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BLUE CARBON ECOSYSTEM AS CRITICAL NATURAL CAPITAL:

Strengthening Blue Carbon
Ecosystem Governance in Indonesia



Author:

Mas Achmad Santosa
Stephanie Pretty Rizka Juwana
Karenina Lasrindy
Gridanya Mega Laidha
Harish Makarim
Arkienandia Nityasa Parahita
Grace Gabriella Binowo
Jeremia Humolong Prasetya
Januar Dwi Putra Harimuddin

Layout:

Amadeus Rembrandt Sulistiawan

Photos:

Muhammad Salachuddin
Annisa Yusha Amalia
Karenina Lasrindy
Shutterstock

Director:

Dr. Mas Achmad Santosa, SH, L.LM
(Co-Founder and CEO of Indonesia Ocean Justice Initiative)

Supported by:

Indonesian Ministry of Environment and Forestry
Indonesian Ministry of Marine Affairs and Fisheries
The Asia Foundation

Recommended Citation:

Indonesia Ocean Justice Initiative.
Blue Carbon Ecosystem as Critical Natural Capital: Strengthening Blue Carbon Ecosystem Governance in Indonesia. Jakarta: IOJI, 2023.

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Abbreviations and Acronyms

Other Land Use Area	: <i>Areal Penggunaan Lain</i> / Other Land Use
AFOLU	: Agricultural, Forestry and Other Land Use
ASEAN	: Association of Southeast Asian Nations
EIA	: Environmental Impact Assessment
AMAN	: <i>Aliansi Masyarakat Adat Nusantara</i> / Alliance of Indigenous Peoples of the Archipelago
ABKT	: <i>Area Bernilai Konservasi Tinggi</i> / High Conservation Value Area
Anti-SLAPP	: Anti Strategic Lawsuit Against Public Participation
BCAF	: Blue Carbon Action Fund
BCAP	: Blue Carbon Action Partnership
BCDP	: Blue Carbon Dependent people
BSP	: Benefit Sharing Plan
CBD	: Convention on Biological Diversity
CBDR	: Common But Differentiated Responsibilities
COP	: Conference of the Parties
CSR	: Corporate Social Responsibility
CNC	: Critical Natural Capital
CMMAI	: Coordinating Ministry for Maritime Affairs and Investment
DAU	: <i>Dana Alokasi Umum</i> / General Allocation Fund
DAK	: <i>Dana Alokasi Khusus</i> / Special Allocation Fund
DAS	: <i>Daerah Aliran Sungai</i> / Watershed
DBH	: <i>Dana Bagi Hasil</i> / Profit Sharing Fund
EBSA	: Ecologically or Biologically Significant Areas
EBA	: Ecosystem Based Approach
EFT	: Ecological Fiscal Transfer
BCE	: Blue Carbon Ecosystem
ESD	: Ecologically Sustainable Development

ERPD-FCPF	: Emissions Reduction Program Document-Forest Carbon Partnerships Facilities
FCPF	: Forest Carbon Partnerships Facilities
FCPF-CF	: Forest Carbon Partnerships Facilities Carbon Funds
FPIC	: Free, Prior, and Informed Consent
FOLU	: Forestry and Other Land Use
GHG	: Greenhouse Gas
GNP-SDA	: <i>Gerakan Nasional Penyelamatan Sumberdaya Alam / National Movement to Save Natural Resources</i>
Ha	: Hectare
IUCN	: The International Union for Conservation of Nature
IKLH	: <i>Indeks Kualitas Lingkungan Hidup / Environmental Quality Index</i>
IKTL	: <i>Indeks Kualitas Tutupan Lahan / Land Cover Quality Index</i>
IPLC	: Indigenous People and Local Communities
IPPKH	: <i>Perizinan Penggunaan Kawasan Hutan / Licensing for Use of Forest Areas</i>
KBA	: Key Biodiversity Area
KEE	: <i>Kawasan Ekosistem Esensial / Essential Ecosystem Area</i>
KESEMAT	: <i>Kelompok Studi Ekosistem Mangrove Teluk Awur / Teluk Awur Mangrove Ecosystem Study Group</i>
KKPRL	: <i>Kesesuaian Kegiatan Pemanfaatan Ruang Laut / Conformity of Marine Space Utilization Activities</i>
KSNT	: <i>Kawasan Strategis Nasional Tertentu / Certain National Strategic Areas</i>
KPA	: <i>Kawasan Pelestarian Alam / Nature Conservation Area</i>
KSA	: <i>Kawasan Suaka Alam / Natural Reserve Area</i>
KTH	: <i>Kelompok Tani Hutan / Forest Farmers Group</i>
KPI	: Key Performance Indicators
LSM	: <i>Lembaga Swadaya Masyarakat / Non-Governmental Organization</i>
MoEF	: Ministry of Environment and Forestry
MPA	: Marine Protected Areas
MMAF	: Ministry of Marine Affairs and Fisheries
MMR	: Measurement, Monitoring, Reporting
MRV	: Monitoring, Reporting, Validating
NDC	: Nationally Determined Contribution
NTFP	: Non-Timber Forest Product
PADIATAPA/FPIC	: <i>Persetujuan Dengan Informasi Awal Tanpa Paksaan / Free, Prior and Informed Consent</i>

PBB/UN	: <i>Perserikatan Bangsa-Bangsa / United Nations</i>
PDDT	: <i>Pembangunan Daerah Tertinggal dan Transmigrasi / Development of Disadvantaged Regions and Transmigration</i>
Pemda	: <i>Pemerintah Daerah / Regional Government</i>
PEN	: <i>Pemulihan Ekonomi Nasional / National Economic Recovery</i>
PES	: <i>Payment for Ecosystem Services / Payments for Ecosystem Services</i>
PRK	: <i>Pembangunan Rendah Karbon / Low Carbon Development</i>
PNS	: <i>Pegawai Negeri Sipil / Civil Servants</i>
PPLH	: <i>Pejabat Pengawas Lingkungan Hidup / Environmental Supervisory Officer</i>
PPLHD	: <i>Pejabat Pengawas Lingkungan Hidup Daerah / Regional Environmental Supervisory Officer</i>
PSDKP	: <i>Pengawasan Sumberdaya Kelautan dan Perikanan / Supervision of Marine and Fisheries Resources</i>
PolSus	: <i>Polisi Khusus / Special Police Precinct</i>
PKSM	: <i>Penyuluh Kehutanan Swadaya Masyarakat / Community-Based Forestry Extension Officer</i>
Pokmaswas	: <i>Kelompok Masyarakat Pengawas / Community Monitoring Group</i>
Perpres BRGM	: Presidential Regulation Number 120 of 2020 concerning Peatland and Mangrove Restoration Agency
PKHB	: <i>Program Karbon Hutan Berau / Berau Forest Carbon Program</i>
PKKPRL	: <i>Persetujuan Kesesuaian Kegiatan Pemanfaatan Ruang Laut / Approval of Conformity of Marine Space Utilization Activities</i>
PMK	: <i>Peraturan Menteri Keuangan / Minister of Finance Regulation</i>
PPLHD	: <i>Pejabat Pengawas Lingkungan Hidup Daerah / Regional Environmental Supervisory Officer</i>
PPNS	: <i>Penyidik Pegawai Negeri Sipil / Civil Servant Investigators</i>
PSN	: <i>Proyek Strategis Nasional / National Strategic Project</i>
RBP	: Results Based Payments
REDD+	: Reducing Emissions from Deforestation and Forest Degradation
OECM	: Other Effective Area-based Conservation Measures
RTRW	: <i>Rencana Tata Ruang Wilayah / Regional Spatial Planning</i>
RTRL	: <i>Rencana Tata Ruang Laut / Marine Spatial Planning</i>
RZWP3K	: <i>Rencana Zonasi Wilayah Pesisir dan Pulau-Pulau Kecil / Zoning Plan for Coastal Areas and Small Islands</i>
RPJMN	: <i>Rencana Pembangunan Jangka Menengah Nasional / National Medium Term Development Plan</i>

RPJP	: <i>Rencana Pembangunan Jangka Pendek / Short Term Development Plan</i>
RPPLH	: <i>Rencana Perlindungan dan Pengelolaan Lingkungan Hidup / Environmental Protection and Management Plan</i>
RZ-KAW	: <i>Rencana Zonasi Kawasan Antarwilayah / Interregional Zoning Plan</i>
RZ-KSNT	: <i>Rencana Zonasi Kawasan Strategis Nasional Tertentu / Zoning Plan for Certain National Strategic Areas</i>
TAKE	: <i>Transfer Anggaran Kabupaten Berbasis Ekologi / Ecologically Based District Budget Transfers</i>
TAPE	: <i>Transfer Anggaran Provinsi Berbasis Ekologi / Ecologically Based Provincial Budget Transfers</i>
TANE	: <i>Transfer Anggaran Nasional Berbasis Ekologi / Ecologically Based National Budget Transfer</i>
TNC	: The Nature Conservation
SDG	: Sustainable Development Goals
UNDP	: United Nations Development Program
UNEP	: United Nations Environment Program
UNFCCC	: United Nations Frameworks Conventions on Climate Change
UUD 1945	: The 1945 Constitution of the Republic of Indonesia
Job Creation Law	: Law Number 11 of 2020 concerning Job Creation
Forestry Law	: Law Number 14 of 1999 concerning Forestry jo. Law Number 11 of 2020 concerning Job Creation
Conservation Law	: Law Number 5 of 1990 concerning Conservation of Biological Natural Resources and Its Ecosystems
Regional Government Law	: Law Number 1 of 2014 concerning Regional Government
Spatial Planning Law	: Law Number 26 of 2007 concerning Spatial Planning jo. Law Number 11 of 2020 concerning Job Creation
SEA	: Strategic Environmental Assessment
Fisheries Law	: Law Number 31 of 2004 concerning Fisheries jo. Law Number 11 of 2020 concerning Job Creation
Environmental Protection Law	: Law Number 32 of 2009 concerning Environmental Protection and Management jo. Law Number 11 of 2020 concerning Job Creation
Coastal and Small Islands Law	: Law Number 27 of 2007 jo. Law Number 1 of 2014 concerning Management of Coastal Areas and Small Islands jo. Law Number 11 of 2020 concerning Job Creation
UU Kelautan	: Law Number 32 of 2014 concerning Marine Affairs
WWF	: World Wildlife Funds
VCS	: Voluntary Carbon Standard





FOREWORD

Minister of Environment and Forestry

The book “Unending Frontier: An Environmental History of the Early Modern World” (2003) by John Richards and “Something New Under the Sun: An Environmental History of the Twentieth-Century World” (2000) by John McNeill offers a comprehensive overview of the global environmental history spanning the past five centuries. Richards delves into the interconnected events in Eurasia from 1450, particularly highlighting the intensified land use following population recovery and succession after the Mongol Wars in the 14th century. On the other hand, McNeill explores the persistent environmental challenges of the 20th century, especially in less industrially developed regions. The age of industrialization ushered in environmental injustices that remain unresolved, including air pollution, limited access to clean water, hazardous waste, biodiversity loss, and climate change.

The present world is confronted with critical challenges: the triple threat of climate change, biodiversity loss, and pollution, all intricately intertwined and urgently demanding attention. Hence, significant and concerted efforts are required to combat these issues. Reflecting on Europe’s environmental history over two centuries, the Rhine River faced three ecological challenges: water regulation and navigation, flood management, and water contamination. This highlights the relevance of Europe’s environmental narrative to global endeavors aimed at remedying and halting environmental degradation. Essential approaches in this context involve ecosystem-based and nature-centered solutions.

The study of Blue Carbon Ecosystem (BCE), integrating marine ecosystems like mangroves, seagrass, estuaries, and coral reefs, holds significant potential as a carbon sink, playing a pivotal role in climate change mitigation. Efforts focused on protecting and managing BCE through ecosystem-based solutions align strongly with the 2030 FOLU Net Sink Agenda, which stands as our national commitment.

To fortify and preserve BCE, the government must continue developing strategies alongside regional authorities, particularly in the following areas:

First, regional spatial planning based on conservation and community-oriented principles.

Second, structuring regional development by identifying primary issues, spatial planning, development clusters, and resource-based carrying capacity.

Third, socio-economic development via regional planning and land use through investment programs, quality human resources, services, and accessible information for all stakeholders, reinforcing indigenous knowledge to address the physical vulnerability of (small) island areas and specifically preserving vulnerable biodiversity.

Fourth, Infrastructure development driven by socio-economic benefits, transportation, communication facilities, and the fostering of social and economic infrastructure in growth centers.

Efforts to protect and manage BCE require robust collaboration. Presently, we collaborate with various entities, including international organizations and foreign governments (bilaterally and multilaterally), to advocate for the conservation and sustainable utilization of BCE. The government's relationship with regional bodies, businesses, and society should be harmonized with constitutional mandates and the hierarchical state structure.

Given the dynamic evolution of regulations regarding the Carbon Economic Value (*Nilai Ekonomi Karbon*), the significance of this BCE study continues to grow. With collective action, I am confident that we can achieve sustainable development goals that harmonize economic growth with environmental preservation. The Ministry of Environment and Forestry is steadfast in its commitment to safeguarding BCE and advocating for their sustainable and equitable utilization for the benefit of present and future generations.

Jakarta, January 27, 2023

**Minister of Environment and Forestry of
the Republic of Indonesia**



Prof. Dr. Ir. Siti Nurbaya, M.Sc



FOREWORD

Minister of Marine Affairs and Fisheries

Blue carbon ecosystems have proven to hold superior capacity to sequester and store carbon compared to terrestrial vegetation, often referred to as green carbon. Effective management of blue carbon is imperative to enhance ecological advantages, increase carbon absorption and storage, and ultimately reduce greenhouse gas emissions. Furthermore, blue carbon ecosystem contributes to bolstering the socio-economic resilience of coastal communities and fishermen in Indonesia in confronting the challenges posed by climate change.

In this context, the Ministry of Marine Affairs and Fisheries shoulders two significant responsibilities: first, as the authority accountable for oceanic affairs and climate within Indonesia for the climate change convention, and second, as the executor of climate change mitigation and adaptation within the marine sector, specifically focusing on blue carbon. To harness the potential of blue carbon in addressing climate change, appropriate strategies and endeavors are essential to support the nation's set contribution targets, also known as Nationally Determined Contribution, encompassing both mitigation and adaptation elements.

Lastly, I wish to extend my gratitude to the authoring team and the Indonesia Ocean Justice Initiative for their publication titled "Critical Natural Capital: Blue Carbon Ecosystem Governance in Indonesia." It is my hope that this study will serve as a commendable starting point and a valuable resource to reinforce the role of the Ministry of Marine Affairs and Fisheries. This will align with the blue economy strategy, promoting the mainstreaming of blue carbon as a critical element in climate change control.

Jakarta, January 27 2023

Minister of Marine Affairs and Fisheries



Sakti Wahyu Trenggono



FOREWORD

Chief Executive Officer Indonesia Ocean Justice Initiative

Coastal ecosystems stand as pivotal resources in bolstering climate change mitigation and adaptation strategies. Among these, Blue Carbon Ecosystems (BCE), such as mangrove forests and seagrass meadows, demonstrate a remarkable capacity to absorb and store carbon, making a crucial contribution to climate change mitigation. Additionally, BCE play a significant role in climate change adaptation, particularly in safeguarding against climate-related impacts such as coastal erosion, sea level rise, water quality regulation, provision of habitats for fisheries and endangered marine species, and fostering economic resilience for coastal communities (Serrano et al., 2019).

Indonesia possesses a remarkable opportunity to harness marine and coastal ecosystems as part of the solution to climate change. According to The National Mangrove Map (2021), existing mangrove areas in Indonesia span over 3,364,076 hectares—the world's largest extent. Indonesian mangrove forests exhibit high potential for carbon absorption, with an impressive 3.14 billion tons stored within them (Murdiyarso, 2015).

At both global and national levels, diverse commitments and actions have been undertaken to safeguard BCE. Indonesia is spearheading the promotion of a sustainable ocean economy, often referred to as the blue economy. The pursuit of a sustainable ocean economy underscores the integral role played by safeguarding coastal and marine ecosystems and preserving biodiversity as one of the primary actions to bolster ocean health. The High-Level Panel for a Sustainable Ocean Economy (2020) report highlights the effective protection and restoration of BCE in various countries as the most cost-effective opportunity to reduce greenhouse gas emissions.

The Presidential mandate that sets out the rehabilitation of 600,000 hectares of mangroves by 2024, demonstrates a resolute commitment and a prime opportunity for mangrove conservation. Furthermore, at the G20 meeting in Bali, Indonesia's leadership drove the agreement on the G20 Bali Leader's Declaration. This declaration acknowledges the pivotal role of mangrove and seagrass ecosystems in addressing climate change, as well as halting and restoring biodiversity loss, emphasizing the adoption of nature-based solutions and ecosystems-based approaches (Art. 15).

While contemporary discussions on BCE lean toward the science of mangrove and blue carbon financing, governance aspects are often sidelined. The Indonesia Ocean Justice Initiative (IOJI), a think tank and policy advocacy entity focused on promoting equitable ocean governance and sustainability, conducted a study on blue carbon ecosystem governance (BCE). This study targets six key elements of BCE governance that necessitate development and strengthening in Indonesia: (1) National Legal and Policy Framework; (2) Institutional Arrangement; (3) Community Engagement and Empowerment; (4) Tenurial Security; (5) Monitoring and Enforcement; and (6) Equitable Financing and Equitable Benefit Sharing. The study thoroughly maps each challenge and offers recommendations for enhancing these six governance elements. These recommendations serve as a point of reference for all stakeholders, particularly the government and regional administrations.

Although corrective actions have been made in the management of BCE, the current climate context calls for more ambitious actions. Furthermore, the urgency of designating BCE as critical natural capital (CNC) is becoming increasingly urgent. Evidence-based policies necessitate effective coordination to unlock the potential of BCE in contributing to climate change mitigation and adaptation, while enhancing the well-being of communities reliant on blue carbon resources.

Strong governance of BCE through collaborative efforts and synergy among stakeholders will serve as a catalyst for a sustainable and equitable future for BCE.

Jakarta, January 27 2023

Chief Executive Officer of Indonesian Ocean Justice Initiative



Dr. Mas Achmad Santosa, SH, LL.M.



FOREWORD

Country Representative The Asia Foundation

Indonesia possesses the world's largest mangrove forest, accounting for approximately 22.6% of the global mangrove ecosystem. Mangrove forests, commonly referred to as mangroves, and seagrass are pivotal as blue carbon ecosystems in our mission to shield and absorb substantial emissions. Therefore, safeguarding and nurturing these blue carbon ecosystems stand as a solution to climate change. As a nation blessed with abundant marine resources, Indonesia holds the potential to advance the populace's well-being and conserve natural resources through its blue carbon ecosystem. The stewardship of these ecosystems could chart a new course for Indonesia's journey towards sustainable ocean management, encompassing social, environmental, and economic facets.

Establishing a roadmap for effective blue carbon governance initiatives is a key strategy in this pursuit. Such governance will play a role in protecting mangrove and seagrass ecosystems, safeguarding their significance as a lifeline for communities reliant on the ocean. The degradation of mangrove forests not only imperils coastal areas from erosion but also disproportionately affects women, who are often engaged in nearshore fishing activities across many Indonesian regions.

Recognizing the paramount importance of Indonesia's blue carbon ecosystem, The Asia Foundation has supported Indonesia Ocean Justice Initiative (IOJI). This partnership conducted a comprehensive stock analysis study, examining the potential and impact of climate change while assessing successful regional initiatives in safeguarding blue carbon ecosystems in the Riau Islands, Bangka Belitung, and East Kalimantan. The findings have captured the current state of these ecosystems and outlined corrective measures essential for their protection. The collaboration involved consultations with various stakeholders, including the Ministry of Environment and Forestry, Ministry of Marine Affairs and Fisheries, Coordinating Ministry for Maritime Affairs and Investment, Peatland and Mangrove Restoration Agency, provincial/district governments, academics, and non-governmental organizations.

The study extensively scrutinizes the blue carbon ecosystem, assessing policy and legal frameworks, institutional arrangement, community participation, tenurial security, monitoring and enforcement, financing and equitable benefits distribution. It is hoped that the study's findings will furnish policy recommendations to fortify blue carbon ecosystem governance in Indonesia. These recommendations are intended to be scrutinized, collectively deliberated upon, and embraced by stakeholders, symbolizing a shared commitment to safeguard and nurture our invaluable blue carbon ecosystem.

The Asia Foundation extends its gratitude to all stakeholders who contributed to this study, particularly the Ministry of Environment and Forestry and the Ministry of Marine Affairs and Fisheries for their support. This collaborative effort between civil society and the government serves to reinforce environmental programs, showcasing synergy and collaboration. The Asia Foundation takes pride in fostering collaborative engagement among the government, civil society, and all stakeholders, and is honored to have supported this study.

Jakarta, January 27 2023

Country Representative of The Asia Foundation, Indonesia

The Asia Foundation

Hana A. Satriyo





EXECUTIVE SUMMARY

Blue Carbon Ecosystems as Critical Natural Capital: Governance of Blue Carbon Ecosystems in Indonesia

The worsening impacts of climate change due to human activities are predicted to pose a significant threat to oceans and coastal areas.¹ On the other hand, 17% of the world's blue carbon reserves are found in Indonesia.² These reserves present a significant opportunity for Indonesia to utilize the Blue Carbon Ecosystems (BCE) as a solution to address climate change.

Despite the considerable potential of BCE in addressing climate change and improving the well-being of coastal communities, these ecosystems have long been threatened by anthropogenic pressures.³ Pressures and threats to the health of BCE are caused by aquaculture activities, mangrove deforestation, agriculture, coastal development, pollution, and unsustainable/destructive fishing practices.⁴ In Indonesia, aquaculture, palm oil plantation, and coastal area development are the main causes of mangrove ecosystem degradation.⁵ When degraded, BCE transitions from being a carbon-absorbing ecosystem to a significant contributor to Greenhouse Gas (GHG) emissions.⁶ BCE degradation also harms the protection of coastal ecosystems and jeopardizes the livelihoods of communities dependent on BCE.

Using a normative-empirical study method and a comparative approach, this study examines 6 (six) elements of BCE governance, namely: (1) national legal and policy framework; (2) institutional arrangements; (3) community engagement and empowerment; (4) tenurial security; (5) monitoring and enforcement; and (6) funding and equitable benefit sharing. This study is expected to answer three main questions. First, how does the national legal and policy framework regulate BCE management? Second, what are the main challenges faced by government and non-government actors in providing effective protection for BCE and the communities that depend on BCE (blue carbon dependent people)? Third, what kind of policies need to be pursued to strengthen BCE protection and empower people who depend on BCE?

1 OECD, Adapting to a changing climate in the management of coastal zones, Environment Policy Paper no. 24, 2021

2 Alongi et al., "Indonesia's blue carbon: a globally significant and vulnerable sink for seagrass and mangrove carbon", 2015.

3 Anthropogenic pressure is defined as "human activity, whether intentional or unintentional, and carried out continuously, which has a negative impact on society because it triggers or accelerates the occurrence of disasters" (Gill & Malamud 2017: 248)

4 Dorothee Herr, et al., "Pathways for implementation of blue carbon initiatives", Aquatic Conservation Vol. 27, (2017).

5 World Bank, The Economics of Large-scale Mangrove Conservation and Restoration in Indonesia, 2022.

6 Maria F. Adame et al., "Future carbon emissions from global mangrove forest loss", Global Change Biology Vol. 27 (12), 2021.

KEY FINDINGS

1. National Legal and Policy Framework

From the aspects of legal and national policy framework, efforts to protect and manage BCE in Indonesia have been regulated in various legal regimes, namely the forestry regime, coastal and marine regime, environmental protection and management regime, spatial planning regime, and regional government regime. In these various legal regimes, there are already protection or safeguard instruments for BCE. However, not all BCE are protected or managed sustainably. For example, in the mangrove ecosystem, around 49% of the mangrove area in Indonesia is included in conservation and protected forest areas, and 3% is included in marine conservation areas. However, mangroves that are not included in protected areas continue to be threatened by anthropogenic pressures. Apart from that, after the enactment of the Job Creation Law, it was discovered that there were exempting provisions that can weaken the protection and safeguards of BCE, such as policies on strategic national projects.

2. Institutional Arrangement

As a cross-sector issue, BCE management is carried out at various administrative levels and jurisdictions.⁷ Mangroves are included in the category of coastal and small island resources based on Law No. 27 of 2007 jo. Law No. 1 of 2014 regarding Management of Coastal Areas and Small Islands (Coastal Areas and Small Islands Law)⁸, and is included in the forest category based on Law No. 41 of 1999 on Forestry (Forestry Law).⁹ With this definition, the Ministry of Environment and Forestry (MoEF) holds the main authority in managing mangroves in forest areas (state forest areas), and the Ministry of Marine Affairs and Fisheries (MMAF) has authority over managing mangroves in coastal areas and small islands outside forest areas. The role of the MoEF in mangrove management is more significant because it has authority over 79% of mangroves in forest areas, compared to MMAF which has authority over 21% in non-forest areas.¹⁰ Apart from these two ministries, there are other ministries and agencies at the central and regional levels which also have authorities to manage mangroves.

7 Krott, M. (2005). Forest Policy Analysis. Dordrecht Springer. References Scientific Research Publishing.

8 Ibid.

9 Indonesia, Forestry Law, Law no. 41 of 1999, Article 1 paragraph (2).

10 Directorate of Soil and Water Conservation, Ministry of Environment and Forestry, National Mangrove Map 2021, (Jakarta: Ministry of Environment and Forestry, 2021), p. 21.

Distribution of Authority in Mangroves Management in Indonesia		
Ministries and/or Agencies	Authority	Regulations in Legislation
Ministry of Environment and Forestry	Planning	Articles 10, 12, 17 (2), and 21 of the Forestry Law jo. Job Creation Law
	Management and Utilization (including issuing permits and licenses)	Articles 21, 27 (4), and 31 (4) of the Forestry Law jo. Job Creation Law; Article 135 Government Regulation No. 23/2021 regarding Forest Area Management
	Supervision and Control (including law enforcement)	Articles 60 and 63 Forestry Law jo. Job Creation Law; Articles 266, 267, and 273 Government Regulation 23/2021 regarding Forest Area Management
	Rehabilitation and Restoration	Articles 2 para. (2), 21, and 22 Presidential Regulation No. 120/2020 on Peat And Mangrove Restoration Agency (BRGM Presidential Regulation)
Ministry of Marine Affairs and Fisheries	Planning	Articles 7 para. (2), 7B para. (2) of the Coastal Areas and Small Islands Management of Coastal and Small Islands Law jo. Job Creation Law
	Management and Utilization (including issuing permits and licenses)	Articles 4, 19, and 50 of the Coastal Areas and Small Islands Management of Coastal and Small Islands Law jo. Job Creation Law; Article 5 of Minister of Marine Affairs and Fisheries Regulation No. 31/2020 concerning Management of Marine Protected Areas
	Supervision and Control (including law enforcement)	Article 36 para. (1) of Coastal Areas and Small Islands Management of Coastal and Small Islands Law jo. Job Creation Law
	Rehabilitation and Restoration	Article 2 para. (2), 21, And 22 of BRGM Presidential Regulation
	Research	Presidential Regulation No. 38 of 2023 on the Ministry of Marine Affairs and Fisheries
Ministry of Agrarian Affairs and Spatial Planning	Planning	Article 8 para. (3) of Spatial Planning Law jo. Job Creation Law
National Development Planning Agency/ Ministry of National Planning	Planning	Minister of National Development Decree No. 89/2020 regarding the Establishment of Strategic Coordination Team for Wetland Management in Achieving Sustainable Development Goals and Low Carbon Development
	Management and Utilization (including issuing permits and licenses)	

Distribution of Authority in Mangroves Management in Indonesia		
Regional Government	Planning	Article 7 para. (2) of the Coastal Areas and Small Islands Management of Coastal and Small Islands Law jo. Job Creation Law; Articles 10 and 27 para. (2) of Law No. 23/2014 on Regional Government (Regional Government Law); Article 10 para. (2) of Law No. 26/2007 on Spatial Planning (Spatial Planning Law)
	Management and Utilization (including issuing permits and licenses)	Articles 14 para. (2) and 27 para. (2) of Regional Government Law
	Supervision and Control (including law enforcement)	Article 36 para. (5) of Coastal Areas and Small Islands Management of Coastal and Small Islands Law jo. Job Creation Law; Article 14 para. (7) of Regional Government Law
Peat and Mangrove Restoration Agency	Rehabilitation and Restoration	Article 2 of BRGM Presidential Regulation
Coordinating Ministry of Maritime and Investment Affairs	Rehabilitation and Restoration (technical director team)	Article 14 para. (2) of BRGM Presidential Regulation
	Coordination	Presidential Regulation No. 92/2019 regarding Coordinating Ministry of Marine and Investment Affairs
National Research and Innovation Agency	Research	Presidential Regulation No. 33/2021 on the National Research and Innovation Agency

The distribution of responsibilities concerning seagrass ecosystem management involves fewer ministries and agencies compared to mangrove management. Seagrass falls under the coastal resource classification as outlined in the Coastal Areas and Small Islands Management of Coastal and Small Islands Law, hence granting authority to MMAF for the planning, utilization, as well as supervision and regulation processes, executed jointly with Regional Governments within their specified jurisdictions.

The engagement of multiple ministries/agencies holding authorities over BCE management may potentially lead to “bureaucratic rivalry.” Additionally, the structural organization faces challenges in terms of limited human resource capabilities, and the ministry/agency performance metrics are predominantly based on budget utilization. To address these challenges, the legal framework governing BCE management needs to clearly define the delineation of functions, responsibilities, and jurisdiction on both a national and regional level. Collaborative efforts between coordinating institutions should be supported by comprehensive and inclusive action plans and strategic roadmaps for BCE management, complemented with outcome-based indicators for ministries/agencies. Moreover, bolstering regional institutions necessitates strengthening coordination bodies and multi-stakeholder forums.

3. Community Engagement

Community involvement in BCE governance should occur from the initial stages of planning and policymaking, focusing on site-specific ecosystem management. Engaging the community in the development and execution of BCE natural resource management initiatives, such as the blue carbon project, significantly contributes to fostering social resilience, upholding cultural values, and safeguarding ecosystem services crucial to their livelihoods.¹¹ Community engagement during the policymaking phase has been regulated under Indonesian laws and regulations. However, despite regulation, there remain various hindrances that render this participation ineffective and appear more as a formality. One notable reason is the lack of adequate information provided to the public, hampering their ability to participate effectively.

Effective community involvement in the planning and policymaking process necessitates meaningful public participation. In the context of area-based ecosystem management, the community can engage through several avenues such as (1) Social Forestry schemes; (2) customary forest schemes; (3) community conservation initiatives; (4) participation in the National Economic Recovery program; (5) BCE management via funding projects; and (6) participation in monitoring. However, these programs encounter various challenges due to limited community access to information concerning the aforementioned processes. To address this, assistance from government and civil society groups and the establishment of a multi-stakeholder forum for BCE management that involves community members are essential to ensure substantial public participation. Furthermore, the government needs to streamline the licensing process for communities engaged in managing BCE through Social Forestry and customary forest schemes, as well as other forms of community management stipulated in relevant laws and regulations.

4. Tenorial Security

The welfare of communities that depend on BCE requires guaranteed rights to use, manage, and exploit resources. There are several instruments that can be used to ensure tenorial security for mangrove-dependent people in forest areas and outside forest areas. In forest areas, Social Forestry is the most feasible instrument that can provide legal management with a fairly long licensing period (35 years). Management in non-forest areas needs to rely on collaborative management between communities and regional governments, including BCE in coastal areas. Therefore, a concept of coastal tenure is needed as a way to ensure the tenorial security of coastal communities to manage BCE. The concept of coastal tenure can be translated, among other things, through Other Effective Conservation Measures (OECM).¹²

Indonesia has great OECM potential and there are already several forms/models of coastal management through OECM that have been implemented in the regions. OECM can increase effectiveness, inclusiveness, and equitable conservation to empower local and indigenous communities through collaboration with the government in conservation efforts. OECM can also contribute to achieving national and international targets for the number of marine conservation areas. There are already several forms of community management in Indonesia that have the potential to become OECM, such as the customary *Panglima La'ôt* in Aceh, Sasi in Maluku and Papua, Mane'e in North Sulawesi,

11 Vanderklift, et al., "Constraints and opportunities for market-based and protection of blue carbon ecosystems," *Marine Policy Journal*, (2019), p. 1.

12 OECM is defined as "Geographically defined areas, other than Protected Areas, that are managed and administered in ways that achieve positive and sustainable long-term outcomes for the maintenance of in-situ biodiversity with associated ecosystem functions and services and where applicable, values cultural, spiritual, socio-economic and other related local values." CBD Decision COP 14-8 (translated)

and community-based mangrove rehabilitation in Sinjai District, South Sulawesi.¹³ Several experts have identified existing laws that can be interpreted to support OECM.¹⁴ The OECM concept needs to continue to be discussed by various stakeholders, especially the government and experts so that it is widely understood and can be clearly regulated in national and regional policies.

5. Monitoring and Enforcement

In general, monitoring and enforcement in BCE protection have been regulated in various laws and regulations, including the Forestry Law, Coastal Areas and Small Islands Law, Law No. 32 of 2009 on Environmental Protection and Management (Environmental Protection and Management Law), and Regional Government Law. Apart from being carried out by authorized officials, supervision can also be carried out by the community.¹⁵ Efforts to supervise and enforce the law face several obstacles, including (1) the limited number of human resources carrying out monitoring and enforcement, which is not commensurate with the large number of activity permits that must be supervised; (2) imposition of administrative sanctions that have not been effective in encouraging compliance; and (3) low number of cases that are investigated and prosecuted using corporate criminal liability. These obstacles hinder the ability of surveillance officers and law enforcers to detect, respond, and punish to generate a deterrent effect.

6. Financing and Equitable Benefit Sharing

Enhanced opportunities to finance Blue Carbon Ecosystems (BCE) in Indonesia have arisen following the enactment of Presidential Regulation Number 98 of 2021 on the Carbon Economic Value (Presidential Regulation on Carbon Economic Value). This regulation introduces a carbon trading mechanism and results-based payments, among others aimed at supporting mangrove conservation endeavors. Subsequently, the recent issuance of Minister of Environment and Forestry Regulation No. 21 of 2022 regarding the Procedures for Implementing the Economic Value of Carbon (MoEF Regulation 21/2022), marks another significant stride in recognizing and managing BCE. Presidential Regulation on Carbon Economic Value acknowledges the vital role of blue carbon in climate change mitigation, designating mangroves within the sub-sector implementing Carbon Economic Value. Despite these advances, Indonesia faces challenges in acquiring sufficient funding for BCE management, primarily due to: (1) limited State Budget allocations; (2) the absence of a standardized method for calculating the carbon value of BCE; and (3) an insufficient understanding of the potential risks associated with BCE projects.

Effective BCE management must prioritize the community as the primary beneficiary. The fair distribution of these benefits should be driven by considerations of community welfare and their reliance on blue carbon ecosystem services. However, obstacles persist in ensuring equitable benefit distribution, primarily stemming from the lack of tenurial security for the community, hindering effective and equitable benefit allocation. To rectify this, the government needs to intensify efforts in empowering and protecting the rights of communities and ensuring tenurial security to enable effective and equitable benefit sharing. The involvement of civil society groups and universities is crucial in assisting

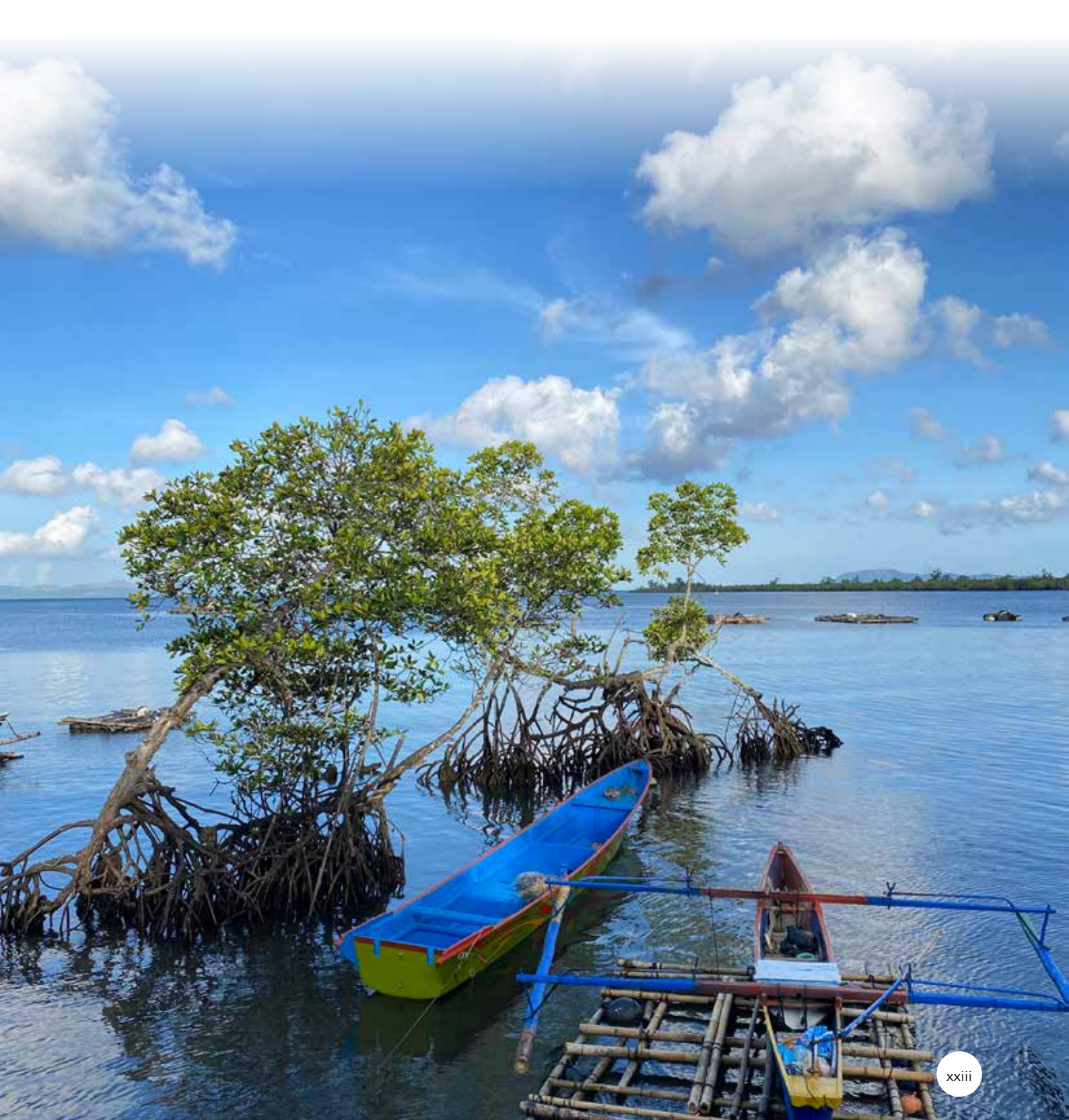
13 Estradivari, et al., "Marine Conservation beyond MPAs: Towards the Recognition of Other Effective Area-Based Conservation Measures (OECMs) in Indonesia," *Marine Policy* 137,(2022), <https://doi.org/10.1016/j.marpol.2021.104939>.

14 Ibid. Legislation that is considered to support the essence of OECD includes UU 5/1960, UU 5/1990, UU 31/2005 jo. Law 45/2009 jo. Job Creation Law, Management of Coastal and Small Islands Law jo. Job Creation Law, Environmental Protection and Management Law jo. Job Creation Law, Law 32/2014 jo. Job Creation Law.

15 Indonesia, Law on Management of Coastal Areas and Small Islands, Law no. 27 of 2007 jo. UU no. 1 of 2014, Article 36 paragraph (6).

community engagement in the benefit distribution schemes within BCE management. Moreover, the development of blue carbon projects in Indonesia should align with the principles outlined in the High-Quality Blue Carbon Principles and Guidelines (2022) established by the international blue carbon community.¹⁶

16 World Economic Forum, Friends of Ocean Action, Salesforce, Ocean Risk and Resilience Action Alliance, Conservation International, and The Nature Conservancy, "High Quality Blue Carbon Principles: A Triple Investment Benefits for People, Nature and Climate", https://www3.weforum.org/docs/WEF_HC_Blue_Carbon_2022.pdf accessed 10 December 2022



Methodology

This study addresses three primary inquiries. First, it explores the existing governance framework, laws and policies, institutional arrangements, community engagement and empowerment, tenurial security, monitoring, and enforcement, as well as funding and equitable benefits sharing in the management of Blue Carbon Ecosystems (BCE). Second, it delves into the main challenges faced by the government and society, particularly those reliant on blue carbon ecosystems (blue carbon dependent people/BCDP), in effectively safeguarding these ecosystems. Third, it outlines steps to enhance governance and fortify the protection of BCE and BCDP.

This study uses a normative-empirical method with a comparative approach. Most of the data and information were qualitative data collected through desk studies, interviews, and focus group discussions involving experts. Although primarily qualitative, several quantitative data were also incorporated to substantiate the study's findings. The study was initiated with a desk analysis to catalog BCE governance challenges and opportunities, as well as pertinent laws, policies, and successful practices implemented in other nations. Interviews were conducted with a spectrum of stakeholders encompassing central and regional government officials, academics, international organization experts, think tanks, national and international NGOs, and civil society groups like forest farmer collectives, coastal communities, small fishermen, and mangrove management community groups.

Field research was carried out in three chosen provinces—Bangka Belitung (Bangka Island), Riau Islands (Bintan Island), and East Kalimantan (Samarinda and Balikpapan). The selection was based on specific criteria: the presence of significant BCE, economic activities potentially endangering BCE health, inclusion in the national mangrove rehabilitation program, and ongoing BCE management initiatives by government bodies, site organizations, and local communities. Notably, East Kalimantan is the inaugural pilot province to receive funding under the World Bank-led emission reduction initiative called the Forest Carbon Partnership Facility.

There were certain limitations that impacted the study's outcomes. *First*, the study focuses only on six governance components, excluding a detailed discussion on the scientific aspect of blue carbon. *Second*, some data remain inaccessible such as field data, restricted public access, or outdated information. *Third*, the study's field visits were confined to three provinces and might not be fully representative of conditions nationwide, particularly in regions divergent from Bangka Belitung, Riau Islands, and East Kalimantan.

The governance framework employed in this study pertains to Bennett's definition (2018), encompassing structure, institutions, and policy-making processes.¹⁷ Furthermore, the study adopts three key enabling conditions from the national blue carbon assessment framework developed by IUCN in 2016: legal, policy, and institutional features.¹⁸ The focal areas of the study are six elements of BCE governance: (1) National Legal and Policy Framework; (2) Institutional Arrangement; (3) Community Engagement and Empowerment; (4) Tenurial Security; (5) Monitoring and enforcement; and (6) Funding and Equitable Benefit Sharing.

17 Nathan J. Bennet., et al. "Environmental governance: A practical one framework to guide design, evaluation and analysis," *Conservation Letters* Vol. 11, (2018). p. 1.

18 Dorothee Herr., et al. "National blue carbon policy assessment framework: towards effective management of coastal carbon ecosystems," (Gland, Switzerland: IUCN, 2016).





Blue Carbon Ecosystems

Functions and Benefits of the Blue Carbon Ecosystem (BCE)

As the largest archipelagic country in the world with a coastline of 108,000 km and a total of 17,504 islands,¹⁹ Indonesian waters, and their natural resources have become a life support for the majority of Indonesian people. This wealth of natural resources simultaneously faces the threat of climate change. The sea and coastal areas are estimated to be the areas most affected as a result of climate change caused by human activities.²⁰ The impact of climate change will further worsen the level of vulnerability of coastal communities and complicate their ability to adapt.²¹ The impact of climate change occurs through various processes, including: (1) sea level rise, (2) coastal storm surges, (3) warming and acidification and (4) alterations in the hydrological cycle.²²

The impact of climate change on the ocean can be irreversible (unable to return to its original state) for centuries to thousands of years.²³ However, this impact scenario can still be overcome if countries act quickly to mitigate climate change and increase adaptive capacity in dealing with its impacts.

Coastal ecosystems hold significant potential in mitigation and adaptation efforts to climate change. BCE, which includes mangroves, seagrass, and salt marshes, have great potential to absorb and sequester carbon, playing an important role in climate change mitigation efforts. Apart from its mitigation function, BCE also provides adaptation benefits to climate change, such as protection against coastal storms, regulation of water quality, habitat for fisheries and endangered marine species, and food security for coastal communities.²⁴

More than 55% of the carbon on earth is absorbed by marine organisms.²⁵ This carbon stored in marine and coastal ecosystems is known as blue carbon, according to the IUCN and UNEP definition.²⁶ BCE thus refers to the coastal ecosystems that are also carbon sinks: mangroves, seagrass, and brackish water swamps/salt marsh. Apart from their ability to

19 Coordinating Ministry for Marine Affairs and Investment, "Reference Data for Indonesian Maritime Regions," <https://kkp.go.id/brsdm/poltekkarawang/article/14863-menko-maritim-launch-data-rujukan-region-kelautan-indonesia> accessed on January 22, 2022.

20 OECD, "Adapting to changing climate in the management of coastal zones," OECD Environment Policy Paper Number 24, (2021).

21 *Ibid.*

22 *Ibid.*

23 IPCC, "Summary for Policymakers. In: Climate Change 2021: The Physical Science Base. Contributions of Working Group I to the Sixth Assessment Reports of the Intergovernmental Panel on Climate Change," (Cambridge University Press, 2021).

24 Serrano, et al., "Conservation of Blue Carbon Ecosystems for Climate Change Mitigation and Adaptation," in Perillo GME, et al., Coastal wetlands: an integrated ecosystem approach, (Elsevier, 2019), p. 965-996

25 Nellemann, et al., Blue Carbon: A Rapid Response Assessment, (United States: United Nations Environmental Program, GRID-Arendal, Birkeland Trykeri, 2009)

26 *Ibid.*

absorb and store carbon, BCE provide various other benefits, such as filtering water, reducing the effects of coastal pollution (such as nutrient content loading), preventing sedimentation, protecting beaches from erosion, and buffering the effects of extreme weather events.²⁷ These benefits of BCE can be categorized into at least seven main functions, namely²⁸:

1. Disaster risk reduction, such as tsunamis, erosion/abrasion, and coastal storms;
2. Mitigation of climate change (capacity to absorb carbon and place to store carbon);
3. Natural buffer and protection against risks related to climate change in coastal areas (climate-related coastal risks);
4. Enhancement of the socio-economic conditions of coastal communities;
5. Protection of marine biodiversity through habitat services;
6. State income originating from ecotourism taxes, payments for ecosystem services (PES), and increasing fish stocks; and
7. Community educational and recreational facilities.

²⁷ *Ibid.*

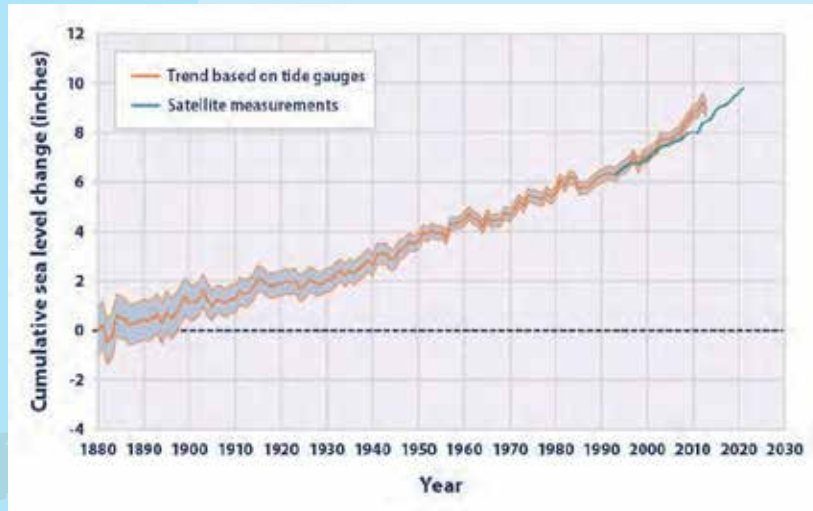
²⁸ *Ibid.*



Infographic 1.1

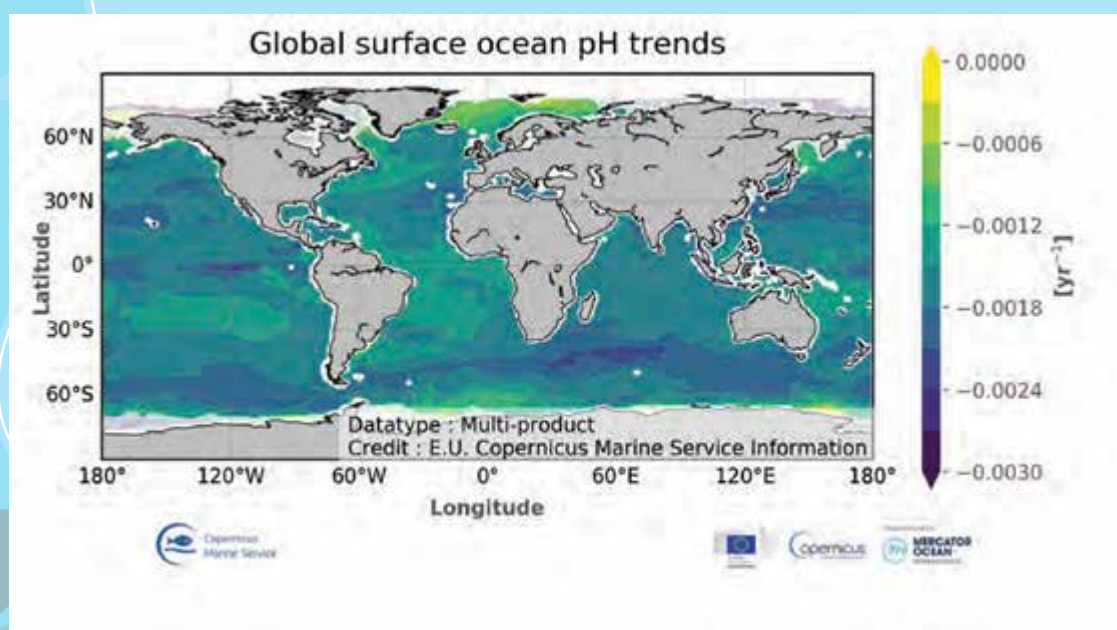
The Ocean: Victim and Solution of Climate Change

Data on increasing sea level rise from 1880-2021



Source: United States Environmental Protection Agency, "Global Average Absolute Sea Level Change, 1880-2021", <https://www.epa.gov/climate-indicators/climate-change-indicators-sea-level>

Ocean Acidification

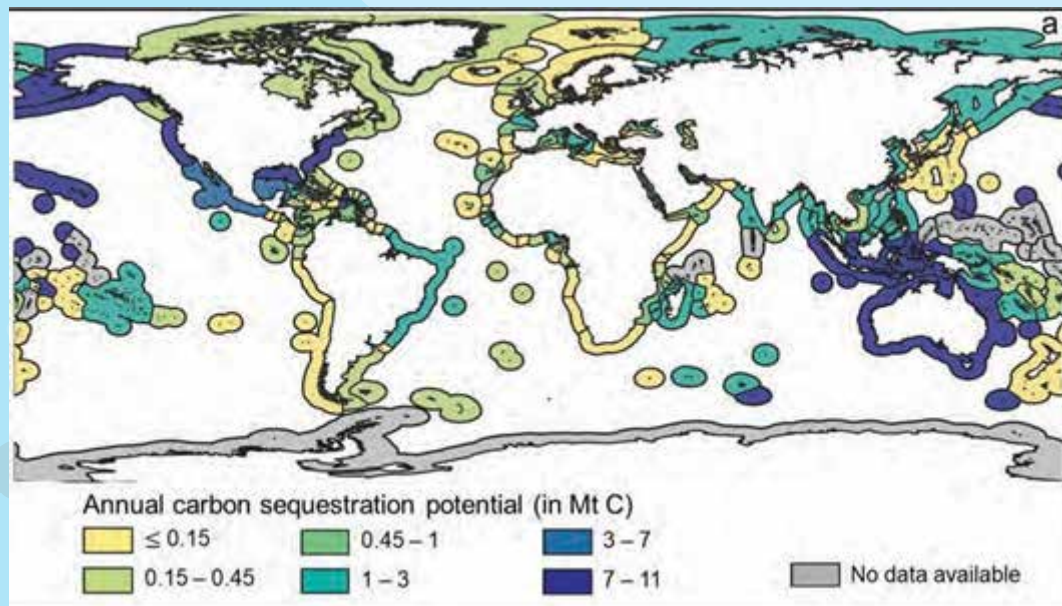


Increase in seawater pH between 1985-2020.

Source: Marine Copernicus, "Global ocean acidification " https://data.marine.copernicus.eu/product/GLOBAL_OMI_HEALTH_carbon_ph_trend/notifications

Potential for carbon absorption from the ocean

The ocean can absorb 30% of carbon emissions produced by human activities. Since the Industrial Revolution, ocean acidity levels have increased by 26% (United Nations, 2021).



Source: Bertram et al., "The blue carbon wealth of nations," Nature and climate change vol. 11, (2021), p. 704-709

Globally, the collective potential for carbon absorption is estimated at 24.0 million tonnes annually for mangroves, 13.4 million tonnes for salt marshes, and 43.9 million tonnes for seagrass. This cumulates in an overall absorption capacity of 81.2 million tonnes per year for BCE.

Potential of Blue Carbon Ecosystems in Indonesia

Indonesia has a great opportunity to utilize marine ecosystems as a solution to climate change with 17% of the world's blue carbon reserves. Indonesia's coastal wetlands are estimated to store one-fifth of blue carbon.²⁹ According to the High-Level Panel for a Sustainable Ocean Economy report, the protection and restoration of BCE in several key countries—including Indonesia—provide the most cost-effective opportunities in contributing to efforts to reduce greenhouse gas emissions.³⁰

At the G20 meeting in Bali in November 2022, Indonesia as the host together with other G20 members succeeded in agreeing on the G20 Bali Leader's Declaration, which included an article related to the protection of mangrove ecosystems. Article 15 states that forest ecosystems, seagrass, coral reefs, and wetland ecosystems including peat and mangroves have a significant role in mitigating and adapting to climate change (Art. 15 Declaration).

For this reason, Indonesia together with other G20 members is committed to increasing efforts to stop and restore biodiversity loss by employing nature-based solutions and ecosystems-based approaches; supporting climate change mitigation and adaptation; and including conservation and protection of BCE (Art.15 Declaration).

Based on the 2021 National Mangrove Map, Indonesian mangrove encompasses an area of 3,364,076 hectares (ha).³¹ The ecosystem services of 3.3 million ha of mangroves in Indonesia are worth at least US\$ 1.5 billion per year.³² The World Bank report shows that mangroves per district have an ecosystem service value of US\$ 2 million to US\$ 50 million over a period of thirty years.³³ Moreover, mangrove forests in Indonesia have very high carbon sequestration potential. The carbon stored in Indonesia is quite large, namely 3.14 billion tonnes in mangrove forests.³⁴

However, mangroves in Indonesia have experienced alarming deforestation, with an estimated deforestation rate of 55,000 per year or a loss of around 30% of mangroves.³⁵ In the 2009-2019 period, Indonesia experienced 182,091 ha of mangrove forest being cut down, with a deforestation rate of 18,209 ha/year.³⁶ The rate of mangrove deforestation in Indonesia is higher than in other countries in Southeast Asia, namely 9,535 ha/year.³⁷

29 Alongi, et al., "Indonesia's blue carbon: a globally significant and vulnerable sink for seagrass and mangroves carbon," *Wetlands Ecology and Management* 24, 3-13, (2015), p. 1-11.

30 Hoegh-Guldberg. O., et al., "The Ocean as a Solution to Climate Change: Five Opportunities for Action," World Resources Institute, (2019), p. 1-116.

31 Directorate of Soil and Water Conservation, Ministry of Environment and Forestry, National Mangrove Map 2021, (Jakarta: Ministry of Environment and Forestry, (2021), p. 21.

32 World Bank, "The Economics of Large-scale Mangrove Conservation and Restoration in Indonesia," (2021), p. 5.

33 *Ibid.*

34 Murdiyarso, et al., "The potential of Indonesian mangroves forests for global climate change mitigation", *Nature Climate Change* Vol. 5, (2015), p. 1090.

35 Julie Mollins, "Data & Facts: Contribution of mangroves to mitigating climate change in Indonesia", CIFOR, <https://forestsnews.cifor.org/56920/data-fak-kontribut-mangrove-pada-mitigasi-bangun-iklim-di-indonesia?fnl=>, accessed 22 September 2022.

36 Arifianti, et al., "Mangrove deforestation and CO2 emissions in Indonesia," *IOP Conference Series: Earth and Environmental Science*, (2021), p. 3.

37 Friess, et al., "Rates and drivers of mangroves deforestation in Southeast Asia, 2000– 2012" *Proc Natl Acad Sci* vol. 113 (2), (2016), p. 347.

Indonesia as the Largest Mangrove Country in the World

Indonesia is active in ASEAN, APEC, and G20 forums. Indonesia's position, as the biggest mangrove country in the world, can be used to initiate international and regional cooperation in saving the world's mangrove ecosystem.



Figure 1.1
Five Biggest Mangrove Countries in the G20

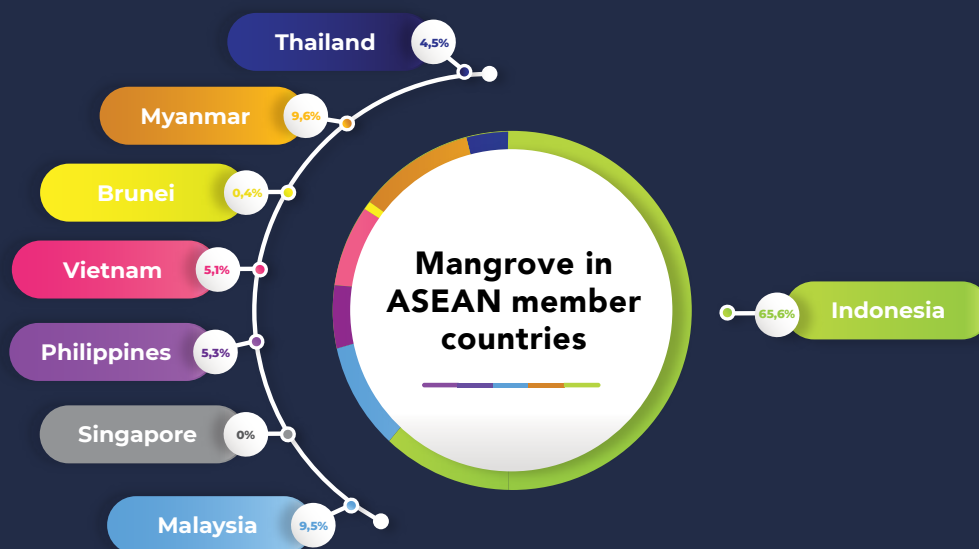


Figure 1.2
Comparison of Indonesia's Mangrove Area with Countries in Southeast Asia
Source: Ocean Wealth, "Mangrove Restoration", <https://maps.oceanwealth.org/mangrove-restoration/>.

Mangrove damage in Indonesia is mostly caused by anthropogenic pressures,³⁸ such as aquaculture, agriculture, logging, and infrastructure development (mining, ports, housing).³⁹ Among these pressures, aquaculture is the main driver, contributing to as much as 36% of mangrove deforestation in Indonesia.⁴⁰

In various coastal regions of Indonesia, there exist submerged seagrass or aquatic plants that flourish within the sea. There are 16 distinct seagrass species, constituting about 22% of the total species found worldwide.⁴¹ The recorded expanse of seagrass in Indonesia covers an area of 293,464 hectares⁴² and stores approximately 0.39 billion tonnes.⁴³ This accounted area is estimated to represent merely 16-35% of the potential available area.⁴⁴ It is speculated that Indonesia has experienced a reduction in its seagrass population by around 30-40%, primarily due to coastal development.⁴⁵

Research conducted in the waters of eastern Indonesia indicates that only 43% of the seagrass is classified as 'healthy' or 'good'.⁴⁶ Approximately 50% of these beds are labeled as 'unhealthy', with the remaining 7% categorized as 'bad'.⁴⁷ According to experts, challenges in gathering seagrass data in Indonesia include the necessity for specialized expertise, substantial budgets, and the absence of historical data relating to the distribution, both spatially and temporally, of seagrass.⁴⁸

Blue Carbon Ecosystem Governance

Although the term "Blue Carbon" was introduced in UNEP's Rapid Assessment Report 2009, there is no specific reference to define the concept of BCE governance.⁴⁹ As a general term, governance is defined by Bennett (2018) as including "structures, institutions and processes that determine who makes decisions, how decisions are made, how and what actions are taken and by whom."⁵⁰ Through this term, the structure consists of laws, policies, rules, and norms. Meanwhile, institutions relate to stakeholders and actors, such as decision-making bodies, and processes are the process of involving stakeholders to produce quality decisions and to prevent conflicts. Likewise, Bailet (2002), defines marine

38 Anthropogenic pressure is defined as "human activity, whether intentional or unintentional and carried out continuously, which has a negative impact on society because it triggers or accelerates the occurrence of disasters" Gill and Malamud, "Anthropogenic processes, natural hazards, and interactions in a multi-hazard framework," *Earth-Science Reviews* vol. 166, (2017), p.247.

39 Herr, et al., "Pathways for implementation of blue carbon initiatives," Wiley, (2016), p. 118.

40 Arifianti, et al., "Mangrove deforestation and CO2 emissions in Indonesia," *IOP Conference Series: Earth and Environmental Science*, (2021), p. 6.

41 *Ibid.*

42 Nurul Dlawani Mirah Sjafrie, et al., *Status of Indonesian Seagrass Fields 2018*, (Jakarta: LIPI Oceanography Research Center, 2018), p. 1-40.

43 Alongi, et al., "Indonesia's blue carbon: a globally significant and vulnerable sink for seagrass and mangroves carbon," *Wetlands Ecology and Management* 24, 3-13, (2015), p.

44 *Ibid.*

45 UNEP, "Seagrass in the South China Sea," UNEP/GEF/SCS Technical Publication Number 3, (2004), p. 1.

46 Supriyadi, et al., "Preliminary Study of Seagrass Conditions in Eastern Indonesian Waters," *Segara Journal* vol. 14(3), (2018), p. 174.

47 *Ibid.*

48 Gadjah Mada University, "UGM Lecturer Develops Seagrass Field Mapping Method" <https://ugm.ac.id/id/berita/22436-dosen-ugm-kembangkan-method-petaan-pada-lamun>, accessed in October 2022.

49 Nellemann, et al., *Blue Carbon: A Rapid Response Assessment*, (United States: United Nations Environmental Programme, GRID-Arendal, Birkeland Trykkeri, 2009), p. 6.

50 Bennett, J. Nathan., et al. "Environmental governance: A practical one framework to guide design, evaluation and analysis," *Conservation Letters* Vol. 11, (2018), p. 2.

governance as “a set of rules, practices, and institutions that interact at all levels to enable fairness and sustainability in the allocation and management of marine resources and space”.⁵¹

Despite the great potential of BCE in addressing climate change and improving the welfare of coastal communities, anthropogenic stressors have long threatened the health of BCE. Therefore, effective conservation, rehabilitation, and restoration efforts are needed.

There are at least six elements of BCE governance that need to be developed and strengthened in Indonesia:

1. Legal and Policy Framework

This legal and policy framework answers how legal policy in Indonesia views, assesses, and recognizes BCE as natural capital with high value. The protection instruments regulated in the existing laws and regulations are important aspects of BCE management. To be able to develop and implement environmental law enforcement progressively, it is important to improve existing regulations and policies periodically to protect, preserve, and improve the environment based on the latest policy developments and science.⁵²

2. Institutional Arrangement

Institutional arrangements are needed to regulate one or several institutions that manage BCE in a coherent and integrated manner, which includes processes of planning, restoration, rehabilitation, conservation, sustainable use, supervision, law enforcement, and coordination between institutions.

3. Community Engagement

Effective community engagement is a prerequisite for community empowerment in the decision-making process and site-based BCE management. As a condition for effective management, policies need to recognize the importance of transparency, public accountability, and inclusive processes in decision-making regarding BCE management. This decision-making includes passing regulations, conducting Strategic Environmental Studies (SEA), spatial planning, and implementing Blue Carbon projects. Apart from making decisions, the community also has a potential role in supervising, maintaining, and managing the BCE.

4. Tenurial Security

Tenurial security is a key social component that aims to provide strong incentives for local/ Indigenous People to protect BCE. In essence, tenurial security is the right to access, use, and manage land and resources. Tenurial security can contribute to the welfare of the local community by providing a source of livelihood from the ecosystem services. Tenurial security also influences the local community's access to obtain financial incentives for their conservation efforts.

51 François Baitet, “Ocean Governance: Towards an Oceanic Circle”, DOALOS/UNITAR Briefing on Developments in Ocean Affairs and the LOS, (2002).

52 G20 Bali Leader's Declaration 2022

5. Monitoring and Enforcement

Monitoring and enforcement efforts need to respond to legal violations that could damage the BCE. Violations can be committed by individuals who do not hold a permit or licensed business actors who violate the provisions on space utilization resulting in damage to the BCE.

6. Financing and Equitable Benefit Sharing

Efforts to maintain BCE's function in absorbing and storing carbon, as well as providing other ecosystem services, require large costs. The State Budget is often insufficient. Therefore, various funding schemes are needed. Funding sources must also be allocated to provide compensation to the community, business world, and government through providing incentives to protect BCE.

We recognize that the efficiency of BCE governance is influenced by various factors, including data availability and technical expertise required for successful BCE management. Additionally, according to the UNFCCC report focusing on enhancing climate change mitigation and adaptation strategies in marine and coastal sectors, several other governance factors—such as science, capacity building, technological approaches, engagement of Indigenous peoples' knowledge, and addressing loss and damage—require development as part of the response to climate change challenges in the marine sector.⁵³ However, due to the study's scope limitations, these specific aspects will not be addressed in this research.

53 UNFCCC, "UNFCCC Ocean-Climate Action at COP27," <https://www.wetlands.org/publications/unfccc-ocean-climate-action-at-cop-27/> accessed on 2 January 2023.





Legal and Policy Framework

Legal frameworks at both global and national levels are very important in BCE governance. Legal frameworks at the international level (soft law and hard law) can provide an understanding of basic concepts and principles, as well as become a reference for cross-border international agreements and cooperation—for example, the common principle but differentiated responsibilities (CBDR)⁵⁴, *in dubio pro natura*⁵⁵, intergenerational⁵⁶ & intragenerational equity⁵⁷ (as stated in the Rio Declaration⁵⁸), biodiversity conservation⁵⁹, precautionary principle,⁶⁰ principle of prevention⁶¹, polluter pays principle, and sustainable development. However, the term sustainable development was criticized by Prof. Ben Boer, who argued that the concept is too “anthropocentric” and “utilitarianistic”. This can be seen from the emphasis on the environment as a supporting role, and as an instrument or resource that is utilized (exploited) by humans by ignoring the needs of the natural environment. Therefore, Boer believes that it is more appropriate to use the term Ecologically Sustainable Development (ESD).⁶² At the national level, BCE protection regulations can be found both in the constitution and other statutory regulations.

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- 54 Common but Differentiated Responsibility (CBDR), introduced in the 1992 Rio Convention, is an international principle which stipulates that every country has the responsibility to overcome the problem of environmental degradation in the world, but the weight of responsibility for each country is not the same.
- 55 IUCN, “Environmental Rules of Law”, <https://www.iucn.org/our-union/commissions/world-commission-environmental-law/our-work/history/foundational-documents-4>, accessed 25 July 2022
- 56 Intergenerational Equity emphasizes efforts to ensure the availability of equivalent opportunities or opportunities for future generations to obtain prosperity through the equitable distribution of the benefits of natural resources, so that future generations do not bear the burden (low quality of life) left behind by the current generation.
- 57 Intragenerational Equity emphasizes the importance of justice between one generation and another, including the fulfillment of basic needs in the social environment and quality of life through the equitable distribution of the benefits of natural resources within one generation.
- 58 United Nations, “Report of The United Nations Conference on Environment and Development (UNCED)”, in *The United Nations Conference on Environment and Development, Rio de Janeiro, June 3-14, 1992*, (New York: United Nations, 1993).
- 59 The principle of biodiversity protection emphasizes that efforts to protect biodiversity do not only involve moral and ethical issues, but are a source of human welfare.
- 60 The precautionary principle emphasizes preventative efforts to avoid a decline in environmental quality.
- 61 The principle of prevention emphasizes the obligation of states, companies and individuals to take steps to avoid or cause environmental damage.
- 62 Ben Boer, “Institutionalizing Ecologically Sustainable Development: the roles of National State and Regional Governments in translating Grand Strategy into Action”, *Wilamette Law Review*, Vol. 31, (1995).

Constitution

Recently, there has been an affirmative phenomenon at the global level, where 80% (156 out of 193) of UN member countries have regulated the protection of the earth and the protection of the carrying capacity of ecosystems in the constitutions of each country (global environmental constitutionalism). There are at least four types of regulations in the constitutions of these countries, namely: (1) substantive environmental rights (75 countries); (2) state environmental duties (68 countries); (3) environmental policy directives (13 countries); and (4) sustainable development for future generations and public trusts (48 countries).⁶³

The constitution plays an important role because it can determine the direction of natural resource management, which is then operationally regulated in other statutory regulations. The regulations or provisions in a country's constitution also indicate whether a country adopts a weak concept or strong concept of sustainability.

The provisions in the constitution are very relevant in developing national policies for BCE protection. The material content contained in the constitution regarding BCE protection, both general and specific, will determine the direction of BCE protection policy; It can be in the form of a strong, medium, or weak protection policy direction. In certain countries, after the 2000s, their constitutions have developed in a direction that emphasizes the importance of protecting the environment, including ecosystems that are under threat/ anthropogenic pressure and have a high level of vulnerability.

Some examples of countries that provide very strong protection measures in their constitutions are (see Appendix 1):

1. Bolivian Constitution⁶⁴

In the Bolivian Constitution, apart from regulating the right to a good and healthy environment, it also regulates the natural rights of natural/other living beings. Specific articles also stipulate state obligations to protect the environment.

2. Dominican Constitution⁶⁵

Like Bolivia, the Dominican Constitution regulates the right to life of non-humans and the state's obligation to protect the environment for intergenerational interests.

3. Brazilian Constitution⁶⁶

The Brazilian Constitution regulates the duties of the state in protecting ecosystems so that future generations have the right to a protected ecosystem. Article 225 regulates in detail the mechanisms or ways in which the state carries out its obligations in protecting ecosystems, which are described in seven obligations.⁶⁷

63 James R. May and Erin Daly, *Global Environmental Constitutionalism*, (Cambridge: Cambridge University Press, 2015)

64 *Constitute, Bolivia (Plurinational State of)'s Constitution of 2009*, (Oxford: Oxford University Press, Inc., 2022), p. 11.

65 *Constitute, Dominica's Constitution Of 1978 With Amendments Through 2014*, (2014), p. 8.

66 *Constitute, "Translation of Brazil 1988 (rev. 2017)"*, *Constitute Project*, https://www.constituteproject.org/constitution/Brazil_2017?lang=en, accessed 30 July 2022.

67 See the appendix for a description of the seven obligations of the state in the Brazilian Constitution.

4. Constitution of Ecuador⁶⁸

Ecuador was the first country to regulate rights for nature. Articles 406 and 407 of the Ecuador Constitution regulate the government's obligations: (a) prohibit non-renewable natural resource extractive activities in certain natural resource ecosystems, such as Protected Areas, and (b) protect fragile and threatened ecosystems, like mangroves. In the Ecuadorian Constitution, there is an exception to the protection of fragile ecosystems if there are activities based on national interest reasons. However, the implementation of this exception must be open and proposed by the President and published by the National Assembly through a referendum. The implementation procedure is not easy, indicating that Ecuador adheres to the strong concept of sustainability.

68 Constitute, "Translation of Ecuador 2008 (Rev. 2021), Constitute Project, https://www.constituteproject.org/constitution/Ecuador_2021?lang=en, accessed 30 July 2022.

Box 2.1

Differences in the Concept of Weak Sustainability and Strong Sustainability

Adelman in 'Justice, Development and Sustainability in the Anthropocene' (2019) divides the concept of sustainable development into weak sustainable development and strong sustainable development.

The weak concept of sustainability is based on the human-centric concept of a market economy where all natural resources, even if they are critical (fragile), can be replaced by other forms of capital.⁶⁹ Weak Sustainability views that natural resources can basically be replaced by human-made capital/wealth. Currently, existing natural resources can be utilized or 'sacrificed' if they can provide more economic benefits than if they were not utilized. This economic benefit is a substitute for future generations to utilize.

An analogy of this view is, for example, "it doesn't matter if the current generation uses non-renewable natural resources and throws CO₂ into the atmosphere, as long as enough machines, roads or ports are built as compensation".⁷⁰ This view leads to maximizing monetary compensation for environmental degradation and assumes that technological progress can produce technical solutions to environmental problems as a result of development,⁷¹ which prioritizes economic growth on the grounds that environmental damage can be reduced or repaired through technical improvements and human technology.

On the other hand, the strong sustainability concept views that natural resources cannot be seen as mere supplies of resources. This concept views that monetary value is only

69 Anamika Barua and Bandanas Khataniar, "Strong or weak sustainability: A case study of emerging Asia", *Asia-Pacific Development Journal* 22(1), (April 2016), 1-31.

70 Jerome Pellenc and Tom Dedeurwaerdere, "Weak Sustainability versus Strong Sustainability," *Brief for GSDR* 2015 p.1.

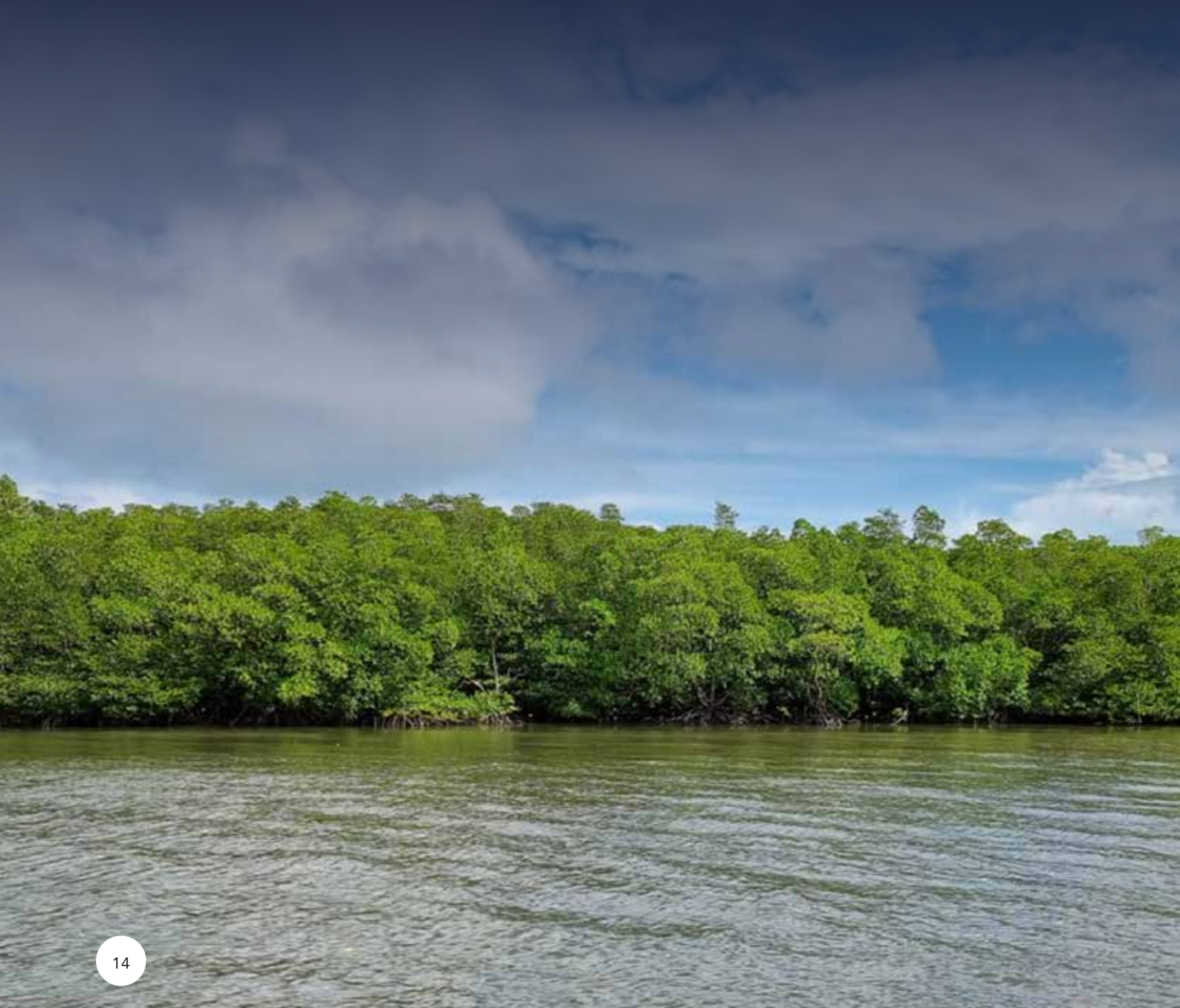
71 *Ibid.*

one part of the entire ecosystem, where other elements that are useful both directly and indirectly for humans are also important aspects that must be maintained in their carrying capacity and sustainable value for ecosystem function and community welfare. Strong sustainability views that natural resources are something that cannot be replaced, meaning that degradation or loss of natural resources cannot be compensated for.⁷² In this concept, environmental degradation cannot be justified, even if this damage will be compensated by increasing human-made capital or increasing welfare.⁷³ This view says that future generations should not accept poor environmental conditions even if these conditions can provide economic prosperity for future generations.⁷⁴

72 *Ibid.* p. 105

73 *Ibid.*

74 *Ibid.*



Regulations in the constitution that strengthen environmental protection provide at least two benefits, namely:

1. Provide development direction that prioritizes environmental protection. The implication is that any other statutory regulations must not conflict with the Constitution. If there is a conflict, its constitutionality can be tested materially at the Constitutional Court.
2. Create an environment for the public to demand, monitor, and supervise the performance of the state (especially the government) in carrying out environmental protection efforts.

What about the Indonesian constitution? The 1945 Constitution does not specifically mention coastal ecosystems, although recognition of the right to a good and healthy environment can be found in Article 28H, while provisions regarding natural resource management can be found in Article 33 paragraph (3) and paragraph (4):

- Article 28H paragraph (1):

“Everyone has the right to live in physical and spiritual prosperity, to have a place to live, and to have a good and healthy living environment, and the right to receive health services”

- Article 33 paragraph (3):

“The earth, water, and natural resources contained therein are controlled by the state and used for the greatest prosperity of the people”

- Article 33 paragraph (4):

“The national economy is organized based on economic democracy with the principles of togetherness, efficiency, justice, sustainability, environmental insight, independence, and by maintaining a balance of progress and unity of the national economy.”

- Article 33 paragraph (5)

“Further provisions regarding the implementation of this article are regulated in law.”

Recognition of the Indonesian people’s right to a healthy and good environment as written in Article 28H paragraph (1) provides for the government’s obligation to consistently maintain the carrying capacity of the environment. The importance of this right is emphasized in one of the latest resolutions of the United Nations General Assembly in July 2022, where access to a clean and healthy environment is a universal human right.⁷⁵ Recognition of this right is also strengthened by the Human Rights Committee, which in 2022 stated that Australia had violated Articles 17 and 27 of the International Covenant on Civil and Political Rights.⁷⁶

Does the Indonesian constitution adhere to strong or weak sustainability? Article 33 paragraph (4) regulates that development is based on the principles of efficiency, justice,

75 This resolution can increase cooperation between countries in protecting ecosystems to ensure human rights beyond borders.

76 Australia breached Article 17 due to its failure to explain delays in climate change adaptation measures, particularly in relation to requests for upgraded sea walls. seawalls) by minority indigenous groups in the Torres Straits Islands, and do not address the reduction in community food sources due to climate change. Article 27 was violated because Australia failed to take timely and adequate adaptation steps to protect the claimants’ collective ability to maintain traditional ways of life and transmit culture, traditions and use of land and sea resources to the next generation.

sustainability, and environmental insight. Looking at the concepts contained in this article, it can be concluded that the direction of the Indonesian constitution is ecological Sustainable Development.

Recognition of ecologically sustainable development, which leads to a strong concept of sustainability, is only regulated in general terms. It is not yet formulated in detail and does not yet describe the importance of maintaining certain ecosystems, such as BCE. Therefore, in the context of the Indonesian Constitution, because further provisions regarding the implementation of this article are regulated in law (Article 33 paragraph (5) of the 1945 Constitution), protection for BCE can still be strengthened in statutory regulations, which recognize that BCE are vulnerable and threatened and require strong protection from the state.



About Ecology Sustainable Development (ESD)

The term sustainable development was criticized by Prof. Ben Boer, who argued that the concept is too “anthropocentric” and “utilitarianistic”. This can be seen from the emphasis on the environment as a supporting role, and as an instrument or resource that is utilized (exploited) by humans by ignoring the needs of the natural environment. Therefore, Boer believes that it is more appropriate to use the term ecologically sustainable development (ESD).⁷⁷

In its National Strategy on ESD, Australia provides the following definition of ESD:

“using, conserving, and enhancing the community’s resources so that ecological process, on which life depends, are maintained and the total quality of life, now and in the future can be increased”

Protection Instruments in Various Legislation

The environmental protection clause in the constitution needs to be translated into various laws and regulations. For example, BCE conservation and protection efforts in Indonesia are regulated in various legal regimes, and the regulations are not specific to BCE, such as environmental, forestry, coastal and marine, spatial planning, and conservation legal regimes. Specifically for regulations regarding mangroves, due to their position between land and coast, mangroves are included both in the land legal regime and the coastal and marine legal regime. The absence of special regulations regarding BCE means that BCE’s status has not been recognized as a ‘fragile⁷⁸ and threatened⁷⁹’ ecosystem, so it has not been supported by strong protection instruments from the state.

In related laws and regulations, there are various protection instruments that can be applied to BCE.

77 Ben Boer, “Institutionalizing Ecologically Sustainable Development: the roles of National State and Regional Governments in translating Grand Strategy into Action”, *Wilamette Law Review*, Vol. 31, (1995).

78 The definition of fragile refers to the fourth Ecological criterion or Biologically Significant Marine Areas (EBSAs). See: GOBI, “EBSA Criteria: Vulnerability, Fragility, Sensitivity or Slow Recovery”, GOBI, <https://gobi.org/ebsas/vulnerable/>, accessed 1 August 2022.

79 The definition of threatened refers to the third Ecological criterion or Biologically Significant Marine Areas (EBSAs). See: GOBI, “EBSA Criteria: Importance for Threatened, Endangered or Declining Species and/or Habitats”, GOBI, <https://gobi.org/ebsas/threatened/>, accessed 1 August 2022.

Table 2.1

Protection Instruments in Various Blue Carbon Ecosystem Protection and Management Regimes

Legislation	Protection Instruments
Law Number 32 of 2009 concerning Environmental Protection and Management ("Environmental Protection and Management Law")	Environmental Management and Protection Plan
	Environmental Impact Analysis
	SEA/Strategic Environmental Assessment
Law Number 27 of 2007 jo. Law Number 1 of 2014 concerning Management of Coastal Areas and Small Islands ("Coastal and Small Islands Law") jo. Law Number 11 of 2020 concerning Job Creation jo. Government Regulation in Lieu of Law Number 2 of 2022 concerning Job Creation	Allocation of Conservation Areas
Law Number 26 of 2007 concerning Spatial Planning ("Spatial Planning Law") jo. Law Number 11 of 2020 concerning Job Creation jo. Government Regulation in Lieu of Law Number 2 of 2022 concerning Job Creation	Allocation of Protected Areas
Law Number 32 of 2014 concerning Maritime Affairs ("Marine Law") jo. Law Number 11 of 2020 concerning Job Creation jo. Government Regulation in Lieu of Law Number 2 of 2022 concerning Job Creation	Blue carbon reserve areas in the Certain National Strategic Area Zoning Plan (RZ-KSNT) and Inter-Regional Area Zoning Plan (RZ-KAW)
Law Number 5 Conservation of 1990 concerning Biological Natural Resources and Their Ecosystems ("Conservation Law")	Marine Protected Area
Law Number 41 of 1999 concerning Forestry ("Forestry Law") jo. Law Number 11 of 2020 concerning Job Creation jo. PERPU Number 2 of 2022 concerning Job Creation	Protected forest
	Conservation Forest
	Customary Forest
	Social Forestry
Law Number 27 of 2007 jo. Law Number 1 of 2014 concerning Management of Coastal Areas and Small Islands ("Coastal and Small Islands Law") jo. Law Number 11 of 2020 concerning Job Creation jo. PERPU Number 2 of 2022 concerning Job Creation Government Regulation Number 28 of 2011 concerning Management of Natural Reserve Areas and Nature Conservation Areas Regulation of the Minister of Maritime Affairs and Fisheries Number 28 of 2018	Essential Ecosystem Areas
	Management by local and traditional communities

Environmental Protection and Management Regime

Environmental Protection and Management Plan

Planning is the initial stage of BCE management which determines the direction of BCE protection and utilization. Based on the Environmental Protection and Management Law, the planning stage includes environmental protection and management, carried out through environmental inventory, determination of ecoregions, and preparation of an Environmental Protection and Management Plan (*Rencana Perlindungan dan Pengelolaan Lingkungan Hidup*/RPPLH).⁸⁰ At the environmental inventory stage, basic data on natural resources (including BCE) will be obtained: potential and availability, type, form of control, knowledge management, forms of damage, and conflict management.⁸¹ Data on environmental inventories are the basis for determining ecoregions,⁸² carrying capacity, storage capacity, and natural resource reserves.⁸³

RPPLH as a planning document at the national, provincial, and district/city levels outlines potential environmental problems as well as utilization, protection, and management efforts within a certain period of time.⁸⁴ Furthermore, RPPLH also contains adaptation and mitigation plans for climate change.⁸⁵ RPPLH is the basis for the preparation of long- and medium-term development plans. Since RPPLH is a planning document, the use of natural resources should be based on the RPPLH in question, which assesses the carrying capacity and storage capacity of the environment.⁸⁶ Distribution and health conditions of BCE needs to be included in the RPPLH. For example, the DKI Jakarta Province RPPLH for 2022-2025 contains the area and density of mangroves and seagrass, as well as the types of utilization.⁸⁷

Strategic Environmental Assessment

The Environmental Protection and Management Law also regulates Strategic Environmental Assessment (*Kajian Lingkungan Hidup Strategis*) as an instrument for preventing environmental pollution/damage. SEA is a series of analysis that ensures the principles of sustainable development are the basis for and integrated into the development of a region.⁸⁸ SEA can help prevent degradation of natural resources and the environment at the policy, plan, and/or program level.⁸⁹ SEA must be created by the government and regional governments in preparing and evaluating: (1) spatial plans and (2) policies, plans, and/or programs that have the potential to cause environmental impacts and risks.⁹⁰ Contents in SEA that form the basis of spatial planning include: (a) carrying

80 Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009, Article 5.

81 Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009, Article 6 (2).

82 An ecoregion itself is a geographical area that has similarities in the characteristics of natural resources, environment, geography and socio-cultural conditions. Ecoregions function as spatial units in environmental inventory and analysis.

83 Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009, Articles 7 and 8.

84 Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009, Articles 1, 9 and 10.

85 Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009, Article 10.

86 Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009, Article 12.

87 DKI Jakarta Provincial Government Environmental Service, DKI Jakarta Province Environmental Protection and Management Plan for 2022-2052, (Jakarta: Environmental Service, 2022).

88 Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009, Article 14.

89 Indonesia, Government Regulation concerning Procedures for Carrying out Strategic Environmental Studies, PP Number 46 of 2016, General Explanation.

90 Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009, Article 15.

capacity and environmental capacity for development; (b) estimates of environmental impacts and risks; (c) service performance/ecosystem services; (d) efficient use of natural resources; (e) level of vulnerability and adaptive capacity to climate change; and (f) the level of resilience and potential for biodiversity.⁹¹ In this case, mangroves and seagrass as important coastal ecosystems are natural resources included in the SEA.

However, after the ratification of Law Number 6 of 2023 concerning the Stipulation of Government Regulations in Lieu of Law Number 2 of 2022 concerning Job Creation into Law, the SEA instrument underwent changes. Article 14 A of the Job Creation Law, in amendments to the Spatial Planning Law, regulates that the implementation of the preparation of spatial planning plans is carried out by taking into account aspects of the carrying capacity and capacity of the environment and SEA. This indicates that SEA is not a mandatory requirement in preparing spatial planning, even though SEA is a very important instrument for preventing environmental damage/pollution.

Environmental Impact Assessment

Based on Article 21 of the Environmental Protection and Management Environmental Protection and Management Law, Environmental Impact Assessment/EIA (*Analisis Mengenai Dampak Lingkungan*) is an assessment that analyzes the significant impact of a business/activity on the environment. The assessment is used as a prerequisite for making decisions regarding business operations, and over the years, has become a very important instrument for preventing environmental damage in Indonesia. At a minimum, the EIA includes the following: a) assessment of the impact of business plans and/or activities; (b) evaluation of activities around the location of the planned business and/or activity; (c) input suggestions and responses from communities directly impacted that are relevant to business plans and/or activities; (d) estimates of the magnitude of the impact and the significant nature of the impact that occurs, if the business plan and/or activity is implemented; (f) environmental management and monitoring plans.⁹² Important impacts analyzed in the EIA include social aspects (the large number of people who will be affected by the planned business and/or activity) and ecological aspects (the number of other environmental components that will be affected and whether or not the impact is reversible).⁹³

In relation to mangrove protection, every business activity that will impact or even damage mangroves needs to be studied using the principles of preservation, sustainability, and prudence. The impact of damage or conversion of mangrove areas can result in serious environmental impacts. As explained in the previous section, mangroves have 7 (seven) main functions, including serving as a carbon absorber and natural buffer for various ecological disasters. The loss of mangrove areas can also hamper efforts to reduce emissions in the context of climate change. With a precautionary principle approach, risks arising from limited scientific knowledge and technology are not reasons to postpone steps to minimize or avoid threats to environmental pollution and/or damage.

After the ratification of the Job Creation Law, the provisions regarding EIA, which were previously regulated by the Environmental Protection and Management Law, underwent various changes. First, Article 25 of the Job Creation Law changes the content of the EIA by regulating that only communities affected directly by relevant impacts can provide input. However, environmental observers, researchers, or non-governmental organizations who have developed and/or assisted communities directly affected can

91 Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009, Article 16.

92 Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009 jo. Law Number 20 of 2020 concerning Job Creation, Article 25.

93 Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009, Article 22.

still be involved.⁹⁴ Second, Article 24 of the Job Creation Law also abolishes the EIA Assessment Commission (*Komisi Penilai Amdal*) and replaces it with a Due Diligence Team, which consists of elements from the central government, regional government, and certified experts.

Whereas previously the Environmental Protection and Management Law stipulated that the EIA Commission consisted of more elements, namely: a) environmental agencies; b) related technical agencies; c) experts in the field of knowledge related to the type of business and/or activity being studied; d) experts in the field of knowledge related to the impacts arising from a business and/or activity being studied; e) representatives of potentially affected communities; and f) environmental organizations. Third, the Job Creation Law also changes the provisions of Article 26 of the Environmental Protection and Management Law regarding the objection mechanism that can be submitted by the public to EIA. Noting these three things are important to optimize EIA instruments which are expected to become instruments for preventing social-ecological risks and impacts from a business activity.

Prohibition of Environmental Damage and Pollution

Apart from preventive instruments in the form of RPPLH, SEA, and EIA as explained above, the Environmental Protection and Management Law also regulates repressive instruments in the form of providing sanctions for environmental damage and pollution. First, for environmental permit holders (after the ratification of the Job Creation Law into environmental approval), if they are deemed to have committed violations in the environmental sector, they can be given administrative sanctions. Article 76 of the Environmental Protection and Management Law regulates administrative sanctions that can be given, including: a) written warning; b) government coercion; c) suspension of environmental permits; or d) revocation of environmental permits. Second, the Environmental Protection and Management Law also regulates the provision of criminal sanctions against perpetrators of environmental pollution and destruction that results in the exceeding of standard criteria for environmental damage (*baku kerusakan lingkungan hidup*).

Regarding destruction and pollution of BCE, Article 21 of the Environmental Protection and Management Law paragraph (3) letters d and e have regulated standard criteria for environmental damage to mangroves and seagrass. Article 98 of the Environmental Protection and Management Law regulates that perpetrators who deliberately cause the standard criteria for environmental damage to be exceeded can be threatened with imprisonment for a minimum of 3 years and a maximum of 10 years and a fine of at least IDR 3 billion and a maximum of IDR 10 billion.⁹⁵ Meanwhile, Article 99

94 Indonesia, Government Regulation concerning the Implementation of Environmental Protection and Management, PP Number 22 of 2021, Article 29 (2).

95 Article 98 reads: "If the act as intended in paragraph (1) results in injury to someone and/or danger to human health, he is threatened with imprisonment for a minimum of 4 (four) years and a maximum of 12 (twelve) years and a fine of at least IDR 4,000,000,000.00 (four billion rupiah) and a maximum of IDR 12,000,000,000.00 (twelve billion rupiah) and if the act as intended in paragraph (1) results in serious injury or death to a person, he is threatened with imprisonment for a minimum of 5 (five) years and a maximum of 15 (fifteen) years and a fine of at least IDR 5,000,000,000.00 (five billion rupiah) and a maximum of IDR 15,000,000,000.00 (fifteen billion rupiah)." Indonesia, Law-Environmental Protection and Management Law, Law Number 32 of 2009, Article 98.





regulates that perpetrators whose negligence causes the standard criteria for environmental damage to be exceeded are threatened with imprisonment for a minimum of 1 year and a maximum of 3 years and a fine of at least IDR 1 billion and a maximum of IDR 3 billion.⁹⁶ Furthermore, the Environmental Protection and Management Law provides sanctions and criminal penalties for perpetrators who dispose of waste without permission into environmental media (including BCE)⁹⁷, burn land,⁹⁸ and carry out activities/businesses without a permit.⁹⁹ The Environmental Protection and Management Law also regulates a one-third increase in sanctions if an environmental crime is committed by, for, or in the name of the business entity.¹⁰⁰

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- 96 Article 99 reads: "If the act as referred to in paragraph (1) results in injury to someone and/or danger to human health, he is threatened with imprisonment for a minimum of 2 (two) years and a maximum of 6 (six) years and a fine of at least IDR 2.000,000,000.00 (two billion rupiah) and a maximum of IDR 6,000,000,000.00 (six billion rupiah). (3) If the act as intended in paragraph (1) results in serious injury or death to a person, he is threatened with imprisonment for a minimum of 3 (three) years and a maximum of 9 (nine) years and a fine of at least IDR 3,000,000,000.00 (three billion rupiah) and a maximum of IDR 9,000,000,000.00 (nine billion rupiah)." Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009, Article 99.
- 97 Article 104 reads: "Any person who dumps waste and/or materials into environmental media without permission as intended in Article 60, is threatened with imprisonment for a maximum of 3 (three) years and a fine of a maximum of IDR 3,000,000,000.00 (three billion rupiah)." Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009, Article 104.
- 98 Article 108 reads: "Every person who burns land as intended in Article 69 paragraph (1) letter h, is threatened with imprisonment for a minimum of 3 (three) years and a maximum of 10 (ten) years and a fine of at least IDR 3,000,000,000.00 (three billion rupiah) and a maximum of IDR 10,000,000,000.00 (ten billion rupiah)." Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009, Article 108.
- 99 Article 109 reads: "Every person who carries out business and/or activities without having an environmental permit as intended in Article 36 paragraph (1), is threatened with imprisonment for a minimum of 1 (one) year and a maximum of 3 (three) years and a fine a minimum of IDR 1,000,000,000.00 (one billion rupiah) and a maximum of IDR 3,000,000,000.00 (three billion rupiah)." Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009, Article 109.
- 100 Article 116 (1) reads: "If an environmental crime is committed by, for, or on behalf of a business entity, criminal charges and criminal sanctions are imposed on: the business entity; and/or the person who gave the order to carry out the criminal act or the person who acted as the leader of the activity in the criminal act." Indonesia, Environmental Protection and Management Law, Law Number 32 of 2009, Article 116 (1)."

Table 2.2

Opportunities and Constraints for Protection and Management of Blue Carbon Ecosystems in the Environmental Protection and Management Regime

Opportunity	Constraint
Environmental Protection and Management Plans and Strategic Environmental Assessments can prevent environmental harm by evaluating the carrying and storage capacities of natural resources, guiding policy-making.	<ol style="list-style-type: none"> 1. Strategic Environmental Assessment is not a mandatory requirement in preparing spatial planning utilization 2. Not all regions have an Environmental Protection and Management Plan
EIA can be an optimal prevention instrument as it examines the impact of business activities from environmental and social aspects.	There is the potential for restrictions on community engagement in the preparation of EIA after the Job Creation Law
Administrative sanctions and criminal sanctions, if implemented appropriately, can provide a deterrent effect that can prevent the recurrence of environmental damage and pollution.	The application of administrative sanctions and criminal sanctions is still faced with several obstacles

Biodiversity Protection Regime

High Conservation Value Area

High Conservation Value Areas (*Area Bernilai Konservasi Tinggi/ABKT*) are by definition areas that have important value for the conservation of biodiversity and produce important environmental services for local communities. ABKT can be a classification of areas with BCE that need to be protected using criteria that have important environmental services. Law Number 1 of 2014 concerning Regional Government ("Regional Government Law") mandates the provincial government to manage areas of important ecosystem value and buffer areas for Nature Reserve Areas and Nature Conservation Areas, where ABKT falls into these two categories. The ABKT identification process is carried out to prepare a report containing the management and monitoring of ABKT.

Based on the Regulation of the Director General of Natural Resources and Ecosystem Conservation Number 5/2017 concerning Technical Instructions for Determining High Conservation Value Areas Outside Natural Reserve Areas, Natural Conservation Areas, and Buru Parks, the areas included in ABKT are: (1) areas that are significantly contains important species diversity; (2) natural landscape elements; (3) areas containing unique, rare, vulnerable, or threatened ecosystems; (4) areas that can provide ecosystem services; (5) areas that have natural resources that provide basic needs for local communities related to biodiversity; (6) areas that are important to the traditional cultural identity of local communities.



Based on the 6 categories above, mangrove areas should be classified as ABKT. In particular, mangroves fit the 4th category (areas that can provide ecosystem services) because they serve as areas with high carbon reserves which contribute to emission mitigation. The Director General's regulation also explains that areas with high carbon reserves must be protected, but does not specifically regulate the protection efforts. The ABKT assessment process must involve preparing a study/report containing information on diversity, ecosystem services, and socio-culture.

Essential Ecosystem Areas

Essential Ecosystem Areas (*Kawasan Ekosistem Esensial/KEE*) are areas outside Natural Reserve Areas, Nature Conservation Areas, and Buru Parks that are ecologically important for biodiversity. KEE has the potential to become a protection instrument for BCE that is not included in conservation areas or protected areas. The definition of an essential ecosystem is an ecosystem or area that has unique habitats and/or types of wild plants and animals and/or has an important function as a life support system. The term essential ecosystem is the same as an important ecosystem.¹⁰¹ KEE can be wetland ecosystems, corridors, ABKT, as well as biodiversity parks and landscapes/landscapes that have geological and geomorphological specificities that are outside the Nature Reserve Areas and Nature Conservation Areas. The aim of establishing KEE is to support community living space adjacent to conservation areas which have important value for biodiversity conservation. For example, the KEE was formed to support elephant habitat in the Bukit Tigapuluh Landscape, Jambi Province.¹⁰²

101 Indonesia, Director General of Forest Protection and Nature Conservation Ministry of Environment and Forestry, Regulation of the Director General of Forest Protection and Nature Conservation concerning Guidelines for Identification and Inventory of Essential Wetland Ecosystems, Number SK.151/IV/SET-3/2007, Article 1.

102 Directorate General of Conservation of Natural Resources and Ecosystems, "Declaration of the KEE Forum Towards Harmonization of Elephant and Human Life", <http://ksdae.menlhk.go.id/info/8392/deklarasi-forum-kee-towards-harmonization-of-life-elephant-and-human.html>, accessed January 20, 2023.

Mangroves can be categorized into KEE as a wetland ecosystem and ABKT. The identification of ecosystems that can be categorized as KEE is regulated in detail in the Regulation of the Director General of Forest Protection and Nature Conservation Number SK.151/IV/SET-3/2007 concerning Guidelines for Identification and Inventory of Essential Wetland Ecosystems. Mangroves that are considered essential are¹⁰³:

- c. mangrove areas categorized as medium, dense, or very dense;
- d. key biodiversity area (KBA), and ecosystem-based adaptation (EBA);
- e. mangrove locations under high threat due to population distribution, settlement, growth, and so on;
- f. mangroves located around river mouths or mud flats (open areas surrounded by quite dense mangrove forests);
- g. mangrove areas in the medium to very rare category, which can be categorized as KEE if they are KBA, BA, and EBA due to their importance to flight routes for migratory birds or if the area is only dominated by mangroves with a medium density level (which is very rare);
- h. located outside the conservation area implemented by the Ministry of Environment and Forestry (MoEF) and the Ministry of Marine Affairs and Fisheries (MMAF);

In practice, several mangrove ecosystems are determined to be included in the KEE scope through regional regulations, for example in East Java¹⁰⁴ and West Papua.¹⁰⁵ The concept of KEE is implied in the Conservation Law and has been explicitly mentioned in Government Regulation Number 28 of 2011 concerning the Management of Natural Reserve Areas and Nature Conservation Areas.¹⁰⁶ However, there is no legal umbrella that specifically regulates the management of KEE, at all the statutory levels, of laws, government regulations, presidential regulations, and ministerial regulations.

Regulations related to KEE need to be further clarified. First, the KEE concept needs to be formally regulated in statutory regulations, and the most ideal law to accommodate this concept is the Draft Law on Conservation of Natural Resources and Ecosystems (RUU KSDAE), which is currently under discussion in the House of Representatives (*Dewan Perwakilan Rakyat*). Second, the regulation of the KEE concept must be harmonized with the regulations regarding spatial planning and management of coastal areas. This means that there needs to be an obligation for each region to include KEE in the spatial planning plan, which has now been integrated between the Regional Spatial Planning Plan (RTRW) and the Coastal Area and Small Island Zoning Plan (RZWP3K). Third, ministerial regulations governing Norms, Standards, Procedures, and Criteria for determining and managing KEE. Fourth, it needs to be regulated in more detail regarding the types of utilization permitted in KEE, as well as regulations related to monitoring and enforcement, including providing sanctions if there is a violation of KEE utilization. These four things are prerequisites for making KEE as one of the forms of BCE protection.

103 Rosdiana, et al., "Legal Protection of the Balikpapan Bay Essential Ecosystem Area", *Lex Suprema* Vol. 4 Number 2, (2022), p. 998-1013.

104 Indonesia, Governor of East Java, Decree of the Governor of East Java concerning Management of the Pangpang Bay Essential Ecosystem Area, Banyuwangi District, East Java Province, Number 188/123/kpts/013/2021.

105 Indonesia, West Papua Provincial Government, West Papua Province Regional Regulation concerning Determination and Management of Mangrove Essential Ecosystem Areas in the West Papua Province Region, Number 5 of 2022.

106 Indonesia, Government Regulation concerning Management of Natural Reserve Areas and Nature Conservation Areas, PP Number 28 of 2011, Article 24.

Table 2.3

Opportunities and Constraints for Protection and Management of Blue Carbon Ecosystems in Biodiversity Regimes

Opportunity	Constraint
High Conservation Value Areas (ABKT) and Essential Ecosystem Areas (KEE) have the potential to become instruments of protection for BCE not included in a conservation area or protected area.	There is no legal umbrella that clearly regulates the management and protection framework for High Conservation Value Areas and Essential Ecosystem Areas.

Spatial Planning Regimes on Land, Coastal and Ocean

Spatial planning instruments on land, coasts, and ocean have an important role in protecting BCE as they minimize overlap between various activities. Spatial planning encourages integrated management and use of ecosystems, thereby creating a policy framework that can minimize conflicts over the use of space and resources as well as the impact of various space use activities on the environment.

Allocation of BCE as a Protected and Conservation Area in the Spatial Planning and Zoning Plan

The Spatial Planning Law and the Coastal and Small Islands Management Law regulate space planning and utilization.¹⁰⁷ Protection for BCE can be found in Article 20 and Article 23 of the Spatial Planning Law jo. Job Creation Law jo. Article 15 Government Regulation Number 21 of 2021 concerning the Implementation of Spatial Planning. These articles stipulate that the preparation of the RTRW Regional Regulations (Perda) for each province must establish protected/conservation areas. Furthermore, Article 10 of the Coastal and Small Islands Management Law jo. Job Creation Law jo. Article 15 of the Government Regulation on the Implementation of Spatial Planning stipulates that, in the preparation of the RZWP3K Regional Regulation, each province must include conservation areas. The spatial planning regime provides protection for BCE which has been integrated into Protected Areas in the RTRW and Conservation Areas in the RZWP3K. Mangroves, seagrass, and peat are unique and vulnerable coastal resources, hence, they need to be designated as Protected Areas based on Article 28 paragraph 3 letter d of the Management of Coastal and Small Islands Law. This article is an explicit statement that mangrove and seagrass ecosystems are important to protect because they are ecosystems vulnerable to change. BCE that have been included in a Protected Area or conservation area should be protected optimally because in Protected Areas no extractive activities are allowed. In integrating RTRW and RZWP3K as mandated by the Government Regulation on the Implementation of Spatial Planning, it must be ensured that there is BCE protection in both protected areas and conservation areas.

The Marine Spatial Planning Plan must also have a conservation area based on Article 5 of the Government Regulation on the Implementation of Spatial Planning, which states that the conservation area must be integrated into: a) the marine spatial pattern in the Marine Spatial Planning Plan and the Marine Area Zoning Plan (RZ) document and b) allocation

¹⁰⁷ Indonesia, Law on Management of Coastal Areas and Small Islands, Law Number 27 of 2007 jo. Law Number 20 of 2020 concerning Job Creation, Article

space in the RZ document for Coastal Areas and Small Islands. Based on this Government Regulation, the Marine Spatial Planning Plan will be integrated into the National RTRW.¹⁰⁸

The Spatial Planning Regime can be an instrument of protection by requiring that every utilization activity must be in accordance with the space allocation and have a Confirmation of Conformity of Space Utilization Activities. The Coastal and Small Islands Management Law regulates that people who use space without permission and cause changes in the function of the space are threatened with imprisonment for a maximum of 3 (three) years and a fine of up to IDR 500 million.¹⁰⁹ Meanwhile, in the Spatial Planning Law, criminal sanctions can be given to anyone who: a) utilizes a designated space without approval and causes a change in the function of the space; b) uses space not in accordance with the spatial plan which results in changes to the function of the space; and c) does not comply with the provisions stipulated in the Confirmation of Conformity of Space Utilization Activities requirements, which is punishable by imprisonment for a maximum of 3 (three) years and a fine of a maximum of IDR 1 billion.¹¹⁰

Criminal sanctions can also be imposed on corporations in the form of imprisonment and fines for their management, as well as a criminal fine of 2 times greater. Corporations may be subject to additional penalties in the form of a) revocation of Business Permit; and/or b) revocation of Legal Entity status.¹¹¹

The Government Regulation on the Implementation of Spatial Planning also regulates administrative sanctions against anyone who does not comply with the spatial planning plan and causes a change in the function of the space. These sanctions include: a) written warning; b) administrative fines; c) temporary suspension of activities; d) temporary suspension of public services; e) location closure; f) revocation of Confirmation of Conformity of Space Utilization Activities; g) cancellation of Confirmation of Conformity of Space Utilization Activities; h) building demolition; and/or i) restoration of space function.¹¹² The process of imposing administrative sanctions needs to go through the process of a) results of an assessment of Confirmation of Conformity of Space Utilization Activities implementation (by the Minister, but can be delegated to the Governor); b) results of Spatial Planning Supervision (by the Minister, but can be delegated to the Governor); c) Spatial Planning Audit results (by central, provincial and regional) or d) complaints about violations of Space Utilization.

However, the current spatial planning regime also has several weaknesses. First, the spatial planning regime opens up the possibility that not all BCE are designated as Protected Areas and conservation areas. This is because, in the drafting of the Regional Spatial Planning and Zoning Plan for Coastal Areas and Small Island Regional Regulations, there is the possibility of conflict between various interests.¹¹³ For example, the RZWP3K Regional Regulation of East Kalimantan Province contains conservation areas that overlap with other economic areas.¹¹⁴

108 Indonesia, Government Regulation concerning the Implementation of Spatial Planning, PP no. 21 of 2021, Article 245.

109 Indonesia, Law on Management of Coastal Areas and Small Islands, Law Number 27 of 2007 jo. Law Number 20 of 2020 concerning Job Creation, Article 75.

110 Indonesia, Spatial Planning Law, Law Number 26 of 2007, Articles 69, 70 and 71.

111 Indonesia, Spatial Planning Law, Law Number 26 of 2007, Article 74.

112 Indonesia, Government Regulation concerning the Implementation of Spatial Planning, PP Number 21 of 2021, Article 195.

113 Suprpto, et al., "Kontestasi aktor dalam proses revisi rencana tata ruang provinsi (RTRWP) di Indonesia (studi kasus: revisi RTRW Provinsi Riau)", *Jurnal Wilayah dan Lingkungan*, Vol. 6 No. 3, (2018), p. 193- 214.

114 Indonesia, East Kalimantan Province, Regional Regulation concerning Zoning Plan for Coastal Areas and Small Islands of East Kalimantan Province for 2021-2041, Number 2 of 2021, Appendix 2.

Second, even if BCE has been included in a Protected Area, violations of spatial planning designations still occur because law enforcement efforts for spatial planning violations have not been effective. The Ministry of Agrarian Spatial Planning and the National Land Agency noted that in 2021 spatial planning audit activities carried out in 121 districts/cities, 3,900 indications of spatial planning violations were found throughout Indonesia.¹¹⁵ The findings of the Ministry of ATR/BPN are in line with a report from the National Legal Development Agency (BPHN) of the Ministry of Law and Human Rights in 2014 which stated that law enforcement which was not yet optimal was a problem due to the large number of spatial planning violations.¹¹⁶ National Legal Development Agency noted that the application of sanctions in spatial planning violations still caused confusion, and the threat of punishment imposed is still relatively light.¹¹⁷ In an effort to increase law enforcement against spatial planning violations, it is necessary to ensure the existence of a) the existence of legislation; b) whether or not there is support from Human Resources (HR); c) the availability of facilities and infrastructure; d) delegation of law enforcement authority; e) system for detecting and handling complaints in the community; f) Standard Operational Procedures for law enforcement; and g) availability of an adequate budget.

Third, the Job Creation Law and Government Regulation on the Implementation of Spatial Planning regulate several provisions that can weaken the spatial planning regime, including:

1. Article 34A of the Job Creation Law regulates that the implementation of National Strategic Projects or strategic national policies can still be implemented even though the project implementation plan has not been stipulated in the spatial plan/Zoning Plan.¹¹⁸ This implies that spatial planning can be 'violated' and use of the area can be carried out even though it is not in accordance with the Spatial Planning Plan. It is feared that the existence of this article will result in damage to BCE affected by PSN.
2. Article 107 of the PP on the Implementation of Spatial Planning regulates that Special Economic Zones, which have been determined based on statutory regulations, and Industrial Areas and Tourism Areas that already have Business Permits do not need to go through the assessment stage of documents for proposed space utilization activities. In fact, the assessment stage of documents for proposed space utilization activities is an important stage to see the conformity between space utilization and the space allocation contained in the spatial plan. This article has the potential to threaten the existence of BCE which has been stipulated in the Regional Regulations governing Regional Spatial Planning or Zoning Plan for Coastal Areas and Small Islands due to the designation of Industrial Areas, Tourism Areas, and Special Economic Zones.
3. Article 127 of the Government Regulation on the Implementation of Spatial Planning regulates that utilization activities cannot be carried out in the Core Zone of Conservation Areas. However, Article 127 excludes activities of a national strategic nature as determined by statutory regulations. This could threaten the existence of BCE in the Core Zone of Conservation Areas, which should be protected from human

115 Ali Akhmad Noor Hidayat, "More than 3,200 Spatial Planning Violations, BPN: Many Occur in Urban Areas", <https://bisnis.tempo.co/read/1437647/besar-dari-3-200-pelaanggaran-tata-ruang-bpn-a-lot-happens-in-cities> accessed 14 November 2022

116 National Legal Development Agency Ministry of Law and Human Rights, Final Report of the Legal Study Team Concerning Spatial Planning Law Enforcement in the Regional Autonomy Framework, (Jakarta: BPHN, 2014)

117 *Ibid.*

118 Indonesia, Spatial Planning Law, Law Number 26 of 2007 jo. Law Number 20 of 2020 concerning Job Creation, Article 34A

activity.¹¹⁹ The provisions in the Job Creation Law show that Indonesia has not yet adopted the strong paradigm of sustainability, implying that BCE is not yet considered critical natural capital, and its existence can be destroyed and replaced with man-made wealth.

Blue Carbon Reserve Area

Another opportunity for protection instruments in the spatial planning regime is the Blue Carbon Reserve Area. This area is part of the Certain National Strategic Area (KSNT) with the aim of environmental control. This area is part of the marine spatial plan and was first regulated in Government Regulation Number 32 of 2019 concerning Marine Spatial Planning. This area is then further regulated in the PP on the Implementation of Spatial Planning, where Article 43 stipulates that the authority to determine the Zoning Plan for Certain National Strategic Areas rests with the Central Government, in this case, the Ministry of Marine Affairs and Fisheries. Certain National Strategic Areas that are designated as Environmental Management Areas (*Kawasan Pengendalian Lingkungan Hidup*) include Blue Carbon Reserves.

Apart from Blue Carbon Reserve Areas, marine ecosystem protection areas can also be designated as Ecologically or Biologically Significant Marine Areas.¹²⁰

Currently, the space allocation for Blue Carbon Reserve Area has been determined in four Inter-Regional Area Zoning Plans, namely: 1) Inter-Regional Area Zoning Plans of Java Sea;¹²¹ 2) Inter-Regional Area Zoning Plans of Maluku Sea;¹²² 3) Inter-Regional Area Zoning Plans of Sulawesi Sea;¹²³ and 4) Inter-Regional Area Zoning Plans of Makassar Strait¹²⁴ while space allocation for ecologically and biologically significant areas is determined in five Inter-Regional Area Zoning Plans of namely Inter-Regional Area Zoning Plans of Makassar Strait¹²⁵, Inter-Regional Area Zoning Plans of Maluku Sea¹²⁶, Inter-Regional Area Zoning Plans of Sulawesi Sea,¹²⁷ and Inter-Regional Area Zoning Plans of North Natuna Sea.¹²⁸

119 Indonesia, Government Regulation concerning the Implementation of Spatial Planning, PP Number 21 of 2021, Article 127.

120 Ecologically or Biologically Significant Marine Areas (EBSA) refer to marine areas that have important values and functions to support ecosystem services.

121 Indonesia, Government Regulation on Zoning Plan for the Java Sea Interregional Area, Presidential Decree Number 3 of 2022 Article 45

122 Indonesia, Government Regulation on Zoning Plan for the Sulawesi Sea Interregional Area, Presidential Decree Number 40 of 2022 Article 45

123 Indonesia, Government Regulation on Zoning Plan for the Maluku Sea Interregional Area, Presidential Decree Number 4 of 2022 Article 45

124 Indonesia, Government Regulation Zoning Plan for the Makassar Strait Interregional Area, Presidential Decree Number 38 of 2020 Article 38

125 *Ibid.*

126 Indonesia, Government Regulation on Zoning Plan for the Maluku Sea Interregional Area, Presidential Decree Number 4 of 2022 Article 46.

127 Indonesia, Government Regulation on Zoning Plan for the Maluku Sea Interregional Area, Presidential Decree Number 4 of 2022 Article 45

128 Indonesia, Government Regulation on North Natuna Sea Interregional Zoning Plan, Presidential Decree Number 41 of 2022 Article 45.

Currently, there are no further regulations regarding procedures and methods for managing Blue Carbon Reserve Areas or areas that are ecologically and biologically significant. The potential problems explained previously, regarding National Strategic Projects that may exclude spatial planning provisions, can be avoided by not applying these exclusion provisions to Blue Carbon Reserve Areas and Ecologically and Biologically Significant Areas.

Table 2.4

Opportunities and Constraints for Protection and Management of Blue Carbon Ecosystems in Spatial Planning Regimes

Opportunity	Constraint
All provinces are required to designate protected areas and conservation areas in their spatial plans.	Not all BCE are designated in Protected Areas and conservation areas.
Protected Areas and Conservation Areas can protect BCE by not allowing extractive activities.	Spatial planning on land, coastal, and oceans can be overridden by national strategic policies. The Core Zone of Marine Protected Areas can be granted permits for activities of national strategic projects.
The designation of a Blue Carbon Reserve Area in the Zoning Plan for Certain National Strategic Areas has the potential to provide protection for BCE.	There is yet a clear explanation of the implications for establishing a Blue Carbon Reserve Area.



Forestry Regime

According to the Forestry Law, forests can be categorized into Conservation Forests, Protected Forests, and Production Forests, depending on their designated functions.¹²⁹

Mangroves may be classified within the aforementioned forest categories or in non-forest areas (also known as “other land use areas”). The explanation accompanying Article 41 of the Forestry Law specifically underscores the importance of giving special consideration to rehabilitating mangroves as an integral part of the forest. Furthermore, Government Regulation Number 23 of 2021 concerning Forestry Administration also regulates the obligations of forest managers to prevent forest destruction. This regulation also regulates the principles of forestry management, including the principles of mangrove forest management. In this section, we will explain the protection instruments for mangroves in forest areas based on their categories.

Protected Forest

By definition, a protected forest is a forest area with the main function of protecting a life support system to regulate water management, prevent flooding, control erosion, prevent seawater intrusion, and maintain soil fertility.¹³⁰ The designation of a forest area as a protected forest is one of the protection instruments for mangroves. Existing mangrove areas in the Protected Forest Area are 907,724 ha or around 27% of the total mangrove area existing in Indonesia. Government Regulation Number 23 of 2022 concerning Forestry Implementation states six criteria for Protected Forests, one of which is a forest area that is a coastal protection area.

Protected Forest is a forest area that has been designated by the government to be protected, so that its ecological functions can continue to function and the benefits can be enjoyed by the surrounding community. Protected Forests can be designated in a) river upstream areas (including the surrounding mountains) as catchment areas; b) along the river; c) coastal edges (for example in mangrove forests); and d) other places according to the expected function.

Protected Forests can be an instrument of protection for mangroves because, in general, the use of Protected Forests is only permitted for non-extractive activities which are divided into three categories, namely area utilization, environmental service utilization, and collection of non-timber forest products (NTFP). Examples of utilization are as follows:¹³¹

- a. Utilization area, namely the cultivation of medicinal plants and animal breeding.
- b. Utilization of environmental services is natural tourism, water utilization, and comfort utilization.
- c. collecting non-timber forest products such as rattan, fruit, and honey.

129 Indonesia, Forestry Law, Law Number 41 of 1999, Article 6.

130 *Ibid.*, Article 1 paragraph (8).

131 Indonesia, Forestry Law, Law Number 41 of 1999, Article 26; Indonesia, Government Regulation on Forestry Implementation, Number 23 of 2021.



Utilization of Protected Forests is carried out by granting Business Permits and Social Forestry. These two permit or approval holders are required to carry out forest protection, which includes preventing forest damage, including damage to mangroves. In Protected Forests, there are divisions into zone, namely core zone, utilization zone, and special zone. The core zone is designated for NTFP activities, ensuring that it does not result in any harm to forest stands.

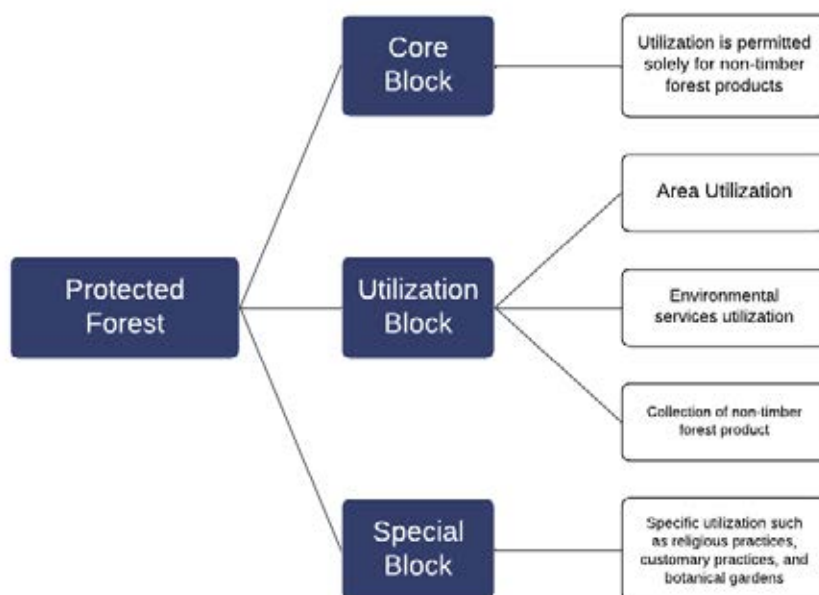


Figure 2.1
Allocation of Blocks in Protected Forests

However, as a protection instrument, the Protected Forest also has several weaknesses. First, it is permitted to use forest areas for development purposes outside of forestry activities with strategic objectives that cannot be avoided. Development activities outside of forestry activities that can be provided include mining (with an underground mining pattern and not open-pit mining) and the construction of public facilities such as toll roads, reservoirs, as well as national strategic program activities, national economic recovery, and food security (food estate).¹³² This activity was granted through the Forest Area Use Approval (previously the Forest Area Borrow-to-Use Permit) by the Minister of Environment and Forestry and without going through an assessment by the House of Representatives as in the regime before the Job Creation Law. Second, the function of protected forests can be changed through changes in the function of forest areas¹³³ to production forests.¹³⁴ Changes in the function of these forests can be carried out in the context of national strategic project activities, National Economic Recovery programs, land acquisition for natural disasters, and land objects for agrarian reform determined by the central government.¹³⁵ The provisions above have the potential to damage mangrove forests on a fairly large scale, and this is inversely proportional to the initial aim of establishing Protected Forests.

Conservation Forest

¹³² Indonesia, Government Regulation on Forestry Implementation, PP Number 23 of 2021, Article 91.

¹³³ Indonesia, Government Regulation on Forestry Implementation, PP Number 23 of 2021, Article 84 (1).

¹³⁴ Indonesia, Government Regulation on Forestry Implementation, PP Number 23 of 2021, Article 77.

¹³⁵ Indonesia, Government Regulation on Forestry Implementation, PP Number 23 of 2021, Article 84 (3).

The total area of mangroves in the Conservation Forest area is 748,271 ha or around 22% of the total mangrove area in Indonesia. By definition, Conservation Forest is a forest area with certain characteristics, which has the main function of preserving plant and animal diversity and its ecosystem. Several types of Conservation Forests are Nature Reserve Areas (nature reserves and wildlife sanctuaries), Nature Conservation Areas (national parks, grand forest parks, nature tourism parks), and game reserves. Conservation Forests are the strongest protection instrument for mangroves because in this area no extractive use is permitted. Utilization of forest areas is not permitted in reserve forests and national parks.¹³⁶ In national parks, the central area is strictly safeguarded, and any alterations due to human activities are strictly prohibited. In fact, in these two areas, rehabilitation activities are also prohibited in order to maintain the integrity/authenticity of the ecosystem. In general, in Nature Reserve Areas, utilization is only limited to the functions of research, education, carbon storage, water utilization, tourism utilization, and utilization of germplasm sources to support cultivation. In contrast, Nature Reserve Area, utilization is only limited to the functions of research, education, carbon storage, water utilization, tourism utilization, and utilization of germplasm sources to support cultivation. Utilization in Nature Conservation Areas can take the form of traditional utilization, namely NTFP collection activities, traditional cultivation, and limited traditional hunting. Furthermore, development activities outside of forestry activities are not allowed in Conservation Forest areas.¹³⁷



Figure 2.2
Types of Conservation Forests

Similar to Protected Forests, potential problems occur because the designation of Conservation Forests can be diverted by two things. First, there is a possibility of altering the function of Conservation Forests to either Protected Forests or Production Forests¹³⁸ Second, Conservation Forests can be changed in function if there are proposals for National Strategic Projects activities, national economic recovery programs, land acquisition for natural disasters, and land objects for agrarian reform determined by the Central Government.¹³⁹

¹³⁶ Indonesia, Forestry Law, Law Number 41 of 1999, Article 24.

¹³⁷ Indonesia, Government Regulation on Forestry Implementation, PP Number 23 of 2021, Article 32.

¹³⁸ Indonesia, Government Regulation on Forestry Implementation, PP Number 23 of 2021, Article 77.

¹³⁹ Indonesia, Government Regulation on Forestry Implementation, PP Number 23 of 2021, Article 84 (3).

Social Forestry

Social Forestry (perhutansos) is a system of managing or utilizing forests located within state forest areas or private forests/customary forests and carried out by local communities or customary law communities (Indigenous People). The main objectives of utilizing forests under this Social Forestry scheme is to improve the welfare of local communities and maintain environmental balance. Social Forestry management can be carried out in the form of village forests (HD), community forests (HKm), community plantation forests (HTR), customary forests, and forestry partnerships. Forest utilization activities in Social Forestry scheme include: activities to utilize areas, utilize environmental services, utilize wood and non-timber forest products, collect wood and non-timber forest products, and process and market forest products optimally and fairly for the welfare of the community while maintaining sustainability. Social Forestry management can be carried out in the following forms:

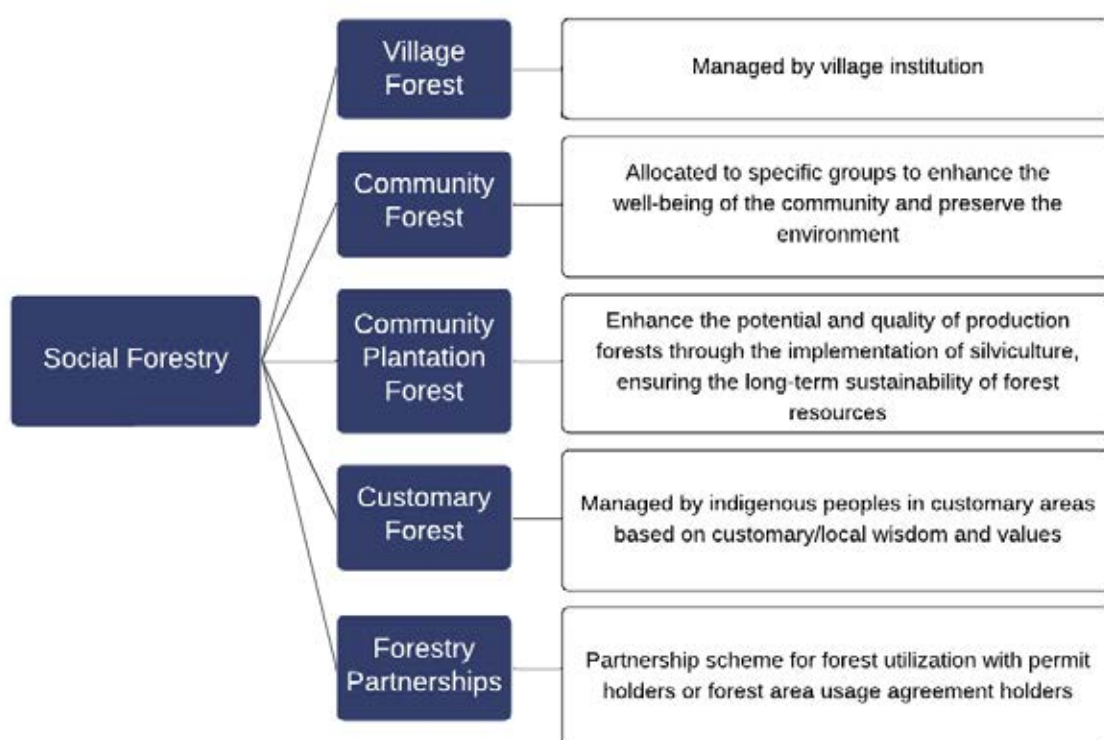


Figure 2.3

Forms of Social Forestry

Social Forestry is a form of community access to manage mangroves in forest areas. This access is important, among other things, to ensure tenurial security. The Social Forestry management agreement has a term of 35 years and can be extended. Every management approval holder, in carrying out forest management (social forestry) must comply with the principles of sustainable forest management (sustainable forest management), protecting the area from environmental damage and pollution, carrying out forest protection, and planting and maintaining forests in the work area.

The weakness of the management of Perhutansos is the approval process, even though the determination has been issued by the Minister. This situation can be altered if there is a shift in the membership of the agreement holder, a change in the work area, or a change

in cooperation agreement for the forestry partnership agreement. Article 96 paragraph (3) Minister of Environment and Forestry Regulation Number 9 of 2021 then further details that changes to the work area in question can be made if there is a change in the function of the forest area, a change in the designation of the forest area, the resolution of tenurial conflicts, and overlaps with permits and other approvals. Not only that, in cases where the areas that have been approved as Social Forestry is designated as a national strategic project, the Minister can also make changes to the Social Forestry Management Approval that has been issued.¹⁴⁰

Customary Forest

Customary Forests are the only Social Forestry scheme that transfers forest ownership rights. Customary Forest is a forest within the territory of a customary law community. This scheme provides tenurial security and justice for indigenous communities to own and manage forests sustainably to ensure their welfare. All types of state forests (Production

¹⁴⁰ Indonesia, Minister of Environment and Forestry, Regulation of the Minister of Environment and Forestry concerning Social Forestry Management, Minister of Environment and Forestry Regulation Number 9 of 2021, Article 97.



Forests, Protection Forests, and Conservation Forests) can be converted into Customary Forests and become separate parts of state forests. In Customary Forests, communities manage their forest areas based on their respective customary laws.

Customary Forests are a crucial protection instrument. Based on data from the National Indigenous Peoples Alliance (AMAN), Customary Forests store vast carbon reserves. The area of customary territory mapped in a participatory manner by indigenous communities reached 12.4 million ha, and of this 12.4 million ha, the area of Customary Forest reached 8,748,109 hectares or around 70% of the total customary territory. This area stores 6.946 billion tons of carbon stock.¹⁴¹ However, until now, the designation of Customary Forests is still experiencing stagnation. Of the total area of 12.4 million ha, there are 99 customary areas that have been designated by the regional government through regional legal products with an area of 2.56 million ha. Then there are 616 maps of customary areas that have been regulated by regional legal products with an area of 7.16 million ha, the determination process of which still has to be followed up with a Regent's Decree or Regulation. The remaining 2.71 million ha of customary areas do not have any regional legal products at all.¹⁴²

Prohibition of Damaging Blue Carbon Ecosystems in the Forestry Regime

The Forestry Law regulates efforts to prevent forest destruction, including mangrove forests. Article 50 states that there is a prohibition on cutting down trees in forest areas without a utilization permit. Therefore, cutting down trees – including mangroves – is still permitted as long as you have a utilization permit, such as a utilization permit in the Production Forest area for the production of mangrove charcoal. Criminal sanctions against perpetrators of forest logging that do not comply with permits are regulated in Law Number 18 of 2013 concerning Prevention and Eradication of Forest Companies. Perpetrators who cut down trees in forest areas that do not comply with forest use permits, cut down trees in forest areas without having a permit, and cut down trees in forest areas illegally are threatened with imprisonment for a minimum of 1 (one) year and a maximum of 5 (five) years and a fine of at least IDR 500 million and a maximum of IDR 2.5 billion.¹⁴³ This sanction can also be given to corporations with a minimum imprisonment of 5 (five)

141 National Indigenous Peoples Alliance, *Catatan Akhir 2021: Tangguh di Tengah Krisis* (Jakarta: AMAN, 2021)

142 *Ibid.*

143 Indonesia, Law concerning Prevention and Eradication of Forest Destruction, Law Number 18 of 2013, Article 82 (1).



years and a maximum of 15 (fifteen) years as well as a criminal fine against corporate managers of at least IDR 5 billion and a maximum of IDR 15 billion.¹⁴⁴

Furthermore, criminal sanctions are also given to perpetrators who intentionally load, unload, release, transport, control, and/or possess logging products in forest areas without permission, transport, control, or possess timber forest products that are not accompanied by a certificate. The legality of forest products, and the use of wood forest products that are suspected to originate from illegal logging comes with the threat of imprisonment for a minimum of 1 (one) year and a maximum of 5 (five) years as well as a fine of at least IDR 500 million and a maximum of IDR 2.5 billion. This sanction can also be given to corporations with the same object of violation, with the threat of imprisonment for a minimum of 5 (five) years and a maximum of 15 (fifteen) years as well as a fine for corporate managers of at least IDR 5 billion and a maximum of IDR 15 billion.¹⁴⁵

For illegal mining activities in forest areas, individuals are threatened with imprisonment for a minimum of 3 (three) years and a maximum of 15 (fifteen) years as well as a fine for corporate managers of at least IDR 1.5 billion and a maximum of IDR 10 billion. Corporations can also be threatened with a criminal offense with the same object as imprisonment for a minimum of 8 (eight) years and a maximum of 20 (twenty) years as well as a fine of at least IDR 20 billion and a maximum of IDR 50 billion.¹⁴⁶

144 Indonesia, Law on Prevention and Eradication of Forest Destruction, Law Number 18 of 2013, Article 82 (3).

145 Indonesia, Law on Prevention and Eradication of Forest Destruction, Law Number 18 of 2013, Article 83 (4).

146 Indonesia, Law concerning Prevention and Eradication of Forest Destruction, Law Number 18 of 2013, Article 89.



Table 2.5

Opportunities and Constraints in the Protection and Management of Blue Carbon Ecosystem in Forestry Regime

Opportunity	Constraint
All provinces are required to designate Protected Areas and include them in spatial plans.	Spatial planning can be excluded for national strategic policies.
The Forestry Law regulates mangroves as part of the forest. This means that all forestry protection instruments can also apply to mangroves.	There are mangrove ecosystems outside the forest area.
Utilization in Protected Forests is very limited and there are monitoring instruments to prevent violations.	<p>The designation of Protected Forests can be changed</p> <p>Only 26.9% of the mangrove area is included in the scope of Protected Forests.</p> <p>Potentially destructive uses, such as mining, are still permitted in Protected Forests</p>
The core zone of the Conservation Forest is absolutely protected and no changes are permitted by human activity.	<p>The designation of Conservation Forest can be changed.</p> <p>Only 20% of the mangrove area is included in the scope of Conservation Forest</p>
Social Forestry provides community access to manage BCE.	There is a need for a good monitoring and supervision mechanism to ensure that there is no violation or damage to mangroves in Social Forestry

Coastal and Small Islands Management Regimes

Protection instruments for coastal and water regimes are spread across several laws and regulations, including the Management of Coastal Areas and Small Islands Law, the Conservation Law, and Law Number 31 of 2004 concerning Fisheries ("Fisheries Law"). The Management of Coastal and Small Islands Law to date is the regulation that best accommodates BCE protection regulations. First, Article 10 states that there is an obligation for each region to have a Protected Area in its Spatial Planning Plan. The criteria for establishing a Protected Area include coastal resources that are unique and vulnerable to change, such as peat, mangroves, coral reefs and seagrass (Article 28 paragraph 3 letter d of the Management of Coastal Areas and Small Islands Law). This article provides the implication that mangroves and seagrass are important to protect because they are ecosystems that are vulnerable to change.

Marine Protected Area

Marine Protected Areas (MPA) are an important instrument in protecting marine and

coastal ecosystems. In general, MPAs are designed or established for specific purposes such as biodiversity conservation, conservation of species in critical habitats, tourism, culture, research, or other purposes.¹⁴⁷ However, in recent years the role of MPAs in protecting BCE and supporting its ability as an ecosystem service carbon sinks have been recognized.¹⁴⁸ In protecting BCE, MPA can reduce threats to these ecosystems, both by restoring degraded BCE habitat, and protecting coastal buffer ecosystems adjacent to existing BCE habitat that are vulnerable to damage and sea level rise. In Indonesia, the MPA concept is regulated through several regulations, including the Conservation Law, the Management of Coastal Areas and Small Islands Law, Government Regulation Number 60 of 2007 concerning Conservation of Fish Resources, and Minister of Maritime Affairs and Fisheries Regulation Number 31 of 2020 concerning Management of Conservation Areas. The conservation areas in question consist of coastal and small islands conservation areas (KKP3K), marine conservation areas, and maritime conservation areas (KKM). Marine Protected Areas are then divided into 3 forms, namely Parks, Asylums, and KKM with different functions, characteristics, and zone criteria for each form. Each form is then divided into three zones, namely the core zone (where extraction activities are not permitted), the limited use zone, and other zones according to the area's designation.

147 RV Salm, et al., *Marine and Coastal Protected Areas: A guide for planners and managers* (Washington DC: IUCN, 2000).

148 Edward B. Barbier, et al., "The value of estuarine and coastal ecosystem services" *Ecological Monographs*, Vol. 81 (2), (2011), p.169-193.



Among the three forms of Marine Protected Areas, the Sanctuary form is the form with the highest strictness, with mandatory area criteria to cover a core zone of at least 70%¹⁴⁹ (in the park form 10% and in the KKM form). Basically, the core zone is the most ideal conservation zone because it provides absolute protection for conservation targets where utilization activities are not permitted, especially destructive activities such as reclamation, open-pit mining, and dumping.¹⁵⁰

Marine Protected Areas are divided into the following classifications:

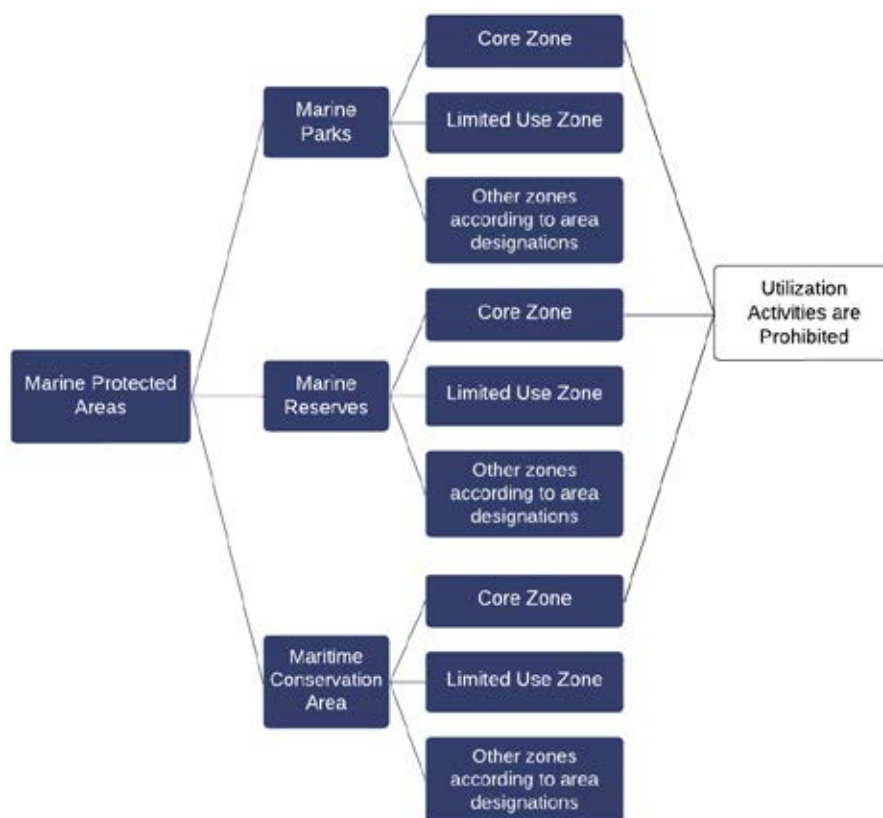


Figure 2.4
Classification of Marine Protected Areas

However, the Government Regulation on Spatial Planning provides 'exceptions' to this prohibition, although reclamation activities, open-pit mining, and dumping are not permitted, especially in the core zone. In the next regulation, if it is technically not possible to move from a marine conservation area, then the activity can be carried out by activities designated as National Strategic Activities, or for the benefit of conservation areas in the management of Marine Protected Areas.

Exceptions to this rule weaken the function of Marine Protected Areas to protect marine and coastal ecosystems, and contradict the function of the core zone which should be an absolute protection zone that protects conservation targets from all forms of activity. Apart from that, if a province has reserved and allocated a Conservation Area in the Zoning Plan for Coastal Areas and Small Islands, it does not necessarily mean that the area will immediately become effective as a Conservation Area because it must be determined first

¹⁴⁹ Indonesia, Regulation of the Minister of Maritime Affairs and Fisheries concerning Management of Conservation Areas, PermenKP Number 31/PERMEN-KP/2020, Article 31 (2).

¹⁵⁰ Indonesia, Natural Resources Conservation Law, Law Number 5 of 1990, Elucidation of Article 32.

by the Minister of Maritime Affairs and Fisheries.¹⁵¹ Based on MMAF 2021 data, currently Indonesia has 201 marine protected areas, with a total area of 24.11 million ha. This area consists of 16.8 million ha, which has been determined by the Minister, and 7.3 million ha, which is still being reserved by the regional government. This means that there are 7.3 million ha of conservation areas that must still be determined by the Minister.¹⁵² Not determining conservation areas by the Minister can have implications for space use that is not in accordance with conservation objectives within conservation areas.

Other Effective Area-based Conservation Measures (OECM)

OECM is defined as a protected area other than a conservation area, which is managed sustainably with instruments to maintain ecosystem functions and services, cultural, spiritual, socio-economic, and other relevant local values.¹⁵³ OECM is a mechanism for implementing community-led initiatives that can be recognized by the government and formalized through the determination of community/customary conservation areas in spatial planning documents. OECM can increase effectiveness, inclusiveness, and equitable conservation to empower local and indigenous communities and to push governments to collaborate in conservation efforts. OECM can also contribute to achieving national and international targets for area and conservation. The potential for OECM in Indonesia is large, and there are already several forms/models of coastal management through OECM implemented in the regions, including Panglima Laot in Aceh, sasi in Maluku and Papua, mane'e in North Sulawesi, and community-based mangrove rehabilitation in Sinjai. South Sulawesi.¹⁵⁴ Unfortunately, this concept is not yet widely understood because it has not been clearly regulated in official legal policy. However, experts have identified several existing laws that can be interpreted to support the essence of OECM.¹⁵⁵ There are at least three forms of OECM recognition based on laws and regulations in Indonesia: first, through the determination and ratification of the Management Areas for Customary Law Communities in Coastal Areas and Small Islands which are integrated into RZWP3K.

Second, through facilitating the granting of Approval for Conformity of Space Utilization Activities to traditional communities and local communities; and third, through the granting of permits (business permits) from the government to individuals or legal entities to use marine areas for a certain period of time for the specific use purposes allocated to that area.¹⁵⁶

151 Indonesia, Minister of Maritime Affairs and Fisheries, Regulation of the Minister of Maritime Affairs and Fisheries of the Republic of Indonesia concerning Management of Conservation Areas, PermenKP Number 31/PERMEN-KP/2020, Article 29.

152 Directorate of Conservation and Marine Biodiversity, "In 2021, MMAF Targets the Establishment of 800 Thousand Hectares of Marine Protected Areas", Ministry of Marine Affairs and Fisheries, <https://kkp.go.id/djprl/kkhl/article/27156-tahun-2021-kkp-targets-determination-800-thousand-hectare-water-conservation-areas#:~:text=When%20this%20Indonesia%20has%20201,in%20reservations%20by%20the%20regional%20government,> accessed on 5 August 2022.

153 Estradivari, et al., "Marine Conservation beyond MPAs: Towards the Recognition of Other Effective Area-Based Conservation Measures (OECMs) in Indonesia," *Marine Policy*, Vol.137, (2022), p.1-12.

154 *Ibid.*

155 Estradivari, et al., "Marine Conservation beyond MPAs: Towards the Recognition of Other Effective Area-Based Conservation Measures (OECMs) in Indonesia," *Marine Policy*, Vol.137, (2022), p.1-12.

156 *Ibid.*, p. 9

Prohibition of Converting Mangrove Areas, and Damaging Mangroves and Seagrass Meadows

In the marine and coastal regime, there are several laws and regulations that prohibit the destruction of BCE. First, Article 73 of the Management of Coastal Areas and Small Islands regulates that perpetrators who convert mangrove areas, cut down mangroves and destroy seagrass can be threatened with imprisonment for a minimum of 2 (two) years and a maximum of 10 (ten) years and a fine of at least IDR 2 billion and a maximum of IDR 10 billion. In utilizing coastal areas, everyone is also prohibited from converting mangroves in utilization areas that do not pay attention to the sustainability of their ecological functions. This article also regulates the prohibition of cutting down mangroves in conservation areas and destroying seagrass. Furthermore, mining and development activities are prohibited from being carried out if they technically, ecologically, sociologically and culturally result in pollution or environmental damage. Perpetrator can be threatened with imprisonment for a minimum of 2 (two) years and a maximum of 10 (ten) years and a fine of at least IDR 2 billion and a maximum of IDR 10 billion.¹⁵⁷

Second, Article 19 of Law Number 5 of 1990 concerning Conservation of Biological Natural Resources and Ecosystems ("Conservation Law") regulates the prohibition of activities that could result in changes to the function of marine conservation areas. Prohibited activities include activities that can reduce or even eliminate the function of conservation areas, reduce conservation areas, and result in the presence of invasive species. Furthermore, Article 33 regulates the prohibition of activities that could result in changes to the core zone. Violations of Article 19 and Article 33 can be subject to a maximum prison sentence of 10 (ten) years and a maximum fine of IDR 200 million. Furthermore, people who carry out activities that are not in accordance with the function of the utilization zone can be punished with a maximum imprisonment of 5 (five) years and a maximum fine of IDR 100 million.

Third, in the Fisheries Law, mangroves are defined as a fishery resource that must be protected. Article 12 Paragraph 1 regulates that "every person is prohibited from committing acts that result in pollution and/or damage to fish resources and/or the environment in the fisheries management area of the Republic of Indonesia" and if this article is violated, a maximum prison sentence of 10 (ten) years can be imposed. years and a maximum fine of IDR 2 billion.

157 Indonesia, Law on Management of Coastal Areas and Small Islands, Law Number 27 of 2007, Article 73.

Table 2.6

Opportunities and Constraints for BCE Protection and Management in Coastal and Aquatic Regimes

Opportunity	Constraint
BCE located in the core zone of marine conservation areas will receive stronger protection.	<p>Not all BCE are located in conservation areas.</p> <p>There is a specific provision that allows strategic activities within the Core Zone of Marine Protected Areas.</p> <p>There are still many conservation area reserves that must be determined by the Minister of Marine Affairs and Fisheries.</p>
Community-led initiatives can be recognized by the government and formalized through the establishment of community/customary conservation areas in the Regional Spatial Planning or Zoning Plan for Coastal Areas and Small Islands	Formal OECM recognition does not yet exist at the national level.
There is a prohibition on converting mangrove areas, cutting down mangroves, and destroying seagrass, which can be punished with criminal penalties with quite strong sanctions.	The effectiveness of sanctions depends on the quality of monitoring and enforcement.

Regional Government Regime

Based on the Regional Government Law and in line with the principles of regional autonomy and assistance duties, regional governments have the authority to administer government affairs. This authority is based on the transfer and delegation of authority from the center to the regions. Authority in the forestry, maritime, energy and mineral resources sectors is shared between the central and regional governments. Therefore, regional governments have some authority in managing BCE. The implementation of management authority is carried out by regional apparatus, which is an assistant to the regional head and the Regional People's Representative Council (*Dewan Perwakilan Rakyat Daerah*) in carrying out government affairs which fall under regional authority, including regional services.

In coastal and marine areas, provincial regions have the authority to manage natural resources in the sea within their territory up to a maximum of 12 miles from the coastline. This management authority includes exploration, exploitation, conservation and management of marine resources outside of oil and gas, administrative arrangements, spatial planning arrangements and participation in maintaining security at sea and defending state sovereignty. Especially in provincial areas that have archipelagic characteristics, apart from the management authority as previously mentioned, these areas are also assigned



by the central government to carry out the central government's authority in the maritime sector based on the principle of co-operation duties. Furthermore, regional governments also have authority regarding mangroves located in non-forest areas or Other Land Use Areas .¹⁵⁸

Furthermore, in field research, it was found that several regions regulate BCE protection through regent regulations and village regulations. First, Berau District Regional Regulation Number 5 of 2020 concerning Mangrove Ecosystem Management in Other Land Use. This regulation aims to reduce the rate of mangrove degradation and maintain mangrove area cover in Other Land Use Areas . This regulation governs the categorization of mangrove areas in Other Land Use Areas into three classifications: Core Areas, Cultivation Areas, and Public Use Areas. It also addresses the prohibition of encroachment, mangrove cutting, and the opening of mangrove areas for fisheries, plantations, agriculture, and animal husbandry. Violation of this provision may result in a maximum imprisonment of 3 months and a fine of up to IDR 50 million.¹⁵⁹ This regulation also involves the community, Non-Governmental Organizations (NGOs) and other parties in preserving mangrove areas. Providing incentives to communities who manage mangrove areas in a sustainable manner is also regulated in this regulation.¹⁶⁰

Apart from that, in Pengudang Village, Bintan District, Riau Islands, the community has long regulated the protection of seagrass meadows through Pengudang Village Regulation Number 02/TRISMADES/DPD/DPL 2010 concerning Management of Seagrass Meadows. This regulation regulates the allocation of special protection areas or core areas for seagrass, coral reefs, and mangroves. In this area, all activities that can damage and pollute the ecosystem are completely prohibited, including prohibiting the use of toxic materials for fishing, prohibiting mangrove cutting, and so on. Violations of this prohibition are subject to sanctions in the form of social sanctions and fines of IDR 100,000 to IDR 10 million depending on the level of the violation committed.

The writing team also found similar regulations in Babulu Laut Village, Penajam Paser District, East Kalimantan Province. Village regulations are presently undergoing the ratification process. These regulations pertain to the safeguarding and administration of mangrove ecosystems, encompassing aspects such as planning and funding. Engaging in activities that could damage the mangrove ecosystem within the village administrative area is forbidden for everyone, with the associated sanctions yet to be specified. These local regulations also outline the rights and responsibilities of village residents in the protection and administration of mangroves. The village government is encouraged to facilitate the fulfillment of residents' rights to derive benefits from mangrove management. To reinforce institutional support, the village government has established a Mangrove Care Community Group through the village head's decision.

158 Indonesia, Government Regulation on Forestry Implementation, PP Number 23 of 2021, Article 41 (8) and Article 249 (7).

159 Indonesia, Berau District, Berau District Regional Regulation concerning Mangrove Ecosystem Management in Other Land Use, Berau District Regional Regulation Number 5 of 2020, Article 31.

160 Indonesia, Berau District, Berau District Regional Regulation concerning Mangrove Ecosystem Management in Other Land Use, Berau District Regional Regulation Number 5 of 2020, Article 28.

Table 2.7

Opportunities and Constraints for Protection and Management of Blue Carbon Ecosystems in Regional Government Regimes

Opportunity	Constraint
In the absence of political will at the central level, regulations at the regional level can be a solution to fill the legal vacuum in mangrove management and rehabilitation at the regional level	Regional policies can be overridden by central level policies.
Stronger community engagement	A program to increase legal understanding for village communities is needed.
If there is a forest area where the protection instruments are not strong, the solution could be to make part of the area a village forest so that it can be protected by village regulations.	<p>The authority of the village is quite limited, and only covers BCE management within forested areas.</p> <p>Implementation of village regulations can still be disrupted by activities that receive permission from the central government.</p>

Other Policies

Presidential Regulation Number 120 of 2020 concerning the Peat and Mangrove Restoration Agency (BRGM)

One of the recent regulations related to mangrove ecosystem management is the policy contained in Presidential Regulation no.120 of 2020 concerning the Peat and Mangrove Restoration Agency ("BRGM Presidential Regulation"). This regulation gives mandate for the BRGM to accelerate mangrove rehabilitation with a target area of 600,000 ha by 2024 in nine provinces. This program is carried out with a labor-intensive approach as part of PEN's efforts. Within the framework of PEN, the Government has also expanded the mangrove rehabilitation target in 32 provinces for 2020-2021 to an area of 34,250 ha. At COP 26 (2021 in Glasgow), President Joko Widodo said that this rehabilitation target is the broadest target in the world. BRGM was tasked with accelerating the implementation of mangrove rehabilitation in the various provinces above. The biggest obstacles in implementing the mangrove rehabilitation program carried out by the government, in this case BRGM, are: (1) the existence of data gaps between maps and conditions or reality on the ground; (2) budget limitations; and (3) the lack of initiative by regional governments. Obstacles related to data gaps affect the size of the mangrove rehabilitation target area.



Presidential Regulation Number 98 of 2021 concerning the Economic Value of Carbon for Achieving Nationally Determined Contribution Targets and Controlling Greenhouse Gas Emissions in National Development

Prior to COP 26 in Glasgow, the President issued Presidential Regulation Number 98 of 2021 concerning the Economic Value of Carbon for Achieving Nationally Determined Contribution Targets and Controlling Greenhouse Gas Emissions in National Development ("Presidential Regulation on Carbon Economic Value"). This Presidential Regulation is an affirmation of the government's efforts to realize its commitment to reduce greenhouse gas emissions by 31.89% through its own efforts or 43.20% in Enhanced National Determined Contribution (NDC) with international cooperation. In general, this Carbon Economic Value presidential regulation regulates:

Efforts to achieve NDC targets through implementing climate change mitigation and adaptation;

- a. Procedures for implementing the Carbon Economic Value through carbon trading mechanisms, performance-based payments, levies on carbon, and other mechanisms determined by the Minister;
- b. Transparency framework;
- c. Monitoring and evaluating climate change mitigation and adaptation actions;
- d. Coaching and funding;
- e. Establishment of a steering committee for the implementation of the Carbon Economic Value instrument chaired by the Coordinating Minister for Maritime Affairs and Investment. This regulation also recognizes the role of blue carbon in order to achieve NDC targets.
- f. Realizing the government's obligation to contribute to reducing greenhouse gas emissions through mitigation and adaptation actions as regulated in the Paris Agreement which has been ratified by the government.¹⁶¹ This regulation regulates the economic value of ecosystem services on land and sea in reducing greenhouse gas emissions. Furthermore, Article 8 of the Carbon Economic Value Presidential Regulation explicitly regulates that BCE is an effort to mitigate climate change from

¹⁶¹ Indonesia, Law on Ratification of the Paris Agreement to The United Nations Frameworks Conventions on Climate Change (Paris Agreement on the United Nations Framework Convention on Climate Change), Law Number 16 of 2016, General Explanation.

the marine sector to achieve the NDC target.¹⁶²

Blue Carbon Ecosystem in the National Medium Term Development Plan

In the 2020-2024 National Medium Term Development Plan (RPJMN) document, climate change is included in 6 Priority Programs, namely Building the Living Environment, Increasing Disaster Resilience, and Climate Change. In this case, national development is carried out by taking into account the carrying capacity of natural resources and the carrying capacity of the environment, disaster vulnerability, and climate change. One of the targets in this sixth priority is a low carbon program for coastal and marine areas, with a target area of 50,000 ha of mangrove ecosystem that must be restored.

Nationally Determined Contribution (NDC)

The Nationally Determined Contributions (NDCs) represent the implementation of each country's initiatives to decrease national emissions and cope with the effects of climate change, as outlined in Article 4, Paragraph 2 of the Paris Agreement. Indonesia has adopted the agreement as stated in Law Number 16 of 2016 concerning Ratification of the Paris Agreement on the United Nations Framework Convention on Climate Change. In the NDC document, adaptation and resilience are described.

Mangroves in Indonesia offer significant advantages in mitigating the impacts of climate change. Indonesia's 2021 NDC document has included BCE in the adaptation component. To achieve the target of ecosystem and landscape resilience, there are main programs in the form of ecosystem conservation and restoration. In this program there are two actions that have an impact on the BCE: (1) protection of existing marine conservation areas and development of new ones; and (2) restoration of degraded mangroves and peat.

The main implication of incorporating BCE in the NDC adaptation component is that it serves as a foundation for the government to recognize the protection and management of BCE and can and can be used as a national policy priority to encourage mobilization of action between institutions. Incorporating adaptation components is also carried out through the NDC Roadmap document for Climate Change Adaptation which is a reference for planning and implementation at sectoral and regional levels.¹⁶³ Protection of BCE in the adaptation component not only shows that the government recognizes the value of the function and benefits of BCE in climate change adaptation, but also becomes the initial stage for the government to collect data as part of the review to include it in the mitigation component.¹⁶⁴ The mitigation potential of mangroves alone is 12.4 million tCO₂/year (2.1% of annual emissions), and has a value of around 558 million US\$ per year.¹⁶⁵

Globally, there are several challenges experienced by many countries including the BCE in the NDC. In 13 countries, the challenges are:

162 Indonesia, Presidential Regulation on the Economic Value of Carbon, Presidential Regulation Number 98 of 2021, Article 8.

163 Ministry of Environment and Forestry, Roadmap Nationally Determined Contribution (NDC) Adaptation to Climate Change (Jakarta: Ministry of Environment and Forestry of the Republic of Indonesia, 2017).

164 Tamara Thomas, et al., "Blue Carbon and Nationally Determined Contributions", The Blue Carbon Initiative, https://static1.squarespace.com/static/5c7463aaa9ab95163e8c3c2e/t/5f27860f8dd86201c1337f2d/1596425746332/BCI+NDC_ExecSum_Final_singles.pdf, accessed September 1, 2022.

165 Frida Sidik and Daniel A. Friess, Dynamic Sedimentary Environments of Mangrove Coasts, (Elsevier, 2021).

- a. lack of standardized carbon accounting data and methodology
- b. weak technical capacity
- c. lack of coordination between agencies
- d. overlap and duplication in policies
- e. limited funding in implementing policies that focus on BCE conservation.¹⁶⁶

In Indonesia, the challenges of including BCE in the NDC are mainly related to: (1) institutions; (2) mechanism; (3) policy; (4) capacity; (5) Investment financing; (6) technical challenges in developing Monitoring, Reporting, Verification (MRV) data, changes to baseline data, and availability of data series.

Forestry and Other Land Use (FOLU) Net Sink 2030

To support the achievement of NDC, the government has established a Forestry policy and Other Land Use (FOLU) Net Sink 2030.¹⁶⁷ FOLU Net Sink 2030 is a condition to be achieved where the level of absorption is higher than the level of emissions in 2030 as a mitigation action effort from the forestry and land sector. It is targeted that by 2030 a greenhouse gas emission level of -140 million tons of CO₂e will be achieved.¹⁶⁸

In connection with BCE, FOLU Net Sink 2030 can increase the role of BCE, especially mangroves in the forest area, in efforts to mitigate climate change. Indonesia's FOLU work targets include several efforts to protect mangrove forest areas in particular, namely: a) reducing the rate of deforestation of peatlands and mangroves; b) reducing the rate of peat and mangrove degradation; and c) mangrove rehabilitation and afforestation in ex-mining areas. Apart from that, the Indonesia FOLU Net Sink 2030 Operational Plan also contains protection strategies that involve the community, such as increasing Social Forestry targets and developing and strengthening Customary Forests.

The mangrove policy outlined in the Indonesia FOLU Net Sink 2030 Operational Plan document incorporates both protection and rehabilitation measures. For dense or moderate mangrove conditions, the applied policy is to preserve the coverage and utilize it in a sustainable manner. The permissible usage direction is limited to NTFP or the utilization of environmental services (such as nature tourism) that do not harm mangrove vegetation, while efforts are made to avoid the use of wood forest products. If there is utilization of timber forest products, implementation is carried out on a limited basis with strict supervision. Furthermore, this Operational Plan also emphasizes the importance of community empowerment in mangrove management in efforts to conserve the mangrove ecosystem.

For damaged mangrove ecosystems, the mangrove management policy is mangrove restoration and rehabilitation.¹⁶⁹ Rehabilitation of mangrove in the forest area is directed not only at planting, but also at paying attention to the mangrove landscape. The goal is to ensure that mangrove rehabilitation remains focused on the ecological-social system, encompassing topographic configuration, vegetation, land use, and settlement,

166 Pham Thu Thuy and Le Thi Thanh Thuy, "Incorporating blue carbon into Nationally Determined Contributions", CIFOR, Number 274 (2019).

167 Indonesia, Minister of Environment and Forestry, Decree of the Minister of Environment and Forestry of the Republic of Indonesia concerning Indonesia's Forestry and Other Land Use (FOLU) Net Sink 2030 for Controlling Climate Change, Number SK.168/MENLHK/PKTL/PLA.1/2/2022.

168 *Ibid.*

169 *Ibid.*, p.25

influenced by ecological and historical processes, as well as economic, social factors, and human activities in the area.¹⁷⁰

The Indonesian FOLU Net Sink 2030 Operational Plan also summarizes 7 steps to save the mangrove ecosystem: 1) establishing a policy and regulatory framework for managing the mangrove ecosystem that is adapted to local conditions and wisdom; 2) encouraging promotion of the benefits of mangroves which can improve the community's economy, both through non-timber forest products and environmental services; 3) increasing awareness and community involvement in mangrove management; 4) providing clear boundaries regarding mangrove logging; 5) increasing mangrove productivity through technological development; 6) increasing and strengthening cooperation both within and outside the country for mangrove rehabilitation; 7) increasing efforts to enforce laws that are fair and transparent.¹⁷¹

2021-2030 National Mangrove Rehabilitation Roadmap

With the high rate of mangrove deforestation in Indonesia, it is necessary to accelerate the mangrove rehabilitation program. This acceleration program is outlined in the 2021-2030 National Rehabilitation Roadmap. By accelerating rehabilitation, it is hoped that the FOLU Net Sink 2030 goal of increasing the role of mangroves in reducing emissions can be achieved. This roadmap was prepared by the Ministry of Environment and Forestry and BRGM with the implementation of mangrove rehabilitation consisting of three main phases:

1. Acceleration of mangrove rehabilitation (2021-2024). In the first phase, the main target is to achieve the rehabilitation target of 600,000 ha. Achieving rehabilitation targets is carried out through the 3M strategy: restore, improve and maintain.
2. Mainstreaming mangrove ecosystem management (2025-2027). This phase targets the integration of mangrove management in development plans, activity and business plans, and the establishment of mangrove management units.
3. Sustainable mangrove management (2028-2030). This phase focuses on building a sustainable mangrove management system. By 2030, it is hoped that mangrove rehabilitation will contribute to achieving FOLU Net Sink.

National Strategy for Wetland Management: Peat and Mangrove Ecosystems

The national strategy document on promoting the management of wetlands (peat and mangrove ecosystems) to achieve the targets of the Sustainable Development Goals (SDGs) and low carbon development was launched by the Ministry of National Development Planning/National Development Planning Agency (Bappenas) in early 2023. This document regulates the targets-mangrove management targets in the aspects of land cover, biodiversity, emissions, and economics. These targets have been mapped based on the achievement period (2022-2045) and are also supported by strategy mapping.

170 Indonesia, Minister of Environment and Forestry, Decree of the Minister of Environment and Forestry of the Republic of Indonesia concerning Indonesia's Forestry and Other Land Use (FOLU) Net Sink 2030 for Controlling Climate Change, Number SK.168/MENLHK/PKTL/PLA.1/2/2022 p.144

171 *Ibid.*, p.145

Table 2.8

Aspects and Target Indicators for Mangrove Management in National Wetland Management Strategy

Aspect	Indicator
Land Cover	Area of rehabilitated mangroves
	Reducing the Rate of Mangrove Deforestation
Biodiversity	Number of Designated Conservation Area Units
Emission	Reducing GHG Emissions and Mangrove Rehabilitation Activities and Reducing Deforestation Rates
Economy	Number of Green Jobs Available from Mangrove Rehabilitation Activities
	Increased Fisheries Production from Silvofishery Development
	Emission Intensity ¹⁷²

Strategy mapping and action plans in the National Strategy include strengthening several sectors, namely: (1) Regulatory and policy framework; (2) Institutional and implementation synergy; (3) Availability and management of data and information as well as knowledge and technology; (4) Monitoring, evaluation and reporting framework; (5) Community awareness, capacity and participation; (6) Law enforcement; (7) Funding scheme. Strengths, weaknesses, opportunities, and threats have been identified in strengthening sectors in the national strategy. The National Strategy document, which has been prepared comprehensively and is data-based, is expected to be included in the RPJMN and Long Term Development Plan (RPJP).

Ministry of Marine Affairs and Fisheries Plan to Design Climate Change Mitigation and Adaptation Actions from the Marine Sector

The policy documents described above only regulate mangroves and not other BCE, such as seagrass. Nevertheless, the Ministry of Marine Affairs and Fisheries continues to strive to develop an action plan regarding the role of seagrass in achieving NDC. The Ministry of Marine Affairs and Fisheries seeks to include the blue carbon sector in the second NDC document in 2025 and prepare an implementation document for the economic value of carbon from the BCE.

The climate change mitigation and adaptation action strategy from the marine sector also includes preparing a blue carbon emission profile, developing a measurement system, as well as MRV for emission reduction and carbon absorption activities. These efforts are also supported by strengthening human resource capacity in the marine and fisheries sector and preparing a blue carbon dashboard that will be connected to the National Registry System. Meanwhile, the Ministry of Marine Affairs and Fisheries continues to strive to

¹⁷² Emission intensity is an indicator used to assess the efficiency in carbon emissions of an activity, which is a comparison between the amount of carbon emissions produced and the economic income obtained

strengthen the protection of blue carbon reserve areas on coasts and small islands.

Challenges in Law and Policy

Current policies and legal frameworks provide several opportunities for the protection and sustainable management of BCE. On the other hand, there are several challenges that can threaten the effectiveness of BCE protection.

1. Not all BCE are protected by sustainable protection and management instruments

Around 49% of the mangrove area in Indonesia is included in Conservation Forest and Protected Forest areas,¹⁷³ and 3% is included in marine conservation areas.¹⁷⁴ Around 34% of the total seagrass area is also included in marine conservation areas.¹⁷⁵ Other mangrove areas are also managed in other environmental management instruments, such as Social Forestry. However, areas of mangrove and seagrass that are not included in protection instruments continue to be threatened by anthropogenic pressure. CIFOR noted that every year Indonesia loses 55,000 ha of mangrove area, or the size of New York City.¹⁷⁶

Apart from that, if a province has reserved and allocated a conservation area in the Zoning Plan for Coastal Areas and Small Islands, it does not necessarily mean that the area will immediately become effective as a conservation area because the conservation area must be determined first by the Minister of Maritime Affairs and Fisheries.¹⁷⁷ Based on MMAF MMAFdata, currently Indonesia has 201 marine conservation areas with the total area reaching 24.11 million ha. This area consists of 16.8 million ha which has been

173 Directorate of Soil and Water Conservation–Ditjen PDASRH, National Mangrove Map 2021, (Jakarta: MoEF, 2021)

174 Presentation by Mr. Hendra Yusran Siry in the Seminar “ Partnership for Climate Action”, Bali, 14 November 2022.

175 *Ibid.*

176 Julie Mollins, “Data & Facts: Contribution of mangroves to mitigating climate change in Indonesia”, CIFOR, <https://forestsnews.cifor.org/56920/data-cepat-kontribut-mangrove-pada-mitigasi-bangun-iklim-di-indonesia?fnl=>, accessed 22 September 2022.

177 Indonesia, Minister of Maritime Affairs and Fisheries, Regulation of the Minister of Maritime Affairs and Fisheries of the Republic of Indonesia concerning Management of Conservation Areas, PermenKP Number 31/PERMEN-KP/2020, Article 29.



determined by the Minister and 7.3 million ha which is still being reserved by the regional government. This means that there are still 7.3 million hectares of conservation areas that have yet to be determined by the Minister.¹⁷⁸ Not yet having a conservation area designated by the Minister could have implications for space use that is not in accordance with conservation objectives in the area.

2. Established protection instruments can be converted to serve national strategic policies and projects

Several provisions in laws and regulations, especially after the passing of the Job Creation Law, prioritize national strategic policies. Article 127 of the Government Regulation on the Implementation of Spatial Planning regulates that utilization activities cannot be carried out in the core zone of conservation areas, although activities, in nature that are nationally strategic, are excluded from this regulation. This arrangement is also found in the Government Regulation on the Implementation of Spatial Planning, where reclamation, open-pit mining and dumping activities can still be carried out in the core zone of water conservation areas if they are designated as national strategic activities. Apart from that, Government Regulation Number 23 of 2021 stipulates that the function of Protected Forests and Conservation Forests can be changed through changes in the function of forest areas¹⁷⁹, one of which is in the context of PSN activities.¹⁸⁰

The Job Creation Law regulates that in the context of implementing national strategic projects or strategic national policies, even though there is no plan for implementing the project in the spatial plan/zoning plan, the project can still be implemented. This has the implication that spatial planning can be put aside and the use of areas for strategic national policies can be carried out even if it is not in accordance with the spatial planning plan.¹⁸¹

Recommendations for Strengthening Protection Instruments

Based on the explanation above, it can be concluded that each protection instrument has its own opportunities and challenges. To determine the most appropriate protection instrument in an area, all related factors need to be considered, such as local communities' access to coastal ecosystems for their survival. In addition, protection instruments will be effective if their application is not easily excluded by other economic activities, including activities categorized as national strategic policies. The recommendations for strengthening protection instruments include:

1. Conduct a National Study and Mapping to Recognize BCE as Critical Natural

178 Directorate of Conservation and Marine Biodiversity, "In 2021, KKP Targets the Establishment of 800 Thousand Hectares of Marine Protected Areas", Ministry of Marine Affairs and Fisheries, [https://kkp.go.id/djprl/kkhl/article/27156-tahun-2021-kkp-targets-determination-800-thousand-hectare-water-conservation-areas#:~:text=When%20this%20Indonesia%20has%20201,in%20reservation%20by%20the%20regional government](https://kkp.go.id/djprl/kkhl/article/27156-tahun-2021-kkp-targets-determination-800-thousand-hectare-water-conservation-areas#:~:text=When%20this%20Indonesia%20has%20201,in%20reservation%20by%20the%20regional government, accessed on 5 August 2022), accessed on 5 August 2022.

179 Indonesia, Government Regulation on Forestry Implementation, PP Number 23 of 2021, Article 84 (1).

180 Indonesia, Government Regulation on Forestry Implementation, PP Number 23 of 2021, Article 84 (3).

181 Indonesia, Law on Job Creation, Law Number 11 of 2020, Article 18

Capital (CNC) which must be protected and cannot be substituted

Based on the strong sustainability concept, some natural capital/natural resources have important functions and cannot be replaced by man-made capital. In this case, these resources can be recognized as Critical Natural Capital (CNC), which have an impact on the quality of life and human survival where CNC protection has an impact on sustainability goals. The policy making process needs to adopt a CNC approach by evaluating the level of "criticality" of natural resources. This CNC concept is an important element of the strong concept of sustainability as its development is based on Article 33 paragraph (4) of the 1945 Constitution.

To determine BCE as a CNC, Indonesia needs to conduct a national study or mapping based on the bioregion concept. In measuring the level of "criticality", there are at least two measuring instruments: degree of importance (importance related to ecosystem service functions); as well as the level/degree of threat.¹⁸² The first aspect refers to how society perceives the ecosystem ecologically, socio-culturally and economically. Meanwhile, the level of threat is seen from the number of degraded ecosystems and the quality of the remaining ecosystems.¹⁸³

Within the Indonesian legal framework, CNC can be measured through existing criteria used to classify important ecosystems through High Conservation Value Area and Essential Ecosystem Area. Apart from these two criteria, Fridolin Brand also introduced six critical environmental service domains (six domains of critical ecosystem services) to determine CNC, namely the criteria: (1) socio-cultural; (2) ecological; (3) sustainability; (4) ethics; (5) economics; (6) human survival.

182 Paul Ekins, et al., "A framework for the practical applications of the concepts of critical natural capital and strong sustainability", Vol.44 (2-3), (2003), p.165-185.

183 *Ibid.*



Table 2.9

Blue Carbon Ecosystem in Six Domains of Critical Ecosystem Service

BCE in Six Critical Ecosystem Services Domains (Brand, 2009)		
Socio-cultural	When ecosystem services are especially important for certain social groups, it is because they create a socio-cultural context in terms of non-materialistic needs	Tourist and recreational spots Some indigenous peoples view mangroves as “ancestors” (such as in Papua)
Ecological	When ecosystem services are assessed ecologically for their significance in terms of their naturalness, biodiversity, and uniqueness.	Climate settings Breeding ground and habitat for marine biodiversity
Sustainability	Refers to the debate between weak and strong sustainability (weak vs. strong)	Ecosystem services that cannot be replaced (i.e. as carbon sinks, even with technology)
Ethical	When the loss of ecosystem services can be morally detrimental, where moral values are violated	Further research is needed to prove that losing BCE can be morally detrimental
Economics	When the loss of ecosystem services brings with it very high economic costs	High economic losses when BCE is degraded
Human survival	Ecosystem services become important when without them, human life is not possible	Mangroves as a fortress in coastal areas (living seawall), protects coastal communities from storm surges, coastal erosion, and rising sea levels. Maintaining marine and coastal resources has an impact on the livelihoods of small-scale fishermen and coastal communities

Ecological criteria and Biologically Significant Areas (EBSA) can serve as additional criteria for identifying CNC. The EBSA measures areas of the ocean that are of particular importance in terms of their ecological and biological characteristics. For example, with providing important habitat, food sources, or breeding grounds for certain species. In 2008, EBSA was used as a standard for special areas in the UN Convention on Biological Diversity (CBD). The EBSA criteria have been used in Indonesia when determining EBSA in the Makassar Strait Inter-Regional Area Zoning Plan (RZ-KAW)¹⁸⁴, Interregional Zoning

184 *Ibid.*



Plan of Sulawesi Sea¹⁸⁵, Interregional Zoning Plan of Sulawesi Sea,¹⁸⁶ Interregional Zoning Plan of North Natuna Sea.¹⁸⁷

The EBSA criteria consist of seven points that need to be met at least one of them, namely:

1. Uniqueness and rarity;
2. Importance for the life of a particular species;
3. Importance for species and/or habitats that are in danger, threatened with extinction, or experiencing decline in quantity;
4. Vulnerable, fragile, sensitive, and recovery is slow;
5. Biological productivity;
6. Biological diversity; and
7. Its natural quality.

Of the seven criteria identified by COP CBD 9, Japan added one criteria independently.¹⁸⁸ This can be emulated by Indonesia where one of the EBSA criteria needs to accommodate functions BCE in mitigating and adapting to irreplaceable climate change (cannot replaceable) and unsubstitutable (characteristic of critical natural capital).

185 Indonesia, Government Regulation on Zoning Plans Maluku Sea Interregional Area, Presidential Decree Number 4 of 2022 Article 46.

186 Indonesia, Government Regulation on Zoning Plans Maluku Sea Interregional Area, Presidential Decree Number 4 of 2022 Article 45

187 Indonesia, Government Regulation on North Natuna Sea Interregional Zoning Plan, Presidential Decree Number 41 of 2022 Article 45.

188 Nature Conservation Bureau, "The criteria of EBSAs in Japan", Ministry of the Environment of Japan, <https://www.env.go.jp/en/nature/biodic/kaiyo-hozen/kaiiki/kaiiki/kijun.html>, accessed 20 August 2022.



Box 2.3

EBSA has been recognized in Indonesia

Based on data from the CBD, the East Malacca Strait and Sulawesi are EBSA areas. Indonesia, through Presidential Regulation Number 4 of 2022 concerning the Zoning Plan for the Interregional Sulawesi Sea, also designated part of the Sulawesi sea area as KSNT in the environmental sector. Likewise, Presidential Regulation Number 41 of 2022 concerning the Zoning Plan for the North Natuna-Natuna Sea Interregional Area which designates part of the East Malacca Strait as KSNT in the environmental sector.

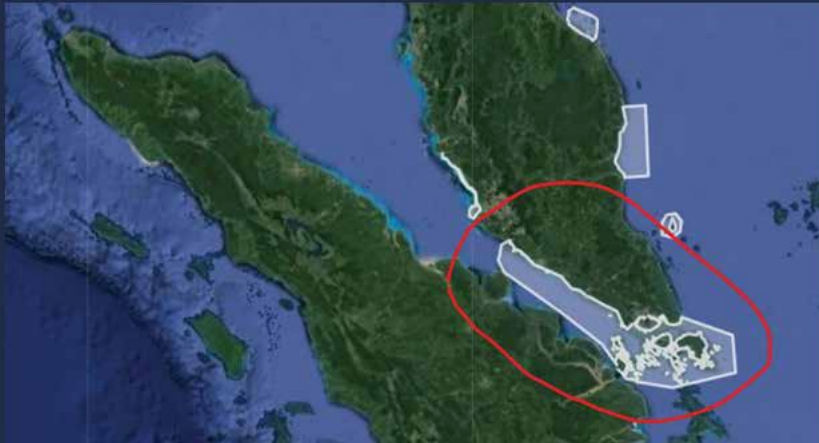


Image: EBSA in the East Malacca Strait

Source: Convention on Biological Diversity, "View Areas Meetings the EBSA Criteria", <https://www.cbd.int/ebsa/>.

To designate an BCE as a CNC, the High Conservation Value Area criteria can also be used which were previously regulated by the Regulation of the Director General of Natural Resources and Ecosystem Conservation regarding Technical Instructions for Assessment of the Effectiveness of Management of Essential Ecosystem Areas. However, this regulation has been revoked. These criteria consist of:¹⁸⁹

- a. High biodiversity;
- b. Landscape elements that are important for the dynamics of natural ecological processes;
- c. Distinctive, rare, vulnerable and threatened ecosystems;
- d. Ecosystem service providers;
- e. Social functions related to meeting the basic needs of local communities;
- f. Cultural functions for customary rights communities and related to local wisdom in the use of resources and the environment; and/or
- g. High carbon stock.

BCE areas that meet the above criteria are then designated as CNC and given strong protection instruments. This concept is the same as the FOLU Net Sink program (mangroves found in forest areas) which has mapped areas that have high conservation value, and need to be protected in order to fulfill Indonesia's NDC. These determination criteria can also refer to the criteria for determining essential mangroves which are regulated in the

¹⁸⁹ Indonesia, Director General of Natural Resources and Ecosystem Conservation, Regulation of the Director General of Natural Resources and Ecosystem Conservation concerning Technical Instructions for Assessment of the Effectiveness of Management of Essential Ecosystem Areas, Number P.1/KSDAE/BPE2/KSA.4/2/2021, Article 7 (4).

KEE identification and inventory technical instructions, including:

Mangrove areas categorized as medium, dense, to very dense;

- a. The area is KBA and EBA area;
- b. Mangrove locations are under high threat due to population distribution, settlement, growth and so on;
- c. The location of mangroves is around river mouths, mudflats;
- d. Mangrove areas in the medium to very rare category can be categorized as KEE if they are KBA, BA and EBA which are flight routes for migratory birds and characteristically the area is only dominated by mangroves with a medium density level which is very rare;
- e. Located outside the conservation area implemented by the Ministry of Environment and Forestry and MMAF;

This determination has been through a study that takes into account the carrying capacity and ecosystem functions/services for climate change mitigation. FOLU Net Sink only covers forest areas, so similar mapping needs to be carried out for BCE areas outside forest areas.

After establishing the BCE, the Indonesian Government needs to determine that the ecosystem's protection status is absolute and cannot be disturbed by any activity, including PSN.



2. Determine Protection Instruments Based on Regional Characteristics and Demographics

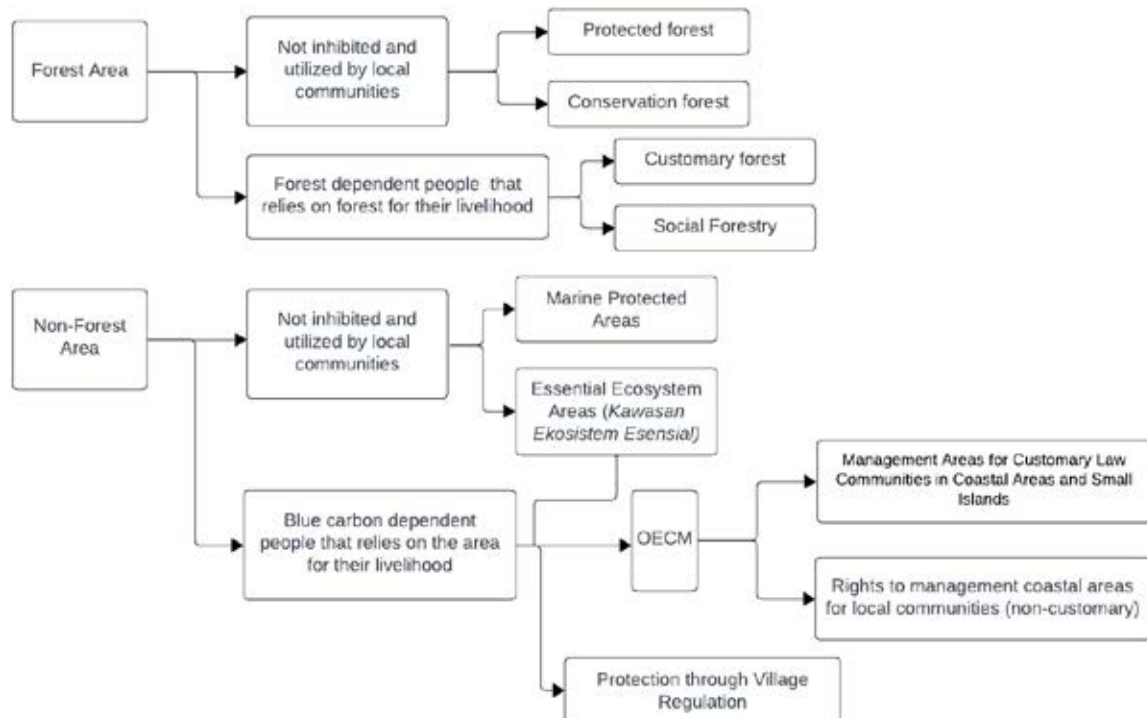


Figure 2.5
Existing Protection Instruments

The graph above illustrates various protection instruments based on regional characteristics and demographic factors. In the areas identified with communities that depend on BCE (blue carbon dependent people/BCDP), the government needs to utilize protection instruments that allow sustainable use of BCE for the daily life needs of the community while protecting the mangrove ecosystem in question. Apart from that, the community needs to be directly involved in its management. Within this scheme, the community has a key role in managing and ensuring sustainable BCE protection. For areas that are not inhabited by people, the government can implement strict protection instruments with the aim of protecting the ecosystem from all forms of use, such as the core zone, including implementing strict monitoring and enforcement.

If the BCE is in the other land use area, the regional government can establish protection policies through, among other things, village regulations. Village regulations as a protection instrument have several opportunities, including stronger involvement of village communities, as well as filling legal gaps in the management and rehabilitation of BCE at the site level.¹⁹⁰ Considering that village regulations have limitations, namely: (1) they cannot regulate activities located upstream or outside the village domain that have the potential to damage the BCE; and (2) village regulations cannot prevent business permits granted by the regional government from being granted on Other Land Use Area land, so there is a need for BCE protection which is contained through regulations at the provincial level or governor regulations.

¹⁹⁰ Dian Cahyaningrum and Endah Setyowati, "Efektivitas Pelaksanaan Peraturan Desa dalam Menjaga Kelestarian Hutan Mangrove di Desa Surodadi, Kecamatan Sayung, Kabupaten Demak", *Jurnal Ilmiah Negara Hukum*, Vol.2 Number 1, (2011), p.29-50.

3. Establish strict requirements for converting BCE

At the time this study was conducted, there were no regulations that clearly explained what requirements the government had to fulfill if it wanted to convert the various protection instruments described above, especially for National Strategic Projects purposes. This strategic project is at the government's discretion based on the Job Creation Law. Strict requirements need to be set for the government if it wants to convert BCE for the purposes of this strategic project.

To accept or reject this conversion, there are two main prerequisites that need to be met, namely:

Based on studies that are scientifically-backed and have high credibility, and

1. The study must be prepared through an inclusive process involving all relevant stakeholders, especially affected communities. The results of the study must be published transparently so that the wider community can participate in assessing and monitoring them.
2. Strict requirements for establishing national strategic policies in protected areas have been regulated in Ecuador. The constitution stipulates that this is possible through a referendum (see Box 2.4).

Box 2.4

Implementation of National Strategic Policy in Ecuador

Based on Article 407 of the Ecuadorian Constitution, non-renewable natural resource extraction activities are prohibited in Protected Areas and in areas declared as intangible assets. This can be excluded at the request of the President and after a declaration of national interest. The National Assembly (People's National Assembly) holds a referendum, if necessary, to approve the President's proposal.

Article 407

"Activities for the extraction of nonrenewable natural resources are forbidden in protected areas and in areas declared intangible assets, including forestry production. Exceptionally, these resources can be tapped at the substantiated requests of the President of the Republic and after a declaration of national interest issued by the National Assembly, which can, if it deems it instead, convene a Referendum."



Institutional Arrangement

As explained in the previous section, BCE governance is regulated in various statutory regulatory regimes. As a cross-sector issue, BCE management is carried out at various administrative levels and jurisdictions.¹⁹¹ Therefore, maintaining clarity and coherence in institutional arrangement is important in ensuring the quality of BCE management in a sustainable and fair manner.

Authority Based on Statutory Mandate

In general, the authority to manage BCE consists of: (a) restoration, rehabilitation and conservation planning, (b) granting concessions and controlling utilization, (c) monitoring and supervision, and (d) enforcement.

Institutional Arrangement in Mangrove Management

Based on the existing regulations, the authority to manage mangroves is mostly vested in two ministries, because mangroves are in the transition area between land ecosystems and marine ecosystems.¹⁹² Mangroves are included in the coastal resource category under the Management of Coastal and Small Islands Law¹⁹³, and are included in the forest category under the Forestry Law¹⁹⁴. With this definition, the Ministry of Environment and Forestry has the main authority in managing mangroves in forest areas (state forest areas). Meanwhile, the MMAF has authority over mangrove management in coastal areas and small islands which are not state forest areas. For managing these mangroves, the role of the Ministry of Environment and Forestry is more significant because 79% of mangroves are in state forest areas, and only 21% are in non-forest areas which are the authority of the MMAF¹⁹⁵ and regional governments¹⁹⁶.

Based on Presidential Regulation Number 120 of 2020 concerning the Peat and Mangrove Restoration Agency, the authority to manage mangroves is also given to BRGM. Previously this agency was known as the Peat Restoration Agency. BRGM is a non-structural institution directly responsible to the President. BRGM specifically has a mandate to accelerate mangrove rehabilitation with a target of 600,000 ha in nine provinces by 2024, which is carried out with policy direction, technical guidance, and support from the Ministry of Environment and Forestry and MMAF. Apart from that, BRGM also has the mandate to monitor and evaluate the implementation of mangrove rehabilitation.¹⁹⁷

191 Krott, M, "Forest Policy Analysis", Research Publishing, (2005).

192 Indonesia, Law on Management of Coastal Areas and Small Islands, Law Number 27 of 2007 jo. Law Number 1 of 2014, Article 1 number 2.

193 *Ibid.*

194 Indonesia, Forestry Law, Law Number 41 of 1999, Article 1 paragraph (2).

195 Indonesia, Law on Management of Coastal Areas and Small Islands, Law Number 27 of 2007 jo. Law Number 1 of 2014, Article 1 number 2.

196 Appendix BB. Division of Forestry Affairs Law Number 23 of 2014 concerning Regional Government. See also: Article 249 Government Regulation Number 23 of 2021 concerning Forestry Implementation

197 Indonesia, Presidential Regulation concerning the Peat and Mangrove Restoration Agency, Presidential Decree Number 120 of 2020, Article 5 paragraph (4).

Apart from MMAF, MoEF, and BRGM as the main ministries/agencies in managing BCE, several other Ministries and/or Agencies also have a role in managing BCE, namely National Development Planning Agency in coordinating planning, Ministry of Agrarian Affairs and Spatial Planning/National Land Agency in formulating, determining, coordinating implementation and supervising national development and spatial planning¹⁹⁸, as well as regional government for mangrove management in the other land use area/Other Land Use Area.¹⁹⁹

Furthermore, the Oceanographic Research Center within the National Research and Innovation Agency (*Badan Riset dan Inovasi Nasional*) is responsible for activities such as creating a national repository for mangrove data (National Mangrove Map), advancing research technology, and overseeing the monitoring of mangrove and seagrass ecosystems. The National Research and Innovation Agency is also a contributing member of the Mangrove Forest Rehabilitation Working Group.

In order for the implementation of the authority held by several ministries and agencies above to be effective, the coordination function is very important. Based on Presidential Regulation Number 92 of 2019²⁰⁰, the Coordinating Ministry for Maritime Affairs and Investment is assigned to carry out coordination functions in the maritime sector, which includes mangrove management. To facilitate this coordination, the government has also formed ad-hoc teams and working groups, namely the Wetland Management Strategic Coordination Team and the National Mangrove Ecosystem Management Working Group. The specific functions of these two working groups are detailed in Box 3.1.

198 Indonesia, Spatial Planning Law, Law Number 26 of 2007 jo. Law Number 11 of 2020 concerning Job Creation, Article 1.

199 Indonesia, Government Regulation concerning the Implementation of Forest Areas, PP Number 23 of 2021, Article 249 paragraph (7).

200 Indonesia, Presidential Regulation concerning the Coordinating Ministry for Maritime Affairs and Investment, Presidential Decree no. 92 of 2019, Article 3 letter a.



Ad-Hoc Team related to Mangrove Ecosystem Management

1. Strategic Coordination Team for Wetland Management to Achieve Sustainable Development and Low Carbon Development Goals

In 2020, the regulations governing mangrove ecosystem management which were initially outlined in Presidential Regulation Number 73 of 2012 concerning the National Strategy for Mangrove Ecosystem Management, were revoked and replaced by Presidential Regulation Number 108 of 2020 concerning the 2019 Corona Virus Disease Handling Committee and PEN. The replacement Presidential Regulation disbanded the Team National Coordination of Mangrove Ecosystem Management. In line with this, National Development Planning Agency issued Decree of the Minister of National Development Planning Number 82 of 2020 concerning the Establishment of a Strategic Coordination Team for Wetland Management to Achieve the Goals of Sustainable Development and Low Carbon Development. This decree appointed the Director of the Environment of the Ministry of National Development Planning/Bappenas as Head of the Strategic Coordination Team. The coordination team consists of a director, person in charge and implementing team whose task is to design strategies and roadmaps for managing wetland ecosystems (peat and mangrove) in order to support the achievement of GHG emission reduction targets and the achievement of SDGs and Low Carbon Development (LCD) no later than October 2021 is one year since the decision was made. Other tasks are coordinating policies and steps for peat and mangrove management; coordinating and synchronizing policies between the government and regional governments, and multi-stakeholders; implementing data strengthening; and increasing socialization of wetland management policy regulations to the community.

2. National Mangrove Ecosystem Management Working Group/Mangrove Working Group

Decree of the Coordinating Minister for Maritime Affairs and Investment Number 88 of 2022 concerning the National Mangrove Ecosystem Management Working Group appoints the Coordinating Ministry for Maritime Affairs and Fisheries as the Chair of the Steering Committee for the National Mangrove Working Group, which consists of MoEF, MMAF, National Development Planning Agency, and BRGM. The targets of the Mangrove Working Group's activities include the preparation of policies, strategies, monitoring, and evaluation of national mangrove management in accordance with the road map; synchronization and implementation of the roadmap among ministries/agencies, regional governments, and communities; preparation of national mangrove management regulations and institutions; increasing cooperation with national and international strategic partners; and preparing and implementing strategies, studies, and policies related to blue carbon.²⁰¹

201 Indonesia, Decree of the Coordinating Minister for Maritime Affairs and Investment, Permenkomarves Number 88 of 202.

Ad-Hoc Teams Comparison Matrix

Ad-Hoc Team	Member	Job Description
Wetland Management Strategic Coordination Team to Achieve Sustainable Development and Low Carbon Development Goals	<ul style="list-style-type: none"> • Director: Minister of National Development and Planning • Working Group Coordinator: National Development Planning Agency • Members: Bappenas, BRGM, MoEF MoEF, MMAF, Ministry of Villages, National Research and Innovation Agency, Conservation International Indonesia, Ministry of Public Works and Public Housing, Lapan, Principal CIFOR Scientist, President Director of PT. Kandelial Alam, Ministry of Agrarian Affairs and Spatial Planning/National Land Agency, Ministry of Law and Human Rights 	<ul style="list-style-type: none"> • Designing strategies and roadmaps for managing wetland ecosystems (peat and mangroves); • Coordinating and providing policies and management measures; • Coordination and synchronization of policies with regional governments and multi-stakeholders; • Data amplification; • Increasing socialization of policy regulations.
Mangrove Working Group	<p>Chief Director:</p> <p>Coordinating Ministry for Maritime Affairs and Investment</p> <p>Member:</p> <p>MoEF, MMAF, National Development Planning Agency, and BRGM.</p>	<ul style="list-style-type: none"> • Preparation of policies, strategies, monitoring, and evaluation of national mangrove management in accordance with the road map; • Synchronize roadmap implementation • Preparation of regulations and institutions; • Increased cooperation with national and international strategic partners; • Develop and implement strategies, studies, and policies related to blue carbon.

The distribution of authorities in mangrove management can be seen in the following table (see Appendix 2 for a more complete table):

Table 3.1

Distribution of Authorities in Mangrove Management in Indonesia

Authority	Ministries and/or Agencies
Planning	Ministry of Environment and Forestry
	Ministry of Marine Affairs and Fisheries
	Ministry of Agrarian Affairs and Spatial Planning
	Ministry of National Development Planning/ National Development Agency
	Regional Government
Management and Utilization (incl. licensing)	Ministry of Environment and Forestry
	Ministry of Marine Affairs and Fisheries
	Regional Government
Supervision and Control (incl. law enforcement)	Ministry of Environment and Forestry
	Ministry of Marine Affairs and Fisheries
	Regional Government
Rehabilitation and Restoration	Peat and Mangrove Restoration Agency
	Ministry of Environment and Forestry
	Ministry of Marine Affairs and Fisheries
Research	National Research and Innovation Agency
	Ministry of Environment and Forestry
	Ministry of Marine Affairs and Fisheries
Coordination	Coordinating Ministry for Maritime Affairs and Investment
	National Development Planning Agency

Institutional Arrangement in Seagrass Management

Compared to mangroves, the authority in managing seagrass ecosystems does not involve as many ministries and agencies as mangroves. Seagrass is included in the category of coastal resources regulated in the Management of Coastal and Small Islands Law²⁰² as a coastal ecosystem resource.²⁰² Thus, seagrass management falls under the authority of the MMAF as the ministry responsible for managing coastal areas and small islands. MMAF has authority in the planning, utilization, supervision, and control process, together with regional governments based on their areas of authority (see Appendix 3).

²⁰² Indonesia, Law on Management of Coastal Areas and Small Islands, Law Number 27 of 2007 jo. Law Number 1 of 2014, Article 7.

Institutional Challenges

The effectiveness of the distribution of authority among ministries and agencies, as described earlier, hinges on its alignment with environmental governance. Various challenges associated with BCE institutions in Indonesia are outlined below:

1. Bureaucratic Rivalry Potential

As discussed previously, multiple ministries and agencies possess various responsibilities and authorities in mangrove management. This is because mangroves can be located in forest areas (which are under MoEF's authority), coastal areas (under MMAF's Authority), and Other Land Use Areas (regional government's authority). The difference between mangrove areas in coastal areas and forests refers to the determination of forest areas determined by the Ministry of Environment and Forestry in forest use planning. At the regional level, based on the Regional Government Law, Management of Coastal and Small Islands Law, and Forestry Law, mangrove management by regional governments is carried out through the Regional Environment and Forestry Office or the Regional Marine and Fisheries Office at the provincial and district/city levels. In the forestry sector, after the enactment of the Job Creation Law, regional governments still have some authority regarding forest management, including mangroves. These authorities include forest management²⁰³, conservation of biological natural resources and their ecosystems, education and training, assistance and community empowerment in the forestry sector, and watershed management across districts/cities within one province. Meanwhile, in the coastal and marine sector, based on the Regional Government Law, regional governments have full authority in managing coastal resources within a range of 0-12 miles.

The role of the Regional Environment and Forestry Office and the Regional Marine and Fisheries Office in each province is different. For example, in East Kalimantan, the exercise of authority carried out by the Regional Marine and Fisheries Office was only limited to coordinating with the Regional Environment and Forestry Office regarding mangrove hoarding and damage.²⁰⁴ There are also several provinces that have a common understanding to distinguish between mangroves which are forest and non-forest areas, so that there is clarity on the division of authority between the two institutions.²⁰⁵

With mangroves being managed by various ministries/agencies, effective coordination is needed to prevent potential duplication and bureaucratic rivalry. To illustrate the impact of competition between state institutions, the literature has explained its impact on two things: a) competition over limited budget allocations (allocation rivalry) and b) competition for authority and bureaucratic autonomy (functional rivalry).²⁰⁶

In the policy-making process, budgeting is a very important issue and often results in

203 (A) FMU forest management except for Conservation Forest Management Units (Forest Management UnitK); b) management plan of the forest management unit except for the Conservation Forest management unit; c) utilization of Production Forests and Protected Forests, including: utilization of forest areas; utilization of non-timber forest products; collection of forest products; utilization of environmental services except utilization of carbon storage and/or absorption; d) rehabilitation outside state forest areas; e) protection of Protected Forests and Production Forests; f) processing of non-timber forest products g) processing of wood forest products with a production capacity of <6,000 m³/year; and h) management of KHDTK for religious purposes. See: Appendix BB. Division of Government Affairs in the Forestry Sector Law no.23 of 2014 concerning Regional Government

204 IOJI Interviews in Bangka Belitung and Riau Islands Provinces, December 2021.

205 IOJI Interview in East Kalimantan Province, August 2022.

206 Nicholson-Crotty, Sean, et al., "Bureaucratic Competition in the Policy Process." *Policy Studies Journal* 33,(2005), p.341–61 <https://doi.org/10.1111/j.1541-0072.2005.00119.x>.

conflict between institutions due to limited funding sources available.²⁰⁷ Meanwhile, competition over authority (functional rivalry) on the one hand can give rise to innovative policies, but on the other hand can result in budget limitations and in one institution succeeding and developing (flourishing), while other institutions are not developing (diminishing).²⁰⁸ The existence of bureaucratic rivalry can ultimately hinder efforts to protect mangroves optimally.

Box 3.2

Bureaucratic Rivalry

Weber in *The Concept of Bureaucracy Theory* (1980) states that state institutions/public institutions characteristically have different tasks and responsibilities, hierarchies, and SOPs for carrying out their duties. However, Peters (2010) states that state institutions/bureaucracies compete with one another when they have the same object of responsibility, on an issue that has cross dimensions. cutting policy, such as the environment (Giessen, 2014). Therefore, bureaucratic Rivalry occurs when a policy is implemented/carried out by more than one actor who has a 'lead role' or a significant role in the same issue. The impact of bureaucratic rivalry is a sectoralized, uni-dimensional, uni-disciplinary, and uncoordinated policy (Brias-Easton, 2005), which will disrupt sustainable development.

Mangrove areas are on the border between forests and coastal areas and are managed by several ministries/agencies, each of which has its own policies, resulting in potential conflict. of interest (Krott, 2005).

Source: Faisal Abidin et al., "Exceptional Bureaucratic rivalry in mangroves forests policy: Explanations from the Sundarbans, Bangladesh," *Ocean and Coastal Management* 203, (2021), p.11.

2. Limited Human Resources

Limited human resources in BCE management ministries/agencies in Indonesia have an impact on the process of planning and policy implementation. Regarding governance assessment related to mangrove management in several countries, IUCN (2018) found three challenges related to institutional capacity: (1) planning management; (2) limited provision of information on the Geographic system Information Systems; and (3) monitoring and law enforcement capacity.²⁰⁹ In addition, knowledge regarding the relationship between mangroves and complex climate change issues, as well as access to data availability for policy planning, is still not evenly shared by ministries/agencies managing BCE.²¹⁰

Limited institutional capacity is also greatly influenced by the limited number of human resources and adequate capabilities to carry out several important functions. For example, the number of supervisors and extension workers is not commensurate with the area of

207 Campbell and Szablowski, *The Super Bureaucrats: Structure and Behavior in Central Agencies*, (New York: New York University Press, 1979) p.279.

208 Campbell, et al, *Organizing Governance, Governing Organizations*, (Pittsburgh: University Of Pittsburgh Press, 1988).

209 Slobodian, Lydia, et al., "Legal Frameworks for Mangrove Governance, Conservation and Use Assessment Summary", WWF Germany, (2018).

210 Murdiyarso, et al., "Network analysis of blue carbon governance process in Indonesia", *Marine Policy*, Volume 137, (2022).

mangrove forests in Indonesia. Supervisory capabilities will be discussed further in the Monitoring and Enforcement Chapter. The needs of extension workers will be discussed further in the Community Engagement Chapter.

3. Ministry/Agency/Regional Government (M/A/R) performance indicators are based on budget absorption

Based on the Corruption Eradication Commission's 2018 National Movement to Save Natural Resources (GNPSDA) program evaluation synthesis report, the achievement of outcomes in each program is still less than optimal. This is because M/A/R performance is based on the key performance index (KPI) from the Ministry of Finance.²¹¹ Based on this KPI, budget absorption (input), activities (process), and output from the program become performance references. Thus, M/A/R performance is not focused on achieving outcomes.

The obligation to absorb the budget in the Indonesian State Budget (*Anggaran Pendapatan Belanja Negara*) within just one year can also pose obstacles. Moreover, State Budget changes can only be made two and a half months before the fiscal year ends.²¹² The government has not implemented a multi-year budget like in other countries²¹³, meaning that the decisions for future work or programs often favor those that can be completed within one year.²¹⁴

Such a budgeting system raises two problems. First, it has not been able to address problems in the field which tend to be structural in nature and require multi-year solutions.²¹⁵ Second, there are many programs whose outcomes cannot be identified, considering that outcomes (which can be in the form of intermediate or final outcomes) will only be identified after more than a year.²¹⁶

211 Hariadi Kartodiharjo et al, Synthesis Note on Evaluation of the National Movement to Save Natural Resources (GNP-SDA), (Jakarta: Directorate of Research and Development of the Corruption Eradication Commission, p. 9.

212 *Ibid.*

213 Use of budget multi-year carried out in several countries, one of which is Canada and several states in America. See: "Multiyear Budgeting", <https://icma.org/articles/pm-magazine/multiyear-budgeting>

214 Hariadi Kartodiharjo et al, Synthesis Note on Evaluation of the National Movement to Save Natural Resources (GNP-SDA), (Jakarta: Directorate of Research and Development of the Corruption Eradication Commission, p. 9.

215 *Ibid.*

216 Hariadi Kartodiharjo et al, Synthesis Note on Evaluation of the National Movement to Save Natural Resources (GNP-SDA), (Jakarta: Directorate of Research and Development of the Corruption Eradication Commission, p.10.

Recommendations for Institutional Strengthening

Based on the challenges above, recommendations for institutional strengthening are at least as follows:

1. Building leadership, bureaucratic culture and human resources that support sustainability and Equitable Ocean Governance

Effective management of BCE determined by bureaucratic culture and human resources. This bureaucratic culture can be translated into bureaucratic behavior based on principles of good governance, which supports social justice, ability to maintain the carrying capacity of the ecosystem and sensitivity to the climate crisis (ecological justice).

To strengthen institutions in BCE management, bureaucratic culture needs to be based on the following principles:

- Transparency;
- Inclusivity, by involving non-government stakeholders, including in the process of policy making and program implementation (procedural rights)
- Decision making that prioritizes science based evidence
- Prioritization of cooperation (eagerness to cooperate) between relevant government institutions and non-government actors²¹⁷
- Implementation the principles of the rule of law in accordance with the constitutional mandate (Article 1 paragraph (3) of the 1945 Constitution): (1) supremacy of law; (2) equality before the law; (3) judicial independence; (4) a professional, fair and impartial legal process (due process of law)²¹⁸
- Adaptive or flexible responses²¹⁹
- Accountability in fulfilling responsibilities.²²⁰

Meanwhile, human resources in the Ministry/Agency managing BCE need to have capabilities that support policy planning and implementation. These capabilities are:

- Senses of authority and leadership in institutions responsible for coordination;
- Strong thinking orientation towards a sustainable and just development paradigm, including a sustainable approach ocean economy (sustainable marine economy), which prioritizes 3P (effective protection, sustainable use, and equitable benefits sharing), as well as the urgency of the earth crisis;²²¹
- Prioritization collaboration and synergy above sectoral egos;
- Development of integrity, through example (leadership by example) and the application

217 Stephan Willems and Kevin Baumert, "Institutional Capacity and Climate Actions", (Paris: OECD, 2003).

218 Zaid Afif, "The Concept of Rule of Law in the Indonesian Constitutional System", Asahan University LPPM Pioneer Journal, Vol.2 No.5, (July-December 2018) p. 56

219 *Ibid.*

220 *Ibid.*

221 The earth crisis or climate crisis describes the impact of climate change caused by increasing global temperatures. Stockholm Resilience, "The Nine Planetary Boundaries", <https://www.stockholmresilience.org/research/planetary-boundaries/the-nine-planetary-boundaries.html>, accessed September 12, 2021.

- of incentives and disincentives;
- Law enforcers who have the will and commitment (soft competency) to uphold justice, integrity and skills (hard competency) which shows alignment with the importance of saving ecosystems in handling natural resource management matters (in dubio pro natura);²²²
- Law enforcers who have an understanding of substantive and procedural laws relating to handling natural resource cases, and use a “multidoor” approach.²²³

The bureaucratic culture and human resource capabilities described above are needed to develop strong leadership. Environmental and BCE management requires visionary leadership and an insight into a sustainable and equitable development paradigm. Considering the issue of climate change and blue carbon which has become increasingly significant in recent years, leaders at the institutions involved need to have the ability to take initiatives based on scientific data and must be able to formulate justice-oriented policies for the current and future generations. It is imperative to foster a forward-looking, cooperative, and problem-solving approach.

2. Strengthen Coordination Functions and Use Integrated Approach to Avoid Bureaucratic Rivalry

BCE governance must be carried out with a clear mandate and authority among all relevant government stakeholders. The functions of each institution must be defined clearly, firmly and without overlaps in statutory regulations. This is intended to avoid collisions of authority or lack of responsibility. Apart from that, it is also to avoid regulatory gaps relating to the limits of authority, roles and functions of each ministry and/or related institution.

According to Bennett, coordination of roles, functions, and mandates among various ministries/agencies can be effectively managed by a coordinating body or institution. This ensures the quality of policies and addresses trade-offs.²²⁴ The role of the coordinating ministry must be able to overcome potential bureaucratic rivalry by ensuring that there is no overlapping of policies, for the sake of a smooth implementation process between Ministries/agencies. The role of the coordinating ministry can only be effective if it is not burdened with operational implementation roles. For example, programs that should be part of the main duties and functions of a K/L/P should not also be implemented by the coordinating ministry. This is important to maintain neutrality and prevent conditions where the holder of the coordinating function actually creates rivalry with the K/L/P being coordinated, thereby disrupting the main objectives in BCE management.

This coordination function is also important for implementing the integrated approach²²⁵ in bureaucratic processes to overcome cross-sectoral and complex issues.²²⁶ Through an integrated approach, related ministries/agencies will not work individually, but will

222 Principle 5 in Environmental Rules of Law, IUCN World Declaration on the Environmental Rules of Law; www.iucn.org/our-union/commissions/world-commission-environmental-law/our-work/history/foundational-documents-4 accessed 8 September 2022,

223 multidoor approach can be applied for various purposes, including: 1. Preventing disparities in criminal prosecution for similar cases (preventing discriminatory enforce) 2. Avoid opportunities for criminals to escape (consistent law enforcement), and 3. Recover state losses (through a chasing approach the assets).

224 Bennett, J. Nathan., et al. “ Environmental governance: A practical one framework to guide design, evaluation and analysis,” *Conservation Letters* Vol.11, (2018), p. 7.

225 Faisal Abidin et al., “Exceptional Bureaucratic rivalry in mangroves forests policy: Explanations from the Sundarbans, Bangladesh,” *Ocean and Coastal Management* 203, (2021), p.11.

226 *Ibid.*

carry out their respective tasks synergistically to achieve one common goal. Integrated approaches can be carried out through the development of a joint action plan and road map. This approach has been implemented to address plastic pollution in the sea, which is regulated in Presidential Regulation Number 83 of 2018 concerning Handling Marine Waste. This Presidential Decree forms a National Coordination Team consisting of 16 related Ministries/agencies to prepare inclusive action plans and road maps. In managing BCE, the government is adopting a similar scheme to the National Plastic Action Partnership, known as the National Blue Carbon Action Partnership. The latter is currently in the planning stages for implementation by the Coordinating Ministry of Maritime and Investment Affairs (CMMAI).

Box 3.3

Form of Mangrove Management Coordination Mechanism in Madagascar

Inter-Ministerial Environment Committee (CIME): Madagascar resolved potential duplication and bureaucratic competition by establishing CIME in 1997 as a cross-institutional coordination mechanism, given the cross-sectoral nature of environmental issues. The aim is to ensure that the policies and strategies adopted in each ministry include environmental or sustainability dimensions.²²⁷

Cross-agency mechanism coordination: National Committee for Integrated Coastal Zone Management (CNGIZC). This committee is responsible for coordinating sustainable development in coastal and marine areas.²²⁸

National Commission on the Integrated Management of Mangroves: In 2015, the National Committee for Integrated Mangrove Management or Commission Nationale de Gestion Intégrée des Mangroves (CNGIM) was formed to coordinate the integrated management of mangrove areas. This committee is guided by the Ministry of Agriculture, Livestock and Fisheries (MAEP) and co-chaired by the Ministry of the Environment and Sustainable Development (MEDD) and MAEP. The aim is to ensure sustainable mangrove management in mangrove areas, and to review and monitor all aspects related to mangrove management.²²⁹

3. Accelerate the preparation of road maps and performance indicators through an inclusive process

The decision to form a Strategic Coordination Team for Wetland Management to Achieve the Sustainable Development and Low Carbon Development Goals as well as the Mangrove Working Group is a good first step, especially with regard to the role of designing strategies and roadmaps for managing wetland ecosystems (peat and mangroves). To avoid duplication and increase coordination and budget efficiency, two ad-hoc teams can be integrated into the National Mangrove Ecosystem Management Working Group (Mangrove WG) and National Blue Carbon Action Partnership, which is currently in the process of being ratified. The integration of the two teams is expected to produce programs, policies, goals, and targets in mangrove management that are

²²⁷ *Ibid.*

²²⁸ *Ibid.*

²²⁹ Slobodian, L.N., Badoz, L., eds., *Tangled roots and changing tides: mangroves governance for conservation and sustainable use* (Berlin: WWF Germany, Gland: IUCN, 2019).

devoid of bureaucratic rivalry, not overlapping, and inducive of a collaborative and non-competitive environment.

Anticipating the release of the wetland roadmap document, there is a hope that the government will develop a roadmap for BCE management. This initiative aims to integrate efforts in managing mangroves with seagrass, which often operate independently. The BCE management action plan/roadmap is envisioned to enhance inclusivity by facilitating coordination among non-government stakeholders, making it easier for stakeholders outside the government to coordinate joint actions. Furthermore, the BCE management action plan/roadmap must be in line with and not duplicate the wetland ecosystem management road map.

The BCE roadmap should be oriented towards a singular, tangible, and measurable goal. Achievement of this goal hinges on each relevant ministry/agency fulfilling Key Performance Indicators, not solely based on budget absorption. The roadmap should incorporate a regular evaluation mechanism to gauge progress, identify challenges, and formulate effective solutions. Additionally, it must align with the FOLU Net Sink 2030 program.

4. Strengthen policies and institutions at the regional level

Strengthening commitment and policies at the regional level can be done by establishing a climate change policy coordination institution, such as the Regional Climate Change Council (*Dewan Daerah Perubahan Iklim*). The Regional Climate Change Council can support the smooth formulation of climate change policies and coordinate climate change programs from various institutions in regional governments. East Kalimantan Province has the Regional Climate Change Council as an ad-hoc institution that is multi-stakeholder in managing climate change issues. The Regional Climate Change Council was established by the Governor of East Kalimantan based on the Governor of East Kalimantan Regulation Number 9 of 2017. To overcome the issue of sectoral ego, the Regional Climate Change Council acts as an “intermediary” between the agencies and strengthens the “scientific” base so that it can be used as a basis for making policies and implementing programs,²³⁰

Another example is the formation of the Regional Mangrove Working Group (*Kelompok Kerja Mangrove Daerah*), which was formed through a governor’s decision. This Regional Mangrove Working Group has been found in several provinces, such as Riau, Central Java and Bangka Belitung. In Central Java, Regional Mangrove Working Group is a cross-sector forum with members from the regional government, mangrove experts and practitioners, as well as non-governmental organizations. The Central Java Regional Mangrove Working Group was ratified through the Decree of the Governor of Central Java Number 660.05/10/2009 concerning the Formation of the Mangrove Ecosystem Management Advisory Team for Central Java Province. For regions that have or will form Regional Peat and Mangrove Restoration Teams to implement the duties and functions of the regional Peat and Mangrove Restoration Agency and the Regional Mangrove Working Group, these two institutions at the regional level need to be synchronized.

230 IOJI Interview in East Kalimantan Province, August 2022.





Community Engagement

Community involvement stands as a crucial component in BCE governance, ensuring that the environmental benefits and functions of BCE are effectively harnessed by the communities. Given the significant number of people reliant on BCE for their livelihood, policies associated with BCE will distinctly affect them. The involvement of the community in governing blue carbon can be divided into two main phases: (1) policy formulation and (2) site-based ecosystem management. The positive influence of community engagement in BCE management has been evident in various countries like Kenya, Madagascar, and India.²³¹ Community engagement positively reinforces social resilience,²³² safeguards ecosystem services pivotal to community sustenance, preserves socio-cultural values, and nurtures a sense of proprietorship in the sustainable preservation of BCE.

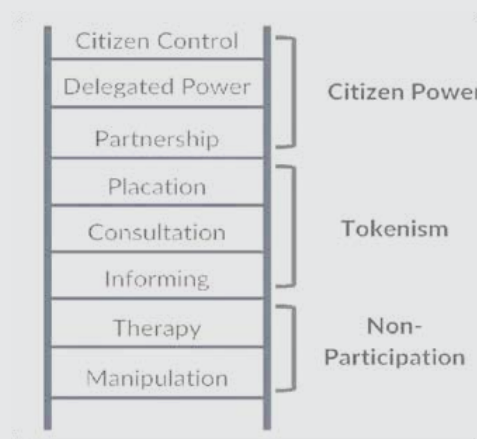
231 Wylie, et al., "Keys to successful blue carbon projects: lessons learned from global case studies," Marine Policy vol. 65, (2016), p. 76-84.

232 Vanderklift, et al., "Constraints and opportunities for market-based finance for the restoration and protection of blue carbon ecosystems," Marine Policy vol.107, (2019), p.4.

Box 4.1

Arnstein 's Theory of Citizen Participation

Arnstein divides citizen participation into 8 levels of the ladder rungs: (1) manipulation; (2) therapy; (3) informing; (4) consultation; (5) placement; (6) partnerships; (7) delegation; (8) citizen control.



Sherry Arnstein expounded on the varying levels of citizen participation, contingent on the power holders and the community's ability to fully utilize the means and mechanisms of participation. Arnstein underscored the critical difference between empty ritual community participation—*proforma* discourse—and real power that bears an impact on the results or outcomes derived from such participation.

Arnstein classified the eight types of participation into three levels. The lowest tier is non-participation, encompassing manipulation and therapy. The next level, identified as tokenism, includes practices such as informing, consulting, and placation, aimed at merely soothing or pacifying the community. Then, at the apex of the ladder is the highest level of participation, degree of citizen power. Within this level are the sixth stage, partnership, the seventh stage, delegated community power conferred by the power holder, and the eighth stage, participation where the community wields enough power to influence or control decision-making (citizen control).

The goal of non-participation is not to empower genuine participation. The intention of the power holder is limited to educating or addressing the community's desire for involvement. At the tokenism level, people are heard and given the space to express their views, but the ultimate decision-making authority rests solely with the power holders. At the citizen level of power, the community is provided with a significant opportunity to impact the outcome of the community engagement process, essentially providing a level playing field or equal bargaining position between the community and the decision-maker.

Source: Sherry R. Arnstein, *A Ladder of Citizen Participation*, 1969.

Community Engagement in Decision Making

Community engagement in the decision-making/policy formulation process related to BCE management has been regulated and guaranteed by various statutory regulations as follows:

First, Article 28 of the 1945 Constitution regulates the rights of the community to associate, gather, and express opinions. Furthermore, Article 18B of the 1945 Constitution recognizes and respects Indigenous People and their traditional rights.

Second, Article 65 of the Environmental Protection and Management Law regulates several rights related to community involvement in Articles 65, 66, and 70. Article 65 regulates the rights to a good and healthy living environment, access to participation, and the ability to submit proposals/objections to activities that can have an impact on the environment as well as public complaints due to alleged environmental pollution/damage. Article 66 stipulates that anyone who fights for the right to a good and healthy living environment cannot be prosecuted criminally or sued civilly. In this case, Article 66 protects people who fight for the right to a good and healthy living environment from attempts at criminalization and lawsuits, which are termed Anti-Strategic. Lawsuit Against Public Participation (Anti-SLAPP).²³³

Article 70 in the Environmental Protection and Management Law also describes the form of community engagement in environmental protection and management and regulates that the community has equal and broadest rights and opportunities to play an active role in environmental protection and management. From these three articles, the public has the right to raise objections to damaging activities, including those potentially damaging BCE.

²³³ Strategic Lawsuit against Public Participation "SLAPP" was introduced by George W. Pring in "SLAPPs: Getting Sued for Speaking Out." It is a lawsuit or counterclaim (reconvention) filed against a person or organization that speaks about a problem, interest or public concern.

Third, in the Spatial Planning Law jo. Job Creation Law, the role of the community in preparing spatial planning policies can be categorized into several stages, namely: a) participation in preparing spatial planning plans, b) participation in space utilization, and c) participation in utilization control. Community involvement in the preparation of spatial planning plans is supported by regulations in Government Regulation Number 45 of 2017 concerning Community Engagement in the Implementation of Regional Government Article 1 jo. Article 2 paragraph (2) letter e and h states that the community has the right to participate in the preparation of regional regulations and regional policies that regulate and burden the community, includes permits.²³⁴ This provision shows that there is space for the community in the planning, decision making, supervision, and implementation of development processes.

Fourth, in the Management of Coastal and Small Islands Law , there are several articles that provide space for community involvement. Article 62 states that the community has equal opportunity to participate in the management of Coastal Areas and Small Islands (WP3K), starting from planning, implementation of management, to monitoring. The form of participation is the right to submit an application for an Indigenous People area to be included in the coastal and small islands zoning plan, the right to obtain information, and within a certain period of time, the right to refuse or raise objections to management activities at WP3K. With this provision, normatively, the Management of Coastal and Small Islands Law provides protection for the community from things and activities in coastal areas that potentially cause harm to the community.

Fifth, in the Forestry Law jo. Law Number 11 of 2020 concerning the Job Creation Law jo. PP Number 23 of 2021 regulates the management of protected forests and production forests by the community through Social Forestry. Social Forestry will be discussed further in the next section on community involvement schemes within ecosystem management.

Sixth, in the Presidential Regulation Carbon Economic Value jo. Minister of Environment and Forestry Regulation Number 21 of 2022 regulates that communities can be involved in climate change mitigation activities, in the form of carbon trading or performance-based payments, both of which can be applied in mangrove management and conservation.

Judging from the explanation above, the legal framework in Indonesia already accommodates community engagement in the decision-making process. However, the legal framework alone is not enough to ensure effective participation. There are other influencing elements, namely transparency and availability of information, group

²³⁴ Indonesia, Government Regulation Concerning Community Engagement in the Implementation of Regional Government, PP Number 45 of 2017 concerning Article 1 jo. Article 2 (2)



representation (including women's groups), recognition of traditional/local knowledge (indigenous knowledge) to be integrated into the decisions, as well as community motivation to involve themselves in the process of policy formulation and ecosystem management.

Table 4.1

Regulation on Community Engagement

Regulation	Article	Article Contents
1945 Constitution	Article 28	The right of the public to associate, gather and express opinions
1945 Constitution jo. Constitutional Court Decision Number 35/ PUU-X/2012	Article 18 B	Recognition and respect for customary law communities and their traditional rights
Environmental Protection and Management Law	Article 65	<p>Everyone has the right to:</p> <ul style="list-style-type: none"> a. a good and healthy environment as part of human rights b. obtain environmental education, access to information, access to participation, and access to justice in fulfilling the right to a good and healthy environment c. submit proposals and/or objections to business plans and/or activities that are expected to have an impact on the environment d. play a role in environmental protection and management in accordance with statutory regulations e. make complaints due to alleged environmental pollution and/or destruction.

Regulation	Article	Article Contents
Environmental Protection and Management Law	Article 66	Every person who fights for the right to a good and healthy environment cannot be prosecuted criminally or sued civilly
	Article 70	<p>The community has the same and broadest rights and opportunities to play an active role in environmental protection and management.</p> <p>Community roles can take the form of:</p> <ul style="list-style-type: none"> a. social supervision; b. providing suggestions, opinions, suggestions, objections, complaints; c. delivery of information and/or reports.
Spatial Planning Law jo. Job Creation Law	Article 65	<p>The role of the community in formulating spatial planning policies can be categorized into several stages, namely in:</p> <ul style="list-style-type: none"> a. participation in the preparation of spatial plans; b. participation in space use; c. participation in utilization control;
Management of Coastal and Small Islands Law jo. Job Creation Law	Article 62	The community has the same opportunity to participate in the Management of Coastal Areas and Small Islands, starting from planning, implementing management, to monitoring.
	Article 60	<p>The community's right to gain access to parts of coastal waters that have been granted a Location Permit and Management Permit</p> <p>The community's right to propose traditional fishing areas into the RZWP-3-K;</p> <p>The right to apply for customary law community areas into coastal and small islands zoning plans.</p>
	Article 60	The right to obtain information, within a certain period of time.
		The right to object to the management plan.

Regulation	Article	Article Contents
Environmental Protection and Management Law jo. Job Creation Law	Article 18 paragraph (1)	The process of issuing environmental approval is a process that involves the community, namely in the process of preparing an EIA and issuing environmental approval through public consultation
Law Number 41 of 1999 concerning Forestry jo. Job Creation Law jo. PP Number 23 of 2021 concerning Forestry Implementation	Article 29 A	Utilization of Protected Forests and Production Forests through Social Forestry.
Presidential Regulation Carbon Economic Value jo. Minister of Environment and Forestry Regulation Number 21 of 2022 concerning Procedures for Implementing the Economic Value of Carbon	Article 6 paragraph (2) Presidential Regulation Carbon Economic Value jo. Article 3, Article 32 Per Minister of Environment and Forestry	Implementing climate change mitigation within the framework of the Carbon Economic Value can be carried out by the community either through carbon trading mechanisms or performance-based payments.
Environmental Protection and Management Law jo. Job Creation Law	Article 26	The preparation of EIA documents is carried out by involving communities directly affected by business plans and/or activities.
Government Regulation Number 22 of 2021 concerning Environmental Management	Article 28 paragraph (3)	Involvement of communities directly affected in the EIA is carried out through announcements of business plans and/or activities, and public consultations.

Forms of Community Engagement in Blue Carbon Ecosystem Management

Management, utilization and conservation efforts of BCE has been carried out by communities in Indonesia through various schemes and policies.

Social Forestry Scheme

Social Forestry is a community forest management scheme with the aim of improving welfare, maintaining environmental balance, and preserving socio-cultural dynamics in

the form of Village Forest, HKm, HTR, Customary Forests and Forestry Partnerships.²³⁵ Social Forestry is a solution for communities who want to utilize forests productively and sustainably. There are at least three reasons why Social Forestry can be a community forest management scheme. First, Social Forestry can resolve land conflict and provide access to forest management for the community. Second, by formally recognizing community management rights, Social Forestry can provide incentives for community empowerment and opportunities for community economic growth. Third, Social Forestry provides access to forest management for communities, which can encourage communities to carry out conservation practices.²³⁶

Social Forestry shows positive results based on several studies. First, by providing formal recognition of forest management by the community, Social Forestry strengthens social institutions²³⁷ and increases community knowledge of forest management, opening up opportunities for collaboration and non-financial benefits²³⁸ and thereby making the community highly committed to managing forests in the long term.²³⁹ Second, Social Forestry also reduces social conflicts related to management status,²⁴⁰ and becomes a tool for conflict resolution with various forestry stakeholders.²⁴¹ Furthermore, Social Forestry can reduce inequality in society and provide support for marginalized groups.²⁴² Third, Social Forestry provides economic opportunities for forest management communities. Social Forestry can increase people's income,²⁴³ improve people's welfare, and reduce their dependence on national park areas.²⁴⁴ By increasing the capital owned by local

235 Indonesia, Government Regulation concerning the Implementation of Forest Areas, PP Number 23 of 2021, Article 1.

236 MR Fisher et al., "Assessing the new Social Forestry project in Indonesia: Recognition, livelihood and conservation?", *International Forestry Reviews* Vol 20 (3), (2018), p.2.

237 Harada and Wiyono, "Certification of a Community-based Forest Enterprise for Improving Institutional Management Eco and Household Income: A Case from Southeast Sulawesi, Indonesia," (2014), in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

238 Nurrochmat, et al., "Contesting national and international forests regimes: Case of timber legality certification for community forests in Central Java, Indonesia", (2016) in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

239 Suwarno, et al., "Participatory modeling to improve partnerships schemes for future Community-based Forest management in Sumbawa District, Indonesia," (2009) in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

240 Suwarno, et al., "Participatory modelling to improve partnerships schemes for future Community-Based Forest Management in Sumbawa District, Indonesia" (2009)" and Akiefnawati, et al., "Stewardship agreement to reduce emissions for deforestation and degradation (REDD): case study for Lubuk Beringin's Village Forest, Jambi Province, Indonesia" (2010), in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

241 Arifin, et al., "A conjoint analysis of farmer preferences for community forestry contracts in the Sumber Jaya Watershed, Indonesia," (2009), in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

242 Race and Sumirat, "Understanding the timber value chain in community-based forestry in Indonesia: analysis of sengon in central Java," (2015), in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

243 Winarni et al., "Tengkawang cultivation model in community forests using agroforestry systems in West Kalimantan," (2017), Wulandari and Inoue, (2018), in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

244 Lee, et al., "Measuring social capital in Indonesian community forests management," (2017) in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: OpMeasuring social capital in Indonesian community forests management, opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.



communities,²⁴⁵ Social Forestry can reduce poverty levels²⁴⁶ by providing a reliable source of income in the long term.²⁴⁷ Fourth, social forestry also contributes positively to the sustainable development agenda.²⁴⁸ Social Forestry can increase public awareness to protect forests from forest destruction and illegal logging practices,²⁴⁹ and has been proven to reduce deforestation rates²⁵⁰, maintain biodiversity and conservation values²⁵¹, and maintain and conserve forest cover.²⁵²

The findings from the Author's field research also show consistent results regarding the positive potential of Social Forestry as mentioned above. Social Forestry can be a solution for communities who have already cleared land in forest areas—including land clearing in mangrove forest areas—for years before the forest area was established. One of the

245 Kaskoyo, et al., impact of community forest program in protection forests on livelihoods outcomes: a case study of Lampung Province, Indonesia. *J. Sustain*, "" (2017), in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

246 Rumboko, et al., "Optimizing community-based forests management policy in Indonesia: a critical review," (2013) and Wulandari, et al., (2018) in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

247 Suwarno, et al., "Participatory modelling to improve partnerships schemes for future Community-Based Forest Management in Sumbawa District, Indonesia", (2009), in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

248 Wulandari, et al. "The importance of social learning for the development of community based forests management in Indonesia: The Case of Community Forestry in Lampung Province," (2018) and Santika, et al., (2017), in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

249 Rosyadi, et al., "Creating politics capital to promote devolution in the forestry sector —a case study Soc of the forests communities in Banyumas district, Central Java, Indonesia," (2005) and Suwarno, et al., "Participatory modeling to improve partnerships schemes for future Community-Based Forest Management in Sumbawa District, Indonesia," (2009), in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

250 Santika, et al., "Community forests management in Indonesia: Avoided deforestation in the Env context of anthropogenic and climate complexities," (2017) in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

251 Langston, et al., "Estate crops more attractive than community forests in West Kalimantan, Indonesia" (2017), in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Estate crops more attractive than community forests in West Kalimantan, Indonesia. *Land* 6." *Opportunities and Challenges*," *Forest Policy and Economics* 111, (2020), p.1-13.

252 Fisher, et al., (2018) and Kaskoyo, et al., (2017), in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

continuation of business activities in forest areas that is often found in communities that depend on mangroves is pond activities.²⁵³ For communities that manage aquaculture, from the findings of field studies in the Delta Mahakam, East Kalimantan, Social Forestry is a solution to provide legal management, and this legality has a positive economic impact on the community, while preserving the remaining mangrove areas. This connection between social, economic, and environmental aspects can be realized, for example, when communities implement the silvofishery aquaculture system.

The system of silvofishery, or traditional environmentally friendly aquaculture, allows for aquaculture activities in mangrove areas, while also encouraging the planting of mangroves in those same areas. The productivity of aquaculture depends on the presence of mangroves because mangroves function as: a water salinity neutralizer, temperature guard, a wave barrier, and supplier of natural fish food.²⁵⁴ This management is carried out by groups such as the Forest Farmers Group (KTH) as a Social Forestry permit holder, and within this community group there is a Fish Farmer Group (Pokdakkan). In field studies in other areas, especially in HKm Gempita (Kurau Village, Bangka Belitung Islands), Social Forestry also helps the economy of the community whose daily livelihood is as fishermen by encouraging the management and utilization of mangrove areas as ecotourism sites, as well as the selling various processed mangrove products such as syrup.

In practice, the implementation of Social Forestry programs is faced with various challenges, such as a lengthy process to obtain a Social Forestry permit, as well as limitations in assistance due to lack of human resources and location distance. This challenge will be discussed further in the Tenurial Security Chapter.

Customary Forests and Coastal Customary Community Management Areas

As per the Forestry Law in Indonesia, forests are classified into two main categories: state forests and private forests.²⁵⁵ Historically, until 2013, customary forests were classified under the state forest category. Advocacy efforts led by AMAN and various institutions aimed to secure recognition for customary tenure systems. These initiatives involved petitioning for a review of the Forestry Law, which neglected to acknowledge the rights of indigenous peoples.²⁵⁶ The contention was that this law contradicted the 1945 Constitution, particularly the 2002 Amendment (Article 18B paragraph 2), which acknowledges the cultural identity and traditional rights of indigenous communities as essential human rights. In 2013, the Constitutional Court ruled in favor of separating customary forests from state forests. The court's decision resulted in the removal of the term "state" from Article 1 paragraph 6 of the Forestry Law. Presently, the definition designates "customary forests as existing forests within the territories of customary law

253 This is permitted based on the settlement mechanism for business activities that do not have business permits and do not have permits in the forestry sector based on Article 110B of Law Number 18 of 2013. This article provides an exemption from administrative sanctions for individuals who live in or around forest area for five years continuously with a maximum area of five hectares. For these legal subjects, the solution is resolved through structuring forest areas, including Social Forestry, TORA, or changes to the designation and function of forest areas. See: Article 41 paragraph (1) and 42 paragraph (1) PP Number 24 of 2021 concerning Procedures for Imposing Administrative Sanctions and Procedures for Non-Tax State Revenues Derived from Administrative Fines in the Forestry Sector.

254 Interview with Prof. Dr. Esti Handayani Mardi, Professor at the Faculty of Fisheries and Marine Sciences, Mulawarman University, August 10 2022.

255 Indonesia, Forestry Law, Law Number 41 of 1999, Article 5 paragraph (1).

256 AMAN, "Pernyataan Sikap AMAN tentang Perubahan Kawasan Hutan", Press Release AMAN, (2014), in Siscawati, et al., "Overview of forests tenure reform in Indonesia", Working Paper 223, (2017), p.15.

communities."²⁵⁷

Constitutional Court Decision Number 35/2013 is an important achievement in relation to community rights to forest resources in Indonesia. Significantly, this ruling expands the rights of indigenous peoples because the regulation requires the government to grant collective ownership of areas traditionally managed by indigenous peoples. Based on this explanation, it is clear that customary law communities can manage and control their customary forests legally.

Indigenous People in coastal areas can also be involved in the management of BCE in coastal and marine areas by establishing Coastal Customary Community Management Areas.²⁵⁸ Customary management Areas that have been determined will be integrated into RZWP3K RZ-KSN, RZ-KSNT, and Interregional RZ. The determination of this management area can only be proposed by customary law communities, who have received recognition and protection through the appointment of regents/mayors. In the event that the regent/mayor as referred to has not yet determined the recognition and protection of customary law communities, the Minister can facilitate the identification and/or stages of verification and validation stages.²⁵⁹ This recognition and protection process must go through identification, verification and validation, and determination processes. Until 2022, the Directorate General of Maritime Spatial Management MMAF has carried out an inventory of 32 communities in five provinces identified as Indigenous People. Of the total of 32 communities that have been identified by the MMAF, 22 of them have been designated through 18 regulations/decrees from regents/mayors.²⁶⁰ On the other hand, based on identification data by AMAN, there are 550 indigenous communities that inhabit coastal areas (377 communities) and small islands areas (182 communities).²⁶¹

Management and conservation of mangrove forests by Indigenous Peopleunities can be found, for example, in Maluku. Indigenous communities in Maluku have historically managed their forest areas traditionally for many years. The Maluku regional government has also recognized various existing customary law communities, although they are still hampered by their formal determination and recognition through regional regulations, In this regard, the people in Maluku were ultimately uninterested in a Social Forestry management model that only provides partial rights, compared with full ownership of the forest area.²⁶²

Similar to Social Forestry, recognition of customary forests also faces various obstacles, even more complex than Social Forestry, including: (1) the Indigenous People Law has not yet been issued; (2) incomplete mapping and delineation of forest areas; (3) requirements for establishing customary forest areas requires multiple stages; (4) and the inadequate role of regional governments in facilitating recognition of indigenous communities. These obstacles will be discussed further in the Tenurial Security Chapter.

257 Siscawati, et al., "Overview of forests tenure reform in Indonesia", Working Paper 223, (2017), p.15.

258 Indonesia, Regulation of the Minister of Maritime Affairs and Fisheries concerning Procedures for Determining Management Areas of Customary Law Communities in the Utilization of Space in Coastal Areas and Small Islands, Minister of Maritime Affairs and Fisheries Regulation Number 8 of 2018, Article 4.

259 Indonesia, Regulation of the Minister of Maritime Affairs and Fisheries concerning Procedures for Determining Management Areas for Customary Law Communities in the Utilization of Space in Coastal Areas and Small Islands, Minister of Maritime Affairs and Fisheries Regulation Number 8 of 2018, Article 7 paragraph (2)

260 Berita Satu, "KKP determines protection for 22 customary law communities" <https://www.beritasatu.com/Ekonomi/814097/kkp-tetangkat-perlindungan-bagi-22-community-Hukum-adat>, accessed in September 2022.

261 National Indigenous Peoples Alliance, "Catatan Akhir 2021: Tangguh di Tengah Krisis," (2021), p.20.

262 Nining Liswanti, et al., "Securing tenure rights in Maluku, Indonesia," CIFOR Number 170, (2017), p.2.

Community Conservation Initiative

The third scheme that can be used and has been put into practice in Indonesia is community initiatives to conserve mangrove forests outside of Social Forestry and customary forest schemes. This practice can be found at the Mangrove Center, Balikpapan, East Kalimantan, which was initiated by Agus Bei. This Mangrove Center protects mangrove areas through education and locally-managed ecotourism. The area of the Mangrove Center is a combination of Other Land Use Area and state forest areas.²⁶³ Another example, in Pengudang Village (Bintan District, Riau Islands Province), where Iwan Winarto developed community-based mangrove and seagrass ecotourism management. The rights/legal basis for managing mangrove ecotourism are based on a decree issued by the Tourism Regional Office. The development of this tourist village is a collaboration between village residents who are fishermen and craftsmen.²⁶⁴

Community initiatives also come from universities, one of which is the Teluk Awur Mangrove Ecosystem Study Group (Kemat) which is a student activity unit under the Faculty of Fisheries and Marine Affairs, Diponegoro University.²⁶⁵ Kesemat's activities focus on mangrove rehabilitation in several areas, including Java, Sumatra, Kalimantan, Sulawesi, Maluku.²⁶⁶ Apart from rehabilitation, Kesemat also encourages sustainable use of mangroves to improve community welfare, through a creative mangrove industry which produces several processed mangrove products such as coffee, batik and processed food.²⁶⁷

Apart from Kesemat, the Lampung Mangrove Center is also a mangrove management initiative as a form of collaboration between the university and the community. Lampung Mangrove Center is located in Margasari Village, East Lampung District. During a field practicum for students at the University of Lampung in 2004, the Head of Margasari Village at that time took the initiative to hand over 50 ha mangrove forest area for an educational forest to the University of Lampung.²⁶⁸ Currently, the University of Lampung has obtained a location permit for managing a 700 ha mangrove forest which is used for research center and ecotourism.²⁶⁹

Community Engagement Through Implementation of the National Economic Recovery Program

Community engagement encouraged by the central government and regional governments is also found in mangrove planting programs, one of which is within the framework of National Economic Recovery (*Pemulihan Ekonomi Nasional*).

BRGM implements a community-based mangrove rehabilitation program approach

263 Interview with Mr. Agus Bei, Manager of Graha Indah Mangrove Center, Balikpapan, East Kalimantan, 12 August 2022.

264 Interview with Mr. Iwan Winarto, Manager of Pengudang Bintan Mangrove, Bintan, Riau Islands Province, December 14, 2021.

265 Kesemat, "Kiprah", <https://kesemat.or.id/kiprah/>, accessed 20 December 2022.

266 *Ibid.*

267 *Ibid.*

268 Kustanti, et al., "Integrated Management of Mangrove Ecosystem in Lampung Mangrove Center (LMC) East Lampung District, Indonesia," *Journal of Coastal Development* Vol.15 Number 2, (2012), p.1.

269 *Ibid.*



or intervention through community groups. One of the positive impacts of National Economic Recovery program is that mangrove planting has become a new source of income for the community through purchasing mangrove seeds and providing planting wages. By identifying areas that needed rehabilitation, BRGM formed the Mangrove Care Village (*Desa Peduli Mangrove*). The Mangrove Care Village program includes: (1) placing village assistants; (2) participatory village mapping; (3) social mapping; (4) education to the community through field schools; and (5) institutions at the village level.

In the institutional development program at the village level, BRGM asks villages to create village regulations or regulations related to the protection and rehabilitation of mangrove ecosystems. BRGM has currently conducted online training for 200 villages. In order to support the mangrove rehabilitation program, this can be done through the Village Medium Term Development Plan and Village Government Work Plan, so that villages can allocate their budget to protect the local mangrove ecosystem. Community groups that carry out mangrove planting are connected with villages to ensure synergy. In developing Mangrove Care Village, BRGM also engages with several local universities.

BCE Management through Finance Projects

One example is the Reducing Emissions from Deforestation and forests Degradation (REDD+) project, which receives funding through Result-Based Payment (RBP). This project showcases positive incentives obtained from the results of verified emission reduction achievements and co-benefit results.²⁷⁰

One example of implementation of the financing mechanism through RBP that is the Berau Forest Carbon Program (PKHB) in Berau, East Kalimantan. PKHB is one of four pilot programs to increase carbon sequestration and REDD+ sustainable forest management facilitated by The Nature Conservancy (TNC).²⁷¹

This program has been implemented since 2010, where through the East Kalimantan Governor's Decree Number 522/K.512/2010 dated April 14 2010, the East Kalimantan REDD+ Working Group and Regional Climate Change Council formed as a coordinating

270 GCF Tasks Force, "REDD+ Results Based Payment (RBP) Indonesia: Overview and Preparations for Provinces", https://gcftf.org/wp-content/uploads/2020/12/RBP_Booklet_20200512_ENG.pdf, accessed on 21 December 2022.

271 Herlina Hartanto, et al., *SIGAP REDD+ Inspiring Citizen Action for Change in REDD+*, (Jakarta: The Nature Conservancy, 2014), p. 94.

team for climate change adaptation and mitigation activities in East Kalimantan.

To ensure that the community can be actively involved in PKHB, various forms of community involvement are implemented, including through the formation of community forums or institutions, assistance in management, and the implementation of free, prior and informed consent. In addition, the development and implementation of a monitoring and evaluation system works to ensure community involvement in PKHB results in meaningful contribution to community welfare and forest sustainability.²⁷²

To encourage community engagement, the financing system is allocated to support three program categories: (1) mitigation and management of natural resources, (2) economic development in line with the principles of sustainable forest protection and management, and (3) strengthening enabling conditions.²⁷³ This financing system is performance-based, so the amount of incentives received by the community will be determined by their level of performance in implementing their work plans. Apart from that, financing is only given to communities who have agreed to participate in the PKHB initiative, which is indicated by the existence of agreement documents, work plans, and cooperation agreements.²⁷⁴ This will be discussed in the Financing sub-chapter.

272 *Ibid.*

273 Herlina Hartanto, et al., *SIGAP REDD+ Inspiring Citizen Action for Change in REDD+*, (Jakarta: The Nature Conservancy, 2014), p. 97.

274 *Ibid*, p. 98.



Box 4.2

Mama Mikoko Successfully Invites Kenyan Women in Mangrove Project

Mikoko Project Pamoja in Gazi Bay is one of the successful BCE management projects, where this project is led by the women-focused community. One of the important lessons in achieving its success is the high level of participation, ownership and support from the population.²⁷⁵ Local communities are also very aware of and involved in the transparent land use planning process. Mikoko Pamoja Project is able to provide alternatives to fulfill the community's livelihood, such as planting pine trees to prevent the cutting down of mangroves for building materials.²⁷⁶ Mikoko Pamoja Projects also empowers women, Zulfa Hassan, known as "Mama Mikoko" (mother mangrove) invited women in the community and formed the Mtangawanda Women's Association. This association is involved in mangrove restoration activities and since 2018, tens of thousands of mangroves have been planted in degraded mangrove areas.²⁷⁷

Community Engagement in Monitoring

The community also has an important role in monitoring. They can carry out monitoring through their function as part of the Community Monitoring Group (*Kelompok Masyarakat Pengawas/Pokmaswas*) or by submitting complaints. These two things will be discussed in the Monitoring and Enforcement Chapter.

Challenges of Community Engagement in Indonesia

1. Challenges for Communities in Accessing Information and Participating in Policy Making

In practice, there are still barriers to community engagement in policy making, especially in land and coastal spatial management. This can be seen from the challenges in gaining access to information and access to participation in policymaking. According to literature on several phenomena in different countries, non-involvement of communities in the decision-making and governance process can lead to problems of injustice faced by coastal communities, such as plunder, displacement, confiscation of marine space, environmental degradation, and reduction of environmental services.²⁷⁸

Article 2 of Law Number 14 of 2008 concerning Openness of Public Information regulates the public's right to access public information and consists of the provisions that: (1) everyone has the right to access information, (2) exceptions to access is very limited,

²⁷⁵ The Commonwealth, "Community led mangroves restoration and conservation in Gazi Bay, Kenya, Lessons Learned from Early Blue Carbon Projects", <https://thecommonwealth.org/case-study/case-study-community-led-mangrove-restoration-and-conservation-gazi-bay-kenya-lessons>, accessed August 2021.

²⁷⁶ *Ibid.*

²⁷⁷ The Nature Conservancy, "Mother Mangrove: The Woman Behind Kenya's Mangrove Restoration", <https://www.nature.org/en-us/about-us/where-we-work/africa/stories-in-africa/women-kenya-mangrove-forest/>, accessed 12 December 2022.

²⁷⁸ Bennett, et al., "Blue growth and blue justice: Ten risks and solutions for the ocean economy", *Marine Policy* Vol.125, (2021), p.1.

and (3) access to information is provided timely, precisely, at low cost and simply. This is also emphasized in the Environmental Protection and Management and Management of Coastal and Small Islands Laws. However, currently there are still obstacles in the public participation mechanism in Indonesia because the information disclosure process is not yet optimal.²⁷⁹

Apart from that, policymaking has not provided sufficient space for the community to be involved meaningfully. For example, the National Law Development Agency noted that one of the challenges that affects community engagement in preparing spatial planning is that the involvement of residents in preparing spatial planning plans is still a formality. The government considers that by carrying out the socialization and consultation process, the role of the community has been involved. On the other hand, communities expect that their influence will reach the decision-making stage. The National Law Development Agency also noted that community involvement in the preparation of spatial planning is still minimal and only involves certain groups who are considered not resistant.²⁸⁰

The problem of low community involvement in land and coastal spatial management policy planning is caused by poor communication by the government to the community.²⁸¹ For example, plans for the management of coastal areas and small islands in Jepara were protested due to a lack of community involvement which resulted in fishermen having limited access due to new regulation requiring fishermen to have an area use certificate.²⁸²

The EIA process is also often seen as not being carried out with genuine community engagement, but rather being carried out with formality.²⁸³ Several studies have found that public consultation in EIA has not provided sufficient access for the community to be truly involved in the decision-making process. Apart from the lack of public understanding regarding the purpose and importance of EIA, the issue of corruption is a challenge in implementing EIA.²⁸⁴ Based on data from the GNPSDA report in 2018, indications of corruption in forestry sector licensing reached IDR 688 million to IDR 22.6 billion per company per year.²⁸⁵ In addition, in the implementation of forest conversion for use in other sectors, there is a potential state loss of around IDR 49.8 trillion to IDR 66.6 trillion per year.²⁸⁶ Another problem is the lack of follow-up on the results of public consultations

279 Daniel and Habsari, "Informational Asymmetry in Public Participation on Environmental Monitoring in Indonesian Regulation: A Preliminary Discourse", *CSID Journal of Infrastructure Development* Vol.2 (1), (2019), p.13.

280 National Legal Development Agency, *Legal Research on Community Engagement in Spatial Planning*, (Jakarta: BPHN Ministry of Law and Human Rights of the Republic of Indonesia, 2011)

281 A Ramadhan, et al., "Collaborative Approaches For Coastal and Marine Spatial Planning in Indonesia: Opportunities and Challenge", *IOP Conf. Series: Earth and Environmental Science* 501 (2020), p.4. See: Ambari, "Central Java Provincial Government Violates Laws in Coastal Zone Discussions?" <https://www.mongabay.co.id/2018/03/16/pemprov-jateng-langgar-angkat-undang-dalam-pengbahanzonasi-pesisir/>

282 A Ramadhan, et al., "Collaborative Approaches For Coastal and Marine Spatial Planning in Indonesia: Opportunities and Challenge", *IOP Conf. Series: Earth and Environmental Science* 501 (2020), p.4 See: Ambari, "Central Java Provincial Government Violates the Law in Coastal Zone Discussions?" <https://www.mongabay.co.id/2018/03/16/pemprov-jateng-langgar-angkat-undang-dalam-pengbahanzonasi-pesisir/>

283 Lai, et al., "Technical experts ' perspectives of justice-related norms: Lessons from everyday environmental practices in Indonesia," *Land Use Policy* Vol.102, (2021), p.3.

284 *Ibid.*

285 Hariadi Kartodiharjo et al, *Synthesis Note on Evaluation of the National Movement to Save Natural Resources (GNP-SDA)*, (Jakarta: Directorate of Research and Development of the Corruption Eradication Commission, p. 5.

286 *Ibid.*

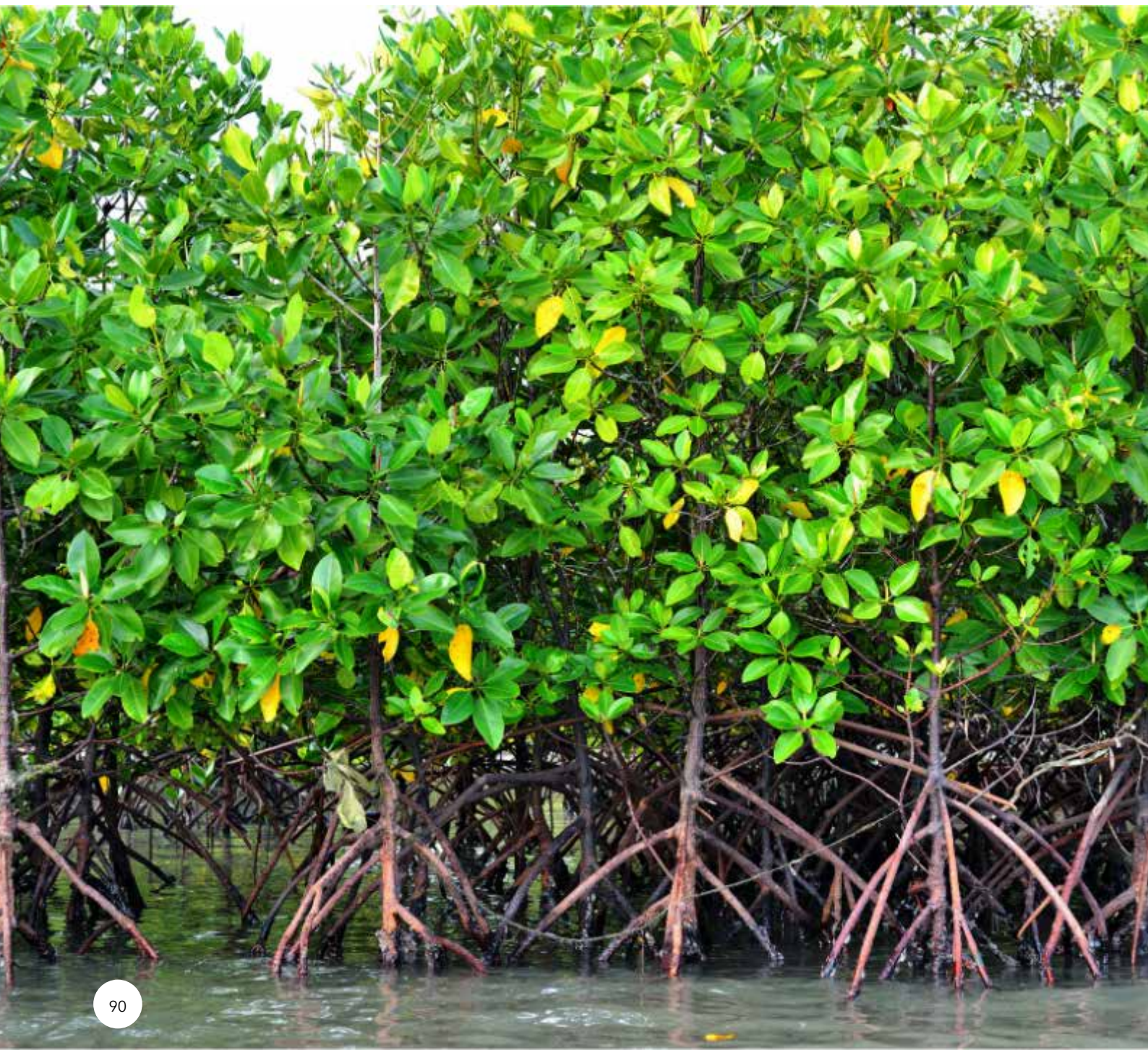
and decision making from the government to the community.²⁸⁷

Based on Arnstein's level of participation theory, community engagement in the environmental licensing process (which is now environmental approval)²⁸⁸ can be seen at the degree of tokenism. This is caused by processes which limit participation to only consultation and providing information, according to Farhan Ulya, et al., (2020), without providing a guarantee that the community's voice is taken into account in determining the outcome of a public decision.²⁸⁹ Hence, it is possible for the communities to provide significant input, but the decision is still fully controlled by the power holder.

287 Daniel and Habsari, "Informational Asymmetry in Public Participation on Environmental Monitoring in Indonesian Regulation: A Preliminary Discourse", *CSID Journal of Infrastructure Development* Vol 2 (1), (2019), p.15.

288 Indonesia, Job Creation Law, Law Number 11 of 2020, Article 1(36).

289 Farhan I. Ulya, Emilda Yofita, Febri Wulandari and Yunita Desmawati, "Strengthening Community Engagement in the Environmental Permitting Process Through the Concept of Citizen Power", *Padjadjaran Law Review* Vol 8 Number 1, (2020), p. 84-98.



2. Community Challenges in Managing and Monitoring BCE

As mentioned above, community engagement schemes to carry out direct management are faced with various challenges. One of them is the lack of assistance for community groups. In fact, assistance by government and non-government is very necessary to increase community capacity in managing mangroves to improve their welfare from efforts to utilize and protect mangroves. A complete explanation will be discussed in the Tenurial Security Chapter.

Recommendations for Community Engagement

1. Strengthening the Implementation of the Rights of BCE Dependent People

Several laws recognize the community's rights to obtain public information and be involved in the policy making process. The Public Information Openness Law emphasizes the public's right to obtain information. The Environmental Protection and Management Law and the Coastal and Small Island Management Management of Coastal and Small Islands Law explain the community's right to participate. In fact, Article 66 of the Environmental Protection and Management Law states that people who fight for the right to the environment as a human right cannot be criminalized or sued civilly.

The problem lies in the obstacles for local and traditional communities to participate in the decision-making process and carry out direct management. Therefore, to improve the implementation of recognitional²⁹⁰, distributional²⁹¹ and procedural²⁹² rights of local and indigenous communities in BCE management, the following steps need to be taken:

1. Accelerate efforts to establish customary maps to facilitate recognition of Indigenous Peoples and forests;
2. Providing tenurial security for coastal communities to manage BCE, one of which is through the Coastal Customary Community Management Area;
3. Meaningfully engage with Indigenous People and Local Communities (IPLC) and increase the representation of women in policymaking. In particular, the community involvement within development of EIA should not be done in "formality". The EIA process is needed to support sustainable development goals and as a political space for negotiations between stakeholders.²⁹³ In this case, public consultation in the EIA process is not only informative, but also empowers the community.²⁹⁴ For example, public consultation does not only provide information on compensation that will be given to the community for changes/damages from activity/project, but also educates the community about the impacts felt in the short and long term.²⁹⁵ Moreover, the same perception should be applied in the public consultation process for spatial planning.

290 Recognition Rights refers to the recognition of people's rights.

291 Distributional rights refers to the right to a fair distribution of environmental benefits and impacts.

292 Procedural Rights refer to the relationship between society and the state (including policy makers and law enforcers), one of which is the right to be included in policy making.

293 Lai, et al., "Technical experts' perspectives of justice-related norms: Lessons from everyday environmental practices in Indonesia," *Land Use Policy* Vol.102, (2021), p.4.

294 *Ibid*, p. 5.

295 *Ibid*.

2. Creating Collaborative Management and Improving Assistance in BCE Management

Community involvement in BCE conservation efforts requires good governance, such as through collaboration management and governance. Collaborative Governance can be implemented in the form of regular assistance, financing, provision of facilities, capacity building, or other forms of incentives between the government and the community that encourage sustainable community-based mangrove management. In this case, regular assistance, conflict assistance, institutional formation at the site level, as well as assistance within pre-and post-granting management permits from the government are highly necessary.

An example of collaborative governance between the government and the community in managing mangroves is found in the Lampung region. In this case, the community together with the regional government collaborate to manage mangroves in their area.²⁹⁶ The aim is to increase protection of mangroves and improve livelihoods. The community collaborates with the government to request a series of access, utilization rights, and management rights to mangroves in their area.

Collaborative Management must also be accompanied by increasing the capacity of the assistants. Currently, the number of Forest Management Units (*Kesatuan Pengelola Hutan*) is unequal to the forests being managed. Hence, it is necessary to increase the personnel by increasing the role of forestry instructors, fisheries instructors and NGO assistants. This will be discussed more fully in the Tenurial Security Chapter.

3. Increase Community Involvement in Blue Carbon Projects or Programs through Free, Prior, and Informed Consent

Community involvement and ownership must be ensured in a blue carbon project. A strong community-based approach requires the active involvement and participation of local communities in every blue carbon project development process, like project design, determining the benefits sharing, implementation and monitoring. In addition, management must be inclusive, involving the voices of all community groups, such as local residents, fishermen, young people and women, and marginalized groups.²⁹⁷

Apart from the transparency aspect, the project developers also need to pay attention to how ecosystem protection efforts integrate the norms, culture, and socio-economics of local communities. Community development and empowerment in blue carbon management takes time and goes through several stages. BCE protection efforts must be able to associate with the community's livelihood and increase their income both directly and indirectly.²⁹⁸ Blue carbon projects need to encourage understanding of various ecosystem services from BCE and not only emphasize carbon sequestration. A blue carbon project is considered to be of high quality when the community leads the governance and management role.²⁹⁹ In this case, the project developers must ensure

296 Siscawati, et al., "Overview of forests tenure reform in Indonesia", Working Paper 223, (2017), p.21.

297 Interview with Blue Ventures, February 3, 2022.

298 Herr, et al., "Pathways for implementation of blue carbon initiatives," *Aquatic Conservation* Vol 27 (2016), p.116.

299 World Economic Forum, Friends of Ocean Action, Salesforce, Ocean Risk and Resilience Action Alliance, Conservation International, and The Nature Conservancy, "High Quality Blue Carbon Principles: A Triple Investment Benefits for People, Nature and Climate", https://www3.weforum.org/docs/WEF_HC_Blue_Carbon_2022.pdf accessed 10 December 2022.

good community representation in the project governance/management structure.

Free, Prior and Informed Consent (FPIC) is a right of indigenous peoples that allows them to give or withhold consent to actions that affect them.³⁰⁰ This right is embedded in the right to self-determination.³⁰¹ FPIC allows indigenous communities to be intrinsically involved in a project, such as being fully involved in the consultation process and negotiating in project planning and implementation.³⁰² There has been an initiative to prepare FPIC guidelines, such as in the implementation of the REDD+ project³⁰³ and the Coastal SIGAP guide in the coastal and marine program by YKAN.³⁰⁴

4. Encourage and Create Enabling Conditions for Local Communities Involved in Conservation Efforts

In some cases, the problem that occurs is that people who want to manage coastal or forest areas are hampered by problems with bureaucracy, legality, and so on. However, there are also cases where management is hampered because the community itself does not have the motivation to carry out conservation. Therefore, education, incentives and assistance are needed to create motivation. First, provide an understanding of BCE services that can benefit their resilience and survival. For example, efforts to rehabilitate mangroves increased after the 2004 Aceh tsunami disaster.³⁰⁵ Increasing community understanding of the benefits of mangroves, including their function as a defense against natural disasters, can raise community motivation to conserve mangroves.

Utilization of BCE for economic efforts can contribute to the achievement of conservation efforts without forest destruction/conversion. Several forms of economic business in the context of sustainable utilization of BCE include ecotourism, silvofishery, honey bee cultivation, processing of mangrove products, and fish cultivation products. Sustainable product business requires external support, such as improving processing skills, marketing, financial management and market access. For example, silvofisheries in East Kalimantan have to compete with conventional ponds which can produce larger catches than silvofishery/traditional ponds.³⁰⁶ In this case, Mulawarman University provides support to silvofishery farmers to use organic fertilizer.³⁰⁷ NGOs also provide capacity building for women residents to process export quality pond products.³⁰⁸

Third, make grant access or permits easier for community conservation efforts to be prioritized over other interests. Granting permits for Social Forestry and customary

300 Food and Agriculture Organization of the United Nations, "Indigenous People", <https://www.fao.org/indigenous-peoples/our-pillars/fpic/en/>, accessed 10 November 2022.

301 UN-REDD Program, "Guidelines on Free, Prior, Informed Consent", (2013), p.15.

302 World Economic Forum, Friends of Ocean Action, Salesforce, Ocean Risk and Resilience Action Alliance, Conservation International, and The Nature Conservancy, "High Quality Blue Carbon Principles: A Triple Investment Benefits for People, Nature and Climate", https://www3.weforum.org/docs/WEF_HC_Blue_Carbon_2022.pdf accessed 13 December 2022.

303 RECOFTC and GIZ, 2011. Free, Prior, and Informed Consent in REDD+: Principles and Approaches for Policy and Project Development. Bangkok.

304 Fadly, et al., 2020. SIGAP Coastal Marine Program Guide. Nusantara Nature Conservation Foundation, Jakarta.

305 Rotich, et al., "Where Land Meets the Sea: A Global Review of the Governance and Tenure Dimensions of Coastal Mangrove Forests", (2016).

306 Interview with Members of Sumbala Forest Farmers Group, East Kalimantan, on 12 August 2022.

307 Interview with Prof. Dr. Esti Handayani Mardi, Professor at the Faculty of Fisheries and Marine Sciences, Mulawarman University, August 10 2022

308 Interview with Chair of the Lestari Mangrove Foundation, 13 August 2022.



forests can be time-consuming. The government needs to make improvements to overcome this.

Fourth, provide direct incentive (in the form of money) or indirect incentives (e.g. development of livelihood facilities and infrastructure). Communities involved in forest conservation projects in East Kalimantan funded by Forest Carbon Partnerships Facilities-Carbon Fund (FCPF-CF) and the World Bank receive incentives in the form of money and other forms of incentives which are channeled through village institutions. A more complete discussion of the distribution mechanism will be discussed in the Equitable Benefit Sharing chapter.

Smart Silvofishery Management Conpect For Shrimp Ponds

- no chemicals
- it does not damage the mangrove ecosystem (mangrove 70-80%)
- low production input
- do not use over-the-counter drugs.
- produce less waste.
- increase pond productivity.
- prioritizing nutrient cycles in ponds



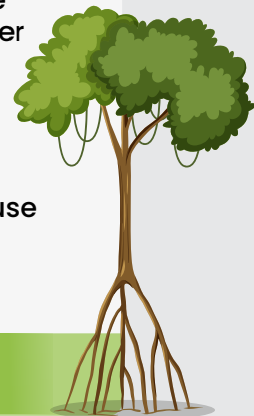
➔ *Fish health managment using plant extracts*



Benefits

1. Traditionally aquaculture
2. without feeding
3. Mangrove forests provide physical and chemical enviromental conditions that are in accordance with the needs of mangrove crabs, so that the ability of mangrove crabs to survive is greater than when kept in ponds or ponds.
4. The maintenance period is relatively short (3-5months).
5. can be developed on critical land such as pond that are no longerproductive.
6. The ecological function of mangroves is still maintaned because mangrove forests are not cut down.
7. Sustainable aquaculture or enviromentally friendly?

The potential of silvofishery to improve the quality of pond products



Source: A comparison of Silvofishery models for mangroves restoration in East Kalimantan, Esti Handayani Hardi, 2022.



Tenurial Security

Tenurial Security Definition

Tenurial security is a key social component that aims to provide strong recognition and incentives for local/customary communities to protect BCE. The concept of tenure includes the rights and obligations to own, control, manage, transfer and utilize land and natural resources.³⁰⁹ In other words, tenure rights to natural resources are the right to access land use and resources.³¹⁰ Land tenure relates to ownership rights, while forest tenure emphasizes the right to access, manage and utilize forest resources.³¹¹ Thus, tenurial security is a guarantee for a person or group that their rights to access, manage and utilize resources can be protected and not revoked arbitrarily.³¹²

Importance of Tenurial Security

People whose lives depend on the mangrove ecosystem (mangrove-dependent people) need guaranteed rights to use, manage, and utilize mangrove resources.³¹³ This guarantee includes the period of ownership of these rights. Uncertain tenure rights pose a challenge to the protection, restoration, and sustainable use of mangroves. On the other hand, tenurial security for people who depend on mangrove ecosystems has several benefits:

1. Incentives for local communities to manage mangroves sustainably;
2. Increased welfare, food security, climate change mitigation, and gender justice;³¹⁴
3. Reduction of deforestation practices. From various studies, forests managed by communities have lower deforestation rates compared to protected forests which deny access to communities for use and management;³¹⁵ By assuring tenurial security, local communities will feel more involved in ecosystem management and have a greater interest in preventing forest destruction.
4. Generating external support and financing.

309 Bruce, J.W., 1989. Community Forestry Rapid Appraisal of Trees and Land Tenure. Forest, Trees and People Program: Community Forestry Note 5 (Rome: FAO/SIDA, 1989), p.4

310 Larson, AM, Tenurial Rights and Access to Forests: Training manual for research (Bogor: CIFOR, 2013), p. 8

311 *Ibid.*

312 Anne Larson, "Forest Tenure Definitions", <https://www2.cifor.org/forest-tenure/about/definitions/> accessed 15 November 2022

313 RECOFTC, Tenure and Social Forestry in ASEAN Member States: Status, analysis and recommendations. (Bangkok, RECOFTC: 2021)

314 The Tenure Facilities, "Frequently asked question", <https://thetenurefacility.org/wp-content/uploads/2018/09/FAQ-5-September-2018.pdf> accessed on 15 November 2022

315 Porter-Bolland et al., "Community managed forests and forests protected areas: An assessment of their conservation effectiveness across the tropics", Forest Ecology and Management Volume 268 (2012) p. 6-17

Tenurial Security in Blue Carbon Ecosystem Management

Tenurial security is an important aspect of an incentive-based approach to BCE protection or conservation efforts. Several findings have shown that involving the community in BCE management and providing tenurial security to the community can support sustainable management.³¹⁶ Thus, the discussion of challenges and recommendations for tenurial security in this study will prioritize the community as an important role in protecting BCE.

In various countries, there are differences in the ownership status of mangroves, where mangroves can be considered public domain because they are located in coastal areas or considered as public forests.³¹⁷ Tenure access for communities to mangrove resources is granted through special use rights (user rights), which can be traditional use rights or based on customary law.³¹⁸

Report by the International Union for Conservation of Nature (IUCN), World Wide Fund for Nature (WWF), and The German Federal Ministry for Economics Cooperation and Development (BMZ), released a review of the legal and policy framework for mangrove management in several countries, including the tenure status of mangroves.³¹⁹ The following table summarizes some of the report's findings:³²⁰

316 Schneider, C et al., Identifying mangroves blue carbon barriers: Key consideration for policy makers, (Bristol: Blue Ventures, 2021)

317 Slobodian, L.N., Badoz, L., eds., Tangled roots and changing tides: mangroves governance for conservation and sustainable use (Berlin: WWF Germany, Gland: IUCN, 2019)

318 *Ibid.*

319 Slobodian, L.N., Badoz, L., eds., Tangled roots and changing tides: mangroves governance for conservation and sustainable use (Berlin: WWF Germany, Gland: IUCN, 2019)

320 *Ibid.*



Table 5.1
Tenure Status in Various Countries

Country	Tenure Status
Madagascar	<p>Mangroves in Madagascar are situated in the coastal areas, forming part of the natural public domain. In 2005, the Malagasy land and property laws were revised to acknowledge user rights as a form of ownership. This revision aimed to issue certificates recognizing land rights, particularly for traditionally occupied lands. However, due to their classification as part of the public domain, mangroves cannot be owned personally through land certificates.</p> <p>Consequently, local public rights over mangroves are constrained to management through the Renewable Local Natural Resources Management Law, known as 'GELOSE.' Nonetheless, this initiative remains limited. From 1996 to 2004, only 3% of 1,250 contracts related to mangrove management were established.</p> <p>Slobodian et al. (2019) argue that GELOSE cannot be considered an effective policy due to its contradictions with existing policies and its failure to maximize benefits.³²¹</p>
Kenya	<p>Mangroves cannot be owned either personally or collectively, as they are legally classified as part of the public forest.³²² This designation places them under the control of the national government, held in trust for the benefit of the people of Kenya.</p> <p>However, there exists the right to manage these mangroves through user rights, particularly by engaging in public participation, often facilitated through bodies like the Community Forest Association. This association is empowered to oversee the management and utilization of mangrove resources, including but not limited to wood fuel, ecotourism, and recreational activities.</p>

³²¹ Slobodian, L.N., Badoz, L., eds., *Tangled roots and changing tides: mangroves governance for conservation and sustainable use* (Berlin: WWF Germany, Gland: IUCN, 2019)

³²² *Ibid.*

Country	Tenure Status
Ecuador	<p>Mangroves are acknowledged as a public resource, governed by a legal framework that allows for the allocation of concessions through agreements between the Ministry of the Environment and the local community.</p> <p>The community is granted the right to utilize mangrove forests through Sustainable Use and Custody Agreements (AUSCM). The society is required to adhere to specific steps for the protection outlined in the agreement. Violations of the AUSCM and unauthorized logging of mangrove forests can result in the forfeiture of public rights to manage the ecosystem.</p> <p>Under Minister of Environment Agreement Number 198 of 2014, this agreement sets the stage for the government to provide incentives for the conservation and sustainable utilization of mangrove forests to traditional users and the public. This initiative, known as Socio Manglar, supports the management outlined in AUSCM.</p>

Based on practices in these three countries, mangroves are a public resource, which means they cannot be owned by individuals or the community. However, these three countries provide management or user rights to involve the community in its management, such as management transfer contracts based on the GELOSE Law (Madagascar) and traditional use rights through AUSCM (Ecuador).³²³ The AUSCM policy has several provisions:

The community is given access to manage mangrove forests. This access is given for a period of 10 years with the condition that the community must maintain the mangrove ecosystem.

1. The community is given the authority to form a Work Plan, which includes: Utilization Plan, Control and Supervision, Monitoring and Evaluation
2. Providing management access to the community is followed by technical assistance provided by universities, NGOs, and the government.
3. The community is given economic incentives to maintain the mangrove ecosystem through social policies Manglar. The economic incentives given depend on the size of the concession area and are given twice a year. The minimum incentive given per year is USD 7,000 for an area of 100-500 ha, and the maximum is USD 15,000 for an area above 1,000 ha.³²⁴
4. In addition, Ecuador gives communities clear legal rights to mangroves through 40 mangrove concessions (40,000 ha) and has had a positive impact on controlling deforestation, improving livelihoods, and reducing conflict with the large shrimp farming industry.³²⁵

In Indonesia, the government holds authority over natural resources, referring to Article 33 Paragraph (3) of the 1945 Constitution which states, "earth and water and the natural resources contained therein are controlled by the state and used to the greatest extent

323 FVL Rodriguez, "Mangrove Concessions: An Innovative Strategy for Community Mangrove Conservation in Ecuador", in C. Makowski, C.W. Finkl (eds.), *Threats to Mangrove Forests*, (Springer International Publishing, 2018)

324 *Ibid.*

325 Ariel E. Lugo, Ernesto Medin, and Kathleen McGinley, "Issues and Challenges of Mangrove conservation in the Anthropocene", *Madera Bosques* Vol 20 (2014)

for the prosperity of the people". The government is placed as the power holder³²⁶ of natural resources in Indonesia which must utilize them for the greatest prosperity of society.³²⁷ The state's control over natural resources is given through the authority to grant management rights. Management rights can take the form of permits granted for state forests, private forests, and customary forests.

The Indonesian government adopted the concept of the right to control by the state, in which the Indonesian people give trust the state to manage forests by exercising its legal authority to allocate, regulate, and determine legal relations between citizens relating to forests.³²⁸ In practice, the state acts as the owner by controlling and limiting community access to forests and granting forest use concessions.³²⁹ This system is in line with the public trust doctrine, the principle which states that the government holds trust over natural resources for the public interest.³³⁰

There are several legal or policy instruments that have the potential to provide tenurial security for communities managing BCE, including Social Forestry, customary forests, and customary management areas, as well as self-managed BCE management in Other Land Use areas.

First, Social Forestry as an instrument for tenurial security in forest areas. Apart from providing management and utilization rights, Social Forestry provides guaranteed access for Social Forestry groups for quite a long time (35 years). Social Forestry permit holders are also required to create a work plan. Based on field research, obtaining approval for a Social Forestry permit is lengthy and involves numerous requirements. Assistance is needed to truly promote improvements in the welfare of Social Forestry management groups.³³¹

Second, customary forests and customary management areas are instruments that can provide guarantees for Indigenous Communities. To ensure tenurial security for the

326 Constitutional Court decision on judicial petition review of Law Number 20 of 2003 concerning Electricity Number 001-021-022/PUU-I/2003, Law Number 22 of 2001 concerning Oil and Natural Gas Number 002/PUU-I/2003, and the Judicial Review Decision of Law Number 7 of 2004 concerning Water Resources Number 058-059-060-063/PUU-II/2004. In this decision, the Constitutional Court determined that what is meant by the right to control the state includes five meanings. The state formulates policies (beleid), including making arrangements (regelendaad), carrying out management (bestuurdaad), carrying out management (beheer daad) and carry out supervision (toezicht houden daad) for the purpose of maximizing the prosperity of the people.

327 *Ibid.*

328 Rodd Myers et al., "Claiming the forest: Inclusions and exclusions under Indonesia's 'new' forests policies on customary forests", Land Use Policy 66 (July 2017)

329 *Ibid.*

330 Constitutional Court Decision No. 85/PUU-XI/2013 concerning Review of Law Number 7 of 2004 concerning Water Resources, p. 52-55

331 Siscawati, et al., "Overview of forests tenure reform in Indonesia", Working Paper 223, (2017), p.15.



Indigenous Community, these instruments require legal certainty, including through the ratification of The Indonesia Indigenous Peoples Bill initiated by the House of Representatives.

Third, self-managed BCE management in Other Land Use areas is an alternative scheme outside Social Forestry and management by Indigenous Communities. Based on interviews conducted, this self-management (*swakelola*) can provide certainty of management and utilization for the community as long as there is recognition by the regional government, such as a Governor's Decree (*Surat Keputusan*). For example, the Mangrove Center in Balikpapan, Kesemat in Central Java, Pengudang Tourism Village, and the Lampung Mangrove Center. This recognition is needed to obtain assistance, and to ensure that the BCE area managed is not converted for other activities.

Table 5.2

Opportunities and Constraints of Tenurial Security Instruments in Blue Carbon Ecosystem Management

Instrument	Opportunity	Constraint
Social Forestry	<ul style="list-style-type: none"> The community attains a relatively long tenure security for a period of 35 years. This extended duration offers the community a sense of stability and assurance regarding their rights. The presence of legality within Social Forestry facilitates easier access for the society to obtain support and assistance. This legality ensures that the local community can navigate and benefit from various forestry-related initiatives and resources. Encouragement is provided for people to devise their own sustainable management plans, which can significantly enhance their overall well-being. This is facilitated through the creation and implementation of a Social Forestry Work Plan. Moreover, the President Regulation Number 28 of 2023 addresses the Integrated Acceleration Management of Social Forestry outlines strategies to expedite the area's development targets and efforts, aiming to amplify the support and resources available to accompany these endeavors. 	<ul style="list-style-type: none"> The process of applying for Social Forestry, as per the guidelines outlined in the Minister of Environment and Forestry Regulation No. 9 of 2021, involves several stages, necessitating a significant amount of time for completion. The multiple stages involved in licensing Social Forestry make the process time-consuming. Unfortunately, the support and guidance available are limited due to constraints in human resources and the challenges posed by geographical distances between locations. These limitations impact the provision of assistance and guidance for individuals involved in Social Forestry initiatives.

Instrument	Opportunity	Constraint
Forests and Customary Management Areas	<ul style="list-style-type: none"> • Formal recognition significantly strengthens the ownership status of the land. • BCE Management based on local wisdom 	<ul style="list-style-type: none"> • The draft bill on Indonesia's Indigenous People has not been enacted. • The mapping, delineation, and the establishment of forest area involves multiple stages in the process. • The role of the Regional Government in serving and facilitating the public acknowledgment of these customs is insufficient.
Self-Management in Other Land Use	<ul style="list-style-type: none"> • This management tends to be more flexible, often not requiring specific permissions. • It can be recognized and receive support from local governments if the initiatives are considered good and beneficial. 	<ul style="list-style-type: none"> • Without formal recognition or certification, the legal standing is considerably weak. • Without recognition from the Regional Government, there is no strong legal certainty and making it subject to potential changes by the Government.

Tenurial Security Challenges in Indonesia

Various for communities to obtain forest tenure in Indonesia are explained below:³³²

1. Forest Area Tenurial Conflict

There is a unique challenge in defining the concept of 'tenure' in Indonesia because forests tenure (forest management) is equal to land tenure (land ownership). This inaccuracy poses a challenge for conservation efforts in Indonesia.³³³ The tenurial concept understood in Indonesia involves granting usufruct rights (the right to use or benefit from land/property, while the ownership belongs to another person) or management rights to the community while maintaining ownership of the forest area by the state. Based on data, it is estimated that there are 48 million people in Indonesia scattered across 41,000 villages located near or within state forest areas.³³⁴ As a result, communities living in these areas are considered 'illegal', and are at risk of eviction. In the global discourse on tenure, the granting of individual property titles or land ownership for indigenous and

332 Siscawati M, Banjade MR, Liswanti N, Herawati T, Mwangi E, Wulandari C, Tjoa M and Silaya T.2017. Overview of forests tenure reforms in Indonesia. Working Paper 223. Bogor, Indonesia: CIFOR.

333 Jakarta Post, Collective land rights for sustainable prosperous Indonesia, "<http://www.thejakartapost.com/news/2015/01/02/co>", accessed on October 5, 2022.

334 McCarthy, JF and Robinson, KM, Land and Development in Indonesia: Searching for the People's Sovereignty. (ISEAS Yusof Ishak Institute: Singapore, 2016)

local communities can provide forest tenure security, but there are still concerns about how communities can defend their rights against threats posed by large-scale investment and land conversion.³³⁵

2. Obstacles to Indigenous People Protection and Recognition

Article 18B of the 1945 Constitution has recognized indigenous people rights. Furthermore, Law Number 41 of 1999 recognizes that customary forests are part of state forests, which was later changed after Constitutional Court Decision Number 35/2012. The decision stipulates that customary forests are separate from state forests. In the implementing regulations (MoEF Regulation Number 21/2019 concerning Customary Forests and Private Forests) it is stated that the establishment of customary forests requires prior recognition for Indigenous Community. However, to date, the Bill on Indonesia's Indigenous People has not been passed. This is an obstacle to recognition by Indigenous People who want to defend their customary forests.³³⁶

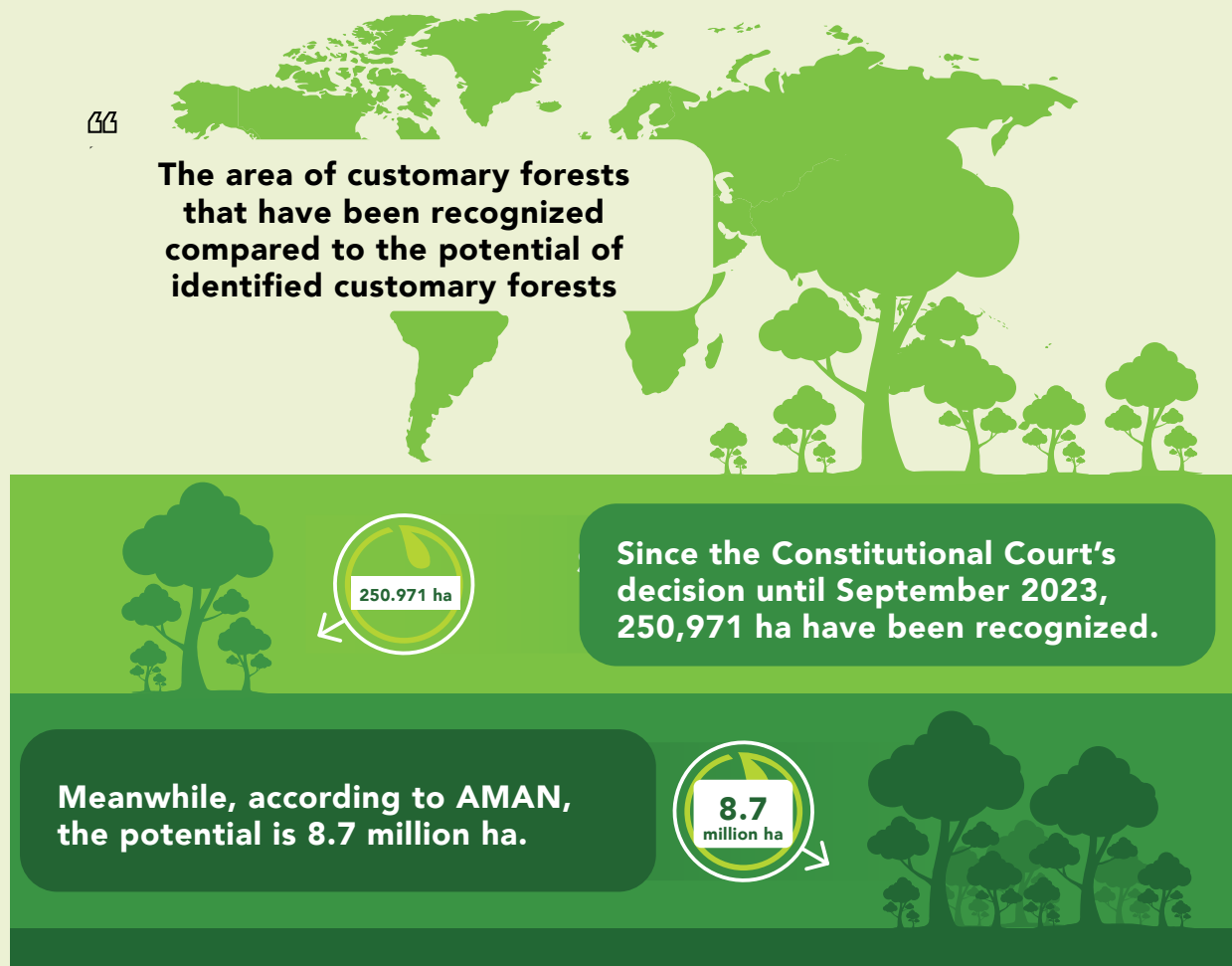
335 Siscawati M, Banjade MR, Liswanti N, Herawati T, Mwangi E, Wulandari C, Tjoa M and Silaya T.2017. Overview of forests tenure reforms in Indonesia. Working Paper 223. Bogor, Indonesia: CIFOR.

336 AMAN, Catatan Akhir Tahun 2021 Aliansi Masyarakat Adat Nusantara: Tangguh di Tengah Krisis, (Jakarta: AMAN, 2021), p. 7.



Infographic 5.1

The Area of Customary Forests Recognized by the Ministry of Environment and Forestry Compared with the Identified Potential



Based on the Ministry of Environment and Forestry, until September 2023, an area of 250,971 ha of customary forest has been designated by the government from a total of 1,088,149 ha of indicative customary forest map.³³⁷ Meanwhile, the potential of customary forest based on data from AMAN reaches a total of 8.7 million ha.³³⁸

Constraints on recognition of Customary Law Community by regional regulations have resulted in slow mapping and determination of customary territories.³³⁹

337 Presentation of the Directorate of Social Forestry Area Preparation and the Directorate General of Social Forestry and Environmental Partnerships Ministry of Environment and Forestry, "Socialization of Social Forestry," 22 March 2023. Presentation of the Director General of Social Forestry and Environmental Partnerships Ministry of Environment and Forestry, "GOVERNMENT AND PARTNERSHIP PATTERNS COMMUNITY, AND TENURIAL SECURITY INSTRUMENTS IN MANAGING BLUE CARBON ECOSYSTEMS IN FOREST AREA", 16 September 2023

338 AMAN, Catatan Akhir Tahun 2021 Aliansi Masyarakat Adat Nusantara: Tangguh di Tengah Krisis, (Jakarta: AMAN, 2021), p.11.

339 AMAN, Catatan Akhir Tahun 2021 Aliansi Masyarakat Adat Nusantara: Tangguh di Tengah Krisis, (Jakarta: AMAN, 2021), p.16.

Infographic 5.2

53% Regional Governments have yet to implement their obligations



Currently, there are 158 regional government regulations related to Indigenous People spread across 23 provinces and 65 districts. The details are as follows: 11 provincial regional regulations, 1 governor's regulation, 57 regional regulations, 2 regent's regulations and 87 regent's decrees, spread across 23 provinces and 65 districts. Of the 65 districts that have regional government regulations related to Indigenous People, there are 30 districts that have determined them as Indigenous Communities alongside their customary territory. Furthermore, there are 5 districts that have only reached the stage of forming Indigenous People committees and 30 districts have not implemented the regional government regulations. From this data, it can be seen that there are 53% of regional governments that have not implemented the regional government regulations they have created.

(AMAN, Catatan Akhir Tahun 2021 Aliansi Masyarakat Adat Nusantara: Tangguh di Tengah Krisis, (Jakarta: AMAN, 2021)

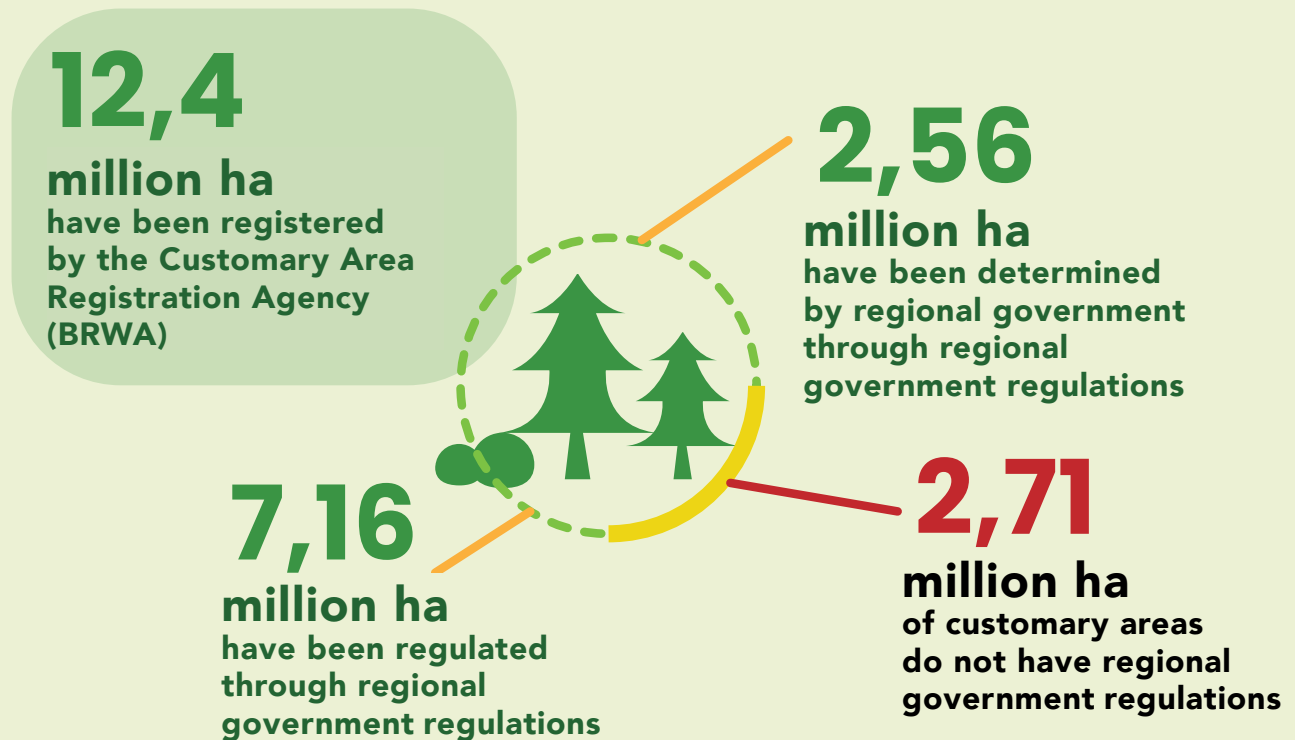
The limited achievement is caused by several factors. First, the complexity of the requirements for establishing customary forests and the lack of role of regional governments in encouraging and facilitating the recognition of Indigenous People.³⁴⁰ Establishment of customary forests can be proposed if there has been recognition of the subject of indigenous people through regional regulations.³⁴¹ In this case, the role of regional government is important to serve and facilitate recognition of indigenous communities. However, the important role of regional governments actually becomes an external constraint for indigenous communities when the regional government's readiness to serve and facilitate recognition of indigenous communities is inadequate. This can be seen from the small number of regional government regulations related to indigenous communities and the low level of implementation of these legal products at the regional level.

340 Dore, Armansyah. "Menakar Peluang dan Tantangan Pengakuan Hutan Adat dalam Peraturan Menteri Lingkungan Hidup dan Kehutanan No. 17 tahun 2020 tentang Hutan adat dan Hutan Hak," Jurnal Ilmiah MajuVol.4, (2021), p.31.

341 Article 63 PP Number 9 of 2021 concerning Social Forestry

Infographic 5.3

2.71 Million Ha of Traditional Areas Do Not Have Legal Products



Based on participatory mapping in 968 traditional communities with an area of 12.4 million ha registered by the Customary Area Registration Agency (BRWA), there are 99 customary areas that have been determined by the regional government through regional government regulations with an area of 2.56 million ha. Then there are 616 maps of customary areas that have been regulated by regional government regulations with an area of 7.16 million ha, the determination process of which still has to be followed up with a regent's decree or regulation. The remaining 2.71 million ha of customary areas do not yet have regional government regulations.

(AMAN, Catatan Akhir Tahun 2021 Aliansi Masyarakat Adat Nusantara: Tangguh di Tengah Krisis, (Jakarta: AMAN, 2021)

Second, in the Minister of Environment and Forestry Regulation Number 9 of 2021 on Social Forestry Management, one of the requirements to register a customary forest is the identification and mapping of customary areas. The identification and mapping process is carried out by two parties, namely a task force formed by the regent/mayor and/or facilitated by the Minister of Environment and Forestry.³⁴² In some cases, the identification and mapping process carried out by the designated team experiences obstacles due to the vastness of area that needs to be mapped. Ideally, there should be opportunities for participatory mapping carried out by Indigenous People to speed up the process of identifying and mapping customary areas.

³⁴² Ibid.

3. Challenges in Obtaining Social Forestry Permit

As of today, there are still discrepancies in the realization of achieving the target of 12.7 million ha of Social Forestry. In September 2023, the realization of Social Forestry achievements reached 6,371,773.42 ha.³⁴³

Infographic 5.4

Comparison of National Social Forestry Targets and National Social Forestry Realization Until September 2023



Source: Presentation of the Director General of Social Forestry and Environmental Partnerships, Ministry of Environment and Forestry, "GOVERNMENT AND COMMUNITY PARTNERSHIP PATTERNS, AND TENURIAL SECURITY INSTRUMENTS IN MANAGING BLUE CARBON ECOSYSTEMS IN FOREST AREAS", 16 September 2023

343 Presentation by the Director General of Social Forestry and Environmental Partnerships, Ministry of Environment and Forestry, "Government and Community Partnership Patterns, and Tenurial Security Instruments in Management of Blue Carbon Ecosystems in Forest Areas", 16 September 2023

Despite the progress being made, achieving the set targets encounters multiple challenges, including primarily the inconsistent mapping of forest area boundaries. This is caused by inefficient administration and limited access to data, resulting in inaccurate data related to forest area boundaries. The lack of preparedness in this mapping jeopardizes the success of Social Forestry and create disputes among involved parties over forest area management, potentially leading to misunderstandings.³⁴⁴

Secondly, the challenge arises from the inadequate understanding within the community, lack of experience, and limited access to information needed for local communities for the application of Social Forestry permits.³⁴⁵ Although support for Social Forestry implementation has been offered, the technical guidance provided remains insufficient. Without robust technical guidance and a well-devised strategic plan, the effective execution of Social Forestry becomes challenging.³⁴⁶ The process of obtaining a Social Forestry permit is intricate and challenging for the community, involving 26 stages with various sectoral institutions at regional and central levels.³⁴⁷ This process often involves high fees or transaction costs, sometimes extending beyond three years. Furthermore, there is a low final approval rate by regional governments, which only stands at approximately 20-30% of what has been approved by the MoEF.³⁴⁸

Third, obstacles at the regional government level. Despite the MoEF approving and allocating customary areas for social forestry in the form of community forests, communities still have to go through additional processes at the provincial and district/city levels before obtaining the final approval from the governor. Issues at the regional level are caused by limited human resources and budgets, as well as the capacity of institutions to process the required Social Forestry permits.³⁴⁹

4. Information Gaps in the Community

There are existing limitations faced by the community regarding regulations/laws that positively impact their rights and access to land and forests. Communities are not equipped with the technical capability to prepare mapping, planning, and information on where they should submit complaints. Moreover, they need assistance to meet the requirements for obtaining permits and post-approval of the permits. This information gap relates to: a) knowledge and ability in mapping/delineating forest area boundaries, b) in-depth understanding of the dynamics between institutions and actors, c) clarity and methodological innovation in understanding tenure and tenurial security, d) understanding differences and similarities between traditional/customary tenure systems and formal tenure systems, e) developing capacity to carry out tenure reform, f) developing mechanisms to integrate policies and practices in the field.³⁵⁰

344 MR Fisher et al., "Assessing the new Social Forestry project in Indonesia: recognition, livelihood and conservation ?", *International Forestry Review* Vol.20 3 (2018)

345 Irawati et al (2014) in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

346 Lestari et al (2015) in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

347 Maryudi 2014; Setiahadi et al, 2017 in Ari Rakatama and Ram Pandit, "Reviewing Social Forestry schemes in Indonesia: Opportunities and Challenges," *Forest Policy and Economics* 111, (2020), p.1-13.

348 Siscawati, et al., "Overview of forests tenure reform in Indonesia", Working Paper 223, (2017), p.32.

349 *Ibid.*

350 *Ibid.* Siscawati, et al., "Overview of forests tenure reform in Indonesia", Working Paper 223, (2017), p.31-33.

5. Limited Understanding of Coastal and Marine Tenure Concept

As discussed above, the required form of tenure is not only land tenure for communities who live in forest or coastal areas; but also the rights to manage the ecosystem. In the forestry regime, the concept of forest tenure has been widely developed. The community obtains legal certainty of forest tenure through customary forests and Social Forestry. However, for the effective involvement of local communities in managing BCE, the development of coastal and marine tenure is necessary. This concept is a form of tenurial security for communities managing coastal areas. In Indonesia, this concept can be found in Article 20 of the Management of Coastal and Small Islands Law which recognizes the right to manage coastal and small islands by local communities and traditional communities.³⁵¹ There are at least three reasons for the need for coastal and marine tenure.

First, mangroves that are not in forest areas and seagrass in coastal waters cannot be protected through Social Forestry schemes (as a form of forest tenure). Social Forestry is part of the forestry regime and does not cover natural resources outside the forest area.

Second, the forest concept tenure is not always appropriate to apply on coasts because their characteristics are different from forests. One of them is because coastal tenure needs to anticipate the possibility of a reduction in the size of the tenure area caused by coastal disasters, for example coastal erosion.

Compared to forest tenure regulations (e.g., social forestry), coastal tenure regulations are not yet well-established. While the coastal governance framework is still incomplete, the Management of Coastal and Small Islands Law has regulated coastal management permits for local and traditional communities.³⁵² A robust tenure governance structure, inclusive of coastal and marine tenure, requires several essential components:

1. Establishment of a comprehensive legal and policy framework at the national level.
2. An effective law enforcement system.
3. Implementation of an efficient co-management scheme.
4. Establishment of a dispute resolution mechanism.
5. Active participation and empowerment of local communities.
6. Development and support of effective institutions.³⁵³

Customary rights in coastal management is regulated in the Minister of Maritime Affairs and Fisheries Regulation Number 8 of 2018 concerning Procedures for Determining Management Areas for Customary Law Communities in the Utilization of Space in Coastal Areas and Small Islands. Meanwhile, the granting of rights to non-indigenous communities has not been regulated in detail and is only a general regulation in the Management of Coastal and Small Islands Law.³⁵⁴

351 Indonesia, Law on Management of Coastal Areas and Small Islands, Law Number 27 of 2007 jo. Law Number 1 of 2014, Article 20.

352 Indonesia, Law on Management of Coastal Areas and Small Islands, Law Number 27 of 2007 jo. Law Number 1 of 2014, Article 20.

353 Umi Muawanah et al., "Going into rights: Pathways for revitalizing marine tenure rights in Indonesia", Ocean & Coastal Management Volume 215 (2021)

354 Article 20 reads: (1) The Government and Regional Governments are obliged to facilitate the granting of Location Permits and Management Permits to Local Communities and Traditional Communities. (2) Permits as intended in paragraph (1) are given to Local Communities and Traditional Communities, who utilize the space and resources of Coastal Waters and the waters of small islands, to fulfill their daily living needs." Indonesia, Law on Management of Coastal Areas and Small Islands, Law Number 27 of 2007 jo. Law Number 1 of 2014, Article 20

OECM, as discussed in the previous chapter, is one form of coastal and marine tenure. In practice, coastal tenure has not been widely implemented, compared to forest tenure. Based on MMAF data, there are 18 regent/mayor regulations in 5 provinces that regulate this.³⁵⁵ The challenges faced are at least as follows:

- a. Even though there is already a community-based management permit regulated in the Management of Coastal and Small Islands Law, a legal umbrella at the national level is still needed that regulates OECM so that its implementation can be more effective;
- b. Understanding on provision of coastal tenure in the form of OECM is still very limited;
- c. There are bureaucratic challenges that cause the granting of coastal management permits to be hampered, due to the incomplete mapping of indigenous communities in coastal areas;³⁵⁶
- d. Even though the potential already exists (such as blue financing), the funding for the community to manage using the OECM scheme (as a form of coastal and marine tenure) is still inadequate.³⁵⁷

Recommendation

1. Developing Coastal and Marine Tenure Concept

The national law has created opportunities for the management of coastal areas by local and traditional communities. As previously highlighted, there are several challenges in granting community-based coastal management rights. To address these challenges, several efforts can be pursued. *First*, enhance awareness regarding the concept of coastal and marine tenure. Granting management rights in coastal areas to local communities can be achieved through regulations issued by regents or mayors. According to MMAF data, 18 regent/mayor regulations in 5 provinces address this aspect³⁵⁸, though the number remains relatively small compared to the potential coverage throughout Indonesia. Thus, extensive awareness campaigns about coastal and marine tenure in various regions are essential for the development of more local regulations.

Until 2023, the MMAF has initiated programs to support coastal and marine tenure. These programs encompass activities such as completing marine spatial planning, expanding conservation areas, and facilitating sustainable management partnerships within these conservation areas. However, the actual implementation of these programs remains limited. Therefore, there is a pressing need to strengthen governance in coastal and marine areas to reinforce the rights of local, traditional, and Indigenous People in managing coastal areas,


Second, conducting an inventory related to community-based coastal management by local, customary, and traditional groups. *Third*, formalizing maps of customary areas can streamline the process of granting management permits to indigenous communities in coastal regions. Integrating these maps into spatial planning documents aligns with the Management of Coastal and Small Islands Law. Following the Job Creation Law, the MMAF has issued only two Approvals for Conformity of Marine Spatial Utilization

355 Presentation by Dedi S. Adhuri, Ph D in the Workshop "Integrating Coastal Management in Villages and Other Effective-Area Based Conservation Measure (OECM) into Policy", Jakarta, 2 December 2022

356 National Indigenous Peoples Alliance, "Catatan Akhir 2021: Tangguh di Tengah Krisis", (2021), p.20.

357 Presentation by Dedi S. Adhuri, Ph.D in the Workshop "Integrating Coastal Management in Villages and Other Effective-Area Based Conservation Measure (OECM) into Policy", Jakarta, 2 December 2022

358 Presentation by Dedi S. Adhuri, Ph.D in the Workshop "Integrating Coastal Management in Villages and Other Effective-Area Based Conservation Measure (OECM) into Policy", Jakarta, 2 December 2022



Activities (PKKPRL) to provide coastal and marine areas management permits to local communities.³⁵⁹

2. Increase Assistance and Empowerment for the Community

To overcome the complex process of applying for a permit on community-based management, assistance is needed to help communities understand, receive suggestions and support before and during the application process. One of the beneficial form of assistance for communities are guidance provided by Forest Management Units in facilitating Social Forestry group. For instance, the guidance provided by Batu Lanteh Forest Management Unit has enhanced the capacity and bargaining position of farmers engaged in managing Social Forestry enterprises in Sumbawa, thereby optimizing the benefits derived from forest product commodities.³⁶⁰

However, compared to the forest area, the number of Forest Management Unit personnel is insufficient. The number of personnel in 325 Technical Implementation Units of Forest Management Unit Services (UPTD Forest Management Unit) throughout Indonesia as of February 25, 2019, was 13,236 people.³⁶¹ This number causes the national average ratio of the number of human resources and the area of management to be 1 person to handle 4,847 ha of forest area. Although the national target for granting Social Forestry permits is quite ambitious, the actual budget for assistance remains restricted in the field.³⁶²

359 Presentation by Dedi S. Adhuri, PhD in the Workshop "Integrating Coastal Management in Villages and Other Effective-Area Based Conservation Measure (OECM) into Policy", Jakarta, 2 December 2022

360 PSKL, "Forest Management Unit assistance to improve Social Forestry efforts", Ministry of Environment and Forestry, <http://pskl.menlhk.go.id/berita/187-pendampingan-Forest-Management-Unit-angkatkan-usaha-perhutanan-social.html>, accessed December 13, 2022.

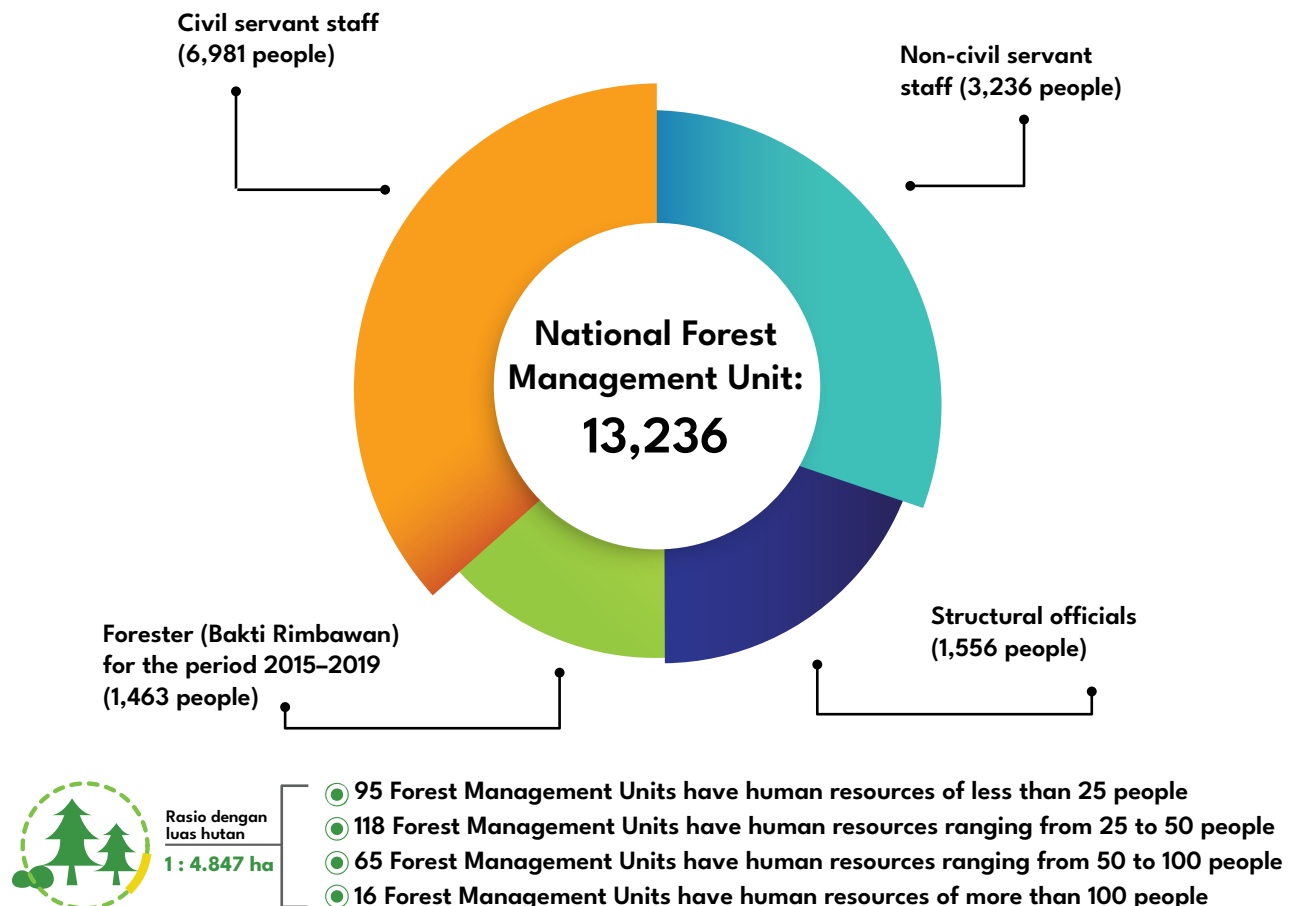
361 Sinpasdok Forest Management Unit, "Forest Management Unit Data and Information", <http://Forest-Management-Unit.menlhk.go.id/sinpasdok2020/pages/pencariandata> accessed 20 December 2022

362 Mutaqin et al., "Analysis of Social Forestry Activities in Improving Environmental Quality and Improving Community Economy Post Covid-19 Pandemic", Bappenas Working Papers Vol V Number 2 (2022).

Infographic 5.5

Comparison of Forest Area with Number of Forest Management Units Personnel

Comparison of forest area with number of Forest Management Units



Number of National Forest Management Unit: 13,236, consisting of:

1. Structural officials (1,556 people)
2. Civil servant staff (6,981 people)
3. Non-civil servant staff (3,236 people)
4. Forest Service for the period 2015–2019 (1,463 people) Ratio to forest area: 1 to 4,847 ha

There are 95 Forest Management Units with personnel of less than 25 people, as many as 118 Forest Management Units have personnel between 25 to 50 people, as many as 65 Forest Management Units have personnel between 50 people to 100 people, and as many as 16 Forest Management Units have personnel of more than 100 people.

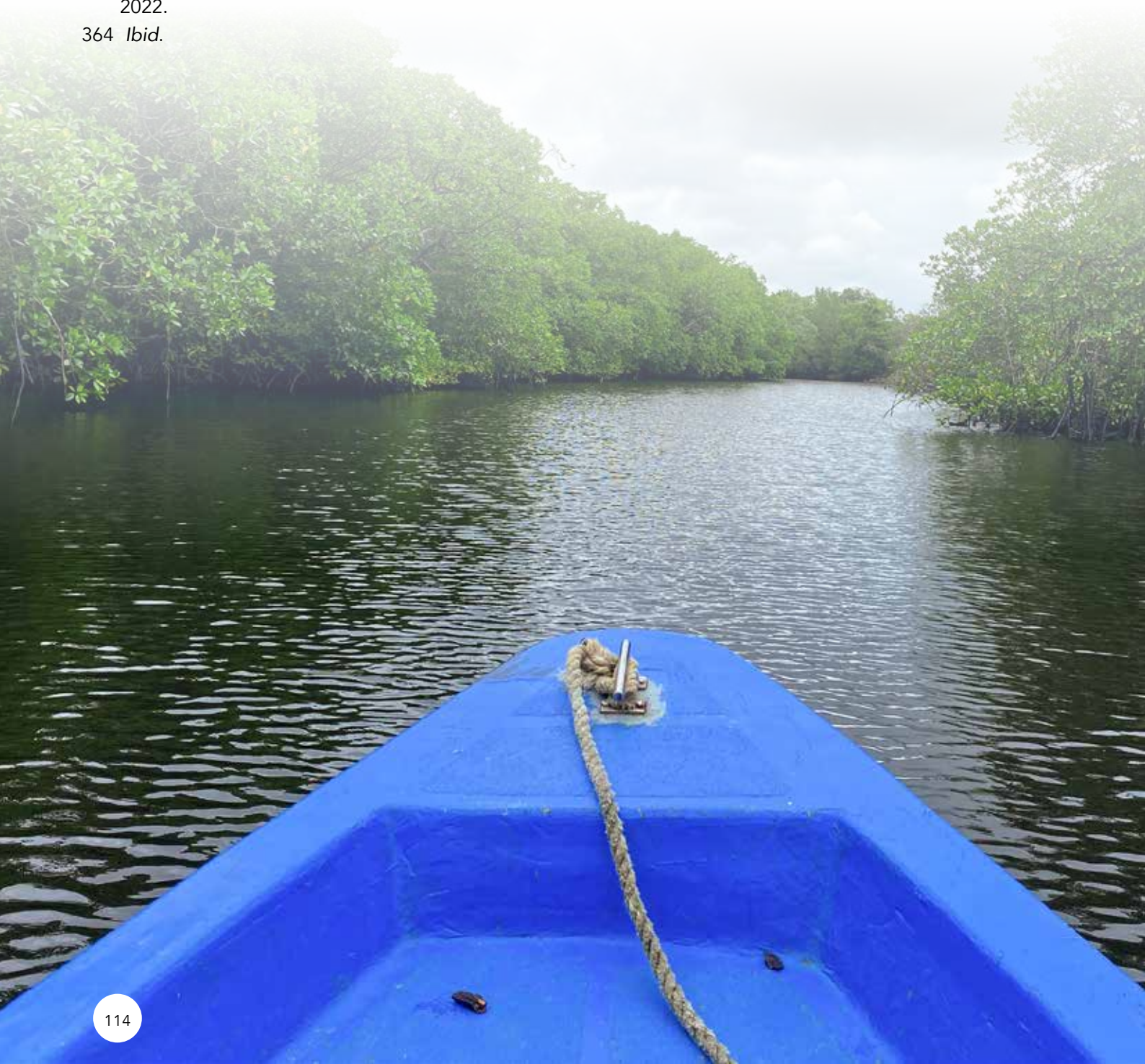
Source: Forest Management Unit Sinpasdok

With the high need for assistance, forestry instructors or fisheries instructors at the national and regional levels need to be directed to provide this assistance. Currently, the number of Forestry Instructors is 9,345 people, consisting of 2,804 Civil Servant Forestry Instructors, 5,781 Non-Governmental Community Forestry Instructors, and 654 Private Forestry Instructors.³⁶³ Considering the high demand for community assistance, assistance can also be supported by fisheries instructors. The number of fisheries instructors reached 6,274 people, consisting of 2,537 civil servant fisheries instructors, 1,987 auxiliary fisheries instructors, and 1,750 self-help fisheries instructors.³⁶⁴ Apart from that, assistance can also come from site-level NGOs.

Second, providing paralegal training for people who depend on BCE. Paralegal training can support people to have adequate understanding of their rights and know how to defend them. Paralegal training can be provided by NGOs or Legal Aid Institutions, targeting local residents champions from community groups and provide opportunities for communities to empower each other.

363 PPID Ministry of Environment and Forestry, "Bahu-Membahu KLHK Anticipating Karhutla", <http://ppid.menlhk.go.id/berita/siaran-pers/6586/bahu-membahu-klhk-antisipasi-karhutla> accessed on 20 November 2022.

364 *Ibid.*



Monitoring and Enforcement

Monitoring and enforcement are important components in BCE governance to prevent and act on violations. Monitoring and enforcement in BCE protection have been regulated in existing regulations including the Forestry Law, Management of Coastal Areas and Small Islands Law, Environmental Protection and Management Law and Regional Government Law (see attachment 4). In the Management of Coastal Areas and Small Islands Law, apart from being carried out by enforcement officers, monitoring can also be carried out by the public.³⁶⁵

Under the Forestry Law, the MoEF is limited to mangrove in forest areas, as the MoEF's authority for BCE management falls within the scope of forestry. Monitoring within the scope of forestry is carried out by the government, both central and regional, as well as community supervision.³⁶⁶ Monitoring activities by the government³⁶⁷ include supervision, as well as requests for information and inspections.³⁶⁸ Enforcement is carried out if the inspection indicates violation.

Under the Environmental Management Law, the MoEF has the authority to supervise and enforce the law related to environmental aspects, especially regarding compliance with requirements specified in environmental permits/approvals, which must be adhered to by all permit holders. In case of violations against environmental permits/approvals or legislation, both in forestry and environmental aspects, the MoEF through the Directorate General of Law Enforcement is obligated to carry out administrative and/or criminal law enforcement.

Regional governments also have the authority to supervise and enforce laws based on forestry, marine affairs, and energy and mineral resources legislations.³⁶⁹ Monitoring and enforcement at the regional level are carried out by the Provincial Marine Affairs and Fisheries Office (*Dinas Kelautan dan Perikanan*) and the Provincial Environment and Forestry Office (*Dinas Lingkungan Hidup dan Kehutanan*). In coastal areas, provinces have the authority to supervise and enforce laws over coastal resources in their territory up to a maximum of 12 miles from the coastline.³⁷⁰ To ensure that regional governments fulfill their supervisory function, the (central) government is given the authority to conduct second-tier oversight (monitoring)³⁷¹ as well as second-line administrative sanctions (second line enforcement)³⁷² against the person responsible for the business and/or activity if the government considers that the regional government intentionally neglects supervision or imposes administrative sanctions.³⁷³

The most commonly used approach in environmental protection and management,

365 Indonesia, Law on Management of Coastal Areas and Small Islands, Law Number 27 of 2007 jo. Law Number 1 of 2014, Article 36 paragraph (6).

366 Indonesia, Forestry Law, Law Number 41 of 1999, Article 60

367 *Ibid.*, Article 60 paragraph (1).

368 *Ibid.*, Article 3

369 Indonesia, Regional Government Law, Law Number 23 of 2014, Article 14 paragraph (1)

370 *Ibid.*, Article 27 paragraph (3).

371 Indonesia, Law on Environmental Protection and Management, Law Number 32 of 2009, Article 73.

372 Indonesia, Law on Environmental Protection and Management, Law Number 32 of 2009, Article 77.

373 *Ibid.*

including for BCE, is command and control.³⁷⁴ This approach is coercive, meaning that enforcement is carried out in response to violations to impose sanctions. The implementation of command and control implies the state is the only stakeholder responsible for establishing regulatory norms, monitoring compliance, and enforcing the law. The government is obligated to conduct oversight to ensure that permit-holders comply with the regulations and standards by the government. This approach can only be effective if it fulfills three preconditions, consisting of:³⁷⁵

- a. Ability to detect violations;
- b. Ability to respond quickly and decisively to detected violations; and
- c. The ability to punish or impose sanctions that have a deterrent effect and fulfill sense of justice within society

The “3A+1” concept developed by the International Network on Environmental Compliance and Enforcement (INECE) is a prerequisite that must be fulfilled by the central government and regional governments if they want to carry out enforcement effectively. This “3A+1” theory consists of:³⁷⁶

1. Ability to detect – technology utilization/digitization, quantity and quality of enforcement officers, and coordination. This ability must be possessed by supervisors and investigators.
2. Ability to respond – coordination, infrastructure, and supervision logistics. This ability must be possessed by supervisors, investigators and prosecutors.
3. Ability to punish – coordination, ability to determine sanctions that create a deterrent effect and restore damaged environments. This ability must be possessed by investigators, prosecutors, bureaucrats and judges.
4. Ability to build perception that the 3A conditions must be well established within the government. This capability must be possessed by the government and leaders of enforcement institutions.

Challenges of Monitoring and Enforcement

The current applicable legislation has regulated the division of monitoring and enforcement authorities among ministries, regional government, and enforcement institutions. However, enforcement for BCE management is considered to be faced with several challenges. Mangrove deforestation in protected and conservation forest areas reached 24.4% of the total mangrove deforestation number in Indonesia.³⁷⁷ This indicates that monitoring and enforcement efforts in protected and conservation forest areas is inefficient.

In practice, various challenges were identified which resulted in ineffective monitoring, as well as inconsistent and weak enforcement.

374 Mas Achmad Santosa, “Enforcement of Administrative, Criminal and Civil Environmental Law Based on the Indonesian Legal System”, Environmental Law and Enforcement Training Project Phase II, Jakarta 05-10 November 2001

375 Mas Achmad Santosa, *Good Governance and Environmental Law*, (Jakarta: ICEL, 2001), p.236

376 Mas Achmad Santosa, “Efektifitas Penegakan Hukum Administrasi Dalam Perlindungan dan Pengelolaan Lingkungan Hidup di Indonesia Studi Kasus di Propinsi Jawa Tengah”, (Dissertation, Faculty of Law, University of Indonesia, Depok, 2014).

377 Arifianti et al., 2021 in BAPPENAS, “National Strategy for Wetland Management: Peat and Mangrove Ecosystems”, (2023), p.101.

1. Limited number of human resources carrying out monitoring and enforcement

One of the duties of ministers, governors and regents/mayors is to conduct oversight. They are assisted by Environmental Supervisory Officers (*Pejabat Pengawas Lingkungan Hidup*), Regional Environmental Supervisory Officers (*Pejabat Pengawas Lingkungan Hidup Daerah*), Civil Servant Investigators (*Penyidik Pegawai Negeri Sipil*), Forest Police (*Polisi Hutan*), Marine and Fisheries Resources Surveillance (*Pengawas Sumber Daya Kelautan dan Perikanan*), and Special Police for Coastal and Small Island. It is very important for them to find initial evidence of the existence/absence of violations in order to carry out investigations.

However, in practice, the number of Regional Environmental Supervisory Officers, Forest Police, and Civil Servant Investigators at the regional level is very limited. Nationally, there are only 166 people from the Marine and Fisheries Resources Surveillance Technical Implementation Unit (*Unit Pelayanan Terpadu – Pengawas Sumber Daya Kelautan dan Perikanan*) stationed in the regions and 204 people from the Provincial Marine Affairs and Fisheries Office.³⁷⁸ The number of Regional Environmental Supervisory Officers is also insufficient to oversee the entire vast forest area, with only 150 personnel spread throughout the province.³⁷⁹ On the other hand, the number of supervisors affects the ability to detect whether there are violations, either through regular/periodic supervision, incidental supervision, or supervision based on public complaints.

The ratio of the number of Regional Environmental Supervisory Officers to the area of mangrove forests in Indonesia is 1 in 22,426 ha. This implies that on average, a single Regional Environmental Supervisory Officer supervises 22.4 thousand ha.³⁸⁰

378 Directorate General of Fisheries and Marine Resources and Fisheries Supervision, KKP Officially Adds 30 New Fisheries Civil Servant Investigators, <https://kkp.go.id/djpsdkp/article/32762-kkp-resmi-add-30-penidik-kerja-new-civil-fisheries-state>, accessed on November 10, 2022.

379 Data from the Directorate General of Criminal Law Enforcement, MoEF, 2022.

380 *Ibid.*



Infographic 6.1

Comparison of the number of Regional Environmental Supervisory Officers and the area of mangrove forests

Number of Regional Environmental Supervisory Officers in the Center for Environmental and Forestry Security and Law Enforcement:

Environmental and Forestry Law Enforcement and Security Agency	Work Area	Grand Total
Environmental and Forestry Law Enforcement and Security Agency Java, Bali, and Nusa Tenggara Nusra, Section 1 Jakarta	12	39
Environmental and Forestry Law Enforcement and Security Agency BPPLHK Java, Bali, and Nusa Tenggara Province , Section 2 Surabaya	24	
Environmental and Forestry Law Enforcement and Security Agency BPPLHK Java, Bali, and Nusa Tenggara Province , Section 3 Kupang	3	
Environmental and Forestry Law Enforcement and Security Agency Kalimantan Province, Section 1 Palangkaraya	4	17
Environmental and Forestry Law Enforcement and Security Agency Kalimantan Province, , Section 2 Samarinda	9	
Environmental and Forestry Law Enforcement and Security Agency Kalimantan Province, , Section 3 Pontianak	4	
Environmental and Forestry Law Enforcement and Security Agency Maluku and Papua Province Province, Section 1 Manokwari	3	8
Environmental and Forestry Law Enforcement and Security Agency Maluku and Papua Province Environmental and Forestry Law Enforcement and Security Agency Maluku and Papua Province , Section 2 Ambon	3	
Environmental and Forestry Law Enforcement and Security Agency Maluku and Papua Province Environmental and Forestry Law Enforcement and Security Agency Maluku and Papua Province , Section 3 Jayapura	2	
Environmental and Forestry Law Enforcement and Security Agency Maluku and Papua Province Environmental and Forestry Law Enforcement and Security Agency Maluku and Papua Province , Section 1 Makassar	12	17
Environmental and Forestry Law Enforcement and Security Agency Environmental and Forestry Law Enforcement and Security Agency Sulawesi Province Province, Section 2 Palu	2	
Environmental and Forestry Law Enforcement and Security Agency Sulawesi Province Environmental and Forestry Law Enforcement and Security Agency Sulawesi Province i, Section 3 Manado	3	
Environmental and Forestry Law Enforcement and Security Agency Sulawesi Province Environmental and Forestry Law Enforcement and Security Agency Sulawesi Province	1	17
Environmental and Forestry Law Enforcement and Security Agency Sumatera Province , Section 1 Medan	8	
Environmental and Forestry Law Enforcement and Security Agency Sumatera Province Environmental and Forestry Law Enforcement and Security Agency Sumatera Province , Section 2 Pekanbaru	10	
Environmental and Forestry Law Enforcement and Security Agency Sumatera Province , Section 3 Palembang	5	
Directorate of Supervision and Application of Administrative Sanctions	45	
Total	150	

Source: Directorate General of Criminal Law Enforcement, MoEF
Area of mangrove forests in Indonesia: 3,364,080 ha Comparison: 1 to 22,426 ha.

Regarding the effectiveness of public complaints, the limited number of Regional Environmental Supervisory Officers personnel also hampers the ability to detect and ability to respond, since public reports on environmental damage take 2-3 days for them to respond and visit the location of the violation.³⁸¹ After 2-3 days, the Regional Environmental Supervisory Officer's delay in visiting the location of the violation resulted in difficulties in collecting evidence. This hampers the investigation (ability to respond) and imposition of sanctions (ability to punish).

Apart from National and Regional Environmental Supervisory Officers, the current number of forest police is still insufficient. Based on MoEF data in 2021, there are only 8,643 forest police officers. With an area of forest area in Indonesia of around 120 million hectares, the ratio of forest police to the area they have to supervise is around 1 to 13,880. In other words, each Forest Police must be responsible for overseeing around 13,880 hectares of forest. According to research results on the requirement for forest security officers in 2013, the ideal ratio should be 1 to 5,000. In order for forest area monitoring to run optimally, around 24,000 forest police officers are needed. Therefore, an additional 15,357 forest police officers are still needed to ensure the optimal protection.³⁸²

2. Challenges in Imposing Administrative Sanctions

Based on our field research in Bangka-Belitung Province, it is known that perpetrators of mangrove logging were only given warnings by the government and/or law enforcement officers. In East Kalimantan, sanctions are often imposed in the form of government compulsion to replant mangroves.³⁸³ However, the level of replanting success has not been part of the government's compulsion.³⁸⁴ This kind of compulsion does not create a deterrent effect. Meanwhile, one of the objectives of imposing administrative sanctions is to halt pollution and restore the environment.³⁸⁵ In addition, government compulsion in the form of replanting also does not take into consideration the loss of ecosystem services lost due to mangroves being damaged or cut down.

The ecosystem service value of mangrove trees that have been established for years cannot be replaced by newly planted mangroves. Based on other findings, there are actually no sanctions imposed on perpetrators of mangrove destruction at all.³⁸⁶ Improper imposition of sanctions on violators of mangrove destruction can hamper efforts to impose sanctions (ability to punish) which actually provides a deterrent effect for the perpetrator and does not achieve the goal of recovery.

In environmental protection, it has been proven that administrative sanctions can effectively encourage compliance. However, there are several challenges in imposing administrative sanctions, namely:

1. Not all permits (as a government control tool to ensure compliance) include detailed

381 Interview with DLH East Kalimantan, 10 August 2022.

382 Ministry of Environment and Forestry, Directorate General of Environmental Law Enforcement, "Action Plan for the Directorate of Forest Prevention and Security for 2021." https://gakkum.menlhk.go.id/assets/info-publik/RENCANA_AKSI_DIREKTORAT_PPH_TA_2021_FIN.pdf accessed on 15 January 2023)

383 Interview with DLH East Kalimantan, 10 August 2022.

384 Interview with Mrs. Vinda Damayanti, Director of Complaints, Supervision and Administrative Sanctions of the Directorate General of Monitoring and Enforcement, Ministry of Environment and Forestry, 28 October 2022.

385 AG Wibisana "Tentang Ekor yang Tak Lagi Beracun: Kritik Konseptual atas Sanksi Administratif dalam Hukum Lingkungan di Indonesia". *Jurnal Hukum Lingkungan Indonesia*, 6(1), 41–71.

386 IOJI Interview with Dr. H. Erzaldi Rosman Djohan, Governor of Bangka Belitung, November 23 2021.

- obligations of the permit holder. This can lead to violations by permit holders due to their lack of understanding regarding what is and is not permitted.
2. Monitoring is not optimal because the number of supervisors is not commensurate with the number of licensed activities that must be supervised and the monitoring mechanism is not yet effective.
 3. The administrative sanctions imposed have not supported the achievement of the objective of imposing sanctions, namely increasing compliance.

3. Only a few cases of mangrove destruction are processed using criminal legal instruments

Based on data from the Directorate General of Environmental and Forestry Law Enforcement, MoEF, of the 10 criminal cases of environmental damage and forest and land fires that have been decided by the courts from 2015 to 2022, there are only three cases related to mangrove destruction. Based on data from the Directory of Decisions of the Supreme Court of the Republic of Indonesia, there are four cases related to logging and stockpiling of mangroves. The ruling reads as follows:

Table 6.1

Criminal Verdict on Mangrove Destruction in Supreme Court Verdict Directory

Decision	Modus Operandi	Area	Article used	Punishment
Decision 148/Pid. Sus/2020/	The defendant is PT Panca Anugrah Nusantara, which is a corporation operating in the hotel sector and wants to deal with sea water entering the hotel by adding land behind the hotel. The addition land was carried out by dredging and filling land, where there are beaches and mangrove plants with sparse density. The defendant carried out reclamation with the aim of adding land.	0.56 ha	Article 109 jo.116 of the Protection and Management of Environment Law	Criminal fine of IDR 1.15 billion

Decision 1673/Pid.B/LH/2020/PN Mks.	The defendant is PT Tompo Dalle which cut down mangroves using an excavator with a mining site width of 7 m and 8 m and a length of 60 m. The aim of cutting down mangroves is to create a water channel towards the beach so that the water does not stagnate.	Covering an area of approximately 0.1 Ha (1000m ²) with opening dimensions of approximately 7 10 meters	Article 109 paragraph (1) jo.116 paragraph (1) letter a of the Protection and Management of Environment Law	Criminal fine of IDR 1 billion
Ruling 932/Pid. Sus/2020/PN Btm	The defendant is Belitung Mandiri Mulia Indah, who leveled the land by uprooting mangroves and mangroves to build buildings in the Sei Hulu Lanjai protected forest area. The defendant did not have a felling permit because he did not know that the area was a protected forest area.	18 Ha	In its consideration, the Panel of Judges charged the Defendant with Article 98 paragraph (1) jo.116 paragraph 91) letter a of the Protection and Management of Environment Law	Criminal fine of IDR 1.05 billion
Decision Number 45/Pid. Sus/2021/PN Tdn	The defendant is Tony Irawan who cut down mangroves.	0.56 ha	The Panel of Judges in their consideration charged the Defendant with Article 109 jo. Article 116 paragraph (2) letter a of the Protection and Management of Environment Law jo. Article 65 of the Criminal Code	1 year 4 months in prison and a fine of IDR 1 billion with 2 months of Subsidiary

Since 2015, only four cases of mangrove destruction were processed criminally. Another problem is that the judge did not apply a criminal fine of $\frac{1}{3}$ to the corporation as the defendant, as stated in Article 117 of the Protection and Management of Environment Law.³⁸⁷ This is not in accordance with the concept of imposing sanctions in corporate criminal liability.

³⁸⁷ Article 117 reads "If criminal charges are filed against the giver of the order or leader of the criminal act as intended in Article 116 paragraph (1) letter b, the criminal threat imposed is in the form of imprisonment and a fine increased by one third", Indonesia, Protection and Management Law Environment, Article 117

Recommendations for Strengthening Monitoring and Enforcement

1. Enhancing the Capabilities and Quantity of Enforcement Officers and Ensuring Sufficient Budget

Indonesia's forests are vast with diverse topography. There is a high number of activity permits in an area which requires an adequate number and quality of Regional Environmental Supervisory Officers. The availability Regional Environmental Supervisory Officers availability is needed to:³⁸⁸

- a. Conduct routine and incidental supervision and check self-monitoring reports;
- b. Verify and validate field reports related to alleged environmental violations;
- c. Address environmental violations (through persuasive methods and assistance);
- d. Impose administrative sanctions and ensure compliance with these sanctions;
- e. Coordinate with investigators if there are criminal elements to be followed up.

Therefore, it is necessary to increase the number of Regional Environmental Supervisory Officers personnel accompanied by additional equipment and quality monitoring technology such as boats, cameras or other recording equipment to support the monitoring and field inspection process. Additional Environmental Civil Servant Investigators and Forest Police are also needed to help strengthen the monitoring process.

Currently there are several technologies for monitoring natural resources. For example, the use of drones/Unmanned Aerial Vehicles by the MoEF to monitor forest resources.³⁸⁹ In addition, the "Sipongi" information system, which is an online platform containing information on forest and land fires in Indonesia from satellite data, is accessible by the public to prevent occurrence of forest and land fires.³⁹⁰ These practices of technology utilization can be optimized in mangrove monitoring.

In addition to expanding the number of enforcement officers, there is a requirement to enhance their capabilities. Enforcement officers must fulfill three prerequisites for effective enforcement (Ability to detect, Ability to Respond, and Ability to Punish). Budget constraints are frequently cited as the cause of inadequate enforcement. Based on the writer's field research, environmental inspectors are under-remunerated.³⁹¹ The availability of an adequate budget aims to³⁹²:

- a. conduct regular monitoring, address public complaints, and undertake various other measures to identify violations responding to environmental violations committed in order to overcome and/or stop violations (persuasion and repression);

388 Mas Achmad Santosa, "Efektifitas Penegakan Hukum Administrasi Dalam Perlindungan dan Pengelolaan Lingkungan Hidup di Indonesia Studi Kasus di Propinsi Jawa Tengah", (Dissertation, Faculty of Law, University of Indonesia, Depok, 2014).

389 Ministry of Environment and Forestry, "KLHK Gunakan Drone Pantau Hutan Indonesia", http://ppid.menlhk.go.id/broadcast_pers/browse/997, accessed on 18 January 2022.

390 Ministry of Environment and Forestry, "Sipongi Jadi Rujukan Utama Informasi Karhutla di Indonesia", <http://ppid.menlhk.go.id/berita/siaran-pers/5586/sipongi-jadi-rujukan-utama-information-karhutla-in-Indonesia>, accessed on January 18, 2022.

391 IOJI Interview with DLH East Kalimantan, 9 August 2022.

392 Mas Achmad Santosa, "Efektifitas Penegakan Hukum Administrasi Dalam Perlindungan dan Pengelolaan Lingkungan Hidup di Indonesia Studi Kasus di Propinsi Jawa Tengah", (Dissertation, Faculty of Law, University of Indonesia, Depok, 2014).

- b. responding to environmental violations committed in order to overcome and/or stop violations (persuasion and repression);
- c. supports the imposition of sanctions.

Enforcement authorities need to be provided with in-depth understanding of the importance of BCE as a critical natural capital. Through this improved understanding, future punishment and sanctions will be adequate to create a deterrent effect, in hopes that cases pertaining to BCE destruction will be mitigated.

2. Improve Enforcement Coordination Based on Applicable Laws and Regulations

Enforcement regarding BCE damage involves various enforcement officers. The Forestry Law and the Protection and Management of Environment Law regulate that in handling environmental criminal cases, integrated enforcement is carried out between Civil Servant Investigators, police and prosecutors under the coordination of the Minister of Environment and Forestry.³⁹³ Integrated enforcement is crucial to ensure the effectiveness and efficiency of environmental criminal enforcement.

One example of an enforcement coordination forum that has been formed is the Task Force for the Eradication of Illegal Fishing (Satgas 115), which was formed based on Presidential Regulation Number 115 of 2015 concerning the Eradication of Illegal Fishing. Task Force 115 has succeeded in facilitating the arrest and prosecution of illegal fishing vessels, including large vessels flying foreign flags. Factors that influence this success include:

1. Establishment by the President (through the legal basis of a Presidential Regulation);
2. Involvement leaders from ministries and agencies into the structure of Task Force 115 related to enforcement on illegal fishing;
3. Involvement of professionals from outside the government to work full-time;
4. Supported by an adequate budget.

Apart from facilitating coordination to ensure effective investigation of environmental crimes, integrated enforcement can also build a common understanding among all agencies involved in handling environmental cases.³⁹⁴ The MoEF can develop a forum to coordinate the handling of destruction and pollution violations in cases where the offenses intersect several laws. For example, the handling of mining in small island areas regulated in the Coastal and Small Islands Management Law must be coordinated with the MoEF to determine whether there is pollution or violations of quality standards.

The central government has the authority to issue permits, but effective coordination with regional governments is needed for monitoring. Therefore,

³⁹³ Indonesia, Law on Environmental Protection and Management, Law Number 32 of 2009, Article 1 number 19.

³⁹⁴ Constitutional Court, Decision Number 18/PUU-XII/2014, p.19.

there needs to be improvements in terms of:³⁹⁵

- a. Effective coordination system and implementation;
- b. Clear division of duties and authority;
- c. Clear lines of coordination between central and regional governments in order to carry out monitoring and secondary functions line enforcement; and
- d. Delegation of authority in carrying out supervision and imposing administrative sanctions from ministers, governors and regents/mayors to units assigned to carry out environmental management/control at the central and regional levels;
- e. An information system that integrates activity licensing data and data related to the determination of administrative sanctions needs to be carried out accurately and quickly. The aim is to support the supervisory function by regional governments regarding activity permits issued by the central government.

3. Advancing Sanction through the Utilization of Maximum Penalty Indictments and Optimizing Lawsuit for Maximum Administrative Fines

The effectiveness of enforcement does not only depend on the actors, but also on the accuracy of implementing enforcement instruments. In some cases, enforcement may only be effective if it is carried out through criminal enforcement, where administrative enforcement is not appropriate.³⁹⁶ On the other hand, administrative law can be more effective and efficient.

There are several things that can be used as guidelines in determining whether a violation is subject to administrative sanctions, criminal sanctions or imposed jointly, which will be illustrated in the table below:³⁹⁷

1. If the violation that occurred is a serious violation, then criminal enforcement is more applicable. This measure of seriousness can be subjective, and depends on several factors: the nature of the violation, the perception of the likelihood of recurrence, the intent underlying the violation, or the aspiration of enforcement to protect values that are considered fundamental to the violation. The next criterion, if the violation cannot be rectified and restored, then the appropriate choice of enforcement is criminal law. If the violation is committed by, for, or on behalf of a corporation/business entity, then the criminal sanctions imposed must be increased and additional penalties may be imposed based on the articles concerning corporate criminal liability.³⁹⁸
2. If violations can be rectified and restored (through government compulsion sanctions which can be supplemented with monetary penalty) it is necessary to determine whether this is possible if administrative sanctions are applied first, and processed with criminal sanctions if necessary. To determine whether criminal sanctions are still necessary, there are several factors that need to be considered: (a) whether there is an economic benefit for the violator in his business activities, (b) whether the

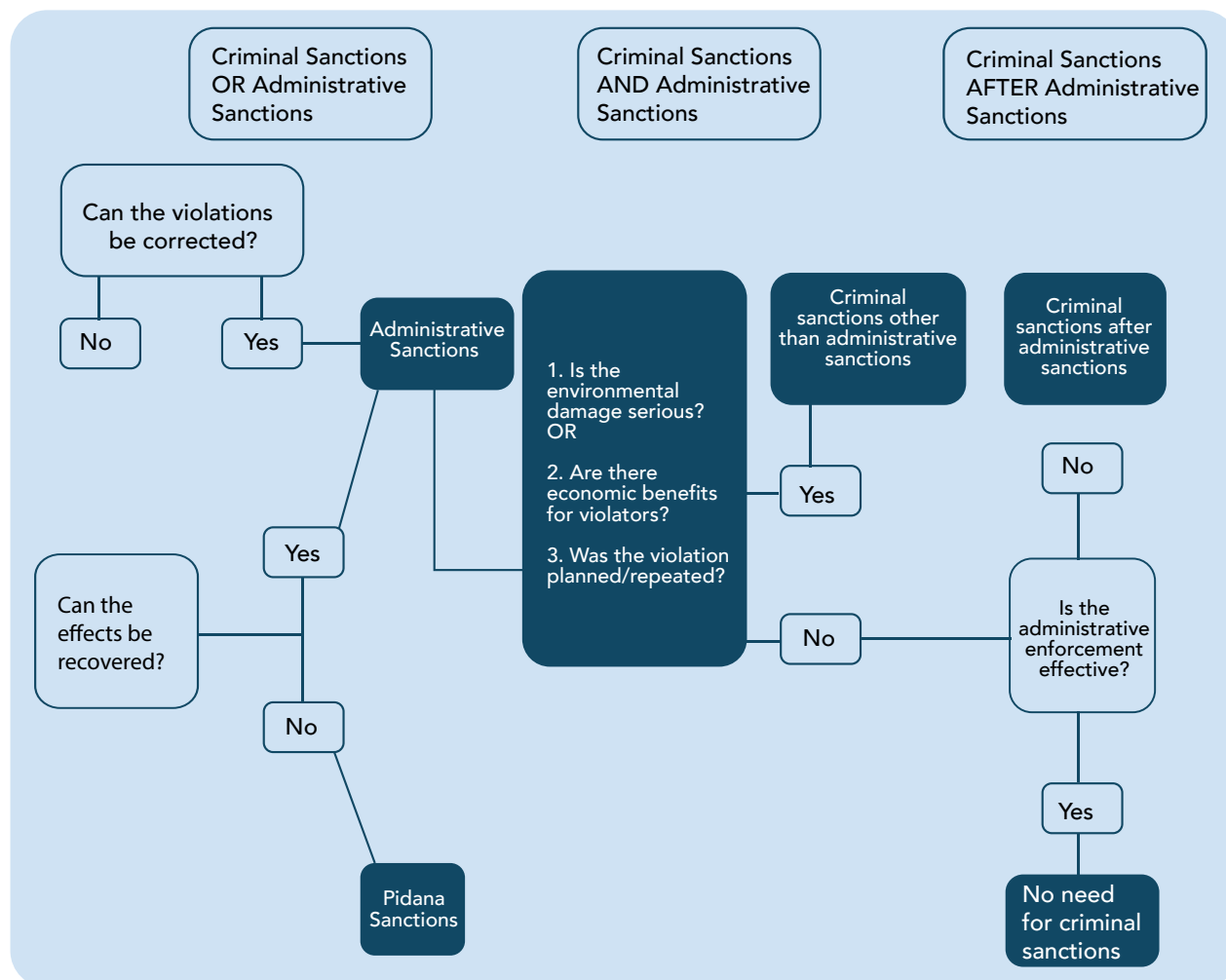
395 Mas Achmad Santosa, "Efektifitas Penegakan Hukum Administrasi Dalam Perlindungan dan Pengelolaan Lingkungan Hidup di Indonesia Studi Kasus di Propinsi Jawa Tengah", (Dissertation, Faculty of Law, University of Indonesia, Depok, 2014).

396 Andri G. Wibisana and Savitri Nur Setyorini, "Pilihan-Pilihan Penegakan Hukum: Sebuah Analisa Awal atas Penegakan Satu Atap (One Roof Enforcement System) dalam Hukum Lingkungan", in "Aradhana Sang Guru Perundang-Undangan", (Depok: 2019), p.404.

397 *Ibid.*

398 Indonesia, Law on Environmental Protection and Management, Law Number 32 of 2009, Articles 116, 117, 118 and 119.

violation was committed repeatedly or planned, and (c) whether the act was carried out intentionally. If one of these three factors is met, then administrative sanctions can be imposed together with criminal sanctions. However, if not, then the only sanctions that can be imposed are administrative sanctions.



Source: Adapted from N. Struiksma, et al., "De effectiviteit van Bestuurlijke en strafrechtelijke milieuhandhaving", 2007, p.44 in Andri Gunawan Wibisana, "Environmental enforcement Options", p.407.

3. When implementing administrative sanctions, it's essential to evaluate their effectiveness in addressing infractions. Winter and De Ridder presents key criteria to assess this effectiveness:³⁹⁹
 - a. Does the violation cause irreversible environmental damage?
 - b. Has the damage caused by the violation been fully restored to its initial state?
 - c. Do the perpetrators of violations repeat their actions so that administrative law enforcement officials/investigators have to repeat law enforcement actions?
 - d. Has there been a change in the behavior of the perpetrator of the violation?
 - e. If it is deemed that administrative sanctions have not been effective, then after administrative sanctions have been imposed it is possible that criminal sanctions may also be imposed.

The enforcement of both criminal and administrative law must use the optimum scenario. Following field assessments and interviews, it has been observed that a common administrative sanction for mangrove damage violations is the replanting of mangroves

³⁹⁹ Heinrich Winter and Jacobus de Ridder, *Enforcement of Environmental Law: Comparing Criminal Prosecution and Administrative Sanctioning in The Netherlands*, (Paper for IUCN, 2006).

in alternative locations. However, this penalty does not fully address the consequences of mangrove damage, particularly in terms of significant carbon release. Replanting does not sufficiently cover the losses caused by this impact. Mature or large mangroves provide distinct ecosystem services compared to newly planted ones due to differences in amount of carbon stored. Therefore, imposing fines to cover these losses should consider the total value of ecosystem services.

Based on the four cases of violations against mangrove destruction, there were several cases that involved experts in calculating the valuation of mangrove damage. For instance, in Decision Number 148/Pid.Sus/2020/PN Tdn, experts assessed environmental losses due to mangrove damage at IDR 2.3 billion for 0.56 hectares. However, the judicial panel decided on a lower fine of IDR 1.1 billion, deviating from the expert evaluation. Furthermore, the judges did not specifically address the loss of value in the mangrove ecosystem's services that arise from such damage. As an ecosystem with a high carbon absorption rate, the costs of recovering from loss of carbon and the costs of recovering carbon reduction should be taken into account, as seen in the case of PT. Kalista Alam in Aceh.⁴⁰⁰

In cases where violations cause substantial damage to the mangrove ecosystem, the affected community and the MoEF can pursue a civil lawsuit to seek compensation for the damage's impact. However, the civil enforcement option entails several considerations, including its high cost and time-consuming process.

4. Multidoor (Multi-Legal Regime) Approach and Corporate Criminal Liability

Multi-door approach enhances the ability of enforcement officers to effectively address mangrove violations, creating a deterrent effect on perpetrators. Considering the various methods of violations, adopting a multi-door enforcement approach is necessary. This approach ensures the utilization of multiple laws and regulations that are interconnected, maximizing the effectiveness of enforcement. For example, using the Environmental Protection and Management Law jo. the Forestry Law, Law Number 31 of 1999 concerning Corruption Crimes, or other statutory regulations. There are several purposes for using a multi door approach in criminal law enforcement, including⁴⁰¹:

1. Prevent disparity in criminal prosecution and punishment for similar cases (prevent discriminatory enforcement);
2. Minimize the potential of perpetrators to escape (consistent enforcement);
3. Enforce corporate criminal liability;
4. Recover state losses (through a chasing the assets approach); and
5. Prevent the mastermind from fleeing;

Establishing a multi door approach requires the presence of an Integrated Criminal Justice System (ICJS) to address cases that involve multiple entities and investigators from various institutions.

Apart from employing a multi door approach, a deterrent effect can also be instigated through corporate criminal liability when the offender is a corporation or company.

400 Supreme Court Decision Number 651 K/Pdt/2015 — PT. Kallista Alam vs. State Minister for the Environment of the Republic of Indonesia

401 Mas Achmad Santosa, "Efektifitas Penegakan Hukum Administrasi Dalam Perlindungan dan Pengelolaan Lingkungan Hidup di Indonesia Studi Kasus di Propinsi Jawa Tengah", (Dissertation, Faculty of Law, University of Indonesia, Depok, 2014).

Corporate criminal liability serves three primary objectives: creating a deterrent effect, actualizing retributive justice⁴⁰², and fostering a transformation in corporate culture.⁴⁰³ Numerous cases have positioned corporations as suspects or defendants, imposing sanctions on the corporation. However, certain laws only regulate sanctions on management, not on the corporation as a legal entity itself, a situation witnessed in the Forestry Law⁴⁰⁴ before its amendment by the Job Creation Law.

Compared to other legislations, the provisions in the Environmental Protection and Management Law closely align with the concept and objectives of corporate criminal liability. Article 116 of the Environmental Protection and Management Law specifies that if a corporation commits a criminal act, criminal charges and sanctions can be applied to the corporation or individuals responsible for ordering or leading the illicit activity.

Considering corporations are legal entities, responsibility is attributed to them by linking natural human actions to corporate actions. This attribution is guided by Article 4(2) of Supreme Court Regulation Number 13 of 2016. Refinements in provisions regarding corporate criminal liability have been introduced by Law Number 1 of 2023 concerning the Criminal Code, which will take effect three years from January 2, 2023. Corporate criminal liability extends to the corporation itself, management occupying functional positions, those issuing orders, individuals with control, and/or beneficial owners of the corporation.⁴⁰⁵

5. Enhancing the Grievance Mechanism and Community Monitoring System

Based on our field research, some of the village regulations empower local communities to take direct measures against those responsible for mangrove destruction. This notable discovery serves as a model that should be implemented in various other villages across different regions. Such actions align with Article 36, paragraph (6) of the Coastal and Small Islands Management Law and Article 68, paragraph (2) of the Forestry Law, both of which emphasize the provision of equal rights and opportunities to communities in exercising monitoring.

Furthermore, enhancing community based surveillance such as *Kelompok Masyarakat Pengawas* is another viable strategy. These monitoring groups act as the forefront defenders of mangrove areas and should be equipped with adequate skills, knowledge, tools, and technology to bolster their monitoring efforts. Offering incentives to these community monitoring groups can significantly boost their enthusiasm and the efficacy of their surveillance activities. Additionally, to fortify community-led monitoring systems, several improvements need to be incorporated into the mechanisms, including:⁴⁰⁶

- a. Establishing a user-friendly public grievance mechanism to report potential violations.
- b. Establishing a regular post-response monitoring system to mitigate the risk of repeated violations.

402 Cristina de Maglie, "Models of Corporate Criminal Liability in Comparative Law", Washington University Global Studies Law Review, Vol.4, (2005), p. 563.

403 *Ibid.*, p. 564.

404 Indonesia, Forestry Law, Law Number 41 of 1999, Article 78 paragraph 14.

405 Indonesia, Law on the Criminal Code, Law Number 1 of 2023, Article 49.

406 Mas Achmad Santosa, "Efektifitas Penegakan Hukum Administrasi Dalam Perlindungan dan Pengelolaan Lingkungan Hidup di Indonesia Studi Kasus di Propinsi Jawa Tengah", (Dissertation, Faculty of Law, University of Indonesia, Depok, 2014).



- c. Developing a complaint mechanism that allows public involvement to assist Provincial Environment and Forestry Office and Provincial Marine Affairs and Fisheries Office in post-response monitoring.
- d. Establishing a public complaint system enabling community engagement to aid Provincial Environment and Forestry Office and Provincial Marine Affairs and Fisheries Office in monitoring compliance post-sanction imposition.
- e. Establishing a systematic post-sanction monitoring process.

Enhancing public awareness of the law requires the government to regularly conduct socialization forums and information exchange. Additionally, mechanisms fostering openness and public access to information concerning environmental compliance are crucial.⁴⁰⁷

This research highlights the prevailing low level of public knowledge regarding issues that can be raised through complaints, despite the significant importance of a grievance mechanism. Therefore, to ensure the effectiveness of public complaints, there are several critical prerequisites need to be met:

1. Educating the public about various forms of violations, as well as procedures and mechanisms for lodging complaints.
2. Disseminating information to the public about activities for which permits are granted.
3. Ensuring transparent handling and swift follow-up of public complaints.

407 *Ibid.*

Box 6.1

Tanjung Batu Case Study

Community involvement in coastal management is evident in Berau, with a particular focus on Tanjung Batu. Local fishermen have come together to establish a community focused on mangrove tourism. This proactive initiative includes voluntary monitoring of the mangrove ecosystem, particularly to report instances of illegal mangrove logging in the area. Notably, the mangrove trees in Tanjung Batu are healthy, leading people from neighboring villages to engage in clandestine logging activities during the night. The genesis of this community initiative stemmed from simple interactions among fishermen who frequented the sea at night, where they encountered and witnessed instances of unauthorized mangrove logging.





Financing

Introduction

One of the main problems in BCE conservation and rehabilitation is limited funding. Analysis shows that to achieve Sustainable Development Goal (SDGs) 14 (life below water) by 2030, the world will need USD 174.52 billion per year for marine conservation. Currently only USD 25.5 billion per year is available (a combination of private and public funding). Hence, there is a funding gap of USD 149.02 billion per year for marine conservation. To achieve SDGs 14.2 target (to restore and protect ecosystems), it is estimated that the world requires USD 34.1 billion per year. Meanwhile, SDGs 14.5 target (to conserve coastal and marine areas of the world) is estimated to require USD 5.9 billion per year.⁴⁰⁸

The climate change mitigation costs needed by Indonesia from 2020-2030 reach IDR 3,779 trillion or around IDR 343.6 trillion per year. In particular, by the year 2030, approximately IDR 93.28 trillion is needed to implement climate change mitigation in the forestry sector, of which mangroves are a part. However, currently, the allocation of funds from the State Budget for climate change mitigation is inadequate. In 2018, 2019 and 2020, the government budgeted IDR 132.47 trillion, IDR 97.66 trillion and IDR 77.81 trillion, respectively. These allocations are insufficient to meet the climate financing needs, which amount to IDR 200 trillion IDR 300 trillion annually.⁴⁰⁹

Climate Financing Scheme in Indonesia

Sources of climate financing in Indonesia can come from various budgetary sources. Domestically, climate funding can be derived from the State Budget and non-State Budget funds (private investment and CSR, carbon trading, financial institutions). From international funding sources, climate funding can derive from bilateral and multilateral agreements (Green Climate Fund, Global Environmental Facilities, Adaptation Funds, and so on).

Opportunities for BCE financing mechanisms in Indonesia have increasingly opened up after the issuance of the Presidential Regulation on Carbon Economic Value. This Presidential Regulation adopts a carbon trading mechanism and results-based payment for mangrove conservation efforts — as has been implemented in Ecuador and Kenya. Recently, the Indonesian Government issued the Minister of Environment and Forestry Regulation Number 21 of 2022 Procedure for Implementation of Carbon Pricing as a derivative of the Carbon Economic Value Presidential Regulation. Regarding Carbon Economic Value, the Presidential Regulation recognizes blue carbon as part of climate change mitigation from the marine sector. Furthermore, mangroves have been included in the sub-sector in the implementation of Carbon Economic Value based on the Minister of Environment and Forestry Regulation Number 21 of 2022.

⁴⁰⁸ Despina F. Johansen and Rolf A. Vestvik, "The cost of saving our ocean estimating the funding gap of sustainable development goal 14", Marine Policy Vol.112, (2020).

⁴⁰⁹ Fiscal Policy Agency, 2018-2020 Climate Change Mitigation and Adaptation Budget Report, (Jakarta: Ministry of Finance, 2020)

Potential BCE Financing based on Presidential Regulation 98/2021 concerning the Carbon Economic Value:

1. Carbon Trading

Carbon trading is a market-based mechanism for reducing Green House Gas (GHG) emissions through buying and selling carbon units.⁴¹⁰ Trading can be carried out through carbon exchanges or direct trading, domestically, and internationally through mechanisms of:⁴¹¹

- a. Emissions trading; and
- b. GHG emissions offset.

One of the successful implementations of mangrove carbon trading has been demonstrated in the Plan Vivo project of Mikoko Pamoja, Kenya. Mikoko Pamoja is a community-based project for Ecosystem-Based Management, offering financial incentives to the community via a Payment for Ecosystem Services (PES) scheme facilitated by the selling of carbon credits supported by Voluntary Carbon Credits (VCC). From 2014 to 2018, a total of 498 individuals from the participating communities received payments totaling USD 58,591. The triumph of the Mikoko Pamoja project has spurred the African Forum for Payments for Ecosystem Services to provide guidance in implementing similar projects across East Africa, collaborating with governments and communities in Tanzania, Madagascar, Mozambique, and Kenya.

Several factors contribute to the success of the Mikoko Pamoja project. First, there is notable support and active engagement from the local community, alongside transparency in the implementation of the project. Second, there is availability of accurate carbon stock data in the relevant area. Third, the presence from the government facilitates partnership between local communities, researchers, and regional government bodies, fostering collaboration in managing blue carbon projects. Moreover, facilitators also play a pivotal role in enhancing community capacity in project execution. Additionally, the existence of specific regulations and guidelines allows community participation in forest management. These guidelines are stipulated in Article 45 of the Forest Kenya Law (2005), wherein community groups residing in forest areas register themselves as a Community Forest Association. This registration enables their participation in forest area management in collaboration with the Kenya Forest Service through Participatory Forest Management Plans.

Through participatory forest management, the Kenyan government allocated 117 hectares of mangroves in Gazi for the needs of the Mikoko Pamoja project. Benefitting from a supportive participation policy under the Participatory Forest Management Plan, Mikoko Pamoja collaborated with the Kenya Forest Service and governmental agencies responsible for forest management to implement the carbon credit program. Consequently, Mikoko Pamoja advocated for the development of national policies related to mangroves to be

410 Article 1 paragraph (17) Presidential Regulation Number 98 of 2021 Implementation of Economic Value of Carbon to Achieve Nationally Determined Contribution Targets and Control of Greenhouse Gas Emissions in National Development

411 Article 48 paragraph (1) and paragraph (3) Presidential Regulation Number 98 of 2021 Implementation of Carbon Economic Value to Achieve Nationally Determined Contribution Targets and Control of Greenhouse Gas Emissions in National Development

integrated into Kenya's updated Nationally Determined Contributions (NDC).⁴¹²

Fifth, there is support from voluntary external parties to actively participate in project implementation, including supervision and monitoring from civil society. One of the external parties who plays an important role is Mikoko Pamoja The Steering Group, which provides technical assistance and acts as an intermediary between the community and potential carbon buyers. Mikoko Pamoja Steering Group consists of Kenya Marine and Fisheries Research, Kenya Forest Service, University of Edinburgh Napier, and Bangor University.⁴¹³

The success of the Mikoko Pamoja project demonstrates that the Voluntary Carbon Market mechanism has proven successful in financing small-scale, community-based blue carbon mangrove restoration projects. This also provides benefits to local communities in developing countries.⁴¹⁴

The success of carbon trading from the mangrove sector in other countries can also be seen in 'The India Sundarbans Mangrove Restoration Project', India. Mangrove restoration project Sundarbans is part of the Agriculture, Forestry, and Other Land Use (AFOLU) project by Voluntary Carbon Standard (VCS). This program has been verified as of September 2015, and emission reduction credits have been issued by the UNFCCC. The planting and restoration project then succeeded in achieving the target of restoring 5,600 ha of mangrove area. The community is able to generate profits of around USD 50-56 per month for each person who carries out the planting, USD 120 for the project manager, and USD 225 per month for field officers. For communities that maintain mangrove nurseries, payments are calculated per seedling with a range of between USD 0.015 to USD 0.0375 per seedlings, depending on the species with a total of 0.8 million seedlings planted in this project.⁴¹⁵

2. Result-Based Payment

Result-Based Payment (RBP) is an incentive or payment obtained from the results of GHG emission reduction achievements that have been verified and/or certified. Based on Article 1 paragraph 20 of the Presidential Regulation on Carbon Economic Value, RBP is an incentive or payment obtained from the results of verified and/or certified GHG emission reduction achievements and validated non-carbon benefits.⁴¹⁶ Based on Article 55 paragraph (3) of the Presidential Regulation on Carbon Economic Value, RBP as intended in paragraph (1) covers the scope of:

- a. International, whereby international parties may make payment to the Government or provincial government with approval of the Government;
- b. National, whereby the Government may make payment to provincial governments, regency/municipal governments, Business Actors, and/or the public; and
- c. Provinces, whereby provincial governments may make payment to regency/municipal governments, Business Actors, and/or the public.

412 Wylie, et al., "Keys to successful blue carbon projects: lessons learned from global case studies," Marine Policy vol. 65, (2016), p. 78.

413 *Ibid.*

414 Wylie, et al., "Keys to successful blue carbon projects: lessons learned from global case studies," Marine Policy vol. 65, (2016), p. 76-84.

415 *Ibid.*

416 Article 1 paragraph (20) Presidential Regulation Number 98 of 2021 concerning Implementation of Carbon Economic Value

Implementation of the RBP as intended does not result in a transfer of carbon ownership. In terms of RBP implementation, mitigation results become part of the NDC target achievement. The RBP mechanism with REDD+ is also possible. REDD+ is an international mechanism to provide positive incentives for developing countries that succeed in reducing emissions from deforestation and forest degradation.⁴¹⁷ In a REDD+ RBP Proposal submitted by the Indonesian Government for the 2014-2016 Period to Green Climate Fund, Indonesia has included mangroves in its carbon sequestration plan.

In the Norwegian REDD+ RBP Agreement, Indonesia has also included mangroves in its carbon absorption calculations.⁴¹⁸ This shows that Green Climate Fund, as one of the largest REDD+ sources of funds, also recognizes mangroves as part of REDD+. In the Forest References Emission Level (FREL) document, Indonesia has also included mangroves in the forest category. There are two types of mangrove forests, including primary mangrove forests and secondary mangrove forests.

In another program, the REDD+ Project “East Kalimantan Jurisdictional Emissions Reduction Program, Indonesia,” which is the Forest Carbon Partnership Facility-Carbon Fund (FCPF-CF) program, has also included mangroves as primary and secondary mangroves forests. In this program, capacity of carbon absorption is calculated both from above ground and below ground biomass. In November 2022, Indonesia received the first payment of USD 20.9 million from the planned total of more than USD 110 million.⁴¹⁹ This project has been approved and will last until 2025.⁴²⁰

Another example of a carbon financing project that has been implemented in Indonesia is the Berau Forest Carbon Program program (*Proyek Karbon Hutan Berau/PKHB*), which was implemented in Berau District, East Kalimantan. Following the agreement to implement REDD+, the Indonesian government has prepared phases of implementation through the trials in several areas. One of the districts appointed to carry out the trial is Berau District, East Kalimantan. The process was facilitated by various parties, including The Nature Conservancy (TNC), the central, provincial and district governments, resulting to the PKHB initiative as a regional sustainable natural resource management model that is low-carbon.⁴²¹ To realize the low-carbon regional development, PKHB developed two types, namely strengthening enabling conditions and site-based strategies. PKHB was implemented in three stages, namely: scoping stage (2008), development stage (2009-2010), and pilot stage (2011-2015).⁴²²

The main funding for the PKHB program comes from Tropical Forest Conservation which is a debt-for-nature swap from the Indonesian Government to the United States Government facilitated by TNC and WWF. In addition, there are also other sources of finance available

417 Directorate General of Climate Change Control Ministry of Environment and Forestry, “REDD+”, <http://ditjenppp.menlhk.go.id/kcpi/index.php/aksi/redd> accessed 15 November 2022

418 Green Climate Funds, “Indonesia REDD-plus RBP for results period 2014-2016”, <https://www.greenclimate.fund/document/indonesia-redd-plus-rbp-results-period-2014-2016> accessed 12 November 2022

419 The World Bank, “Indonesia Receives First Payment for Reducing Emissions in East Kalimantan”, <https://www.worldbank.org/en/news/press-release/2022/11/08/indonesia-receives-first-payment-for-reducing-emissions-in-east-kalimantan> accessed December 2, 2022

420 The World Bank, “Indonesia and the world bank sign milestones agreement on emissions reductions”, <https://www.worldbank.org/en/news/press-release/2020/12/08/indonesia-and-the-world-bank-sign-milestone-agreement-on-emission-reductions> accessed 20 December 2022

421 CIFOR, “TNC’s Initiative within the Berau Forest Carbon Program, East Kalimantan, Indonesia | REDD+ on the CIFOR Grounds.” <https://www2.cifor.org/redd-case-book/case-reports/indonesia/tncs-initiative-within-berau-forest-carbon-program-east-kalimantan-indonesia/>. accessed 25 December 2022

422 DDPI East Kalimantan, “Berau Forest Carbon Project” [http://ggc.ddpi.kaltimprov.go.id/future/program-carbon-hutan-berau#:~:text=PKHB%20telah%20implemented%20in%20three,pilot%20\(2011%2D2015\)](http://ggc.ddpi.kaltimprov.go.id/future/program-carbon-hutan-berau#:~:text=PKHB%20telah%20implemented%20in%20three,pilot%20(2011%2D2015).). accessed November 1, 2022

, such as from TNC, to support the implementation of PKHB and the involvement of the Berau community. In this regard, TNC developed a financing system for the community in PKHB which is provided to support three program categories, namely: natural resource mitigation and management programs; economic development programs that are in line with the principles of sustainable forest protection and management; and programs to strengthen enabling conditions.⁴²³

In the financing system developed by TNC, the community will receive funds to support implementation of three program categories in one package. This means that financing to support economic development will only be provided if the community manages natural resources sustainably.

On community involvement, one of the supporting factors in the PKHB program is the presence of facilitators from TNC who provide community guidance and assistance to:

1. Identify the strengths and utilize these strengths to achieve their mission and vision;
2. Design processes, provide tools, and create conditions that make it easier for residents, community groups, and village governments to plan and implement an initiative;
3. Connecting citizens with other parties, such as government institutions, companies, research institutions, non-governmental organizations and other community groups; and
4. Increase citizens' understanding and awareness of various relevant issues, especially issues of natural resource management, economic development, and regulation.⁴²⁴

In addition to mentoring and coaching, TNC facilitators develop and implement a monitoring and evaluation system to ensure community involvement in PKHB produces meaningful contributions to community welfare and forest sustainability.

3. Carbon Market Potential

At the global level, there is currently great interest from the private sector to access carbon credits from blue carbon as nature based solutions. However, the number of eligible and well-established blue carbon projects is limited compared to the potential market demand. For example, at the 2021 UNFCCC COP in Glasgow, Salesforce, a software company, announced that it intends purchase one million tonnes of high-quality blue carbon credits.

There are several sources of financing available for the development of blue carbon projects in developing countries to increase the availability of blue carbon projects that are eligible to receive funding. For example, the Blue Carbon Accelerator Fund (BCAF) focuses on increasing the number of blue carbon/blue carbon restoration projects globally that are investment-ready and able to access other financing.⁴²⁵ BCAF was launched in 2022 by IUCN and the Australian Government.

⁴²³ Hartanto, Herlina, Tomy Yulianto, and Taufiq Hidayat, SIGAP-REDD+: Inspiring Citizen Action for Change in REDD+., (Jakarta: The Nature Conservancy, 2014)

⁴²⁴ *Ibid.*

⁴²⁵ Blue Carbon Accelerator Fund, <https://bluenaturalcapital.org/bcaf/>, accessed December 14, 2022.



In addition, a guidance document has now been developed and launched regarding the important principles that make a blue carbon credit and project high quality. This guidance document is entitled *High Quality Blue Carbon Principles & Guidelines*, prepared by various non-governmental organizations that have a track record of developing blue carbon projects, namely Conservation International, Meridian Institute, TNC, Ocean Risk and Resilience Action Alliance, Salesforce, and World Economic Forum. Given the unique nature of blue carbon, the high risks and uncertainties in calculating and selling blue carbon credits, this guide consolidates knowledge and best practices globally, and provides quality blue carbon criteria for investors. This guide targets credit buyers, investors, suppliers and project developers.

Box 7.1

Blue Carbon Action Partnership to Accelerate Carbon Market

In an effort to strengthen multi-sectoral blue carbon financing on a global and national scale, the World Economic Forum and Friends of Ocean Action developed the Blue initiative Carbon Action Partnership (BCAP). This initiative follows the National Plastic Action Partnership blueprint, with the specific aim of building partnerships on strengthening aspects of science, policy and funding mechanisms to improve BCE restoration and conservation efforts. BCAP's work is aimed at connecting blue carbon projects in Indonesia to international carbon markets and other funding mechanisms. BCAP has three major steps, namely: (1) Establishment of a National Secretariat; (2) Development of a Blue Carbon Roadmap; (3) Development of long-term funding support and a national blue carbon funding roadmap.

Source: World Economic Forum Ocean Action Agenda, Concept Note, Blue Carbon Action Partnerships.

Box 7.2

Innovative Funding Sources: TAKE, TAPE and TANE

Ecological Fiscal transfer (EFT) is an incentive scheme developed through vertical (i.e. central government to provincial government) or horizontal (between governments at the same level) fiscal transfers as a reward for performance in environmental management, including forestry.⁴²⁶ EFT can provide compensation to regional governments for the costs of managing ecosystem conservation and the costs of negative externalities from activities that take advantage of the environment. In principle, EFT provides incentives to regional governments to undertake greater ecological conservation, thereby contributing to global, increased conservation and restoration efforts, combating climate change, mitigating biodiversity loss, and achieving sustainable development goals. In many countries, EFT has been recognized as an innovative approach to conservation financing. For example, in the state of Parana, Brazil, the EFT scheme succeeded in increasing its total forest area from 637,000 ha to 1.69 million ha in 8 years.⁴²⁷

In Indonesia, the EFT scheme has been discussed and implemented for the last few years by the Research Center for Climate Change (University of Indonesia) which initiated the addition of forest area variables in the the General Allocation Fund for regions. Subsequently, UNDP pushed for a biodiversity protection scheme through the Regional Incentive Fund and The Asia Foundation, which introduced EFT in the form of Ecology-based District Budget Transfers (*Transfer Anggaran Kabupaten berbasis Ekologi/TAKE*), Ecology-based Provincial Budget Transfers (*Transfer Anggaran Provinsi berbasis Ekologi/TAPE*), and Ecology-based National Budget Transfers (*Transfer Anggaran Nasional berbasis Ekologi/TANE*).

In Indonesia, enabling regulations for the EFT scheme can be seen in Law Number 1 of 2022 concerning Financial Relations between the Central Government and Regional Governments (TANE), Government Regulation Number 12 of 2019 concerning Regional Financial Management (TAPE), and Government Regulation concerning Amendments to Government Regulation Number 43 of 2014 concerning Implementing Regulation of Law Number 6 of 2014 concerning Villages (TAKE).

TAPE

TAPE is an ecologically-based fiscal incentive provided by the provincial government to district/city governments sourced from Special Financial Assistance for the Provincial Government. For example, North Kalimantan Province has implemented this EFT policy through Governor Regulation Number 6 of 2019 concerning Amendments to Governor Regulation Number 49 of 2018 concerning Procedures for Providing, Distribution and Accountability for Financial Assistance Expenditures of the Government of North Kalimantan Province. The indicators used by the North Kalimantan Provincial Government in determining the amount of Special Ecological-based Financial Assistance are based on: a) Prevention of land fires in Other Land Use Area; b) Protection and management of Green Open Space; c) Waste management; d) Protection of water sources; and e) Prevention of air pollution.

In the EFT scheme, the indicators used can be adjusted to the needs of each region, so that aspects of mangrove conservation, restoration and rehabilitation can also be

426 Busch, J., Ring, I., Akullo, M. et al. "A global review of ecological fiscal transfers." *Nat Sustain* 4, 756–765 (2021)

427 *Ibid.*

included as one of the indicators. This can be a motivation for regional governments to maintain or increase the extent of their mangrove area cover.

TAKE

TAKE is an ecology-based fiscal incentive provided by the district to villages or villages that maintain environmental sustainability through the reformulation of the Village Fund Budget originating from the District/City local government budget. For example, TAKE can be found in Nunukan Regent Regulation Number 59 of 2019 concerning Amendments to Regent Regulation Number 15 of 2015 concerning Village Fund Allocation. The Nunukan District Government allocates 2.5% of the total Village Fund Allocation for Affirmative Village Fund Allocation based on ecological performance.

TANE

TANE is an ecology-based fiscal incentive provided by the central government to provinces, districts/cities and villages. Currently the TANE concept is still in the development stage, but there have been several discourses for a TANE policy.

Based on Law Number 23 of 2014 and Law Number 33 of 2004 concerning Financial Balance between the Central Government and Regional Governments, the relationship mechanism in the central and regional government funding systems is regulated in the transfer mechanism to the regions. This mechanism has the aim of reducing vertical imbalances between central and regional governments as well as horizontal imbalances between regional governments. Transfers to the regions themselves consist of components of the Balancing Fund as well as the Special Autonomy Fund and the Adjustment Fund. The Balancing Fund itself consists of allocations from Profit Sharing Funds (*Dana Bagi Hasil/DBH*), Natural Resources and Taxes, General Allocation Funds (*Dana Alokasi Umum/DAU*) and Special Allocation Funds (*Dana Alokasi Khusus/DAK*).

Several researchers proposed the EFT concept which is based on DAU. This is based on the amount of DAU allocation each year. Haryanto (2015) stated that there are two ways to integrate the EFT model in Indonesia which originates from DAU. The first way is to provide funding allocations to regions that care about preserving the environment by increasing the DAU funding allocation source. The second way is to include environmental indicators in the Fiscal Gap concept to add to several pre-existing population and regional indicators. Potential indicators that meet the criteria as EFT with reference to best practice in several international countries is the Total Critical Area Land Cover. Regions that meet a high Total Critical Area Land Cover index will receive a larger additional DAU allocation compared to regions with low Total Critical Area Land Cover index.⁴²⁸

The second option is the TANE concept which is based on the Forestry natural resources profit sharing fund. Forestry natural resources profit sharing fund is a regional revenue originating from Forestry natural resources which is allocated within the framework of implementing decentralization.⁴²⁹ Forestry natural resources profit

428 Joko Tri Haryanto, "Ecological Studies Fiscal Transfer as a Potential for Environmental Funding in the Regions", *Journal of Social and Political Sciences* Volume 18, Number 3 (March 2015)

429 Presentation by Mariana Dyah Savitri (Sub Directorate of Profit Sharing Funds, Ministry of Finance) at the National EFT III Conference "Ecological Based Fiscal Incentives/EFT in the HKPD Law and Its Implementation in 2023", Yogyakarta, 14 November 2022

sharing fund consists of 3 (three) sources:

- a. Forest Utilization Business Permit Fee: Fees for forest utilization business permit holders in certain forest areas;
- b. Forest Resources Provisions: Levies imposed in lieu of the intrinsic value of state forest products; and
- c. Reforestation Fund: Levy from business permit holders to utilize forest products from natural forests in the form of wood, with the aim of reforestation and forest rehabilitation.

The source of funds that is earmarked to its allocation is DBH Reforestation Fund. As for the 2022 State Budget Law and Minister of Finance Regulation (PMK) 216/PMK.07/201, the policy on using DBH from Reforestation Funds can be utilized for:

1. Rehabilitation outside the area according to provincial authority;
2. Rehabilitation of forests and land according to provincial authority;
3. Development and management of timber forest products, non-timber forest products and/or environmental services in the area;
4. Community empowerment and Social Forestry;
5. Operationalization of Forest Management Units;
6. Controlling forest and land fires;
7. Forest protection and security;
8. Development of forest plant seeds;
9. Forestry education; and/or
10. Other strategies determined by the government.

In the “Other Strategic” categories, an EFT scheme can be implemented. The category of this “Other Strategic” activity is 30% and can be utilized to provide direct cash assistance and strengthen the regional economy for communities around the forest, and provide incentives for environmental management performance. Providing Environmentally Based Incentives can be done using indicators such as Waste Management Performance, Wastewater Management Performance, Environmental Sanitation Performance, and Forest and Land Rehabilitation Performance.

Furthermore, in Law Number 6 of 2021 concerning the State Budget for Fiscal Year 2022, 20% of the DBH allocation for the Reforestation Fund is calculated based on environmental performance indicators. This indicator derived from the Land Cover Quality Index (*Indeks Kualitas Tutupan Lahan/IKTL*) from the MoEF. This index covers conservation and rehabilitation aspects. In Law Number 1 of 2022 concerning Regional Government Financial Relations, 90% of the DBH allocation is based on a formula, and 10% is based on performance. The DBH SDA allocation will use environmental performance indicators, namely the Environmental Quality Index (*Indeks Kualitas Lingkungan Hidup/IKLH*) from the Ministry of Environment and Forestry.⁴³⁰

Initiatives like this must and can continue to be developed so that regions compete in implementing progressive environmental policies, including conserving, restoring and rehabilitating large areas of mangroves.

430 Presentation by Mariana Dyah Savitri (Sub Directorate of Profit Sharing Funds, Ministry of Finance) at the National EFT III Conference “Ecological Based Fiscal Incentives/EFT in the HKPD Law and Its Implementation in 2023”, Yogyakarta, 14 November 2022

Challenges

1. Limitations of State Budget for BCE Funding

In line with the Indonesian Government's objective of restoring 600,000 hectares of mangrove land, the BRGM has indicated that IDR 26 trillion is required for mangrove rehabilitation across nine provinces.⁴³¹ However, the allocated additional PEN expenditure budget for labor-intensive mangrove planting in 2021 stands at only IDR 1.589 trillion. This distribution includes IDR 1.523 trillion for MoEF and BRGM, with IDR 43.37 billion designated for MMAF, and IDR 23.27 billion for the Ministry of Villages for the Development of Disadvantaged Regions and Transmigration.⁴³²

The State Budget funding for climate change mitigation and adaptation was IDR 77.81 trillion in 2020. In the preceding years, the budget was IDR 132.47 trillion in 2018 and IDR 97.66 trillion in 2019. This allocation falls significantly short of the financial requirement for climate-related financing, estimated to range between IDR 200 trillion to IDR 300 trillion each year.⁴³³ The budget for low-carbon development in coastal areas between 2010-2020 is also under the average allocation for combined MoEF and MMAF budget, i.e. not even 1% of the total budget.⁴³⁴

2. Gaps in Carbon Value Calculation

The potential for funding BCE initiatives aimed at conserving and rehabilitating coastal ecosystems can be actualized through effective planning and management. To accomplish this, key stakeholders such as governmental bodies, investors, academics, and society must possess the capability to assess carbon stocks (the total carbon stored in a specific area) and track variations in carbon stocks and greenhouse gas (GHG) emissions over time.⁴³⁵

Investors in BCE projects necessitate access to reliable metrics to estimate blue carbon offsets (averted losses or gains achieved), anticipate the survival rate of regenerated vegetation in BCE, and calculate additional risks and benefits (co-benefits) that could impede or enhance the advantages. Although several guidelines have been developed recently to standardize the assessment of carbon stock changes in BCE projects and ease access to financing mechanisms, these guidelines still require widespread dissemination and simplified language for various stakeholders such as investors, project developers, and policymakers. This approach is detailed in the Coastal document "Blue Carbon: Methods for Assessing Carbon Stocks and Emission Factors in Mangroves, Tidal Salt

431 Anugrah Andriansyah, "Rehabilitas Hutan Mangrove di 9 Provinsi Capai Rp26 Triliun" <https://www.voaindonesia.com/a/rehabilitasi-hutan-mangrove-di-9-provinsi-capai-rp26-triliun/6685494.html> accessed 11 November 2022

432 Ministry of Finance, "Mangrove Planting Labor Intensive PEN Program for 2020 and 2021, where is the difference?" <https://anggaran.kemenkeu.go.id/in/post/program-pen-padat-karya-penanaman-mangrove-tahun-2020-dan-2021-dimana-bedanya> accessed 11 November 2022

433 Debora Laksmi Indrasari, "Upaya Pendanaan Perubahan Iklim di Indonesia", <https://www.kompas.id/baca/telaah/2022/02/04/usaha-pendanaan-bahan-iklim-di-indonesia> accessed 11 November 2022

434 BAPPENAS, "Strategi Nasional Pengelolaan Lahan Basah: Ekosistem Gambut dan Mangrove", (2023), p.102.

435 Howard, J. et al., (2014). Coastal Blue Carbon: Methods for assessing carbon stocks and emissions factors in mangroves, tidal salt marshes, and seagrasses. (USA: Conservation International, Intergovernmental Oceanographic Commission of UNESCO, International Union for Conservation of Nature, 2014)



Marshes, and Seagrasses.⁴³⁶

As a result of the lack of socialization of standard methods for calculating carbon values from the BCE, there is uncertainty in predicting the level of carbon accumulation over the investment period. Investors generally need a specific level of carbon accumulation at the project location they are developing to calculate the return on investment. The development of knowledge regarding BCE survival rates, as well as best practices and methods to increase survival rates still need to be developed and widely disseminated to avoid risks.⁴³⁷

The development of knowledge on carbon assessment calculations aims to create metrics and tools to predict and calculate the results of BCE projects. These metrics and tools must be reusable (produce similar results under various conditions), transferable (valid and adaptable to various socio-economic and environmental conditions), and replicable (measured using metrics that can be compared across options investment).⁴³⁸


Currently, there is a method developed by Blue Carbon Initiative to calculate carbon stocks and emission factors from BCE.⁴³⁹ This method can serve as a guide for coastal ecosystem managers and other stakeholders who are interested in measuring blue carbon, but do not yet have practical tools and guidance to enable proper carbon analysis. In Indonesia, there have not been any best practices in conducting carbon stock analysis and emission

436 M.A. Vanderklift, et al., Constraints and opportunities for market-based finance for the restoration and protection of blue carbon ecosystems, *Marine Policy* 107 (2019)

437 *Ibid.*

438 *Ibid.*

439 Howard, J. et al., (2014). Coastal Blue Carbon: Methods for assessing carbon stocks and emissions factors in mangroves, tidal salt marshes, and seagrasses. (USA: Conservation International, Intergovernmental Oceanographic Commission of UNESCO, International Union for Conservation of Nature, 2014)



factors from BCE that can be used as a reference. Therefore, socialization, development of best practices and a strong will from the government are needed to adopt and implement methods to facilitate the measurement of carbon stocks and emission factors from BCE in Indonesia.

3. Knowledge Gap on the Risks in Blue Carbon Projects

The success of BCE project needs to meet the '*permanence*' requirement, which means that the carbon absorbing ecosystem must be able to store carbon for a long time (from 25 to 100 years). This is different from terrestrial ecosystems such as forests which are at risk. It appears as a direct result impacts (such as forest burning and deforestation), BCE is vulnerable to various threats that can impact the success of carbon sequestration. This is because BCE is located in an aquatic environment, which makes this ecosystem more 'open' and accessible to the public, making it vulnerable to various threats. For example, seagrass can experience negative impacts due to upstream activities that impact downstream water quality.

So, when assessing BCE, it must be seen from a broader perspective and cannot be separated from other ecosystems, because BCE is vulnerable to activities that occur even hundreds of kilometers away.⁴⁴⁰ This creates special difficulties for BCE restoration projects because the risk of failure could be high. A recent study attempting to measure the success rate of BCE restoration showed that the average survival rate for seagrass restoration projects was 38.0%, 51.3% for mangroves, and 64.8% for salt marshes.⁴⁴¹

In addition to the risks mentioned above, the BCE project also faces risks from legal and policy uncertainty. Changes in government program priorities, changes in carbon prices in the market, reduced public funding for conservation efforts, and 'easing' of regulations directly or indirectly impact BCE protection. Undesirable negative impacts resulting from weak legal and policy frameworks can threaten the sustainability of investment in BCE projects (for example, PSN which can clear mangrove land).

Recommendation

1. Empowerment of Communities and Assurance of Community Rights to Attain Financial Returns in BCE Rehabilitation and Conservation

It's vital to ensure the tenurial security of communities to prevent conflicts related to overlapping land ownership and carbon rights, which could adversely affect the beneficiary communities. Engaging communities in every policy-making process, such as spatial planning and EIA preparation, based on the transparent principle of Free, Prior, and Informed Consent (FPIC) in funding

440 J. Bell James, "Developing a Framework for Blue Carbon in Australia: Legal and Policy Considerations", UNSW Law Journal Volume 39 (4) (2016)

441 Elisa Bayraktarov et al, 'The Cost and Feasibility of Marine Coastal Restoration ' (2016) 26 Ecological Applications 1055, 1056.

mechanisms for blue carbon projects, including the formulation of benefit-sharing plans, is crucial for successful implementation.

2. Accelerate Utilization of Diverse Funding Sources

There is a range of public funding sources accessible for BCE initiatives, including FPCF (World Bank), Forest Investment Program (World Bank, ADB), Global Environment Facility Trust Fund (Global Environment Facilities), Global Climate Change Alliance (European Commission), Green Climate Fund (Green Climate Funds Board), among others. Creating a comprehensive database of national and international funding sources easily accessible to a wide range of stakeholders, including civil society, businesses, and regional governments, is essential. Additionally, exploring innovative funding sources like Ecologically Based Budget Transfers, Green Bonds, Blue Bonds/Blue Sukuk, Debt-for-nature swaps, and more should be considered.

Box 7.3

The Mangrove Program for Coastal Resilience (M4CR), a collaborative initiative between the World Bank and the Government of Indonesia, aims to enhance mangrove management and improve local community livelihoods in selected areas. Focused on managing 75,000 hectares in North Sumatra, Riau, East Kalimantan, and North Kalimantan, the M4CR program estimates the potential management of 29,418,162 tCO₂e over 30 years. The funding scheme for this program includes a USD 400 million loan and a USD 19 million grant.

Source: Presentation by Dr. Nani Hendiarti in the Seminar “Strengthening Blue Carbon Ecosystem Governance in Indonesia”, Jakarta, January 30 2023.

Strengthen Monitoring, Reporting, and Verification Systems

Suboptimal monitoring has an impact on the success rate of mangrove planting. Mangrove planting needs to have a Monitoring, Reporting, and system Verification (MRV) which is long-term and integrated.⁴⁴² Experts assess that MRV efforts need to refer to the principles of transparency, accuracy, consistency, completeness, and compatibility (TACCC principle) published by the Intergovernmental Panel on Climate Change.⁴⁴³ In addition, the MRV system needs to be linked to Safeguard Information System that supports ensuring the sustainability of blue carbon projects.⁴⁴⁴

3. Reinforce Data Valuation of BCE Ecosystem Services

Beyond calculating carbon absorption and storage capacity, it's essential to develop data concerning the valuation of other ecosystem services provided by BCE. Services like biodiversity protection, safeguarding coastal areas, and enhancing the livelihoods of

442 Murdiyarso et al., “Rehabilitation of Coastal Areas for Low Carbon Development” CIFOR Info Brief Number 366 (July 2022)

443 *Ibid.*

444 *Ibid.*

coastal communities are often regarded as “co-benefits” whose valuation isn’t computed. Strengthening data related to the valuation of BCE ecosystem services is vital to prioritize BCE protection⁴⁴⁵ over other economic activities and ensure fair revenue distribution from carbon prices to the community.⁴⁴⁶

4. Develop Best Practices for Blue Carbon Ecosystem Projects in Indonesia

Creating best practices for BCE projects is crucial to stimulate market interest in developing such projects in Indonesia. It involves acquiring updated knowledge regarding potential risks from BCE and mitigating strategies through extensive research. Adopting internationally recognized carbon stock calculation methods and providing comprehensive data on the status of BCE in Indonesia, especially for seagrass where official and validated data is lacking, are fundamental for this purpose.

445 Coordinating Ministry for Maritime Affairs and Investment, “Side Event Meeting: Partnership in Climate Action”, https://www.youtube.com/watch?v=ifl-i_LzFhg&t=2363s accessed 14 November 2022

446 World Economic Forum, Friends of Ocean Action, Salesforce, Ocean Risk and Resilience Action Alliance, Conservation International, and The Nature Conservancy, “High Quality Blue Carbon Principles: A Triple Investment Benefits for People, Nature and Climate”, https://www3.weforum.org/docs/WEF_HC_Blue_Carbon_2022.pdf accessed 25 December 2022.





Equitable Benefit Sharing

Maintaining the function of BCE as a carbon absorber and provider of various ecosystem services requires significant financial support. State budgets often lack adequate funds to cover the essential costs of restoring, rehabilitating, and conserving BCE. Hence, diverse funding mechanisms are essential. Within the blue carbon program's funding scheme, a specific allocation is earmarked to provide compensation to communities, offering incentives for safeguarding BCE.

Given the limited government resources for nationwide BCE maintenance and prevention of damages, involving communities that rely on BCE (Blue Carbon Dependant People) for their livelihood becomes imperative in its conservation. Economic incentives should be devised to encourage communities to actively preserve BCE, particularly through the development of economic incentives for the conservation of blue carbon. These incentives could encompass procuring seeds, planting, and nurturing mangroves, thus bolstering BCE's capacity for optimal carbon absorption and storage.

Equitable Benefit Sharing Concept

In conservation, equitable benefit sharing is a crucial concept, mirroring one of the CBD's key objectives since its inception in 1993: "the fair and equitable sharing of benefits derived from the use of genetic resources."⁴⁴⁷ In emission reduction programs such as REDD+, the focus is on the fair distribution of revenue resulting from the "monetization" of emission reductions. Equitable benefit sharing in emission reduction programs plays a pivotal role in incentivizing potential beneficiaries to alter deforestation and forest degradation practices.⁴⁴⁸ Various mechanisms can be employed for benefit sharing, ensuring legitimacy, support, and the effectiveness of emission reduction programs.⁴⁴⁹

Benefit distribution can be implemented based on performance-based or input-based approach.⁴⁵⁰ In a performance-based approach, benefits are distributed once specific targets, such as the restoration of a certain number of hectares, have been achieved.⁴⁵¹ Conversely, the input-based approach grants the beneficiary an initial incentive for carrying out activities, such as planting or monitoring. A hybrid system incorporating both approaches may also be implemented within a benefit distribution mechanism.⁴⁵²

The types of benefits in the benefit distribution scheme are: (1) monetary and non-

447 Conventions on Biological Diversity, "Fair and equitable benefits sharing of benefits arising from the use of genetics resources", <https://www.cbd.int/doc/meetings/abs/absep-01/other/absep-01-equitable-en.pdf>, accessed 20 November 2022.

448 CIFOR, "REDD+ Benefit Sharing", Fact Sheet (2014), p.1.

449 *Ibid.*

450 Nawir, et al., "Thinking about REDD+ benefits sharing mechanism (BSM): Lessons from community forestry (CF) in Nepal and Indonesia", (2015), p.4.

451 *Ibid.*

452 Nawir, et al., "Thinking about REDD+ benefits sharing mechanism (BSM): Lessons from community forestry (CF) in Nepal and Indonesia", (2015), p.4

monetary; (2) carbon and non-carbon; or (3) direct and indirect.⁴⁵³ Monetary benefits refer to financial benefits obtained from implementing emission reductions, while non-monetary benefits (in-kind) are given to groups in the form of investments in facilities that contribute to their well-being, such as educational facilities, health care, or water resources. Benefits can also be provided to fund activities that support sustainable BCE management. Additionally, the decision on benefit provision involves specifying whether the distribution is directed towards individuals, families, groups, communities, or intermediaries tasked with the distribution process.

Legal Framework for Benefit Sharing

Legal instruments relating to the issue of benefits sharing are regulated in various laws and regulations:

1. Law Number 32 of 2009 concerning Environmental Protection and Management. The Environmental Protection and Management Law regulates three environmental economic instruments, namely development planning and economic activities, environmental funding, and incentives and/or disincentives.⁴⁵⁴
2. Presidential Regulation Number 98 of 2021 concerning the Carbon Economic Value. In this Presidential Regulation, RBP can provide benefits not only to the government, regional governments, and business actors, but also to the community. The community as a beneficiary is based on their role and contribution in fulfilling the performance achievements of climate change mitigation and/or climate change adaptation.⁴⁵⁵
3. Regulation of the Minister of Environment and Forestry Number 70 of 2017 concerning Procedures for Implementing Reducing Emissions from Deforestation and Forest Degradation, Role of Conservation, Sustainable management of Forest and Enhancement of Forest Carbon Stock Regulation of the Minister of Environment and Forestry Number 70 of 2017 regulates several things including identification of parties receiving funding as well as arrangements for providing incentives based on activities that have an impact on reducing emissions (RBP).⁴⁵⁶

Regulation of the Governor of East Kalimantan Province Number 33/2021 concerning Benefit Sharing Mechanisms in Reducing Land-Based GHG Emissions. This regulation outlines the categories of beneficiaries, the allocation proportions, benefit distribution, utilization of benefits, guidance, supervision, and procedures for addressing complaints in the FPCF implementation in East Kalimantan Province.

453 Chapman, et al., "Defining the Legal Elements of Benefit Sharing in the Context of REDD+", Carbon and Climate Law Review Vol. 8(4), (2014), p.271.

454 Indonesia, Law on Environmental Protection and Management, Law Number 32 of 2009, Article 42 paragraph (2).

455 Indonesia, Presidential Regulation on the Economic Value of Carbon, Presidential Regulation Number 98 of 2021, Article 57.

456 Indonesia, Regulation of the Minister of Environment and Forestry concerning Procedures for Implementing Reducing Emissions from Deforestation and Forest Degradation, Role of Conservation, Sustainable management of Forest and Enhancement of Forest Carbon Stock, Minister of Environment and Forestry Regulation No. 70 of 2017, Article 11 and Article 19.

Benefit Distribution Practices in Various Countries

1. Sundarbans Restoration Project (India)

In other countries, one example of mangrove restoration that provides economic incentives for the local community is in India through the Sundarbans Mangrove Restoration Project. This program involves the planting of 16 million mangroves since its launch in 2011, with a targeted carbon dioxide (CO₂) sequestration of 700,000 tons within a 20-year period.⁴⁵⁷ This project was initiated by Indian NGO Nature Environment, Wildlife Society, and Livelihoods, international impact investors. This project in 2015 was validated by the VCS.⁴⁵⁸ The Sundarbans Project began with the provision of a number of funds for local communities known as *forests friends*, where the community helps protect the mangrove forest area from activities that damage BCE. Members of forest friends receive compensation from the implementation of mangrove planting and maintenance of USD 45 per month which then increases to USD 50-56 per month at the next stage.⁴⁵⁹ The income generated by the community is not yet considered a part of benefit sharing as a reward for successfully reducing greenhouse gas emissions and strengthening carbon storage in the mangrove ecosystem. The efforts to control greenhouse gas emissions in this project require a span of 20 years to fully realize the mangrove's functions as a carbon sink.

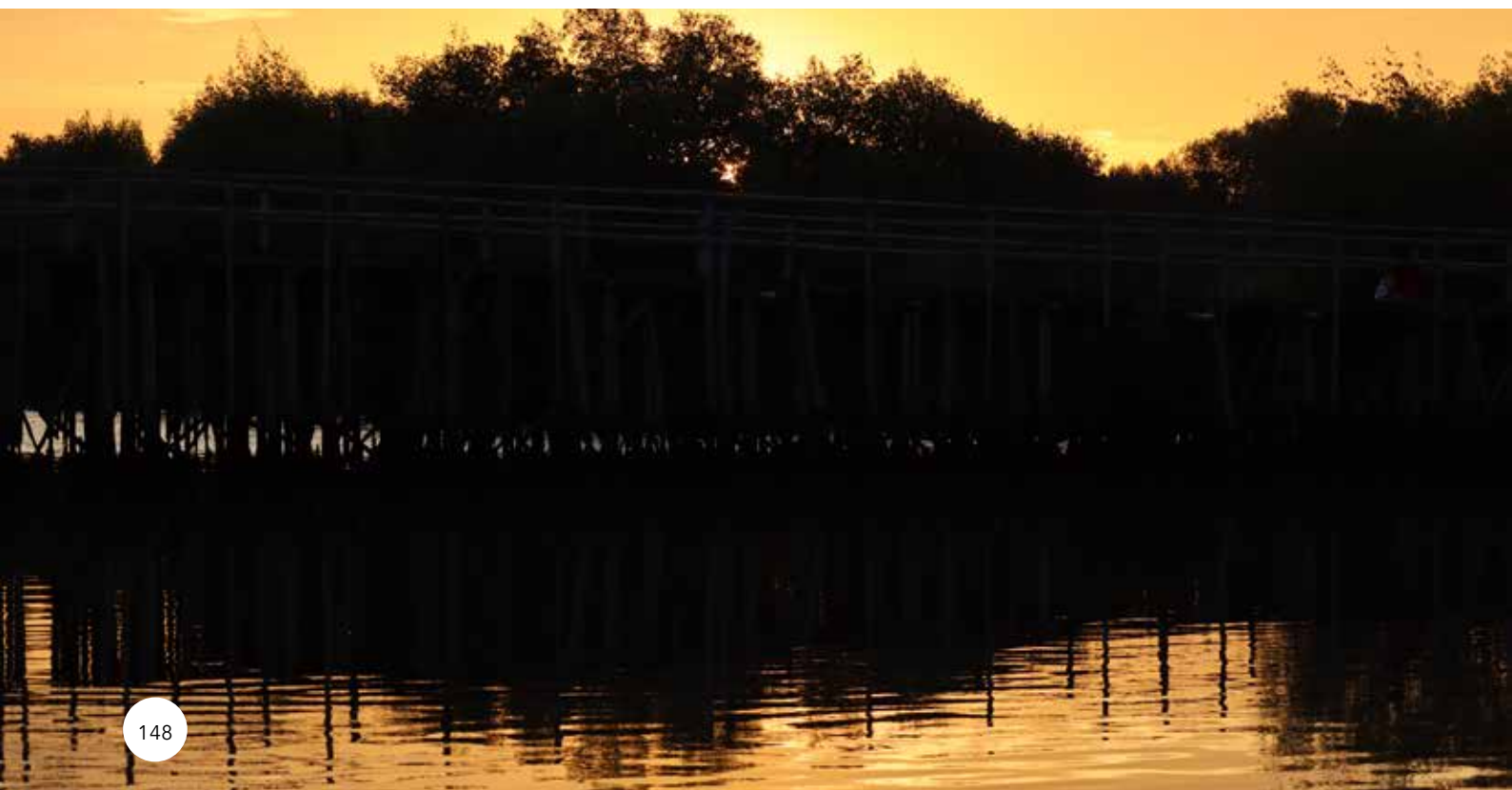
2. Mikoko Pamoja (Kenya)

The Mikoko Pamoja Project in Kenya is able to provide alternative livelihoods for people who preserve mangroves, such as planting pine trees for building materials. Moreover, Mikoko Pamoja provides financial incentives to the community with the PES scheme

457 Schneider, et al., "Identifying mangroves blue carbon barriers. Key considerations for policy makers", (2021), p.11.

458 *Ibid.*

459 *Ibid.*



through the sale of carbon credits from carbon emission reductions.⁴⁶⁰ Benefits sharing in the Mikoko Pamoja can be seen in the following chart:⁴⁶¹

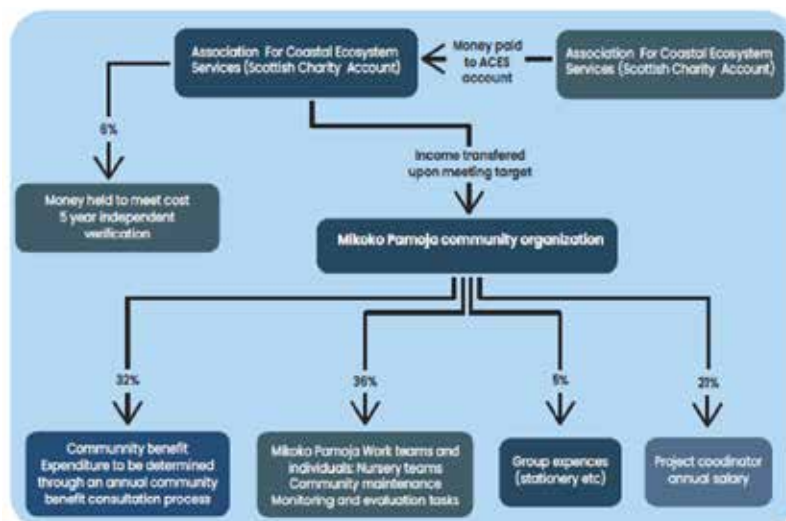


Figure 8.1
Benefits sharing on Mikoko Pamoja
James Kairo's presentation in the Webinar "Blue Talks", May 27, 2022

In addition to direct income for project managers in the project, there is an allocation of benefits to the community in the form of socio-economic facilities, such as sanitation and educational facilities.⁴⁶² Mikoko Pamoja is an example of best practice in the benefits sharing that can improve the socio-economic status of communities in Gazi Bay, Kenya, by improving livelihoods and providing community facilities.

Forest Carbon Partnership Facility-Carbon Fund in East Kalimantan

The East Kalimantan Province was chosen as the pioneering site for the Reduced Emissions Program (RBP). The program was initiated with the signing of an agreement between the Ministry of Environment and Forestry and the World Bank for GHG emission reduction programs through FCPF-CF. As part of this initiative, the East Kalimantan province received compensation of USD 110 million, equivalent to roughly IDR 1.5 Trillion from the World Bank.⁴⁶³ This compensation was for an emissions reduction of 22 MtCO₂e, valued at around USD 5 per ton of CO₂e.⁴⁶⁴ The Emissions Reduction Program Document (ERPD)-FCPF encompasses a mangrove forest area of 375,137 hectares from 2020 to 2025.⁴⁶⁵ Emission reduction activities include various efforts, such as conservation, environmental protection programs, waste management initiatives, and socio-economic development.⁴⁶⁶ These activities involve the participation of local communities through

⁴⁶⁰ The Commonwealth, "Community led mangroves restoration and conservation in Gazi Bay, Kenya, Lessons Learned from Early Blue Carbon Projects", <https://thecommonwealth.org/case-study/case-study-community-led-mangrove-restoration-and-conservation-gazi-bay-kenya-lessons>, accessed 20 August 2021.

⁴⁶¹ James Kairo, Presentation in the Webinar "Blue Talks", May 27, 2022.

⁴⁶² *Ibid.*

⁴⁶³ East Kalimantan Provincial Government, "East Kalimantan is the only Province Recipient of World Bank Compensation for Reducing Carbon Emissions, 2021", <https://kaltimprov.go.id/berita/kaltim-sa-only-provinsi-penerima-kompasi-world-bank-for-reducing-carbon-emissions>, accessed September 2022.

⁴⁶⁴ Ministry of Environment and Forestry and East Kalimantan Provincial Government, "Draft 1.5 Benefit Sharing Plan: East Kalimantan Jurisdictional Emissions Reduction", (2021), p.13.

⁴⁶⁵ Interview with East Kalimantan Project Management Unit, December 14 2022.

⁴⁶⁶ Interview with Mr. Iskandar, Head of Kariangau Village, East Kalimantan, 15 August 2022.

commitments signed between the regional government and beneficiaries, with FCPF funds allocated for these endeavors.

The Benefit Sharing Plan (BSP) within the FCPF was devised based on the ERPD.⁴⁶⁷ General principles guiding the BSP include transparency, effectiveness, respect for customary land and territorial rights, community support, and the clarity of legal rights concerning carbon and land.⁴⁶⁸ The benefit sharing mechanisms within FCPF includes: (1) identification of types, requirements, and beneficiaries; (2) calculating distribution and sharing of benefits; (3) utilization of benefits; (4) coaching and supervision; and handling complaints.

The following table details each beneficiary as well as their roles and responsibilities⁴⁶⁹:

Table 8.1

List of Beneficiaries, Roles and Responsibilities, as well as Type of Benefits

Beneficiaries	Roles and Responsibilities	Types of Benefits
Central Government	<ul style="list-style-type: none"> • <i>Issuance, implementation and enforcement of relevant national policies</i> • <i>Administering the national REDD+ system</i> • <i>Administering Public Service Agency-Environmental Fund Management Agency (BLU-BPDLH)</i> • <i>Administering ER Program, MRV, intervention coordination for ER at national level</i> 	<ul style="list-style-type: none"> • <i>Receiving monetary and non-monetary benefits</i>
National Park/ Conservation Management Unit	<ul style="list-style-type: none"> • <i>In charge of conservation area in East Kalimantan Province</i> • <i>Developing conservation partnership with local communities</i> • <i>Forest and Animal Protection and Monitoring</i> • <i>Fire Mitigation and Prevention</i> • <i>Partnership with local communities for Sustainable livelihood in buffer zone area</i> 	<ul style="list-style-type: none"> • <i>Monetary benefits to cover operational costs</i> • <i>Non-monetary benefits</i>

467 Ministry of Environment and Forestry and East Kalimantan Provincial Government, "Draft 1.5 Benefit Sharing Plan: East Kalimantan Jurisdictional Emissions Reduction", (2021), p. 6.

468 Ministry of Environment and Forestry and East Kalimantan Provincial Government, "Draft 1.5 Benefit Sharing Plan: East Kalimantan Jurisdictional Emissions Reduction", (2021), p. 7.

469 Adapted from the Ministry of Environment and Forestry and the East Kalimantan Provincial Government, "Draft 1.5 Benefit Sharing Plan: East Kalimantan Jurisdictional Emissions Reduction", (2021), p.1-45.

Beneficiaries	Roles and Responsibilities	Types of Benefits
East Kalimantan Provincial Government	<ul style="list-style-type: none"> • Prepare, implement and enforce regional regulations. • Improve land management plans, increase forestry administration capacity, reduce deforestation related to excessive logging and timber plantations, reduce deforestation related to mining, and support emissions reduction activities • Facilitate the coordination of ER interventions initiated by the Departments • Responsible for implementing Measuring, Monitoring, and Reporting (MMR) and Feedback and Grievance Redress Mechanism (FGRM), sub-national registration systems, and social & environmental protection at the provincial level • Implementation of ER interventions related to capacity building • Facilitate the process of proposing or licensing Social Forestry • Facilitate Forest Management Unit in increasing management capacity 	<ul style="list-style-type: none"> • Receiving monetary and non-monetary benefits
Forest Management Unit	<ul style="list-style-type: none"> • Conflict resolution • Social forestry support • Forest management, protection and monitoring • Fire management and prevention • Coordination with the community and other entities within the Forest Management Unit 	<ul style="list-style-type: none"> • Receiving monetary and non-monetary benefits
District Government	<ul style="list-style-type: none"> • Prepare, implement and enforce regional regulations to improve land management, reduce deforestation related to the expansion of oil palm plantations, reduce encroachment with sustainable alternative program plans, and support emission reduction activities. • Implementation of ER interventions related to capacity building for fire prevention and control, facilitation of sustainable agriculture and plantations, green climate/villages. 	<ul style="list-style-type: none"> • Receiving monetary and non-monetary benefits

Beneficiaries	Roles and Responsibilities	Types of Benefits
Village Government	<ul style="list-style-type: none"> Develop ER activity plans and agreement on distribution of benefits with the community and groups holding land rights 	<ul style="list-style-type: none"> Receiving monetary and non-monetary benefits
Plantation Concession	<ul style="list-style-type: none"> Implementation of Sustainable Forest Management, High Conservation Value (HCV), and Reduced Impact Logging (RIL) policies Partnership with local communities Fire prevention program 	<ul style="list-style-type: none"> Receive non-monetary benefits in the form of capacity building activities for plantations and sustainable forest management, handling tenure conflicts, facilities and inputs to support sustainable practices
Timber Concession		
Forest Management Concession (Natural Forest)		

The condition for beneficiaries to be eligible to receive compensation is that they fulfill their roles and responsibilities as stated in the ERPD. Beneficiary performance in carrying out activities will be validated using the MMR system at the regional level, and will be verified using the MRV system at the national level to ensure benefits are distributed to eligible beneficiaries.⁴⁷⁰ At the time this study was written, the final percentage of the benefit distribution scheme had not been officially approved.

Within the 5 year period, community involvement through socialization and discussions in the context of FPIC was done at least twice a year.⁴⁷¹ The FPIC process involved 99 villages that were committed to participating in this program. All documentation of public consultations are properly recorded in the ERDP document. The information provided to participants in the publication consultation as part of FPIC is listed in the draft 1.5 benefits document sharing plan⁴⁷²:

1. Implementation of FPIC: What and why is FPIC needed, implementation process, mechanisms that can be used to express consent.
2. Emission Reduction Program: causes of deforestation and degradation, actions that can be taken to overcome them, program implementation, implementing parties.
3. Social and Environmental Protection (Safeguards): Discussion of social and environmental safeguard frameworks, standards from the UNFCCC and World Bank, social and environmental issues with possible impacts, ways to mitigate impacts, and monitoring frameworks.
4. Benefit Sharing Scheme: Types of benefits received, beneficiaries, how benefits

470 Ministry of Environment and Forestry and East Kalimantan Provincial Government, "Draft 1.5 Benefit Sharing Plan: East Kalimantan Jurisdictional Emissions Reduction", (2021), p.12.

471 Interview with East Kalimantan Project Management Unit, December 14 2022.

472 Ministry of Environment and Forestry and East Kalimantan Provincial Government, "Draft 1.5 Benefit Sharing Plan: East Kalimantan Jurisdictional Emissions Reduction", (2021), p.36.

are distributed, how to get benefits, proportion of benefits, and general calculations.

5. Measuring, Monitoring, Reporting (MMR): how emissions are measured, how monitoring is done, what is reported, and MRV mechanisms.
6. Feedback and Grievance Redress Mechanisms (FGRM): Mechanisms for providing suggestions and complaints.

The requisite for local communities and indigenous communities to receive benefits is that they should be recognized by the village government.⁴⁷³ The Ministry of Environment and Forestry requires that people register themselves in the village community, and in the case of individuals migrating from outside, the individual needs to register with the village community to receive benefits.⁴⁷⁴ Community groups can receive benefits directly through group institutions or through the village government. All communities must be within village jurisdiction. In addition, it is not required for local communities to possess formal land certificates to receive benefits. In addressing tenure issues, the World Bank is collaborating with the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency and BRGM to enable communities to receive land rights in the form of rights to ecosystem services.⁴⁷⁵

473 Ministry of Environment and Forestry and East Kalimantan Provincial Government, "Draft 1.5 Benefit Sharing Plan: East Kalimantan Jurisdictional Emissions Reduction", (2021), p.12.

474 Ministry of Environment and Forestry and East Kalimantan Provincial Government, "Draft 1.5 Benefit Sharing Plan: East Kalimantan Jurisdictional Emissions Reduction", (2021), p.13.

475 Coordinating Ministry for Maritime Affairs and Investment, "Side Event Meeting: Partnership in Climate Action", https://www.youtube.com/watch?v=ifl-i_LzFhg&t=2363s accessed 14 November 2022



Distribution of funds to the community is carried out through the Environmental Fund Management Agency (*Badan Pengelola Dana Lingkungan Hidup*).⁴⁷⁶ Funds to the community are then channeled through intermediary agency, where it is then channeled to village institutions and KTH. These funds can be used for activities that protect forests and improve the welfare of local communities.

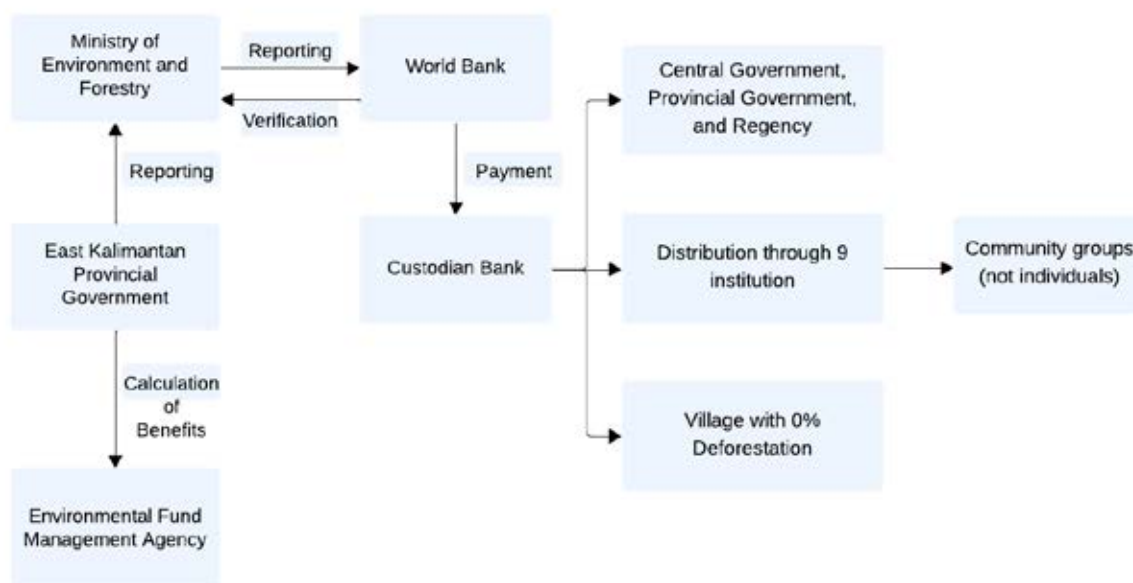


Figure 8.2
East Kalimantan FPCF-CF Benefit Sharing Scheme

⁴⁷⁶ Ministry of Environment and Forestry and East Kalimantan Provincial Government, "Draft 1.5 Benefit Sharing Plan: East Kalimantan Jurisdictional Emissions Reduction", (2021), p.28.



The distribution must refer to East Kalimantan Governor Regulation Number 33 of 2021 concerning Benefit Sharing Mechanisms in Reducing Land-Based GHG Emissions. The currently agreed distribution proportions are as follows:

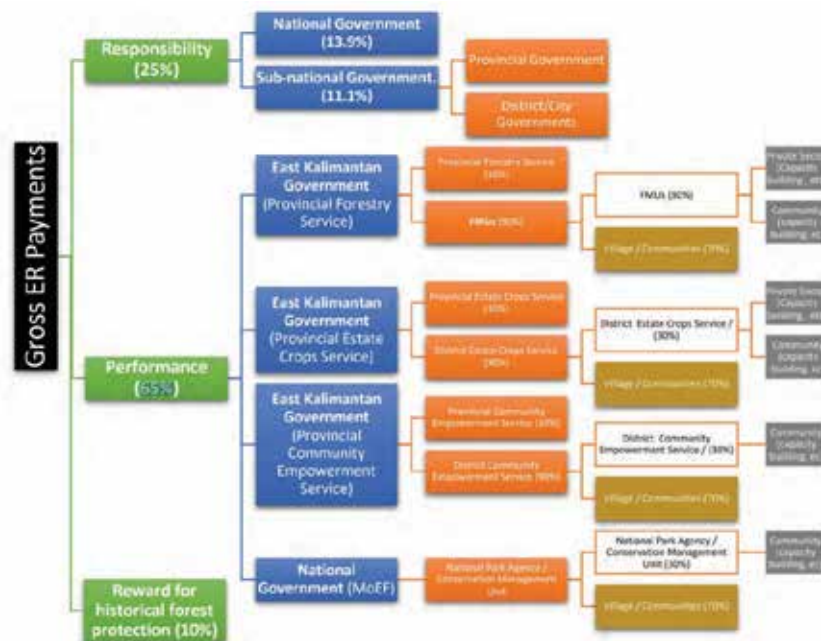


Figure 8.3 Benefit Distribution Scheme in FCPF-CF East Kalimantan

Source: Presentation of Progress on Implementation of the Emission Reduction Program in East Kalimantan Province FCPF-Carbon Fund (as of 29 June 2022)

Challenges of Equitable Benefit Sharing

1. Tenurial Security in Determining Communities Entitled to Receive Benefits

Generally, attention to tenure issues is one of the basic steps in preparing for the implementation of REDD+ program, as unclear and conflicting property rights have been identified as a major challenge of the REDD+ program.⁴⁷⁷ In addition, the absence of tenurial security prevents communities from becoming beneficiaries. Studies show that Indonesia has a fairly high number of agrarian and natural resource conflicts, with a conflict area of 2,043,287 ha, where the forestry sector is one of the largest contributing sector.⁴⁷⁸

2. Potential Misuse of Funds

Corruption poses a serious threat to the success and legitimacy of efforts to reduce carbon emissions. Corruption can increase costs and reduce incentives for communities to switch to sustainable forest use. Potential corruption can occur in the REDD+ benefit distribution scheme, including through: (1) influencing the design process; (2) identification of the beneficiary; (3) design flaw; (4) manipulation of emissions data to obtain higher payment;

⁴⁷⁷ Sunderlin, et al., "Creating an appropriate tenure foundation for REDD+: The record to date and prospects for the future", World Development Vol 106, (2018), p.376.

⁴⁷⁸ Ahmad Zuber, "Konflik Agraria di Indonesia", Sosiologi Reflektif Vol. 8 (1), (2013), p.148.



(4) revenue management.⁴⁷⁹

CIFOR identified 6 important steps to prevent corruption in the REDD+ scheme, namely:

1. Mechanism to ensure transparency and access to information on carbon accounting and financing data from REDD+;
2. Increasing public participation, including in preparing benefit sharing schemes;
3. Improve coordination between central and regional governments;
4. Improve coordination between sectors and harmonization of policies;
5. Establish a supervisory function over the benefit sharing process, which is equipped with the authority to impose sanctions if violations are found;
6. Implementing strategies that are cost efficient.⁴⁸⁰

Recommendations for Equitable Benefit Sharing

1. Experience of the FPCF Program in East Kalimantan as a Precedent that is a Potential Best Practice for RBP Program Development

The first payment to East Kalimantan from the World Bank implements a very complex and detailed mechanism following international standards. Specifically on the implementation of FPIC, continuous socialization has succeeded in gaining support from regional governments and the community. The public consultation process carried out is also well recorded in the ERDP document which can be accessed by the public, including responses and input from consultation participants. The mechanisms that have been developed in the FPCF need to be evaluated and refined if necessary, to be used as training material in improving the provincial government's capacity when implementing FPIC.

2. Community Assistance by NGOs and Universities in Benefit Sharing Mechanism

Considering that the concept of equity often leads to multiple interpretations, it is important for all stakeholders, especially local communities as beneficiaries, to also consider the process and benefits that they define as fair. Project costs, flow of fund, and revenue distribution must be transparent so that communities and stakeholders have the information they need to determine

479 Kendra Dupuy, "Corruption risks and experiences in REDD+ finance benefits sharing mechanisms", U4 Brief, (2014), p.1-4.

480 Shintia Dian Arwida et.al., "Lessons for REDD+ benefit-sharing mechanisms from anti-corruption measures in Indonesia", CIFOR Infobrief No.120 No.20 (May 2015)

whether benefit sharing mechanisms are fair.⁴⁸¹ Intermediaries who distribute funds that will be received by communities also need to have the trust of the community. In the processes of determining the mechanism and implementing the benefits sharing, it is needed for communities to be assisted by universities and NGOs that have credibility to ensure that the community receives sufficient information about their rights and the process that will be followed, and adequate understanding of relevant technical issues.

3. Adoption of High Quality Blue Carbon Principles and Guidelines

There are five principles introduced by the High Quality Blue Carbon Principles and Guidelines to ensure the quality of blue carbon projects that can provide benefits for people, the environment and the climate.⁴⁸² These principles are: (1) Safeguard Nature; (2) Empower People; (3) Operate Locally and Contextually; (4) Employ the best information, interventions, and carbon accounting practices; and (5) Mobilize High-integrity Capital.⁴⁸³ The implementation of these five principles in blue carbon projects needs to be mainstreamed in their implementation in Indonesia.

481 World Economic Forum, Friends of Ocean Action, Salesforce, Ocean Risk and Resilience Action Alliance, Conservation International, and The Nature Conservancy, "High Quality Blue Carbon Principles: A Triple Investment Benefits for People, Nature and Climate", https://www3.weforum.org/docs/WEF_HC_Blue_Carbon_2022.pdf accessed 10 December 2022.

482 World Economic Forum, Friends of Ocean Action, Salesforce, Ocean Risk and Resilience Action Alliance, Conservation International, and The Nature Conservancy, "High Quality Blue Carbon Principles: A Triple Investment Benefits for People, Nature and Climate", https://www3.weforum.org/docs/WEF_HC_Blue_Carbon_2022.pdf accessed 10 December 2022.

483 *Ibid.*



Conclusion

The primary challenges in protecting and managing the Blue Carbon Ecosystem (BCE) stem from the absence of BCE's recognition as critical natural capital (CNC). Consequently, BCE remains perpetually vulnerable to anthropogenic pressures, which contradicts the essence of strong sustainability, mandating the robust protection of natural capital, especially CNC.

Indonesia's efforts to protect and manage BCE are governed by various legal regimes, including forestry, coastal and marine, environmental protection, spatial planning, and regional government. Although these legal frameworks regulate BCE, not all areas are protected or managed sustainably. Notably, mangroves in Other Land Use Areas face the threat of potential land conversion. While nearly 49% of Indonesia's mangrove area is within conservation and protected forest areas, only 3% falls under marine conservation zones. Likewise, 34% of seagrass is in marine conservation areas. Yet, unprotected mangroves and seagrass remain susceptible to anthropogenic pressures. Even within protected areas, the security measures for BCE can be overridden by exceptional clauses catering to other economic activities.

Legally, it is imperative to establish BCE's status as CNC, enabling robust protective instruments. For BCE situated in blue carbon-dependent areas, protective measures conducive to community involvement can be implemented through Social Forestry or Customary Management Areas in Coastal Zones (as a form of Other Effective Area-based Conservation Measures/OECM). Another potential positive implication of the recognition of BCE as CNC is that protective and management measures for BCE, once established, should not be transformed into practices compromising ecosystem sustainability. Any deviation from CNC status for activities of high public interest necessitates a stringent and transparent process.

The effectiveness of protective measures is contingent on several factors, including institutional arrangement. BCE, as a cross-sectoral issue, entails management at diverse administrative levels and jurisdictions. The involvement of multiple ministries/agencies could potentially trigger bureaucratic rivalry. To mitigate this, the legal framework should clearly define the distribution of functions, responsibilities, and authority at national and regional levels. Such coordination should be supported by inclusive action plans and roadmaps for BCE management, embedded with outcome-based success indicators. Furthermore, regional institutions should be fortified through enhanced coordination bodies and multi-stakeholder forums.

Communities also play a pivotal role in BCE management. Their meaningful involvement in the management processes supports sustainable protection efforts and has the potential to enhance the socio-economic conditions. The effectiveness of community engagement is also influenced by tenurial security, which is pivotal for community access and management of BCE without the fear of unilateral revocation of their rights.

In Indonesia, various schemes facilitating community engagement while ensuring tenurial security for BCE-managing communities, like Social Forestry, Customary Forest, and Customary Management Areas in Coastal Zones, have been established. Community engagement at the site level has the potential to be developed to improve community welfare, such as community conservation initiatives in ecotourism and edutourism,

mangrove rehabilitation in the context of National Economic Recovery, carbon trading schemes, and result-based payments. However, these policies face obstacles such as restricted policy-making processes, limited community assistance for economic empowerment, and insufficient recognition of community tenure rights.

Effective community engagement in BCE management requires strengthening the recognition and fulfillment of rights for BCE-dependent communities, such as their involvement in spatial planning and licensing, and implementation of Free, Prior, Informed, Consent (FPIC). Collaborative governance should be implemented, including intensifying assistance and empowerment for BCE-dependent people. The government's role should include strengthening enabling conditions for community engagement in BCE management, supporting alternative livelihoods, and facilitating sustainable economic activities, such as silvofishery and ecotourism.

BCE protection efforts, whether led by the government or the community, demand robust monitoring and enforcement. Effective monitoring and enforcement are essential for ensuring compliance from business actors and the public, preventing violations, and imposing penalties if violations occur. However, challenges persist in terms of resources, monitoring infrastructure, and the lack of understanding among monitoring and enforcement officials about the urgency of protecting BCE as CNC.

For this reason, it is necessary to increase the ability of monitoring and enforcement officers to detect violations and respond to them accurately. Monitoring and enforcement officials need to be equipped with an understanding of the importance of BCE as a CNC and empowering the community in monitoring, as well as improving infrastructure to monitor by utilizing technology. To create a deterrent effect, enforcement needs to be strengthened through the utilization of several legal instruments, such as criminal law, administrative law, claims for compensation, and corporate criminal liability. Enforcement officials can also apply a multi-legal regime approach that uses various existing laws and regulations and is based on the principles of justice.





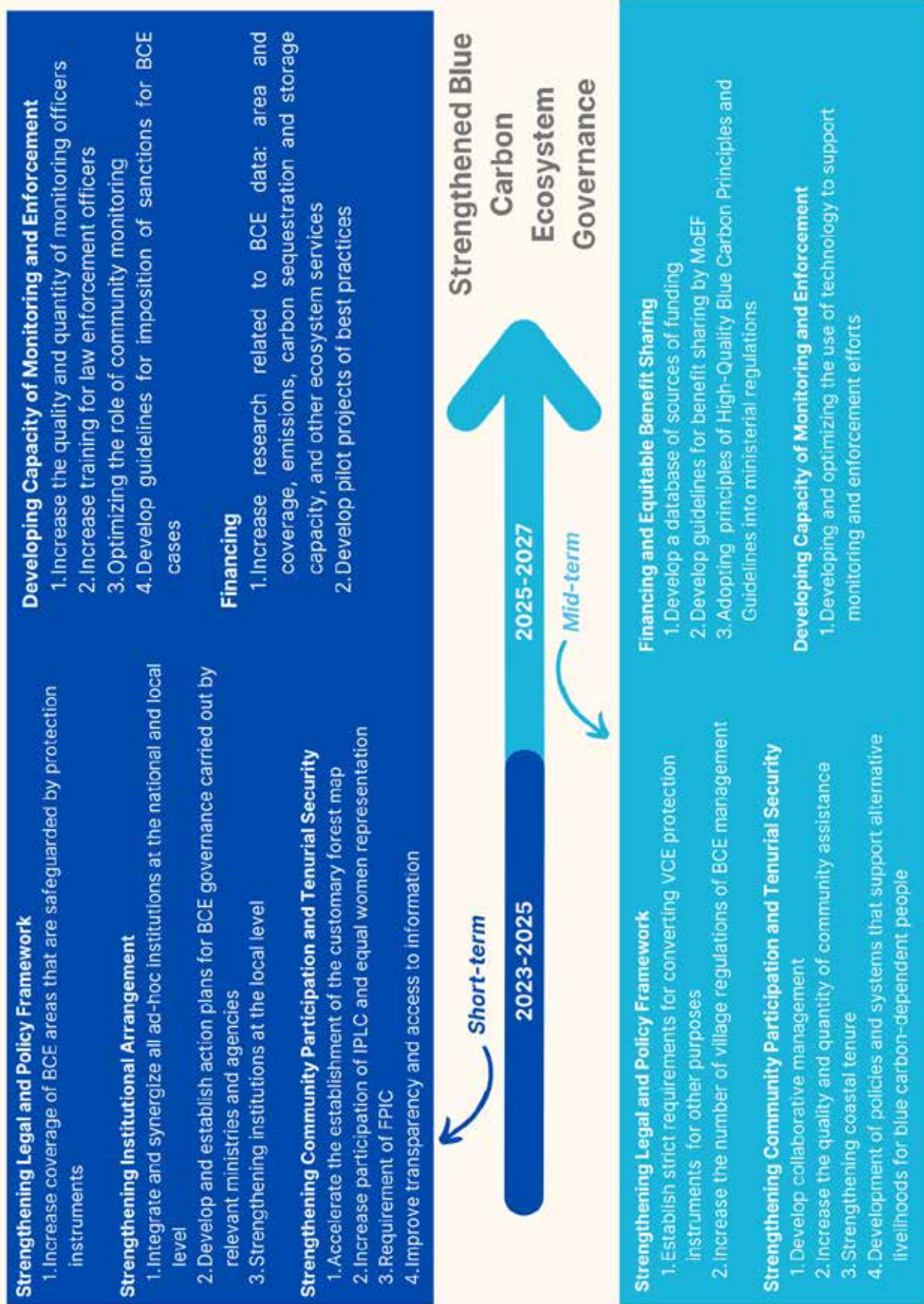
To ensure sustainable protection and utilization of BCE's ecosystem services, adequate financing support is crucial. Currently, the existing funds for BCE protection are insufficient. Indonesia's Presidential Regulation Number 98 of 2021 on the Carbon Economic Value, is a step to mobilize funding to meet Nationally Determined Contribution (NDC) targets. This underscores an opportunity for blue carbon funding through carbon trading schemes and Results-Based Payment.

The successful implementation of blue carbon financing depends on standardized methodologies for calculating carbon stocks that are agreed upon and socialized, as well as risk identification.

Accelerating the use of public and private financial sources, strengthening BCE ecosystem services valuation data, and developing best practices for blue carbon projects are critical steps in achieving adequate BCE funding in Indonesia. Best practices developed in the Forest Carbon Partnerships Facility-Carbon Fund (FCPF-CF) in East Kalimantan can be instrumental in the development of blue carbon projects.

Equitable benefits sharing is an essential aspect of BCE projects involving the community. The government and other stakeholders must empower and ensure fair financial compensation to communities involved in BCE management. Improving community assistance by involving NGOs and universities in benefit-sharing schemes is crucial. Moreover, the principles outlined in the High-Quality Blue Carbon Principles and Guidelines (2022) should be adopted for the development of blue carbon projects in Indonesia.

PATHWAYS FOR STRENGTHENING BLUE CARBON ECOSYSTEM GOVERNANCE





General Recommendations

This study recommends efforts to improve BCE governance by strengthening six aspects of governance. These improvements aim to ensure the effective protection of BCE, alongside the sustainable and equitable utilization of resources, thereby enabling blue carbon dependent people to derive essential benefits for their survival and welfare. Strengthening governance is also needed to create legal certainty, which is an important driver for blue carbon partnerships, investments, and financing.

Table 10.1

Recommended Priority Action for the Short and Intermediate Term to Realize BCE Protection as Critical Natural Capital

Short Term (2023-2025)	Intermediate Term (2025-2027)	Practical Steps
<p>Determining BCE as Critical Natural Capital (CNC/critical natural capital) as a character of a strong sustainability concept (strong sustainability)</p> <p>Legal implications:</p> <p>The protection becomes stronger (BCE cannot be substituted or replaced by other economic activities)</p> <p>The threat of punishment for violators is higher</p>		<p>BCE as CNC was integrated into the amendment to the Conservation Law</p> <p>BCE as CNC is integrated into the Environmental Protection and Management Law, Forestry Law, and Management of Coastal and Small Islands Law</p> <p>Increasing presidential regulations that determine blue carbon reserve areas and ecologically and biologically significant areas (EBSA) as contained in the Presidential Regulation on the Inter-Regional Zone Zoning Plan (RZ-KAW) Java Sea,³⁶⁵ Maluku Sea,³⁶⁶ Sulawesi Sea,³⁶⁷ and Makassar Strait³⁶⁸ and North Natuna Sea.³⁶⁹</p>

³⁶⁵ Indonesia, Government Regulation on Zoning Plan for the Java Sea Interregional Area, Presidential Decree Number 3 of 2022 Article 45

³⁶⁶ Indonesia, Government Regulation on Zoning Plan for the Sulawesi Sea Interregional Area, Presidential Decree Number 40 of 2022 Article 45

³⁶⁷ Indonesia, Government Regulation on Zoning Plan for the Maluku Sea Interregional Area, Presidential Decree Number 4 of 2022 Article 45

³⁶⁸ Indonesia, Government Regulation Zoning Plan for the Makassar Strait Interregional Area, Presidential Regulation Number 38 of 2020 Article 38

³⁶⁹ Indonesia, Government Regulation on North Natuna Sea Interregional Zoning Plan, Presidential Regulation Number 41 of 2022 Article 45.

Table 10.1**Recommended Priority Action for the Short and Intermediate Term to Realize BCE Protection as Critical Natural Capital**

Short Term (2023-2025)	Intermediate Term (2025-2027)	Practical Steps
Establish very strict requirements for converting BCE as a CNC for other public purposes		Adding a new clause to the Spatial Planning Law and the Management of Coastal and Small Islands Law , that the conversion of conservation areas that protect CNC for the purposes of National Strategic Policy is not permitted except for very important public interests, but is carried out very strictly
Strengthening coastal tenure in Indonesia, including through Customary Law Community Management Areas in Coastal Areas as a form of OECM (Other Area-Based Effective Conservation Measure)		Integrated into amendments to the Conservation Act Integrated into the Management of Coastal and Small Islands Law
	Adding village regulations by recognizing and regulating mangrove protection instruments in Other Land Use Area at the village level	Create a target number of village regulations regulating BCE protection that involve community participation to improve mangrove protection and management in Other Land Use Area areas



Table 10.1**Recommended Priority Action for the Short and Intermediate Term to Realize BCE Protection as Critical Natural Capital**

Short Term (2023-2025)	Intermediate Term (2025-2027)	Practical Steps
Strengthen the coordination function between Ministries/Agencies		Setting common goals with key performance indicators (KPI) which can be outlined in a road map or action plan, which is not only based on budget absorption but outcome-based, as well as strengthening the coordination function to monitor and ensure the achievement of each KPI
Accelerate the preparation of action plans or road maps for BCE management		Targeting the action plan to be completed in 2023 Integrating the Strategic Coordination Team for Wetland Management to Achieve the Sustainable Development and Low Carbon Development Goals into the National Mangrove Ecosystem Management Working Group/Mangrove Working Group and the National Blue Carbon Action Partnership which is currently in the process of being ratified. Involving academics and experts, communities, universities, and NGOs/think-tanks in the National Mangrove Ecosystem Management Working Group/Mangrove Working Group
	Strengthen policies at the regional level	Strengthening institutions at the regional level that can accelerate the development and coordination of BCE policies, programs and management initiatives. For example, strengthening the Regional Climate Change Council, Regional Mangrove Working Group, and Regional Peat and Mangrove Restoration Team. These forums can become a forum for the government, universities, NGOs and the community in managing BCE.

Table 10.1**Recommended Priority Action for the Short and Intermediate Term to Realize BCE Protection as Critical Natural Capital**

Short Term (2023-2025)	Intermediate Term (2025-2027)	Practical Steps
	Develop collaborative management and improve the quality and quantity of assistance in BCE management in mangrove forest areas	Increasing the quality and quantity of Forest Management Units (Forest Management Unit) and extension workers
	Providing alternative livelihoods for the community	Providing incentives for ecotourism developed by the community Increasing socialization and assistance for the development of silvofishery and other alternative livelihoods
Accelerate the ratification of customary forest maps to facilitate recognition of communities and customary forests, as well as resolve overlapping permits in forest areas		Create targets so that validation can be completed more quickly Increasing Social Forestry achievement targets
Increasing the participation of Indigenous People and Local Communities (IPLC) and women's representation in BCE management		Do not define the classification of 'affected communities' too narrowly in the EIA process Determine the minimum proportion of women's representation in every public consultation Determine the obligation to involve the IPLC in every public consultation
Implementation of Free, Prior and Informed Consent (FPIC) in blue carbon projects as a prerequisite for meaningful community participation.		Requires FPIC in technical guidelines for blue carbon project development

Table 10.1**Recommended Priority Action for the Short and Intermediate Term to Realize BCE Protection as Critical Natural Capital**

Short Term (2023-2025)	Intermediate Term (2025-2027)	Practical Steps
Improving transparency and access to information to facilitate community participation in policy formation, project implementation, drafting laws and regulations, and granting permits for business activities that can have an impact on blue carbon dependent people		Developing the level of awareness of people who depend on BCE (blue carbon dependent people) to understand and fight for their rights Create better databases that are publicly accessible
	Increased understanding of supervisors and investigators regarding the importance of BCE as a CNC and a multi-legal regime approach, including the implementation of corporate criminal liability	Increased training for investigators regarding the characteristics, functions and benefits of BCE, as well as the consequences of destroying BCE
Strengthen the supervisory function to ensure compliance by business actors whose activities can impact BCE and the communities that depend on BCE		Increase the quantity of supervisors Optimizing the use of technology Optimizing the role of supervision by the community
Imposing high sanctions for damage to BCE and taking into account the value of BCE's services to be considered in imposing sanctions		Create guidelines for enforcement officers Developing offenses regarding CNC destruction with the threat of high penalties as well as environmental restoration penalties, including penalties for restoration and rehabilitation of mangrove ecosystems for destroyers

Table 10.1**Recommended Priority Action for the Short and Intermediate Term to Realize BCE Protection as Critical Natural Capital**

Short Term (2023-2025)	Intermediate Term (2025-2027)	Practical Steps
	Accelerate the use of funding sources, both public and private, one of which is through the funding mechanism regulated in the Presidential Regulation on Carbon Economic Value	Create a funding database that can be accessed by the public Develop BCE funding pilot projects as best practices
	The benefit distribution mechanisms that have been developed in the FPCF program in East Kalimantan need to be used as training material to increase the capacity of other provincial governments in building political will to provide incentives for environmental protection efforts.	Develop guidelines for distribution of benefits by the Ministry of Environment and Forestry
	Adoption of High Quality Blue Carbon Principles and Guidelines Document Principles through arrangements at the Ministry level (MoEF)	Determined through Minister of Environment and Forestry Regulations



SUMMARY OF STUDY RESULTS

LEGAL & POLICY FRAMEWORK

THE EFFORTS TO PROTECT & MANAGE THE BLUE CARBON ECOSYSTEM (BCE) IN INDONESIA ARE REGULATED IN VARIOUS LEGAL REGIMES.



FORESTRY
REGIME



COASTAL
& MARINE
REGIME



ENVIRONMENTAL
PROTECTION &
MANAGEMENT
REGIME



SPATIAL
PLANNING
REGIME



REGIONAL
GOVERNMENT
REGIME

VARIOUS LEGAL REGIMES IN INDONESIA HAVE REGULATED BCE PROTECTION INSTRUMENTS.

Nevertheless, not all BCE are protected or managed sustainably.

About 49% of mangrove areas in Indonesia is covered in conservation and protected areas (forestry)

3% of mangroves are in the marine conservation area

34% of the total area of seagrass are in the marine conservation area

There are still areas of mangroves and seagrass that are not covered by any protection instruments, such as mangroves that are located in production forests and in the Other Land Use (APL) (1,708,085 hectares) which are vulnerable to land conversion.



BCE can still be converted even if it is protected.

THEREFORE, BCE NEEDS TO BE ACKNOWLEDGED AS CRITICAL NATURAL CAPITAL (CNC) AND SAFEGUARDED BY STRONG PROTECTION INSTRUMENTS



For the areas where the communities whose livelihoods depend on the blue carbon ecosystem (blue carbon dependent people), there are some instruments that enable genuine community involvement, such as social forestry or other effective area-based conservation measures (OECM)

Based on the concept of strong sustainability, some natural capital/natural resources have important functions and cannot be replaced by man-made capital. This natural capital is called Critical Natural Capital.

Social Forestry

OECM

INSTITUTIONAL ARRANGEMENT



As a cross-sector issue, the management of BCE is carried out across different governmental levels and administrative jurisdictions.



Several institutions have authority for mangrove management.

Without clear coordination, this could result in bureaucratic rivalry.

Hence, it is crucial to strengthen the coordination function.



Another institutional challenge is that ministry/agency achievement indicators are still based on budget absorption.

Therefore, it is essential to implement an integrated approach between ministries and agencies to accomplish a shared objective. Ministry/agency performance metrics must be based on their contribution to achieving these objectives.

COMMUNITY ENGAGEMENT AND TENURE SECURITY



COMMUNITIES PLAY A PIVOTAL ROLE TO ENSURE SUSTAINABLE BCE MANAGEMENT

There are several challenges that make community engagement ineffective and merely perfunctory



In site-based management, communities may **participate** through several schemes

- (1) Social Forestry
- (2) Customary/Adat Forest
- (3) Community conservation initiatives
- (4) Participation in the National Economic Recovery program
- (5) Blue Carbon Project (e.g. RBP)
- (6) Community-based surveillance and monitoring



COMMUNITY PARTICIPATION IS ALSO AFFECTED BY TENURIAL SECURITY

The community's efforts to gain tenurial security are faced with several challenges. One of them is tenure conflicts, which can be caused by the lack of acknowledgment of community rights in community-based BCE management and bureaucratic challenges.



Adat Forest Area
250.971 Ha
has been established
(MoEF, 2023)
Indicative/Potential:
1.088.149 Ha



Social Forestry target
12.7 Million Ha
Realization by Sept 2023:
6.371.773 Ha

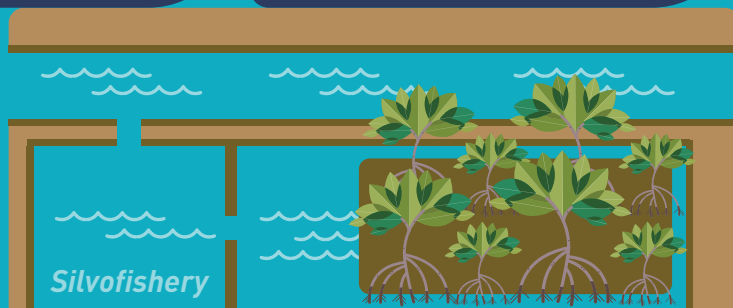
The rights to manage the coastal area may be granted to the indigenous people through

Regulation of Regent/Mayor

Based on the data from the Ministry of Marine Affairs and Fisheries, there are 18 Regulations of Regent/Mayor in 5 provinces that regulate this matter.



To make community engagement effective in BCE management, the acknowledgment and fulfillment of the community rights, including their tenure, **need to be reinforced.**



In addition, incentives for the community to engage in BCE management efforts need to be created, one of which is through the development of alternative livelihoods.

MONITORING ENFORCEMENT

Monitoring and enforcement in BCE protection have been regulated in existing regulations, including:

- 1> **Law No. 41 of 1999** on Forestry
- 2> **Law No. 27 of 2007** on the Management of Coastal Areas and Small Islands
- 3> **Law No. 32 of 2009** on Environmental Protection and Management
- 4> **Law No. 23 of 2014** on Regional Government



Apart from being carried out by enforcement officers, monitoring can also be carried out by the public.

MONITORING ENFORCEMENT MEASURES HAVE SEVERAL CHALLENGES, INCLUDING:



The limited number of human resources conducting supervision and enforcement is not proportional to the numerous permits that need to be monitored.

Area of mangrove forests in Indonesia

3,364,080 Ha

Regional Environmental Supervision Officers + Environmental Supervision Officers: 150

Ratio: 1 to **22,426** Ha.



The imposition of administrative sanctions has not been effective in encouraging compliance.



Only a few cases of mangrove destruction are processed using criminal legal instruments.

FINANCING & EQUITABLE BENEFIT SHARING

THE OPPORTUNITIES FOR BCE FUNDING SCHEME IN INDONESIA INCREASED AFTER THE ISSUANCE OF PRESIDENTIAL REGULATION NO. 98 OF 2021 ON CARBON ECONOMIC VALUE

Furthermore, the Government has just issued
Regulation of The Minister of Environment and Forestry No. 21 of 2022
on Procedures for Implementation of Carbon Pricing.



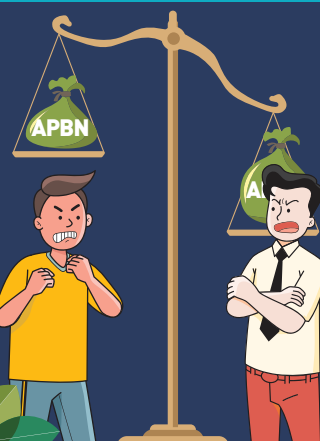
Presidential Regulation

in 2021, the government has acknowledged the term “blue carbon” as part of the climate change mitigations

Mangrove management has also been included in the sub-sector in the implementation of the **Carbon Pricing**.

The challenges in obtaining funding for BCE management in Indonesia include:

- 1 Limitation of State Budget (APBN) for BCE funding
- 2 The method for calculating the BCE carbon value has not been developed and socialized yet
- 3 Inadequate knowledge of the risks that may arise from the BCE project



Other important things to consider

The community needs to be treated as the main beneficiary of the BCE management measures.

The distribution of the benefits must be carried out equitably and by taking into account the community welfare and the community dependence on BCE.

However, tenurial insecurity can hinder people's right to receive benefits.



Appendix 1

Constitutions in Various Countries Which Constitutes Global Environmentalism Constitutionalism

Ecuador Constitution of 2008 with Amendments in 2011

Article 71

"Nature, or Pachamama, where life is reproduced and created, has the right to integral respect for her existence, her maintenance, and for the regeneration of her vital cycles, structure, functions, and evolutionary processes."

Article 406

"The State shall regulate the conservation, management and sustainable use, recovery, and boundaries for the domain of fragile and threatened ecosystems, including among others, high Andean moorlands, wetlands, clouds forests, dry and wet tropical forests and mangroves, marine ecosystems and seashore ecosystems."

Article 407 further emphasizes that BCE's health cannot be disturbed by other economic activities. In the event that the BCE is replaced for other economic purposes, the process is difficult and must go through a referendum.

Article 407

"Activities for the extraction of nonrenewable natural resources are forbidden in protected areas and in areas declared intangible assets, including forestry production. Exceptionally, these resources can be tapped at the substantive requests of the President of the Republic and after a declaration of national interest issued by the National Assembly, which can, if it deems it instead, convene a Referendum."



Constitution of Bolivia (Plurinational State) 2009

Article 33

"Everyone has the right to a healthy, protected, and balanced environment. The exercise of this right must be granted to individuals and collectives of present and future generations, as well as to other living things, so they may develop in a normal and permanent way."

Dominica Constitution of 1978 with Amendments in 2014

Article 67

"The prevention of pollution, [and] the protection and maintaining of the environment for the benefits of the present and future generations, constitute duties of the State."

Article 194

"The formulation and execute, through the law, of a plan of territorial ordering that assures the efficient and sustainable use of the natural resources or the Nation, in law with the need of adaptation to climate change, is [a] priority of the State."

Brazilian Constitution 1988 with Amendments to 2017

Article 225

The Government and the community have a duty to defend and to preserve the environment for present and future generations.

To assure the effectiveness of this right, it is the responsibility of the Government to:

I. preserve and restore essential ecological processes and provide for ecological management of species and ecosystems; (The government and society have an obligation to defend and preserve the environment for present and future generations).

II. preserve the diversity and integrity of the Country's genetics patrimony and to supervision entities dedicated to research and manipulation of genetic material;

III. define, in all units of the Federation, territorial spaces and their components that are to be specially protected, with any change or suppression permitted only through law, prohibiting any use that compromises the integrity of the characteristics that justify their protection;

IV. require, as provided by law, a priori environmental impact studies, which shall be made public, for installation of works or activities that may cause significant degradation of the environment;

V. control production, commercialization and employment of techniques, methods and substances that carry a risk to life, the quality of life and the environment;

VI. promote environmental education at all levels of teaching and public awareness of the need to preserve the environment;

VII. protect the fauna and the flora, prohibiting, as provided by law, all practices that jeopardize their ecological functions, causes extinction of species or subject animals to cruelty



Appendix 2

Distribution of Authority in Mangrove Management in Indonesia			
Authority	Ministries and/or Agencies	Legal basis	Article Contents
Planning	MoEF	Articles 10 and 17 paragraphs (2) of Forestry Law jo. Law Number 11 of 2020 concerning Job Creation	Management forest covers activity maintenance planning area forest
		Article 12 of the Forestry Law jo. Law Number 11 of 2020 concerning Job Creation Article 21 of the Forestry Law jo. Law Number 11 of 2020 concerning Job Creation	Forestry planning covers inventory, confirmation area, stewardship region, region formation, and arrangement plan forestry.
	MMAF	Article 7 paragraph (2) of the Management of Coastal and Small Islands Law jo. Job Creation Law	Planning for coastal areas and small islands consists of the Zoning Plan for Coastal Areas and Small Islands (RZWP3K), the Zoning Plan for National Strategic Areas (RZ KSN), and the Zoning Plan for Certain National Strategic Areas (RZ-KSNT) whose territorial boundaries are determined by Central government.
		Article 7B paragraph (2) of the Management of Coastal and Small Islands Law jo. Job Creation Law	Planning for coastal areas and small islands is carried out by considering: alignment, compatibility, carrying capacity and capacity of the environment, integration with the function and utilization of types of resources and the obligation to allocate space and community access in utilizing WP3K.

Distribution of Authority in Mangrove Management in Indonesia			
Authority	Ministries and/or Agencies	Legal basis	Article Contents
Planning	Ministry of Agrarian Affairs and Spatial Planning	Article 8 paragraph (3) Spatial Planning Law jo. Spatial Planning Law jo. Law Number 11 of 2020 concerning Job Creation	Central government authority: national spatial planning and national strategic area spatial planning.
	National Development Planning Agency	Decree of the Minister of National Planning and Development Number 89 of 2020 concerning Formation of a Coordination Team Strategic Wetland Management	The Planning Working Group is tasked with: designing strategies and roadmaps for managing wetland ecosystems (peat and mangroves) in order to support GHG emission reduction targets
	Regional Government	Article 7 paragraph (2) of the Management of Coastal and Small Islands Law jo. Law Number 11 of 2020 concerning Job Creation	The provincial authority to manage natural resources in the sea includes spatial planning arrangements (Drafting Zoning Plans for Coastal Areas and Small Islands (RZWP3K).
		Article 27 paragraph (2) of the Regional Government Law	Provincial regional government authority: Provincial Regional Spatial Planning (RTRW) and Provincial Strategic Area Spatial Planning
		Article 10 paragraph (2) Spatial Planning Law	Regional governments have the authority to plan, utilize and control regional spatial planning.

Distribution of Authority in Mangrove Management in Indonesia			
Authority	Ministries and/or Agencies	Legal basis	Article Contents
Management and Utilization (incl giving permission)	MoEF	Article 21 Forestry Law	The Ministry of Environment and Forestry has management authority which includes forest governance and preparation of forest management plans, use and utilization of forest areas, forest rehabilitation and reclamation, as well as forest protection and nature conservation.
		Article 31 paragraph (4) of the Forestry Law	Based on their function, forest areas are designated as Conservation Forests, Protected Forests and Production Forests. In this case, the Ministry of Environment and Forestry has the authority to determine forest areas based on these categories.
		Article 27 (4) Forestry Law jo. Article 135 PP 23 of 2021 concerning Management of Forest Areas	Forest area use activities can only be carried out in Protected Forest and Production Forest Areas, carried out through the granting of permits which are the authority of the Minister of Environment and Forestry.
	MMAF	Article 4 of the Management of Coastal and Small Islands Law jo. Law Number 11 of 2020 concerning Job Creation	Management of WP3K, including planning, is carried out with the aim of protecting, conserving, rehabilitating, utilizing and enriching WP3K resources and their ecological systems in a sustainable manner
		Article 19 Management of Coastal and Small Islands Law jo. Law Job Creation	Every form of space utilization in WP3K must be accompanied by a Business Permit.

Distribution of Authority in Mangrove Management in Indonesia			
Authority	Ministries and/or Agencies	Legal basis	Article Contents
Management and Utilization (including granting permits)	MMAF	Article 50 of the Management of Coastal and Small Islands Law jo. Job Creation Law	The Ministry of Marine Affairs and Fisheries has the authority to grant utilization permits, together with regional governments in accordance with its authority, including the authority to issue and revoke business permits in coastal waters and small islands across provinces, National Strategic Areas, Certain National Strategic Areas and National Conservation Areas.
		Article 5 Minister of Maritime Affairs and Fisheries Regulation Number 31 of 2020 concerning Management of Marine Protected Areas	MMAF has the authority to allocate Conservation Areas in marine spatial patterns and establish Conservation Areas
	Regional government	Article 14 paragraph (2) of the Law 23 of 2014 concerning Regional Government	The management of forest areas including district/city grand forest parks is the authority of the district/city region.
		Article 27 paragraph (2) of the Law 23 of 2014 concerning Regional Government	The provincial authority to manage natural resources in the sea includes spatial planning arrangements (Drafting Zoning Plans for Coastal Areas and Small Islands (RZWP3K))
Supervision and Control (including enforcement)	MoEF	Articles 60 and 63 Forestry Law jo. Law Number 11 of 2020 concerning Job Creation	The government and regional governments are obliged to carry out forestry supervision. Supervision activities include monitoring, asking for information, and conducting inspections of the implementation of forest management.

Distribution of Authority in Mangrove Management in Indonesia			
Authority	Ministries and/or Agencies	Legal basis	Article Contents
Supervision and Control (including enforcement)	MoEF	Article 266 Government Regulation Number 23 of 2021 concerning the Implementation of Forest Areas	Supervision of compliance with the implementation of activities in the form of business permits in the forestry sector, approval for the use, release and management of forest areas, permits for business management of forest products or the organization and implementation of other activities in accordance with statutory regulations
		Articles 267 and 273 Government Regulation Number 23 of 2021 concerning the Implementation of Forest Areas	The Ministry of Environment and Forestry has the authority to supervise compliance with the implementation of business permits in the forestry sector issued by the central government and apply administrative sanctions for violations committed by the permit holder.
	MMAF	Article 36 paragraph (1) of the Management of Coastal and Small Islands Law jo. Law Number 11 of 2020 concerning Job Creation	Supervision in WP3K is carried out by certain officials who have authority in the field of Coastal Area Management (MMAF)
	Regional government	Article 36 paragraph (5) of the Management of Coastal and Small Islands Law jo. Law Number 11 of 2020 concerning Job Creation	In order to implement supervision and control of the Management of Coastal Areas and Small Islands as intended, the government and regional governments are required to carry out monitoring, field observations, and/or evaluation of planning and implementation.
		Article 14 paragraph 7 of the Regional Government Law	Monitoring marine and fisheries resources up to 12 miles.

Distribution of Authority in Mangrove Management in Indonesia			
Authority	Ministries and/or Agencies	Legal basis	Article Contents
Rehabilitation and Restoration	BRGM	Section 2 BRGM Presidential Regulation	Carry out accelerated rehabilitation of mangroves in work areas
	MoEF	Article 2 paragraph (2), Art 21, and Article 22 of the BRGM Presidential Regulation	Provide policy, technical and support direction The implementation of BRGM's duties and functions is evaluated by the Minister Coordination between the Head of BRGM and the Minister
Rehabilitation and Restoration	MMAF	Article 2 paragraph (2), Article 21, and Article 22 of the BRGM Presidential Regulation Article 2 paragraph (2), Article 21, and Article 22 of the BRGM Presidential Regulation	Provide policy, technical and support direction The implementation of BRGM's duties and functions is evaluated by the Minister Coordination between the Head of BRGM and the Minister
	CMMAI	Article 14 paragraph (2), BRGM Presidential Regulation	Part of the BRGM technical steering team
			CMMAI is tasked with coordinating, synchronizing and controlling Ministry affairs in administering government in the maritime and investment sectors. ³⁷⁰ In carrying out its duties, Kemenkomarves carries out coordination and synchronization functions in:

³⁷⁰ Indonesia, Presidential Regulation on Coordinating Ministry for Maritime Affairs and Investment, Perpres No. 92 of 2019, Article 2.

Distribution of Authority in Mangrove Management in Indonesia			
Authority	Ministries and/or Agencies	Legal basis	Article Contents
Coordination	CMMAI	Presidential Regulation Number 92 of the year 2019 regarding the Coordinating Ministry for Maritime Affairs and Investment	formulation and/or determination of policies; ³⁷¹ resolving issues in the maritime and investment sectors that cannot be resolved or agreed between Ministries/agencies; ³⁷²
			management, supervision and control in the implementation of policies relating to the maritime and investment sectors, including policies regarding mangroves as part of maritime resources. ³⁷³
Research	National Research and Innovation Agency	Presidential Regulation 33/2021 concerning National Research and Innovation Agency	Research, development, invention, and policy innovations that regulate, respect, develop and preserve diversity in biological and non-biological natural resources

371 Ibid., Article 3 letter a.

372 Ibid., Article 3 letter e.

373 Ibid., Article 3 letter h.



Appendix 3

Division of Authority in Seagrass Management in Indonesia				
Number	Authority	Ministries/agencies	Legal basis	Article Contents
1.	Planning	MMAF	Article 7 paragraph (2) of the Management of Coastal and Small Islands Law jo. Job Creation Law	Planning for coastal areas and small islands consists of the Zoning Plan for Coastal Areas and Small Islands (RZWP3K), the Zoning Plan for National Strategic Areas (RZ KSN), and the Zoning Plan for Certain National Strategic Areas (RZ-KSNT) whose territorial boundaries are determined by Central government.
			Article 7B paragraph(2) Management of Coastal and Small Islands Law jo. Job Creation Law	Planning for coastal areas and small islands is carried out by considering: alignment, compatibility, carrying capacity and capacity of the environment, integration with the function and utilization of types of resources and the obligation to allocate space and community access in utilizing WP3K.
		Regional government	Article 7 Management of Coastal and Small Islands Law jo. Job Creation Law	Provincial regional government authority: Planning for Coastal and Small Island Zoning Plans and Provincial Strategic Area Spatial Planning
			Article 27 paragraph(2) Regional Government Law	The provincial authority to manage natural resources in the sea includes spatial planning arrangements (Drafting Zoning Plans for Coastal Areas and Small Islands (RZWP3K))
2.	Management and Utilization (including granting permits)	MMAF	Article 23 paragraph(2) Management of Coastal and Small Islands Law	The use of WP3K is prioritized for conservation activities, education and training, research and development, mariculture, tourism, fisheries and marine businesses and sustainable industry, agriculture and/or animal husbandry

Division of Authority in Seagrass Management in Indonesia

Number	Authority	Ministries/agencies	Legal basis	Article Contents
2.	Management and Utilization (including granting permits)	MMAF	Article 19 of the Management of Coastal and Small Islands Law jo. Job Creation Law	Every form of space utilization in WP3K must be accompanied by a Business Permit.
			Article 50 of Management of Coastal and Small Islands Law jo. Job Creation Law	The Ministry of Marine Affairs and Fisheries has the authority to grant utilization permits, together with regional governments in accordance with its authority, including the authority to issue and revoke business permits in coastal waters and small islands across provinces, national strategic areas, certain national strategic areas and national conservation areas.
			Article 5 Minister of Maritime Affairs and Fisheries Regulation Number 31 of 2020 concerning Management of Aquatic Conservation Areas	Allocation of conservation areas in marine spatial patterns and establishing conservation areas
		Regional government (according to its authority)	Article 50 of Management of Coastal and Small Islands Law jo. Job Creation Law	MMAF has the authority to grant utilization permits, together with regional governments in accordance with their authority.



Division of Authority in Seagrass Management in Indonesia				
Number	Authority	Ministries/agencies	Legal basis	Article Contents
3.	Supervision and Control (including enforcement)	MMAF	Article 36 paragraph (1) Management of Coastal and Small Islands Law	Supervision in WP3K is carried out by certain officials who have authority in the field of coastal area management (MMAF)
3.	Supervision and Control (including enforcement)	Regional government	Article 36 paragraph (5) Management of Coastal and Small Islands Law	In order to carry out supervision and control of the management of coastal areas and small islands as intended, the government and regional governments are required to carry out monitoring, field observations, and/or evaluation of planning and implementation.
			Article 14 paragraph 7 of the Regional Government Law	Monitoring marine and fisheries resources up to 12 miles.

Appendix 4

Sanctions

Constitution	Chapter	Explanation	Threat of Punishment
Law 41 of 1999 concerning Forestry	Article 80	Violations of area utilization, business permits for the use of environmental services, business permits for the use of forest products outside criminal provisions	Administrative sanctions (fines, revocation of permits, termination of activities, and/or reduction of area.)
	Article 50 paragraph (2)	Holders of forest utilization business permits, utilization of environmental services that cause forest damage.	Prison sentence, if carried out by and/or on behalf of a legal entity or business entity, criminal charges and sanctions are imposed on the management, either individually or jointly, subject to a criminal penalty in accordance with the respective criminal penalties plus 1/3 (one third) of the criminal penalty which was dropped.
	Article 38 paragraph (1)	Use of forest areas for development purposes outside of forestry activities in conservation forests	Administrative sanctions (revocation of forest area use approval)
	Article 38 paragraph (4) and article 280 PP management of Forest Areas	Open-pit mining in protected forest areas	Administrative sanctions (revocation of forest area use approval)
	Article 50	Cutting down trees or harvesting or collecting forest products in the forest without having rights or permission from authorized officials	The maximum prison sentence is 15 years and a maximum fine of IDR 5 billion.

Constitution	Chapter	Explanation	Threat of Punishment
PP on Forest Area Management	Article 277	Forest Area Use Approval Holders who commit violations of forest area use that do not comply with the provisions in articles (92, 93, 103)	Administrative sanctions in the form of written warnings, suspension and revocation of approval for use of forest areas
PP on Forest Area Management	Article 280	Carrying out mining activities in Protected Forest Areas using an open mining pattern	Revocation of permission
	Article 285	Not carrying out restoration of environmental damage in the work area	Administrative sanctions (freezing of business permits)
	Article 140 a	Felling of trees in the protected forest utilization business permit area	Administrative sanctions (freezing of business permits)
	Article 277 and Article 278	Administrative sanctions in the form of written warnings to forest area use approval holders who do not carry out forest protection	Sanctions can take the form of a written warning, suspension of approval for use of forest areas; and/or revocation of approval for the use of forest areas.
Law No. 27 of 2007 jo. Law Number 1 of the year 2014 concerning Management of Coastal Areas and Small Islands (PWP3K) jo. Job Creation Law	Articles 16 and 16A	Every person who utilizes coastal space (except Indigenous Peoples) is required to have a business permit. Use of coastal space that is not accompanied by permits is subject to administrative sanctions.	Administrative sanctions in the form of written warnings, temporary suspension of activities, location closure, revocation of business permits, cancellation of business permits and/or administrative fines. Provisions for procedures and the amount of fines are regulated through government regulations.

Constitution	Chapter	Explanation	Threat of Punishment
Law No. 27 of 2007 jo. Law Number 1 of the year 2014 concerning Management of Coastal Areas and Small Islands (PWP3K) jo. Job Creation Law	Article 71	Utilization of marine space that does not comply with business permits	Administrative sanctions in the form of written warnings, temporary suspension of activities, location closure, revocation of business permits, cancellation of business permits and/or administrative fines. Provisions for procedures and the amount of fines are regulated through government regulations.
	Article 75	Utilization of space that is not accompanied by Business Licensing and results in changes to the function of the space	The maximum prison sentence is 3 years and the maximum fine is IDR 500 million.
	Article 73	Carrying out coral reef mining activities, taking coral reefs in conservation areas,	The minimum prison sentence is 2 years and the maximum is 10 years and the minimum fine is IDR 2 billion and a maximum of IDR 10 billion
Law No. 27 of 2007 jo. Law Number 1 of the year 2014 concerning Management of Coastal Areas and Small Islands (PWP3K) jo. Job Creation Law	Article 73	Using methods and methods that damage the mangrove ecosystem, conserving the mangrove ecosystem, cutting down mangroves for industrial and residential activities	The minimum prison sentence is 2 years and the maximum is 10 years and the minimum fine is IDR 2 billion and a maximum of IDR 10 billion
		Conversion of mangrove ecosystems in cultivation areas or zones that do not take into account the sustainability of the ecological function of coasts and small islands, cutting down mangroves in conservation areas for industrial, residential and/or other activities	
		Using methods and methods that damage seagrass	

Constitution	Chapter	Explanation	Threat of Punishment
Law No. 27 of 2007 jo. Law Number 1 of the year 2014 concerning Management of Coastal Areas and Small Islands (PWP3K) jo. Job Creation Law	Article 73	Carrying out physical construction that causes damage	The minimum prison sentence is 2 years and the maximum is 10 years and the minimum fine is IDR 2 billion and a maximum of IDR 10 billion
		Carry out sand mining in areas which technically, ecologically, socially and/or culturally cause environmental damage and/or environmental pollution and/or harm the surrounding community;	
Law Number 26 of 2007 concerning Spatial Planning jo. Law Number 11 of 2020 concerning Job Creation	Article 69	Not adhering to the spatial plan and resulting in changes to the function of the space	The maximum prison sentence is 3 years and the maximum fine is IDR 500 million. If this criminal act is committed by a corporation, apart from imprisonment and a fine against its management, the punishment that can be imposed on the corporation is a fine with three times the weight of the fine and additional fines in the form of revocation of business permits and revocation of legal entity status.
	Article 70	Space utilization that is not in accordance with the space utilization permit	The maximum prison sentence is 3 years and the maximum fine is IDR 500 million. If this criminal act is committed by a corporation, apart from imprisonment and a fine against its management, the punishment that can be imposed on the corporation is a fine with three times the weight of the fine and additional fines in the form of revocation of business permits and revocation of legal entity status.
	Article 71	Failure to comply with the provisions stipulated in the space utilization permit requirements	The maximum prison sentence is 3 years and the maximum fine is IDR 500 million. If this criminal act is committed by a corporation, apart from imprisonment and a fine against its management, the punishment that can be imposed on the corporation is a fine with three times the weight of the fine and additional fines in the form of revocation of business permits and revocation of legal entity status.

Constitution	Chapter	Explanation	Threat of Punishment
PP Number 21 of 2021 concerning Implementation of Spatial Planning	Article 200	Space utilization that is not in accordance with the Conformity of Space Utilization Activities	Administrative sanctions (revocation of conformity of space utilization activities)
	Article 192	Implementation of approval for conformity of marine space utilization activities that disrupt the livelihood and access of small fishermen, traditional fishermen and small fish farmers.	Administrative sanctions
Law Number 32 of 2009 concerning Environmental Protection and Management jo. Law Number 11 of 2020 concerning Job Creation	Article 109	Sanctions against Business Permit holders, as well as environmental approvals that cause environmental damage	The minimum criminal sanction is one year and the maximum is 3 years and a fine of at least IDR 1 billion and a maximum of IDR 3 billion
	Article 119	Additional criminal provisions for business entities	Additional criminal provisions for business entities can be in the form of: <ul style="list-style-type: none"> a. confiscation of profits obtained from criminal acts; b. closure of all or part of business premises and/or activities; c. improvement of the consequences of criminal acts; d. obligation to do what is neglected without right; and/or e. placing the company under supervision for a maximum of three years
	Article 82 B paragraph (2)	Sanctions for activities that cause environmental pollution and/or damage and result in exceeding the quality standards for water, ambient air, sea water, and/or other environmental damage quality standard criteria	Administrative sanctions in the form of: <ul style="list-style-type: none"> a. written warning; b. government coercion; c. administrative fines; d. suspension of Business Licensing; and/or e. revocation of Business License.



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