

**NAVIGATING RAJA AMPAT'S
CUSTOMARY AND FORMAL POLICY
INTEGRATION OF MARINE PROTECTED
AREAS IN BUILDING SEQUENCING
GOVERNANCE**

A Thesis

**Submitted to the Master's Study Program of Public Policy Specializing
in Climate Change in partial fulfillment of the requirements for the
degree of**

Master of Public Policy (M.P.P.)



by:

Maulidya Qutrothunnada

02222310007

UNIVERSITAS ISLAM INTERNASIONAL INDONESIA

DEPOK

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ABSTRACT

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Managing Marine Protected Areas (MPAs) in the Global South is especially interesting, given their unique, authentic, and socio-cultural approaches, not reliant on formal government. Focusing on Raja Ampat's MPA, which is ranked the highest in Indonesia's management performance, with the *sasi* traditional customary system serving as a primary support mechanism for MPA administration in the region. However, this performance still falls below the threshold of being considered sustainably managed, indicating ongoing governance challenges such as the lack of sustainable funding and the lack of comprehensive regional resource monitoring. Policy sequencing emerges as an intentional policy design tool for crafting smarter, more adaptive regulations toward sustainability, within the broader context of climate governance across time and levels of governance. This study aims to develop a policy sequencing model as a mechanism for incrementally increasing policy stringency and feasibility, with the goal of progressively enhancing sustainable marine governance within the Global South context. This study applies both primary and secondary data through stakeholder interviews and literature review, with policy interventions classified according to their categories: supporting, foundational, and advanced. A clear sequencing pattern is identified: NGOs provided foundational interventions through marine ecological assessments and initiated the MPA proposal; local communities engaged through the Deklarasi Tomolol, integrating customary areas into formal conservation zones; and the government formalized the recognition of local knowledge through regional regulations. Advanced policies including result-based payments (RBP) and science-based monitoring are recommended to address funding gaps and external pressures such as climate change and industrial waste. Policy sequencing offers a structured pathway of foundational, supporting, and advanced policies, enhancing coordination among actors and promoting synergy between instruments.

Keywords: MPA, policy sequencing, local knowledge, customary institutions, marine governance.

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Thesis journey has truly been a roller coaster for me and my friends. Being the first batch—what they called a “prototype”—was never easy. But as they say, “the best comes from the first,” paving the way for future generations. And we made it—we succeeded!

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TABLE OF CONTENTS

STATEMENT OF AUTHENTICITY	ii
ANTI-PLAGIARISM STATEMENT.....	iii
THESIS ATTESTATION.....	iv
THESIS DEFENSE APPROVAL	v
ABSTRACT.....	vi
ACKNOWLEDGEMENT	vii
TABLE OF CONTENTS.....	viii
LIST OF FIGURES.....	ix
ABBREVIATION DIRECTORY	x
CHAPTER I: INTRODUCTION	1
CHAPTER II: METHODOLOGY.....	4
CHAPTER III: RESULT AND DISCUSSION	2
3.1 Policy Typology in Raja Ampat's MPA Governance.....	2
3.2 Establishment of BLUD-UPTD	7
3.3 Integrating Sasi into Formal Governance	11
3.4 Governance Challenges in Raja Ampat MPAs	16
3.5 Policy Sequencing for Stronger MPA Governance	20
CHAPTER IV: CONCLUSION	24
REFERENCES.....	26

LIST OF FIGURES

- Figure 3.1 Milestone governance interventions for the establishment and development of Marine Protected Areas (MPAs) in Raja Ampat Regency, Indonesia. Foundational policies (in red) represent early scientific assessments and legal frameworks (e.g., MRAs and REA, Law No. 26/2002) that established ecological and jurisdictional baselines. Supporting interventions (in yellow) include stakeholder engagement, declarations, and local regulatory processes that built consensus and formalized conservation intent. Advanced policies (in green) reflect institutionalization and implementation through ministerial and regional regulations, enabling sustained management.
- Figure 3.2 Management zones of Raja Ampat MPA
- Figure 3.3 Policy sequencing for the Raja Ampat Marine Protected Area (MPA), mapped across four establishment stages as defined by the MPA Guide (2023): proposed, designated, implemented, and actively managed. The sequencing illustrates foundational (e.g., NGO proposals), supporting (e.g., Tomolol Declaration), and advanced (e.g., Ministerial Regulation No. 1/2025, UPTD-BLUD) interventions.

ABBREVIATION DIRECTORY

APBD	: <i>Anggaran Pendapatan dan Belanja Daerah (Regional Budget)</i>
APBN	: <i>Anggaran Pendapatan dan Belanja Negara (State Budget)</i>
BKKPN	: <i>Balai Kawasan Konservasi Perairan Nasional</i>
BKSDA	: <i>Balai Konservasi Sumber Daya Alam</i>
BLU	: <i>Badan Layanan Umum</i>
BLUD	: <i>Badan Layanan Umum Daerah</i>
CBD	: <i>Convention on Biological Diversity</i>
DKP	: <i>Dinas Kelautan dan Perikanan</i>
GGGI	: <i>Global Green Growth Institute</i>
IDDRI	: <i>Institute for Sustainable Development and International Relations (Institut du Développement Durable et des Relations Internationales)</i>
IOJI	: <i>Indonesian Ocean Justice Initiative</i>
IUCN	: <i>International Union for Conservation of Nature</i>
KKLD	: <i>Kawasan Konservasi Laut Daerah</i>
KKP	: <i>Kementerian Kelautan dan Perikanan</i>
KKPD	: <i>Kawasan Konservasi Perairan Daerah</i>
KP	: <i>Kelautan dan Perikanan</i>
LIPI	: <i>Lembaga Ilmu Pengetahuan Indonesia</i>
MPA	: <i>Marine Protected Area</i>
NGO	: <i>Non-Governmental Organization</i>
PPK	: <i>Pemberlakuan Pembatasan Kegiatan (Community Activity Restrictions)</i>
PPL	: <i>Penyuluh Perikanan Lapangan</i>
PPNS	: <i>Penyidik Pegawai Negeri Sipil</i>
RAP	: <i>Rencana Aksi Pengelolaan</i>
RBP	: <i>Results-Based Payment</i>
REDD	: <i>Reducing Emissions from Deforestation and Forest Degradation</i>
SCW	: <i>Selamatkan Cendrawasih-Wan (contoh lokal, mohon koreksi kalau konteksnya berbeda)</i>
SDG	: <i>Sustainable Development Goals</i>
SPAG	: <i>Spawning Aggregation</i>
TNC	: <i>The Nature Conservancy</i>
UN	: <i>United Nations</i>
UNCBD	: <i>United Nations Convention on Biological Diversity</i>
UPT	: <i>Unit Pelaksana Teknis</i>
UPTD	: <i>Unit Pelaksana Teknis Daerah</i>
YKAN	: <i>Yayasan Konservasi Alam Nusantara</i>

CHAPTER I: INTRODUCTION

Marine Protected Areas (MPAs) have significant socio-economic and environmental impacts, which include conservation of the ecosystem services, biodiversity, and economic activity balance (Arkema et al., 2024). Moreover, MPAs are significant in carbon sequestration via two important coastal ecosystems, seagrass beds and mangroves, therefore, strengthening global climate adaptation and mitigation efforts. MPAs also play a key role in addressing the Post-2020 Global Biodiversity Framework of the Convention on Biological Diversity (CBD) that targets the protection of at least 30 percent of the world marine areas by 2030. However, as the experience of the Aichi Biodiversity Targets shows, only a quarter of countries made significant progress, with the rest performing poorly or not at all, or even declining (Carr et al., 2020; Buchanan et al., 2020).

Indonesia, as a signatory of the United Nations Convention on Biological Diversity (UNCBD), has come up with great efforts to enhance MPA governance with high targets, integration of traditional and formal governance systems, and other coastal protection policies. The country is also working towards making sure that 30 percent of their coastal and marine areas are conserved, protected and sustainably managed by the year 2045 (30x45). Recently, however, it has been found that 37 of 61 MPAs in Indonesia, both national and local, remain in the minimally managed category, with management effectiveness scores of less than 50% (Meilana et al., 2023). In contrast, the Raja Ampat MPAs stands out as the most effectively managed, with a score of 83.78% (Meilana et al., 2023).

One of the main reasons that Raja Ampat has relatively high performance is the incorporation of customary practices using sasi system (Meilana et al., 2023; McLeod et al., 2009; Wartini, 2020). Sasi is an indigenous ecological management system that regulates when, where and how the resources are harvested. Its regulations feature species-specific prohibitions, catch limits, seasonal closures, and gear restrictions all of which contribute to sustainable fisheries and intergenerational fairness (Wartini, 2020).

The codification of sasi into conservation governance has been facilitated by the government in Law No. 21/2001 on Special Autonomy of Papua Province,

which requires the recognition, protection, empowerment and development of Indigenous rights. Besides, NGOs like The Nature Conservancy and Conservation International have been instrumental in the planning, funding, and policy advocacy of MPA (White et al., 2022). These bodies have facilitated community participation by zoning education that started with Tomolol Declaration in 2006 and Waiwo Declaration in 2007 that recognized Indigenous rights, their customary law and cultural values in marine management.

The partnership between government and NGOs in the incorporation of Indigenous people and traditional practices such as *sasi* into conservation efforts has been central in the success of the MPA in Raja Ampat, especially in fisheries management. However, issues remain. Illegal fishing remains a threat to conservation outcomes because integration of technology in monitoring and surveillance is not yet developed. In addition, mangrove and seagrass conservation through carbon pricing mechanisms need additional institutional support.

These gaps can be filled with a strategic approach that should not be based on the creation of new policies but on the reinforcement of the existing policies with the help of the additional interventions. Policy sequencing provides such an approach: instead of a mere chronological implementation, it is a deliberate design process that helps maximize complementarities between governance actors and policy instruments (Gunningham & Sinclair, 1998; Howlett, 2019; Lambin et al., 2014; Taeihagh et al., 2013). Sequencing will ensure that policies support each other instead of undercutting each other as seen in other areas of governance like climate governance, land-use reform (Furumo & Lambin, 2021), carbon pricing (Linsenmeier et al., 2022; Montfort et al., 2023), and financial reform (Khatkhate, 1998). Nonetheless, its use in MPA governance is not well-studied.

In the application of MPAs, policy sequencing can be used to develop in a structured manner through aligning of foundational policies, supporting policies, and advanced policies. For instance, to avert a shortage of revenues due to ecotourism, local communities could be engaged in result-based payment schemes, including marine-oriented REDD+ initiatives. By ensuring that each intervention is bolstered by complementary instruments, policy sequencing facilitates progressive and effective governance reforms.

This research aims to develop a policy sequencing framework that integrates both customary and formal governance mechanisms in MPA management. The study seeks to offer actionable insights into how policies can be sequenced to ensure that Indigenous knowledge systems and state regulations work in harmony. Ultimately, this work contributes to Indonesia's broader MPA strategy by presenting a model that can be scaled and adapted across various ecological and institutional settings. Therefore, our research questions are:

1. How can the key policies shaping Raja Ampat's MPA governance be classified into foundational, supporting, and advanced measures?
2. How has the customary sasi system been integrated into the formal governance of Raja Ampat's MPA?
3. What governance challenges remain in Raja Ampat MPAs?
4. What sequencing of policies could help strengthen MPA governance across Indonesia in the future?

In the next section, we outline the methods used to collect and analyze both primary and secondary data, along with the operational definitions and examples that guided the research process. This includes an explanation of the interview process, the scope of the literature review, and the framework used for classifying and sequencing policy interventions.

CHAPTER II: METHODOLOGY

This research paper will use two primary research methods, including semi-structured interviews and a literature review. The interviews were carried out during five days between April 23-27, 2025, with the key stakeholders in Raja Ampat, including the representatives of the NGOs, local government and community members, especially those who were involved in the *sasi* system of customary rules. These open-ended interviews gave detailed information on the implementation of governance policies and how formal rules are in interaction with customary practices (Weller et al., 2018). The major themes that were discussed during the interviews were: the nature of programs or policy interventions implemented following the Tomolol Declaration; the current issues in marine conservation and the challenge of climate change to program implementation; the solutions to the challenges; the role and coordination of key actors; the nature and source of support including funding, training and institutional capacity; and the most important next steps to sustain MPA governance.

To supplement the interviews, this research also examined a broad literature including national regulations, local customary systems, and interventions of NGOs and international organizations. The sources were government documents and scholarly articles as well as NGO reports and grey literature. The aim was to identify key governance milestones and policy interventions that have shaped MPA management in Raja Ampat over time.

In addition to data collection, the study involved a policy classification and sequencing exercise. All identified policy interventions were categorized into one of three groups based on their function in governance: *foundational policies*, which refer to early-stage actions that establish the basic legal and institutional framework for MPA management (such as marine assessment and the legal recognition of *sasi*); *supporting policies*, which help strengthen existing efforts and facilitate implementation or coordination (such as joint patrols and NGO collaborations); and *advanced policies*, which focus on enhancing long-term sustainability and adaptive capacity (such as climate resilience strategies, co-management frameworks, and sustainable financing initiatives). While this study does not strictly classify policies

by type (e.g. incentives or disincentives), it is informed by the policy typology proposed by Furumo and Lambin (2021) to better understand how different instruments function in practice. Their framework guided the development of a sequencing model adapted to reflect the evolution and cumulative impact of policy interventions on MPA governance in Raja Ampat.

Due to time and resource limitations, this research focuses only on the initial stages of MPA development up to the establishment of the BLUD (Public Service Agency) as the financial institution supporting MPA management in Raja Ampat.

CHAPTER III: RESULT AND DISCUSSION

3.1 Policy Typology in Raja Ampat's MPA Governance

In strategically organizing policy sequencing, we categorized the milestone policies of Raja Ampat MPAs into three classified categories: foundational, supporting, and advanced policies. We identified the policy milestones in the Raja Ampat MPAs and analyzed the strategic policy sequencing by classifying each policy into one of the three categories (Figure 1).

The first Marine Rapid Assessment (MRA-1) served as an initial step in documenting and informing the marine and coastal biodiversity of Raja Ampat to highlight its conservation importance. This MRA also served as a foundational project that recommended the development of a conservation area and its management (McKenna et al., 2002). MRA-1 was conducted by CI, Universitas Cendrawasih, LIPI, the Australian Institute of Marine Science, and the Western Australian Museum. MRA-1 was followed by MRA-2, which focused on collecting additional data on reef-associated stomatopod crustaceans, identifying spawning aggregation sites (SPAG), and assessing the potential for future conservation areas and their management, as well as the status of natural resources and utilization patterns. A third study, the Rapid Ecological Assessment (REA) in 2002, was then carried out to refine the data on marine biodiversity and ecosystem conditions in Raja Ampat, identify and map the types and conditions of vegetation, conduct a socio-economic evaluation, and recommend priority conservation actions.

These three assessments served as foundational policies by providing recommendations for planning marine conservation areas in Raja Ampat, focusing on their biodiversity potential. We grouped these three assessments together under the foundational policy category due to their shared purpose: to collect and provide information on Raja Ampat's marine resources as a tool for recommending marine conservation areas, which ultimately became the basis for the proposed development of MPAs in Raja Ampat (MPA Guide, 2023). A similar process occurred in the early

development of MPAs in Nusa Penida and Sabang, which were initiated with the support of NGOs who visited the areas, held meetings with local communities, conducted ecological and social surveys, and completed essential documents and conditions required to establish MPAs in accordance with national government regulations (Trialfhianty et al., 2025).

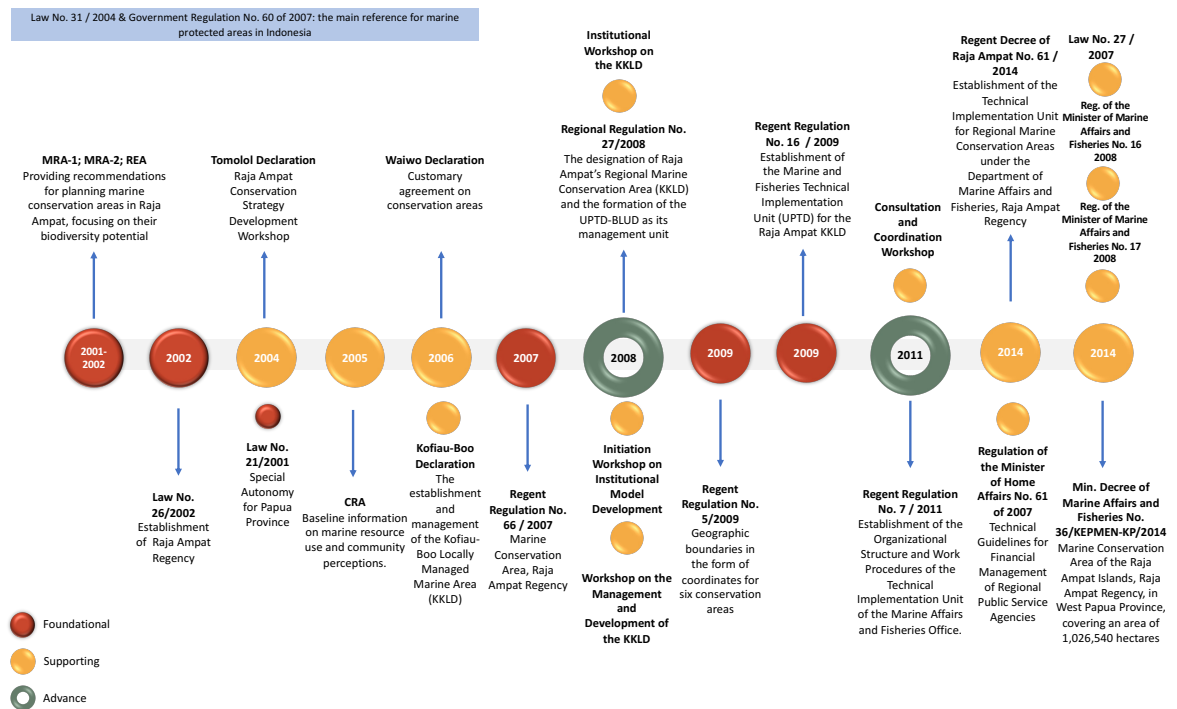


Figure 3. 1

(Milestone governance interventions for the establishment and development of Marine Protected Areas (MPAs) in Raja Ampat Regency, Indonesia. Foundational policies (in red) represent early scientific assessments and legal frameworks (e.g., MRAs and REA, Law No. 26/2002) that established ecological and jurisdictional baselines. Supporting interventions (in yellow) include stakeholder engagement, declarations, and local regulatory processes that built consensus and formalized conservation intent. Advanced policies (in green) reflect institutionalization and implementation through ministerial and regional regulations, enabling sustained management.

Figure 1 Milestone governance interventions for the establishment and development of Marine Protected Areas (MPAs) in Raja Ampat Regency, Indonesia. Foundational policies (in red) represent early scientific assessments and legal frameworks (e.g., MRAs and REA, Law No. 26/2002) that established ecological and jurisdictional baselines. Supporting interventions (in yellow) include stakeholder engagement, declarations, and local regulatory processes that built consensus and

formalized conservation intent. Advanced policies (in green) reflect institutionalization and implementation through ministerial and regional regulations, enabling sustained management.

In the same year as the REA, the Indonesian government issued Law No. 26 of 2002 establishing Raja Ampat Regency as a new district composed of Ayau Islands District, North Waigeo, South Waigeo, Samate, South East Misool, Misool, and West Waigeo, along with other new regencies in Papua Province. This government-issued foundational policy provided local institutional capacity to manage their own region, becoming a legal basis for integrating long-term conservation planning into Raja Ampat's development agenda (Atmodjo et al., 2020). The regulation also marked an initial step in managing the biodiversity wealth that could serve as a source of income for the region through well-planned and controlled efforts (Nainggolan, 2012). Regional autonomy or decentralization in resource management became the foundation for sustainable marine and fisheries resource governance, providing social space for local communities to participate in resource management. In areas with strong local institutions, they have the authority to produce local decrees (PerDa), enabling the formal incorporation of local customs into official law (Lestari & Satria, 2015; Trialfhianty et al., 2025).

As part of the marine conservation development in Raja Ampat Regency, TNC conducted a Coastal Rural Appraisal in 2003 to gather baseline information on marine resource use and community perceptions (Rudyanto et al., 2015). Surveys with local fishers revealed a decline in catches caused by illegal and destructive fishing methods, often attributed to outsiders, including shark finning, sea turtle hunting, overfishing, and illegal fishing practices (White et al., 2022). A unique aspect of this study is that it provided a valuable baseline of how local fishers perceived the status and threats to marine resources at a time when national and international conservation initiatives were just beginning in the region. It also included community engagement and served to inform the development and implementation of an MPA network to address these threats (Larsen et al., 2018).

The four studies demonstrated the necessity of creating conservation areas in Raja Ampat and therefore presented important baseline data in the sustainable conservation of MPA biodiversity (Webb, 2005). These studies were also used as inputs in a multi-stakeholder forum that came up with the Raja Ampat conservation vision. This involved the drafting of conservation action agenda, biodiversity conservation and sustainable development plans and consensus and support of key actors on the planning and drafting of the conservation strategy document. The Raja Ampat Conservation Strategy Development Workshop was organized in Tomolol Village on December 11-13, 2003, and involved a wide variety of stakeholders, including the Raja Ampat local government, Papua II Natural Resources Conservation Agency (BKSDA), TNC, CI, local communities (including customary leaders), and was sponsored by PT Yellu Mutiara (Rudyanto et al., 2015). The workshop was also used as a platform to raise community issues especially on the common illegal activities. Consequently, the forum underlined that the fundamental rights, customary laws, and socio-cultural values of the local communities should be taken into account and become part and parcel of the management of natural resources of Raja Ampat. It was also emphasized that Raja Ampat should be recognized as a marine regency. The involvement of customary resource owners from the very beginning of MPA planning and decision-making has been shown to lead to more successful conservation management (Lam, 1998). The outcome of this forum became known as the Tomolol Declaration.

“Departing from several of these cases, and also driven by the community's perception that their area holds significant marine potential, they eventually initiated the Tomolol Declaration in Tomolol Village, Misool, to decide that this area must be protected and designated as a conservation area.”

— Allan Fredrik Ramandey, Data and Information Staff of Raja Ampat Marine Park Authority

Two years after the Tomolol Declaration, a follow-up declaration was held in 2006 to determine specific conservation areas. Known as the Waiwo Declaration, it followed a series of customary agreement ceremonies held between 2004–2006 in the districts of Kofiau, Mayalibit Bay, and Ayau. The Waiwo Declaration became the forerunner of the Raja Ampat Regional Marine Conservation Area, which includes Sayang-Wayag, Mayalibit Bay, Ayau-Asia, Kofiau-Boo, South East Misool, and Dampier Strait. The designation process took two years due to differing perceptions, especially from local communities who live in eco-existence with nearby marine resources (Nuraini et al., 2024).

Following this long process—from MRA-1 to the customary declarations—demonstrating the importance of sustainable protection and management, the Raja Ampat Regent, Marcus Wanma, issued Regent Regulation No. 66 of 2007 concerning Raja Ampat Marine Conservation Areas. This regulation provided formal legal recognition to the conservation areas, empowering the local government to manage and protect these vital ecosystems. It established a comprehensive conservation framework that balanced ecological, social, and economic considerations, ensuring sustainable development aligned with community needs. By encouraging collaborative and adaptive management involving local communities and stakeholders, the policy fostered local ownership, compliance, and responsiveness based on scientific monitoring and feedback.

The regulation also supported a network approach to conservation, establishing interconnected MPAs to improve ecological resilience and biodiversity. It explicitly promoted sustainable livelihoods through responsible resource use and marine ecotourism, aligning conservation with local economic benefits. Furthermore, the policy laid a flexible foundation for expanding conservation areas based on scientific assessments, enabling scalable and adaptive marine protection in Raja Ampat.

Importantly, Chapter V of Regent Regulation No. 66/2007 emphasized that Raja Ampat's marine conservation should be developed through a network system (MPA Network). According to IUCN, an MPA network is a collection of individual MPAs operating cooperatively and synergistically at multiple spatial scales to generate

greater conservation benefits. MPA networks provide more effective protection due to interconnections that affect (1) genetic diversity of viable populations, (2) protection of migratory and wide-ranging species, and (3) safeguarding multiple essential habitats (nurseries, reproduction, adult habitats) and their connections, which cannot be assured by single MPAs alone (Agardy et al., 2011). Expanding and connecting MPAs improves habitat protection and ecological interdependence. However, destructive activities in one MPA can trigger negative spillover effects, undermining the effectiveness of the entire network—just as positive spillovers can enhance it (Abecasis et al., 2017).

3.2 Establishment of BLUD-UPTD

In the same year as Regent Regulation No. 66/2007, a workshop was held to determine the management structure of the regional marine conservation area. Two main options emerged: the Ideal option, involving all stakeholders with operational duties held by the government, and the Alternative option, which proposed the establishment of a Technical Implementation Unit (UPT) fully managed by the government under the Department of Marine and Fisheries (DKP). Another alternative discussed was the implementation of a Public Service Agency (BLU) financial model. In this model, funds would not be returned to the state treasury but managed directly by the BLU for conservation activities.

"The main reason Raja Ampat MPAs became the first is because of the establishment of the BLUD."

– Indri Widhiastuti Coordinator of the Raja Ampat Working Unit, Kupang National Marine Conservation Area Center (BKKPN).

A year later, the result of collaborative thinking among stakeholders led to the issuance of Regional Regulation (PerDa) No. 27 of 2008, which revoked Regent Regulation No. 66 of 2007. This PerDa became the legal basis for the designation of Raja Ampat's Regional Marine Conservation Area (KKPD) and the formation of the UPTD-BLUD as its management unit. This regulation is categorized as an advanced policy, as it reflects both regulatory upgrading and policy refinement. One of its key points is the designation of conservation area functions based on zoning, reflecting an

ecosystem-based management approach and an adaptation to local ecological and social conditions.

Moreover, the PerDa recognizes the importance of an MPA network as part of a broader marine conservation strategy aligned with global best practices. Additionally, the involvement of communities and stakeholders in the development of management and zoning plans demonstrates a shift toward a participatory and inclusive approach, moving away from a traditional top-down governance model. Institutionally, this regulation serves as the legal foundation for the formation of the UPTD-BLUD, paving the way for local governance with a sustainable financing mechanism.

The UPTD-BLUD is a quasi-governmental structure that supports the integration of government budget allocations, MPA revenues (such as tourism entrance fees), and external funding sources (including philanthropic donations and Blue Abadi Fund grants, which were formalized in 2017) into a consolidated local budget (Purwanto et al., 2017). However, when COVID-19 struck, the UPTD-BLUD experienced a funding shortfall due to its heavy reliance on tourism fees for conservation management, such as patrol systems. Although this gap was partially addressed through an emergency grant from a private foundation to maintain operations during the pandemic (Awaludinnoer et al., 2021), there remains a pressing need to establish more sustainable financing mechanisms to mitigate the impact of unforeseen events (White et al., 2020).

The formation of the UPTD was based on Article 14, paragraph 6 of Government Regulation No. 41 of 2007, which states: "Within a regional agency, a technical implementing unit (UPTD) may be established to carry out certain technical operational and/or supporting activities within one or more subdistricts." In simple terms, the BLUD represents a financial management model, while the UPTD refers to the institution managing that model.

In 2009, a year after the enactment of PerDa No. 27 of 2008, another workshop was held to socialize the institutional management options and to discuss the type of institution that would serve as the managing body of the Raja Ampat KKLD network. This workshop provided policy support by formulating the rationale for the

institution's establishment, its main duties and functions, the type of institutional model, and recommendations regarding the KKLD's institutional form. It was attended by representatives from TNC, CI, the Ministry of Home Affairs of the Republic of Indonesia, the Ministry of Marine Affairs and Fisheries, and the Raja Ampat Marine and Fisheries Office.

That same year, the Regent of Raja Ampat issued Regent Regulation (PerBup) No. 5 of 2009 as a follow-up to PerDa No. 27. This regulation defined the geographic boundaries in the form of coordinates for six conservation areas: Ayau-Asia, Sayang-Wayag, Dampier Strait, Mayalibit Bay, Kofiau and Boo, and Southeast Misool. It also outlined the management zones (1) Core Zone, (2) Sustainable Fisheries Use Zone, and (3) Other Use Zone (Figure 2).

The Core Zone is designated for research activities. The Sustainable Fisheries Use Zone, akin to the sasi zone, is used for both national/regional capture fisheries and local community use, and within this zone, there are further designated sub-zones. The Other Use Zone is intended for maritime transportation, submarine cables, and similar activities. However, this PerBup does not provide a detailed map of the specific zoning for each area.

Subsequently, the establishment of the UPTD for Marine and Fisheries of KKLD Raja Ampat District was legally formalized through Regent Regulation No. 16 of 2009. This regulation followed a coordination meeting between the Raja Ampat local government, TNC, and CI. The collaboration led to a Regent Regulation affirming that the Raja Ampat KKLD UPTD would be designated as a BLUD under the Raja Ampat Marine and Fisheries Office.

This long process—beginning with MPA establishment as a foundation-level intervention, which demonstrated the rich biodiversity of Raja Ampat and the resulting need for conservation; integrating customary rights by acknowledging Indigenous Local Knowledge (ILK) through sasi; and culminating in the formation of the BLUD-UPTD—ultimately led to the issuance of Ministerial Decree No. 36/KEPMEN-KP/2014 on July 15, 2014 concerning the Raja Ampat Islands Marine Conservation Area in West Papua Province, covering an area of 1,026,540 hectares. This 13-year journey was made possible through collaboration between government, NGOs, and Indigenous communities—considering all three pillars of sustainability: social, economic, and environmental. The alignment of these three critical stakeholders, sharing the same vision to protect the waters of Raja Ampat and their biodiversity, exemplifies that sustainable management begins with stakeholder collaboration, particularly public participation that honors and acknowledges the traditional sasi customs rooted in the community. The sasi traditional customary system served as the primary foundation for MPA governance, demonstrating that community-based areas perform better than nationally-managed MPAs (Meilana et al., 2023).

The next section will explore practical aspects of sasi and the process of integrating sasi into formal regulations. It will also delve into the historical and practical application of sasi, based on interviews and field observations conducted in Mayalibit Bay, Wayfoy Village, Raja Ampat.

3.3 Integrating Sasi into Formal Governance

Sasi is a customary law that has been used for centuries to help communities manage their natural resources, especially in marine areas. Before the implementation of sasi, local communities practiced a tradition called Kabus, which means “daerah terlarang (forbidden area).” Kabus shared the same principle as sasi—protecting specific areas and their natural resources—but it was applied only on land. The sanctions under Kabus were based on what the community believed to be ‘black magic’, causing violators to fall mysteriously ill. The same beliefs apply to sasi:

villagers believe in the law of nature, where those who break sasi rules fall mysteriously ill or are attacked by crocodiles, while the ‘good’ locals are never harmed. Customary sasi laws regarding marine resource protection are often more effective and respected by the local community than formal conservation regulations (Trialfhianty et al., 2025).

“Interestingly, the children who swim in the bay have never been attacked by crocodiles.”

— Dortheus, Local Resident of Waifoi Village, Mayalibit Bay

Sasi also relates to the concept of time intervals in resource use. This practice sets time boundaries for when marine resources can be utilized (*buka sasi*) and when they must not be used (*tutup laut*). *Buka sasi* is often conducted in a sacred manner, beginning with collective prayers at a church or other place of worship for shared purposes such as church construction, hall renovation, and other communal needs. This sacred process is a key reason why the local community is reluctant to violate sasi.

“When it comes to sasi, we’re already afraid.”

— Mayor, Leader of the BLUD Patrol System

However, in some areas, the tradition has deviated from its original intent. For example, *buka sasi* is sometimes performed for personal reasons, such as to prepare school fees for children. Yet, in Waifoi Village, Mayalibit Bay, the tradition remains aligned with its original goal of protecting marine resources. The selection of species under sasi is based on their natural availability—if sea cucumber becomes scarce, sasi is applied to sea cucumber, and the same applies to crabs. In some cases, resource extraction becomes exploitative, including unregulated harvesting and the capture of female species. NGOs in Raja Ampat have played a role in shifting sasi practices toward sustainability through community education.

“There’s been a shift, because now they open sasi based on school needs rather than reproduction cycles, even though sasi was originally meant to allow species to reproduce.”

— Meidiarti, Conservation Manager, Konservasi Indonesia (KI), Raja Ampat Region

Customary law can evolve under the influence of external wisdom and knowledge, including conservation knowledge (Holleman, 2013). NGOs such as Konservasi Indonesia (KI) and Yayasan Konservasi Alam Nusantara (YKAN) have begun intervening where sasi practices have strayed from their original conservation purpose. For example, KI provides education using simple language and visuals, such as showing female species with juveniles still inside their bodies. NGOs have played a larger and more significant role than other actors in educating local communities (Trialfhianty et al., 2025). Such education has yielded expected results—for instance, in Waifo Village, sea cucumber under sasi can only be harvested if they exceed 25 cm in size. This is a direct outcome of NGO outreach, which emphasizes giving species enough time to reproduce. Similar practices have been adopted by local communities on other islands.

In the process of integrating sasi into formal regulation, the Tomolol Declaration was an initial step in recognizing the rights of indigenous Papuan communities, emphasizing fundamental rights, customary law, and sociocultural values. The subsequent Waiwo Declaration reflected how indigenous people began to see conservation activities as similar to their ancestral practices, prompting them to propose integrating their territories into Raja Ampat’s MPA network. Through these declarations, the Raja Ampat Regency government realized that customary practices play a vital role in MPA establishment, as formal conservation decisions inherently involve the local communities’ traditional knowledge and culture. The overlap between traditional and formal governance is essential for the continuity of sasi (Harkes and Novaczek, 2002).

“So indirectly, the community has already proposed their area, alongside their sasi practices, seeing that conservation practices are quite similar to sasi.”

— Allan Fredrik Ramandey, Data and Information Staff, Raja Ampat Marine Park Authority

The sasi tradition, modified through NGO education, not only preserves local wisdom but also supports the achievement of SDG 14, particularly in the areas of sustainable fisheries management, marine ecosystem protection, and the empowerment of local fishing communities.

“Conserve and sustainably use the oceans, seas and marine resources for sustainable development.”

— SDG 14 – Life Below Water

Reflecting on global dynamics, on April 17, 2025, President Trump signed a proclamation titled “Unleashing American Commercial Fishing in the Pacific.” This directive removed key protections to permit commercial fishing in parts of the nearly 500,000-square-mile Pacific Islands Heritage Marine National Monument, once among the world’s largest fully protected marine reserves. The administration argued that this move would boost the U.S. fishing industry and promote economic growth (The New York Times, 2025). However, if co-management practices like sasi, which involve temporary halts in resource extraction, can be integrated into sustainable fisheries policies, economic, environmental, and social goals can eventually coexist. This approach not only allows species to reproduce but also ensures their utilization at appropriate times.

Sasi has demonstrable social benefits and embodies principles recognized in modern fisheries management. Though limited in scope, it has the potential to conserve valuable commercial species and coastal habitats (Harkes and Novaczek, 2002; Trialfhianty et al., 2025).

“If sasi is developed, it can become both an economic and conservation tool.”

— Meidiarti, Conservation Manager, Konservasi Indonesia (KI), Raja Ampat Region

A formal establishment of sasi zones is urgently needed, as its existence may be threatened by population growth and increased investment in the region (Adiastuti et al., 2019). The Indonesian Ministerial Decree No. 191/2023 on Conservation Areas in the Waters of Northern Misool, Raja Ampat, represents a narrowing of the previous

policy in Ministerial Decree No. 13/2021, which recognized sasi zones on Misool Island. The 2023 policy does not mention sasi zones, although it currently applies only to Northern Misool. It is possible that this new regulation may extend to other areas, including Mayalibit Bay. At the time of writing, the rezoning plan remains under discussion.

Highlighting sasi zones in government regulations is an urgent demand from local communities to enhance co-management in Raja Ampat's MPAs. Co-management essentially transfers resource management to the communities, allowing them to develop systems in line with their traditions (Campbell et al., 2012). The presence of sasi in formal regulation creates a positive correlation with the potential for sustainable natural resource development and modern marine management strategies, thereby supporting conservation goals (McLeod et al., 2009). Therefore, traditional marine management practices must be recognized, protected, and legally supported by higher levels of government to function effectively (Ostrom, 1990).

“Sasi practitioners want official recognition from the government, so that sasi holds legal authority.”

— Meidiarti, Conservation Manager, Konservasi Indonesia (KI), Raja Ampat Region

It is important to note that sasi implementation in Raja Ampat gained legal support through Raja Ampat District Regulation No. 27/2008. According to Chapter I, Article 15 of this regulation, local wisdom must be considered in conservation and area designation processes. However, sasi zoning has yet to be formalized by the government. Mislabeling zones may prevent accurate evaluation of different MPA types and their effectiveness in achieving conservation goals (Costa et al., 2016).

Moreover, outsiders are often unaware of local rules and cannot be held accountable, which presents a challenge in communicating these often unwritten customary laws. Integration should recognize and respond to rule flexibility to represent local context and local decision-making autonomy. There must be clear channels of communication between all stakeholders, both local and national including

NGOs. The flexibility needs to be weighed against the codification of the local laws so that they become visible and enforceable (Trialfhianty et al., 2025). This will guarantee that communities voluntarily contribute, have a sense of ownership of the resources, and contribute to conservation activities (Indrarto et al., 2012; White et al., 2022).

In conclusion, *sasi* is partly institutionalized as part of the MPA governance in Raja Ampat. Although local governments have accepted the customary laws by issuing regional regulations and formal declarations, zoning and enforcement of *sasi* areas have not been fully formalized in all the MPAs. The NGOs have served an important role in ensuring that *sasi* practices are in line with scientific conservation interests, which enhances its legitimacy and practicality. There are still gaps, especially in legal codification, consistency with national policies, and the official representation of *sasi* zones on MPA maps and plans.

The following session will elaborate on this discussion by considering the governance issues that still prevail in Raja Ampat MPAs. It will discuss the matters of institutional coordination, enforcement capacity, duplication of regulations and the involvement of local communities in marine protection activities.

3.4 Governance Challenges in Raja Ampat MPAs

The Convention on Biological Diversity's (CBD) post-2020 Global Biodiversity Framework calls for 30% of the global ocean to be effectively conserved and managed through Marine Protected Areas (MPAs) or other effective area-based conservation measures (OECMs) by 2030 (the 30x30 initiative). Although Raja Ampat's MPAs have the highest management effectiveness score among MPAs in Indonesia (Meilana et al., 2023), governance challenges persist, particularly in areas such as community outreach, infrastructure, financing, and socioeconomic conditions.

Syukri et al. (2024) similarly highlight how governance issues in Indonesian MPAs stem from limited government commitment, financial constraints, low levels of community participation, and overly centralized governance structures. Given the scope and limitations of this section, we will focus specifically on two major

challenges: financial constraints and facility and infrastructure for monitoring activities.

1. Financial Constraints

The funding framework for Raja Ampat's local MPAs (KKLD) was designed early in its development through the proposed establishment of a Badan Layanan Umum Daerah (BLUD) in 2007. The BLUD is a financial management mechanism that allows conservation revenues—such as entrance fees and conservation cards—to be managed directly by the implementing agency (UPTD) rather than being deposited into the national treasury. In short, the BLUD handles financial management, while the UPTD is the institution that operates the BLUD.

With the implementation of the BLUD-UPTD model, Raja Ampat's MPAs are no longer dependent on the national budget (APBN), unlike the Raja Ampat Tourism Park, a nationally designated MPA under the Ministry of Marine Affairs and Fisheries, which receives funding from the central government.

The advantage of the BLUD-UPTD model lies in its financial autonomy, allowing Raja Ampat MPAs to continue operations even during national budget cuts or inflationary periods. Revenue from tourism activities such as entrance tickets, boat fees, and conservation cards provides sustainable local funding. Raja Ampat's MPA is currently the only local unit in Indonesia applying this financial model, as formalized in Raja Ampat Regent's Decree No. 61/2014 on the Establishment of the UPTD for Regional Marine Conservation Area Management.

Despite these strengths, COVID-19 exposed the vulnerability of this tourism-dependent financing model. The pandemic led to layoffs, a sharp decline in tourism revenues, and the re-emergence of external threats due to reduced patrol funding (White et al., 2022). To strengthen financial sustainability, alternative funding mechanisms such as Result-Based Payments (RBP) through carbon pricing—mandated by Presidential Regulation No. 98/2021—can be implemented. This regulation enables verified reductions in greenhouse gas emissions or increases in carbon stocks to be rewarded without transferring carbon ownership. RBP aligns financial incentives

directly with environmental outcomes, making funding contingent upon actual conservation success rather than just activities.

Research shows that when RBPs are combined with collective contracts, they can enhance conservation outcomes, encourage risk-sharing among communities, and even outperform individual-based schemes (Pinto-Correia et al., 2022; Rellensmann et al., 2025). This scheme could therefore provide a robust supplemental funding model for MPAs across Indonesia.

2. Facilities and Infrastructure for Monitoring

Giakoumi et al. (2024) emphasize that only a small fraction of MPAs globally have sufficient baseline data and monitoring capacity, limiting their effectiveness. While most monitoring efforts emphasize ecological variables, comprehensive MPA management requires the integration of ecological, socioeconomic, and governance indicators.

In Raja Ampat, monitoring activities include three aspects: ecological, social, and marine resource governance (Ahmadia et al., 2016). Ecological monitoring monitors the abundance and biomass of important species such as coral reefs and sea turtles. Social monitoring evaluates aspects of economic well-being, food security of fishers. Governance monitoring analyzes the processes of decision-making, rules of management, enforcement, and conflict resolution (Ahmadia et al., 2016).

The 2016 State of the Birds Head Seascape MPA Network report noted one of the challenges as the necessity to identify long-term ecological changes which requires large-scale and consistent monitoring over time (Lindenmayer et al., 2022). As Raja Ampat MPAs form a part of a larger network, disturbances to the environment such as pollution caused by mining activities in other islands including Kawe, Gag, and Batang Pele may have spillover effects in the area. These islands are close to Wayag, a famous Manta Ray destination, which is why the danger is especially acute.

Narayana et al. (2024) suggest that IoT and sensors can be used to create a real-time smart monitoring system that would allow tracking such parameters as temperature, pH, turbidity, and air quality-providing useful tools to make ecological

monitoring more responsive. Rochette et al. (2024) also emphasize that scientific integration must be continuous through the creation of MPAs to their daily activities.

In addition, integrating ecological monitoring with social assessments allows a more comprehensive knowledge of MPA results. This consists of household surveys that measure well-being, health, education, empowerment, and culture (Cook et al., 2024). Nevertheless, such surveys can fail to capture the social dynamics of remote communities where access to data is restricted (Ahmadia et al., 2016). To address this, social monitoring in Raja Ampat is supported by NGOs such as KI and YKAN, with each responsible for different zones across the six islands. Local communities also participate in monitoring through volunteer programs, which are inclusive of outsiders as well.

Importantly, MPAs in Raja Ampat are not exclusionary—they respect traditional and community rights (White et al., 2022). In terms of governance monitoring, user participation remains a challenge in some areas. For example, only 3.3% of users in Cenderawasih National Park participate in decision-making, compared to 37.5% in the Raja Ampat MPA network (Ahmadia et al., 2016).

Raja Ampat's success stems from strong stakeholder collaboration. The MPAs are a co-management effort between NGOs, local government, and communities. The BLUD-UPTD model emerged from persistent NGO efforts to advocate for marine conservation through scientific assessments, while the Raja Ampat local government created channels to accommodate feedback from both NGOs and communities. In practice, NGOs and local communities act as field monitors (joint patrols) and informants, reporting issues directly. This collaborative model sets Raja Ampat apart from other MPAs in Indonesia (White et al., 2022).

Community involvement was also integral to the establishment of the MPAs, exemplified by the Tomolol Declaration, where customary leaders from six islands voluntarily pledged their marine territories while affirming their rights. This participatory approach fosters a sense of ownership and responsibility among local communities (Indrarto et al., 2012). The traditional practice of *sasi*, a seasonal closure system for marine resources, is widely recognized and enforced not only by customary

communities but also by broader stakeholders, including the Regent of Raja Ampat and NGOs. Sasi ceremonies are public events, and the rules regarding harvest zones and species are well-communicated and respected. This blending of customary and formal regulations enhances compliance and improves overall management effectiveness (Trialfhianty et al., 2015).

3.5 Policy Sequencing for Stronger MPA Governance

Policy sequencing is not merely about the chronological order of policies, but also about creating smarter regulations to achieve goals that are both sustainable and just (Gunningham and Sinclair, 1998; Howlett, 2019). It is defined as the strategic, temporal arrangement of policy instruments in a way that enhances the feasibility of adopting more ambitious measures over time (Montfort et al., 2023). Drawing from the three pillars of sequencing—supporting, foundational, and advanced policies—we identified key interventions by various stakeholders in establishing and developing the Raja Ampat Marine Protected Area (KKLD).

Additionally, the governance challenges identified in fully implementing and maximizing the success of Raja Ampat’s MPA—particularly in the establishment of fully protected areas—serve as a reference point for assessing governance gaps. This section discusses how policy sequencing in Raja Ampat, when combined with the earlier solutions proposed in this thesis, can serve as a framework to strengthen MPA governance across Indonesia (Figure 3).

According to the MPA Guide (2023) and Grorud-Colvert et al. (2021), fully protected MPAs are zones where no extractive activities are allowed. These zones are vital, as they generate spillover benefits for adjacent non-MPA areas, especially when they are part of a connected MPA network (Fox et al., 2012). The pathway to fully protected MPAs follows four establishment stages: proposed, designated, implemented, and actively managed.

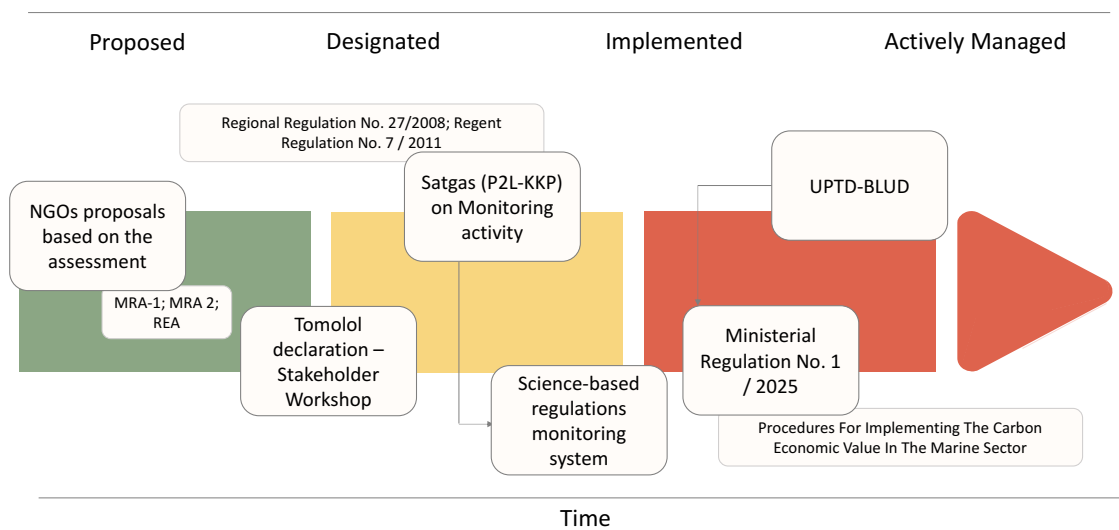


Figure 3.3

Policy sequencing for the Raja Ampat Marine Protected Area (MPA), mapped across four establishment stages as defined by the MPA Guide (2023): proposed, designated, implemented, and actively managed. The sequencing illustrates foundational (e.g., NGO proposals), supporting (e.g., Tomolol Declaration), and advanced (e.g., Ministerial Regulation No. 1/2025, UPTD-BLUD) interventions.

Figure 3.1 Policy sequencing for the Raja Ampat Marine Protected Area (MPA), mapped across four establishment stages as defined by the MPA Guide (2023): proposed, designated, implemented, and actively managed. The sequencing illustrates foundational (e.g., NGO proposals), supporting (e.g., Tomolol Declaration), and advanced (e.g., Ministerial Regulation No. 1/2025, UPTD-BLUD) intervention.

In Part I, we discussed the governance trajectory in Raja Ampat, beginning with NGOs like TNC and CI proposing the conservation area—an example of a foundational policy (see Figure 1). Supporting interventions were also observed in two ways: for instance, the Tomolol Declaration—based on community mapping (MRA1, MRA2, CRA)—strengthened the NGO proposal and thus served as a supporting policy. However, it could also be viewed as foundational, marking a turning point where customary (adat) communities became actively involved in decision-making processes.

Advanced interventions are those that consider long-term consequences, such as the development of the UPTD-BLUD model for sustainable financing of Raja Ampat's conservation area. These interventions must be complemented with science-based supporting policies to enhance governance effectiveness. Monitoring

systems need to go beyond surface-level observation and be equipped to report ecological and governance outcomes on a daily or monthly basis. Innovations such as IoT, environmental DNA (eDNA), echosounder bathymetry, and underwater cameras can be employed. Technologies like smart buoy networks (SBNs), autonomous underwater vehicles (AUVs), and multi-sensor microsystems (MSMs), including smart cable water (SCW), can detect patterns in ecological conditions. Combined with electronic "noses," these tools enable real-time, adaptive monitoring and can trigger alarms that prompt human intervention (Glaviano et al., 2022). For these systems to be fully integrated into decision-making, multi-actor collaboration is essential.

In connection with climate governance, Indonesia's MPAs also have the potential to be incorporated into carbon pricing mechanisms aligned with the REDD+ result-based payment scheme. Although REDD+ focuses on deforestation, its logic can be extended to marine systems, such as sustainable fisheries and coral reef restoration. NGOs and local communities could become key actors in such result-based payment systems.

As of January 6, 2025, the Indonesian Ministry of Marine Affairs and Fisheries (KKP) has regulated marine carbon value mechanisms under Ministerial Regulation No. 1/2025. This regulation defines "performance-based payments" for:

- A. Mangroves
- B. Seagrass
- C. Other ecosystems classified as blue carbon ecosystems (Article 14).

According to Muhammad Yusuf, Director of Coastal and Small Island Utilization at KKP, as quoted by ANTARA (2025), the blue carbon economy includes sustainable fisheries, low-emission aquaculture, and eco-friendly seafood processing and marketing. Coordination is ongoing with NGOs such as KI, the Indonesia Ocean Justice Initiative (IOJI), and the Global Green Growth Institute (GGGI) to ensure cross-sectoral synergy. However, the scheme is still under discussion at the time of writing.

Indri Widhiastuti, Coordinator of the Raja Ampat Working Unit (BKKPN Kupang), confirmed this:

“As for climate-related efforts, the carbon economic value scheme is still being finalized. At KKP, we are working to ensure that our conservation efforts result in sustainable funding.”

By addressing the gaps across the four establishment stages—especially through the integration of innovative technologies and conservation-linked payment mechanisms—Raja Ampat’s policy sequencing can serve as a model for maximizing MPA management. This sequencing model can be adopted by other MPAs in Indonesia, tailored to their institutional, ecological, and socio-economic contexts.

CHAPTER IV: CONCLUSION

This study finds that the high effectiveness of marine conservation management in Raja Ampat results from strong collaboration among various stakeholders, including local communities. NGO interventions served as the foundation for the initial recommendation to designate Raja Ampat as a marine conservation area, followed by support and formalization through local and governmental deliberations. This culminated in the official declaration of the Raja Ampat marine conservation areas (KKLD). An advanced policy framework was established to accommodate diverse interests and now serves as a national reference for KKLD implementation, outlining operational procedures, zoning divisions, and financial governance.

Sasi, as a customary system, reflects a co-management approach by local communities, involving the regulation of resource use based on agreed restrictions. External interventions, particularly from NGOs, have helped evolve this practice toward more sustainable and equitable outcomes. While the state and government have recognized and respected local customs, stronger integration of sasi zones into rezoning schemes is necessary to ensure equitable access and benefits for sasi communities within KKLD Raja Ampat.

Policy sequencing plays a key role in ensuring sustainable financing. Lessons learned during the pandemic highlight the importance of building resilience against unforeseen events. This can be achieved through a results-based payment (RBP) scheme, inspired by REDD+ principles. Additionally, monitoring systems should be strengthened through science-based approaches to detect invisible externalities, such as climate change and industrial waste, within the MPA network.

Policy sequencing should be guided by the developmental stages of MPAs while ensuring long-term implementation through strategic interventions such as RBP schemes and science-based monitoring. Further in-depth and broader studies on policy sequencing are needed, particularly those that emphasize sasi not only as

a conservation tool but also as a sustainable economic model on a global scale, especially on fisheries management.

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