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Working Paper

Process evaluation of the National Integrated Protected Area System (NIPAS) and Expanded National Integrated Protected Area System (E-NIPAS)

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Sonny N. Domingo and Roselle F. Guadalupe

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PHILIPPINE INSTITUTE FOR DEVELOPMENT STUDIES

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Abstract

The National Integrated Protected Area System (NIPAS) Act of 1992 legislated the identification and classification of 17 protected areas in the country. This was amended by the Expanded National Integrated Protected Area System (E-NIPAS) in 2018 which increased coverage to more than a hundred. A process evaluation of this policy augmentation was conducted by looking at three case study sites: the Masungi Georeserve, the Mt. Mantalingahan Protected Landscape, and the Northern Negros Natural Park. Discussions with the management of several other protected areas in Luzon allowed for further analysis and result verification. Aside from expanded legislated coverage, results showed that E-NIPAS presented changes on how consideration is given to policy and management indigenous peoples rights, sectoral representation, sustainable financing, and ecological integrity protection and penalty provision. Cascading the intent of policy proved more difficult with bureaucratic limitations, and funding and manpower constraints impacting protected area management efficiency, biodiversity protection and conservation, critical area and buffer zone encroachment, and control of economic and destructive activities. Recommendations to enhance integrated protected area system management include the operationalization of workable models that enhance stakeholder partnerships in sharing ecological protection mandates, and arresting compromising activities within critical zones. Clear supplementary guidelines are needed to standardize area management and protection approaches, limiting arbitrary decision making among protected area management boards, superintendents and staff. Compartmentalization of area protection in terms of area size, resource provision, and management composition is also key. More detailed characterization of PAs, the crafting and implementation of area protection and business plans, and policy enforcement and legal follow-through are also critical in optimizing the management of the country's integrated protected area systems.

Keywords: ENIPAS, NIPAS, Protected Areas, process evaluation, biodiversity conservation, ecological integrity

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Process Evaluation of the National Integrated Protected Area System (NIPAS) and Expanded National Integrated Protected Area System (E-NIPAS)

Sonny N. Domingo¹ and Roselle F. Guadalupe²

1. Introduction

1.1. Background of the study

Evidence of biodiversity decline has been increasing at an astonishing rate, largely driven by anthropogenic activities. If current trends continue, particularly with ongoing land conversion, over-exploitation of natural resources, and pollution, the negative impacts on biodiversity at all levels will be severe (Secretariat of Convention on Biological Diversity, 2020). The 2024 Living Planet Report highlighted a significant 73% decline in wildlife populations across all ecosystems from 1970 – 2020 (World Wide Fund for Nature, 2024). As the need for biodiversity conservation and protection becomes more urgent, various international agreements and international networks of protected areas have been established under global conventions and regional accords.

Through the United Nations Convention of Biological Diversity (CBD), multiple countries have committed to working towards the Aichi Biodiversity Targets (2011-2020) and Kunming-Montreal Global Biodiversity (2022-2050). These frameworks address a broad spectrum of biodiversity issues, including conservation, sustainable use and forest restoration. One of the goals under the Aichi Biodiversity targets (Target 11) was to increase and improve protected areas—covering terrestrial, inland water, coastal and marine areas globally. After its expiration in 2020, these goals were incorporated into the new framework, the Kunming-Montreal GBF.

The Kunming-Montreal GBF puts emphasis on reducing biodiversity loss, decreasing habitat loss and establishing protected areas. This is under the overarching goal of the framework which is: “by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.” (UN Convention on Biological Diversity, 2022). One of the 2030 Goals of the framework, Target 3, seeks to expand the number of global protected areas by having at least 30 percent of the world’s land and water to be effectively conserved and managed through governed systems and other effective area-based conservation measures (UN Convention on Biological Diversity, 2024).

Effective protection and conservation of the country’s biodiversity through the designation of protected areas is part of the Philippine Government’s international commitment to the UN CBD. This is enabled by the National Integrated Protected Area System (NIPAS) Act of 1992, which legislated the identification and classification of protected areas in the country. The NIPAS Act was amended by the Expanded National Integrated Protect Area System (E-NIPAS) Act of 2018 to increase coverage and improve the management and administration of the system. Both

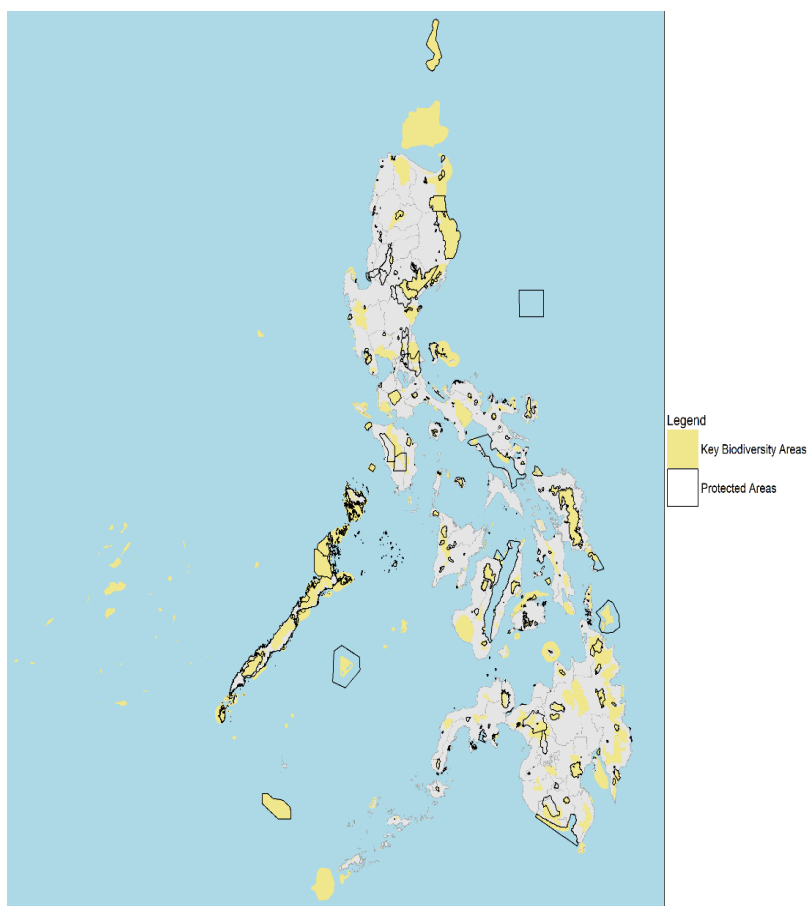
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legislations define protected areas as “land and water with unique physical and biological significance that are managed to enhance biological diversity and protect against destructive human exploitation”³.

Protected areas in the Philippines are designated based on the following criteria: (1) irreplaceability, (2) vulnerability; (3) socio-economic importance; (4) naturalness; (5) uniqueness; and (6) abundance (DENR-BMB, 2016). Irreplaceability refers sites that host range restricted species that cannot be safeguarded elsewhere. Vulnerability highlights areas that serve as habitats of globally threatened species that require urgent protection. Socio-economic importance reflects the recreational, educational, cultural and traditional value of the site, including its heritage and other sustainable uses. Naturalness pertains to landscapes and seascapes with intact ecosystems while uniqueness emphasizes the cultural, geologic, or aesthetic features of the area that enhance biodiversity and conservation value. Lastly, abundance considers areas with notably high concentrations of plants and animal species.

Figure 1. Key biodiversity areas and protected areas in the Philippines



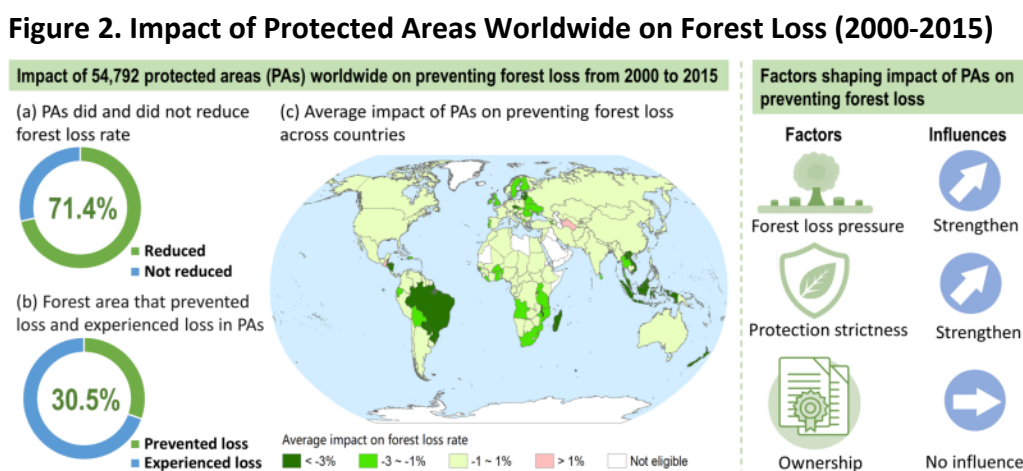
Source: Map Data from DENR-BMB; Maps prepared by the authors

³ Cited in Section 4 of RA 7586 and Section 3 of RA 11038

The criteria used to assess the suitability of protected areas in the Philippines closely mirror the indicators applied in identifying global Key Biodiversity Areas (KBAs), defined as “sites of importance for the global persistence of biodiversity (IUCN, 2016, p.08). Both systems emphasize the vulnerability and irreplaceability of the sites (Foster, 2013; Langhammer, et al., 2007), which explains why many protected areas in the country also qualify as KBAs. Figure 1 illustrates the spatial distribution of KBAs in the Philippines and their overlap with existing protected areas.

Globally, the establishment of PAs has been widely recognize as an effective conservation measure, forest cover changes, and limiting less destructive human activities. The Philippines was considered as one of the countries with significant accomplishments in achieving of the Target 11, upon the expiration of Aichi Biodiversity Targets. The passage of the E-NIPAS Act of 2018 contributed to the increase in percentage of the total protected areas, from 150 PAs to 244 PAs which now cover 15.40% of the total land area in the country, and 1.42% of territorial waters (DENR, 2023).

Figure 2 below illustrates the global impact of 50,000 PAs on forest cover changes from 2000 to 2015 (Yang, et al., 2021). The study found that 71% of protected areas worldwide played a role in preventing forest loss. However, only 31% of these designated PAs effectively contributed to preventing deforestation.



Source. Lifted from Yang et al.'s (2021) Global assessment of individual protected areas

A more recent study focused specifically on Southeast Asia examined 80 selected PAs. Among them, only 36 have successfully preserved 78 thousand hectares of forest land (Sreekar, et al., 2024). These effective PAs not only halted deforestation but also contributed to improved forest cover, reduced carbon emissions and continued protection of endangered species.

Graham, et al., (2021) also found that unprotected areas had more forest cover loss between 2000-2018 compared to established protected areas. This pattern is evident in countries such as

Malaysia, Cambodia and Laos as shown in Table 1 below, which presents estimated forest cover loss and carbon emissions from 2000-2019, both before and after statistical matching.

Table 1. Estimate of forest cover loss and carbon emissions, within and outside protected areas, 2000-2018

Country	Forest cover loss <i>inside PAs</i>	Carbon emissions <i>inside PAs</i>	Before matching				After matching			
			Forest cover loss <i>outside PAs</i>	Avoided forest cover loss	Carbon emissions <i>outside PAs</i>	Avoided carbon emissions	Forest cover loss <i>outside PAs</i>	Avoided Forest cover loss	Carbon emission <i>outside PAs</i>	Avoided carbon emissions
Cambodia	12.70%	4575	13.47%	0.77%	4492	-123	23.86%	11.16%	8337	3762
Indonesia	2.75%	1494	14.60%	11.84%	5287	3777	6.68%	3.93%	3002	1509
Laos	3.33%	1989	12.42%	9.08%	4704	2790	13.65%	10.31%	5173	3184
Malaysia	3.15%	1475	25.34%	22.19%	9637	8151	17.72%	14.57%	8336	6862
Myanmar	0.27%	348	2.63%	2.39%	1705	1401	2.55%	2.28%	1426	1077
Philippines	2.26%	2023	0.67%	-1.59%	1337	-735	0.77%	-1.49%	1577	-446
Thailand	0.37%	642	0.47%	0.20%	1454	804	5.99%	5.62%	3109	2467
Vietnam	0.69%	1016	8.25%	7.56%	2613	1531	10.96%	10.27%	3542	2526
Average	3.19%	1.695	9.73%	6.55%	3904	2200	10.27%	7.08%	4313	2618

Notes: Estimates of forest cover loss and carbon emissions per 30m pixel from 2000-2018, aggregated to 1km² pixels, from within and outside protected areas before and after matching. Carbon emissions = tonnes of CO₂ per km²

Despite this, the data for the Philippines presents a stark contrast, revealing that PAs experience greater forest cover loss than areas outside these designated zones. This implies higher rates of deforestation and increased carbon emissions within PAs, indicating that current management practices are not effectively preventing significant environmental degradation. Ineffective management in some of the protected areas contributed to this escalating forest loss.

Sreekar et al. (2024) highlight several PAs based on their role in ecosystem preservation and biodiversity conservation. Among the 36 PAs deemed effective, only two are in the Philippines: Mt. Banahaw San Cristobal Protected Landscape and Mt. Kitanglad Range Nature Park. In contrast, five protected areas were classified as ineffective: Central Cebu Protected Landscape, Sipangpang Falls, Mt. Mantalingahan, Mt. Malindang and Mt. Makiling Forest Reserves.

Three decades after the passage of the NIPAS Act of 1992 and six years after its amendment through the ENIPAS Act of 2018, challenges surrounding protected areas continue to exist. Issues such as construction and operations of infrastructure within PAs, land disputes, and boundary and delineation conflicts remain widespread, despite promises of improved management through the amendment (Soriano, Lozada, & Rentzmann, 2024). Moreover, no review or evaluation has been conducted on the implementation of the ENIPAS Act since its enactment, even as numerous concerns and challenges have emerged in recent years.

1.2. Objectives

This study aims to conduct a comprehensive process evaluation of the NIPAS to ENIPAS policy augmentation more than three decades after the initial implementation. Specifically, the study seeks to (a) document functional policy and institutional changes upon the passing of the

ENIPAS Act in 2018; (b) identify policy weaknesses and implementation gaps, if any; and (c) propose actionable recommendations to strengthen the protection and management of the country's protected areas.

1.3. Policy questions

Initial efforts to conserve the country's biodiversity started as early as the 1990s, following the landmark legislation of the NIPAS Act 1992. However, lapses in the implementation of the law as well as the management of the protected areas continue to persist decades after the implementation. The passage of the ENIPAS Act of 2018 sought to address the gaps in the implementation and to strengthen biodiversity conservation efforts.

The study seeks to answer the following policy questions:

1. What is the status of the grounding of the ENIPAS Act of 2018?
2. Have there been significant changes in the PAPs and resources related to the protection and management of protected areas after 5 years?
3. What policy and institutional enhancements are necessary to facilitate the grounding of E-NIPAS and bolster the protection of critical areas?

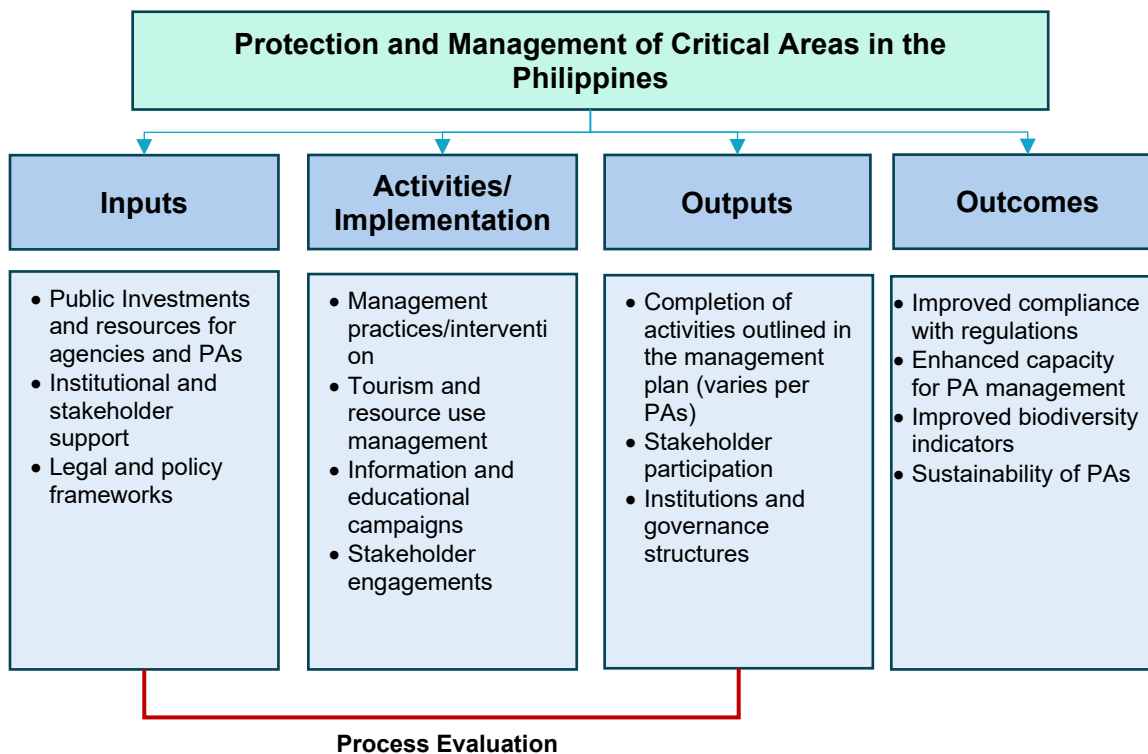
1.4. Methodology

1.4.1. Conceptual framework

The ENIPAS Act is assessed within the process evaluation framework, six years after its legislation. Process evaluation seeks to “verify what the program is and whether it is delivered as intended to the target recipients” (Scheirer, 1994, as cited in Rossie, Lipsey, & Freeman, 2004, p. 187). Process evaluation focuses on assessing the actual implementation of a program to ensure it aligns with its original design, as outlined in relevant documentation and guidelines.

The analysis is also grounded in the IUCN-WCPA Framework, which is designed to evaluate the effectiveness of protected areas through six elements: context, planning, inputs, processes, outputs and outcomes. It applies the Theory of Change (TOC) to assess the process and its intended outcomes for protected area management. Figure 3 illustrates the key components in sequence: inputs, activities/implementation, outputs and outcomes, while also providing the broader contextual backdrop of protected area management in the Philippines.

Figure 3. Theory of Change of Protected Area Management anchored on IUCN-WCPA Framework



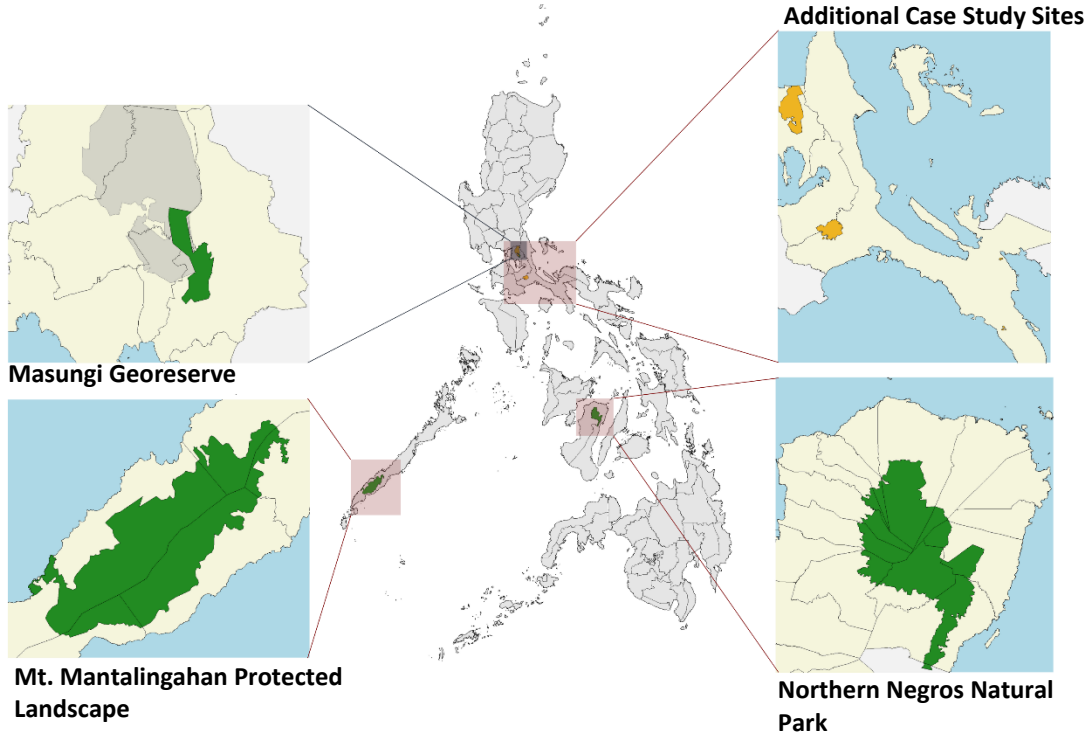
Source: Authors' interpretation

1.4.2. Areas of the Study

This study features three protected areas as the main case study sites: the Masungi Georeserve, Mt. Mantalingahan Protected Landscape (MMPL), and the Northern Negros Natural Park (NNNP). These areas were selected to identify the impact brought by the amendment to protected area management.

To strengthen the analysis, additional discussions were conducted in coordination with the management of selected protected areas in Luzon, namely: the Upper Marikina River Basin Protected Landscape (UMRBPL), Mts. Banahaw – San Cristobal Protected Landscape (MBSCPL), Buenavista Protected Landscape (BPL), and Maulawin Spring Protected Landscape (MSPL). The additional sites, although not examined at the same depth as the main case study sites, provided supplemental contexts to help verify results and allowed comparison across different management offices in the implementation of two legislations. Figure 4 shows the overview of the selected case study sites included in the study.

Figure 4. Overview of the selected case study sites



Source: Map Data from DENR-BMB; Maps prepared by the authors

1.4.3. Data collection and analysis

The data gathering followed the case study approach. The primary data were gathered through the conduct of key informant interviews (KIIs) and focus group discussions (FGDs) with key implementers and relevant stakeholders with significant roles in protected area management. The secondary data was requested from agencies and government units.

Table 2. List of data sources

Primary Data	Secondary Data
DENR – BMB Natural Parks Division	GeoPortal
Provincial ENRO of Palawan, Rizal and Negros Occidental	Comprehensive Land Use Plans of Selected Municipalities
Selected Municipal ENRO of Palawan, Rizal and Negros Occidental	Protected Area Land Cover
Protected Area Management Office – MMPL, UMRBPL and NNNP	IPAF
Palawan Council for Sustainable Development	Forest Cover of the Philippines Management Plans

Source: Authors' own compilation

2. Review of Related Literature

2.1. *Protected areas as a key strategy of biodiversity conservation*

The establishment of protected areas has long been recognized as a fundamental strategy for biodiversity conservation. Historically, such areas have been used for centuries to prevent deforestation and land conversion by restricting human activities linked to resource extraction (Liu, et al., 2022; Naro-Maciel, Sterling, & Rao, 2008). According to the IUCN, a protected area is “a clearly defined geographical space, recognized, dedicated and managed, through legal, or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.” (Dudley, 2008, p.8). Today, the establishment and management of protected areas are central components of international agreements and global treaties aimed at halting biodiversity loss and advancing conservation goals.

While biodiversity protection remains the core objective of protected areas, their role has expanded in recent years. By designating specific areas as protected, ecosystems are shielded not only from harmful human activities but also, in some cases, from impacts of disasters (Naro-Maciel, Sterling, & Rao, 2008). Moreover, the function of protected areas is increasingly being reframed to include the provision of vital ecosystem services, such as carbon sequestration and clean water supply. This shift is reflected in the European Union’s Biodiversity Strategy for 2030, which promotes a transition from passive conservation toward active service provision (Gaglio, Goggi, Lanzoni, Fano, & Castaldelli, 2023). Importantly, protected areas also serve to uphold the cultural heritage of Indigenous Peoples by reinforcing the protection of their ancestral lands and recognizing their traditional knowledge and stewardship.

Significant progress has been observed in the designation of protected areas worldwide, three years after the launch of the Kunming-Montreal Global Biodiversity Framework. The Protected Planet 2024 Report outlines current advancement toward achieving Target 3, which aims to protect 30% of the world’s land and coastal areas by 2030 (UNEP-WCMC and IUCN, 2024). As of the report, global efforts are nearly halfway toward this goal, with 17.6% on terrestrial and inland waters and 8.4% on marine and coastal waters designated as protected. These figures also indicate that 47.72% of the 16,000 KBAs are now under protection or conservation.

Several studies have assessed the effectiveness of protected areas in addressing biodiversity threats. For instance, Pacifici, Di Marco, & Watson (2020) found that well-managed PAs play a crucial role in halting the processes that threaten mammal species. Their study revealed an increase in PA coverage for 94% of mammal species, with 79% of those showing a doubling in population over the past 50 years. Similarly, research by Goncalves-Souza, Villela, Phalan, & Dobrovolski (2021) on Brazil’s natural vegetation demonstrated that while the effectiveness of protected areas varies across biomes, most PAs are significantly more effective than unprotected ones in maintaining native vegetation. However, both papers emphasized the critical importance of adequate resource and effective management in ensuring the success of protected areas.

2.2. *Assessing Protected Areas' Effectiveness*

Protected Areas (PAs) are widely regarded as one of the cornerstones strategies for safeguarding biodiversity, maintaining ecosystem services and reducing human pressures on the environment. While the establishment of PAs is critical, first their legal designation alone does not guarantee successful conservation outcomes. The effectiveness of these areas depends on a complex interplay of factors, including the strength of management systems, the adequacy of both financial and human resources, the consistency of monitoring and evaluation frameworks, and the capacity to adapt conservation strategies in response to emerging ecological and socio-economic challenges (IUCN, 2016).

Evidence from global assessments shows the performance of PAs varies significantly. Some PAs demonstrate success in reducing deforestation rates, stabilizing wildlife populations and improving habitat conditions, while others experience intensified pressures performing worse than unprotected lands.

2.2.1. *Management Effectiveness Tracking Tool (METT)*

The Management Effectiveness Tracking Tool (METT) is the first PA management assessment instrument developed under the IUCN-WCPA Framework. It is build on the principle that an effectively managed PA functions through six elements (WWF International, 2007): (1) understanding the context of existing values and threats, (2) sound planning, (3) adequate resource allocation (inputs), (4) efficient management processes, and (5) the production of outputs and outcomes.

Designed to monitor the improvements in PA management and diagnose areas of weaknesses, the METT consists of two main components: a data sheet outlining basic information about the PA, and an assessment form containing questions on various aspects of management effectiveness such as legal status, resource adequacy, research and monitoring, and stakeholder engagement (Nolte & Agrawal, 2011). The assessment is completed by PA staffs together with external experts, local community representatives, and other stakeholders with substantial knowledge of the area. To ensure comparability over time, the participation of respondents from previous assessments is encouraged. The tool also accommodates qualitative explanations to contextualize the scores.

Globally, METT is the most widely used PA management assessment method, utilized by more than 5,000 PAs across 127 countries (Stolton, Dudley, & Hockings, 2021).

In the Philippines, the 2013 GIZ Management Effectiveness and Capacity Assessment evaluated 61 Pas using the METT (Guiang & Braganza, 2014). The assessment yielded an average score of 33 out of the possible 110. However, KIIs and FGDs implied that these scores were overestimated. When the METT scores were consolidated with qualitative insights from the stakeholders, the overall management effectiveness of the 61 PAs were rated poor to fair.

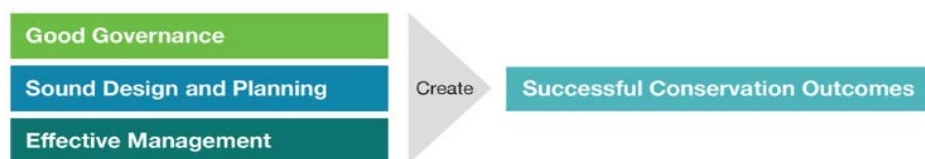
The METT has also been widely applied in areas such as Coastal East Africa, where assessments across Tanzania, Kenya and Mozambique have highlighted both its usefulness and and limitations (Kinights, et al., 2014). Application rates are highest in WWF Priority Landscapes but remain uneven across countries underscoring the need for more balanced assessment coverage. Findings shows that PAs managed with strong community involvement generally achieve higher METT scores than government-managed areas, which is also observed in other Eastern Arc Mountains. Sites with WWF support show slightly higher scores, and improvements are mostly concentrated in design aspects of management specifically planning, inputs and processes than outputs or outcomes.

2.2.2. IUCN Green List Standard

The International Union for Conservation of Nature (IUCN), the oldest and largest organization for nature protection, has been leading efforts to address pressing concerns in the environmental sector including the protection of critical areas. Its establishment was along with the founding of international communities in 1948. The committee focusing on Natural Parks was later on founded during the 1958 General Assembly, with the main purpose of “strengthening international cooperation in matters relating to national parks and equivalent reserves in all countries throughout the world (IUCN, 2010, p. 3).” Today, the IUCN World Commission on Protected Areas (WCPA), is a global network working with governments and select partners to promote the establishment of effectively managed protected areas worldwide, having 3200 members in 140 countries.

Following the global goal of establishing protected areas, the IUCN has developed a globally standard that highlights best practices for conservation measures, which is referred to as the Green List of Protected and Conserved Areas Standard. The main objective of the standard is to: “provide a global benchmark for protected and conserved areas to assess whether they are achieving successful conservation outcomes through effective and equitable governance and management” (IUCN and World Commission on Protected Areas, 2017, p. 6). The standard is structured around four main components, encompassing a total of seventeen criteria that define what successful conservation looks like in protected and conserved areas. The four components include: (1) Good governance, (2) Sound Design and Planning; (3) Effective management; and (4) Successful Conservation Outcomes.

Figure 5. Baseline components of successful nature conservation in Protected and Conserved Areas



Source: IUCN and WCPA, 2017.

The participation in the IUCN Green List of Protected and Conserved Areas Programme is entirely voluntary and involves a structured evaluation process across three key phases:

1. Application phase – individual protected and conservation areas must register and submit preliminary evidence demonstrating that they meet the initial three components of the Green List Standard. These submissions are reviewed and assessed by the Expert Assessment Group for the Green List (EAGL).
2. Candidate phase – Once accepted as a candidate, the site must work towards fully implementing all criteria of the IUCN Green List Standard. This process may take several months or even years, depending on the site's readiness and complexity. The site undergoes a thorough evaluation by the EAGL, and the process is further verified by an independent reviewer.
3. Green list phase – Upon successful evaluation, the site is formally awarded IUCN Green List status. A certificate is issued, and the site receives ongoing support from the IUCN Green List Programme to maintain and continuously improve its performance in line with the standard.

As of 2025, only 0.14% of the world's land area is included in Green Listed Protected Areas, covering a total of 733,351 km². These areas are located across 61 countries worldwide.

2.3. Successful protected and conserved areas

The IUCN Green List Programme validates effectively managed protected and conserved areas that demonstrate excellence in conservation practices. Many countries have expressed strong support and commitment to the initiative, with France and Lebanon standing out as consistent performers among Green List Sites. By 2030, the IUCN aims to have at least 1,000 protected and conserved areas approved under the Green list Standard.

In Southeast Asia, the Cat Tien National Park in Vietnam is recognized as an example of an effectively managed PA. Spanning across 71,187 hectares within the Dong Nai Biosphere Reserve, the park protected one of the largest remaining forest ecosystems in southern Vietnam and supports high levels of endemic and threatened species. Its effectiveness is attributed to a strong governance structure led by The Forest Protection Department under the Ministry of Agriculture and Rural Development, complemented by active involvement from provincial governments and surrounding communities (Southern sub-institute of Forest inventory and Planning, 2021).

The park holds nearly 200 staff dedicated to field protection, administration, planning and scientific research, with consistent funding from the state budget and Payment for Forest Environmental Service (PFES) ensuring stable operational support. The inclusion of CTNP in the IUCN Green list reflects its demonstrated strengths in adaptive management, threat reduction, biodiversity protection, transparent governance and equitable community participation.

Additionally, conservation efforts in the park have shown measurable success in reducing threats and illegal activities, as well as notable progress in habitat protection and species recovery. Importantly, local communities are also actively involved in park planning, sustainable resource use and eco-tourism initiatives, meeting the IUCN criteria for equitable management and benefit-sharing.

In Southern Africa, Hluhluwe-iMfolozi Park (HIP) is widely recognized as one of the most effective protected areas for large mammal conservation, particularly for its role in saving the southern white rhino from near extinction (Anderson, 2022). The 96,000 hectares park contains various ecosystems, including savanna, grassland, and woodland that support high levels of mammal diversity and form a large part of the regional conservation landscape.

The HIP's governance model structure anti-poaching operations, scientific wildlife management and collaborative partnerships with NGOs and research institutions. Its effectiveness is tightly close to its rhino protection, including advanced surveillance systems and long-term monitoring of individual rhinos (te Beest, Owen-Smith, Porter, & Feely, 2017). It served as the core source population for translocating rhinos across Africa, contributing to a species recovery at a continental scale. Aside from saving the white rhinos from the danger of extinction, the area was also successful in maintaining the presence of both black and white rhinos, improved monitoring of priority species and long-term protection of intact savanna ecosystems.

3. Previous assessment of the NIPAS Act of 1992

The Philippines has been supportive of the global movements on biodiversity conservation. It was one of the earliest signatories of the UN CBD, when it was established in May 1992. Prior to the adaptation of the CBD and the historic Earth Summit in Rio de Janeiro, the country initiated having its own protected area systems by enacting the National Integrated Protected Areas System Act (NIPAS) of 1992. This law aimed to establish and manage the protected areas across the Philippines to preserve the country's biodiversity. The NIPAS Act created an integrated system that includes various types of protected areas within a unified framework to ensure they contribute to the national effort of biodiversity conservation. The Department of Environment and Natural Resources, specifically the Biodiversity Management Bureau is responsible for managing these protected areas, in collaboration with local government units, NGOs and indigenous communities. The local management is dealt with by the Protected Area Management Board (PAMB) for each protected area, ensuring effective implementation and monitoring of conservation measures. These guidelines are outlined in the DENR's Administrative Order (DAO) No. 2008-26.

An extensive review⁴ conducted by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in partnership with the DENR from 2012-2017, identified several issues and areas of

⁴ Deutsche Gesellschaft für Internationale Zusammenarbeit's (GIZ) (2014) Report on the Management Effectiveness and Capacity Assessment of Protected Areas in the Philippines.

augmentation related to the establishment and management of the NIPAS Act of 1992. The study, which assessed a total of sixty-one (61) PA sites in Philippines, highlighted various concerns both in the policy framework, and its implementation, which eventually contributed to the push for legislative amendments. The findings are based on the METT Results, as well as feedback gathered from KIIs and FGDs.

The study identified several key concerns, including threats to biodiversity within the protected areas as well as in KBAs outside the PAs. These threats include increasing land conversion for productive use, encroachment, unregulated tourism, and illegal extraction.

In addition, the review highlighted insufficient resource allocation for implementation of the NIPAS, resulting to ineffective PA management. Management challenges are further compounded by the limited technical capacity of key stakeholders to implement PA activities effectively. This has led to outdated management plans, lack of centralized databases and limited conservation initiatives. Lastly, the overlapping boundaries between Protected Areas, Ancestral Domains, Community-Based Forest Management Agreements (CBFMAs), mining claims and LGU zones underscore the limited authority of the DENR, specifically the PAMB in addressing jurisdictional and functional conflicts (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), 2014).

These issues and concerns were also documented through various assessments and echoed by several stakeholders, eventually resulting to the amended legislation in 2018.

4. Augmented Provisions under RA 7586 and RA 11038

Republic Act No. 11038, or the Expanded NIPAS Act of 2018, was enacted in response to the several persistent and systemic challenges encountered in the implementation of the NIPAS Act of 1992. The law aims to strengthen the conservation and protection of the country’s threatened biodiversity by introducing key reforms. These include enhanced scientific and technical support for biodiversity management, clear delineation of protected area boundaries and improved mechanism for revenue allocation through the Integrated Protected Area Fund (IPAF), among others. Table 3 below shows the key provisions of the amended legislation in comparison to the original NIPAS Act.

Table 3. Comparison of the provisions under RA 7586 and RA 11038

Sections	RA 7586 or NIPAS Law	RA 11038 or E-NIPAS Law
Establishment and extent of the system	Initial 17 protected areas (National Parks)	Inclusion of 94 newly identified protected areas (National Parks)
	Suitability assessment: Land use plan only	Suitability assessment: Land and water use plans
		NAMRIA Certification (boundaries and technical descriptions)

Buffer zones	Private lands are not considered	Private lands are included in the coverage
Zoning	Each protected area shall be divided into one or more categories listed below: <ul style="list-style-type: none"> a. Strict Protection Zone b. Sustainable Use Zone c. Restoration Zone d. Habitat Management Zone e. Multi-Use Zone f. Buffer Zone g. Cultural Zones h. Recreational Zones i. Special Use Zones 	Each protected area shall be divided into two zones: Strict Protection Zones and Multiple Use Zones.
Administration and management	<p>DENR through the Protected Areas and Wildlife Division (PAWD) in regions</p> <hr/> <p>Central-based: DENR Secretary, Undersecretary and Protected Areas and Wildlife Bureau (PAWB)</p> <p>Region-based: Regional Executive Director, Regional Technical Director, Protected Areas and Wildlife Division (PAWD)</p> <p>Site-based: Protected Area Management Board (PAWB), Protected Area Superintendent (PAS)</p>	<p>DENR through Biodiversity Management Bureau</p> <hr/> <p>The establishment of Protected Area Management Office (PAMO) is headed by a Protected Area Superintendent (PASu) with a permanent Plantilla position to be assisted by enough support staff with permanent Plantilla position.</p> <hr/> <p>Areas under the management of other departments and government instrumentalities shall remain in the said department or government instrumentality.</p> <hr/> <p>DENR shall retain its oversight function over such protected areas, and the agency/government concerned shall provide annual reports on the management of the said areas.</p>
	<p>Penalties</p> <ul style="list-style-type: none"> • Lowest fine of five thousand pesos (Php 5,000.00) and highest fine of five hundred thousand pesos (Php 500,000.00) • Minimum imprisonment of one year and maximum of six years 	<p>Penalties</p> <ul style="list-style-type: none"> • Lowest fine of Fifty thousand pesos (Php 50,000.00) and highest fine of five million pesos (Php 5,000,000.00) • Minimum imprisonment of one year and maximum of twelve years
Protected Area	Composition of the Board:	Composition of the Board:

Management Board	<ul style="list-style-type: none"> a) DENR Regional Executive Director b) Representative of Autonomous Regional Government c) Provincial Development Officer from each Province d) One representative from each Municipal Government e) One representative from each Barangay f) One representative from each tribal community g) Three representatives from local NGOs and community organizations h) One representative from other National Government Departments 	<ul style="list-style-type: none"> a) DENR Regional Executive Director b) Governor/s of province/s where the PA is located c) Senator of the PH who is registered as a resident of the province d) District representatives of the Congressional district/s where the PA is located e) Mayor/s of the cities or municipalities f) Chairperson of the Barangays g) Regional directors of DA, DEPDev, DOST, PNP and DND h) Representatives from NGO or PO i) Representative from private sector j) Representative from IPs/ICCs k) Representative from academic institution
	<p>Term of Office and Compensation: Board members shall serve for a term of five years without compensation, except for actual and necessary travelling and subsistence expenses incurred in the performance of their duties.</p>	<p>Term of Office and Compensation: The following PAMB Members: DENR-RED, Governors, Mayors, Senators, Congressmen, Barangay Captains, Regional directors of DA, DEPDev, DOST, PNP and DND) shall serve for the duration of their respective terms of office.</p> <p>While the following members of the PAMB: Representatives from NGO/PO, IPs/ICCs, academic institutions and private sector shall serve three (3) years and may be reappointed for another term.</p> <p>The members of PAMB shall serve without compensation except for the actual and necessary travel and subsistence expenses incurred in the performance of their duties.</p>
		<p>Creation of committees: The PAMB <i>en banc</i> may create the following committees:</p> <ol style="list-style-type: none"> 1. Executive Committee. 2. Technical Working committees
Ancestral domains and customary rights	<p>Extensive list of proof required for ancestral domain claim including the following:</p> <ol style="list-style-type: none"> 1. Proof of payment of taxes 2. Survey Plans 3. Spanish documents 4. Historical accounts 5. Anthropological data 	Ancestral territories covered by CADT and CALT shall be recognized.

-
6. Ancient documents
 7. Burial grounds
 8. Written records of customs and traditions
 9. Old improvements
 10. Written and oral testimonies
 11. Religious sites and/or artifacts
 12. Genealogical survey
-

Community Conservation Plan (CCP) can be utilized in the absence of ADSDDP to harmonize with the PAMP.

Developments in protected area sharing common areas in ancestral territories covered by CADT/CALT will require FPIC

In protected areas that share common areas with ancestral territories, the PAMB shall convene a Coordination and Complementation Committee.

Source: Implementing Rules and Regulations of RA 7586 and RA 11038

5. Results

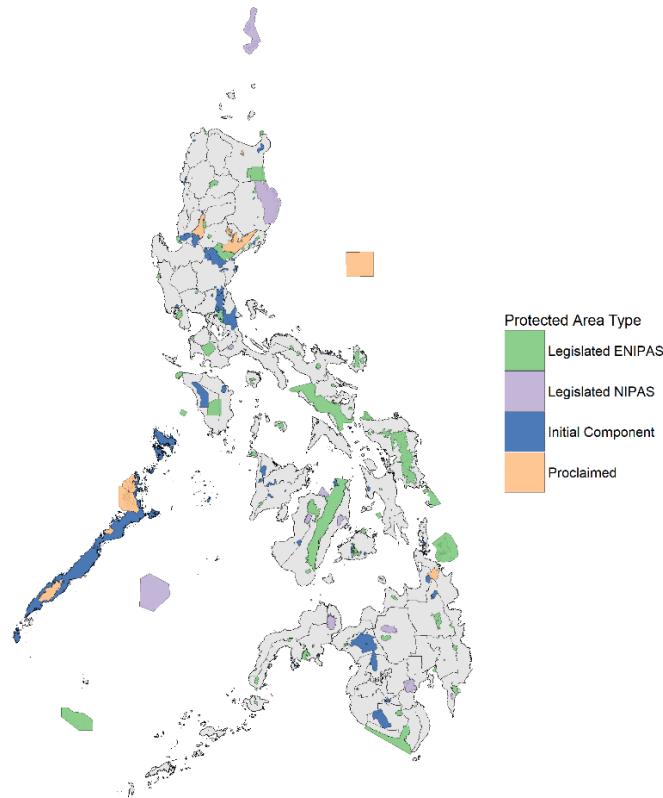
5.1. National impact of the ENIPAS Act of 2018

5.1.1. Policy, Governance and Institutional Reforms

5.1.1.1. Expansion of legal coverage. The passage of RA 11038 in 2018 had its most significant impact in the automatic inclusion of 94 additional protected areas (PAs) into the national system. This was a major development, as these PAs no longer had to undergo the lengthy process of securing individual acts of Congress, unlike the remaining initial components of the system that were proclaimed through laws, presidential decrees, proclamations or executive orders. Figure 6 below shows the map of legislated PAs under RA 7586 and RA 11038.

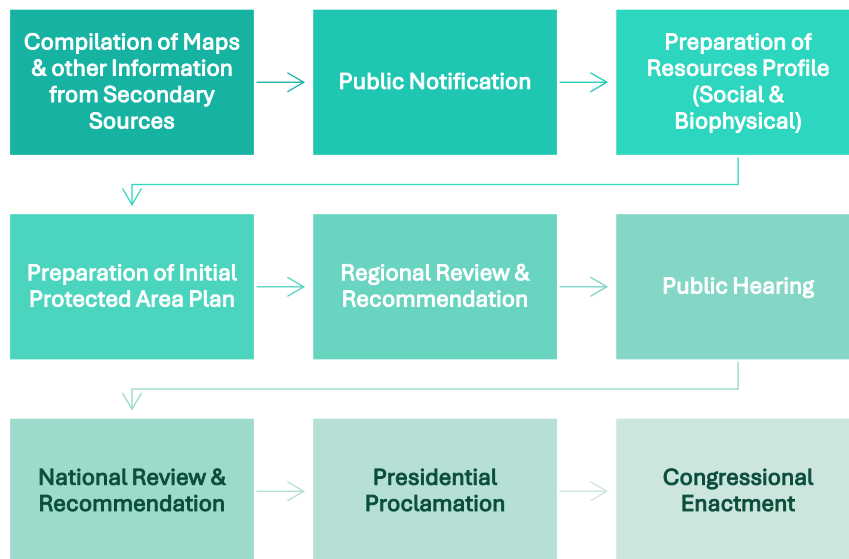
For the remaining initial components and future protected areas (PAs) to be established, an extensive process is required, culminating in congressional enactment. The process is spearheaded by the DENR, typically in collaboration with NGOs and other stakeholders, and involves the preparation of maps, resources profile, and initial protected area plan. Once these are submitted and a Presidential Proclamation is issued, the lengthy process of legislative enactment begins. Figure 7 outlines the steps necessary for PAs to be legislated.

Figure 6. Legislated Protected Areas under RA 7586 and RA 11038



Source: Map Data from DENR-BMB; Map prepared by the authors

Figure 7. Process of establishing a Protected Area



Source: Lifted from DENR-BMB Biodiversity Policy and Knowledge Management Division Infographic

Since the enactment of RA 7586 (NIPAS Act) in 1992, only 13 PAs were legislated between 1995 to 2010, spanning five Congresses, including the landmark Tubbataha Reefs Natural Park Act of 2009 (RA 10067). In contrast, following the passage of RA 11038 (ENIPAS Act of 2018), momentum significantly increased. Aside from the 94 PAs automatically legislated through the amendment, fifteen additional PAs were legislated across three congresses, seven additional under the 18th Congress, five under the 19th Congress, and recent addition of two additional PAs in Tarlac and Leyte in the current Congress, bringing the total number of legislated PAs in the Philippines to 116. The difference is notable, considering that the number of PAs legislated in just the two Congresses after the passage of ENIPAS matches the total legislated under NIPAS over a span of 25 years (1992-2017). With the broader coverage of legislated PAs under ENIPAS, attention has shifted toward ensuring effective management and decision-making within these sites. This is where the role and structure of the Protected Area Management Board (PAMB) become critical.

5.1.1.2. Reforms in PAMB Structure and Functions. The Protected Area Management Board (PAMB) serves as the highest policy making body within protected areas, originally mandated under the NIPAS Act of 7586. While its creation has been a key institutional innovation, several issues have been observed in its original structure and performance. These include limited capacities, unclear roles and accountabilities, and decision-making inefficiencies, especially in harmonizing conflicting land and resource uses (Guiang & Braganza, 2014). Table 4 below outlines the changes in the composition in the NIPAS Act and ENIPAS Act. The comparison shows how representation was improved in attempt to broaden the inclusiveness and decision-making for protected areas.

Table 4. Comparison of PAMB Composition in RA 7586 and RA 11038

Board Member Type	NIPAS Act (RA 7586)	ENIPAS Act (RA 11038)
DENR Regional Executive Director	Present	Present
Legislators	Not mentioned	Senator, District Representatives
Local Government Representatives	Provincial, Municipal and Barangay Representatives	Governor, Mayor and Barangay Chairpersons

National Government Agencies	One representative from other National Government Departments	Regional directors of the following: 1. DA 2. DEPDev 3. DOST 4. PNP 5. DND
Indigenous/Tribal Community Representatives	One representative from each tribal community	Representatives from IPs/ICCs
Civil Society	Three representatives from local NGOs and CSOs	Representatives from NGOs or Pos
Private Sector	Not mentioned	Present
Academic Institutions	Not mentioned	Present

Source: From Implementing Rules and Regulation of RA 7586 and RA 11038

In both laws, certain members of the PAMB remained. The DENR Regional Executive Director (RED) continues to serve, usually as chair of the board. Local government representation is mandated, but the ENIPAS Act provides greater specificity by designating Governor, Mayors and Barangay Chairpersons as members. Indigenous peoples and tribal community representatives are recognized in both laws, although the NIPAS act provides a broader scope by requiring representation from each tribal community. And lastly, civil society participation is maintained, reflecting the continuing recognition of the crucial role of NGOs and CSOs in ensuring effective management and participatory decision-making for protected areas.

The amended law introduced several changes to the composition of the board. Most notable is the inclusion of legislators as members, such as Senator and District Representatives residing in the province where the protected area is located. This change aims to ensure stronger representation of protected areas in Congress, which is also mentioned during the FGDs by the participants. The Act also broadened the scope of national government representation, explicitly specifying membership from DA, DepEd, DOST, PNP, DND and DEPDev's regional development offices. In addition, the private sector and academic institutions were formally included to enhance technical expertise and mobilize additional resources for the effective management of PAs.

These changes have several implications. First, they promote broader inclusiveness, as more sectors are now represented, addressing the governance

gaps observed under RA 7586. Second, they introduce greater political involvement through the inclusion of legislators and top local officials, which ensures alignment with national local policies, although it also poses the risk of politicization. The reforms aim at technical strengthening by adding national agencies, academia, and the private sector, thereby improving science-based and multi-sectoral decision making in PA management.

FGD participants affirmed these observations, noting that the earlier PAMB composition was often dominated by local politicians who advanced their own agendas during meetings. They recognized that the revised structure has helped balance political influence with technical and community perspective, aiming for a more participatory governance.

Alongside the reforms in the composition, changes were also introduced in the functions of the PAMB. These adjustments not only expanded its responsibilities beyond administration and planning but also strengthened its role as a governing and regulatory body, reflecting the shift from a consultative structure under NIPAS to a more empowered decision-making authority under ENIPAS. Table 5 below shows the shift in the roles and functions of the PAMB under the amended Act.

Table 5. Comparison of the functions of the PAMB under NIPAS Act and ENIPAS Act

Functions	NIPAS Act IRR (DAO 25-1992)	ENIPAS Act IRR (DAO 2019-05)
General role	Administers the PA; decides by consensus/majority on planning, resource protection, and administration.	Exercise oversight, regulatory, and enforcement functions.
Planning & Management	Approves management plans, proposals, guidelines and annual work programs in line with the General Management Planning Strategy (GMPS).	Approves and adopts the PA Management Plan (PAMP), ensures integration into local development plans, and reviews zoning and buffer zone management.
Resource Protection	Decides on resource protection measures, delineates boundaries, demarcates buffer zones and recognizes indigenous rights	Enforces laws, rules, and regulations; imposes administrative sanctions for violations; strengthens law enforcement mechanisms
Infrastructure and utilities	Regulates construction, operation and maintenance of roads, rails, waterworks, sanitation, etc.	Retains authority over infrastructure but requires compliance with the approved PAMP and environmental safeguards.
Employment and livelihood	Ensures programs in the management plan provide	Promotes livelihood consistent with conservation; regulates resource use

	employment to people around the PA.	through permits and tenurial instruments
Monitoring and evaluation	Monitors and evaluates performance of PA staff, NGOs and communities; reports to the NIPAS Policy and Program Steering Committee and IPAF Governing Board.	Establishes committee for monitoring biodiversity, law enforcement and fund management; ensures regular reporting and transparency
Finance and funds	Endorses projects for IPAF funding; submit reports on fund utilization.	Manages the IPAF at site level, approves allocations, and ensures at least 75% of revenues are retained for the PA.
Coordination	Coordinates with NGOs, LGUs and other agencies in planning and management	Ensures integration of PA management into LGU and national agency plans; foster multi-sectoral collaboration.

Source: From Implementing Rules and Regulation of RA 7586 and RA 11038

Under NIPAS, PAMBs were primarily administrative bodies, mainly concerned with planning, budgeting and the general oversight of the PAs. Their authority was limited to approving management plans, endorsing proposals and coordinating with stakeholders. In contrast, ENIPAS expanded the mandate of the PAMBs by granting them quasi-regulatory powers. They are now authorized to issue permits and clearances, regulate tenurial instruments, enforce laws and rules within PAs and impose administrative sanctions for violations. This development elevated PAMBs from being largely consultative and managerial to becoming governing authorities.

Financial empowerment for the PAMBs is also introduced under ENIPAS. Whereas previously PAMBs had limited influence over fund management, they are now given stronger control over the IPAF, with a clear mandate to approve allocations and ensure that revenues generated within the site remain available for its management and protection. This allows for greater financial sustainability and responsiveness to the unique needs of each PAs.

The amendment also strengthened the integration of PA management with local governance. ENIPAS requires that the PAMPs be harmonized with the development and land use plans of local government units and national agencies. This ensures that conservation priorities are embedded in broader governance frameworks, minimizing policy conflicts and fostering collaborative implementation.

Lastly, ENIPAS emphasizes oversight and accountability. PAMBs are mandated to establish monitoring committees, institutionalize biodiversity tracking and require regular reporting on both management effectiveness and fund utilization. These mechanisms provide transparency, strengthen enforcement, and enhance stakeholder trust in PA governance.

5.1.1.3. Institutionalization of the Protected Area Management Offices. Aside from the changes in the composition of the PAMB, the site-level management of PAs was also revised under the amendment. The ENIPAS formally established the Protected Area Management Office (PAMO) as a permanent, site-based office serving as the regular management arm and secretariat of the PAMB. This provided a more expansive and institutionalized management structure compared to the NIPAS Act, where site-level management was primarily lodged in the Protected Area Superintendent (PAS, now known as PASu). The change marked a significant step towards the professionalization and strengthening of governance, with Plantilla positions, and broader administrative and financial functions. Table 6 below compares the site-level management provisions under the NIPAS and ENIPAS, highlighting the structural and functional changes introduced by the amended law.

Table 6. Comparison of site level management in NIPAS and ENIPAS

Aspect	NIPAS Act IRR (DAO 25-1992)	ENIPAS Act IRR (DAO 2019-05)
Structure	Only the Protected Area Superintendent (PAS) designated as chief operating DENR Officer at site level	Institutionalized as the Protected Area Management Office (PAMO) - permanent, site-based office and official secretariat of the PAMB
Leadership	PAS directly accountable to PAMB and RED	PAMO headed by the PASu but functions as an office, accountable to PAMB.
Functions	Administrative: implement plans, manage staff, funds, IEC, partnerships, visitors and research programs. Regulatory: peace officer powers (arrest, confiscate, enforce rules)	Implements PAMB policies, prepares plans, enforces laws, manage IPAF at site level, coordinates with LGUs and agencies. Emphasis on reporting, monitoring, financial and technical management.
Staffing	DENR Staff (Biologists, wardens, admin, community relations, clerks, maintenance). 50% must be recruited from local residents.	With plantilla positions, multi-disciplinary team (may include law enforcement, science, socioeconomics, admin, community relations)

Budget and benefits

DENR to provide site-level budget, housing, uniforms, and 25% hardship allowance for staff residing on site.

PAMO authorized to manage funds, especially IPAF site allocations. Has stronger financial and administrative powers.

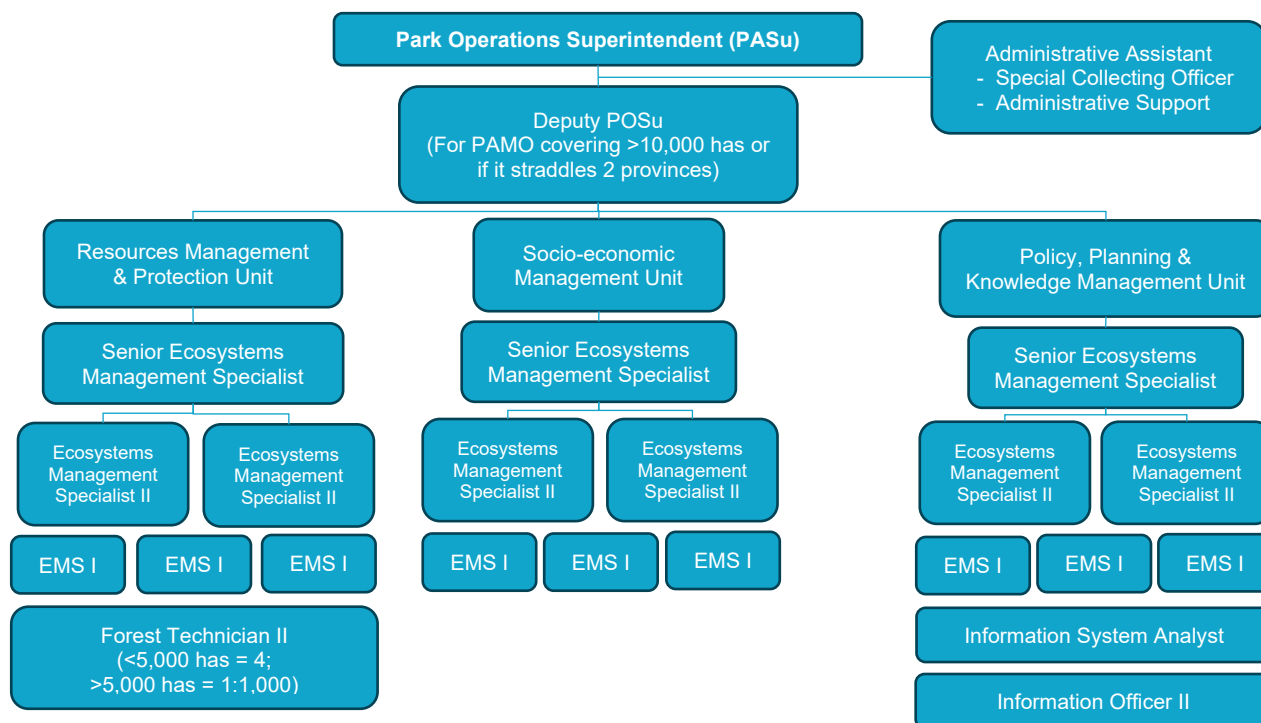
Source: From Implementing Rules and Regulation of RA 7586 and RA 11038

The figure 8 below shows the organizational structure of the Protected Area Management Office that is professionalized and multidisciplinary under the ENIPAS. At the top is the Park Operations Superintendent (POSu/PASu), who serves as the head of the office and is responsible for overseeing overall operations and policy implementation. For large PAs covering more than 10,000 hectares or straddling two provinces, a Deputy POSu (APASu) may also be appointed to provide additional oversight. Supporting the leadership are administrative staff, including an administrative assistant, a special collecting officer, and other support personnel, who ensure smooth day-to-day operations, financial management, and logistical support.

The structure is divided into three core functional units. The Resources Management and Protection Unit focus on biodiversity conservation, monitoring and habitat management, staffed with Ecosystem Management Specialists and Forest Technicians, the latter is adjusted in number depending on the size of the protected area. The Socio-Economic Management Unit handles stakeholder engagement, community-based initiatives, and livelihood programs to ensure that conservation goals align with social development needs. Lastly, the Policy, Planning and Knowledge Management Unit provides technical backstopping through research, planning, monitoring and evaluation, and information systems management, with dedicated officers for IT.

This setup signifies an important shift from the NIPAS structure, which relied heavily on the Protected Area Superintendent (PASu) with minimal staff. By delineating roles across ecological, socio-economic and policy functions, the PAMO is supposed to be better equipped to deliver integrated and science-based management. At the same time, it enables scalability and adaptability, since staffing can be adjusted depending on the complexity of the area. However, its effectiveness will rely on adequate funding, clear role delineation and strong coordination with the PAMB.

Figure 8. Organizational Structure of the Protected Area Management Office (PAMO)



Source: Lifted from Kaliwa River Forest Reserve PAMP (2021-2030)

5.1.1.4. Changes in the tenurial instruments. One of the biggest concerns in the management of the PAs in the Philippines is finding the balance between biodiversity conservation and the rights and needs of people already living in the area. To approach this concern, tenurial instruments, which are the legal mechanisms that allow certain individuals, groups or communities to occupy, use and manage resources under strict conditions, were introduced under both RA 7586 and RA 11038. These instruments recognize the reality that many protected areas are not untouched wilderness but are inhabited by communities and utilized by indigenous peoples. Table 7 presents the key differences in the tenurial instruments under both the Acts.

Table 7. Key differences in the tenurial instruments

Aspects	NIPAS Act IRR (DAO 25-1992)	ENIPAS Act IRR (DAO 2019-05)
Ancestral Domains	CADCs/CFSA; ancestral domains are recognized but not provisional*	CADTs under IPRA
Tenured migrants	Eligible after 5 years of continuous occupancy; tenure instrument to be developed.	Recognized by must secure Protected Area Occupancy Permit (PAOPs); tenure more regulated and renewable
Community-based Tenure	Not explicitly institutionalized, only stewardship mentioned	PACBRMA institutionalized as the main tenurial instrument.
Commercial/Special use	Not clearly defined	SAPA introduced to regulate commercial/resource use
Oversight	DENR and PAMB recognition	PAMB stronger role; decisions must be anchored in PAMPs
Non-qualifying occupants	Resettlement required	Resettlement required with stricter enforcement and integration with social safeguards.

Notes: *The recognition for CADC/CFSA were only temporary as the Act was passed before the IPRA law.
Source: From Implementing Rules and Regulation of RA 7586 and RA 11038

The comparison in Table 7 illustrates the evolution of tenurial instruments from NIPAS Act IRR (DAO 25-1992) to the ENIPAS Act IRR (DAO 2019-05), showing a shift towards institutionalization and regulation. Under the original law, ancestral domains were acknowledged through Certificates of Ancestral Domain Claims (CADCs) and Community Forest Stewardship Agreements (CFSA), although these were only recognized only provisionally. With the passage of the Indigenous Peoples rights Act (IPRA), the ENIPAS now anchors ancestral land rights under the Certificates of Ancestral Domain Titles (CADTs), thereby having a formalize security of tenure for indigenous peoples living within the PAs.

Community-based tenure likewise saw a significant change. While NIPAS merely mentioned stewardship arrangements, the ENIPAS institutionalized the Protected Area Community-Based Resource Management (PACBRMA) as a principal mechanism for granting organized communities access to resources within PAs.

Commercial and special uses, which were not clearly defined under NIPAS, are now regulated under ENIPAS through the Special Use Agreement in Protected

Areas (SAPA), ensuring that extractive or commercial activities are subject to stricter oversight.

5.1.2. *Assessment of the Philippine Protected Areas using Management Effectiveness Tracking Tool (METT)*

To evaluate how PA management has progressed across different policy periods, this study utilized the Management Effectiveness Tracking Tool (METT). Historical METT data from the 2013 GIZ Management Effectiveness and Capacity Assessment (Guiang & Braganza, 2014) provide a baseline for evaluating management conditions during the NIPAS years, while updated 2022 METT scores, officially requested and provided by DENR-BMB (2025) reflect performance under the amended ENIPAS framework. Table 8 presents the selected PAs along with their legal status and METT scores from 2013 and 2022.

Table 8. Comparison of 2013 METT Scores and 2022 METT Scores of selected PAs

Protected Areas	Legal Status	2013 METT Score	2022 METT Score
Batanes Protected Landscape	Legislated NIPAS	85	90.94
Casecnan Protected Landscape	Legislated ENIPAS	57	81
Palau Island Protected Landscape and Seascape	Legislated ENIPAS	61	95.24
Amro River Protected Landscape	Legislated ENIPAS	57	71.8
Simbahan-Talagas Protected Landscape	Legislated ENIPAS	65	75.9
Talaytay Protected Landscape	Legislated ENIPAS	62	66.1
Dinadiawan River Protected Landscape	Legislated ENIPAS	38	81.8
Bataan National Park	Legislated ENIPAS	72	67
Masinloc-Oyon Bay Marine Biodiversity Reserve	Legislated ENIPAS	77	74.05
Las Pinas-Paranaque Critical Habitat and Ecotourism Area	Legislated ENIPAS	69	92.1
Quezon Protected Landscape	Legislated ENIPAS	59	96
Mts. Banahaw-San Cristobal Protected Landscape	Legislated NIPAS	78	87
Taal Volcano Protected Landscape	Legislated ENIPAS	79	89

Mts. Palay-palay and Mataas na Gulod Protected Landscape	Legislated ENIPAS	63	96.05
Abasig-Matogdon-Mananan Natural Biotic Area	Legislated ENIPAS	62	73
Bicol Natural Park	Legislated ENIPAS	79	61.76
Mt. Isarog Natural Park	Legislated ENIPAS	68	55
Lagonoy Natural Biotic Area	Legislated ENIPAS	52	58
Catanduanes Watershed Forest Reserve	Legislated ENIPAS	55	63.57
Bulusan Volcano Natural Park	Legislated ENIPAS	68	91.85
Apo reef natural park	Legislated ENIPAS	84	88.7
Mt. Calavite Wildlife Sanctuary	Legislated ENIPAS	37	59.7
Mt. Guiting-guiting Natural Park	Legislated ENIPAS	52	86.9
Marinduque Wildlife Sanctuary	Legislated ENIPAS	42	62.17
Northwest Panay Peninsula Natural Park	Legislated ENIPAS	43	81
Balinsasayao Twin Lakes Natural Park	Legislated ENIPAS	69	75.49
Camotes Island Protected Landscape and Seascape	Legislated ENIPAS	49	75
Central Cebu Protected Landscape	Legislated NIPAS	44	82.35
Olango Island Wildlife Sanctuary	Legislated ENIPAS	78	86.48
Panglao Island Protected Seascape	Legislated ENIPAS	47	77.33
Rajah Sikatuna Protected Landscape	Legislated ENIPAS	70	90.15
Biri Larosa Protected Landscape and Seascape	Legislated ENIPAS	26	77.54
Cuatro Islas Protected Landscape and Seascape	Legislated ENIPAS	61	96.2
Guiuan Protected Landscape and Seascape	Legislated ENIPAS	45	69.13
Samar Island Natural Park	Legislated ENIPAS	63	69
Basilan Natural Biotic Area	Legislated ENIPAS	42	49
Mount Timolan Protected Landscape	Legislated ENIPAS	86	67
Pasonanca Natural Park	Legislated ENIPAS	85	74

Siocon Resource Reserve	Legislated ENIPAS	40	60
Baliangao Protected Landscape and Seascape	Legislated ENIPAS	67	95.96
Mimbilisan Protected Landscape	Legislated NIPAS	43	89.21
Mt. Balatukan Range Natural Park	Legislated ENIPAS	55	86.17
Mt. Malindang Natural Park	Legislated NIPAS	80	95
Mt. Timpoong Hibok-hibok Natural Monument	Legislated ENIPAS	73	86.54
Mabini Protected Landscape and Seascape	Legislated ENIPAS	70	84
Pujada Bay Protected Landscape and Seascape	Legislated ENIPAS	73	77
Mt. Matutum Protected Landscape	Legislated ENIPAS	61	78
Sarangani Bay Protected Seascape	Legislated ENIPAS	53	67
Average		61.33	78.19

Source: 2013 GIZ Management Effectiveness and Capacity Assessment (Guiang & Braganza, 2014) and DENR-BMB (2025)

The comparison of METT scores between NIPAS (2013) and ENIPAS (2022) periods shows a clear improvement in the management performance of PAs in the Philippines. Across 48 assessed sites, the average METT score increased from 61.33 in 2013 to 78.19 in 2022, reflecting a substantial 27.5% improvement over nine years. This rise coincides with the institutional reforms introduced by ENIPAS, as earlier discussed, including the establishment of permanent PAMOs, strengthened PAMBs, improved revenue retention through IPAF, and more rigorous zoning, planning and monitoring.

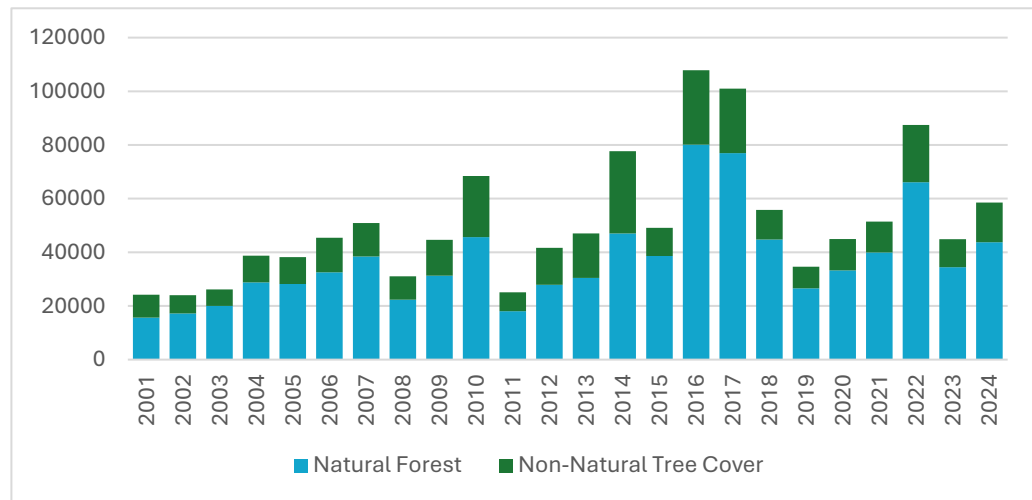
Most PAs demonstrated moderate to significant score increases, with previously underperforming sites such as Dinadiawan River, and Biri Larosa PLS showing the most dramatic gains. In contrast, historically well-managed sites like Mt. Malindang and Batanes Protected Landscape displayed smaller but consistent improvements. Only a few areas, like Bataan National Park and Mt. Timolan PL showed slight declines, likely due to limitations in enforcement and funding which are typically expressed by the implementers.

The differences between NIPAS- and ENIPAS-legislated areas further highlight the amendment's impact: long established NIPAS sites generally had higher baseline scores and experienced gradual improvements while recently legislated areas benefited the most from the strengthened governance and financial mechanisms, resulting in increases in their 2022 scores.

5.1.3. Impacts of the ENIPAS Act of 2018 to Philippine Biodiversity and Ecosystems

5.1.3.1. Forest losses and Land Cover Change. The amendment and passage of the ENIPAS Act of 2018 serve as a significant measure to strengthen the conservation and protection of the country’s biodiversity and critical ecosystems. By providing a stronger legislative framework for the management of PAs and the enforcement of restrictions, the law is expected to reduce destructive activities in key biodiversity areas, such as deforestation.

Figure 9. Forest Loss in the Philippines from 2001 to 2024



Source: Global Forest Watch Data.

The Global Forest Watch Data in Table 9 (Mazur, et al., 2023) shows that forest loss in the Philippines fluctuated considerably over the 24-year period. Both natural forest and non-natural tree cover contributed to these losses, though natural forests consistently accounted for the majority. Natural forest refers to tree cover with limited or no human intervention, including old-growth, regenerating, and low-intensity managed forests. Non-natural tree cover, on the other hand, includes plantations, tree crops, small patches of trees, or trees in agricultural and urban areas. (World Resources Institute, N.D.).

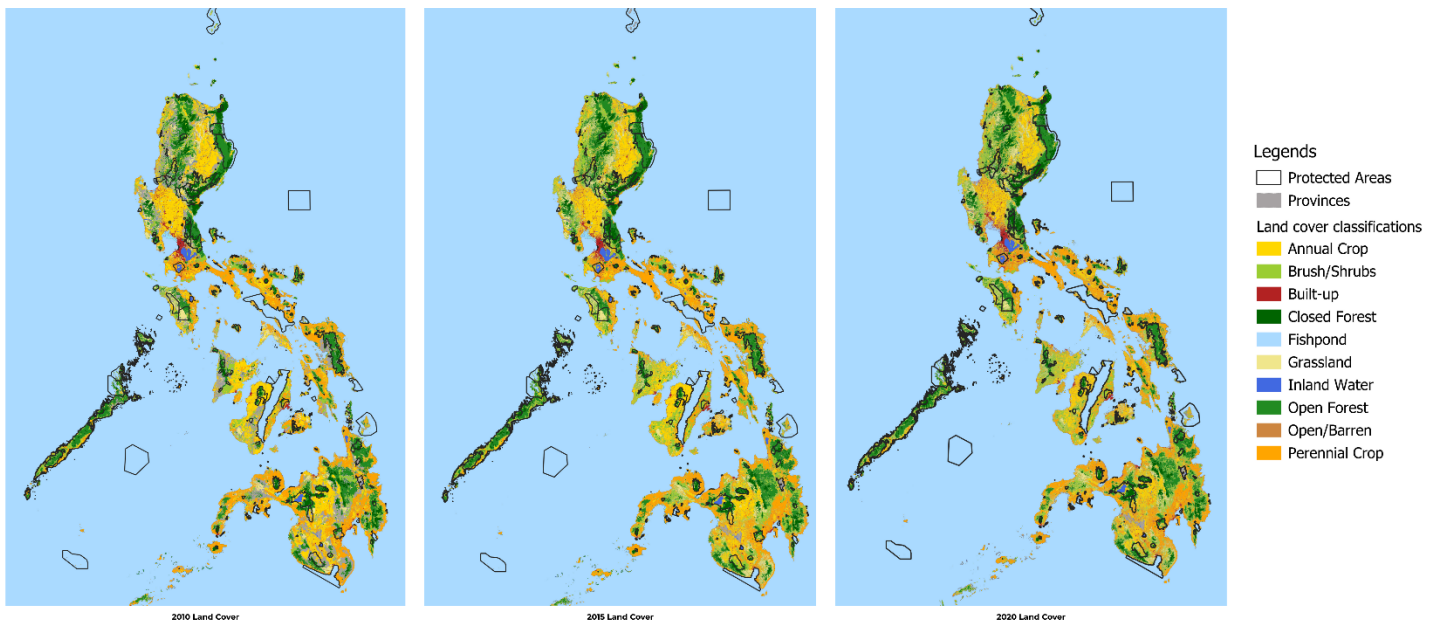
During the years when the NIPAS Act of 1992 was still being implemented, the period from 2001-2017 was marked by a rapid increase in forest loss, with notable surges in 2010 and again between 2014 and 2016. From 2001 to 2010, annual forest loss rose steadily from about 20,000 ha to 60,000-70,000 ha. In 2011, however, forest loss dropped sharply to around 18,000 ha, the lowest in the series. Coincidentally, this was also the year when the National Greening Program was

launched. After 2011, losses rose dramatically once again, peaking in 2016 at over 120,000 ha, the highest level recorded.

After the passage of the ENIPAS Act of 2018, the forest loss declined from 2018-2024 compared to the extreme losses of 2017-2017, but it remained significant. Between 2018 and 2021, annual losses stabilized at a lower range of about 30,000 to 50,000 ha. However, this downward trend did not hold, as the forest loss peaked in 2022 at nearly 90,000 ha, although it is still below the 2016 record high. In 2024, the level of forest loss dropped closer to the 2018-2021 average.

The analysis of the land cover data from 2010, 2015 and 2020 (Table 9) combined with the spatial patterns shown in the land cover change map (Figure 10) shows a positive trend in forest recovery in the Philippines across both NIPAS (1992-2017) and ENIPAS (2018-present) policy periods. During the tail end of the NIPAS implementation, forest cover already showed modest gains, with open forest increasing from 4.59 million hectares in 2010 to 4.68 million hectares in 2015, and closed forest expanding from 1.93 million hectares to 2 million hectares. These improvements, reflected spatially in the map as localized regeneration patches, suggest that early PA designation and national reforestation initiatives (e.g. NGP) contributed to slowing forest loss.

Figure 10. Land cover changes in the Philippines from 2010-2020



Source: Land Cover Data from NAMRIA via Geoportal; MMPL data from DENR-BMB ; Maps prepared by the authors

However, a more substantial increase is observed between 2015 and 2020, particularly the expansion of closed forest to 2.22 million hectares aligning with the implementation of the ENIPAS Act in 2018.

Between 2010 and 2015, built-up areas also increased from 629 thousand hectares to 852 thousand hectares, reflecting continued urban expansion, alongside population growth and infrastructure development during this period. The land cover change map further illustrates this pattern, showing intensified built-up around urban corridors. The area eventually reached 1 million hectares in 2020, indicating that urbanization continued at a rapid pace.

Table 9. Land cover changes in the Philippines (2010, 2015 and 2020)

Year	2010	2015	2020
Agricultural			
Annual Crop	6,275,992.80	6,117,556.80	5,942,685.20
Perennial Crop	6,168,359.90	6,574,383.50	6,563,639.10
Other wooded land			
Fallow	7,247.17	-	-
Brush/Shrubs	3,355,180.00	6,034,586.00	5,804,487.00
Wooded Grassland	3,829,046.10	-	-
Forest			
Open Forest	4,595,154.30	4,682,764.40	4,693,820.70
Closed Forest	1,934,032.50	2,028,015.10	2,221,173.00
Mangrove Forest	310,531.47	303,372.69	311,399.84
Other Natural Land			
Open Barren	97,302.75	121,729.64	160,278.45
Grassland	1,431,342.40	1,961,816.90	1,964,505.40
Marshland/Swamp	131,498.54	140,135.05	142,364.65
Inland Water	481,421.46	511,135.97	492,269.34
Built Up	692,079.28	852,021.19	1,035,173.60
Fishpond	244,967.97	235,824.03	228,380.31
Total	29,554,156.00	29,563,341.00	29,560,177.00

Source: National Mapping and Resource Information Authority (NAMRIA) via PSA Website

5.1.3.2. Number of threatened wildlife species. Protected areas are established to safeguard species and their habitats from degradation, overexploitation and other harmful activities. Therefore, the number of threatened wildlife species within the country may serve as a critical indicator of the effectiveness of its protected areas

system and broader conservation policies. Table 10 shows the data on threatened wildlife species from 1998 to 2022.

Table 10. Number of threatened wildlife species (1998-2022)

Taxonomy group	1998	2002	2006	2010	2014	2018	2019	2020	2021	2022
<i>Fauna</i>	282	331	220	209	212	212	1106	1106	1106	1106
Mammals	94	99	43	42	43	43	55	55	55	55
Birds	173	216	131	127	126	126	184	184	184	184
Reptiles	15	16	27	26	29	29	51	51	51	51
Amphibians	0	0	14	14	14	14	32	32	32	32
Invertebrates/Insect	0	0	5	0	0	0	784	784	784	784
<i>Flora</i>				526	526	984	984	984	984	984
Total	282	331	220	735	738	1196	2090	2090	2090	2090

Source: PSA Statistical Yearbooks, based on DENR's DAO 2017-11 and DAO 2019-09

During the period governed by NIPAS (1992-2017), the number of threatened fauna remained relatively stable yet consistently high. Between 1998 and 2014, total threatened fauna fluctuated only slightly (282 to 212), suggesting that while NIPAS Act provided an institutional framework for PAs, it lacked the enforcement power, funding, or technical support needed to substantially reduce threats. Mammals and birds consistently accounted for most of the threatened species during this period. The sudden appearance of flora in 2014 and 2018 datasets reflects the gradual improvement of national biodiversity assessments rather than abrupt ecological change.

Following the enactment of the ENIPAS Act in 2018, the number of threatened fauna rose from 212 in 2018 to 1106 from 2019 onward. This sharp increase may indicate a substantial expansion in species assessment and more rigorous application of threat criteria.

5.2. Financing and Resource Mobilization

Financial sustainability in the management of protected areas has been identified as one of the key concerns during the earlier assessments of the NIPAS Act (Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH 2014; Sandalo & Lumbres, 2017; Resources, Environment and Economics Center for Studies, 2014). Most protected areas in the Philippines remain highly dependent on government allocations, which are minimal compared to the actual financial requirements for effective conservation and protection. The chronic underfunding limits

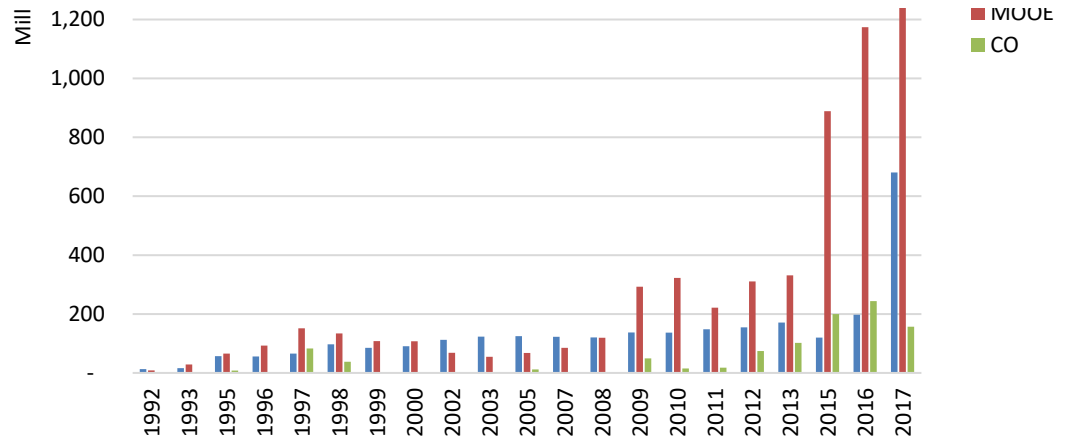
the capacity of the Protected Area Management Offices (PAMOs) to implement management plans, enforce regulations and support community-based conservation initiatives. Additionally, many protected areas face challenges such as inadequate staffing, insufficient monitoring and poor infrastructure maintenance.

5.2.1.1. National Budget Allocations for Protected Areas. The national budget allocations for the sustainable management of the country's protected areas provide essential financing resources for the implementation of conservation programs, maintenance of park facilities, capacity building of PAMOs and enforcement of environment regulations. This is lodged under the DENR, the lead implementing agency of ENIPAS. The national budgetary support serves as the foundation for PA operations, particularly for sites with limited income generating activities, or external funding sources.

In examining the evolution of government support for PA management, it is important to look at how allocations under the NIPAS have changed over time. The trends in national appropriations reflect the government's shifting priorities and the growing recognition of the need to strengthen conservation financing mechanisms. Figure 11 illustrates the budget allocations for PA management by expense class from 1992 to 2017, before the amendment of the law.

The data reveals a significant upward trend in appropriations over the 25-year period of the NIPAS Act, with the most notable increase occurring after 2010. In the earlier years of the law (1992-2005), allocations remained relatively modest and stable, with minimal year-to-year variation across all expense classes. At the beginning of 2015, the budget for PA management started to rise, particularly the Maintenance and Other Operating Expenses (MOOE), which covers the day-to-day operational and management expenses essential for park protection, biodiversity monitoring and community programs, among others.

Figure 11. General appropriations for Protected Area Management by general expense Class during the NIPAS Years (1992-2017) (in million pesos)

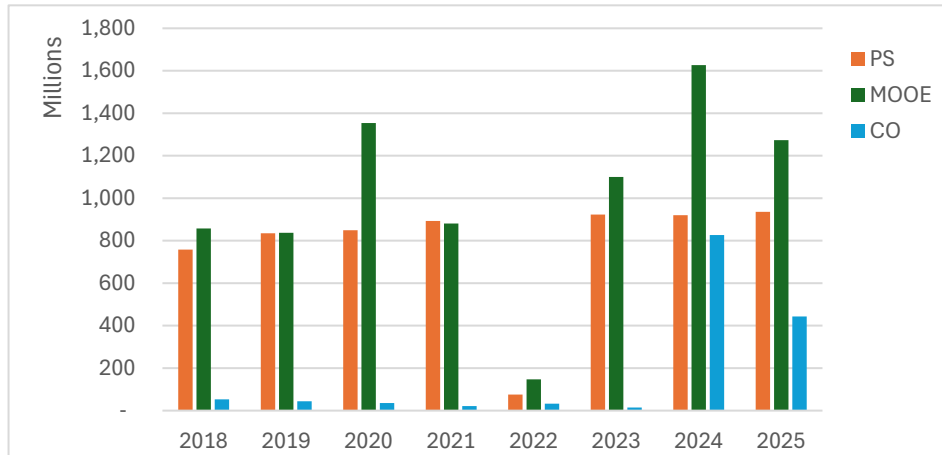


Source: General Appropriations Act 1994-2017

The appropriation peaked in 2017, with MOOE accounting for the largest share, followed by Personal Services (PS), and smaller increasing allocations for CO. This trend suggests a transition from limited and personnel-focused in the early NIPAS years to a more programmatic and operational funding approach in the later period.

Figure 12 below presents the national budget appropriations for PA management under the ENIPAS Act from 2018 to 2025. Compared to the NIPAS period, the budget allocated during the ENIPAS years appears to be higher and had a more consistent level of government funding. Similar to the 2016-2017 allocations, the MOOE for 2018-2025 period remains to have the largest share of appropriations, indicating that day-to-day management remains the core focus of government spending. The PS allocations have also increased relative to the NIPAS period, reflecting the institutionalization and hiring of additional staff for the PA management. Meanwhile, Capital Outlays (CO), which had remained relatively modest in the previous years, showed a marked increase in 2024-2025. This suggests a renewed investment in long-term infrastructure and logistical backbone of PA management.

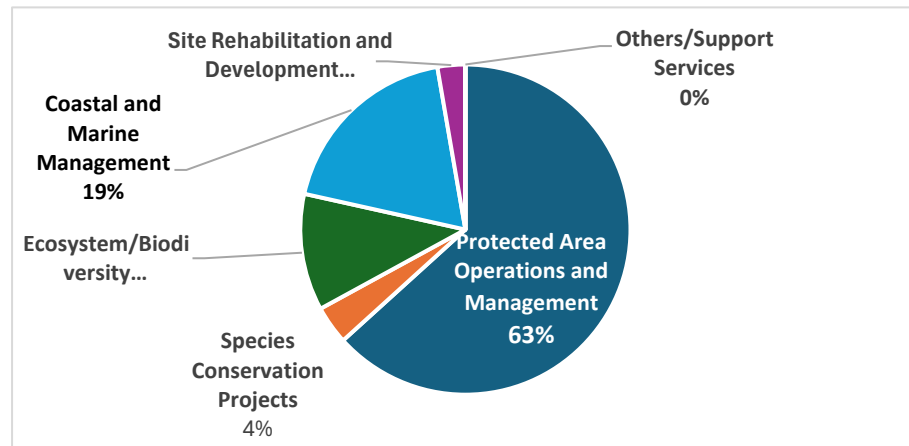
Figure 12. General Appropriations for Protected Area Management by General Expenses Class during ENIPAS Years (2018-2025) (in million Pesos)



Source: General Appropriations Act 2018-2025

Figure 13 presents the distribution of the operations budget for PA management during the implementation period of the NIPAS Act (1992-2017). The largest share of expenditure was allocated to PA operations and management, indicating that most financial resources were directed toward PA administration. These include park operations, maintenance, enforcement and implementation of management plans. Specifically, the category also covers the operations and maintenance of Ninoy Aquino Park and Wildlife Nature Center, initial funding for the implementation of the NIPAS, and various protected areas development and management.

Figure 13. Breakdown of Operations Budget for Protected Area (1992-2017)



Source: General Appropriations Act (1992-2017)

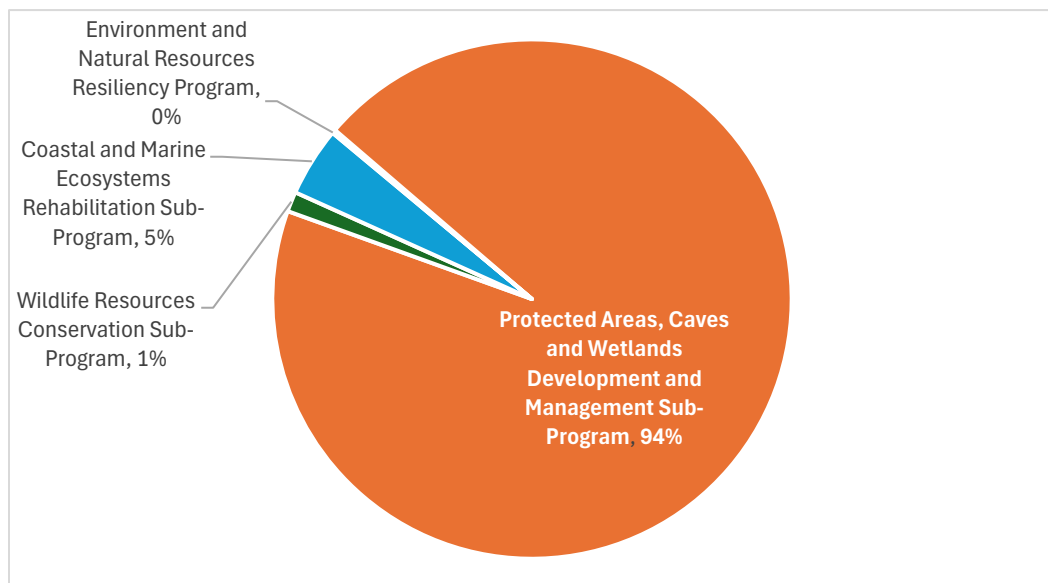
The second largest allocation (19%) was directed to Coastal and Marine Management, which tackles the development and rehabilitation of both Apo and Tubbataha Reefs, as well as the general coastal and marine management.

The third largest allocation (11%) is given to ecosystem/biodiversity programs, which encompasses initiatives for conservation of ecosystems, such as caves and wildlife. Meanwhile, species conservation projects accounted for about 4% of the total budget, covering focused conservation efforts for key species such as the Philippine eagle, *pawikan*, tamaraw and tarsier.

Lastly, site rehabilitation and development received around 3% of the total budget. This component included the rehabilitation and development of selected protected areas such as Mt. Kanlaon, Northern Negros Natural Park, and Mt. Apo.

Figure 14 shows the breakdown of operations budget during the ENIPAS period (2018-2025). Over this period, the allocation structure has evolved, with the operations budget now divided into three main programs: Natural Resources Enforcement and Regulatory Program, Natural Resources Conservation and Development Program, which includes subprograms on Protected Areas, Caves and Wetlands Development and Management, Wildlife Resources Conservation, and Coastal and Marine Ecosystems Rehabilitation, and the Environment and Natural Resources Resiliency Program.

Figure 14. Breakdown of Operations Budget for Protected Area (2018-2025)



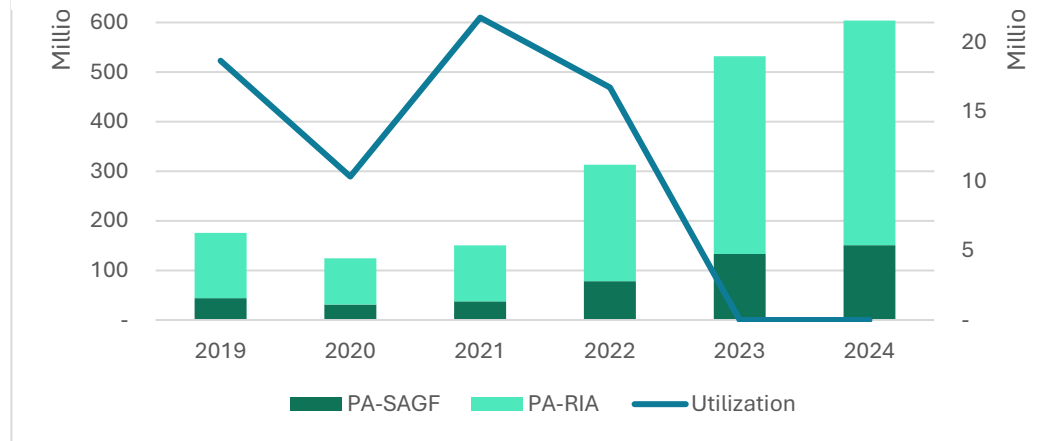
Source: General Appropriations Act 2018-2025

As shown in the figure, the sub-programs under the Natural Resources Conservation and Development Program dominate the operations budget, with the Protected Areas, Caves and Wetlands Development and Management Sub-Program accounting for 94% of the total allocation. This indicates that the bulk of funding is concentrated on the management and maintenance of protected areas. Following this is the Coastal and Marine Ecosystems Rehabilitation Sub-Program, which receives 5% of the total operations budget, relatively small but notable share directed toward restoration and management of marine ecosystems. The Wildlife Resources Conservation Sub-Program is allotted 1%, reflecting limited direct investment in species conservation compared to broader habitat-focused initiatives. Meanwhile, both the Environment and Natural Resources Resiliency Program and Natural Resources Enforcement and Regulatory Program receive minimal allocations, underscoring the stronger emphasis on protected area management over other aspects of protected area governance and ecosystem conservation.

The two figures illustrate a major shift in the allocation of operations budgets for PA management between the pre-ENIPAS Period (1992-2017) and the ENIPAS implementation period (2018-2025). During the 1992-2017 period, the budget was more diversified across several components, addressing multiple aspects of PA management including terrestrial and marine ecosystems, biodiversity, and site rehabilitation. In contrast, during the 2018-2025 ENIPAS period, resources became heavily concentrated on core PA operations, signifying a narrower funding focus on management and maintenance activities. This shift suggests a decline in budgetary support for other critical components such as marine ecosystem rehabilitation, species conservation, and broader biodiversity enhancement efforts.

5.2.1.2. Integrated Protected Area Fund . To complement the funding provided through the national budget allocation, the Integrated Protected Area Fund (IPAF) was established under RA 7586 as the primary financing mechanism for protected areas. All revenues generated from PA operations, such as entrance fees, resource-use fee and charges, donations, endowments and grants, are deposited in this trust fund. Of the total revenues accumulated in the IPAF, seventy-five percent (75%) may be utilized for site-level PA management and is maintained in a separate account called Protected Area Retained Income Account (PA-RIA). The remaining twenty-five percent (25%) supports system-wide operations and is deposited in the Protected Area-Special Account in General Fund (PA-SAGF). Figure 15 shows the total IPAF from 2019-2024, disaggregated between PA-RIA and PA-SAGF allocations.

Figure 15. Total Integrated Protected Area Fund (IPAF) and Utilization by year for CY 2019-2024



Note: No utilization data for 2023-2024
 Source: DENR-BMB

The total IPAF demonstrates a strong upward trend from 2019 to 2024, rising from below Php 200 million in 2019 to over Php 600 million in 2024, indicating steadily increasing revenues for protected areas. From 2019 to 2021, funding levels remained relatively modest, and showed minor fluctuations, reflecting a period of stabilization or limited collection, likely due to early ENIPAS implementation and other external factors, like the COVID-19 pandemic in 2020-2021. A significant increase was observed from 2022-2024, as the total IPAF doubled between 2021 and 2023, and continued to grow through 2024.

Utilization remained low compared to the total IPAF collections, peaking in 2021 at around Php 23 million before declining in 2022. The gap between increasing revenues and limited fund use suggests challenges in fund absorption and implementation efficiency. No utilization data was available for 2023-2024.

Table 11 below presents the summary of projects, activities and programs funded through PA-RIA utilization. PA-RIA funds were utilized across wide range of site-level management activities, primarily supporting personnel services, operations, and infrastructure development. Funds also covered ecotourism and CEPA activities, PAMB operations, equipment procurement, environmental protection and capacity-building initiatives, reflecting the diverse management needs of PAs.

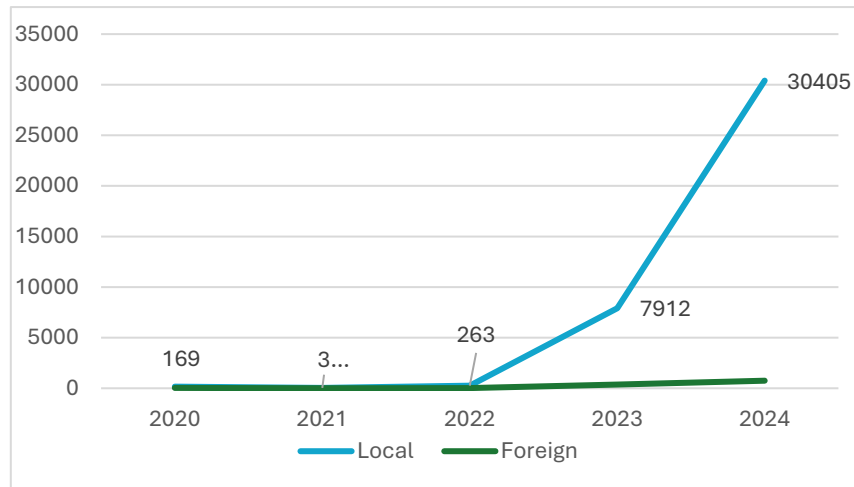
Table 11. Summary of projects, activities and programs in PAs for PA-RIA Utilization

Category	Typical Activities/Projects
Personnel Services	Hiring of Park Rangers, Administrative Staff, Drivers, Bookkeepers, Divers, Life Guards, Forest Protection Officers
Operations and maintenance	Maintenance of ranger stations, vehicles, office equipment, fuel and utility expenses, repair of facilities
Infrastructure development	Construction and rehabilitation of ranger stations, boardwalks, trails, signage, storm shelters
Ecotourism & CEPA Activities	Production of IEC materials, visitor center operations, interpretative signage, conduct of CEPA campaigns, cross visits
PAMB Support	Conduct of PAMB and TWG meetings, representation and travel expenses, subsistence allowances
Equipment procurement	Purchase of vehicles, motorcycles, boats, drones, GPS, cameras, laptops, office furniture
Environmental protection and monitoring	Mangrove protection, coral monitoring, nursery maintenance
Capacity building	Trainings, workshops, orientation on ENIPAS, livelihood programs

Source: DENR-BMB PA Management Office Reports (2019-2024)

Ecotourism has emerged as one of the most significant and sustainable revenue streams for PAs in the Philippines, particularly through the IPAF. Visitor-based income such as entrance fees, recreational charges, and conservation fees directly support conservation and site management. According to the PAs visitor statistics published online by DENR-BMB (N.D.), a total of 31,224 visitors were recorded in the most recent reporting year, comprising 30,405 local visitors and 740 foreign visitors. The increase in visitation highlights the growing role of ecotourism in strengthening financial sustainability under ENIPAS. Figure 16 illustrates the steady rise in visitor numbers from 2020 to 2024, reflecting post-pandemic recovery and increasing public engagement with PAs.

Figure 16. Total number of visitors from 2020 - 2024

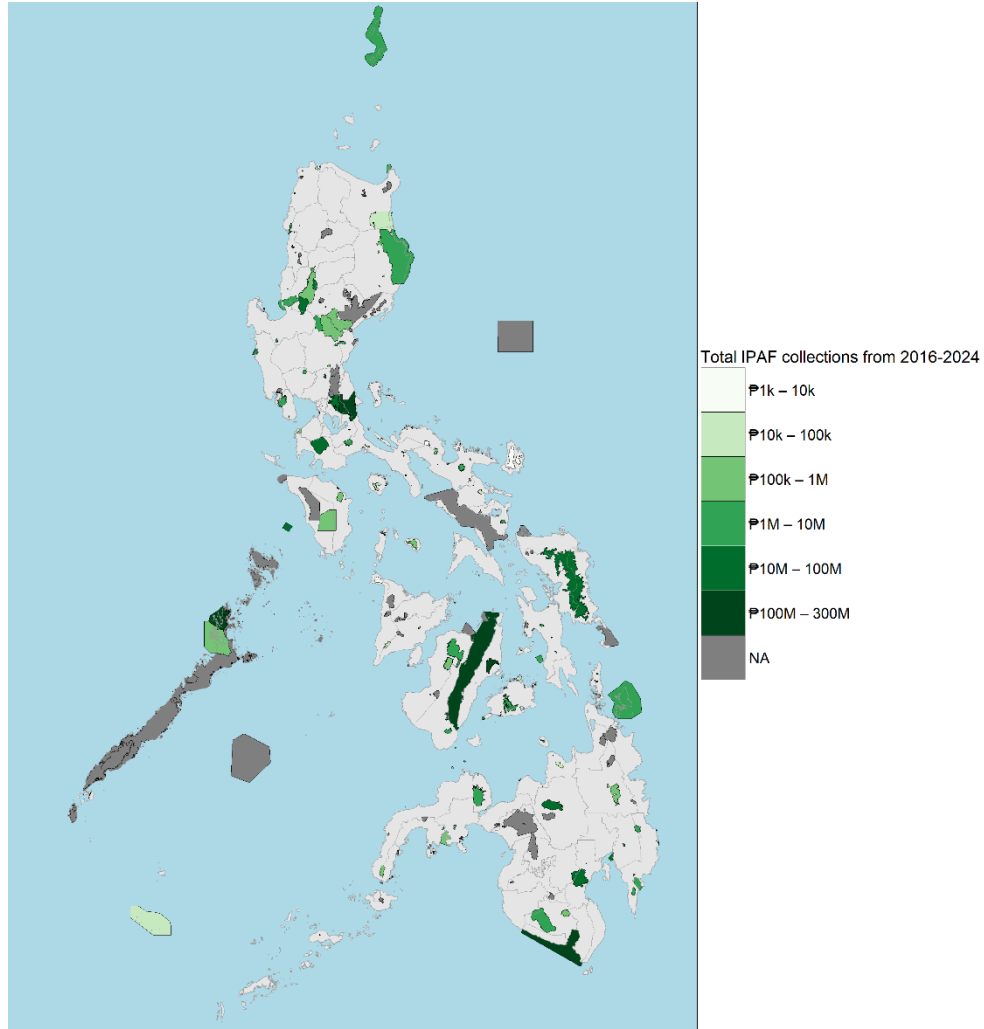


Source: Visitor data from Protected Area Information System (PAIS)

Among the top ten highest-earning PAs in the Philippines, several sites consistently stand out due to strong tourism demand, popular attractions, and effective fee collection systems. The El Nido-Taytay Managed Resource Protected Area remains the country's top revenue generator, accumulating approximately Php 200 million in IPAF earnings from 2016-2024. Similarly, the Apo Island Protected Landscape and Seascape has generated around Php 68 million over the same period through diverse set of revenue streams, including entrance fees, resource user fees, filming permits, recreational activity charges and camera or photography fees (DENR-BMB, 2024). Figure 17 shows the distribution of IPAF generated per PAs from 2016-2024.

Beyond financial contributions, ecotourism also plays a vital role in advancing conservation outcomes by increasing public appreciation for natural resources, supporting livelihood opportunities for local communities and fostering strong collaborative partnerships with LGUs, NGOs and private sectors.

Figure 17. Total IPAF generated per protected area 2016-2024



Source: Map and IPAF Data from DENR-BMB; Map prepared by the authors

In contrast to ecotourism-driven PAs, several of the highest earnings PAs get most of their revenues from non-tourism sources. The Central Cebu PL, for instance, generated approximately Php 276 million (DENR-BMB, 2024), largely from resource user fees and development/royalty charges, particularly those linked to water use and other regulated activities. The Tañon Strait Protected Seascape followed closely with Php 264 million mainly from concession/SAPA fees, development fees and regulated entrance fees. Meanwhile, Sarangani Protected

Seascape accrued Php 188 million, with income dominated by development and royalty fees rather than tourism receipts.

5.2.2. *Legal and enforcement*

Legal enforcement plays a critical role in ensuring the long-term protection, sustainable use, and ecological integrity of PAs. While management plans and conservation programs define how biodiversity should be safeguarded, it is the enforcement of laws, regulations and policies that translate these commitments into actual on-ground protection.

A key institutional development influencing enforcement outcomes during the latter part of the NIPAS period and the transition to ENIPAS is the issuance of DENR Technical Bulletin No. 2016-09, which adopted the Handbook on Law Enforcement for PAs. The handbook aimed to standardized enforcement protocols and strengthen inter-agency collaboration in PAs, responding to earlier challenges related to fragmented authority, inconsistent procedures and weak case build-up.

An important feature of the bulletin is the institutionalization of PA Law Enforcement Teams, which is composed of DENR personnel, PASu and PAMO staff, LGU representatives, and national law enforcement agencies.

Following the adoption of the Handbook on Law Enforcement for PAs in 2016, table 12 shows the notable changes in the scale, focus and enforcement-related activities from 2016-2022. In the later years of NIPAS implementation, enforcement efforts were predominantly wildlife-focused, as reflected in the increasing number of wildlife case-building operations and confiscated species. Actual law enforcement operations during this period were associated mainly with wildlife apprehensions, indicating an enforcement approach that emphasized seizures and field operations but remain limited in terms of PA-specific legal processes.

Table 12. Trends in enforcement-related activities in Protected Areas

Enforcement-related activities	2016	2017	2021	2022
Wildlife law enforcement				
Case building operations	44	99	422	47
Wildlife species confiscated	227	1523	65	414
Actual law enforcement operations	12	23	5	34
PA Law enforcement				
Preparation of reports, cases, complaints related to PAs, wildlife, coastal and marine, caves, wetlands and other ecosystems	0	0	62	37

Note: *2016 marked the start of PA Law Enforcement with the adoption of the Handbook on Law Enforcement for PAs; *2021 data must be interpreted in the context of the COVID-19 pandemic.

Source: DENR-BMB Annual Reports (2016, 2017, 2021 and 2022).

By 2021, PA-specific law enforcement activities, reports, cases and complaints were more consistently documented signaling the operationalization of the handbook’s standardized procedures and stronger institutional mandates under ENIPAS. At the same year, the enforcement was also shaped by COVID-19 restrictions. Despite this, the wildlife case building operations reached its peak at 422, while the actual operations and confiscations declined. In contrast, PA law enforcement and case preparation activities increased sharply, reflecting stronger institutionalization of standardized enforcement and protocols. By 2022, as field operations resumed, wildlife enforcement became more balanced, with increased actual operations, and confiscations.

Aside from PA enforcement data, forest disturbance patterns provide an additional line of evidence for assessing the effectiveness of governance and enforcement across NIPAS and ENIPAS periods. The patterns of forest disturbances recorded during the two policy periods reflect both the strengths and gaps in enforcement, revealing how different pressures continue to shape forest conditions despite existing legal safeguards. These disturbances may be human-induced or climate-related events.

Table 13. Forest disturbances during NIPAS implementation (1991-2017)

Causes	1991	1992	1993	1996	1998	2000	2004	2008	2009	2012	2016	2017
Forest Fire	5,872	12,720	15,330	4,558	18,313	4,879	1,376	77	5,380	5,822	422	1
Illegal cutting	72	-	-	10	2	4,920	-	-	10	-	-	-
Kaingin	759	86	90	94	14,430	875	11	105	571	-	12	50
Illegal Occupancy	-	-	-	-	-	-	-	-	-	-	-	-
Infrastructure Dev't	-	-	-	-	-	-	-	-	-	-	-	-
Illegal hunting	-	-	-	-	-	-	-	-	-	-	-	-
Others (infestation, typhoon etc)	530	-	2,442	524	6,860	498	312	367	2,309	-	1,455	1,955
Total	7,233	12,806	17,862	5,186	39,605	11,172	1,699	549	8,270	5,822	1,888	2,006

Source: compiled from the PSA’s Statistical Report

Other includes Hunting, Smoking, Incendiarism, Long dry spell, Torch, Children, Pasture, Outdoor cooking and

The records of forest disturbances from 1991 to 2017 (shown in table 13) which largely overlap with the implementation of NIPAS Act highlight the scale and persistence of threats over the three decades. During this period, forest fires consistently accounted for the highest level of disturbance in multiple years, particularly in 1993, 1998 (Hilario, De Guzman, Ortega, Hayman, & Alexander, 2009) and 2009 (Yumul, Dimalanta, Servando, & Hilario, 2010) which coincides with strong El Nino events. Kaingin practices also remained a significant disturbance throughout

the NIPAS era, with pronouce increased in 1998. While illegal cutting showed small annual values, its persistence indicated ongoing forest extraction despite formal protection.

Disturbances grouped under others include climate-related events such as typhoon damage and pest infestations.

The recent trends during ENIPAS implementation, as seen in Table 14, show a marked reduction in the scale of forest disturbances, though pressures remain present. Recent figures are significantly lower, with a total reported disturbances of 183 in 2022, 392 in 2023 and 208 in 2024. This sharp decline suggests improvements in enforcement, monitoring systems and community engagement mechanisms introduced under the expanded legislation.

Table 14. Forest disturbance during ENIPAS implementation (2022-2024)

Causes	2022	2023	2024
Forest Fire	77	313	104
Illegal cutting	12	1	3
Kaingin	5	11	14
Illegal	4	7	-
Occupancy/Infrastructure Dev't			
Illegal hunting	1	9	3
Others (infestation, typhoon etc)	84	51	84
Total	183	392	208

Source: compiled from the PSA's Statistical Report

5.2.3. *Emerging national issues and concerns*

Despite the notable progress in institutionalizing protected area governance under ENIPAS, several challenges continue to constrain its full realization. These issues stem from institutional, administrative, and resource-related factors that affect the consistency and effectiveness of implementation nationwide.

A persistent issue identified at the national level is the lack of adequate resources to support effective implementation of the ENIPAS Act. Many PAMOs remain understaffed, with only few permanent personnel who often perform multiple functions beyond protected area management. This is identified during the site visits and exchanges with the key stakeholders, as some of the PA Superintendent needs to perform a dual role of also being the designated Provincial Environmental and Natural Resources Officer (PENRO) of the province. This multitasking limits the time and focus devoted to core conservation activities and weakens institutional continuity, especially when leadership transitions occur.

Financial constraints further compound this challenge. PAMOs frequently lack sufficient funds to carry out enforcement and monitoring activities, particularly those required to implement the law's provisions. Even in PAs where IPAF allocations exist, bureaucratic procedures and delayed fund releases often restrict their timely and efficient utilization. As a result, routine operations such as patrolling, maintenance and community engagement are either delayed or under implemented.

Technical capacity is another critical limitation. Several staff members lack sufficient training in key functions such as the preparation of management plans, as also highlighted during stakeholder exchanges. While capacity-building activities are occasionally conducted, high turnover among contractual personnel undermines institutional memory. This has contributed to the preparation of management plans that are often shallow or overly generic, reflecting limited data and analytical support.

Another emerging issue concerns the primacy of the ENIPAS Act in relation to other laws and existing land uses within PAs. The recognition of prior rights, while intended to uphold social and legal commitments, has in some cases hindered the effective implementation of ENIPAS provisions. These overlapping rights allow certain land uses and activities that are not necessarily low impact, thereby undermining the ecological objectives of the law.

Moreover, numerous small-scale operations, such as extraction, farming or tourism enterprises, may individually appear minimal but collectively exert substantial cumulative impacts on the ecosystems. This situation highlights the challenge of enforcing regulatory limits without compromising livelihoods.

Conflicts also arise between conservation objectives and the pursuit of economic activities that significantly contribute to local or regional economies. When such industries or operations form part of a local government's revenue base or employment drivers, tensions emerge between national conservation mandates and local development priorities, complicating enforcement and long-term management planning.

Beyond the issues and concerns observed at the national level, each protected area also exhibits distinct circumstances and challenges that make its situation unique and often more complex to address.

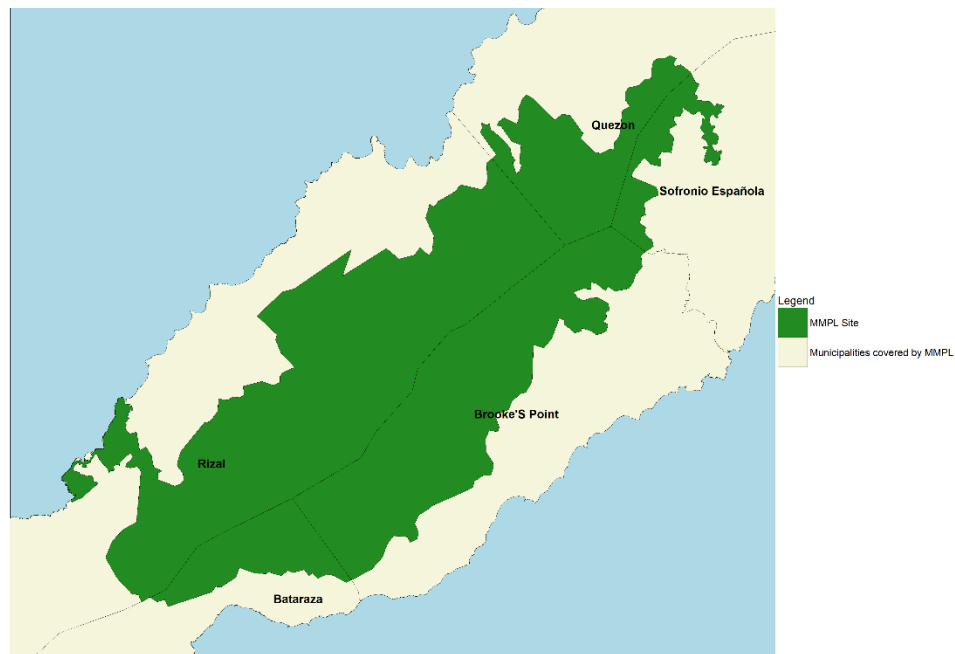
5.3. Site-level impacts of ENIPAS Implementation

5.3.1. Mt. Mantalingahan Protected Landscape

The Mt. Mantalingahan Protected Landscape (MMPL) is one of the eight protected area sites in Palawan and features the province's highest peak, towering 2,085 m. Covering a total area of 120,457 hectares, MMPL spans the territorial jurisdiction of Bataraza, Brooke's Point, Quezon, Rizal and Sofronio Española (Figure 18), making it one of the largest PAs in the country. The site was officially declared a protected landscape on June 23, 2009, under Presidential

Proclamation 1815 and as of 2025, it remains among the 13 proclaimed PAs yet to be formalized through legislation by Congress. The PA is managed by the Protected Area Management Board (PAMB), with the Protected Area Management Office (PAMO) overseeing the conservation programs, enforcement and community engagement.

Figure 18. Mt. Mantalingahan Protected Landscape and municipalities covered



Source: Map Data from DENR-BMB; Maps prepared by the authors

MMPL is primarily a terrestrial ecosystem, dominated by forested mountain ranges that cover several critical watersheds and other conservation areas. Recognized as one of the ten sites in the Philippines, designated by the Alliance for Zero Extinction in the Philippines, it represents the last remaining habitats for several endangered or critically endangered species (Alliance for Zero Extinction, 2019). Biodiversity within MMPL includes at least 861 plant species and 169 vertebrate species, comprising 13 threatened species, 10 vulnerable species, 2 endangered species and one critically endangered species (MMPL PAMB, 2010).

The protected landscape is also the ancestral home of the Palaw'an Indigenous Peoples, who hold claims overlapping with the park and continue to practice traditional agriculture, hunting and gathering and cultural rituals.

Despite its ecological and cultural significance, MMPL faces several major pressures including illegal logging, mining claims, and conversion of forest land to agricultural land. These challenges threaten critical habitats, watersheds and other conservation areas, highlighting the need for strengthened management and conservation efforts under ENIPAS.

5.3.1.1. *Institutional and management changes.* The ENIPAS implementation has brought out notable changes in the institutional and management arrangements of the PAs in the country, including MMPL.

Despite the lack of legislation specifically for the MMPL, the PA is managed by a PAMB supported by the MMPL-PAMO, mirroring fully established protected areas. Table 15 shows the comparison of PAMB members in MMPL during the NIPAS and ENIPAS implementation.

Table 15. Comparison of PAMB members in MMPL

Board Member Type	PAMB en banc for MMPL – 2010	ENIPAS
DENR Regional Executive Director	Present, Chairman	Present
South Palawan Planning Council	Present, Vice Chairman	Not mentioned
Legislators	Not mentioned	District Representatives
Local Government Representatives	Governor of Palawan; 2 nd Congressional District of Palawan; Four (4) Mayors constituting the SPPC; Provincial Planning & Development Officer of Palawan; All barangay chairpersons	Governor, Mayor and Barangay Chairpersons
National Government Agencies	Representatives from: <ol style="list-style-type: none"> 1. NCIP 2. DA 3. DAR 4. PNP 5. AFP – Western Command 	Regional directors of the following: <ol style="list-style-type: none"> 1. DA 2. DEPDev 3. DOST 4. PNP 5. DND
Indigenous/Tribal Community Representatives	One IP representative per municipality	Representatives from IPs/ICCs
Civil Society	Two representatives from each of the following: <ol style="list-style-type: none"> 1. NGOs 2. POs 3. Religious sector 4. Women’s sector 5. Youth sector, 	Representatives from NGOs or Pos

Private Sector	Two representatives	Present
Academic Institutions	Two representative	Present
Others	Executive Director of PCSD; SPPC Technical Committee Chairpersons	N/A
Total	69	57

During the implementation of the NIPAS Act in 2010 at MMPL, the PAMB was supported solely by a Protected Area Superintendent (PASu), appointed by the DENR Regional Executive Director to serve as the secretariat. As the only staff member, PASu coordinates closely with the South Palawan Planning and Management Office, and its personnel to carry out day-to-day management functions.

The PASu's key duties include law enforcement and protection, permit issuance and resource management, planning and reporting, financial administration, and performing other functions assigned by the DENR-RED or the PAMB (MMPL PAMB, 2010). While this arrangement ensured continuity of basic management functions, the operational capacity of managing the PA was limited due to the absence of dedicated technical or administrative staff.

Following the enactment of the ENIPAS Act, the management structure has evolved to address previous limitations. The PASu continues to serve as the head of the MMPL-PAMO but is now supported by dedicated technical personnel and administrative staff organized into functional teams. The current staff composition of the MMPL-PAMO is as follows:

1. Protected Area Superintendent (PASu)
2. Assistant Protected Area Superintendent (APASu)
3. GIS Focal Person
4. Three forest technicians
5. One forest ranger
6. Environmental Management Specialist
7. Project Support Officer
8. Three office support assistants
9. Five Park Rangers.

This expanded team structure allows MMPL-PAMO to perform their functions more effectively, supporting the overall goals of the protected landscape under the ENIPAS framework. The PAMO is also supported by staff from CENRO Quezon, like regular forest rangers employed and funded by the CENRO assisting in

MMPL management activities beyond their usual duties. These include conducting patrolling and monitoring operations within the PA. Similar arrangements have also been observed in other PAs, where personnel are temporarily borrowed to address manpower shortages and to strengthen on-site protection efforts.

Aside from the MMPL PAMO and the PAMB, various stakeholders, including the LGUs, NGOs, community members, and people's organizations, have been instrumental in providing technical and logistical support for the MMPL's management.

Due to the constrained manpower of the PAMO, the LGUs, specifically, the five municipalities have extended assistance through PAMB resolutions that authorize them to allocate funds and deploy additional personnel or park rangers under their respective offices to complement the MMPL's operations. Drawing inspiration from the management model of Mt. Kitanglad, which operates with strong LGU involvement, the MMPL PAMO presented and advocated this approach to the municipal mayors, successfully securing their support according to interview findings. This complementation has been recognized during the focus group discussions as crucial in sustaining on-the-ground operations and ensuring continued protection and monitoring within the MMPL.

Aside from the support provided by the LGUs, the MMPL has also received significant assistance from NGOs, even before its official proclamation as protected area. Conservation International is among the many organizations that have supported the site, contributing to the development of its initial Protected Area Management Plan, facilitating research and capacity building activities, formulating enforcement protocols, and even sponsoring the conduct of PAMB meetings. Further details of their support are discussed in another section of this paper.

Community involvement has also been highlighted as a significant factor contributing to MMPL's operations. Notably, some former *ilegalista*⁵ have been transformed into informants who provide valuable on-the-ground information to enforcement teams. To discourage them from returning to prohibited activities and to help support their livelihoods, these community members receive compensation for their participation as mentioned in the interview. Given the vast scope of the PA, spanning hundreds of thousands of hectares, community members have been engaged as the local intel, helping safeguard the area rather than engage in prohibited activities.

⁵ Local term used to refer to individuals who engage in illegal activities within protected areas.

5.3.1.2. Institutional and management issues. While these institutional arrangements and support mechanisms have strengthened the management of the MMPL, several challenges remain in ensuring effective governance and coordination were identified from the KIIs and FGDs.

While the composition of the PAMB under the ENIPAs framework has ensured broad stakeholder representation, its actual operations on the ground have faced persistent challenges. Difficulties in meeting quorum, limited participation of key stakeholders, and uneven influence among members have constrained its effectiveness as the primary governing body of the MMPL. In addition, the reconstitution of the PAMB under the ENIPAS Act has led to the exclusion of some institutions that were previously part of the board, creating gaps in representation and institutional continuity.

One of the most persistent challenges faced by PAs with large PAMB membership is achieving a quorum during scheduled meetings. Despite advanced scheduling, attendance has often been limited, particularly among representatives from LGUs, national government agencies, and legislative members such as senators and congressmen. Their multiple commitments and competing priorities frequently hinder consistent participation. It is also worth noting that PAMB members are not compensated for their involvement, which may further affect their attendance and level of participation.

Beyond attendance and representation, interviews also revealed uneven levels of influence among PAMB members. Some members tend to be non-participative, contributing little during meetings, while political influence is often unavoidable in decision-making processes. Although certain members provide valuable insights, particularly during deliberations on controversial issues, their perspectives are occasionally overridden during voting due to alliances among other members.

The reconstitution of the PAMB also altered the composition of its membership, resulting in the absence of several institutions and sectors that had previously been active. MMPL operates within a unique governance context in Palawan, where the Strategic Environmental Plan Law (RA 7611) mandates the oversight by the Palawan Council for Sustainable Development (PCSD), who is tasked with overseeing environmental concerns in the province. Despite this critical role, PCSD is currently excluded from the official list of PAMB members under the ENIPAS. This exclusion creates ambiguity in roles and coordination between the MMPL-PAMB and PCSD, potentially complicating the integrated management and enforcement of environmental regulations in the PAs.

The MMPL PAMO also faces significant capacity constraints due to limited personnel. The office currently⁶ has only 17 staff members, including job order personnel, tasked with managing a vast 120,457-hectare protected area. Several staff members, including the PASu, perform dual roles, simultaneously fulfilling responsibilities for CENRO and for PAMO management. These overlapping duties limit the staff's ability to focus fully on core PAMO functions, placing additional strain on an already small team.

Additionally, field personnel face significant safety risks, as some violators are reportedly armed, heightening the danger during patrolling and enforcement operations. The PAMO also lacks allocated funds for regular patrol, monitoring activities and the acquisition of vehicles or other essential equipment. Therefore, staff often rely on personal resources to carry out field operations, which limits both the frequency and effectiveness of enforcement. While collaborations with local communities and partners extend enforcement reach, these measures are not sufficient to fully safeguard the area.

The lack of formal legislation has also been identified by stakeholders as key constraint to effective management. Without a congressional act, the PAMO face limitations in their institutional authority, access to dedicated budget allocations and the establishment of a full staffing pattern. Financial allocations are further constrained because budget prioritization is often given to fully legislated PAs, and some of these sites do not receive their full funding.

5.3.1.3. Socioeconomic and community impacts. Within the MMPL, the designation under NIPAS and its amendment through ENIPAS also have important implications for the local population residing within the PA. These communities are directly affected by conservation policies, including the regulation of land use, resource extraction and access to forest products.

Based on surveys conducted in 2010 (Table 16), the MMPL encompasses 36 barangays, with 300 upland sitios included in the 2010 assessment. The total household population within the PA decreased from 12,625 in 2010 to 10,514 in 2018, while the number of households declined from 2,951 to 2,097 over the same period.

⁶ As of April 2025

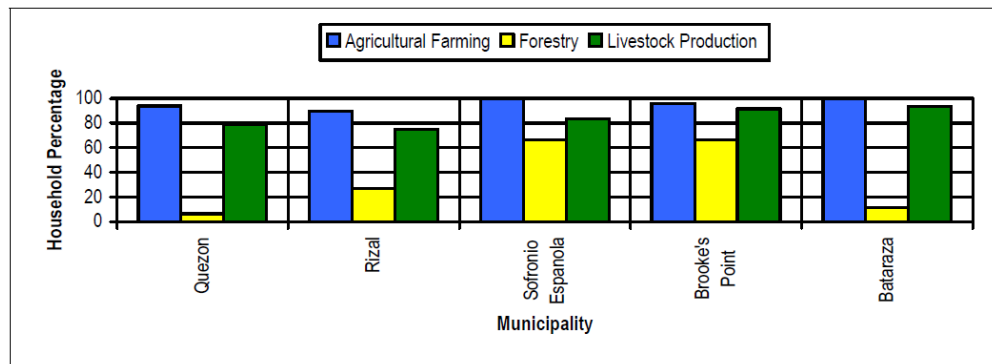
Table 16. Total household population and number of households within MMPL (2010 and 2018)

Year conducted	No. of Barangays	No. of Upland Sitio included	Household population	No. of Households	Total no. of tenured migrants
2010	36	300	12,625	2,951	n/a
2018	36	n/a	10,514	2,120	2,097

Source: MMPL PAMP 2010; DENR BMB Data

Figure 19 presents the primary economic activities of MMPL occupants across the five municipalities, from the 2010 SRPAO. Among them, agricultural farming emerges as the dominant livelihood activity, with household participation levels ranging from 80% to 90%. Following farming are livestock production, showing similar levels of participation, ranging from 70% to 90% across municipalities. In contrast, forestry-related activities have lower levels of participation ranging from 30% to 50%.

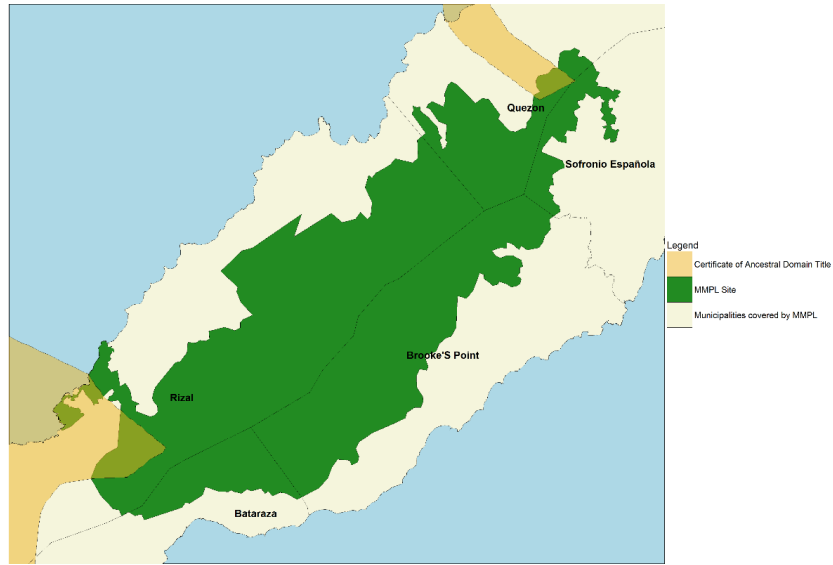
Figure 19. Economic activities of MMPL occupants



Source: lifted from MMPL PAMP 2010

Figure 20 shows that several parts of MMPL overlap with areas covered by Certificates of Ancestral Domain Title (CADTs), reflecting the long-standing presence and territorial claims of the indigenous peoples who reside within and around the PA. These recognized ancestral domains are primarily located in the municipalities of Rizal and Quezon, reflecting areas where CADT applications have already been formally processed and approved. Other portions of the PA also contain IP territories, however, these claims remain under review or still undergoing documentation and validation.

Figure 20. Location of CADTs within MMPL



Source: Map Data from DENR-BMB; Maps prepared by the authors

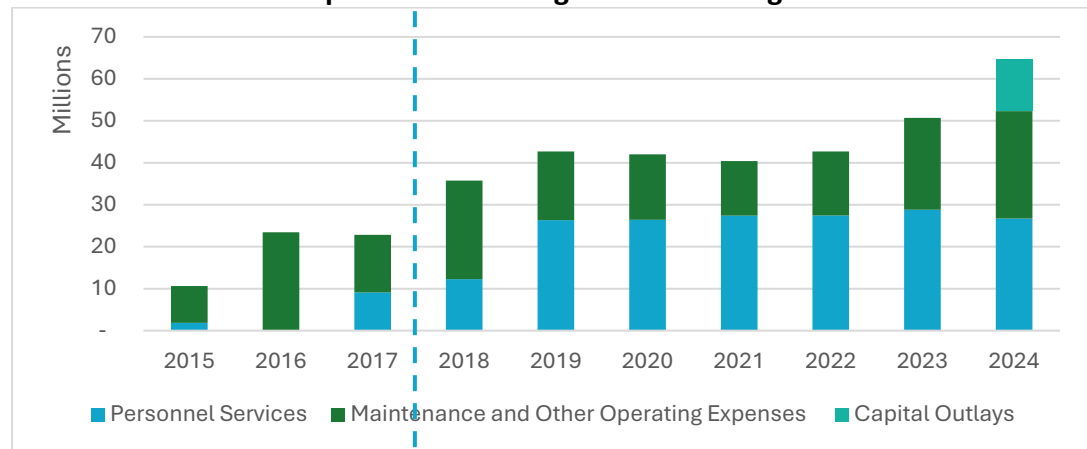
5.3.1.4. Financial sustainability. Financial sustainability is a critical factor influencing the effectiveness of PA management. The MMPL-PAMO operates with limited resources, constraining its ability to implement key conservation, monitoring and enforcement activities. Administratively, the MMPL-PAMO is lodged under the CENRO Quezon.

Figure 21 presents the budget allocations for PENRO Palawan, which oversees six protected areas in the province. During the remaining years of NIPAS implementation, the allocations remained relatively modest, with minimal support for personnel services expenses and almost no funding for capital outlays. A notable shift occurred in 2018, when both PS and MOOE allocations increased significantly, marking the start of a more substantial investment in PA management.

From 2018 to 2024, the overall budget for PA development and management sub-program steadily increased, driven primarily by growth in PS and MOOE. By 2019, PS had become the largest component of the budget, surpassing MOOE and signaling greater emphasis on staffing and personnel requirements. Despite these increases, funding for capital outlays remained consistently limited throughout the period, with allocations appearing only in 2024. This trend reflects the concerns raised by the stakeholders during the interview, particularly the persistent gaps in resources in office equipment, particularly vehicles essential for effective on-ground management.

The total budget for the PAMO for this year, as estimated by their personnel, is approximately Php 1.7 million, covering administrative costs, operational expenses and the management of a vast 120,457 ha PA. This budget does not include allocations for critical needs such as regular patrolling, monitoring, acquisition of vehicles or maintenance of essential equipment.

Figure 21. PENRO Palawan Budget Allocations by Expense Class for the Protected Areas Development and Management Sub-Program



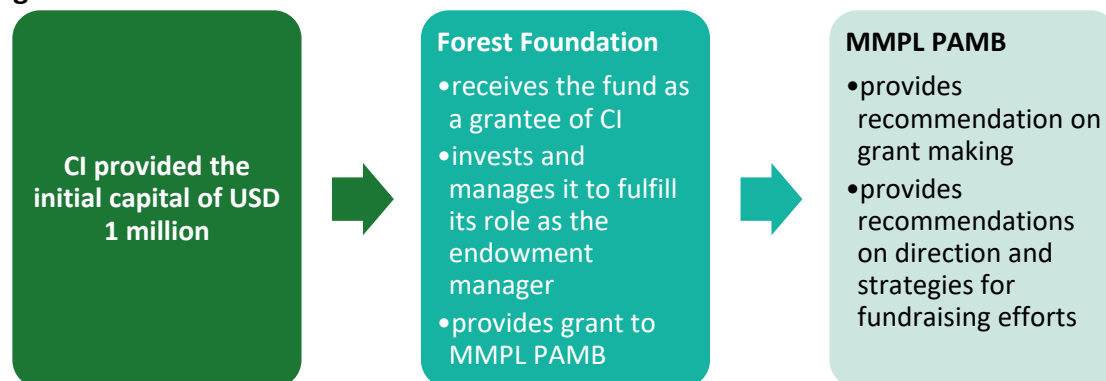
Source: Authors' own compilation from DENR GAA 2015-2024

The Integrated Protected Area Fund (IPAF) is intended to provide supplemental funding for MMPL operations. As of now, IPAF account for MMPL is not yet active. The necessary documents have been submitted to the Bureau of Treasury for processing, but no disbursements have been made to date. Despite the lack of an active IPAF account, income is still being collected from hiking fees, currently totaling approximately Php 120,000. However, these funds can only be accessed once the IPAF account is officially opened, until then, they remain unavailable to support PAMO operations.

It was also raised during the interview that the PA-SAGF, intended for use by all PAs in the country, is difficult to access. While compliance with its requirements is necessary, the process itself is cumbersome for the PA staff, especially for those with limited personnel, like the MMPL-PAMO.

The MMPL has also received financial support from Conservation International (CI), which has provided an endowment fund to assist in long-term conservation efforts. This trust fund is the first of its kind in the Philippines to provide sustainable financing for long-term maintenance, protection and enrichment of the biodiversity within the MMPL (*Forest Foundation, 2022*). Figure 22 shows the current MMPL endowment structure.

Figure 22. MMPL Endowment Structure



Source: Forest Foundation, 2022

Under the endowment fund, the PAMO is permitted to use only the interest generated from the fund, while the principal amount remains intact. From this, the MMPL PAMO was able to avail 15 additional park rangers to supplement existing staff, as well as “green guards” volunteers, to assist with patrolling, monitoring and community engagement activities.

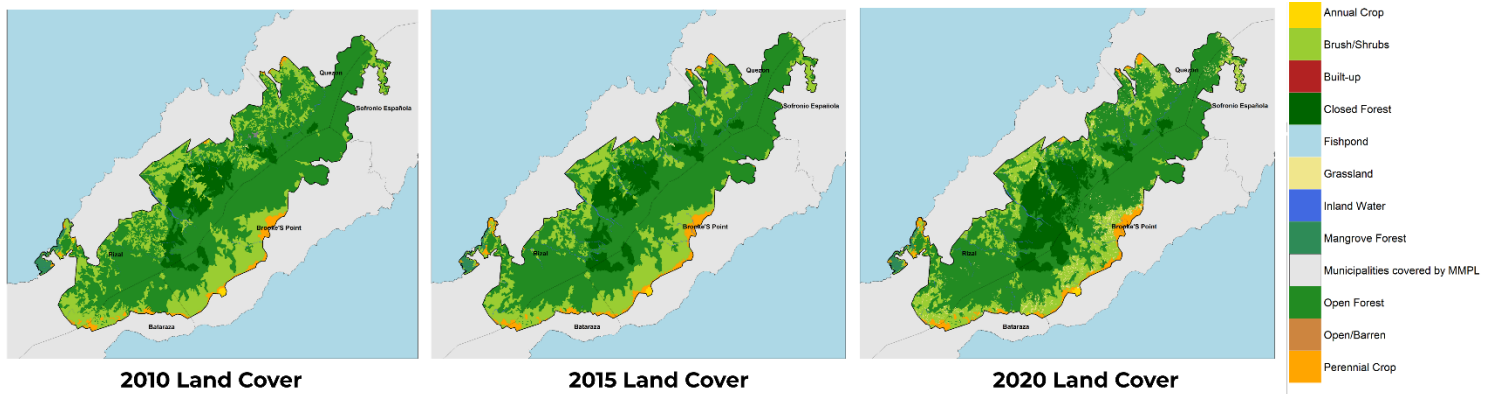
5.3.1.5. Monitoring, enforcement and compliance. Effective management of MMPL requires a structured system to ensure conservation and sustainable use of its resources. Currently, the resources allocated to the MMPL-PAMO are insufficient to carry out monitoring and enforcement activities effectively. As a result, the office has relied on support from LGUs and the endowment fund to provide adequate personnel for area monitoring. Additional support from the Armed Forces of the Philippines (AFP) is often sought during operations, particularly in responding to illegal activities such as logging involving chainsaws.

The endowment fund has served as a supplementary source for acquiring additional manpower for the PA. The most recent utilization of the fund allowed the hiring of 15 additional park rangers and green guards, providing coverage across the 36 barangays within the MMPL.

5.3.1.6. Ecological and conservation impacts. Concerns regarding deforestation have plagued the Province of Palawan this year, specifically the MMPL, following a feature in a documentary TV show that highlighted flooding in the area. This raised questions about the effectiveness of the NIPAS/ENIPAS legislation, particularly in a province often referred to as the “last frontier” due to its rich biodiversity and relatively intact ecosystems (UNESCO, N.D.). The transition to NIPAS to ENIPAS was intended to address these challenges by strengthening legal frameworks, expanding management mandates and enhancing mechanisms

for monitoring, enforcement and habitat protection. This section examines the ecological and conservation outcomes observed in MMPL, drawing on monitoring data, field observations and insights from local stakeholders.

Figure 23. Land Cover Change in MMPL, 2010-2020



Source: Land Cover Data from NAMRIA via Geoportal; MMPL data from DENR-BMB ; Maps prepared by the authors

Between 2010 and 2020, Palawan Province experienced notable land cover changes (shown in Figure 23 and Table 17). Closed forest increased from 86,877 ha to 119,290.40 ha, suggesting regrowth or densification of previously degraded forests, while open forest decreased from 541,590 ha to 516,666.09 ha. Mangrove forest also showed a slight decline, from 63,821 ha to 60,461.70 ha, indicating minor losses in coastal areas. Human modified areas also changed, with built-up areas increasing from 13,642 ha to 22,700.53 ha and barren land more than doubling, highlighting possible pressures from settlements, infrastructures, and land degradation.

Table 17. Land Cover Change, 2010, 2015, 2020, Province of Palawan

Land cover	2010	2015	2020
Closed Forest	86,877	91,541.35	119,290.40
Open Forest	541,590	543,496.50	516,666.09
Mangrove Forest	63,821	59,421.20	60,461.70
Shrubs	294,731	407,744.50	389,577.91
Annual crop	101,201	105,346.70	101,703.47
Perennial crop	175,460	157,899.29	143,952.48
Fishpond	1,698	2,193.12	1,992.05

Built-up	13,642	16,206.00	22,700.53
Barren land	1,788	3,789.28	4,344.86
Grassland	36,038	47,340.13	73,156.35
Inland water	5,965	7,757.77	8,041.86

Source: NAMRIA

5.3.1.7. Remaining threats and pressures. MMPL continues to face multiple threats and pressures that could undermine its ecological integrity. One of the primary challenges identified during the exchanges with the stakeholders is the conversion of land, often for economic development related projects, including road construction and transformation of forest areas agricultural land. Thankfully, the road construction planned to be built across Mt. Mantalingahan proper has been intercepted given the possible compounding issues it may cause.

Another concern is the buying and selling of lots by tenured migrants. During the interview, it was highlighted that indigenous claimants, often struggling with poverty, may sell portions of their lots to non-residents, especially individuals interested in acquiring farmland. Relatedly, land expansion of tenured migrants is also observed, often driven by increasing family sizes, resulting in occupying adjacent lands into their surrounding areas.

Destructive activities also contribute to environmental pressures. Traditional practices like *uma*⁷, although culturally significant and usually performed on small plots as part of rituals, can cumulatively degrade soil quality, reduce forest cover and disrupt local biodiversity when practiced extensively. Similarly, illegal logging activities, specially involving machineries like chainsaws, remain a persistent threat within the area.

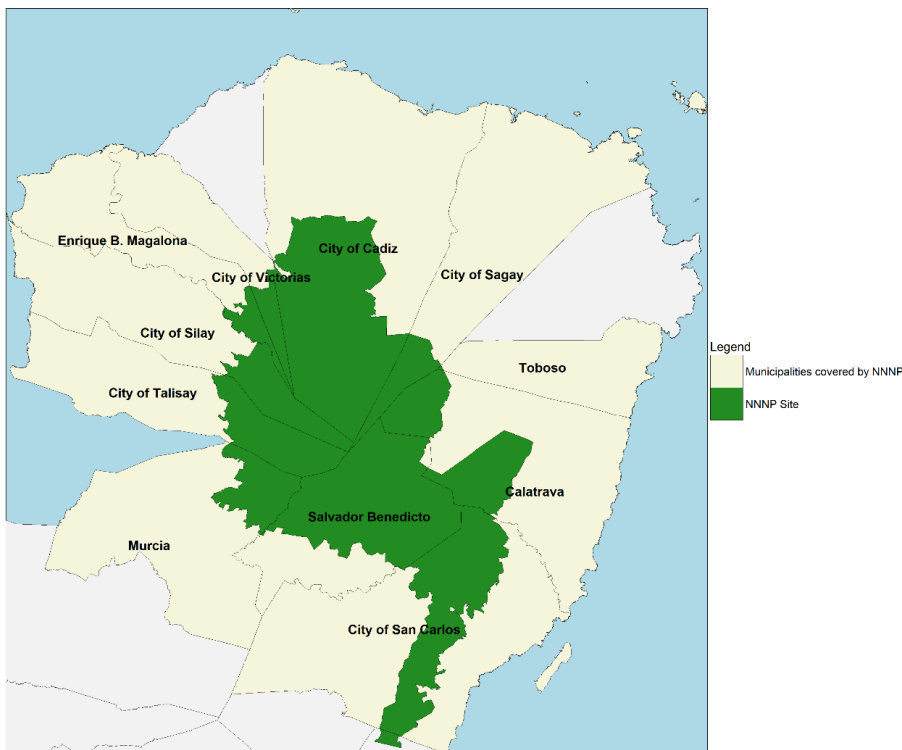
Mining operations add to another layer of environmental stress. These operations are quite complex to deal with as they are established even before the area's proclamation as a protected landscape. In the 2023 BMS submission of the MMPL-PAMO, the expanded mining area of a private mining corporation within the PA was identified as a significant threat (*DENR-BMB, 2025*). The implementers have identified that the corresponding management response includes the conduct of a formal investigation and the filing of appropriate cases against identified violators.

5.3.2. Northern Negros Natural Park

⁷ A practice similar to *kaingin* or slash-and-burn farming

The Northern Negros Natural Park, the largest forested area in the Visayas Region, is designated as a protected area under the ENIPAS Act of 2018. It spans approximately 70,826.16 hectares of evergreen forest covering six cities (Talisay, Silay, Victorias, Cadiz, Sagay, and San Carlos) and five municipalities (E.B. Magalona, Murcia, Toboso, Calatrava, and Don Salvador Benedicto) in the Province of Negros Occidental (Figure 24). The park is managed by the Protected Area Management Board (PAMB), with its day-to-day management, protection, and administration overseen by the Protected Area Management Office (PAMO).

Figure 24. Northern Negros Natural Park and municipalities/cities covered



Source: Map Data from DENR-BMB; Maps prepared by the authors

NNNP is a terrestrial and inland water ecosystem that encompasses one of the largest watersheds in Negros Occidental. Its forested landscape harbors remarkable biodiversity, including a total of 247 plant species. The park is also home to 140 species of birds and is recognized as an Important Bird Area (Conservation International Philippines, DENR-PAWB, and Haribon Foundation, 2019). It provides critical habitat for several globally threatened bird species, such as the Visayan Negros Bleeding-heart, and the Tarictic Hornbill. In addition, 17 mammal species have been recorded within the park, including two globally endangered species, the Philippine Spotted Deer and the Visayan Warty Pig. The NNNP is also the habitat of at least 16 species of reptiles and amphibians, further underscoring its importance as a center of biodiversity in the Visayan region.

The natural park also serves as a home to two Indigenous Peoples (IP) groups, the Negritos and the Tumandoks. As of the 2025, only three IP groups in Negros Occidental have been granted a Certificate of Ancestral Domain Title (CADT), one of which is located within the NNNP.

Despite its designation as a protected area in 2018 under the ENIPAS Act, the NNNP traces its origins to the Northern Negros Forest Reserve (NNFR) established in 1935. Seven decades later, it was reclassified and proclaimed as the Northern Negros Natural Park through Presidential Proclamation No. 895 in 2005. Over the years, the park has undergone significant transitions into governance and conservation strategies, shaped by the original legislation and its amendments under the ENIPAS Act.

5.3.2.1. Institutional and management changes. Before the establishment of the PAMB for NNNP, the area was initially managed by the Northern Negros Forestry Reserve Management Council (NNFRMC). The NNFRMC served as the policy - making and management body, with the Province of Negros Occidental as both chair and head secretariat.

The council was composed of representatives from local and provincial governments, as well as non-governmental organizations. It played a significant role in the legislation that declared NNNP a protected area under NIPAS⁸. The council also contributed to the delineation of management zones, formulation of the initial management plans, manual of operations, and business plans, as well as the creation of environmental management programs such as Balik Ilahas, and Bantay Bukid Brigade.

As of 2024, the PAMB consists of 69 members representing local government units (LGUs), people's organizations (POs), NGOs, national government agencies (NGAs), indigenous peoples (IPs), barangays, the Energy Development Corporation (EDC), and other agencies as enumerated in the Expanded NIPAS (ENIPAS) Act.

The NNNP PAMO supports the day-to-day operation and onsite management of the Protected Area, headed by a PASu. The current PASu of the NNNP exercises a concurrent capacity of also being the PENR Officer of Negros Occidental, therefore the sharing the resources and facilities with the PENRO Negros Occidental.

The PASu is supported by dedicated personnel for the NNNP. Currently, the NNNP PAMO is composed of the following:

1. Two Assistant PASu
2. One NNNP coordinator

⁸ Northern Negros Natural Park is one of the 95 established Pas under RA 11098, not requiring a separate legislation.

3. Twelve Contractual Forest Technician
4. Four Contractual Admin Assistant
5. One Contractual Environmental Management Specialist
6. Seventeen Contractual Park Rangers,
7. Two Support staff
8. One GIS staff for management zoning
9. Two contractual database management officers
10. Four contractual Forest Extension Officers.

The staffing for the NNNP PAMO is supported by other relevant DENR Offices within the Province, such as the CENRO of Bago City, and personnel from the PENRO. They perform critical functions including support to the PAMB operations, conduct of IEC, management of ecotourism activities, conduct of biodiversity monitoring and community-based protection system, among others.

To support the on-ground enforcement of ENIPAS policies and programs, the PAMO is complemented by local community support such as the Bantay Bukid Brigade (BBB), currently composed of 259 personnel.

5.3.2.2. Institutional and management issues. Despite the amendments to the governance structure intended to strengthen the conservation and protection of the Northern Negros Natural Park (NNNP), several institutional and management challenges continue to persist. These issues constrain the park's overall management effectiveness and its capacity to fulfill the objectives of the ENIPAS Act.

Insights from key stakeholder consultations highlight the need to enhance the technical composition of the PAMB. At present, the Board's membership remains heavily dominated by elected officials, resulting in limited technical representation from environmentalists, ecologists, and other relevant professionals. While political leadership can facilitate coordination and resource mobilization, the absence of sufficient technical expertise often hinders informed decision-making on complex ecological and management matters.

In the case of the NNNP, however, the dynamics within the Board are relatively balanced compared to other protected areas. This is partly because several mayors delegate their representation to their respective Municipal or City Environment and Natural Resources Officers (ENROs), who are expected to possess a more grounded understanding of environmental issues, local ecosystems, and the technicalities of PA management. Nevertheless, the stakeholders expressed the need to add additional technical representation, such as additional representatives from the academe, scientific experts and CSOs with relevant experience.

Another major challenge lies in the high turnover of PAMB members resulting from the local election cycle. Since the term of elected local officials is only three years (with a maximum of three consecutive terms), the composition of the Board frequently changes. Each turnover necessitates the reorientation of new members on the park's mandates, management plans, and ongoing programs. This process not only consumes time and resources, it also disrupts policy continuity. As a result, strategic initiatives often lose momentum, and discussions on previously agreed priorities must be revisited repeatedly.

The NNNP PAMO also faces significant resources and staffing constraints that affect its ability to effectively perform its functions. Despite having a total of 48 personnel, a large majority of them are employed under contractual arrangements, missing the security of tenure, benefits or stability enjoyed by Plantilla personnel. This employment structure leads to high turnover and limited institutional capacity.

These personnel are tasked with managing an extensive area of approximately 70,826.16 hectares, coordinating with PAMB members, enforcing ENIPAS provisions, conducting monitoring and enforcement activities. Given the size of the area, and the range of their responsibilities, the current manpower and resources are insufficient to ensure consistent and effective implementation of conservation measures.

Similar to the situation in MMPL, the PASu of NNNP concurrently serves as the PENRO for Negros Occidental. This dual appointment imposes a considerable administrative burden and divides attention between provincial and protected area responsibilities. As a result, the PASu's capacity to focus on site-specific management, stakeholder coordination, and on-ground enforcement is constrained.

5.3.2.3. Socioeconomic and community impacts. As one of the largest protected areas in the region, the NNNP encompasses several communities and human settlements within its boundaries. The presence of these populations has shaped the park's social economic, and environmental landscape, influencing both the pressures and prospects of PA management.

Based on the 2016 Survey and Registration of Protected Area Occupants (SRPAO) conducted by the NNNP PAMO, as shown in Table 18, the boundaries of the NNNP were home to approximately 37,020 individuals residing in 9,736 households across 41 barangays. Of these households, 3,711 households were headed by tenured migrants, while the rest were classified as non-tenured occupants. Collectively, these households occupied around 1,579.37 hectares of PA lands, for both residential and agricultural lots.

Table 18. Total household population within NNNP (2016)

Year conducted	No. of Barangays	Total No. of PA Occupants	Total No. of Households	Total no. of tenured migrants (HH)	Total land occupied (in ha)
2016	41	37,020	9,736	3,711	1,579.37

Source: NNNP's PAMP 2025-2034

Among these, approximately 70.37%⁹ of the individuals residing within the PA boundaries are dependent on the PA's natural resources for their livelihood and daily needs, while only about 16.61% earn their income solely from sources outside the PA. This high level of dependence underscores the socioeconomic link between local communities and the NNNP ecosystem.

Table 19. Total of households within NNNP by livelihood type

Activity	Income
Ecotourism activity	451,600
Agriculture	246,072,150
Livestock	2,752,890
Freshwater fishery	13,200
Manufacturing	33,910
Timber forest products	77,200
Industries	6,647,100
Services	28,752,356
Other services	15,291,000

Source: NNNP's PAMP 2025-2034

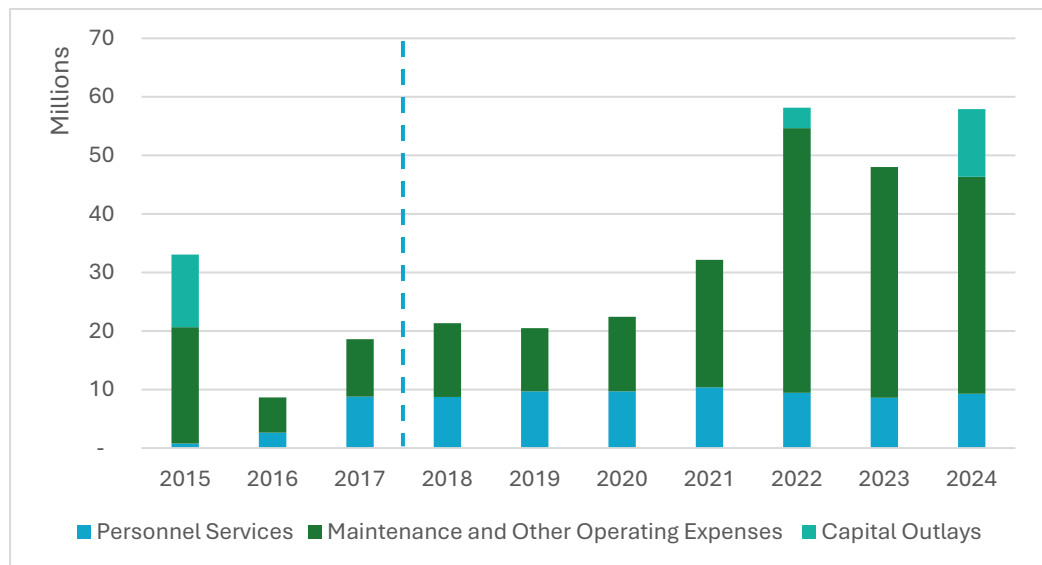
As shown in Table 19, the households situated within the NNNP engage in a variety of livelihood activities that reflect their dependence on the PA's natural resources and their participation in the local activities. Data from the same SRPAO shows that agriculture is the dominant livelihood source generating a total income of Php 246.07 million. Other livelihoods evident in the PAs like ecotourism activities (Php 451,600), livestock raising (Php 2.7 million) contribute modestly but remain important sources of income for the communities within the PA.

5.3.2.4. Financial sustainability. To effectively safeguard and conserve the jurisdiction of the NNNP, ensuring financial sustainability is crucial to support its management functions and operational activities. The park's funding primarily comes from government allocations through the DENR, lodged through the

⁹ Percentages cited are based on the figures stated on the NNNP Protected Area Management Plan (PAMP) 2025-2034.

Provincial Environmental and Natural Resources Office (PENRO). Figure 25 shows the budget allocation for the PENRO Negros Occidental, which oversees three protected areas: Northern Negros Natural Park, Mt. Kanlaon Natural Park, and Sagay Marine Reserve. In the final years of NIPAS implementation, the funding for protected area management in the province remained relatively modest, particularly for capital outlays that support large-scale or infrastructure investments. Following the enactment of ENIPAS Act, allocations from 2018 to 2020 maintained almost the same amount as during the NIPAS implementation. The allocations showed a slight increase in 2021, and peaked in 2022, where the PENRO Negros Occidental received its highest allocation at approximately Php 58 million, with the largest share directed maintenance and other operating expenses, reflecting increased spending in field operations, conservation activities, and other related PA management related expenses. The budget for Personnel Services, however, remained largely unchanged from 2017 onward, fluctuating only slightly between Php 8 million to Php 10 million. This stagnant allocation aligns with the concerns raised by interview participants regarding the lack of sufficient personnel needed for efficient PA management.

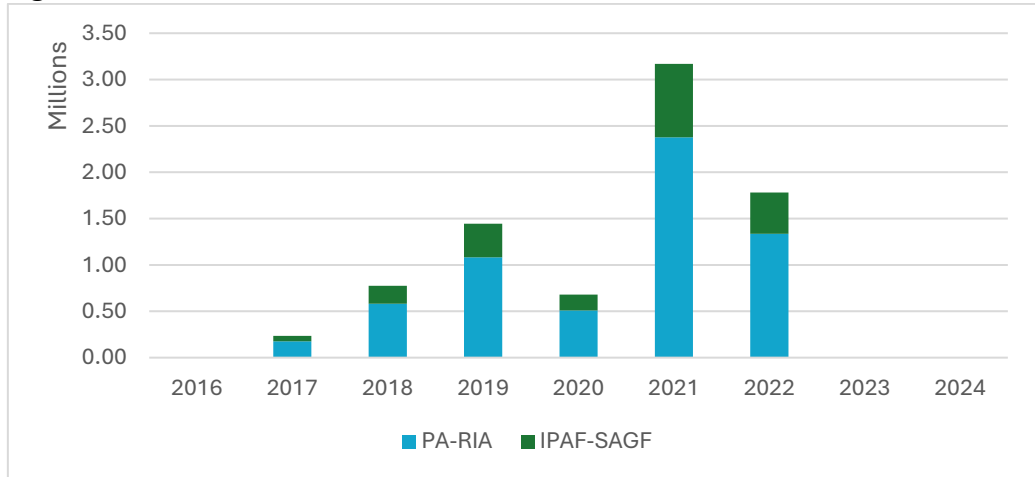
Figure 25. PENRO Negros Occidental Budget Allocations by Expense Class for the Protected Areas Development and Management Sub-Program



Aside from government allocations, the NNNP-PAMO also relies on IPAF to augment their financial resources. Figure 26 illustrates the annual IPAF collections of NNNP from 2016 to 2024, disaggregated into PA-RIA and IPAF-SAGF. Based on the DENR IPAF Dashboard, the NNNP is the highest-earning

protected area in the region, having generated a total of Php 8,083,645.37 over the reporting period. Revenues peaked in 2021, when the park collected approximately Php 3.2 million, which is the highest annual income collected during the available years period.

Figure 26. NNNP IPAF Collection 2016-2024



Note: No data available for years 2016, 2023, and 2024

Source: DENR-BMB IPAF Data

According to the stakeholder consultations, the IPAF was mainly generated from back rentals of structures located within the protected area, most of which are currently in the process of applying for SAPA. Since the infrastructures, such as resorts, and camping grounds, were already constructed prior to SAPA approval, the PAMO is requiring the owners to pay the back rentals while the application is being processed. Despite the high IPAF collections, the stakeholders reported challenges in accessing the funds due to the absence of clear supporting guidelines, particularly regarding implementation procedures and utilization of the fund.

5.3.2.5. Monitoring, enforcement and compliance. While nationwide conservation efforts were prioritized through the passage of the NIPAS Act in 1992, the Province of Negros Occidental launched its own environmental campaign a year later. In 1993, the province declared an “Environment War”¹⁰ to confront its growing ecological challenges. Through Executive Order No. 95-11, Task Force Ilahas was established to strengthen the enforcement of environmental laws (*Galing Pook, N.D.*). The Task Force was composed of representatives from the Office of the Governor, the DENR, the PNP, as well as volunteers from private sectors and upland communities.

¹⁰ Also called *Balik Ilahas* (Bring Back the Wild)

Following the devolution of certain DENR functions to local government units, the Provincial Environment Management Office (PEMO) assumed leadership in overseeing the province's environment management initiatives. Under its guidance, the Task Force Ilahas successfully reduced illegal activities in the forest areas, such as logging, poaching, and *kaingin*. The task force also received the Presidential Galing Pook Award in 1997, earning the distinction of Best Environment Project among LGUs nationwide.

Currently, Task Force Ilahas has been dissolved, and enforcement duties within the NNNP are now carried out by both the Bantay Bukid Brigade (BBB) and NNNP-PAMO forest rangers. The BBB, organized by the local governments, is composed of volunteers who are deputized and accredited by the DENR, making them an important partner in maintaining security and supporting park protection efforts. deputized and accredited by the DENR, which is crucial in maintaining the security and protection of the park.

Similar to other PAMOs, the resources allocated to the NNNP-PAMO remain inadequate to effectively conduct monitoring and enforcement activities. At present, the number of park rangers assigned to patrol the area is severely limited. Based on the focus group discussions with the stakeholders, there are only about three regular forest rangers responsible for safeguarding approximately 70,000 hectares of forestland, while the rest are contractual or job order personnel who lack employment protection and insurance coverage. Moreover, the rangers are not provided with essential equipment such as motor vehicles, which are crucial for their daily operations. This forces many of them to use their personal vehicles to fulfil their duties.

Further limiting enforcement capacity is the uneven presence of local enforcement units. As stated in the NNNP PAMP (NNNP PAMO, 2025), not all of the 11 LGUs within the NNNP have established their own enforcement teams of BBB, resulting in gaps in on-the-ground protection and surveillance across several areas of the park.

A major concern raised during the interviews is the lack of financial resources to access legal and judiciary services. In some cases, rangers who filed complaints against illegal activities within the protected area had to spend their own money to initiate blotter or court cases. staffore, their per diem allowances provided to staff are often insufficient to cover expenses for guides and additional support is needed during monitoring and enforcement operations.

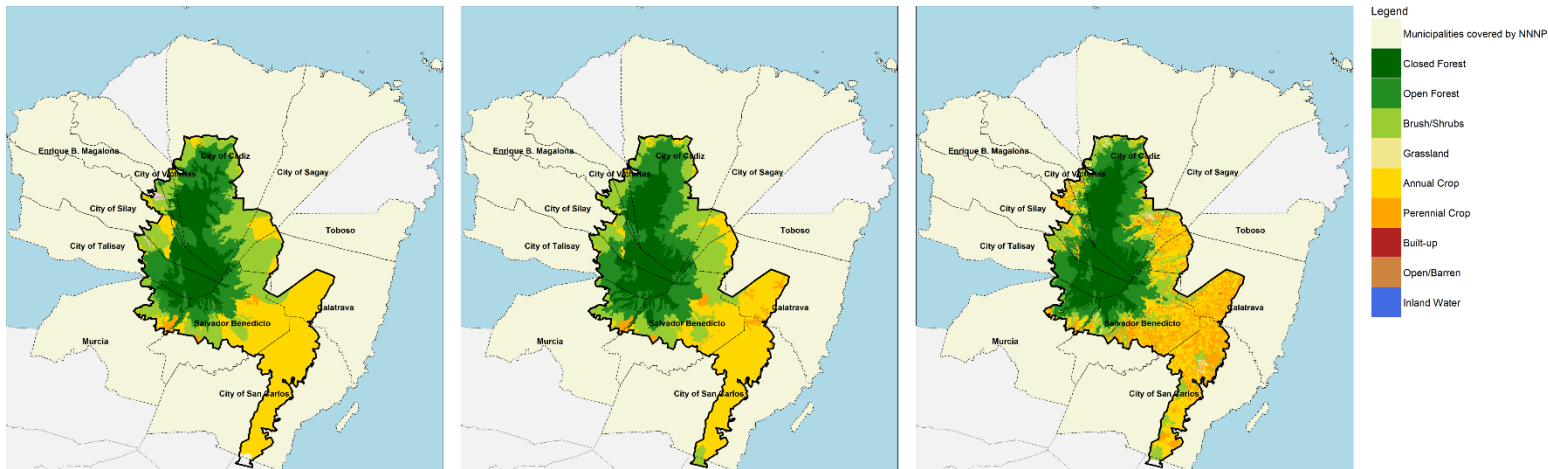
Another significant challenge is the lengthy and cumbersome legal process that must be completed before the enforcement actions can be taken. As a result, authorities are unable to immediately dismantle illegal structures or apprehend

violators, leading to further environmental degradation while cases remain pending.

Finally, the safety and security of enforcement personnel remain a critical issue. Many rangers confront violators unarmed and without proper protection, placing their lives at serious risks in the performance of their duties.

5.3.2.6. Ecological and conservation impacts. Land cover trends in Negros Occidental provide useful insights into what occurred in and around the NNNP during NIPAS and ENIPAS years.

Figure 27. Land Cover Change in NNNP, 2010-2020



Source: Land Cover Data from NAMRIA via Geoportal; NNNP data from DENR-BMB; Maps prepared by the authors

Between 2010 and 2015 (Figure 27 and Table 20), forest cover in the province increased from 44,069 hectares to 47,176.5 hectares and by 2020, it reached 48,738.8 hectares. Closed forest alone grew from 16 thousand hectares to 20 thousand hectares in a decade, suggesting improve protection and natural regeneration in upland areas, including NNNP. At the same time, shrubs increased as well from 110,454 hectares in 2010 to 173,163 hectares in 2015, reflecting earlier disturbances but later declined to 136,951 hectares in 2020, indicating succession back toward forest cover by the ENIPAS years.

Agricultural land also shifted in ways that affected the park’s buffer zones. Annual crops declined from 434,410 ha (2010) to 411,914 ha (2020), while perennial crops expanded significantly from 48,839 ha to 92,894.90 ha over the same period.

Built-up areas increased from 14,782 ha (2010) to 25,403.40 (2020), reflecting general urban growth.

Table 20. Land cover change, 2010, 2015, and 2020, Province of Negros Occidental

Land Cover	2010	2015	2020
Closed Forest	16,506	18,681	20,731.10
Open Forest	27,563	28,495.5	28,007.70
Mangrove Forest	5,021	5,497	5,524.70
Shrubs	110,454	173,163	136,951.50
Annual crop	434,410	433,961.60	411,914.00
Perennial crop	48,839	53,108	92,894.90
Fishpond	16,062	14,346.50	14,912.80
Built-up	14,782	15,760	25,403.40
Barren land	1,820	1,236	2,126.70
Grassland	29,937	26,265	31,469.10
Inland water	4,023	4,340.90	5,549.60

Source: NAMRIA

5.3.2.7. Remaining threats and pressures. Given the vast coverage of the NNNP and the limited resources available to its management office, various threats and pressures continue to persist. Insights gathered from key stakeholder consultations, along with findings from the semestral Biodiversity Monitoring System (BMS), have identified several pressing concerns that require attention.

One of the most recent issues raised by stakeholders is the proliferation of claimants of illegal or non-existent CADTs within the protected area. This is particularly notable, as only one group of Indigenous Peoples (IPs) in NNNP has been officially awarded a CADT. The current slow and complex process of land tenure recognition has contributed to uncertainty and tension, often resulting in resource use conflicts and overlapping land management claims.

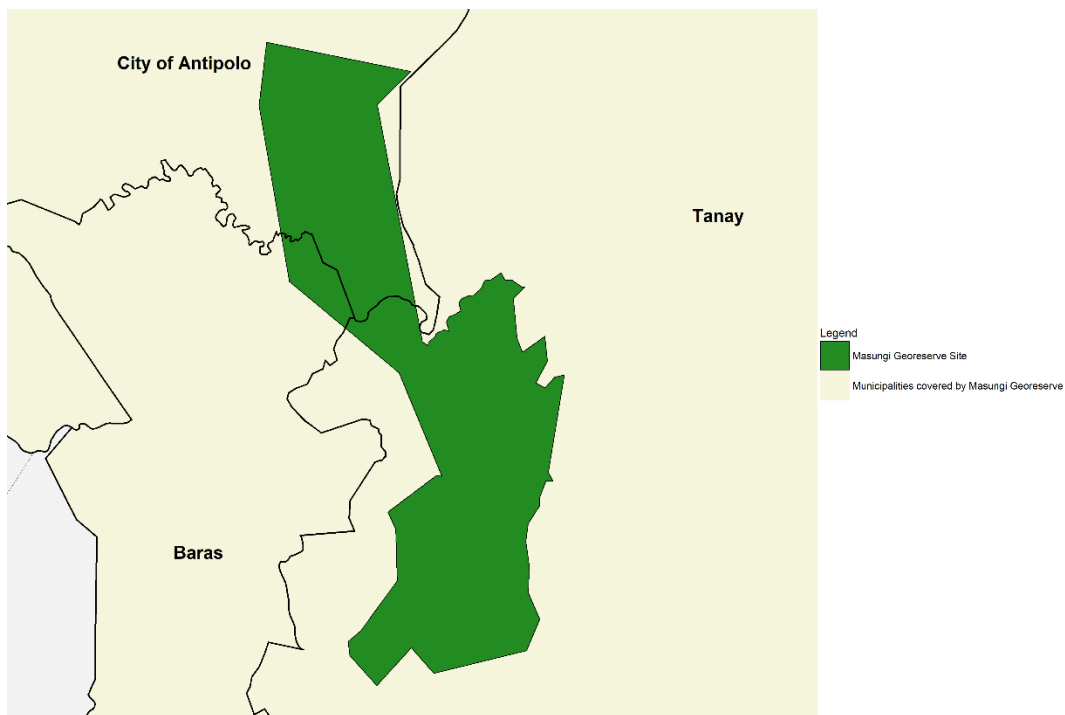
Stakeholders also reported the continued encroachment and conversion of forestlands into agricultural areas, which threatens the integrity of critical habitats within the park. In addition, the construction of unauthorized structures inside the PA has exacerbated ecosystem degradation. These structures cannot be immediately dismantled, as enforcement officers must first undergo a lengthy process of issuing Cease and Desist Orders, before any action can be taken.

According to the 2024 BMS report of NNNP, instances of minor illegal logging were also recorded in certain areas. These activities reportedly serve as an alternative source of income for residents of one barangay. In response, the PAMO has initiated IEC campaigns and introduced alternative livelihood programs to help mitigate these practices and promote sustainable forest use.

5.3.3. Masungi Georeserve

The Masungi Georeserve is a globally recognized conservation area located in the Province of Rizal. The georeserve spans approximately 2,700 hectares, encompassing portions of the municipalities of Tanay and Baras (Figure 28). It is currently managed by the Masungi Georeserve Foundation, Inc. (MGFI), which is the foundation arm of the Blue Star Construction and Development Corporation (BSCDC). The Masungi Georeserve lies within the boundaries of three protected areas: Upper Marikina River Basin Protected Landscape (UMRBPL), Kaliwa River Forest Reserve, and PP 1636 (Figure 29).

Figure 28. Masungi Georeserve and municipalities/cities covered

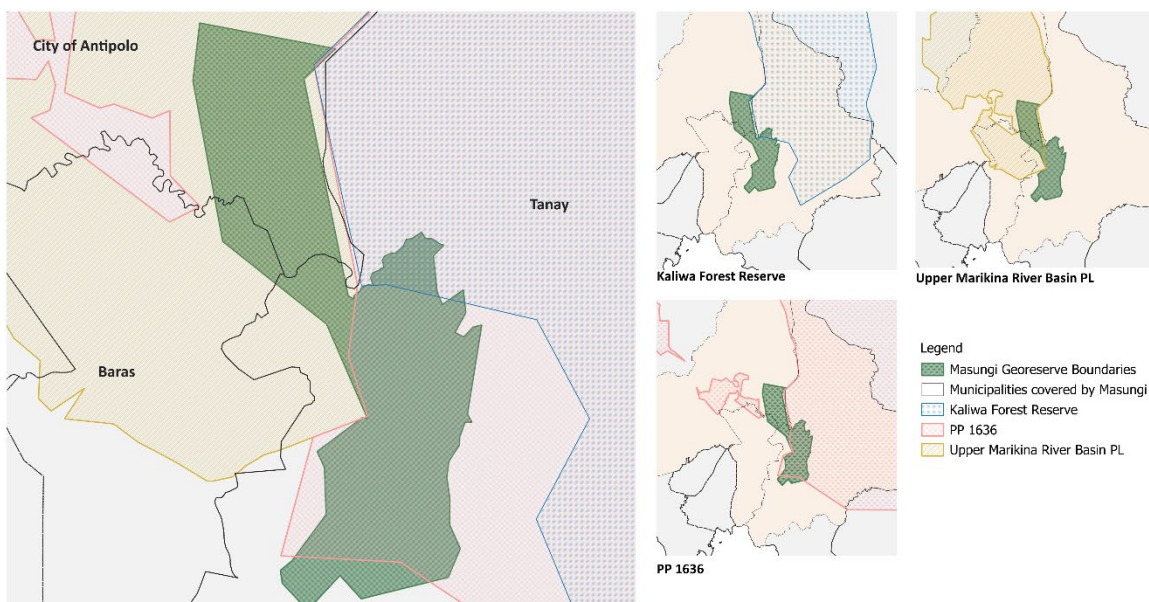


Source: Map Data from DENR-BMB; Maps prepared by the authors

The Georeserve is situated at the western edge of the southern Sierra Madre and is characterized predominantly by karst landscape composed of extensive limestone formations, caves and cliffs. It forms part of the approximately 35,000 km² of total karst terrain across the Philippines (Day & Ulrich, 2000 as cited in DENR-BMB, 2019). Karst areas, such as Masungi, are recognized as vital “arks of biodiversity”, serve as habitats for a wide range of endemic and diverse species adapted to their unique terrain and microclimatic conditions (Clements R. , Sodhi, Schilthuizen,

& Ng, 2006). Within the Masungi Georeserve alone, around 400 species of flora and fauna have been documented, many of which are highly endemic. Among the notable plant species found in the area are *Ficus nota* (Blanco) Merr and *Strongylodon Juangonzalezzi* (JC’s vine/purple jade vine)¹¹ (Dumaliang, Dumaliang, & Peña, 2018). There are also 72 bird species observed within the area including the Serpent Eagle, and the Luzon tarictic hornbill (Masungi Georeserve Foundation, Inc., N.D.). Small mammals, such as the North Luzon Giant Cloud Rat (Paroot), are also present. Notably, a new subspecies of microsnail (Lipae, Estabillo, Fontanilla, & de Chavez, 2020), named the Masungi microsnail, was discovered in 2020 and is known to exist only within the Georeserve’s boundaries.

Figure 29. Maps of Masungi Georeserve and overlapped Protected Areas



Source: Map Data from DENR-BMB; Maps prepared by the authors

Given the ecological importance and strategic location of the Masungi Georeserve, it is important to understand how the area is governed. Beyond its biophysical attributes, the Georeserve operates under a unique and often contested management arrangement that sets it apart from other PAs. The following section discusses the institutional and management structure that underpins Masungi’s operations, including its legal bases, administrative relationships and evolving governance tensions.

5.3.3.1. Institutional and management structure. The management of the Masungi Georeserve differs significantly from the earlier discussed protected areas. Although it is situated between three PAs, each governed by its respective PAMBs, the Georeserve operates independently and outside the jurisdiction of

¹¹ This endemic species was officially identified in 2015 only in Quezon Province. The Georeserve is officially only the 3rd location where the vine has been observed, as in other parts of the country, the jade vine is green in color.

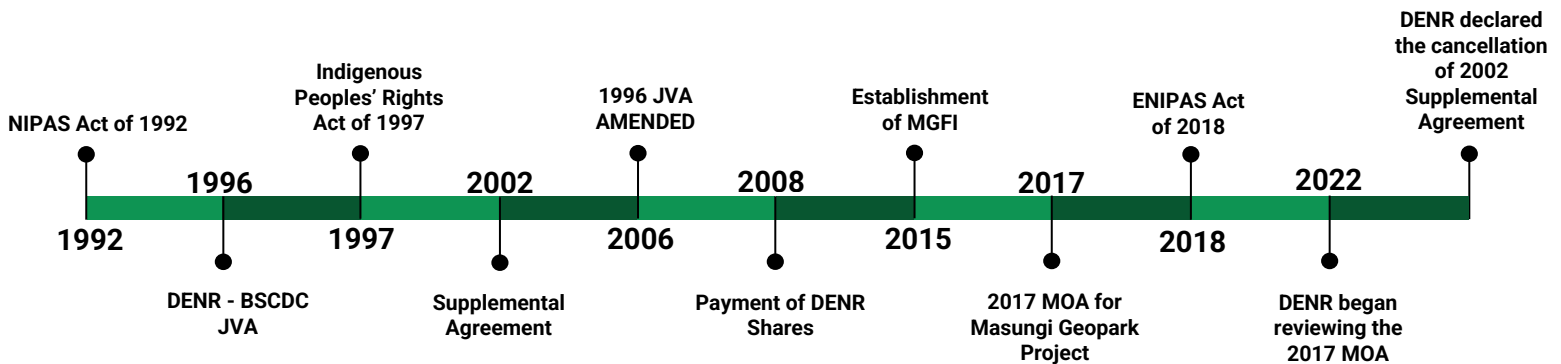
these governing bodies. This arrangement stems from the agreement with the DENR, which grants the MGFI stewardship responsibilities to the area, rather than subjecting it to the standard PAMB governance structure. The origins of the current management set up can be traced by key decisions and agreements made as early as mid-1990s.

According to the shared timeline (Figure 30) in 1996, the DENR, under Secretary Victor Ramos, entered into a Joint Venture Agreement with BSCDC for a housing development project. After winning the public bidding, BSCDC was granted 130 hectares of land to serve as the project site. This area was later expanded to 430 hectares under a 2002 supplemental agreement, which added 300 hectares, including the limestone formations and forests of Masungi, to accommodate additional housing units.

In 2015, BSCDC established the Masungi Georeserve Foundation Inc. to oversee conservation, research and geotourism initiatives aimed at protecting the area’s limestone landscapes and its rich biodiversity. By 2017, under the leadership of DENR Secretary Gina Lopez, MGFI and DENR formally launched the Masungi Geopark Project, extending the protection and geotourism efforts to an additional 2,270 hectares land (*Masungi Georeserve Foundation, Inc., N.D.*).

The MGFI currently serve as the primary steward of the area. Since its establishment in 2015, MGFI has implemented a hands-on management approach that prioritizes ecological preservation while also sustainable public access. They prioritize the protection and conservation of the unique biodiversity in the area, by controlling human impact, monitoring illegal activities within the areas and implementing restoration programs in deforested areas.

Figure 30. Key Legal Developments in Masungi



Source: MGFI's Whitepaper (*Masungi Georeserve Foundation, Inc., N.D.*)

MGFI also operates independently, outside the influence of the governance structures as stated in the NIPAS/ENIPAS Law. This autonomy enables MGFI to implement tailored conservation and management strategies, make swift operational decisions, and adaptatively respond to challenges without the procedural delays typical of government transactions.

Although Masungi Georeserve is situated in three formally designated protected areas, it is not under the governance of any of its PAMBs due to its distinct legal and management framework under the JVA and the 2017 MOA. MGFI has no formal role in the PAMBs of the surrounding PAs, as shared during the key stakeholder discussions. While there are geographic overlaps, MGFI's authority is limited strictly within the Georeserve.

5.3.3.2. Legislative and policy challenges. Despite Masungi Georeserve's critically acclaimed reputation for their environmental and conservation efforts, the management of the Georeserve operates within a complex legal and policy landscape. The validity of its foundational legal instruments has been called into question, and the retractment of previous agreements by the DENR has raised concerns regarding the long-term legitimacy and enforceability of its stewardship arrangements.

In 2022, the DENR began reviewing the 2017 MOA to determine its alignment to the provisions of the RA 11038 (*Department of Environment and Natural Resources, 2022*). Earlier that year, the PAMB for the UMRBPL passed Resolution No. 02-2022 (*Yalao, 2022*), which recommended revoking the 2017 MOA on the grounds that it permitted MGFI to retain control of the land indefinitely, violating the 1987 Constitution¹².

To support their recommendation, the DENR investigative team also identified several violations committed by the MGFI (*Department of Environment and Natural Resources, 2024*). These include the absence of clearances from the PAMB, the lack of Free, Informed and Prior Consent (FPIC) from the ancestral domain owners, the absence of an Environmental Clearance Certificate (ECC) and missing accreditation from the Department of Tourism. These findings are corroborated by the Department of Justice's 2023 Position Paper.

In 2025, the DENR formally declared the cancellation of the 2002 Supplemental Agreement to a letter addressed to Ben Dumaliang, citing the following reasons: (1) the absence of a Presidential Proclamation designating the contract's subject for housing purposes; (2) lack of documentation demonstrating that the proposed

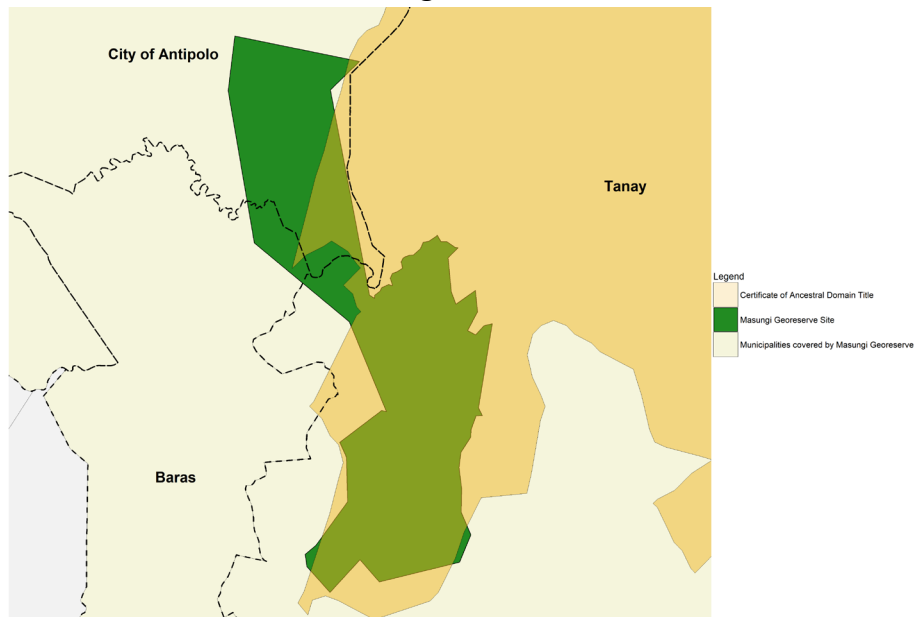
¹² Article XII, Section 2 of the 1982 Constitution provides that "agreements... shall be for a period not exceeding 25 years and renewable for another 25 years."

construction followed a regular procurement or bidding procedures; and (3) the failure to complete the 5,000-unit Garden Cottages housing project within five years of the 2002 agreement (*Department of Environment and Natural Resources, 2025*).

5.3.3.3. Socioeconomic and community impacts. The Masungi Georeserve spans across one city, two municipalities and five barangays in the Province of Rizal. These include Barangay Calawis in Antipolo City, the barangays of Cuyambay, and Tandang Kutyo in the municipality of Tanay, and Barangay Pinugay of the municipality of Baras (*Masungi Georeserve, ND*). While these communities are geographically adjacent to the georeserve, it is important to highlight that no one resides within the boundaries of the Masungi Georeserve itself (*Dumaliang B., 2025*). Its boundaries are maintained as strictly conserved area, with access controlled and human activities limited to conservation work, guided tours, and environmental monitoring.

The surrounding areas of Masungi are home to indigenous peoples (IPs) who have long-standing cultural and ancestral ties to the landscape, including the Dumagat tribe (*Masungi Georeserve Foundation, Inc., N.D.*). These communities also play a role in the broader socio-environmental context of the province.

Figure 31. Location of CADTs within Masungi Georeserve



Source: Map Data from DENR-BMB; Maps prepared by the authors

In line with its conservation and community engagement objectives, the MGFI currently employs on-site staff from the communities surrounding Georeserve, specifically in Barangays Pinugay, Cuyambay and Tandang Kutyo. Many receive

allowances as incentive to support their active participation in the conservation of the area. Locals, who were previously dependent on activities, such as illegal logging, have proven to be easier to train due to their knowledge of the landscape.

While Masungi Georeserve provides employment and supports local conservation efforts, the community consultations have surfaced several concerns from Indigenous Peoples (IPs) and former occupants residing near the Masungi Georeserve. Participants in these consultations reported issues such as restricted access to areas they consider part of their ancestral domain, and shared accounts of property destruction and incidents involving detention of individuals attempting to enter or use the areas. Some of the IP representatives also expressed that the project lacked clear documentation of Free and Prior Informed Consent (FPIC) and have not fully followed the processes outlined in the Indigenous People's Rights Act (IPRA). These concerns highlight ongoing tensions between conservation efforts and community rights within the area.

5.3.3.4. Financial sustainability. Masungi's financial sustainability is supported by a combination of funding, revenue-generating activities and donations. The BSCDC provided the initial funding for the development of the core infrastructure, ecological restoration projects and visitor facilities, establishing a solid foundation for the long-term operations of the area. To support continued conservation efforts, ecotourism serves as a primary source of income, attracting guests interested in nature, conservation, and outdoor activities. Visitors pay conservation fees ranging from Php 1,500 to Php 2,000 per guest (*Masungi Georeserve Foundation Inc., N.D.*), depending on the chosen trail and the day of visit (weekdays or weekends), with these revenues directly supporting both the maintenance of facilities and ecological protection initiatives. Donations from supporters further supplement these efforts, enabling additional conservation projects.

Based on the interview exchanges, the ecotourism activities at Masungi have been a key to connecting opportunities to rural communities, ensuring that the economic benefits extend beyond the reserve itself. Local guides, service providers, and nearby businesses gain from visitor spending, ensuring that the economic benefits extend beyond the reserve itself.

5.3.3.5. Monitoring, enforcement and compliance. The Masungi Georeserve's management relies on several complementary mechanisms to monitor and enforce park regulations, ensuring the protection of its karst landscape and the diverse biodiversity its supports.

One of their strategies, as discussed during the exchange with the management, is the conversion of former violators into rangers, providing employment

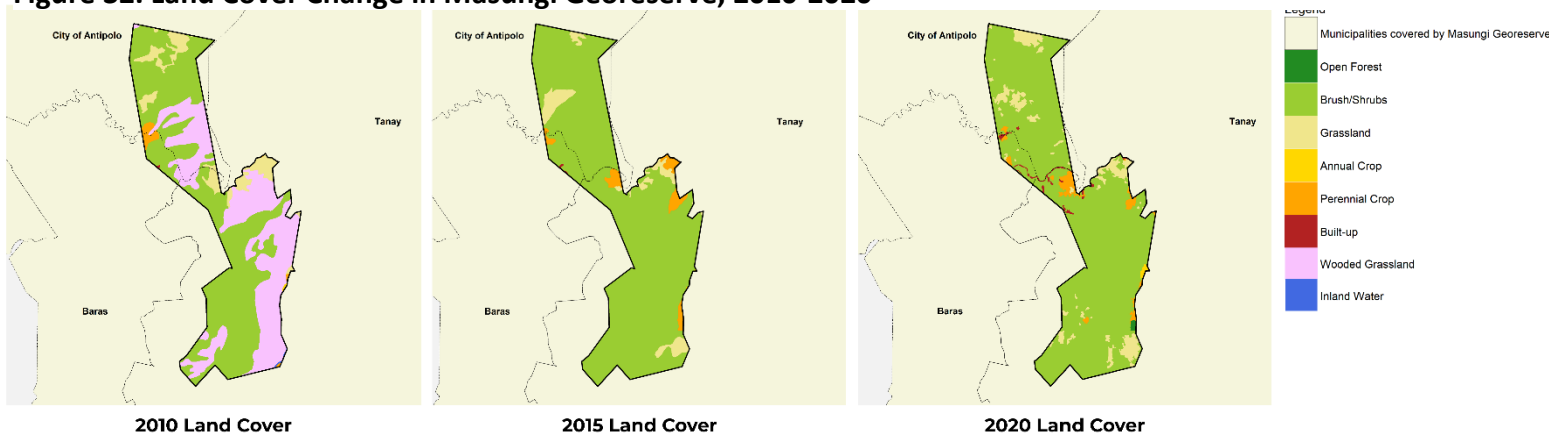
opportunities to them, while also leveraging their local knowledge for conservation efforts. Currently, the Georeserve has both park rangers and forest ranges managing the area, performing a variety of critical functions including maintaining trails, facilities and overall park environment, serving as park guides for visitors and providing ecological and conservation education, monitoring and reporting illegal activities such as poaching, timber extraction or unauthorized entry, and patrolling the area to ensure compliance with regulations and responding to emergencies.

To strengthen enforcement capabilities, some of their rangers were deputized by the DENR, granting them limited authority to enforce environmental laws. They also receive protection and institutional support, from the MGFI, to safeguard their welfare while performing these duties. Physical measures, such as fencing the perimeter, help control access to the property and prevent encroachment.

The Masungi Georeserve also coordinates with external institutions such as the media, and the Philippine National Police, enhancing the visibility of enforcement actions and facilitates timely incident response. They also regularly submit reports and documentation to the DENR and concerned LGUs regarding these violations; however, response times from these agencies, according to them, remain slow.

5.3.3.6. Ecological and conservation impacts. Masungi Georeserve has delivered significant ecological and conservation gains within the UMRBL and the broader Sierra Madre mountain range. Its long-term restoration work continues to reverse decades of degradation, leading to substantial improvements in biodiversity, habitat quality, and watershed health (Figure 32).

Figure 32. Land Cover Change in Masungi Georeserve, 2010-2020



Source: Land Cover Data from NAMRIA via Geoportal; Map data from DENR-BMB; Maps prepared by the authors

Prior to the JVA in 1996, much of the land was barren and heavily impacted by illegal activities such as logging and land encroachment. The initial phase of conservation focused on land protection, strict land-use regulation, and enforcement of existing environmental laws. Perimeter fences and controlled access points were established to curb the extraction of timber and other natural resources, while regular range patrols helped deter further incursions. Complementing these protective measures, reforestation activities were undertaken using native, soil-appropriate species, as well as strategic planting of fruit-bearing trees to attract and sustain wildlife (*Masungi Georeserve Foundation, Inc., N.D.*). These efforts laid the groundwork for natural regeneration processes that continue to accelerate ecosystem recovery today.

Masungi's conservation efforts have also gained important global recognition. In 2022, its frontline rangers won the IUCN – WCPA International Ranger Awards, acknowledging their courage and commitment to protected area protection (*Masungi Georeserve Foundation Inc., 2022*). The MGP was also conferred the Inspire Award at the same year, recognizing the efforts of the foundation in transforming watersheds to fight deforestation through geotourism (*Department of Foreign Affairs, 2022*).

5.3.3.7. Remaining threats and pressures. Despite ongoing conservation and enforcement efforts, several threats and pressures continue to pose significant risks to the Masungi Georeserve.

Many karst landscapes are being quarried for limestone, a primary raw material often used in cement and other manufacturing processes (*Clements G. R., Sodhi, Ng, & Schilthuizen, 2006*). Mining corporations have long targeted the limestone-rich karst formations around Masungi. For instance, in 2022, the DENR ordered the suspensions of three Mineral Production Sharing Agreements (MPSAs) within the Upper Marikina River Basin Protected Landscape (UMRBPL).

Beyond mining, the georeserve and its surrounding areas are also burdened by complex set of socio-environmental challenges. Infrastructure and commercial developments, particularly the unregulated construction of resorts and recreational facilities within the UMRBPL, posing growing risks to the landscape.

Illegal logging also remains as a persistent threat, as shared during the stakeholder consultations. Wildlife is similarly affected by illegal poaching, with reports of hunting of birds, wild pigs, and other native fauna. These disrupt biodiversity and threaten species that rely on protected landscape for survival.

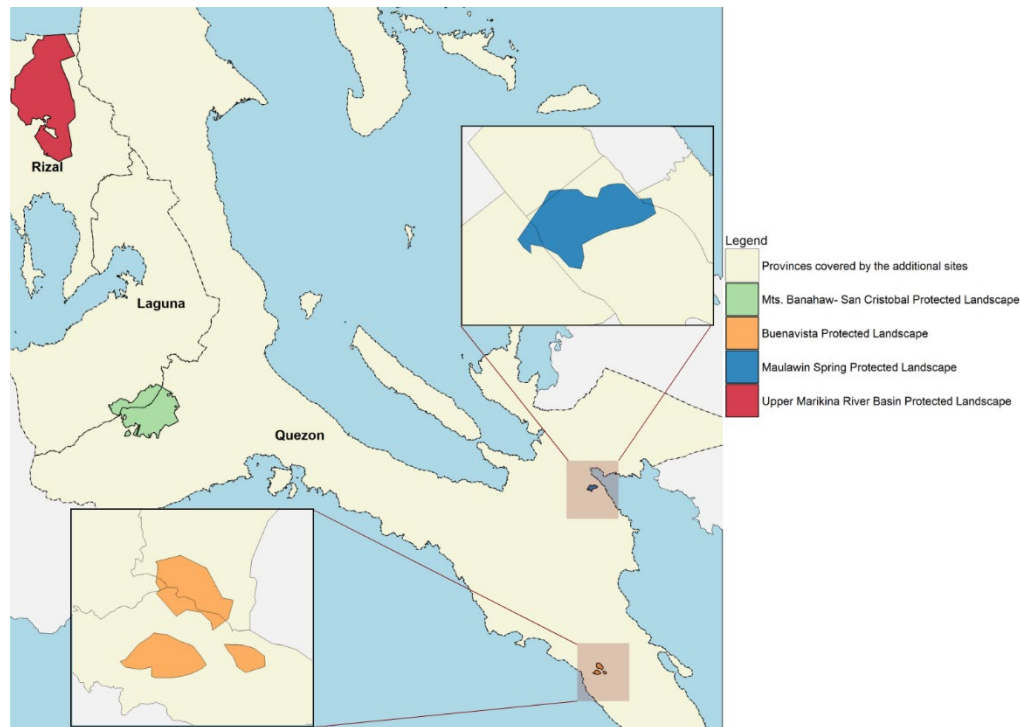
Most alarming, as shared by the key stakeholders is the increasing antagonism and hostility directed towards environmental defenders, particularly those involved in

Masungi. The founders, rangers and staff have faced threats, harassment, and violent incidents from groups with vested interests in exploiting the protected landscape. This current climate of intimidation severely hampers conservation work and raises serious concerns about the safety of frontline environmental workers.

5.3.4. *Select Protected Areas in Luzon*

This section expands the analysis beyond the primary case studies by examining selected protected areas in Luzon (Figure 33). These areas, although not explored in the same depth, provide valuable supplementary insights into the broader implementation of the NIPAS and ENIPAS frameworks. These PAs illustrate diverse experiences with policy implementation, financing, community engagement, and inter-institutional coordination. Their inclusion helps validate where the trends observed in the primary case studies are unique to those sites, or reflective of broader, systemic issues within the protected area governance.

Figure 33. Overview of the additional case study sites and provinces covered

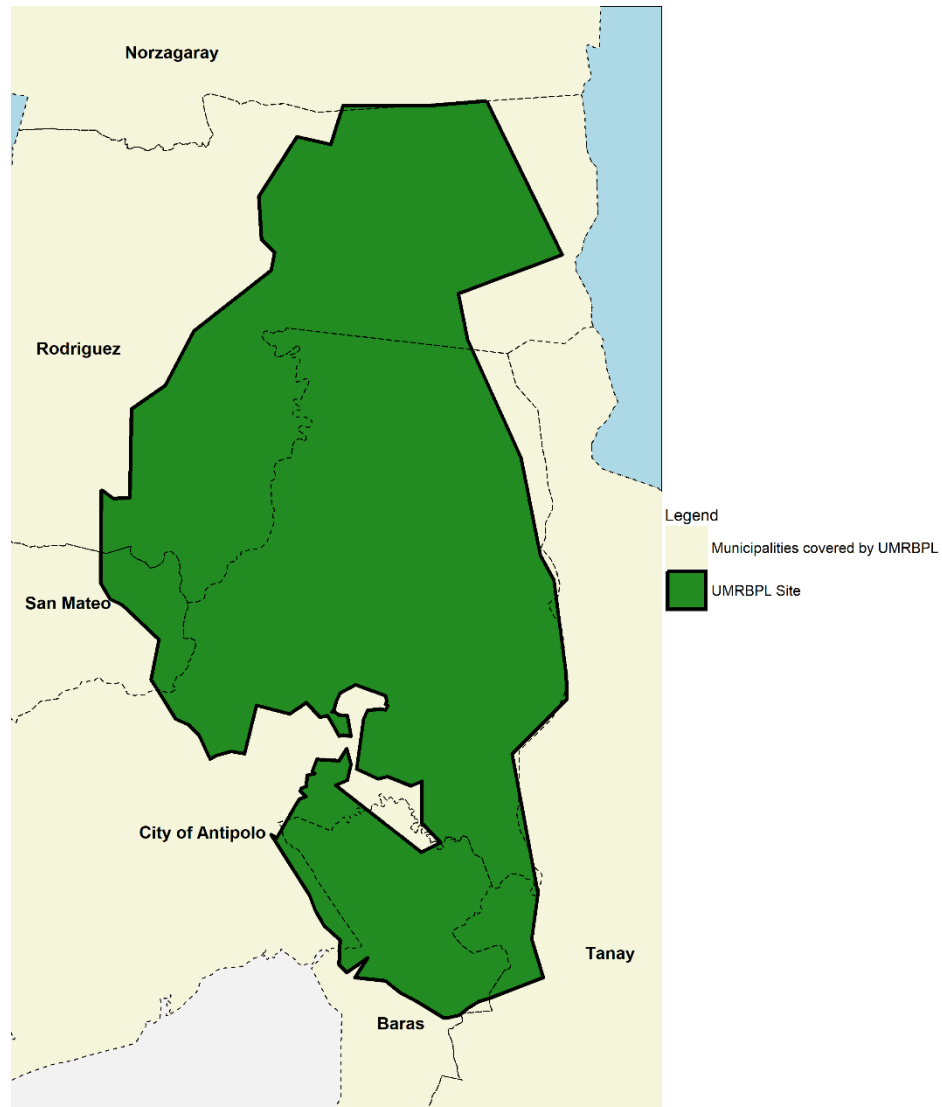


Source: Map data from DENR-BMB; Maps prepared by the authors

5.3.4.1. Upper Marikina River Basin Protected Landscape (UMRBPL). The Upper Marikina River Basin Protected Landscape is the second largest amongst the four protected areas that lie in Rizal provinces. The 26,125 hectares land covers the upper drainage of Marikina River, spanning parts of Antipolo City and the municipalities of Baras, Rodriguez, San Mateo and Tanay (Figure 34). It was

declared a protected area under Presidential Proclamation no. 296 and legislated with the enactment of the ENIPAS Act of 2018.

Figure 34. Upper Marikina River Basin Protected Landscape and municipalities covered



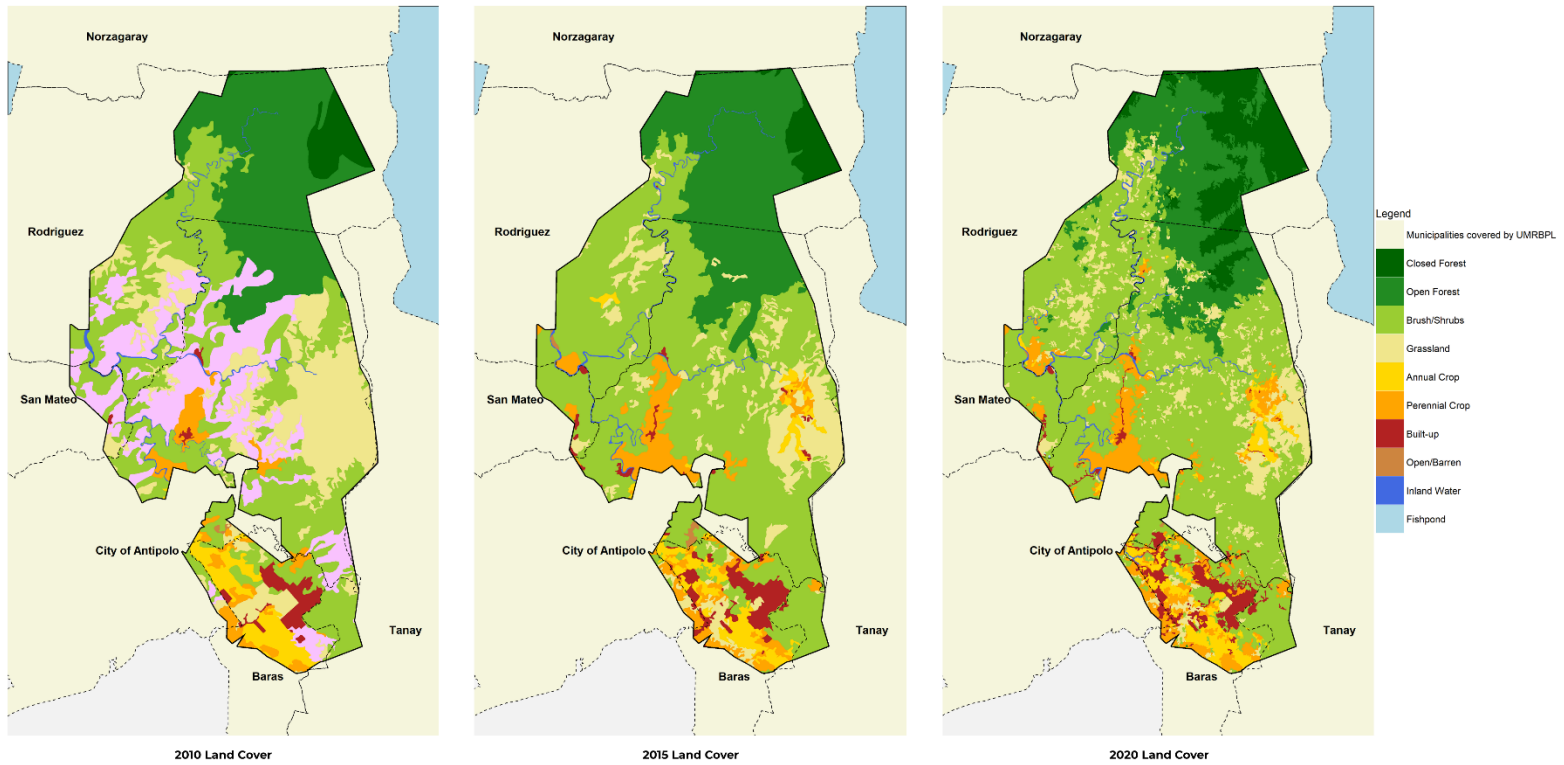
Source: Map data from DENR-BMB; Maps prepared by the authors

The UMRBPL is characterized by upland forest, steep ridges and river systems that form the headwaters of the Marikina river. Montalban Sub-watershed and Wawa dam are also located within its vicinity. These infrastructures, along with the land cover in the hills and mountains of the protected landscape, play a critical

role in water supply, and flood moderation for Metro Manila communities (UMRBPL-PAMO, 2020).

The UMRBPL is also rich in biodiversity, hosting a diverse mix of native and endemic species. Wildlife monitored by LAWIN in 2016-2017 includes the Luzon Hornbill, Northern Rufous Hornbill, Philippine Haw-eagle, Philippine Warty Pig, and Pink-bellied Imperial-pigeon (UMRBPL-PAMO, 2020).

Figure 35. Land Cover Change in UMRBPL, 2010-2020



Note: Areas shaded pink are wooded grasslands.

Source: Land Cover Data from NAMRIA via Geoportal; UMRBPL data from DENR-BMB; Maps prepared by the authors

Land cover change in the UMRBPL from 2010 to 2020 (Figure 35) reflects both strong forest persistence and increasing human pressure, particularly in southern and southwestern portions of the protected landscape. In 2010, UMRPL was largely dominated by closed and open forest, especially in the northern areas, indicating continued importance of landscape as critical watershed and forest protection zone. However, substantial areas of grassland, brush/shrubs. And agricultural land were already present, particularly toward the boundaries adjoining urban and agricultural municipalities.

By 2015, still within the ENIPAS period, the extent of open forest and shrubland increased, suggesting forest thinning, degradation, or conversions from closed

forest, likely driven by agricultural expansion, settlement pressures and infrastructure development.

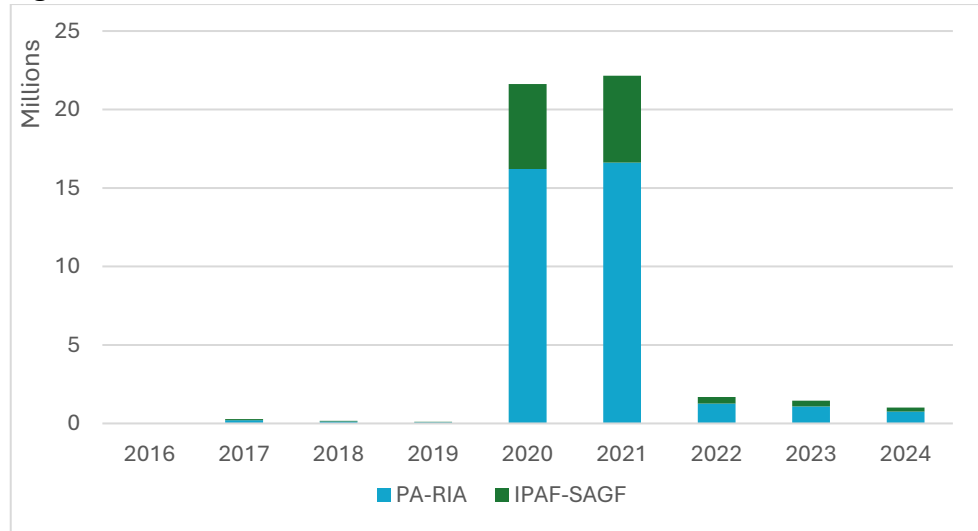
The 2020 land cover map, representing early years of ENIPAS implementation, shows the continued dominance of forest cover in the northern portion of UMRBPL. However, built-up areas and agricultural land further expanded and intensified in the southern and southwestern zones, particularly near Antipolo, Baras and Tanay.

The UMRBPL is governed by the PAMB, which holds the authority to review and approve policies, plans, programs, and agreements related to the management of the protected area. Stakeholder consultations highlighted a key institutional change following the amendment of the NIPAS Act, which is the reduction of PAMB membership from 29 to 25, due to the removal of selected municipalities, cities, and government agencies from the Board.

The UMRBPL-PAMO, on the other hand, serves as the on-site implementing arm responsible for the day-to-day management of the protected landscape. Its core functions include enforcing regulations, coordinating with stakeholders, and implementing PAMB-approved plans and programs. The office is currently led by a designated PASu, similar to other protected areas previously discussed. Under the original NIPAS implementation, the UMRBPL-PAMO was divided into four units: (1) Enterprise Development Unit, (2) Law Enforcement, (3) Biodiversity and (4) Solid Waste Unit. However, with the passage of the ENIPAS Act, as shared during the key informant interviews, these units were dissolved and consolidated into a single management body under the PAMO, streamlining administrative processes.

In terms of financing, the UMRBPL relies primarily on government budget allocations lodged under the DENR, supplemented by revenues from the IPAF. Among the 13 protected areas in Region IV-A, UMRBPL recorded the fourth highest IPAF collections from 2016 to 2024, amounting to approximately Php 48 million. Figure 36 shows the distribution of IPAF collections for Upper Marikina River Basin Protected Landscape from 2016-2024, disaggregated into PA-RIA and IPAF-SAGF.

Figure 36. UMRBPL IPAF Allocation 2016-2024



Source: DENR-BMB IPAF Data 2016-2024

While IPAF has been instrumental in addressing the current gaps in manpower, its use is constrained by Section 15 of RA 11038, which explicitly states that the fund “shall not be used to cover personal services expenditures.” As a result, park rangers and other field support personnel can only be engaged on an activity- or output-based arrangement rather than regular staffing, limiting long-term continuity of enforcement and monitoring. When combined with the rising number of occupants and infrastructure developments within the PA, as manifested during the interviews, these staffing constraints pose significant challenges to effective PA management.

Based on the 2011-2013 SRPAO, there were approximately 3,370 households, equivalent to 15,788 individuals, currently residing within the boundaries of the PA. Among these, only 3,419 individuals were identified as tenured migrants, while the rest are non-tenured occupants. While these figures provide a baseline understanding of the community presence in the area, they are now considerably outdated as the PAMO has yet to conduct another comprehensive census and stakeholder observations indicate a substantial increase in occupants, particularly in Barangay Kalawis.

The increase in the population within the PA has also been accompanied by noticeable rise in infrastructure development inside the PA. Some of the LGUs, in their efforts to pursue social and economic development, have initiated projects such as roads, and other non-profit public facilities. While many of these projects are intended to benefit local residents, they also introduce new challenges for PA management. The lack of clear policies and guidelines governing non-income

generating creates ambiguity in decision-making and weakens the PAMO's ability to regulate construction activities effectively.

Selling of land within the protected area was also observed in UMRBPL, involving instances where tenured migrants transfer or sell their rights to external buyers despite such transactions being prohibited under ENIPAS. These activities not only undermine the integrity of the tenurial instruments, but also contribute to the influx of new, unrecognized occupants. In response, the PAMO has to issue show-cause orders and notices to vacate to buyers, to address these violations.

Tenurial instruments have also emerged as a significant concern for implementers. As shared during the interviews, one key issue is the absence of clear guidelines for managing titled areas within the PA, particularly when landowners seek to convert their properties for commercial or business purposes. This lack of policy direction creates uncertainty over whether such applications should be subject to penalties or require PAMB clearance.

Another situation that has tested the implementers' decision-making involves PACBRMA holders proposing additional ecotourism activities, especially when these involve third-party partners. Such arrangements often necessitate the formulation of Memorandum of Understanding (MOU) and benefit-sharing agreements, yet the implementers lack clear procedural guidance on how these should be evaluated, approved or monitored.

A similar concern have also been raised during the interview regarding SAPAs, particularly regarding the valuation process used to compute fees. The current system allows applicants to base their payments on the zonal value of the area covered by their proposed activity. There are some instances, as shared by the informant, where in some proponents strategically identify or request the use of the lowest available zonal value within the vicinity to significantly reduce their SAPA fees. This results in undervalued permits that do not reflect the true economic benefit derived from resource use within the PA, and limits potential revenue for conservation and management activities.

Beyond the challenges in tenurial instruments, several PAMB-specific issues were also identified during the interviews. Instances of dismissive treatment toward the PAMB secretariat were brought up during the exchange. The PAMB Secretariat, responsible for providing technical inputs, documentation and procedural guidance, are sometimes treated as administrative aides than key support personnel essential to informed decision-making. Another concern is the insufficient technical expertise within the PAMB. While the Board is designed to be multi-sectoral, its current composition often results in a predominance of representatives with limited ecological or environmental background,

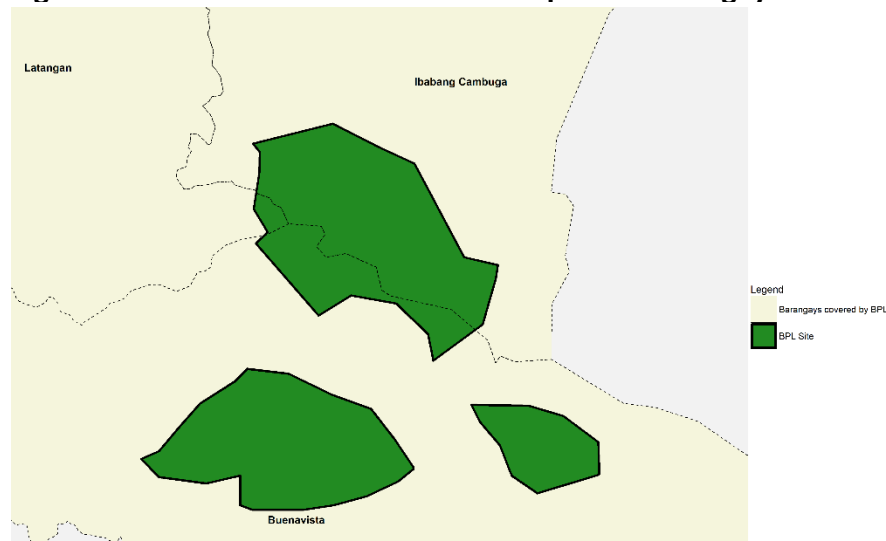
constraining the PAMB’s ability to critically evaluate project proposals, and assess environmental impacts. As a result, key decisions rely more on political considerations than on scientific or technical evidence.

A related governance concern involves situations where PAMB resolutions appear to disproportionately benefit certain members, raising questions about conflict of interest and ethical decision-making within the Board. One example concerns the PAMB resolution that set the travel and subsistence expenses for Board members, including the determination of specific amounts. Although providing compensation for legitimate expenses is acceptable in principle, the concern emerges when those who stand to benefit from these allowances are the same individuals deliberating on and voting for the resolutions.

The UMBRPL BMS 2024 data indicated several emerging threats in the area. These include the presence of few small houses, churches, and informal camping sites located along their transect route. Additionally, soil erosion was also observed after the flooding caused by Typhoon Carina last year.

5.3.4.2. Buenavista Protected Landscape. The Buenavista Protected Landscape is located in Barangay Buenavista, Malunay, Quezon Province (Figure 37). Unlike the earlier discussed PAs which cover thousands of hectares, this PA is relatively small, with approximately 287.24 hectares of land (*DENR-BMB, N.D.*). It was proclaimed as a protected area under Presidential Proclamation No. 294 and legislated under the ENIPAS Act of 2018.

Figure 37. Buenavista Protected Landscape and barangays covered

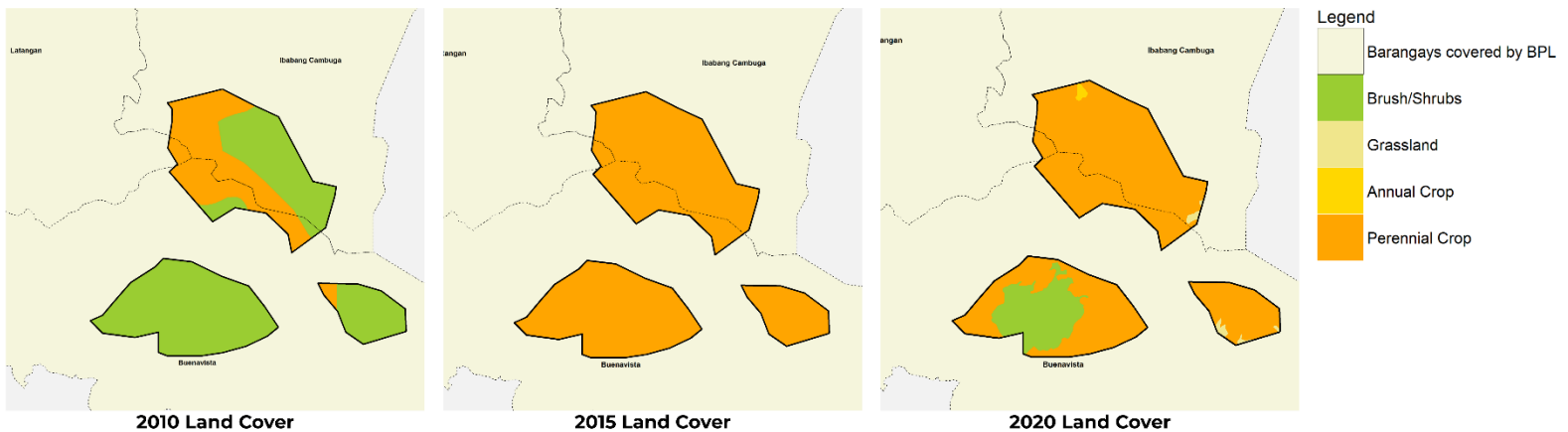


Source: Map data from DENR-BMB; Maps prepared by the authors

The BPL is notable for its karst topography and diverse habitats, ranging from forested hills to open grasslands. It is also significant for its prehistoric limestone burial caves, which are identified as one of the earliest in the Philippines. It also hosts a variety of flora and fauna, including endemic species such as jade vines and hoyas. Wildlife includes the Luzon hornbill, Southern Luzon Giant cloud rat, and white-browed shama (*Municipality of Mulanay, N.D.*)

The land cover maps for BPL (Figure 38) indicate a strong and persistent dominance of agricultural land uses over the 2010-2020 period, with noticeable fluctuations in non-crop vegetation. In 2010, the presence of brush/shrubs suggests more heterogeneous land use and areas of secondary vegetation. By 2015, these non-crop covers largely disappeared, reflecting intensified or expanded agricultural use. In 2020, limited patches of brush/shrubs and grassland emerged, but perennial crops remained dominant.

Figure 38. Land Cover Change in BPL, 2010-2020



Source: Land Cover Data from NAMRIA via Geoportal; BPL data from DENR-BMB; Maps prepared by the authors

The management of BPL is guided by the ENIPAS Act, with the PAMB as the principal decision-making body. The operational management of the area is handled by the BPL-PAMO, currently based in DENR-CENRO Catanauan, which oversees day-to-day administration, monitoring and enforcement. They also collaborate with local government units, academic institutions and community stakeholders for governance efforts.

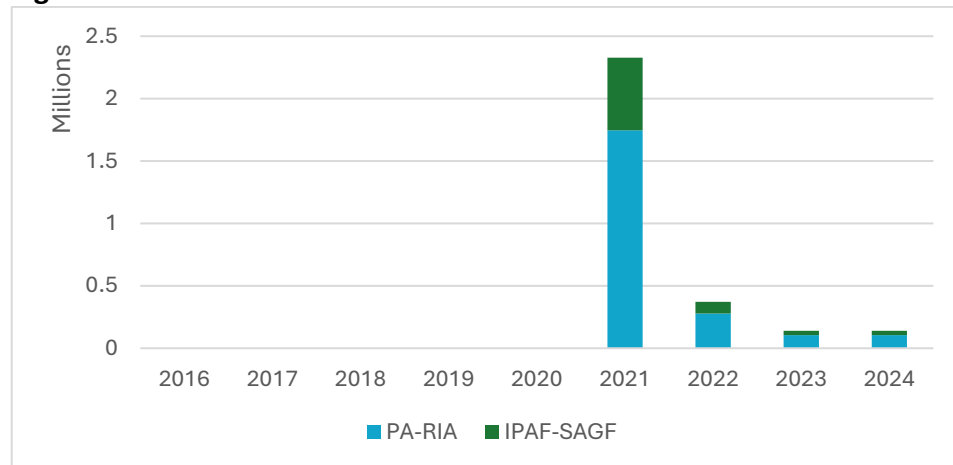
Despite its limited resources, as shared during the discussions, the PAMO has fostered active community involvement. Volunteers from two barangays within the PA have been deputized to assist in the monitoring and patrolling activities.

These volunteers also participate in PAMB meetings to ensure they are informed and involved in the management processes.

Aside from volunteers, the BPL-PAMO also rely on technology-assisted monitoring, particularly using camera traps to provide constant monitoring and surveillance within the protected areas. To complement these measures, the BPL-PAMO also actively conducts door-to-door information, education and communication campaigns to raise awareness among residents and nearby communities about prohibited activities, the ecological importance of the BPL, and legal implications of resource extraction or encroachment. The informants shared that as of 2022, there are 33 households residing inside the PA.

Ecotourism in BPL are still in the planning and coordination stage, with the PAMO and the LGU still exploring potential attractions. Currently, the BPL’s financing primarily relies on government allocations, supplemented by revenues from the IPAF. From 2021 to 2024, the BPL managed to collect a total of Php 2,980,965 for the IPAF (*DENR-BMB, 2024*). One major IPAF contributor is the cell site rental from SMART Communications, where they collect Php 16,000 monthly as shared during the interviews. This has been a significant resource for operational activities for the BPL. Figure 39 shows the IPAF collection from 2016-2024.

Figure 39. BPL IPAF Collection from 2016-2024



Source: DENR-BMB IPAF Data 2016-2024

However, IPAF access remains challenging based on the stakeholder exchanges. According to them, the approval process for accessing the IPAF are lengthy, taking two to three years, which restricts the proactive implementation of their planned activities.

The key informants also noted that the required transition of existing MOAs to formally issued SAPA is likely to have significant financial implications for the

PA. As SAPA fees are computed based on prevailing zonal land valuations, which, in the case of BPL, remain outdated and lower than current market values, the shift is expected to result to substantially reduced rental and user-fee revenues.

The interviews also highlighted several persistent issues and concerns affecting the management of the BPL. Among these is the lack of permanent personnel dedicated solely to PA management. The current staffing pattern within the BPL-PAMO is limited, and many of their personnel, are required to handle multiple roles simultaneously. Their PASu, for instance, are handling two protected areas. This multifunctional arrangement stretches their already constrained human resources, reducing their ability to conduct regular monitoring, implement management plans, or respond promptly to enforcement concerns.

Another concern they identified relates to verifying the claims and documentation of occupants residing with the PA. While no tenurial instruments have been formally issued by the BPL-PAMO, several households claim to possess land titles or other documentary evidence of ownership.

PAMB-specific issues have also been identified during the exchange. PAMB members, as stated during the interviews, seldom attend meetings, and are often represented by alternates that vary frequently which disrupts decision-making continuity and slows the passage of resolutions.

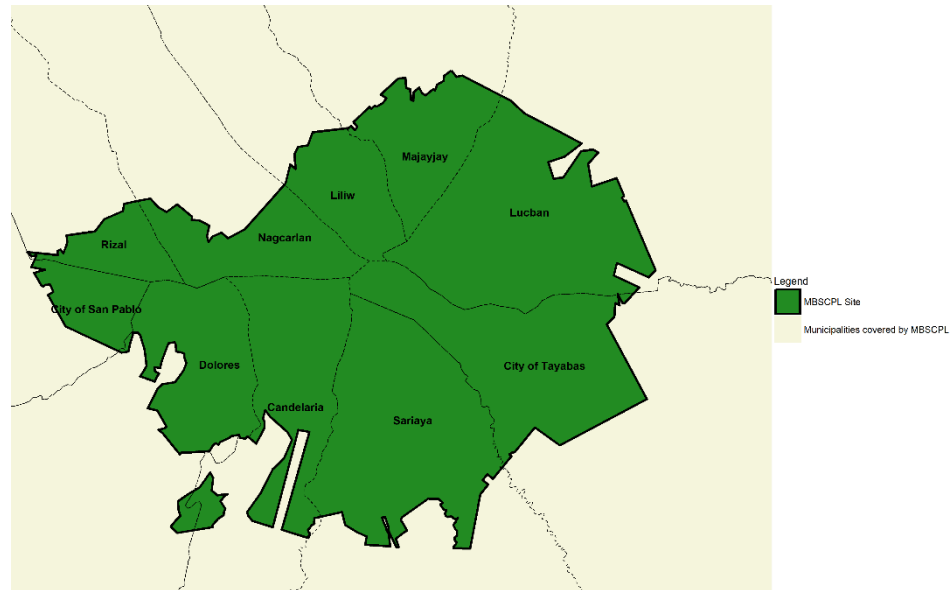
Issues and concerns involve lack of permanent personnel solely for PA management. Current staff of the PAMO are multifunctional like the PASu, currently handling two protected areas. Additional source of complication is the PAMO's interpretation of the ENIPAS provisions, particularly their understanding that representatives of regional directors from national government agencies are not permitted to sit in place of the designated official. This often results in vacant seats during meetings, making it harder to meet the required quorum.

Additionally, the stringent requirements for PAMB membership create barriers for participation, especially for local people's organizations. Under the current provisions of ENIPAS, even non-profit groups must demonstrate financial capability, a criterion difficult for many grassroots organizations to meet.

5.3.4.3.Mts. Banahaw – San Cristobal Protected Landscape. Mts. Banahaw – San Cristobal Protected Landscape is located in the provinces of Laguna and Quezon, covering approximately 10,900 hectares. It spans across the five municipalities in Laguna (Majayjay, Liliw, Nagcarlan, Rizal, San Pablo City) and five municipalities in Quezon (Sariaya, Tayabas, Candelaria, Lucban, and Dolores) (Figure 40) (*DENR-BMB, N.D.*). Mt. Banahaw is one of the highest

mountains in Southern Luzon, peaking at 2,170 meters above sea level. The landscape serves as a critical watershed, providing water resources to surrounding communities and sustaining numerous rivers and streams.

Figure 40. Mts. Banahaw-San Cristobal Protected Landscape and municipalities covered



Source: Map data from DENR-BMB; Maps prepared by the authors

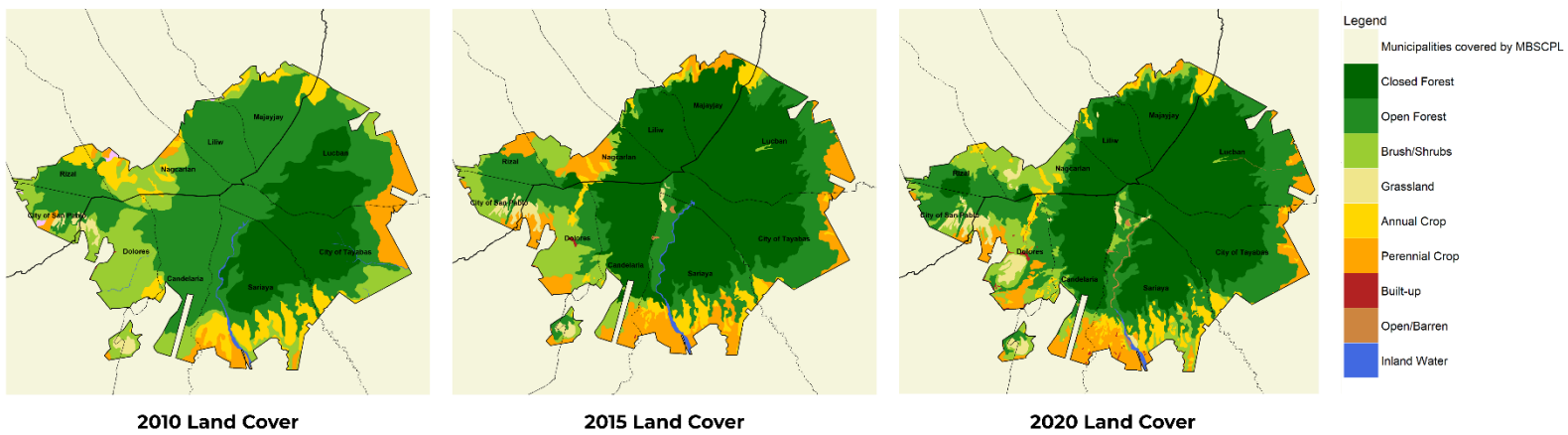
The MBSCPL is recognized for its high levels of biodiversity and endemism. Notable flora in the area includes Narra, kalantas, and kamagong and rafflesia (*DENR-BMB and the Resources, Environment and Economics Center for Studies, 2014*). Faunal species include the Philippine hawk-eagle, and various endemic amphibians and reptiles.

The protected landscape has been legislated in 2009, under the Republic Act No. 9847. Under this, the area is managed under the ENIPAS framework, and the governance involves coordination between the DENR, LGUs, and community-based organizations. Institutionally, the MBSCPL-PAMO is divided into two administrative units: 1) MBSCPL-PAMO Laguna side, headed by the APASu and currently lodged at DENR-CENRO Sta. Cruz; and 2) MBSCPL-PAMO Quezon side, which hosts most of the full-time personnel and operational support. This dual structure reflects the landscape's geographic and administrative spanning across two provinces, requiring strong coordination to ensure consistent enforcement and management policies throughout the PA.

Enforcement of environmental laws, monitoring biodiversity, and community engagement are central to maintaining the ecological integrity of the landscape. During the interviews, the informant stated that farmers serve as important partners for conservation, because of their knowledge of the terrain and their understanding of Banahaw’s ecological value.

For MBSCPL, the land cover (Figure 41) is largely dominated by closed and open forest, highlighting its role as a largely forested and ecologically intact protected landscape. In 2010, forests covered most of the area, with agriculture and grassland concentrated along the periphery. By 2015, agricultural expanded slightly, particularly in lower elevations, suggesting possible localized encroachment or land conversion. By 2020, forest cover remained largely intact, although peripheral agricultural areas persisted and became more spatially defined.

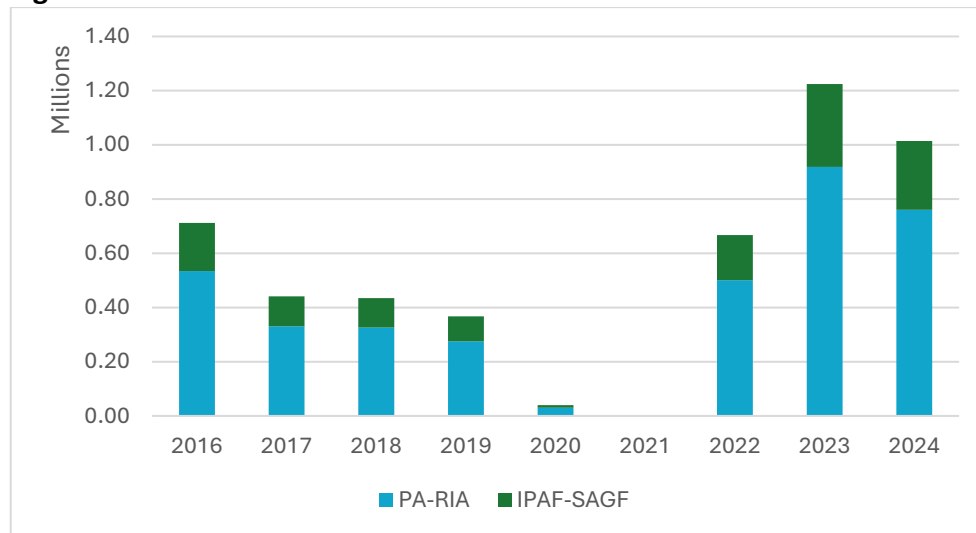
Figure 41. Land Cover Change in MBSCPL, 2010-2020



Source: Land Cover Data from NAMRIA via Geoportal; MBSCPL data from DENR-BMB; Maps prepared by the authors

The protected landscape, like the earlier discussed PAs, relies primarily on government budget allocations for their allocations. Complementing this are revenues generated through ecotourism, most notably from Taytay falls in Majayjay, a popular destination currently managed by LGU with DENR support. The IPAF for the MBSCPL serves as additional financing mechanisms, accumulating a total of Php 4,902,152 from 2016 to 2024. Figure 42 below shows the accumulated IPAF from 2016-2024, disaggregated by PA-RIA and IPAF-SAGF.

Figure 42. MBSCPL IPAF Collection from 2016-2024



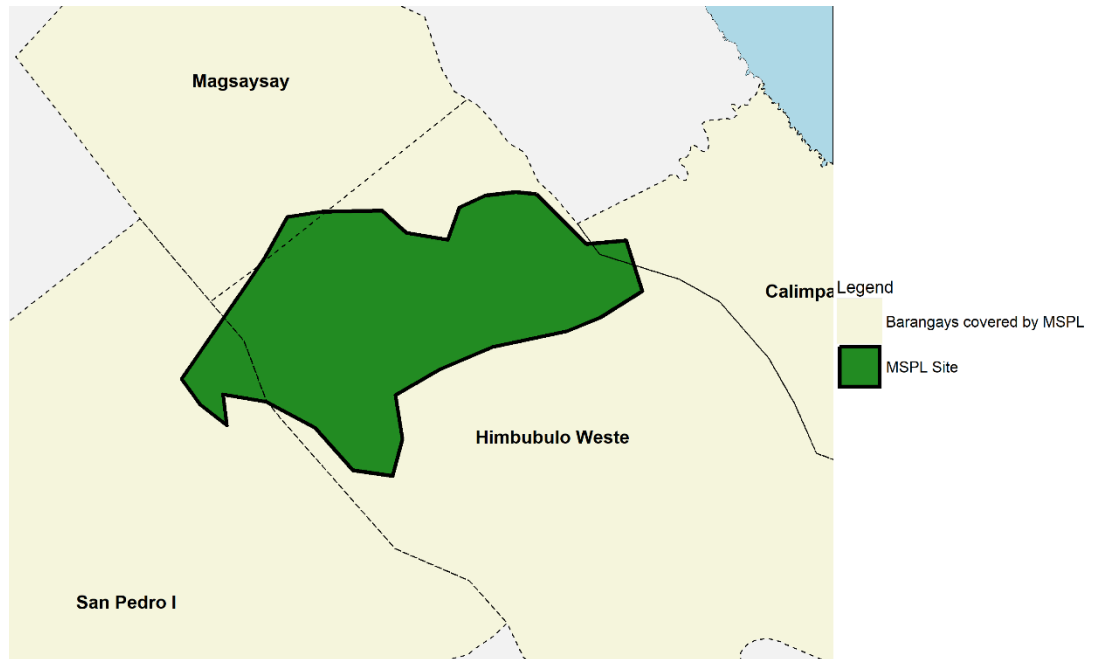
Source: DENR-BMB IPAF Data 2016-2024

Despite the institutional structure and partnerships, several management challenges persist. A key concern identified during the interview is the lack of dedicated personnel for PA management on the Laguna side. While the Quezon side hosts the majority of PAMO staff, operations in the Laguna side rely heavily on job order personnels, who face limitations in scope, stability and enforcement authority.

5.3.4.4. Maulawin Spring Protected Landscape. The Maulawin Spring Protected Landscape (MSPL), located in the municipality of Guinayangan in Quezon Province (Figure 43), represents an important ecological asset within the Southern Luzon biogeographic region. The area, covering approximately 299 hectares, encompasses the Maulawin Spring (*DENR-BMB, N.D.*) and its surrounding watershed, forming a critical source of potable water for Guinayangan and nearby barangays.

Ecologically, the MSPL is characterized by forest characterized by dipterocarp species. Some of the trees can be found in the area include *apitong, pili and kamagong* (*Municipality of Guinayangan, Quezon, N.D.*) The area also serves as a habitat for several wildlife, including the Philippine forest kingfisher, rufous hornbill, Philippine monkey, and Philippine deer.

Figure 43. Maulawin Spring Protected Landscape and barangays covered



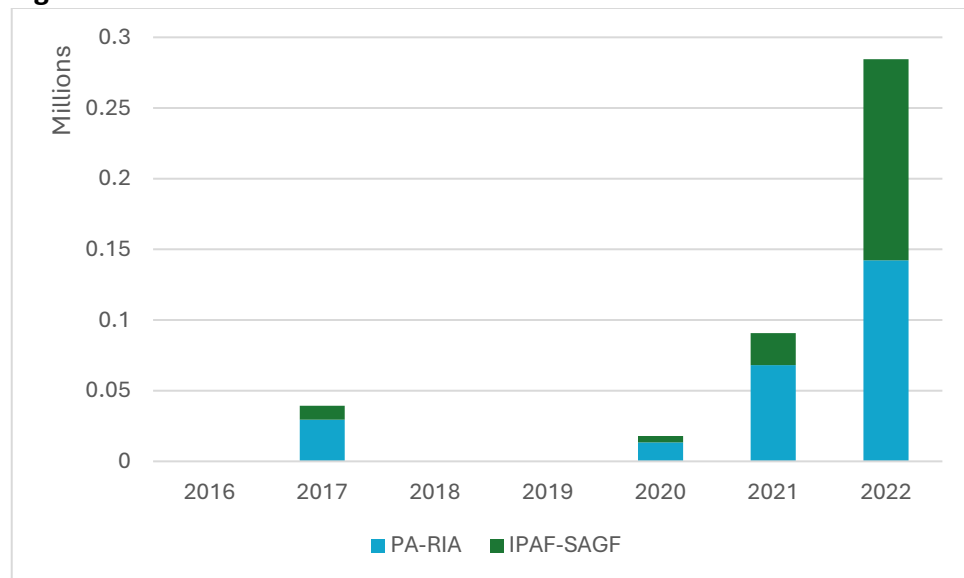
Source: Map data from DENR-BMB; Maps prepared by the authors

From an institutional and governance perspective, insights from interviews highlight both the structure and persistent challenges in MSPL management. The PAMB, composed of representatives from LGUs, NGAs, and local community stakeholders, is mandated to provide policy direction. Daily operations are carried out by the MSPL-PAMO, overseeing the biodiversity monitoring, enforcement of PA regulations, community outreach and the implementation of conservation programs.

However, several governance issues were consistently raised during the stakeholder discussions. Participants emphasize the PAMB functionality is weakened by gaps in representation and attendance. Barangay captains, for instance, are not allowed to send representatives, and the RED is similarly prohibited from delegating alternates, making it difficult to meet the quorum and to come up with a decision. They also noted the absence of designated Municipal Environment and Natural Resources Offices (MENROs) in some LGUs. Representatives from NGAs were also identified as rarely attending PAMB meetings, limiting the technical input and decision-making capacity within the PAMB. The lack of technical experts within the PAMB was also pointed out as a key institutional gap during the interviews.

In terms of financing, interviewees noted that the IPAF for MSPL is currently available and most of the generated income comes from water resource user fees, starting 2013. Currently, the MSPL has generated a total of Php 551,004 from 2017-2024. Figure 44 below shows the IPAF collection from 2016-2022, disaggregated by PA-RIA and IPAF-SAGF. While there have been considerations to convert the current instruments (MOA) to a SAPA arrangement, the stakeholders have expressed concern that SAPA revenues would be significantly lower compared to existing water fee structure. This would result in reducing income gathered from ecosystem services within the PA.

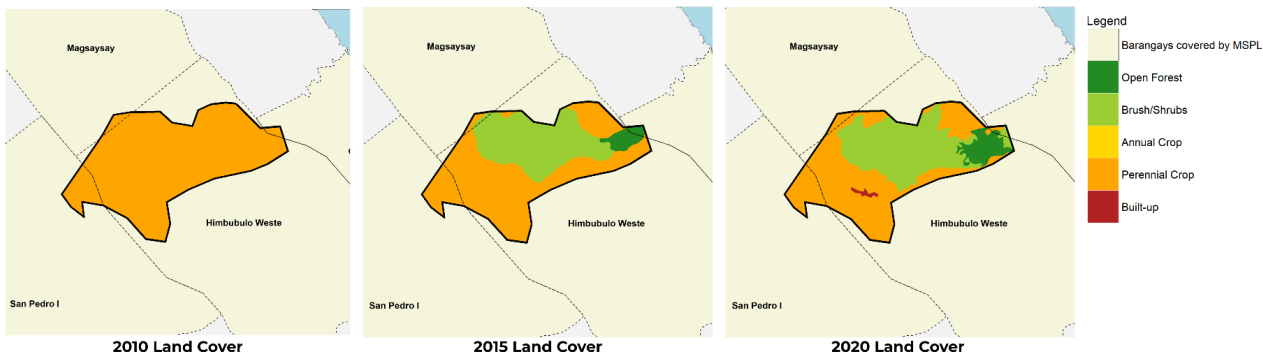
Figure 44. MSPL IPAF Collection from 2016-2022



Source: DENR-BMB IPAF Data 2016-2024

Operationally, the MSPL-PAMO staff are also often required to occupy concurrent positions, managing multiple roles due to limited personnel allocation. Similar to the earlier discussed PAs, this affects the efficiency of their work, particularly in monitoring and managing protected areas. These capacity constraints, as highlighted in the focus group discussion, remain a significant barrier to effectively managing MSPL.

Figure 45. Land Cover Change in MSPL, 2010-2020



Source: Land Cover Data from NAMRIA via Geoportal; MSPL data from DENR-BMB; Maps prepared by the authors

During the earlier period captured in the 2010 land cover map (Figure 45), when MSPL was under the NIPAS framework, the landscape was almost entirely dominated by perennial crops, indicating that agricultural land uses were already well-established within the area. By 2015, still within the NIPAS period, the emergence of brush/shrubs and patches of open forest reflects early signs of vegetation growth and land-use transition. These may be associated with localized conservation initiatives and/or increased awareness of protection mandates, although the continued dominance of perennial crops indicates that agricultural activities remained the primary driver of land cover.

The 2020 land cover map captures the early phase of ENIPAS implementation. Compared to 2015, the persistence and slight expansion of open forest and brush/shrub areas suggest potential initial improvements in protection, zoning clarity and management attention under the strengthened framework. However, the appearance of built-up areas also indicates continuing human settlement and infrastructure development.

6. Discussion

Thirty-three years after the legislation of the NIPAS Act of 1992 and six years after its amendment through the ENIPAS Act of 2018, this study is conducted to critically examine whether the intended policy reforms have translated into improved PA management in practice. While ENIPAS was introduced to address long-standing governance, financing, and institutional gaps, persistent challenges suggest that the effectiveness of the reform remains uncertain.

The purpose of this study is to evaluate how the transition from NIPAS to ENIPAS has been grounded at both the national and site level, and to assess the extent to which observed changes align with the expectations of the ENIPAS reform. The study focused on policy and institutional processes specifically on PA management, including changes in programs, activities and resource allocation following ENIPAS implementation. Building on this purpose, the succeeding sections examine the key changes observed following the implementation of the ENIPAS Act.

6.1. Implications of the key changes under ENIPAS

At the core of ENIPAS is the expansion and consolidation of legal protection via an accelerated pace of PA legislation; improved governance and resource allocation; and stronger enforcement and stakeholder engagement.

One of the most notable changes under ENIPAS is the expansion of legal coverage and the accelerated the pace of PA legislation strengthened the statutory authority. This clarified governance mandates, and reduced long-standing ambiguities over PA boundaries and management responsibilities. The same enhanced predictability and enforceability provide a stronger foundation for integrating conservation priorities into national and local development planning.

Institutionally, ENIPAS repositioned PA governance as a multi-sectoral responsibility. The strengthened PAMB, with broader representation from national government agencies and legislators, expanded the policy reach of conservation beyond the DENR's institutional mandate. The institutionalization of the PAMO also reinforced this shift by professionalizing site-level management and reducing reliance on individual leadership. These reforms collectively signal a move toward more stable and accountable governance structures, consistent with ENIPAS' expected outcome of improved PA management.

Evidence from the METT assessment reinforces this interpretation. The substantial increase in average METT scores between the NIPAS and ENIPAS periods suggests that institutional reforms have translated into measurable improvements in planning, governance, enforcement, and monitoring capacity. The most pronounced gains in previously underperforming sites indicate that ENIPAS has functioned as a corrective policy instrument, raising baseline management capacity across the system rather than only benefiting already well-managed PAs. This system-wide improvement aligns with ENIPAS' intent to strengthen PA management uniformly and reduce disparities among sites.

However, policy implementation experience shows that institutional presence does not automatically translate into institutional performance. At both national and site levels, staffing constraints remain a major limiting factor. Many PAMOs continue to operate with few permanent personnel, relying heavily on contract of service and job order staff, while permanent officers often perform multiple roles across administrative units. This weakens management focus and institutional continuity, particularly during leadership transitions, revealing a gap between institutional design and operational capacity. The same indicates that ENIPAS's policy and institutional reforms have outpaced resource investments in human capital.

Financial reforms under ENIPAS constitute are considerable. Increased national appropriations and strengthened IPAF significantly improved the finance base of PA operations and management. Rising IPAF revenues, driven by ecotourism and regulated resource use, demonstrate enhanced capacity for internal revenue generation and reduced dependence on government funding. These aligned with ENIPAS' objectives of sustainable financing. However, persistent low fund utilization highlights systemic inefficiencies in financial management,

including bureaucratic procedures, delayed releases, and limited absorptive capacity at the site level. This alarming situation is ironic, given the perceived resource gap among most PAs.

Ecological indicators suggest that ENIPAS has began to temper, rather than reverse environmental degradation. The decline in forest loss following the law's enactment alongside modest forest cover gains, indicates that strengthened governance and enforcement can reduce pressures on ecosystems. At the same time, fluctuations in forest loss and the continued influence of climate-related disturbances underscore the limits of policy and operational control over external drivers. The increased identification of threatened species reflects improvements in assessment and monitoring capacity. This is a critical but often underappreciated policy outcome as effective conservation depends on reliable ecological information.

Governance dynamics at the site level further illustrate the complexity of translating and cascading policy from the national to subnational levels. While ENIPAs expanded participation through restructured PAMBs and clarified tenure instruments, uneven engagement, political turnover, and variable technical expertise continue to affect the quality of decision making. In some cases, overlapping land-use rights and economically significant activities within PAs complicated enforcement and create tensions between national conservation mandates and local development priorities. Policy enforcement issues are further magnified with the same inconsistencies and misalignments, coupled with resource and manpower limitations. These highlight the challenges in governing multi-use landscapes, where conservation objectives and accomplishments are defined by pragmatic concerns, while balancing social equity and economic realities.

ENIPAS also explicitly acknowledges various stakeholders, including local migrants, cultural communities and indigenous peoples as partners in protection and conservation efforts in PAs. IP rights are clear and well-articulated within awarded ancestral domains, but issues are evident in areas with less formal tenurial awards and on-going CADT applications. This underscores the added layer of complexity in multi-stakeholder engagements, particularly in cases where ecological integrity protection infringes on development and community welfare concerns.

6.2. *Protected Area management and operational models*

The case study sites analyzed in this study reveal that while ENIPAS provides unified legal and institutional framework for PA governance, its implementation has given rise to diverse management and operational models shaped by site characteristics, institutional maturity, financing arrangements, and stakeholder configurations. These models demonstrate that PA effectiveness under ENIPAS is not uniform, but rely on how governance, financing, and operational responsibilities are structured and exercised at the site level. Table 21 shows the four contrasting but overlapping PA management models.

Table 21. Comparative PA Management Models under ENIPAS

PA Management Model	Representative Case	Governance Structure	Financing & Revenue model	Staffing & operations	Key Strengths	Key constraints	Policy Implications
Privately Managed Conservation Model	Masungi Georeserve	Managed by private foundation through agreements with DENR: Outside formal PAMB governance; High managerial autonomy	Strong self-generated revenues from ecotourism, private investment, and donations	Dedicated full-time staff; centralized operations; Strong enforcement presence	Operational efficiency; Stable financing; consistent enforcement and site protection	Legal and tenure uncertainties; unresolved alignment with ENIPAS and IP rights, weak LGU and community relations	Establish clearer legal pathways for private sector stewardship within ENIPAS, while ensuring stakeholder alignment, accountability, transparency, and rights protection
Economically Diverse ENIPAS PA Model	Northern Negros Natural Park (NNNP)	Large, multi-sectoral PAMB dominated by LGUs and elected officials; day-to-day management handled by PAMO	Mixed financing from national budget and IPAF generated through ecotourism, recreational facilities and user fees	Limited permanent staff; high reliance on contractual personnel; frequent turnover due to election cycles; limited technical capacity of PAMO staff to impose rules and penalties	Strong LGU involvement; revenue-generating potential; stakeholder involvement, and community-based enforcement mechanisms	Political influence over technical decisions; weak enforcement capacity arbitrary decision-making due to unclear guidelines; inconsistent application of rules	Strengthen technical staffing and capacity building; issues clearer, standardized operational and enforcement guidelines under ENIPAS
Transition model (Proclaimed but unlegislated PA)	Mt. Mantalingahan Protected Landscape (MMPL)	Large, multi-sectoral PAMB dominated by LGUs and elected officials; day-to-day management handled by PAMO	Combination of LGU support and international funding	Expanded staffing compared to NIPAS, but limited permanency and authority	Strong local ownership; adaptive partnerships; integration of LGU and community support	Absence of congressional legislation limits protection/conservation measures, authority, staffing security, and access to sustained funding	Fast-track legislative action for proclaimed PAs to avoid institutional and financial disadvantages; Enhance protection and conservation measures
Small, localized PA model	Maulawin Spring Protected Landscape (MSPL)	Relatively small PA, PAMB with limited technical representation; localized governance	Narrow revenue base primarily from water use fees; sensitive to policy shifts (e.g. MOA to SAPA)	Very limited staffing; concurrent roles among PAMO personnel	Clear ecosystem service focus; manageable geographic scope	Limited economies of scale; financial vulnerability; and governance fatigue	Simplify governance and financing requirements for small PAs; tailor SAPA and staffing rules to PA scale and function

Source: Authors' synthesis based on case studies, policy review, and stakeholder consultations.

The Masungi Georeserve represents a privately managed conservation model that operates largely outside the NIPAS/ENIPAS governance framework. Its management is characterized by centralized decision-making, stable financing through ecotourism and private investment, and strong enforcement capacity. These features allow for rapid response to threats, consistent implementation of conservation rules, and measurable ecological gains.

While operationally effective, its legal foundations remain contested, particularly in relation to ENIPAS provisions, PAMB authority, FPIC requirements, and constitutional/legal limits on contracts and agreements. The absence of formal accountability to PAMB structures challenges the state-led governance logic of ENIPAS and raises questions about equity, transparency, and long-term legitimacy. Masungi demonstrates that private management can outperform state-led models in efficiency and outcomes, but also exposes regulatory gaps and unresolved tensions between conservation effectiveness and public governance. The government in this instance, will have to take in an added role in arbitration and stakeholder consensus building.

The NNNP exhibits an early-stage economically diverse ENIPAS PA, where the legislative establishment has yet to be translated into a more mature governance and management frame. While the PAMB is large and inclusive in composition, its effectiveness is undermined by high political turnover, limited technical representation, and the dominance of elected officials. Although some LGUs mitigate this by designating ENROs as representatives, technical decision-making remains inconsistent.

At the operational level, NNNP faces significant capacity constraints within the PAMO, particularly the lack of technical expertise to consistently impose rules, penalties, and management decisions. Stakeholder consultations reveal that enforcement actions and regulatory decisions are often perceived as arbitrary due to absence of clear, standardized guidelines for implementation.

Despite the relatively high IPAF collections compared to other PAs, access to and utilization of these funds remain constrained by procedural ambiguity. The NNNP model illustrates how ENIPAS legislation alone is insufficient to ensure effective protection without parallel investments in technical capacity, guideline clarity and institutional continuity.

MMPL on the other hand, represents a transition model characterized by a shift from proclamation-based protection under NIPAS toward more structured governance under ENIPAS, despite the absence of site-specific legislation. The expansion of PAMO staffing and formalization of functional roles signal institutional strengthening aligned with ENIPAS objectives. However, this progress remains constrained by limited permanent Plantilla positions, dual roles of key personnel, and insufficient financial resources relative to the size and ecological significance of the PA.

The MMPL model demonstrates that ENIPAS can improve administrative structures even in non-legislated PAs, but without congressional enactment, institutional authority, budget

prioritization, and staffing stability remain fragile. The reliance on LGU complementation and NGOs support reflects adaptive governance but also underscores the state's limited capacity to fully operationalized ENIPAS mandates independently. Persistent governance issues within the PAMB highlight the disconnect between formal representation requirements and functional governance effectiveness.

MSPL represents a small, manageable PA model, where limited spatial scope allows for relatively straightforward monitoring and management. But institutional weaknesses remain pronounced with the perennial concerns on resource limitations and infirm processes. The PAMB, although smaller, still struggle with quorum, limited technical input and low attendance from NGAs, constraining its policy-making function. Operationally, PAMO staff hold concurrent roles due to insufficient personnel, affective consistency and efficiency.

Financially, MSPL relies on ecosystem service fees which provide a modest but stable income stream. The proposed transition from MOAs to SAPA arrangements is viewed by stakeholders as a potential risks, as it may reduce revenues and weaken financial sustainability. This highlights a broader ENIPAS implementation challenge, that standardized policy instruments may not be equally suitable across diverse PA contexts, particularly for smalls PAs with unique ecosystem service arrangements.

7. Recommendations

The findings of this study indicate that while the ENIPAS Act has significantly strengthened the legal and institutional foundations of PA governance in the Philippines, its transformative potential remains unevenly realized across site. The observed gaps between policy intent and operational performance point not to deficiencies in the ENIPAS framework itself, but the need for more deliberate governance refinement, administrative clarification, and capacity investment.

7.1. *Pursue Locally-appropriate PA Management Models*

Although necessarily policy compliant and adhering to several core tenets, building locally appropriate PA management models is both diverse and unique in certain ways. The importance of the following is brought to fore as gathered from the case study sites: adaptability to endogenous elements including site-specific characteristics; inclusivity and self-determination among local communities including IPs and other stakeholders, alignment with public and private multistakeholder development objectives; resource and human capital build up; and policy enforcement and legal follow-through.

Even with the vast national and subnational array of government institutions and instrumentalities, it is apparent that the success of PA protection and conservation depend a lot on stakeholder cooperation and complementation. The participation of CSOs, international development organizations, and the private sector have proven crucial in the success of policy grounding and critical area management.

7.2. Revisit ENIPAS Compliance Timelines

The enactment of ENIPAS in 2018 and the passing of its implementing rules and regulations in 2019 committed transition milestone targets that would have led to the further expansion in coverage of PAs; the strengthening of institutional complement and oversight; and the optimization of implementation and management processes. Among the programmed obligations in the short and medium term are the legislation of proclaimed or initial components within three years; preparation and submission of management plans within 1 year; establishment of PAMBs with staff structural complementation for PAMO/ PASU in 3 months; and the establishment of IPAF and the inventory of structures within 60days, among others. The range of activities covers technical description, sustainability assessment, and public consultancy of initial components; and planning alignment with relevant institutional and sectoral planning documents. The preparation of detailed business plans may also be necessary to appropriately set the management and development direction for the PA. The government must revisit these timelines to ensure eventual completion and compliance. But it is understandable that delays in the grounding of ENIPAS provisions were inevitable with the onset of the COVID 19 pandemic late in 2019, but progression should have resumed upon normalization. Full compliance would have facilitated full legislative coverage and optimum management assurance with the expanded integrated protected area coverage.

7.3. Strengthen PAMB Governance and Decision-Making

At the center of ENIPAS implementation is the PAMB, envisioned as a multi-sectoral, participatory, and accountable decision-making body. In practice, however, PAMBs exhibit wide variation in composition and functionality. Challenges such as quorum difficulties, inconsistent attendance, politicization, lack of technical capacity and collegial imbalances suggest that expanded membership alone does not guarantee effective sectoral representation and governance. These concerns indicate a need to strengthen PAMB decision-making structures by clarifying and underscoring mandates and operational roles, rationalizing membership, and institutional mechanisms for continuity, accountability and sound decision-making. The relevant observations and experiences across sites demonstrate that without clearer procedural guidance and performance review, PAMBs risk becoming administrative bottlenecks instead of facilitators and, in some cases, venues for regulatory capture or interest-driven decision-making rather than strategic conservation and protection governance.

7.4. Enhance PAMO staffing, competencies, and field capability

The institutionalization of the PAMO represents one of ENIPAS' most important structural reforms. However, the persistence of staffing shortages, high dependence on COS and job-order personnel, and the assignment of concurrent roles to key officials reveal a structural mismatch between institutional mandates and human resource investments. This weakens field presence,

enforcement consistency, capacity retention, and institutional memory. The findings underscore that ENIPAS' success depends not only on the existence of PAMOs, but on their ability to operate as technically competent, adequately staffed, and field-capable institutions. Without sustained investments in permanent staffing, skills development, and logistical support, the professionalization envisioned under ENIPAS cannot be fully realized.

7.5. Accelerate legislation and policy clarifications

Legal consolidation and accelerated PA legislation under ENIPAS have substantially enhanced statutory authority and reduced governance ambiguity. But delays in site-level operationalization and the absence of clear implementing guidelines have limited the effectiveness of these gains. In several cases, uncertainties around PA encroachment, economic activity regulation and revenue generation, IPAF establishment and utilization, PAMB membership and authority and SAPA implementation have resulted in cautious, inconsistent and sometimes counter intuitive decision-making. This highlights the importance of timely policy clarification and enforcement of statutory timelines to ensure that legal reforms translate into predictable and actionable governance processes.

7.6. Improve financial access and IPAF utilization

Financial reforms under ENIPAS stand out as among the most successful components of the law. Increased national appropriations and the strengthening of the IPAF have improved the financial base of PA management and reduced dependence on government subsidies. Rising IPAF collections demonstrate the viability of internal revenue generation, particularly in tourism-oriented PAs. However, low fund utilization rates reveal systemic constraints in financial access, procurement, and absorptive capacity. This is despite the general observation and perception that funding and resources on the ground are insufficient. To ensure optimal resource provision and utilization, there must be a detailed and progressive accounting of manpower, financial and other resource requirements of all proclaimed and legislated PAs. This will complement the funding and actualization of development plans, and business plans, as provided for by ENIPAS.

7.7. Review prior rights and existing tenurial instruments

The implementation of tenurial and use-right instruments reflects ENIPAS' attempt to balance conservation with social equity and economic realities. While the recognition of prior rights and the introduction of more tailored instruments have reduced overt conflicts, they have also introduced governance complexities. In several cases, existing tenurial arrangements and economic activities constrain the enforcement of conservation rules, particularly where such activities are embedded in local livelihoods or revenue structures. There are instances where destructive activities, including mining, in PAs remain in operation even with the explicit protection provisions of ENIPAS. These dynamics suggest the need for a more adaptive approach, where tenurial instruments are periodically assessed in terms of ecological impact and

aligned with conservation objectives without undermining social commitments. The government and its instrumentalities must not be made powerless in the face of seemingly actionable ecological integrity violations.

7.8. Improve threat prevention and landscape-level management

At the landscape level, the findings point to limitations in site-based management approaches. Ecological pressures, economic activities, and land-use decision often originate beyond PA boundaries, yet management responses remain largely confined within administrative borders. This reinforces the need for stronger buffer zone governance, cross-boundary coordination and integration of PA objectives into broader land-use and development planning frameworks (e.g. CLUP and ADSDPP). More comprehensive environmental compliance vetting must also be applied. The alignment with various planning documents and the imposition of programmatic impact assessment of proposed and ongoing projects and development activities will lessen cumulative and spill over damages from various development undertakings.

7.9. Strengthen DENR-BMB enforcement capacity

Enforcement remains a persistent challenge despite improvements in the legislation. Limited manpower, legal support, and operational resources reduce the credibility of enforcement actions and weaken deterrence. This highlights the continued importance of strengthening DENR-BMB enforcement capacity, not only through expanded authority but through legal, institutional and logistical support for frontline implementers. The approval of new plantilla positions for PA conservation and management is a good initial step. Augmenting the other resource requirements in the grounding of ENIPAS and the protection of all the countries identified critical land and seascapes will ensure that the country moves progressively, responsibly and sustainably into the future.

7.10. Enhance and redesign the Special Use Agreement in Protected Areas (SAPA)

Balancing economic activity and critical area protection is a dilemma for many PAMBs, PAMOs and PASUs. Decision -making is sometimes blurred by infirm guidelines, inefficient decision-making processes and vested interests in collegial representations. Instruments like SAPA must be fair in its terms, and consistent with protection and conservation tenets, while not being overly obstructive.

The experience with SAPA brings out the tension between revenue generation and conservation integrity. While SAPA has potential as a regulatory and financing tool, its current design and implementation have raised concerns about revenue loss, procedural ambiguity and ecological risk. A more strategic design of SAPA, anchored in transparent valuation, clear compliance mechanisms, and conservation performance, would better align with ENIPAS objectives.

7.11. Enhance Policy Enforcement and Legal Follow Through

Embedded within ENIPAS is a stronger legal frame with more substantial penalties for violations to protection and conservation provisions. Fines have been increased from 10 to 100 times while penal provisions have been doubled from 6 to 12 years. But these legal punishments become benign with poor policy grounding, enforcement and legal follow-through. All stakeholders must be clear about applicable laws and penalties if accountability is to be exacted and compliance, expected. However, fair, proportional and sustained legal action must be ensured, while addressing the undue burden to the rank-and-file as evidenced in prolonged legal and court processes. A culture of responsibility and compliance must be enjoined among the multitude of stakeholders if the core principles espoused by ENIPAS are to be carried through. This is true not only in the protection of the country's critical landscapes, but also in the pursuit of other relevant ecological integrity policy interventions.

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