensure local livelihoods and long-term food security may elevate management as a priority for subnational government budget allocation. Similarly, integration between national fisheries management systems and subnational government programs may lead to increases in national government funding.

Political and Economic Decision Making: Indonesia's economy has averaged over 5% annual growth over the past decade, driven in large part by natural resource extraction and agriculture (e.g., coal, cocoa, and palm oil). The 2010–2014 Five Year Medium-Term Development Plan mentions the need for natural resource management in general, though explicit recognition of nearshore fisheries and coastal resource management is largely absent. Management of terrestrial resources has received the lion's share of attention (and international and national funding) in recent years. The Coordinating Ministry for Economic Affairs' Master Plan for the Acceleration and Expansion of Indonesia Economic Development 2011–2025 highlights fisheries as a priority sector in several areas (i.e., economic corridors). Aquaculture is deemed a top priority and the sector where growth in seafood production will be realized in the coming years, and the plan acknowledges that there are problems related to overfishing in some areas. But the investment priorities listed are still geared toward capital investments (e.g., port development, fish processing facilities, boats, fishing gear) that could drive increased exploitation if not coupled with appropriate fisheries management systems.

As with all the countries assessed as part of this effort, resolving and responding to these key findings requires a paradigm shift. But strengthening these enabling conditions is essential to ensure that the conservation community's investment to date is self-sustaining and that the stage is set for broader adoption of RBM systems for nearshore fisheries and coastal marine resources.

I. Introduction

With 17,480 islands and 81,000 kilometers of coastline (the world's second longest), Indonesia is intimately linked to the ocean (see Figure 1). More than 140 million Indonesians live in coastal areas and depend on the health of marine fisheries, coral reefs, and mangroves.

The urgency of improving marine resource management in Indonesia cannot be overstated. From an ecological perspective, Indonesia is located in the center of the Coral Triangle, which contains 76% of all coral species—the highest coral and coral reef fish diversity in the world. From an economics and livelihoods perspective, Indonesia is the world's second largest producer of wild-capture fish, accounting for 6.5 million tons in 2011, 60% of which was from small-scale fishers. There are more than 2.62 million fishers in the marine and inland capture sector in Indonesia,¹ and the country is one of the most fish-dependent countries in the world. The average annual per capita fish consumption (including aquaculture products) reached 30.4 kilograms in 2007, accounting for 72% of total animal protein in human consumption nationwide.²

Figure 1 - Map of Indonesia³



1. FAO 2012.
2. Ibid.; Indonesian Coordinating Ministry for Economic Affairs 2011. See Appendix A for a brief review of relevant social and economic statistics.
3. Australian Department of Foreign Affairs 2013 (www.smarttraveller.gov.au. Accessed March 2013).

What is driving unsustainable fishing and coral reef health decline in Indonesia? A number of stressors are threatening the ecological integrity across Indonesia (see Table 1), in particular:

- Overfishing and destructive fishing practices
- Coastal development and pollution
- Climate change–related impacts, including sea level rise, shifting weather patterns, and ocean acidification

Table 1. Indonesia Resource Health Status and Outlook

RESOURCE	CURRENT STATUS AND TRAJECTORY
FISH AND INVERTEBRATE POPULATIONS	While there may be some room for expansion of landings in the eastern part of the country, ^a several of Indonesia's most economically valuable fisheries are overfished, including shrimp fisheries in almost all management areas, many demersal fisheries, bigeye tuna, and bluefin tuna. ^b Rapidly rising levels of effort across Indonesia—with expanding fishing fleets and overall fishing power—are yielding steady declines in productivity per vessel and per unit of fishing effort. ^c The national fishery production targets for 2011–2015 call for more than doubling total fish harvests from 2010 levels, to be achieved mainly through rapid expansion of aquaculture, with capture fisheries output held at relatively constant, yet likely unsustainable, levels. In general, coastal and reef fisheries are believed to be most heavily stressed.
CORALS	Indonesia has the second largest area of coral reefs in the world, trailing only Australia, but 91% of these are classified as having a medium local threat level or higher. ^d Reefs in Indonesia face a myriad of threats, such as sedimentation from deforestation, coastal pollution, and thermal stress, but overfishing and destructive fishing are believed to be the most acute threats. ^e
MANGROVES	An estimated 50% of the country's mangroves have been eradicated in the last 30 years alone. There is an urgent need to improve the management of marine ecosystems in Indonesia so they can continue to support the livelihoods of the millions of people who depend on them.

a. Mous 2012.

b. Ibid.

c. Kelleher 2012.

d. Burke et al. 2011, pp. 17, 82.

e. Ibid.

In response to these increasing threats, the international conservation community has made Indonesia's marine ecosystems a priority investment area. For more than a decade, international NGOs working in conjunction with various institutions have focused on strengthening management of large national parks (especially working with the Ministry of Forestry's Directorate General (DG) of Forest Protection and Nature Conservation) and, more recently, on establishing small, locally managed marine reserves and networks of such reserves across seascapes (especially working with the Ministry of Marine Affairs and Fisheries and with regency (*Kabupaten*) governments at the local level). Extending from commitments the government of Indonesia has made, both as a party to the Convention on Biological Diversity and as a proponent of the Coral Triangle Initiative, Indonesia has

designated more than 15.7 million hectares as marine protected areas (MPAs),⁴ and the government has announced a target of 20 million hectares of MPAs in total by 2020.⁵ This target represents only 3.5% of Indonesia's 5.8 million square kilometer total exclusive economic zone (EEZ).⁶ Properly selected, designed, and managed MPAs with no-take zones can be an effective part of fisheries management, but MPAs are not sufficient in themselves to guarantee sustainable management and use of Indonesia's broader fisheries areas into the future. Recently, effective small-scale fisheries management in general and the potential for rights-based approaches to coastal resources management in particular have received growing attention.

This paper provides a brief synthesis of the state of four enabling conditions that need to be in place for RBM to proliferate. There are no doubt many different angles from which these factors can be addressed, and the Packard Foundation's partners in the conservation community are best positioned to explore and develop those strategies. Thus the authors have intentionally stopped short of program recommendations so that this may serve as a platform for candid dialogue.

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4. Ruchimat 2012.

5. Yudhoyono 2009.

6. Purwanto 2003, p. 120. Including 3.1 million square kilometers of territorial and archipelagic waters plus an exclusive economic zone of 2.7 million square kilometers.

2. Status of Legal Conditions

According to the Indonesian Constitution, natural resources can be exploited for the greatest benefit of all. There is much debate about the appropriate interpretation of this statement, but fisheries and marine resources, especially within 4 nm of the coast, are generally treated as open access resources. Whereas Indonesia does have regulations and procedures to regulate spatial distribution of fishing effort, these regulations have not yet resulted in control of the overall level of effort, nor have they been effective in abating overfishing. Legislation exists to designate and manage MPAs, and the country is divided into Fisheries Management Areas to guide fisheries interventions (e.g. governance, licensing systems, and gear restrictions). However, there are few effective regulations to limit access beyond no-take zones within MPAs, and few catch limits or effort restrictions are used in nearshore waters. Customary fisheries and marine management systems exist in certain places, but there are no common or scalable models. The overall consensus appears to be that while an RBM approach to managing local marine resources is possible in certain cases, there are enough legal hurdles to make widespread adoption unlikely in the short term. ↻

This section is not an in-depth legal analysis but rather a high-level discussion of the key implications of some of the relevant laws and regulations for strengthening and spreading RBM, as well as some of the overarching themes in Indonesia's legal structure.

Conflicting National and Local Regulations Governing Resource Use

Over the past decade, rapid decentralization of the Indonesian government has caused the proliferation of overlapping or unclear laws governing nearshore resource use.⁷ Following Indonesia's governmental decentralization starting in 1999, conflicting new national and local regulations led to confusion over which agencies held the authority to manage coastal marine resources.

The speed with which decentralized laws were developed and enacted was apparent in the many ambiguities and contradictions among different pieces of legislation and the lack of adequate guidance for subnational governments.⁸ The full extent of these inconsistencies is still a source of uncertainty and a continuing burden on efforts to improve coastal marine management.⁹

Law No. 32/2004 on Decentralization was enacted to clarify the authority granted to each level of government. It required that regional regulations comply with national law, and it emphasized that regional governments must act in partnership with the national government. In particular, Law 32/2004 gave local governments the authority over "exploration, exploitation, conservation and management of marine resources"; control

Guiding Questions

- Are fisheries management laws in place?
- Do customary management systems exist, and are they legally recognized?
- Do existing laws/systems secure exclusive use rights?
- Are there regulations moderating access and effort?
- Does legislation exist to designate protected areas?

7. Full discussion of the institutional implications of decentralization is included in Chapter 5.

8. Bell 2001.

9. Dudley And Ghofar 2005.

over administration and spatial planning; and the enforcement of laws issued by the regions or delegated by the central government. However, the law also stated that these provisions do *not* apply to fish caught by small-scale fishers.¹⁰

Despite the passage of Law 32/2004, the national government has been promulgating regulations that pertain to district and provincial waters. Ministerial decree 2/2011, for example, sets out gear regulations that are specific to district and provincial waters (0–2 nm, 2–4 nm, and 4–12 nm), and this ministerial decree also imposed gear restrictions that are specific for small-scale fishers (i.e., those with boats smaller than 5 gross tonnage (GT)). It follows that the national government still assumes responsibility for management of district and provincial waters.

While Law 32/2004 was a vast improvement over initial regional autonomy laws, significant uncertainty still exists, and a revision is currently under development. The draft version reassigns management authority over forestry, mining and energy, ocean resources, fisheries, and plantations to the provinces, while regencies would only be entitled to revenue sharing from those activities.

New Laws Provide Framework for More-Systematic Management

In recent years, the need for more a more systematic approach to managing marine resources has become more widely understood. Three specific fisheries and marine resource management–related laws enacted over the past decade—Law No. 31/2004 on Fisheries, Law No. 27/2007 on Coasts and Small Islands, and Law No. 45/2009 amending Law 31/2004—attempt to clarify government roles, legalize the establishment of locally managed MPAs, create a basis for water use rights concessions, and affirm the central government’s authority to manage fisheries and marine resources. These were important steps forward, but the full implementation of the various provisions of these laws remains a work in progress.

Laws 31/2004 on Fisheries and Its Amendment, Law 45/2009

Law 31/2004, a long-awaited update to the original fisheries law from 1985, contains many provisions for increasing fishing effort and exploitation, but it also contains counterbalancing elements that support conservation and sustainability.

The law gives clear authority to the central government to set management measures for fisheries, such as limiting seasons and gear types and defining marine reserves, as well as clear prohibition of destructive fishing practices (e.g., cyanide and dynamite fishing), the creation of a fisheries tribunal to adjudicate violations of fisheries laws, and the requirement that fisheries regulations take into consideration *adat* (local traditional law). The language, however, is typically so broad as to leave wide breadth for interpretation to the implementing agencies. This tension permeates throughout Ministry of Marine Affairs and Fisheries (MMAF) divisions tasked variously with increasing production or protecting the resource.

Authority to issue fishing and vessel licenses is governed by different and sometimes overlapping or conflicting legislation and regulations. Government Regulation 54/2002 on Fishery Business grants authority to regents (*Kabupaten*) and provincial governors, or

10. The original Decentralization Law (Law 22/1999) 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.

MMAF, to issue vessel licenses depending on the vessel distance from shore.¹¹ Other aspects of licensing are governed by Law 24/2004, which requires all business actors involved in catching and processing fish and fish products to have appropriate licenses. However, the law also states that “small fishers” are free to catch fish anywhere in the entire Indonesian fishery management area. The overlapping areas and jurisdictions are problematic, but the more important point is that most fishing boats are not required to be licensed at all. The requirement for the fishing business license is not applicable to “small fishermen and/or small fish breeders.” Boats that are less than 5 GT do not require a license, and boats less than 30 GT can fish in national waters without a national license. The system attempts to separate the area of fishing granted by each licensing authority (national, province, district) through a zonation system (distance from shore) and by boat size. As implemented, however, the system only prevents large boats from fishing in areas close to shore. It does not prevent overfishing. The only exceptions available at present appear to be in cases of properly gazetted no-take zones within marine national parks or no-take zones within national and sub-national marine reserves—*Kawasan Konservasi Perairan Nasional* (KKPN) or national marine or freshwater protected area and *Kawasan Konservasi Perairan Daerah* (KKPD) or local marine protected area).

In addition to the fisheries management provisions just described, Law 31/2004—and more specifically Government Regulation No. 60/2007—also provides the legal basis for the creation of MPAs at the national, regency, or community level.

Law No. 45/2009, which amends Fisheries Law No. 31/2004, is devoted to updating the language of that law to better address the challenges of illegal and unreported fishing, particularly the issues posed by new technology, the need for better coordination among different government agencies involved in fisheries management, and matters of jurisdiction and the competency of regency-level courts and their authority to prosecute criminal acts related to fishing outside the district court’s traditional scope of authority. Additionally, Law 45/2009 aims to strengthen involvement by local government agencies. For example, rather than just stating that collection of fishery statistics is a responsibility of the government, the revision states that collection of statistics is a responsibility of both national and local governments.

Both Laws 31/2004 and 45/2009 were steps forward in terms of articulating the need to balance production with sustainability and protection of the resource, but they have yet to create substantial improvements in fisheries management. The general lack of implementation and enforcement capacity across the national and subnational authorities and agencies has meant that progress with fisheries management since the passage of these laws has been incremental at best.

For more information on Laws 31/2004 and 45/2009, see Appendix B.

Law 27/2007 on Coasts and Small Islands

Law 27/2007 requires all subnational governments in coastal regions to develop strategic, zoning, and management plans to accommodate various uses, and (initially, at least) it included concessions for coastal water use rights. Through Law 27/2007, local regional planning agencies are tasked with coordinating the development of these plans and with seeking the guidance of all relevant local agencies as well as local

11. Syarif 2008.

communities during the development of the spatial plans, with the goal of developing plans that reflect an integrated, multistakeholder approach to coastal zone management. In practice, the use of spatial plans by subnational governments is still quite new, and whether these processes can really serve to help reconcile competing interests remains an open question.

Zoning plans can include district MPAs. Regency-level MPAs (KKPDs¹²) may be included as part of the spatial plans mandated under Law 27/2007, but few existing plans have done so. All of the country's coastal regencies have submitted zoning plans out to 4 nm, but most of them are understood to be very basic (i.e., they have identified a shipping channel for their port and perhaps a tourist zone). Only about 20 of these coastal regencies (out of a total of about 498) have included KKPDs in their zoning plans. Despite this low percentage, it is claimed that these regency-level MPAs already cover an area of about 5.5 million hectares, just over one-third of Indonesia's current total designated MPA area. Under pressure to increase Indonesia's total marine protected area to 20 million ha by 2020,¹³ MMAF's Coasts and Conservation Division is looking to locally managed KKPDs as an important means to reach these targets, though the larger question of how these will be resourced and managed remains somewhat uncertain.¹⁴

*The original language of Law 27/2007 established a legal basis for long-term coastal water use rights (hak pengusahaan perairan pesisir or HP-3).*¹⁵ These use rights mirror previously implemented concessions for Indonesian forests (*hak pengusahaan hutan*) and would have been valid from the surface of the water down to the seabed for up to 60 years, suitable for such marine-based industries as tourism, aquaculture, pearl farming, and fishing. Although these concessions were not in perpetuity, they were intended to be sufficiently long (20–60 years) to shift the incentives of the concession holder toward long-term stewardship. But in 2011 the Constitutional Court of Indonesia struck down the coastal waters concessions of Law 27/2007 out of concern that the concession provisions 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 on concessions was insufficiently clear. Such concerns are not surprising given the numerous and difficult conflicts that have resulted between communities and private companies over forest and mining concessions.

A revision to this specific section of the law has been drafted that, as one expert said, "is basically a 'find and replace' for HP-3 with IUPPP," an acronym for a new kind of business license for using coastal waters.¹⁶ Whether this new language will be sufficient to address the

12. KKPDs, or local marine protected areas, were originally known as *Kawasan Konservasi Lautan Daerah*; the name was changed to allow the inclusion of freshwater (lake) aquatic protected areas.

13. Yudhoyono 2009.

14. KKPDs fall under the general aegis of the MMAF, but the ministry has no direct role in their management or funding, leaving these protected areas essentially under local control. KKPDs and their management units must be legally established by decrees and regulations issued and passed by regents (*Bupati*) and local legislatures. Leadership is appointed by, and staff and work plans are approved by, these local government agents. Budgets must be approved and funds allocated by the local government. MMAF has put its imprimatur on a set of criteria and guidelines for these marine protected areas.

15. Waddell 2009, pp. 188–190.

16. Interviewee.

constitutional concerns raised over HP-3 remains to be seen, and the implications for RBM systems in coastal waters are still uncertain.

MPAs and the Ministry of Forestry

The Ministry of Forestry (MoF) has almost 4.7 million hectares of MPAs under their jurisdiction.¹⁷ Most of this area is designated as national park, but some is designated as marine recreational parks, marine wildlife reserves, or marine nature reserves. These areas and MoF's jurisdiction are supported by various pieces of 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.¹⁸ Just a small fraction of the national parks are designated as core zones, and enforcement and management of these areas is an ongoing challenge. While the area of MPAs under MoF's auspices is not likely to grow substantially, these already cover over 1% of Indonesia's EEZ and may be an avenue for trials of RBM approaches to fisheries management.

Customary and Traditional Rights over Marine Resources

Since 1999, changes to fisheries policy have restored constitutional protections of traditional fishing rights and small-scale fishers with varying degrees of success.

Protections for traditional rights are explicitly referenced in Indonesia's 1945 Constitution. However, pre-existing customary fisheries management systems were not recognized during Suharto's "New Order Period" (1967–1998), based on Law 5/1979, which called for uniform systems of rural government throughout Indonesia. This undermining of traditional rights and neglect of local management of marine resources began to change with the establishment of the MMAF in 1999 and enactment of Law 22/1999 on regional autonomy.

A Ministry of Agriculture decree (392/1999) established a zonation of coastal waters that was intended to establish exclusive rights for traditional fishers in nearshore waters. However, this decree had the effect of raising questions about small-scale fishers' rights to fish in waters beyond 6 nm from shore. This unintended complication was corrected in Fisheries Law 31/2004, which confirmed the rights of small-scale fishers to fish anywhere inside Indonesia's fishery management area, including all coastal, territorial, and EEZ 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. Yet 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 entering and fishing in areas under traditional or customary management and control.¹⁹

There are a few examples of successful site-based work that is based on adat (local customary law). In Raja Ampat, for instance, the Papuan Adat Council was involved in the declaration

17. Ruchimat 2012.

18. Yunia 2012.

19. Satria and Adhuri 2010.

of the 155,000 hectare MPA, and a *sasi* declaration designated 97.5% of the MPA as a no-take zone, the largest no-take zone ever established within the Coral Triangle. The central government of Indonesia eventually followed suit and recognized the MPA at the national level.²⁰

But it should be noted that there are no models for customary community management of marine natural resources that operate or are culturally/legally accepted throughout Indonesia. And except for a few locations, such as Papua, West Papua, and the Maluku region of Eastern Indonesia, the principle of local community management of marine resources is not widely recognized. Moreover, a great variety of customary laws and practices are found throughout Indonesia. Some may not be fully compatible with the goal of ensuring long-term sustainable access to fish and other marine resources for communities or to enhance food security. While it is often assumed that customary natural resource laws are based on sustainability principles, they are sometimes as much about social and political hierarchy as natural resource management. 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 very much a site-by-site strategy.

20. Goram 2012.

3. Status of Implementation and Institutional Conditions

While regencies (*Kabupaten*) have control over nearshore waters to the 4 nm point, provinces from 4–12 nm, and national government from 12–200 nm, jurisdictional overlap over nearshore fisheries and marine resources exists, particularly between subnational governments and the Ministry of Marine Affairs and Fisheries. Rapid decentralization of the Indonesian government over the past decade has added to the confusion and uncertainty. Furthermore, enforcement is limited at all levels—national, provincial, and regency—due to a lack of resources, limited coordination, inadequate understanding of laws, and minimal prosecutorial intent. Subnational governments, responsible for nearshore fisheries and coastal resource management, have neither institutional nor infrastructure capacity to exercise their authority, nor do they have coordinated programs to manage their nearshore fisheries. At the national level, MMAF is characterized by “stovepiping,” and projects tend to be the “property” of one or another Directorate General, which precludes comprehensive solutions and investments. 🌀

In addition to understanding the enabling legal conditions that would be required for effective management of coastal fisheries, it is important to understand the capacity, resources, and mission of the institutions charged with implementing existing fisheries management laws and regulations. This in turn provides a basis for grasping the institutional factors that will facilitate or constrain the design, implementation, and support for rights-based approaches to coastal marine resources management.

Limited Subnational Management Capacity and Interagency conflict

Rapid decentralization of resource management has made local governments increasingly responsible for managing natural resources, but it has failed to provide them with policy guidance, institutional capacity, or funding support to exercise that authority. In 1999, following the political/economic crises of 1997–1998, Indonesia embarked on one of the most ambitious decentralization programs ever attempted anywhere in the world. Provincial and regency governments were granted broad autonomy in most aspects of governance and public services. Almost two-thirds of the government workforce was transferred to subnational governments, along with ownership of thousands of offices, schools, hospitals, and other facilities.²¹ At the same time, the government initiated systematic transfers of central revenues to subnational governments through an array of programs, many designed to benefit poorer and natural resource-producing regions.²²

Despite this transfer of resources and authority, real capacity gaps exist at the subnational level in terms of management of marine resources. Important to the management of coastal marine resources, the regional autonomy law gave jurisdiction to the districts to manage marine waters out to 4 nm from shore, assigned provinces authority out to 12 nm from shore, and made the

Guiding Questions

- Are enforcement and management authorities clearly delineated?
- Do enforcement authorities have enough skilled staff, and equipment?
- Do management authorities have skilled staff and equipment?
- Are relevant laws being enforced?

21. Hofman et al. 2002.

22. Fengler 2009; World Bank 2007, p. xv.

central government responsible out to 200 nm. However, the decades of centralized policy preceding this devolution resulted in a capacity gap at the district and provincial levels. While local leaders gained control over marine resources, they remain unable to coordinate a local regulatory structure to ensure effective management, and they often give priority to capital investments over management systems.

The laws for management of natural resources are further complicated by a fragmented approach to management and regulation that reflects competing or conflicting inter- and intra-agency interests. Since decentralization, the Offices for Marine Affairs and Fisheries (*Dinas Kelautan dan Perikanan*, or DKPs) have taken on increasing responsibilities. They receive most of their funding as allocations from the regional government budget, and they are accountable to the governor, mayor, or regent. While regional offices of the DKPs implement the national policies of the MMAF, they receive almost no funding from the ministry. Commercial fleet vessels, however, are under the authority of the transregional fishery management areas (*Wilayah Pengelolaan Perikanan*), whose operations are under the authority of the MMAF's DG for Capture Fisheries. This is despite the fact that almost all large-scale fishing fleets operate out of provincial or regency ports.

*Regulations are more often issued and designed to empower the agency issuing them than to provide reliable and fair guidance to people or entities subject to the legislation.*²³ And there are also *jurisdictional conflicts*. For instance, both MoF and MMAF are responsible for managing MPAs in Indonesia. The MoF was designated the authority for managing these marine parks and reserves through Law 5/1990 and Law 41/1999. The passage of Law 27/2007 and Regulation 60/2007 was supposed to result in the transfer of management authority of MPAs to MMAF. However, MoF only relinquished control of the marine conservation areas; it retained control of the national marine parks. Having two different agencies manage different marine parks is clearly inefficient, but each ministry claims jurisdiction and references different laws to support its claims.²⁴

There are also conflicting interests within specific agencies with no clear coordinating functions. Some MMAF director generals (DGs) are primarily focused on increasing fish production and fish exports, while others are tasked with resource conservation and protection. This can result in competing policies or programs among different DGs (e.g., one DG may be actively promoting the distribution of fishing licenses for high-value species, while another may be focused on creating protections for critical habitat for endangered grouper).²⁵

Finally, a recent study by The Nature Conservancy identified some 900 conflicting rules and regulations governing the legal operation of forested lands in Indonesia.²⁶ While there has been no such study for marine legislation, the evidence points to the legal structure for coastal management being equally confusing.

23. ADB 2002.

24. Djohani 2009.

25. USAID 2009.

26. Initiative for Global Environmental Leadership and Knowledge@ Wharton 2012.

Few Meaningful Restrictions on Fishing Effort

Fisheries Law 31/2004, and the creation of MMAF, helped provide a basis for improved fisheries management by introducing new concepts and provisions for fisheries management planning; management and rehabilitation of fisheries resources and habitats; total allowable catch (TAC) and fishing gear restrictions; zone, routes, and period for fishing seasons; fishing fleet surveillance systems; minimum size and weight limits; fish sanctuaries; and other measures. However, none of these measures have been fully, or in many cases even partially, implemented. This is in part because of the conflicts and ambiguity between the Fisheries Act (Law 31/2004) and Law 32/2004 on local government.

Maximum sustainable yield (MSY) is calculated for each fishery grouping in each of Indonesia's 11 fishery management areas, but it relies on poor data. MSY calculations require estimates of fishing effort and landings data over time. Unfortunately, gathering accurate effort and catch data from Indonesia's multilayered, multispecies, and multigear fisheries has proved immensely difficult and expensive, thus limiting the accuracy of MSY calculations. In the past, estimates of total national MSY have varied wildly between 3.7 million and 7.7 million tons.

Even though ministerial regulation 29 of 2012 stipulates that fishery management plans must be based on TACs, *TACs are still not implemented in Indonesia*. As one interviewee said, "I do not know of any formal TACs, whether systematic or non-systematic, in Indonesia." Fisheries Management planning and implementation is largely ad hoc, while data deficiencies and inherent limitations of the MSY model are not always well understood. In particular, there is often a misunderstanding regarding the relationship between fishing effort, fish populations, and sustainable yield. It is often incorrectly implied that if the current catch is below the TAC, then more fishing should be allowed. This misunderstanding fails to consider that low catches can be, and often are, caused by overfishing. Unfortunately, this misconception is explicit in recent legislation, ministerial regulation 29 of 2012, from MMAF. Moreover, no catch limits or effort restrictions whatsoever are used in coastal waters with the exception of a few effectively managed no-take-zones within MPAs.

There has been little appetite for scaling back fishing effort. There is a growing understanding inside MMAF that Indonesia's fish stocks are being overexploited, but the idea that the sea's bounty is endless still exists. For some, the fact that Indonesia has yet to surpass its country-wide MSY is an indication that effort can still be increased. When proposals to scale back effort are put forward, they are often rejected due to a combination of poor science (e.g., stock assessments) and powerful industry interests.

An encouraging note, however, is that although the current rate of harvest still represents an unsustainable pace of exploitation, national fishery production targets no longer call for significant increases in capture fisheries production. The national fishery production targets for 2011–2015 call for more than doubling total fish harvests from 2010 levels, but this is to be achieved mainly through rapid expansion of aquaculture, with capture fisheries output held at a relatively constant level (see Figure 2).²⁷ Another encouraging note is that some official sources, notably ministerial decree 45/2011, offer a correct interpretation of the

27. Indonesian Ministry of Marine Affairs and Fisheries 2010.

problem of overfishing in Indonesia, including an insightful diagram on the relation between fishing effort and total catch.²⁸

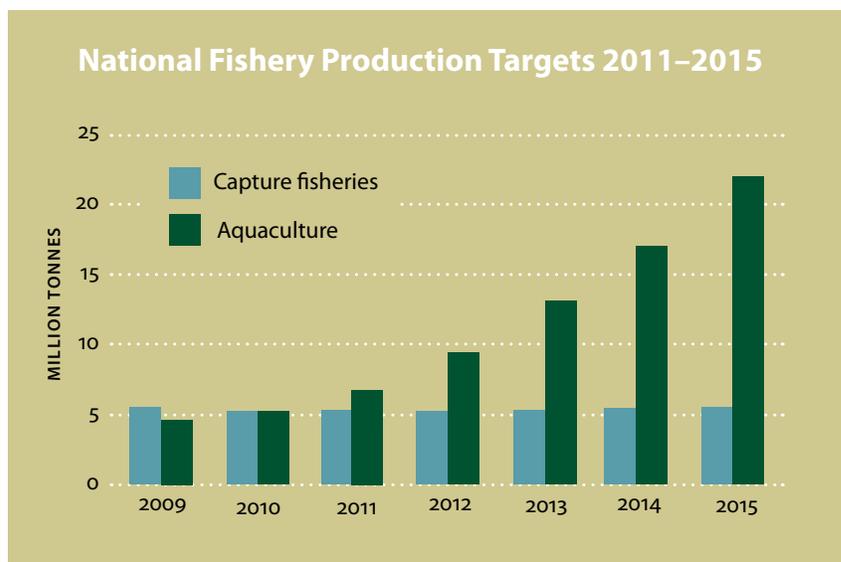
Improved licensing systems represent a possible approach to reducing fishing effort, but so far there are few (if any) instances where licensing has been effectively used in this way. Under Fisheries Law 31/2004, all commercial entities involved in fishing must have three kinds of licenses: a fishing business license (*Surat Izin Usaha Perikanan*), a fish catching license (*Surat Izin Penangkapan Ikan*), and a fish transporting vessel license (*Surat Izin Kapal Pengangkut Ikan*).

Only MMAF is authorized to issue fish catching licenses for vessels exceeding 30 GT. For fishers operating vessels between 10 and 30 GT, the provincial governor has the authority to issue or revoke the fish catching license. For vessels between 5 and 10 GT, catching licenses are issued by the regent (*bupati*) or mayor (*walikota*). The fish catching license specifies the areas where the boat can operate and the gear allowed, but not which fish species that can be caught. The license is good for three years and can be renewed, but the ministry has the authority to revoke or limit the number of licenses issued if fishing fleets expand to the point where fishery resources are being depleted to unsustainable levels. However, this power has never been meaningfully exercised or enforced.

The division of licensing authority, however, does not align with the jurisdiction over fishing zones (see Table 2). For example, a vessel between 30 and 60 GT would be licensed by the central government but would be free to operate in provincial waters between 6 and 12 nm. Complicating matters further, vessels between 10 and 30 GT would have a fishing license issued by the provincial government but would be free to fish in waters beyond 12 nm that are under the jurisdiction of the central government. These inconsistencies create incentives for government agencies to issue licenses for vessels that fish out of their jurisdictional control—gaining revenue from issuing licenses but without incurring any management costs.²⁹

Boats of less than 3 or 5 GT generally (this may vary regionally) do not require a license. In effect, the only real impact of the licensing system is to prohibit large boats (more than 60 GT) from fishing in coastal waters (within 12 nm from shore).

Figure 2. National Fishery Production Targets



28. Interviewee.

29. Resosudarmo et al. 2009.

Table 2. Jurisdictional Inconsistencies Between Fishing and Licensing Regulations

	ZONE I		ZONE II	ZONE III
	ZONE 1a	ZONE 1b		
FISHING ZONE REGULATIONS (Ministry for Agriculture Decree No. 392/1999)				
DISTANCE FROM LOW-TIDE MARK (NM)	0–3	3–6	6–12	12–200
VESSEL SIZE RESTRICTIONS (GT)	≤ 5	≤ 5	≤ 60	≤ 350
	DISTRICT GOVERNMENTS		PROVINCIAL GOVERNMENTS	CENTRAL GOVERNMENTS
MARINE TERRITORIAL JURISDICTION (Law No. 32/2004)				
DISTANCE FROM LOW-TIDE MARK (NM)	0–4		4–12	12–200
VESSEL LICENSING AUTHORITY (Government Regulation No. 54/2002)				
LICENSING AUTHORITY (GT)	≤ 10		10–30	≥ 30

Source: Resosudarmo et al. 2009.

Small-scale fishers do not require a fishing business license, and the requirement for a fish catching license and vessel license is not systematically enforced for small fishers. Small-scale fishers are allowed to catch fish almost anywhere within Indonesia's entire fishery management area, including all territorial waters and waters within the Indonesian EEZ.

In coastal waters and at the local level, few regulations are in place beyond nationwide bans on destructive fishing practices and basic gear restrictions and the aforementioned spatial restrictions. The situation can essentially be described as de facto open access confounded by Malthusian fishing pressure. Only the most remote locations in the eastern parts of the archipelago are being spared some of the relentless increase in effort, and even these areas have suffered damage due to legal and illegal fishers targeting sharks and high-value reef fishes for the shark-fin and live reef fish trade.

One important note for RBM is that small fishing boats with a license from a specific district cannot fish in the waters of another district unless they apply and pay for a “*surat andon*” from their district of origin as well as from the host district. *Andon* fishers are defined as those who operate vessels less than 30 GT in marine waters or have an engine less than 90 horsepower who will be fishing in various grounds outside of their home fishing areas³⁰—essentially roaming fishers. *Surat andon* are usually valid for a finite period of time (e.g., two weeks), but it is common for *andon* fishers to fish beyond the duration of their

30. Bambang et al. 2012.

permit or without a permit at all. Local fishers are typically not supportive of the influx of outside fishers, but the local government sees them as a source of locally generated income, which is highly valued in the context of fiscal decentralization.

Uncoordinated and Under-resourced Enforcement

Enforcement responsibility is generally distributed, poorly coordinated, and under-resourced. Coastal resource management regulations that are in place in Indonesia are often flouted. Due to the inadequate monitoring and enforcement systems, intrusions on MPAs, destructive fishing, and illegal, unreported, and unregulated fishing (IUU) continue relatively unabated. Further, a fragmented approach to enforcement has resulted in poor coordination, insufficient funding, and agencies that are captured by those they are supposed to enforce. 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.³¹

As of 2003, the Indonesian Navy had just 63 vessels to patrol 2.5 million square kilometers of territorial seas, making the odds of catching violators slim. There is strong evidence that those that are captured have used bribes to avoid detention and official fines.³² The drivers influencing the quality of enforcement by the navy are undoubtedly complex, but it is clear that their enforcement efforts to date have been irregular at best and primarily concentrated on illegal foreign fishing vessels. Most frustrating for local communities is that when they hand over violators to the navy or local police, the violators are often released without sanction. “This situation has angered traditional fishermen. And, not surprisingly, they have taken severe actions, such as burning trawlers.”³³

In an effort to increase prosecutorial effectiveness, Indonesia developed a network of fisheries tribunals under Law 31/2004, but these courts have only handled a scant proportion of cases, given that illegal fishing practices are believed to be widespread. The government is currently rolling out a comprehensive vessel monitoring program requiring all vessels over 60 GT to install tracking systems, and development of an on-board observer program is in its early stages. The on-board observer program has become a priority for MMAF with the recent passage of ministerial decree 1/2013 on the observer program. At the regency level, efforts have been made to bring the local community into marine enforcement. The MMAF developed a community-based fisheries monitoring program known as POKMASWAS back in 2001, which allowed local communities to contact MMAF immediately if they witnessed a legal violation. The program’s effectiveness varies between communities. In some villages POKMASWAS only exists on paper; in others, it has developed into a strong community-based organization. Similarly, NGOs have helped develop collaborative community patrols in their seascape MPA and locally managed marine area sites.

MMAF considers IUU fishing to be its biggest enforcement challenge. The number of vessels inspected and apprehended by the ministry and other maritime authorities has increased over the past 10 years, though not enough to stem rising illegal fishing pressures.

31. Parlis 2008.

32. Heazle 2006.

33. Zamansyah 2000.

In 2006, a total of 1,447 vessels were inspected and 132 were found to be in violation, of which 49 were foreign-flagged, accounting for 45.4% of foreign-flagged vessels inspected. By 2008, the total number of vessels inspected had risen to 2,038, of which 140 were foreign-flagged. Of these, 119 or 88.6% of the foreign-flagged vessels inspected were found to be in violation. Typical violations included manipulation or alteration of vessel registration documentation, manipulation of fishing license documents, and catching or transporting fish without a license. However, only a small percentage of cases have been prosecuted in the fisheries or other Indonesian courts.³⁴

In 2005, the MMAF suspended the issuance of fishing licenses to foreign-flagged vessels, a policy that was formalized in 2006 and then amended in 2007 to allow licenses for foreign-flagged vessels whose owners have made direct investments in the fisheries sector.³⁵ The main result to date, however, has been a sharp decline in MMAF's non-tax revenues from sale of licenses, which fell from IDR 500 billion (around \$24 million) in 2004—equivalent to roughly 16% of the ministry's total revenues—to only IDR 64 billion over the first 10 months of 2008. The loss in revenue has not been offset by increased investment in fisheries, and many foreign vessels have been able to claim licenses on the pretext of ownership by Indonesian nationals.³⁶

34. USAID 2009.

35. The Arafura Sea is the site of the most IUU cases involving foreign-flagged vessels from Thailand and China, while the Sulawesi Sea and South China Sea report the most violations involving vessels from the Philippines and Thailand.

36. USAID 2009.

4. Status of Budgetary Conditions

Public finances and expenditures in Indonesia

Unlike most tropical developing countries, Indonesia has significant financial resources available for public expenditures. Over the past decade, Indonesia has emerged as one of the world's most rapidly growing developing economies. Indonesia's gross domestic product growth in 2012 was 6.2%, the third highest of the large Asian economies, and the budget is roughly in balance.³⁷

Public expenditures are dominated by “trade, interest payments, and subsidies,” covering 37–42% of all government spending. The cost of operating Indonesia's government apparatus, including both national and subnational, is roughly 14% of total spending. Among economic and social service sectors, education is by far the most important, accounting for 17–19% of total government spending. Spending on forestry and fisheries, too small to register in the national budget, is folded into the agriculture sector.

The MMAF budget is small relative to other sectors, and staffing and resources focus primarily on capture fisheries and aquaculture. The total budget for the MMAF in 2008 was IDR 3.02 trillion (\$317 million),³⁸ equivalent to 2% of the cost of the entire national fuel subsidy that year. Table 3 shows the MMAF budget breakdown.

Guiding Questions

- Is there a clear system to allocate budgets in support of fisheries management laws?
- Are public funding streams allocated to coastal resource management?
- Can enforcement and management authorities collect and retain revenues?
- Do the appropriate authorities have the capacity to request, absorb, and use funds?

Indonesia is in the midst of a period of rapid and consistent growth, and it has significant resources available to support public expenditures. However, overall allocation to coastal fishery and marine resources management, and especially to the Marine, Coastal, and Small Islands Division within the MMAF and relevant subnational entities, remains small. This is especially true relative to other sectors (e.g., education, health, or agriculture). Several

interconnected reasons underlie the limited financial allocation. Nearshore fisheries and coastal resource management is not perceived as a priority sector, and jurisdictional overlaps complicate efficient budget request, absorption, and usage. The funding that does flow to fisheries is typically geared toward increasing production rather than improving management systems. The fisheries sector often lacks a clear vision and the steps to get there, and consequently fisheries management proposals are often weakly formulated and unable to project a rate of return that would make them a priority for those who control the purse strings. Recognition of the importance of managing nearshore fisheries and coastal resources to ensure local livelihoods and long-term food security may elevate management as a priority for subnational government budget allocation. Similarly, integration between national fisheries management systems and subnational government programs may lead to increases in national government funding. ↻

37. Bland 2013.

38. USAID 2009.

Table 3. MMAF Staff and Budgets, by Office, 2008

MMAF OFFICE	STAFF	% OF STAFF	BUDGET (IDR MILLION)	% OF BUDGET
SECRETARIAT GENERAL	1611	18	327,649	11
INSPECTOR-GENERAL	211	2	30,858	1
DIRECTOR GENERAL (DG) OF CAPTURE FISHERIES	1588	17	744,246	25
DG AQUACULTURE	1423	16	523,300	17
DG PROCESSING AND MARKETING	378	4	215,074	7
DG OF MARINE, COASTAL, AND SMALL ISLANDS	343	4	536,214	18
DG OF SURVEILLANCE AND CONTROL	620	7	268,792	9
AGENCY FOR RESEARCH	1183	13	137,925	5
AGENCY FOR HUMAN RESOURCE DEVELOPMENT	1751	19	235,081	8
TOTAL	9108		3,019,139	100

The DG of Marine, Coastal, and Small Islands received an overall budget allocation equivalent to 18% of the total MMAF budget in 2008 but had to rely on 4% of the total staff for implementation. This DG is responsible for implementation of marine national parks (KKPNs).

Subnational government budgets include fiscal transfers from the national government, shared revenue disbursements, and other local revenue streams.

Post-decentralization, most taxes and other revenues are still collected by the national government, but allocation to subnational governments has increased from 10% of public expenditures in 2000 to 36% in 2011.³⁹ Of the \$52 billion allocated to subnational government in 2011, \$13 billion (9%) was allocated to the provincial level and \$39 billion went to the local (i.e., regency and municipal) level. These allocations occur through several mechanisms:

- *The General Allocation Fund (Dana Alokasi Umum, DAU)* is an unconditional grant that represents approximately 50% of total subnational revenue. Of the total DAU pool, 20% is allocated to provincial governments and the remainder is divided among all regencies and municipalities. The DAU is intended to cover all civil service wages and general government operating costs, but the national government does not dictate exactly how the revenues must be spent.

39. Shah et al. 2012.

- A subcomponent of the DAU referred to as *the Special Autonomy Fund* is set at 2% of national DAU in any given year and flows to Aceh, Papua, and West Papua under the “special autonomy” arrangements for these areas. This supplementary fiscal transfer accounts for 20% of combined province and regency revenues in Papua and West Papua and for 30% in Aceh.
- *The Special Allocation Fund (Dana Alokasi Khusus, DAK)*, amounting to 7% of subnational government revenue, is the only fiscal transfer stream that is explicitly allocated to specific projects and activities by the national government. Most of the DAK allocation goes to cover the capital spending and infrastructure development priorities of the national ministries—the DAK is not used to fund recurrent government administrative costs.
- *The Shared Revenue Fund (Dana Bagi Hasil)* allocation represents 22% of subnational revenue but varies significantly from province to province. Revenues from forestry levy, forestry resource provision, general mining, and heat production are retained 80% at the subnational level of origin while 20% flows to the national government. Fisheries revenues, however, are aggregated together and are then divided 20% to national and 80% equally across all local governments. In other words, fisheries revenues are shared across all local governments rather than retained at the regency or municipality of origin.
- In addition to the above fiscal transfer mechanisms, subnational governments often collect and retain “own revenues” (such as motor vehicle registration fees). These vary by province and regency and are generally higher in wealthier areas that have access to a larger commercial tax base.

Priorities for subnational public expenditures are set at the provincial, regency, and municipal levels. Nearshore fisheries and coastal resource management, including the establishment and management of KKPDs, is generally not seen as a priority. As discussed earlier, local government has responsibility over the 0–4 nm waters, provincial over the 4–12 nm waters, and national over the 12–200 nm waters. The ability of the relevant implementing agencies at the local and provincial levels to request, absorb, and use funds to fulfill these responsibilities is constrained, however.

- *The lack of implementing guidelines for fisheries and coastal management legislation challenges the ability to request and use funds for nearshore fisheries and coastal resource management.* While there are performance and other targets with respect to local governments’ management of education and health spending, no standards or guidelines exist for management of local fisheries and marine waters.
- *The budget cycle request and disbursement timelines are not necessarily aligned with cash flow needs, and absorptive capacity may be limited.* Some regional governments have been unable to spend significant amounts of funding due to dispersal challenges and capacity constraints. Some resource-rich regions with substantial revenue-sharing income from mining or oil and gas production, such as Papua (which along with West Papua and Darussalam Aceh also receives large special allowances under the Special Autonomy Fund), only spend about 60% of their allotted funding and have built large financial reserves. The bulk of funding is often spent at the end of the year; some regions spend more than 50% of their capital expenditures in the last month of the year.

- *There is a preference for government spending to be allocated to capital projects and other tangible investments.* Lacking the experience or skills to manage their budgets, there is a tendency for *bupatis* to spend money on what they know and what may provide them with goodwill among their constituents—capital projects.
- *Similarly, approved budgets are rigid and do not allow for reallocation even if “need” has changed.*

Governmental Public Service Units

Status as a local public service agency (*Badan Layanan Umum Daerah*, BLUD) may provide local governmental public service units with flexibility in hiring and managing human resources, but it will not lead to increased levels of government funding. Indonesian law allows for well-managed and qualified public service units to secure BLUD status. Requirements to secure BLUD status include creating a five-year business plan, providing audited financial statements, and demonstrating rigorous internal governance procedures. Those that do secure BLUD status can receive and administer funds from nongovernmental sources, retain revenues generated by the public service unit,⁴⁰ and enjoy greater freedom to employ non-civil servants. Typical BLUD-designated units include hospitals and public utilities, both of which charge fees for services or products provided to the public. BLUD status makes it possible for a hospital, for example, to manage the income it generates from providing health services to the public to cover some of its own operational costs.

- *There is growing excitement about the potential for BLUD to be used for conservation and natural resource management.* NGOs are supporting the Raja Ampat Regency government in acquiring BLUD status for the public service unit being established under the Regency Fishing Office to manage MPAs that were developed with NGO assistance.
- *Establishing a BLUD-designated unit is not a trivial task, however, and there are many details that have yet to be determined.* To date, there is no good model of a BLUD-designated public service unit that does not generate substantial revenues. This may be a challenge for the suitability of BLUD to marine management units, which may have limited potential for revenue generation. Further complicating matters is that there are still questions about whether eco-tourism visitor fees or fisheries licensing fees collected by a BLUD-designated public service unit could be retained, or whether such fees must be delivered to other agencies.
- In addition, *while BLUD status would allow receipt of funds from domestic and international donors, it does not, in and of itself, ensure financial sustainability.* Some local government leaders may view BLUD status as a means to obtain financial support from domestic and international donors, further absolving their sovereign responsibility to request, absorb, and use government funding. At a minimum, there is a need to be alert to misconceptions that acquiring BLUD status for a public service unit is a “silver bullet” that will solve the problem of securing sustainable funding for fisheries and marine conservation programs.

40. Mazars Starling Resources 2011.

5. Status of Political and Economic Decision Making

Indonesia is a dynamic, multicultural society with a rapidly growing economy. The country has recently negotiated momentous political changes: the end of more than three decades of centralized authoritarian rule under Suharto's "New Order," the launching of electoral democracy at national and regional levels, and the implementation of a deeply transformative decentralization of government and fiscal autonomy to regions and localities. It has also faced and for the most part surmounted extraordinary recent challenges, including the economic crisis of 1998–1999, a campaign by Islamic terrorists that included serious bombings in Bali and Jakarta in 2002 and 2004, and the Indian Ocean earthquake and tsunami that struck Aceh in 2004.

Despite rapid economic growth over the past decade, poverty remains a serious issue. Officially, only 13% of the population lives in poverty, according to government statistics, but if the poverty line were raised from \$1.13 to a more realistic \$2 (as recommended by the Asian Development Bank and other multilateral agencies), at least 110 million people—or approximately 46% of the population—would be classified as poor. The areas with the highest incidence of poverty are the eastern regions of Papua, West Papua, Maluku, and Maluku Selatan. It is hardly surprising, given what is stated above, that fisheries management must compete for government funding and attention with a wide range of other priority issues that are also pressing.

While natural resources management is mentioned generally, fisheries and coastal marine resources management are largely absent from the nation's development plans. The National Development Planning Agency's 2010–2014 National Five Year Medium-Term Development Plan gives priority to improved management of natural resources, including marine resources, in support of local and regional economic development. However, it does not specifically target fisheries as a major development priority.⁴¹

Guiding Questions

- Is there a long-term national development plan that puts priority on sustainable use of natural resources?
- Does the government currently give priority to sustainable fisheries and coastal management?

Indonesia's economy has averaged over 5% annual growth over the past decade, driven in large part by natural resource extraction and agriculture (e.g., coal, cocoa, and palm oil). The 2010–2014 Five Year Medium-Term Development Plan mentions the need for natural resource management in general, though explicit recognition of nearshore fisheries and coastal resource management is largely absent. Management of terrestrial resources has received the lion's share of attention (and international and national funding) in recent years. The Coordinating Ministry for Economic Affairs' Master Plan for the Acceleration and Expansion of Indonesia Economic Development (MP3EI) 2011–2025 highlights fisheries as a priority sector in several areas (i.e., economic corridors). Aquaculture is deemed a top priority and the sector where growth in seafood production will be realized in the coming years, and the plan acknowledges that there are problems related to overfishing in some areas. But the investment priorities listed are still geared toward capital investments (e.g., port development, fish processing facilities, boats, fishing gear) that could drive increased exploitation if not coupled with appropriate fisheries management systems. 🌊

41. Canadian International Development Agency, undated.

A more recent planning document developed by the Coordinating Ministry for Economic Affairs, entitled Master Plan for the Acceleration and Expansion of Indonesia Economic Development 2011–2025, provides a strategic approach to develop the economic potential of six key “economic corridors (EC)”: Sumatra, Java, Kalimantan, Sulawesi, Bali-Nusa Tenggara, and Papua-Maluku. These different regions are all at different stages of economic development, have different endowments of natural resources, and may benefit from a planning approach that is highly integrated at the level of the national subregion (or EC) but that does not attempt to shoehorn all regions and provinces into a single developmental model or pattern. Importantly, fisheries emerge as a priority sector in several ECs, notably the Sulawesi Region, Bali-Nusa Tenggara corridor, and the Papua-Maluku corridor. The MP₃EI also calls for the development of six “minropolitan” regions, referring to MMAF’s plans for accelerated integrated development of fisheries production centers combining marine, aquaculture, and fisheries commodities’ trade infrastructure and services (including banking and finance to support local businesses) to kick-start development in regions with high fisheries potential. Collectively these economic development pursuits will increase pressure on fish stocks. The issue of ensuring the sustainability of fisheries is highlighted, although most activities focus on increasing production rather than on actively managing fisheries.

Although there are development plans for fisheries, the link between sound fisheries management and poverty reduction has not been made clear. Huge sums of money flow toward development projects in Indonesia—the Healthy and Smart Generation (PNM Generasi) program, for example, has an annual budget of more than \$1 billion—but development funding is rarely invested in wild-capture fisheries management projects. Squaring the modernization of fisheries policy, which often requires the reduction in fishing capacity, with poverty alleviation objectives will be crucial to unlock broader support and funding for such ventures. To date, the economic and food security case for improved coastal and fisheries management has not been made strongly enough.

From an environmental perspective, Indonesia is more focused on terrestrial issues rather than on marine issues. While Indonesia exhibits immense marine biodiversity, protecting its marine habitat is a secondary priority compared with reducing deforestation. When it became clear that Indonesia was one of the world’s leading contributors to global warming due to deforestation, climate change became the most important environmental issue in the country, likely due to the volume of external funding it attracted. For example, Indonesia recently attracted \$1 billion in investment from the Norwegian government for forest conservation.

Since 2007, Indonesia’s economic planners have become increasingly aware of the need for Indonesia, as the world’s largest archipelagic state, to move toward a new model that integrates ocean-based and terrestrial-based economic development. Indonesia has attracted major marine conservation programs such as Coral Triangle Initiative, but these are dwarfed by the attention and funding directed toward climate change. If rights-based fisheries management is to be spread widely in Indonesia, the issue must be further elevated as a national priority, and the link between sustainably managed fisheries and economic performance and food security must be brought to the fore.

6. Conclusion

Nearshore fishing and coastal resources are an important component of subsistence and food security for the nearly 60% of Indonesians who live in coastal areas. Recognition of the need to ensure sustainability of these resources is growing, as evidenced through the declaration of some fisheries management and conservation-related laws and with a number of government and non-government entities establishing marine conservation projects throughout the country. But there is a need for corresponding “top-down” fishery policy reform at the national level. The problems of legal uncertainty, technical capacity, capital allocation, and lack of political will for fisheries reform will not be solved until “bottom up” success meets a clear and effective policy and a regulatory structure that removes the myriad of legal, jurisdictional, and budgetary hurdles.

This assessment was geared toward evaluating the state of the main “top-down” enabling conditions that would support the use of RBM to safeguard coastal and marine resources in Indonesia. The key findings are provided in Table 4.

Table 4. Summary of Key Findings

ENABLING CONDITION	GUIDING QUESTIONS	KEY FINDINGS
LEGAL	<ul style="list-style-type: none"> • Are fisheries management laws in place? • Do customary management systems exist, and are they legally recognized? • Do existing laws/systems secure exclusive use rights? • Are there regulations moderating access and effort? • Does legislation exist to designate protected areas? 	<p>Current nearshore fisheries and coastal resource laws include provisions for a range of management measures, but natural resources are generally treated as open access resources; while an RBM approach to managing nearshore fisheries and marine resources is possible in certain cases, there are enough legal hurdles to make widespread adoption unlikely in the short term</p> <ul style="list-style-type: none"> • Boat licensing and registration systems are in place at various levels (national, provincial, and regency), with jurisdictional oversight determined by boat distance from shore and boat gross tonnage • Few regulations are currently in place to limit effort, and the extent of provincial and regency authority to exclude outsiders from their respective waters is not clear • Protected area legislation exists for establishment of a range of protected areas from national MPAs (i.e., KKPN) to regency MPAs (i.e., KKPDs), but ambiguity exists regarding implementation responsibility and regulatory guidelines. • Traditional customary management systems exist in certain provinces in various forms and degrees of strength/recognition, but there are no common or scalable models
INSTITUTIONAL AND IMPLEMENTATION	<ul style="list-style-type: none"> • Are enforcement and management authorities clearly delineated? • Do enforcement authorities have enough skilled staff, and equipment? • Do management authorities have skilled staff and equipment? • Are relevant laws being enforced? 	<p>Enforcement of laws and management of nearshore fisheries and coastal resources is primarily the responsibility of subnational governments, although jurisdictional overlaps with national government and limited subnational resources plague effective implementation</p> <ul style="list-style-type: none"> • Regencies have management control over 0–4 nm, provinces 4–12 nm, and national 12–200 nm, but several jurisdictional overlaps exist between and within agencies • Relevant authorities generally favor increased production of fisheries rather than management, and regulation development is often driven by agency self-interest • Enforcement is limited at all levels (national, provincial, and regency) due to lack of resources, limited coordination, inadequate understanding of laws, and minimal prosecutorial intent. • Subnational (provincial and regency) levels are particularly constrained due to limited institutional and infrastructure capacity

TABLE CONTINUES ON PAGE 25

TABLE CONTINUED FROM PAGE 24

ENABLING CONDITION	GUIDING QUESTIONS	KEY FINDINGS
BUDGETARY	<ul style="list-style-type: none"> • Is there a clear system to allocate budgets in support of fisheries management laws? • Are public funding streams allocated to coastal resource management? • Can enforcement and management authorities collect and retain revenues? • Do the appropriate authorities have the capacity to request, absorb, and use funds? 	<p>There are significant resources for public expenditure, and large fiscal transfers are made to the subnational level, but due to minimal recognition of or priority for nearshore fisheries and coastal resource management, budgets to relevant agencies are minimal.</p> <ul style="list-style-type: none"> • Budget request systems at the national and subnational levels are complex, they span long enough time horizons that priorities may change during the process, and allocations are generally rigid (i.e., money must be spent for original purpose even if need has shifted) • Provincial and regency governments, irrespective of priorities for nearshore fisheries and coastal resource management, often lack the capacity to request adequate budgets (i.e., to make the case for why an increased budget is necessary) and/or to absorb and utilize funds • BLUD status may provide regency-level public service units (i.e., those tasked with managing KKPDs) with valuable financial and management flexibility, but it will not ensure (and may actually discourage) increased government funding allocations • The case for increased allocations to nearshore fisheries and coastal resource management to ensure livelihoods and food security has yet to be made
POLITICAL ECONOMIC DECISION MAKING	<ul style="list-style-type: none"> • Is there a long-term national development plan that puts priority on sustainable use of natural resources? • Does the government currently give priority to sustainable fisheries and coastal management? 	<p>Indonesia's economic growth has and continues to rely upon natural resource extraction, with a focus on mining, logging, agriculture, and fisheries; recognition for the sustainability of extraction is mentioned in development plans, but the focus on the ground is to increase production rather than management</p> <ul style="list-style-type: none"> • The 2010–2014 Five Year Medium-Term Development Plan highlights fisheries as a source of growth potential, but little attention is given to nearshore fisheries and coastal resources. • The Coordinating Ministry for Economic Affairs' Master Plan for the Acceleration and Expansion of Indonesia Economic Development 2011–2025 highlights sustainable fisheries as a priority sector in several areas (economic corridors), but minimal details are given regarding how increasing fisheries production efforts will be done sustainably.

Appendix A. Country Snapshot

Profile	
POPULATION	242 million
GDP	\$847 billion
GDP GROWTH	6.4%
INFLATION	8.3%
INCOME STATUS	Lower-Middle Income
POVERTY RATE AT \$2 A DAY	46%
GOVERNANCE INDEX ^a	3rd quartile (Rank = 144/216)

a. Calculated as a mean of the World Bank's six governance indicators. World Bank 2012b.

Fisheries Production, 2011			
LANDINGS	VOLUME^a (TONS)	GLOBAL RANK^b	SHARE OF GLOBAL PRODUCTION^b
MARINE FISHERIES LANDINGS	5,061,087	2	7%
INLAND FISHERIES LANDINGS	347,420	8	3%
AQUACULTURE PRODUCTION	6,976,924	2	8%
TOTAL FISHERIES AND AQUACULTURE PRODUCTION	12,385,431	2	7%
PRODUCTION VALUE	VALUE^a (MILLION DOLLARS)	SHARE OF GDP^c	
MARINE FISHERIES LANDINGS	6,555	0.77%	
AQUACULTURE PRODUCTION	6,967	0.82%	
TOTAL FISHERIES AND AQUACULTURE PRODUCTION	14,100	1.67%	
TRADE	VOLUME^a (TONS)	VALUE^a (MILLION DOLLARS)	SHARE OF TOTAL EXPORTS/IMPORTS BY VALUE^d
IMPORTS	450,000	498	0.2%
EXPORTS	1,093,284	3,200	1.5%
ROLE OF FISH AND FISHING IN SOCIETY			
NUMBER OF FISHERS^a	2,730,510		
SEAFOOD CONSUMPTION, 2009^e	64 grams per person per day		

a. Mous 2012.

b. Derived from FAO, undated-a. Calculations exclude higher order ISSCAAP groups and seaweeds for marine and inland wild capture landings, and aquaculture production.

c. World Bank 2012a.

d. Badan Pusat Statistik 2012.

e. FAO, undated-b.

MPAs		
	AREA (MILLION HECTARES)	SHARE OF EXCLUSIVE ECONOMIC ZONE AREA
MINISTRY OF FORESTRY PARKS	4.7	1.5%
MINISTRY OF MARINE AFFAIRS AND FISHERIES NATIONAL PARKS	5.5	1.8%
MINISTRY OF MARINE AFFAIRS AND FISHERIES DISTRICT MPAS	5.6	1.8%
TOTAL	15.8	5.0%

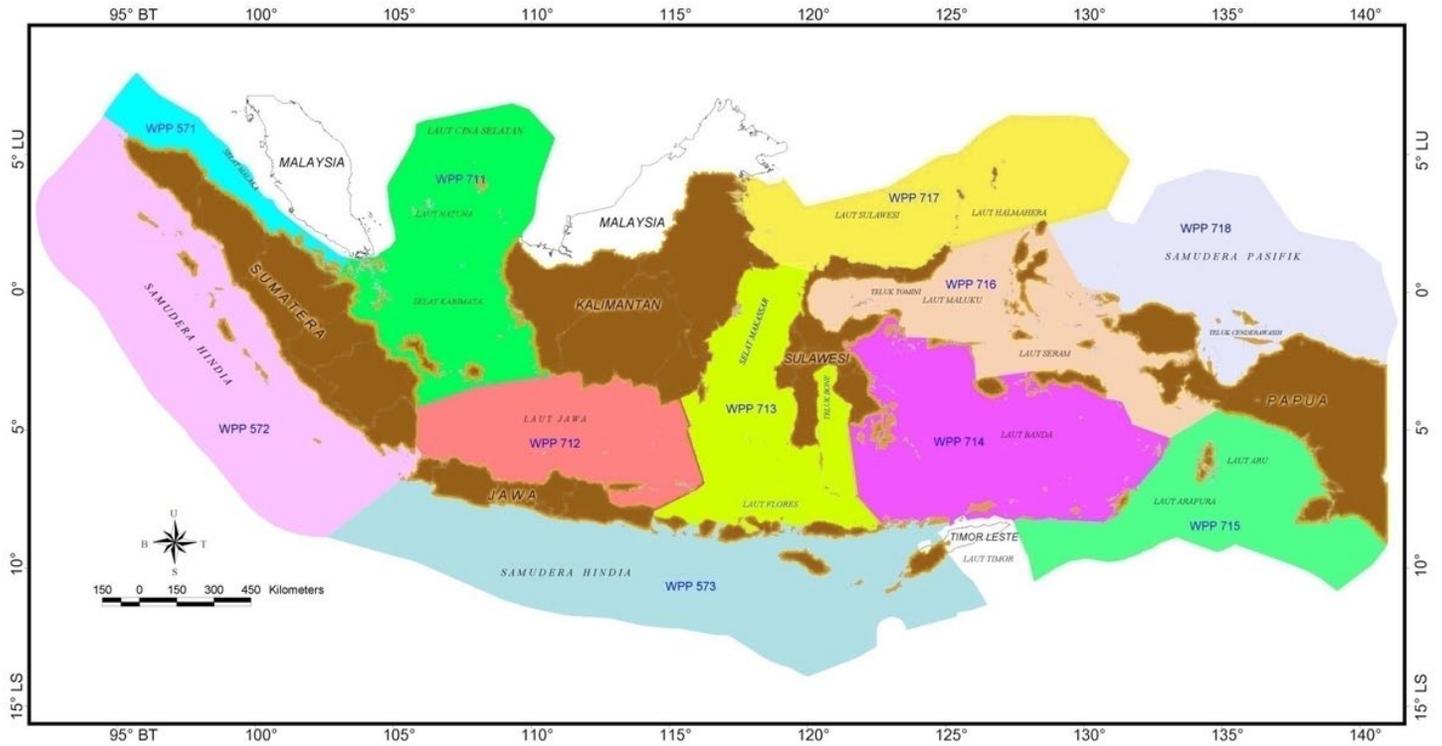
Source: Ruchimat 2012.

Marine Habitats			
	AREA (MILLION HECTARES)	SHARE OF GLOBAL TOTAL	GLOBAL RANK
CORAL REEFS	4.0	16%	2
MANGROVES	3.1	22%	1

Source: Reefs from Burke et al. 2011; mangroves from Giri et al. 2011.

Appendix B.

Indonesia's 11 Fishery Management Areas

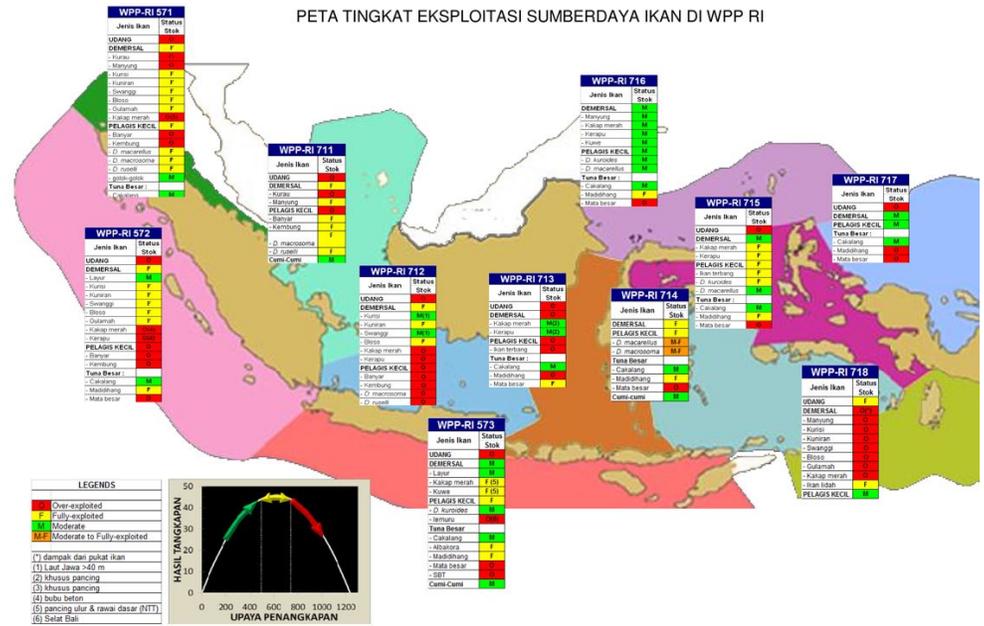


Source: University of Waterloo 2013.

Appendix C.

Status of Stocks in Indonesia's Fishery Management Areas

Lampiran III: Keputusan Menteri Kelautan dan Perikanan RI. Nomor KEP.45/MEN/2011 tentang Estimasi Potensi Sumber Daya Ikan di Wilayah Pengelolaan Perikanan Negara Republik Indonesia



Based on recent estimates by MMAF's Directorate of Fisheries Resources, the majority of fisheries in 7 of Indonesia's 11 fisheries management areas are already fully exploited (yellow) or overexploited (red). Source: Indonesia Ministry of Marine Affairs and Fisheries 2011.

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