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**RESEARCH PAPER SERIES NO. 2019-03**

**Forest Protection in the Philippines:  
Policy Evolution and Sector Outcomes**

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Arvie Joy A. Manejar**

**Research Paper Series No. 2019-03**

# Forest Protection in the Philippines: Policy Evolution and Sector Outcomes

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Philippine Institute for Development Studies  
*Surian sa mga Pag-aaral Pangkaunlaran ng Pilipinas*

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ISSN 1908-3297  
ISSN 2508-0830 (electronic)  
RP 07-19-600

Editorial and production team:

Sheila V. Siar, Maria Judith L. Sablan, and Carla P. San Diego

## Table of Contents

List of tables and figures	v
List of acronyms	vii
Abstract	ix
Introduction	1
Background of the study	1
Objectives	2
Conceptual framework	2
Approach of the study	2
Analytical framework	3
Methodology	2
Data collection	4
Data analysis	4
Results and discussion	13
Policy analysis	13
Implementation processes	24
Evaluation analysis of case studies	42
Conclusion	49
Recommendations	49
Tenurial arrangement	51
Apprehension and monitoring	52
National Greening Program	52
Future policy directions	53
References	57
The Authors	61



## List of Tables and Figures

### Table

1	List of cooperative-respondents and their location	5
2	Modified evaluation criteria	5
3	Evaluation criteria matrix: Forest protection in the Philippines adapted from Mickwitz (2003), Boon et al. (2009), and Morestin (2012)	8
4	Timeline of policies under the forestry sector	18

### Figure

1	Treatment-development design	3
2	Side-effects evaluation framework	3
3	Second part of conceptual framework	13
4	Forest area: Philippines, 1990–2015	24
5	Forest cover: Philippines, 1934–2010	25
6	Forest cover across regions: Philippines, 2010	26
7	Watershed forest reserves across regions: Philippines, 2016	26
8	Quantity of forest-based products export: Philippines, 2003–2016	28
9	Value of forest-based products export: Philippines, 2003–2016	28
10	Land classification: Philippines, 2000–2016	29
11	Comparison of land area between forest reserves and timberlands: Philippines, 2000–2016	30
12	Causes of disturbances within forestlands: Philippines, 2000–2015	32
13	Damages from forest disturbances: Philippines, 2000–2015	33
14	Area and number of Community-Based Forest Management Agreements across regions: Philippines, 2015	35
15	Area and number of timber licenses: Philippines, 2000–2016	36
16	Forest-related apprehensions across regions: Philippines, 2010–2018	38
17	Status of environmental courts in the Philippines	39

18	Environmental court cases: Philippines, as of 2017	39
19	Comparison of National Greening Program accomplishments between government and NGOs, 2011–2016	41
20	Disaggregated National Greening Program accomplishment per sector, 2011–2016	41
21	Apprehension and confiscation figures: Caraga region, 2011–2018	46
22	Volume and value of apprehended forest-based products in Palawan for 2017	46
23	Quantity of apprehensions and seizure of forest products in the Cagayan Valley region	47
24	Value of apprehensions and seizure of forest products in the Cagayan Valley Region	47

## List of Acronyms

A&D	alienable and disposable
AFP	Armed Forces of the Philippines
AO	administrative order
ARMM	Autonomous Region in Muslim Mindanao
bd. ft.	board feet
BOD	biological oxygen demand
CAR	Cordillera Administrative Region
CBFMA	Community-Based Forest Management Agreements
CENRO	Community Environment and Natural Resources Office
CSO	civil society organization
DENR	Department of Environment and Natural Resources
DILG	Department of the Interior and Local Government
DOJ	Department of Justice
DPWH	Department of Public Works and Highways
DSWD	Department of Social Welfare and Development
ECAN	Environmentally Critical Areas Network
EFMS	Electronic Filing Management System
EMB	Environmental Management Bureau
EO	Executive Order
EPEB	Environmental Protection and Enforcement Bureau
FAO	Food and Agriculture Organization
FGD	focus group discussion
FLUP	Forest Land Use Plan
FMB	Forest Management Bureau
ha	hectare
ICCs	indigenous cultural communities
IPs	indigenous peoples
IRR	implementing rules and regulations
JMC	joint memorandum circular
KII	key informant interview
LCE	local chief executive
LGU	local government unit
MC	memorandum circular
METC	metropolitan trial courts
MTCC	municipal trial courts



MIMAROPA	Mindoro, Marinduque, Romblon, and Palawan
MYOP	multi-year operations plan
NAMRIA	National Mapping Resource Information Authority
NCIP	National Commission on Indigenous Peoples
NCR	National Capital Region
NGO	nongovernment organization
NGP	National Greening Program
NIPAS	National Integrated Protected Areas System
NIR	Negros Islands Region
PCSD	Palawan Council for Sustainable Development
PD	Presidential Decree
PENRO	Provincial Environment and Natural Resources Office
PHP	Philippine Peso
PIDS	Philippine Institute for Development Studies
PNP	Philippine National Police
QUAL	qualitative
QUAN	quantitative
RA	Republic Act
RTC	regional trial court
SIFMA	socialized industrial forest management agreement
SO <sub>2</sub>	sulfur dioxide
SWOT	strengths, weaknesses, opportunities, and threats
TLA	timber license agreement
USA	United States of America
USD	US Dollar
WPP	wood processing plan

## Abstract

The Philippines has a total land mass of 30 million hectares, 52.7 percent of which is classified as forestlands. Various management strategies have been laid in place through policies and laws to protect the forestlands, but forest degradation and extractive industry-focused legislations have significantly contributed to the loss of forest cover. To address these problems, three forest protection initiatives were looked into across three case study areas, namely, tenurial arrangements, apprehension and enforcement mechanisms, and the National Greening Program (NGP). Lapses in the implementation process characterized by the absence of site-species matching and failure to incorporate site demographics and topographical issues, and weak institutionalization of the legal support, particularly at the subnational level, remained present. In response, best practices were identified from each area and recommendations were drawn to improve the current policy landscape. These included the use of controlled use zones as management tool, stronger interface with local stakeholders, strengthening of legal support for City Environment and Natural Resources Office, use of Electronic Filing and Monitoring System portal, institutionalization of the *Lawin* Program, practice of site-species matching, and stronger stakeholder participation in the NGP. Reforms in the structure of oversight agencies and an update in the national baseline policy were sought in the form of an Environmental Protection and Enforcement Bureau proposal and the persistent lobbying for the Sustainable Forest Management Bill.



## Introduction

### *Background of the study*

The Philippines has a total land mass of approximately 30 million hectares (ha), 47.3 percent (14.2 million ha) of which is classified as alienable and disposable (A&D) lands while the other 52.7 percent (15.8 million ha) is identified as forestlands. Forestlands are further subdivided into closed or open forest formations, young natural stands, plantations, forest nurseries, seed orchards, bamboo, palm, and fern (Philippine National REDD-Plus Strategy 2012). Considering the share of forestlands in the country's land composition, the Philippines was recognized as one of the megadiverse regions with most tropical forests in the world, nourishing biodiversity, and carbon-rich ecosystems that “sequester carbon through reforestation, agroforestry, and conservation of existing forests” as indicated by the lush forest cover (Rubas-Leal et al. 2017, p. 11).

Issued in 1975, Presidential Decree (PD) 705 became the first and only blueprint of forest management in the country. It tried to encompass the various, and sometimes overlapping, subsectors of the forestry sector—conservation, management, and protection. Forty-three years later, the same law is still in place with no concrete attempt to improve this into a Republic Act (RA) that will strengthen and institutionalize the sector. Moreover, forest protection is still not defined in the Department of Environment and Natural Resources (DENR) list of terms and definitions. Newsletters from its regional websites, however, defined forest protection as an umbrella term for operation and enforcement strategies done by law enforcement units, which include foot patrol, ground surveillance and detection, apprehensions and confiscations, filing of criminal cases, and other related activities (DENR Region 8 n.d.). On a more direct action toward forest protection, Executive Order (EO) 23 was issued in 2011 calling for a moratorium on logging and contract agreements. This move was to address persistent concerns usually experienced in developing countries, which included deforestation, illegal logging, and land conversions, among others. The same executive order identified EO 26 as its policy complement to mitigate the same concerns through the National Greening Program (NGP), and to impose stricter rules on issuance of tree cutting and earth balling permits.

As a result of a policy landscape shaped from shifting priorities and constantly changing directions, forest protection initiatives have remained unstable and the least in priority level of the leading agency

in the sector, DENR, as forest protection initiatives have to compete with other initiatives on the ground across time and across regions. Thus, the study aimed to determine the impacts of these actions on the state of the country's forest resources, as well as identify the accompanying gaps in both legislation and implementation. A policy review is used to describe the policy evolution leading to forest protection, identify conflicting development issues, and recommend ways forward that are appropriate for the sector.

### *Objectives*

The study generally aims to undertake a policy review to identify gaps in legislative agenda and program implementation related to forest protection in the Philippines. Specifically, the study intends to

1. describe the policy landscape and evolution leading to forest protection;
2. identify development issues in conflict with forest protection; and
3. determine the status and overall goodness of forest protection initiatives.

## **Conceptual Framework**

Rapid urban development requires large inputs of resources that are mostly found in the forestlands of the Philippines. To meet the demand due to the growing population, forested lands saw drastic conversion, which ultimately resulted in deforestation affecting the functions of the site and degrading the quality of ecosystem services (FAO 2006). The Philippine government has employed various policy interventions, joined international agreements, and streamlined policies with other sectors such as mining and climate change to counter the effects of lost forest cover. Regrettably, these interventions faced problems like overlapping duties and inconsistencies in existing laws and regulations (Ploeg et al. 2011).

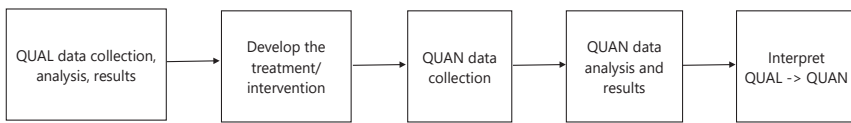
A comprehensive policy review was deemed necessary to assess the interventions made by the government. The study focused on the different aspects of forest protection, particularly the policy landscape and evolution, development issues and challenges in the sector, and the status of forest protection initiatives.

### *Approach of the study*

The research design of this study employed a mixed-methods approach involving both qualitative and quantitative data. Qualitative data

was initially analyzed, the findings of which were supplemented by a quantitative analysis (Creswell and Plano Clark 2011). The study followed a treatment-development design (Figure 1) since both types of data were emphasized in the framework. It, then, proceeded to test the treatment, or in this case, a policy to a population. For this study, the treatment pertained to four critical policies in relation to forest protection, namely, EO 23, EO 26, Electronic Filing and Monitoring System (EFMS), and the *Lawin* Program.

**Figure 1. Treatment-development design**

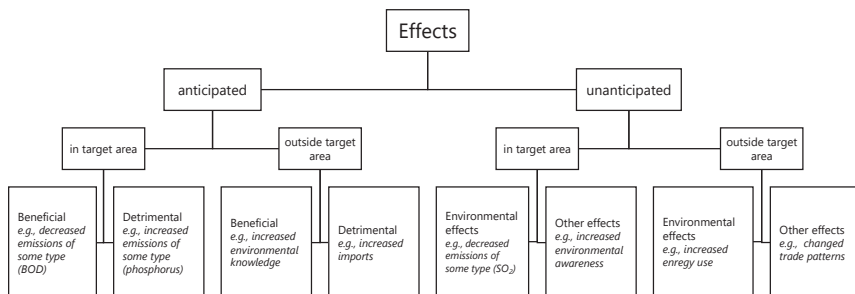


QUAL = qualitative; QUAN = quantitative  
 Source: Edmonds and Kennedy (2013)

*Analytical framework*

Evaluation models are usually utilized for assessing environmental policies. One of these is the side-effects evaluation model that considers the complexity and uncertainty of problems associated with an environmental policy (Figure 2). The model initially categorized the effects of the policy instrument into anticipated and unanticipated effects. Then, it determined whether the effects were within or outside the target area, and finally, it identified whether the effect is environmental or other types of effect (Vedung 1997).

**Figure 2. Side-effects evaluation framework**



BOD = biological oxygen demand; SO<sub>2</sub> = Sulfur dioxide  
 Source: Vedung (1997)

Forms of criteria were also used in assessing policies to arrive at normative judgments. Mickwitz (2003) compiled what he considered as the most important criteria among environmental policies, but the method depended on the relevant data available. Another criteria method was offered by Boon et al. (2009) wherein a policy was evaluated according to its coherence, relevance, efficiency of the implementation process, extent of stakeholder participation, equity in benefits-sharing, and sustainability. A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis complemented the process. Morestin (2012) suggested, on the other hand, that the analytical framework for a study assessing public policy should also determine the effects of policies and programs and identify issues surrounding the implementation process.

For this study, the various criteria offered by the aforementioned literature were modified to fit the context of forest protection in the country.

## **Methodology**

### *Data collection*

Materials and insights were gathered from key national government agencies, particularly the mandates and functions of said government institutions, which were relevant sources of information for in-depth understanding of related policies and ordinances.

To obtain different perspectives apart from the implementing agencies and to validate the data gathered from other sources, focus group discussions (FGDs) were also conducted. Stakeholders who participated in concerned government initiatives and were affected by the policy interventions were invited to the FGDs. A stratified purposive sampling was utilized to ensure equal participation among the sectors. The summary of data sources is presented in Table 1.

### *Data analysis*

The compiled data gathered from the materials given by the Forest Management Bureau (FMB) of DENR, key informant interview (KII) with key individuals, and FGDs with the stakeholders were used to review and assess the existing policies for forest protection. The side-effects evaluation framework by Vedung (1997) was adapted to identify the effects and impacts of the policies and determine whether the goals of the policies emerged in the list of effects.

To aid in the discussion, the side-effects evaluation framework followed a hybrid template of criteria derived from the studies of Mickwitz (2003), Boon et al. (2009), and Morestin (2012) (Table 2).

**Table 1. List of cooperative-respondents and their location**

Key Informant Interviews	Focus Group Discussion
Government Agency	Sector
Forest Management Bureau	Indigenous peoples
National Commission on Indigenous Peoples	Local government units
National Resource and Mapping Information Authority	Mining companies
DENR Regional Offices	Forest rangers
Provincial Environment and Natural Resource Offices	Timber businesses
Community Environment and Natural Resource Offices (CENROs)	CENROs, foresters
City/Municipal Environment and Natural Resource Offices	

DENR = Department of Environment and Natural Resources

Source: Authors' list

**Table 2. Modified evaluation criteria**

Criteria	Definition	Questions
Relevance	Degree of usefulness and appropriateness of policy in responding to evolving issues and concerns in the sector	<p>Are the current problems of the forestry sector adequately addressed by the existing forest policies?</p> <p>Are the policies still working in current conditions?</p> <p>Is there a need for a Republic Act directly addressing forestry?</p>
Impact	Extent of the effects of policy and interventions on stakeholders	Are the impacts from the implementation of the policy instruments identifiable and felt by stakeholders?
Effectiveness	Degree of success relative to the policy's desired result or outcome	<p>What are the effects of the policy on the targeted problem (deforestation, climate change, and biodiversity loss)?</p> <p>How does the implementation process influence the effectiveness of the policy instrument?</p>



**Table 2. (continued)**

Criteria	Definition	Questions
Unintended effects	Set of outcomes not foreseen or aimed at by said policy or intervention	<p>What are the unintended effects of forest protection policies on other sectors (e.g., mining and timber)?</p> <p>Are these effects negative or positive?</p> <p>For negative impacts, in what ways can they be mitigated?</p>
Cost	Monetary or in-kind value of resources that have been utilized to deliver a service or produce a good	<p>What are the costs incurred by the government and other stakeholders?</p> <p>How are the costs distributed across time?</p> <p>To what extent are the costs observable and apparent?</p> <p>How do the costs of the policy fare compared to potential policies and inaction?</p> <p>What is the cost-effectiveness of the policy for the government and for the society?</p>
Persistence and sustainability	Continued existence of intervention, program, or policy despite hindrances and difficulties	<p>How long until the effects of the newly implemented policy were observed?</p> <p>How can effects be sustained over time?</p>
Inclusivity	Ability of the policy to include people who are otherwise marginalized or overlooked in processes of intervention or program	<p>Which actors would be affected by the policy?</p> <p>Are these actors included in the conceptualization and implementation processes of policy instruments?</p> <p>Is the targeted problem by the policy a social issue that needs intervention? What are the stakeholders' reactions to the idea of intervening?</p>

**Table 2. (continued)**

Criteria	Definition	Questions
Inclusivity	Ability of the policy to include people who are otherwise marginalized or overlooked in processes of intervention or program	Are there suggestions from the stakeholders for better intervention methods?  What insights do the involved stakeholders have toward the implementation of the policy?  Can the policy's acceptability evolve throughout its implementation period?
Feasibility	Degree of attainability of outcomes of a particular policy, program, or intervention	Are all needed resources for the implementation available and accessible?  Is the policy in line with existing legislations?  Is cooperation from stakeholders observed?
Transparency	Openness of all relevant information, materials, and documents to the general public	Are the processes of implementation and output of such open to the public?
Equity	Fairness of distribution of benefits and positive impacts among all stakeholders	Are existing social inequalities created, reinforced, or corrected through the policy?  What are the benefits gained by the government and other stakeholders?

Source: Authors' adaptation from Mickwitz (2003), Boon et al. (2009), and Morestin (2012)

In the original conceptual framework, a policy was evaluated directly by its anticipated and unanticipated effects within and outside the target areas of impact. For this study, the modified evaluation criteria were inserted into the side-effects evaluation framework by utilizing these as guide to particularly determine the impacts of the policy and the extent of its reach among surrounding areas. This can be properly seen in Table 3 where the criteria and key analyses were augmented with indicators and identified sources of evidence.

On the other hand, Figure 3 illustrated the mixed-methods approach for the study. In other words, the data gathering and the discussion involved both qualitative and quantitative data. Qualitative

data were initially collected. Empirical findings, meanwhile, were used to supplement the findings of the documentary and anecdotal evidences.

**Table 3. Evaluation criteria matrix: Forest protection in the Philippines adapted from Mickwitz (2003), Boon et al. (2009), and Morestin (2012)**

Criteria and Key Analyses	Indicators	Sources of Evidence
<b>Relevance</b>		
Are the current problems of forestry sector adequately addressed by existing forest policies?	The policies have provisions in place addressing the biggest problems of the forest sector.	National policies (executive orders, administrative orders, local ordinances)  Complementation from other national laws (NIPAS, Mining Act)  KII and FGDs with oversight agencies and stakeholders
Are the policies still working in current conditions?	The policies lack definite authority over forest protection.	KII and FGDs with DENR, FMB, and community stakeholders
Is there a need for a Republic Act directly addressing forestry?	There is a need for a Republic Act on forestry to cement the country's need and to prioritize protection of its forests.	KII with DENR-FMB
<b>Impact</b>		
Are the impacts from the implementation of the policy instruments identifiable and felt by stakeholders?	The impacts of implementation on the ground can be identified by the stakeholders involved and affected.  These impacts can also be easily identified whether they have been felt within or outside the target area (in this case, protected area).  These impacts can be easily divided into anticipated and unanticipated effects.	FGD with community stakeholders  Impacts in the form of monitoring results from NAMRIA, regional offices of DENR (C/PENRO)

**Table 3. (continued)**

Criteria and Key Analyses	Indicators	Sources of Evidence
<b>Effectiveness</b>		
What are the effects of the policy on the targeted problem (deforestation, climate change, and biodiversity loss)?	The policy is expected to curb the rate of deforestation, climate change, and biodiversity loss across years.	Documents/reports from NAMRIA, DENR-FMB, regional offices of DENR (C/PENRO)  Literature review on climate change and biodiversity loss in the Philippines
How does the implementation process influence the effectiveness of the policy instrument?	The implementation process follows the provisions of laws prescribed for forest protection.  The processes do not overlap or contradict with other existing laws.	National policies (executive orders, administrative orders, local ordinances)  Complementation from other national laws (NIPAS, Mining Act)  KII and FGDs with oversight and implementing agencies (national versus local perspective)
<b>Unintended Effects</b>		
What are the unintended effects of forest protection policies on other sectors (e.g. mining and timber)?	The forest protection policies set in place protected areas where mining and timber operations cannot legally take place.	KII and FGDs with mining and timber businesses, and community stakeholders (LGU)
Are these effects negative or positive?	The unintended effects of the policies are positive for some stakeholders and negative for others (e.g. mining and timber businesses)	Complementation with monitoring results on illegal logging
For negative impacts, in what ways can they be mitigated?	These impacts are balanced with dialogues between the forestry sector, and mining and timber industries mitigating the losses with agreements.	Cases of green courts

**Table 3. (continued)**

Criteria and Key Analyses	Indicators	Sources of Evidence
<b>Cost</b>		
What are the costs incurred by the government and the other stakeholders?	There are both monetary and nonmonetary costs shouldered by government and other stakeholders.	Fiscal reports of FMB and regional offices of DENR (C/PENRO)
How are costs distributed across time?	Trend analysis can show the distribution of costs across time and across stakeholders.	KII with oversight and implementing agencies
To what extent are the costs observable and apparent?	The costs are apparent and easily identified.	
How do the costs of the policy fare compared to potential policies and inaction?	There can be lesser costs when there is stronger implementation and more definite national policy. The costs are lesser across time compared to inaction against illegal extractive industries.	KII with oversight and implementing agencies
What is the cost-effectiveness of the policy for the government and society?	The costs are lesser across time compared to inaction against illegal extractive industries.	KII with oversight and implementing agencies
<b>Persistence and Sustainability</b>		
How long until the effects are observed for the newly implemented policy?	The effects can be monitored through reports of DENR and NAMRIA.	Monitoring results of regulatory bodies (NAMRIA, DENR)
How can the effects be sustained over time?	When current policies are reinforced and given more support, these effects can be sustained over time.	KII with oversight and implementing agencies, and stakeholders
<b>Inclusivity</b>		
Which actors would be affected by the policy?	The forest protection policies affect the communities, and the mining and timber businesses.	KII and FGD with stakeholders KII with oversight and implementing agencies

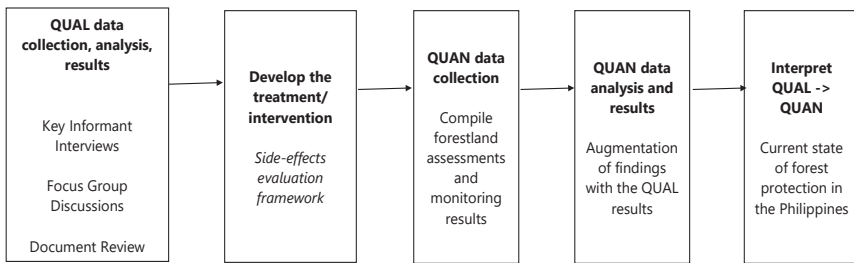
**Table 3. (continued)**

Criteria and Key Analyses	Indicators	Sources of Evidence
Are these actors included in the conceptualization and implementation processes of policy instruments?	The actors/stakeholders are included in the conceptualization of policy instruments and are being considered in the implementation.	Document review of national and local policies and ordinances
Is the targeted problem by the policy a social issue that needs intervention?	The policy is intended to target and solve environmental problems along with accompanying socioeconomic issues.	
What are the stakeholders' reactions to the idea of intervening?	Since the community is the primary stakeholder of the forests, they are cooperative of the intervention and implementation of the policy unless it dictates movement and displacement.	
Are there suggestions from the stakeholders for better intervention methods?	Stakeholders are able to give suggestions and insights on the implementation process through consultation.	
What insights do the stakeholders involved have toward implementation of the policy? Up to what degree are they able to participate?	Stakeholders are able to give suggestions and insights on the implementation process through consultation.	Document review of national and local policies and ordinances
Can the policy's acceptability evolve throughout its implementation period?	The implementation might depend on the leadership of the regional oversight agency along with political will.	

**Table 3. (continued)**

Criteria and Key Analyses	Indicators	Sources of Evidence
<b>Feasibility</b>		
Are all needed resources for the implementation available and accessible?	Resources for implementation may be lacking before on manpower and technology and are being augmented now.	KII with DENR-FMB and regional implementing bodies
Is the policy in line with existing legislations?	The existing policies complement each other toward a unified goal of forest protection.	Complementation of national laws and policies International agreements on forest protection
Is cooperation from stakeholders observed?	The stakeholders are involved and are participating in the implementation process.	KII with community stakeholders
<b>Transparency</b>		
Are the processes of implementation and output of such open to the public?	The outputs of the policy implementation are open to the public.	KII with oversight agencies Transparency of needed documents
<b>Equity</b>		
Are existing social inequalities created, reinforced, or corrected through the policy?	The policy provided an equitable distribution among stakeholders.	KII and FGD with stakeholders
What are the benefits gained by the government and other stakeholders?	The benefits gained come in the form of environmental benefits that increase over time.	Fiscal documents  KII with oversight agencies and FGD with stakeholders

CENRO = Community Environment and Natural Resources Office, PENRO = Provincial Environment and Natural Resources Office, KII = key informant interview; FGD = focus group discussion; DENR = Department of Environment and Natural Resources Office; FMB = Forest Management Bureau; NAMRIA = National Mapping and Resource Information Authority; NIPAS = National Integrated Protected Areas System; LGU = local government unit  
 Note: Other key analyses have been deleted due to repetition  
 Source: Authors' analysis

**Figure 3. Second part of conceptual framework**

QUAL = qualitative; QUAN = quantitative  
Source: Vedung (1997)

## Results and Discussion

### *Policy analysis*

The forestry landscape in the Philippines has been shaped by the evolution of policies that encompass various complementary areas such as management, rehabilitation, and protection that are difficult to treat separately or individually. However, as a result of divergence in policy shifts and management regimes, these areas of forestry can now be identified distinctly from one another. While DENR may not offer an operative definition for forest protection, its contextual definition can be derived from the focal point of recent policy directions.

### **Colonial management regime**

Forest-related policies were grouped by De Jong (2010) into four major categories based on evolving management regimes with corresponding timelines. The first period referred to the colonial arrangements (1910–1950) as the programs were only applied in Luzon or what was considered as the main island and capital of the Philippines which was a colony then of the United States. The first category was associated with state-sponsored reforestation, covering around 26,000 ha. The reforestation resulted in the eviction of the communities within the purported rehabilitation area



(De Jong 2010). The interventions during this time yielded short-term success and provided the least benefits to communities.

### **National government regime**

The second period refers to the set of programs that took place after World War II around 1950s to 1970s—when most Asian countries were freed from the colonizers. The national governments in the region conducted endogenous forest rehabilitation aimed at rural development and export-friendly forestry to mitigate environmental degradation. This time, the perspective toward communities was shifted from being the cause of degradation to being the benefactor. During the early 1970s, DENR has established an array of forest support programs such as Administrative Order (AO) 62 in 1971—or the *Kaingin* Management and Land Settlement Regulation, Forest Occupancy Management Program, Family Approach to Reforestation Program, and Communal Tree Farming Program. The aforementioned policies addressed problems supposedly caused by *kaingineros* on shifting cultivation. In addition, these legal documents converted them into benefactors by having them enter into contractual agreements as small family groups for forest management (Harrison et al. 2004).

Presidential Decree 705 or the Revised Forestry Code of the Philippines was passed during the same period and has remained to this day as the blueprint for program implementation in the forestry sector. EO 192 was passed thereafter, which called for the reorganization of Department of Environment, Energy, and Natural Resources, renaming it as DENR, and for other purposes. It also created the FMB mandated to provide technical assistance for the effective protection, development, and conservation of forestlands and watersheds (FMB 2016). However, this duration was marked with poor implementation and monitoring.

### **External agencies management regime**

The third period involved the influx of intervention programs from international organizations and external agencies such as Food and Agriculture Organization (FAO) of the United Nations, Asian Development Bank, and World Bank from 1980 to 2000. Where before only the state was involved in policies and interventions, external actors have already joined along with increased participation from the private sector and nongovernment actors. The communities' role

also shifted from being mere beneficiaries to being the state's partners through contract and tenure agreements to, at the very least, enhance the socioeconomic conditions of forest occupants and, at most, alleviate poverty in these areas. The most notable among these was the Integrated Social Forestry Program in 1982, which was later integrated with the Community-Based Forest Management (CBFM). The lack of technical expertise was addressed in this era along with improved consideration toward local communities.

### **Participatory management**

The participatory management era saw the rise of stakeholder participation from being mere beneficiaries of the programs and partners in tenurial contracts to having roles in the technical knowledge and monitoring processes. The proliferation of tenurial instruments such as the Community-Based Forest Management Agreements (CBFMA), Sustainable Integrated Forest Management Agreement, and Timber License Agreement were among its most notable features. The period also saw the development of the trade industry of forest-related products along with the rise of wood-processing plants. However, these interventions, under the name of forest rehabilitation program, ran contrary to the encompassing forest protection policy as these enabled tree cutting privileges, upland development, grazing, and agroforestry. Seen as a complementary trade, forest charges were imposed along with delineation of borders, conduct of inventory of forest resources, and the establishment of the sector's legal side.

The tenurial instruments carried on until 2011 when EO 23 was issued, declaring a moratorium on the cutting and harvesting of timber in natural and residual forests. This was the first concrete legislative action in terms of forest protection, possibly due to reports on the country's dwindling forest cover. In the same year, EO 26 was also released, containing the mechanisms for an interdepartmental convergence initiative for an NGP. In Section 2.6 of EO 23, it was mentioned that the Department of Agriculture, the Department of Agrarian Reform, and DENR shall develop the NGP as an educational complement and a rehabilitation component of the moratorium, thereby implying that the two EOs should be treated as partner legislations. In the same year, EO 26 was passed, which established the NGP from 2011 to 2016. NGP, supposedly, covered the rehabilitation of forestlands, mangrove

and protected areas, ancestral domains, civil and military reservations, urban areas under the greening plan of the local government units (LGUs), inactive and abandoned mine sites, and other suitable lands. The latter was expanded in 2015. Participation from LGUs and the barangays were also requested to support the greening program. To strengthen the issued EOs, an anti-illegal logging task force was created among the triumvirate partnership of the DENR, the Armed Forces of the Philippines (AFP), and the Philippine National Police (PNP). Guidelines in availing permits became stricter for tree cutting and earth balling—the latter being denounced by the key informants in the study sites as contradictory and not environmentally sound. Memorandum orders (MO) were also circulated, demanding a uniform replacement ratio for cut or relocated trees. Currently, the ratio is 100 replanted trees for every one cut tree (1:100). The future of the remaining valid tenurial instruments depended on the provisions of Memorandum Circular 2013-28 since it contained the guidelines on renewal and cancellation of certificate of stewardship contracts.

Policies and legal foundations were in place to ensure the participation and inclusion of LGUs. For instance, PD 1067 issued in 1976 mandated for the delineation of activities near or on the banks of rivers and streams and shores of seas and lakes, which implied the need to establish coastal resource planning in the area. In 1992, the Urban Development and Housing Act was passed, which permitted the eviction and demolition of occupations within dangerous areas such as the shoreline and riverbanks. Joint Memorandum Circular (JMC) 1998-01 by DENR and DILG served as the foundation for the collaboration and partnership of LGU and DENR toward sustainable management and development of forest resources. An added unique feature to Palawan was Proclamation 2152 that declared the entire province and certain parcels of public domain as mangrove swamps and forest reserves. At the barangay level, there exists baseline policy like the authority of local chief executive to enforce laws and ordinances applicable within the barangay in relation to pollution control and environmental protection as stated in Section 389 of Book Three of the Local Government Code of 1991. Further, MC 2008-101 called for the creation of a Barangay Peace and Order Committee tasked to devise a Public Safety Plan that will include environmental protection activities (e.g., clean-up

drive, tree and ornamental planting, and flood control), and solid waste management (e.g., information and education campaign in proper garbage segregation, recycling, collection and disposal, and development of a material recovery facility).

### **Synthesis of policy evolution**

While not every forest-related law was mentioned in the discussion, it was found that there were over 3 RAs; 7 combined EOs, proclamations, and PDs; and 87 MOs, MCs, and AOs issued in the country that deal with the many areas of the forestry sector (Table 4). Despite the number of laws, there were minimal legislation focused solely on forest protection. Since the colonial era until 2010, the policies were geared toward supporting extractive industries—export, timber businesses, multiple land uses—that eventually resulted in dwindled forest cover. Laws geared toward forest protection, particularly in the field of legal proceedings, tree cutting permits, and land-use plans, started to emerge only in 2010. These laws were complemented with tree planting and replacement ratio instructions, following the arrangement similar to EOs 23 and 26. Tenurial arrangements with special privileges, timber businesses, and laws on forest charges dwindled around this time and were either cancelled or imposed upon moratoriums. Additionally, laws failed to ensure the protection of the Philippines' ecological frontiers and lush rainforests situated in Palawan and Cagayan, and instead classified these areas as croplands. The policies within those years were derived from the past administrations' failure to sustainably manage the forest resources, and to some extent, their lack of understanding of the biosphere and the compounding effects those policies will have on the future generations. The gradual onset of degradation pressures on the sector has resulted in reactionary policies by the end of 2010 as a race against time to return the previous forest cover and protect whatever remained.

The policies and orders released throughout the years have contributed greatly to the present state of the country's forestry sector. In many ways, implementation processes have shaped the realities on the ground and affected not only environmental concerns but also socioeconomic, legal, and fiscal aspects. The following section provided a discussion of the current state of the forestlands of the country, the issues and concerns, and the impacts of current initiatives.

**Table 4. Timeline of policies under the forestry sector**

	1970s–1980s	1990s–2000s	2000–2005	2005–2010	2010–2018
			Agreements and Licenses		
Family Approach to Reforestation Program		AO 2003-11 CBFMA	RA 9486		MC 2013-28 renewal and cancellation of Certificate of Stewardship Contract
Communal Tree Farming Program		AO 2004-29 revised rules on CBFMA	MO 2007-336 lifting suspension of harvesting and transportation of timber in plantation under tenure		
		AO 2004-30 revised rules on SIFMA	Memo from Secretary defining parameters related to delegation of authorities for processing and issuance of CBFMAs		
		AO 2004-34 guidelines in MYOP for TLA	MO 2010-09 no acceptance and processing for logging contracts		
		Tree cutting			
		AO 2003-24 IRR of RA 9175	MO 2005-01 special recovery authority for drifted tops for charcoal		MO 2011-52 declaring moratorium on timber cutting, anti-illegal logging task force

Table 4. (continued)

1970s–1980s	1990s–2000s	2000–2005	2005–2010	2010–2018
		MC 2004-08 streamlining permitting requirements from EMB	MO 2005-02 recovery authority for drift logs and uprooted trees	MO 2012-02 uniform replacement ratio for cut or relocated trees
		Revised guidelines in issuance of cutting/ harvesting permits in private titled lands	MO 2005-19 authorizing DENR-CAR to issue permits <30	MC 2013-74 clarification on suspension of cutting permits
			MO 2007-472 inventory of timber and rattan services	EO 23 s. 2011 MC 2013-118 processing of land use permits with tree cutting / earth balling
Forest charges, imports, exports				
		AO 2003-17 Subic as port	AO 2010-11 seedling production, collection, disposition	MO 2011-113 instruction on transportation of timber from natural and residual forests
		MO 2004-01 reporting system for forest income		MC 2013-515 revised procedures of LGU shares from forest charges

**Table 4. (continued)**

1970s–1980s	1990s–2000s	2000–2005	2005–2010	2010–2018
		MO 2004-04 reporting sys for regional report on wood import		JMC 2014-01 implementation of DPWH-DENR-DSWD partnership on tree replacement project
		AO 2004-16 prescribing revised schedule of forest fees		
		Legal proceedings		
		AO 2003-18 disposition	MO 2009-459 conveyances seized, confiscated, and forfeited in favor of government	
		Wood processing plants		
		AO 2003-41	MC 2007-09 clarifications on implementation of moratorium	
		AO 2003-53 establishment and operations of WPP	AO 2007-13 lifting of moratorium on WPPs	

**Table 4. (continued)**

	1970s-1980s	1990s-2000s	2000-2005	2005-2010	2010-2018
			Land use planning		
AO 62					
Kaingin Management and Land Settlement Regulation		RA 7279			
Urban Development and Housing Act		AO 2003-42 plantation for herbal	MC 2005-05 adopting forestry definition concerning forest cover/land use	EO 193 – expanded NGP	
Forest Occupancy Management Program		JMC 1998-01			
LGU and DENR partnership toward sustainable development of forest resources		MC 2004-06 guidelines in integration of reforestation farming strategy	AO 2005-25 upland agroforestry program	Proclamation 2013-663 Busuanga Pasture reserve	
PD 1067					
need for coastal resource planning		Proclamation 2152			
Palawan lands as mangrove swamps and forest reserves		AO 2004-04 guidelines on planted trees in private lands RA 7160	AO 2005-23 collaborative approach to watershed mgmt.	EO 26 – NGP	



**Table 4. (continued)**

	1970s–1980s	1990s–2000s	2000–2005	2005–2010	2010–2018
LCE to enforce laws related to environment		AO 2004-28 forestlands for tourism	MC 2006-01 non-titling of lands, even within A&D lands, suitable for fishery operations		
PD 705					
Revised forestry code			AO 2004-35 for grazing	MO 2007-313 review of titled properties within protected area AO 2008-24 assessment and delineation of boundaries between forestlands, national parks, and agricultural lands	MC 2012-01 implementation of NGP
EO 192 reorganization			AO 2004-49 declaring public forest as A&D for cropland in Batangas; AO 2004-28 Pampanga; 2004-47 Capiz; AO 2004-48 Surigao del Sur; 2004-45 Puerto Princesa City; AO 2004-43 Maramag, Bukidnon; 2004-42 Bataan; 2004-41 Cebu, Capiz; 2004-40 Aparri and Cagayan; 2004-39 Zamboanga del Norte; 2004-38 Itogon, Benguet; 2004-37 Cagayan; 2004-50 Nueva Ecija		MC 2013-06 guidelines and procedure for plantation development for NGP

Table 4. (continued)

1970s–1980s	1990s–2000s	2000–2005	2005–2010	2010–2018
		AO 2004-59 special uses	MC 2009-03, MC 2009-04, MC 2009-05, 2009-06, 2009-07, 2009-09 implementation of upland development program	JMC 2013-03 barangay forest program in support of NGP

AO = administrative order; CBFMA = community-based forest management agreements; SIFMA = socialized industrial forest management agreement; MYOP = multi-year operations plan; JMC = joint memorandum circular; PD = presidential decree; EO = executive order; NGP = National Greening Program; MC = memorandum circular; DPWH = Department of Public Works and Highways; DENR = Department of Environment and Natural Resources; DSWD = Department of Social Welfare and Development; WPP = ts; IRR = implementing rules and regulations; TLA = timber license agreement; LGU = local government unit; CAR = Cordillera Administrative Region; LCE = local chief executive; RA = Republic Act; EMB = Environmental Management Bureau; A&D = alienable and disposable  
Source: Authors' interpretation

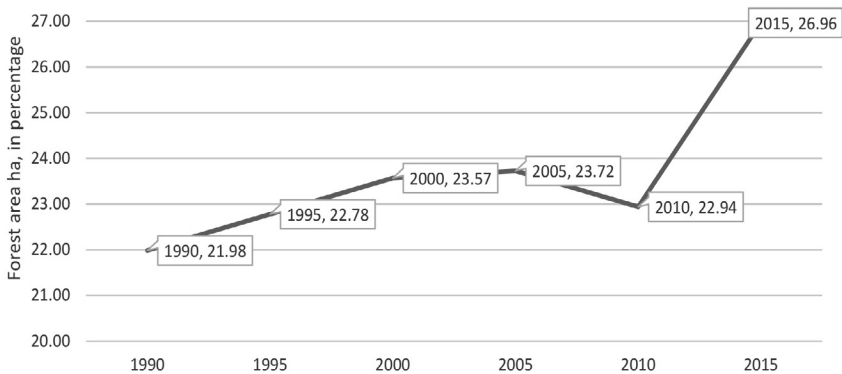
*Implementation processes*

**Status of forestlands**

Out of the Philippines’ 30 million ha total land area, 15.8 million ha is identified as forestlands. In 1990, only 21.98 percent of the Philippine land area was classified as forestlands. It grew steadily to 23.72 percent in 2005 and decreased again to 22.94 percent in 2010 as shown in Figure 4. In five years, the forestlands increased to almost 27 percent as a result of the combined efforts of EOs 23 and 26.

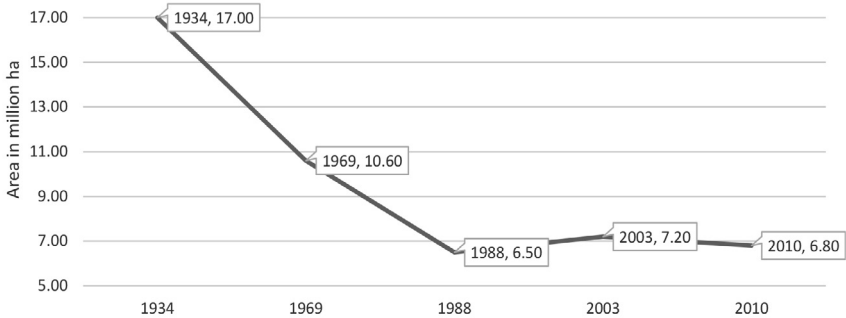
In terms of forest cover, it was estimated to be around 17 million ha in 1934, but it decreased to 6.840 million ha in 2010 as reflected in Figure 5 (FMB 2016) due to reasons ranging from kaingin, global warming, and development issues. Forest cover was further categorized into three types, namely, open forest, closed forests, and mangrove forests. Open forests were identified as lands with tree canopy density between 10 and 40 percent. Closed forests, on the other hand, have a canopy average of 60 to 100 percent while mangrove forests grow along the intertidal zones in tropical and subtropical latitudes near the equator. Vis-à-vis the total forest cover in 2010, the open forest has the largest share among the three (4.595 million ha), followed by closed forest (1.934 ha), and mangrove forest (0.311 million ha).

**Figure 4. Forest area: Philippines, 1990–2015**



he = hectare

Source: World Bank (2018)

**Figure 5. Forest cover: Philippines, 1934–2010**

ha = hectare

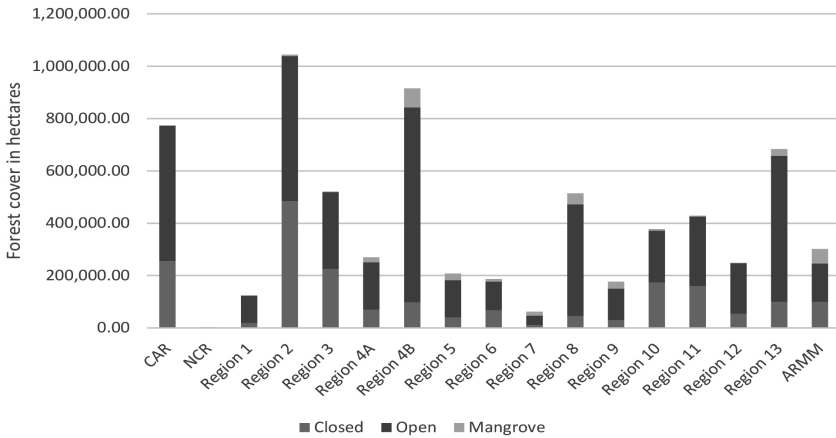
Source: Senate Economic Planning Office (2015)

Among the regions, Cagayan Valley (Region 2) has the largest forest cover and a balanced presence between open and closed forests (Figure 6). This is followed by the Mindoro, Marinduque, Romblon, and Palawan (MIMAROPA) region (Region 4B), in terms of forest cover. MIMAROPA, however, was comprised more of open forests. Across all regions, open forests with 10–40 percent canopy density have dominated whereas closed forests with greater canopy density trailed behind, more so with mangrove forests (FMB-DENR 2013).

*Forestland services.* Like any other ecosystem, forests were known to deliver basic provisional services including maintenance of watershed forest reserves. For both upland and lowland communities, the loss of forest cover also meant a decrease in water supply. The largest watershed reserve was found in the Cordillera Administrative Region (CAR) with an area of 521,190 ha while the most watersheds were identified in Central Luzon (Figure 7).

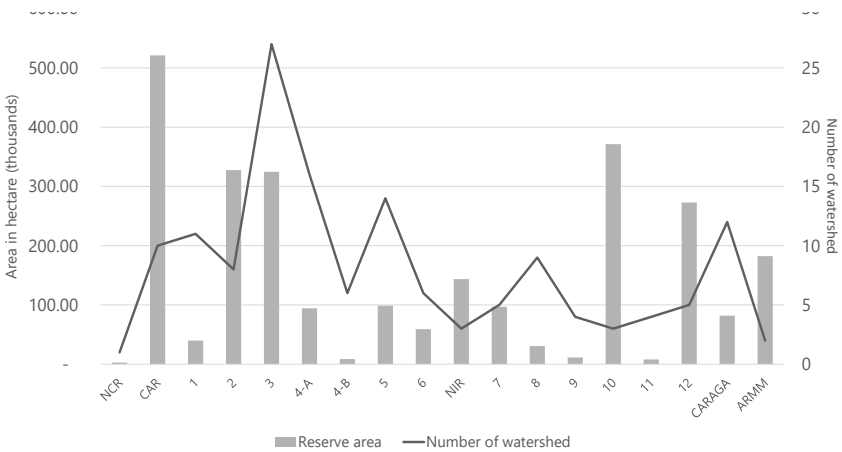
Aside from provisioning services, the Philippine forests also provided economic services in the form of products such as wood-based manufactured articles, furniture, paper and paperboard, pulp and waste paper, and lumber. These were exported to nations such as Japan, United States of America (USA), China, United Kingdom, and the Netherlands with a total trade value of USD 3.16 billion. In turn, the Philippines imported paper and paperboard, plywood, furniture, and lumber from other countries that amounted to USD 1.42 billion. The country's top import sources were China, USA, Indonesia, Malaysia, and Japan. Most

**Figure 6. Forest cover across regions: Philippines, 2010**



CAR = Cordillera Administrative Region; NCR = National Capital Region; ARMM = Autonomous Region of Muslim Mindanao  
 Source: FMB-DENR (2016)

**Figure 7. Watershed forest reserves across regions: Philippines, 2016**



CAR = Cordillera Administrative Region; NCR = National Capital Region; NIR = Negros Island Region; ARMM = Autonomous Region of Muslim Mindanao  
 Source: FMB-DENR (2016)

of the imported forest-related products also came from Asian countries, particularly in the East and Southeast regions where forest cover and biodiversity were similarly abundant.

The quantity and value of forest-based products were presented in Figures 8 and 9, respectively. In Figure 8, it can be derived that paper was the main export throughout 2003–2006, then export product slowly shifted to wood-based production from 2007 onwards. The exported quantity of the former amounted to nearly 2.5 billion net kilogram while the latter added up to 5.8 billion gross kilogram. This also implied that both timber and lumber production were intensified to meet the demand for export. In terms of exported value, the highest were wood-based and forest-based products followed by paper (Figure 9).

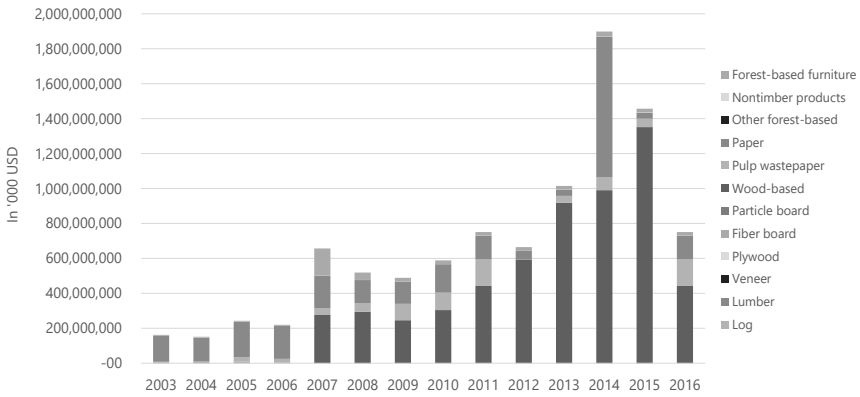
*Challenges in the forestry sector.* While it was relatively easy to identify forests based on canopy density, land classification was faced with persistent challenges in terms of overlapping land titles and mismatched labels. The repercussions of which had both direct and indirect effects on forest cover and watersheds—even more so in the distribution and utilization of forest-based products. There were some instances when the declaration on paper was different from what can be found on the ground. The inconsistency in land classifications contributed to the domino effects within the forestry sector.

In Figure 10, it can be observed that there was barely any change in land classifications from 2000 to 2016. Most of the lands were declared as A&D lands. Forest reserves have dwindled by 2,000 ha while timberlands also decreased by 34,000 ha. Lands lost to aquaculture should also be considered. Data revealed dismal results, considering that these figures included results from the moratoriums on logging and the nationally-supported and multistakeholder-participated NGP.

A closer look on the country's forest reserves vis-à-vis the timberlands is shown in Figure 11. The latter has a significant land area over the former due to numerous tenurial agreements issued by the government. Initially treated as management strategies for protecting forestlands, these tenurial agreements have placed special tree cutting privileges to the contract partners and shaped these timberlands into plantations fit for timber businesses.

In the literature, the loss of forest cover in the country was attributed to deforestation and forest degradation. FAO (2006) defined deforestation as the conversion of forested land to nonforested land due

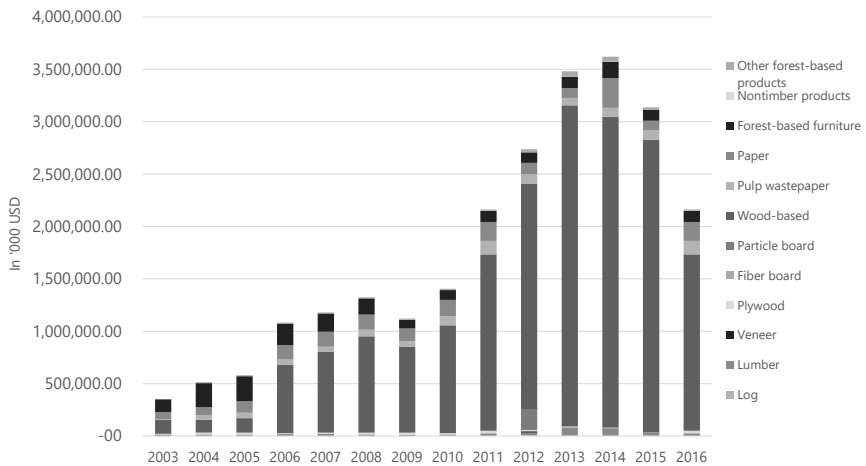
**Figure 8. Quantity of forest-based products export: Philippines, 2003–2016**



USD = US Dollar

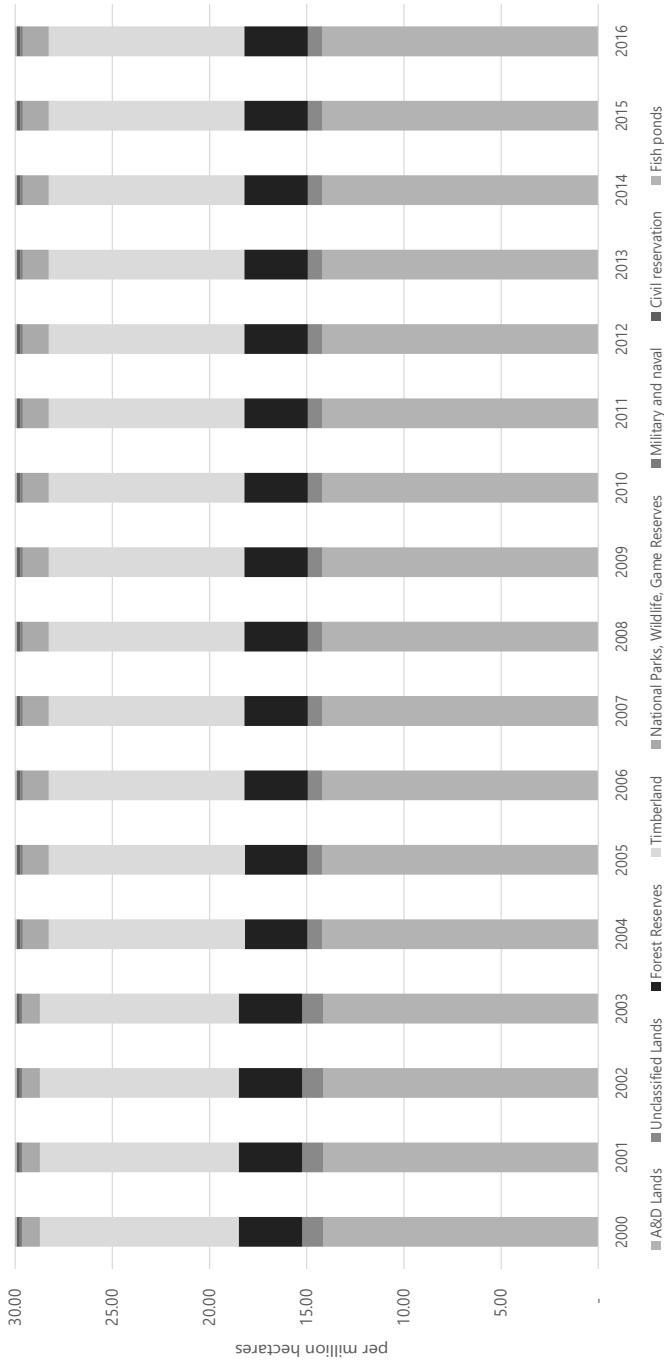
Source: FMB–DENR (2016)

**Figure 9. Value of forest-based products export: Philippines, 2003–2016**



Source: FMB–DENR (2016)

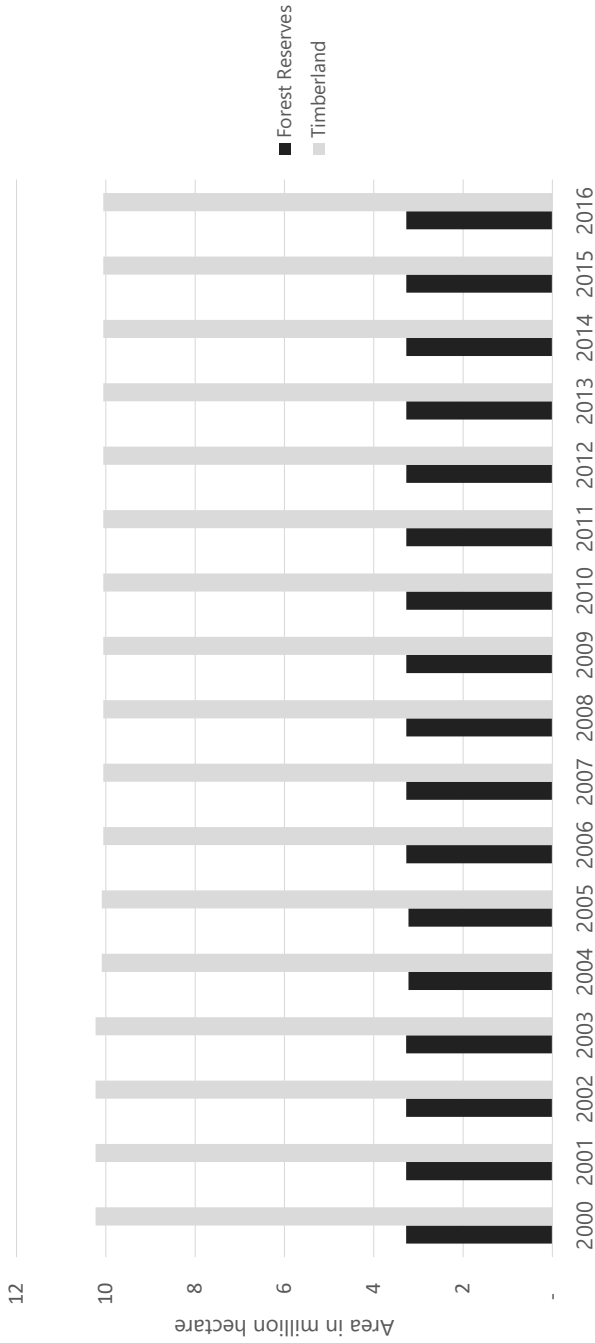
**Figure 10. Land classification: Philippines, 2000–2016**



A&D = alienable and disposable lands  
Source: DENR (2016)



**Figure 11. Comparison of land area between forest reserves and timberlands, 2000–2016**



Source: DENR (2016)

to anthropological issues while forest degradation pertains to the shift in forest ecological structure, function, and quality of forest services due to natural or anthropological reasons.

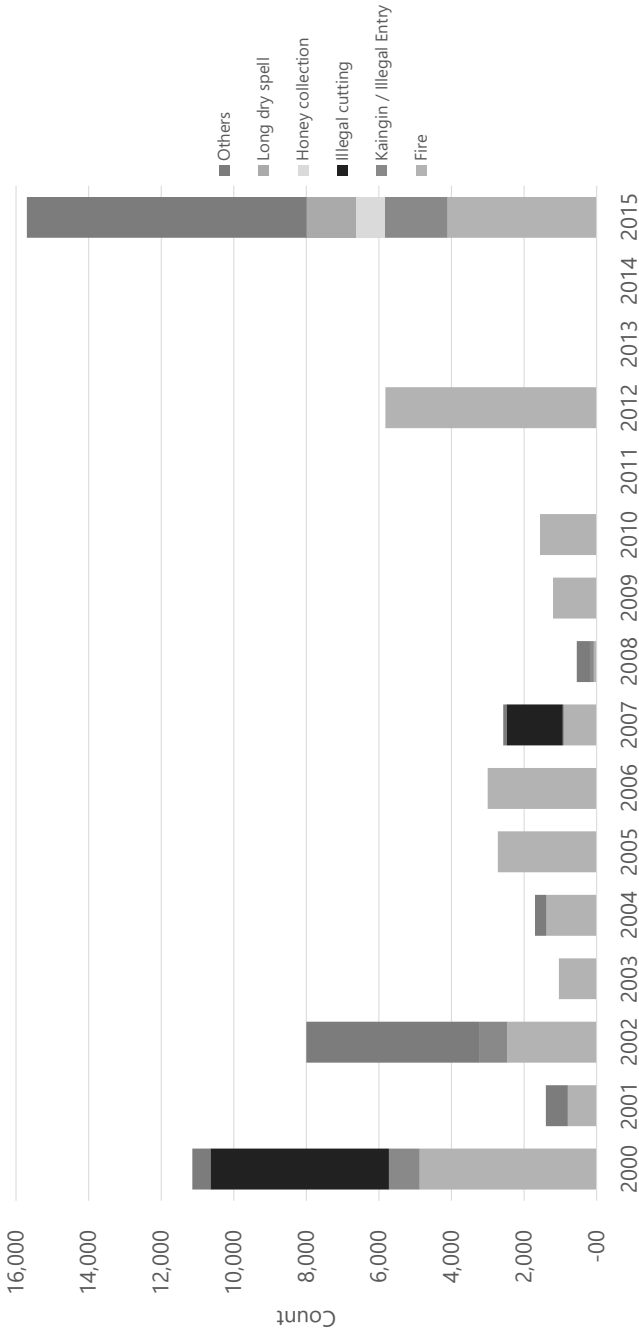
A consistent finding was that illegal logging played a key role in the process of deforestation and degradation, the impacts of which were carried over to other sectors, such as agriculture and fisheries, through siltation. Despite these observations, certain LGUs deferred shutting down illegal logging activities due to the communities' allegedly heavy reliance on timber revenues (Ploeg et al. 2011). This was true in the case of the Northern Sierra Madre Natural Park, the largest protected area in the uplands by virtue of the National Integrated Protected Areas System (NIPAS) Act of 1992 and RA 9125.

Regional reports from DENR's field offices were compiled to document the causes of forest disturbances from 2000 to 2015 and to pinpoint the major factors that contributed to the significant decline in forest cover (DENR 2016). There were six general causes identified, namely, fire, kaingin/illegal entry, illegal cutting, honey collection, long dry spell, and others. Fire was an umbrella term for incendiarism, hunting, throwing of cigarettes, forest fire, and grass fire. DENR reported that there were available data for 2013 and 2014; however, these were not disaggregated according to the major causes, hence, the absence of data for those years as reflected in the figure.

In 2000, the main causes of forest disturbances were illegal cutting and fire (Figure 12). From 2000 to 2015, illegal cutting decreased until no incidence was observed and reported in 2015. However, fire continued to persist even until 2015. It disturbed a total of 29,929.46 ha while illegal cutting covered 6,427 ha. The latter's disappearance in the charts can be attributed to the issuance of EO 23 banning logging, but this was yet to be confirmed by the personnel on the ground, particularly among areas where there were a number of declared apprehensions and confiscations related to illegal activities within the forestlands.

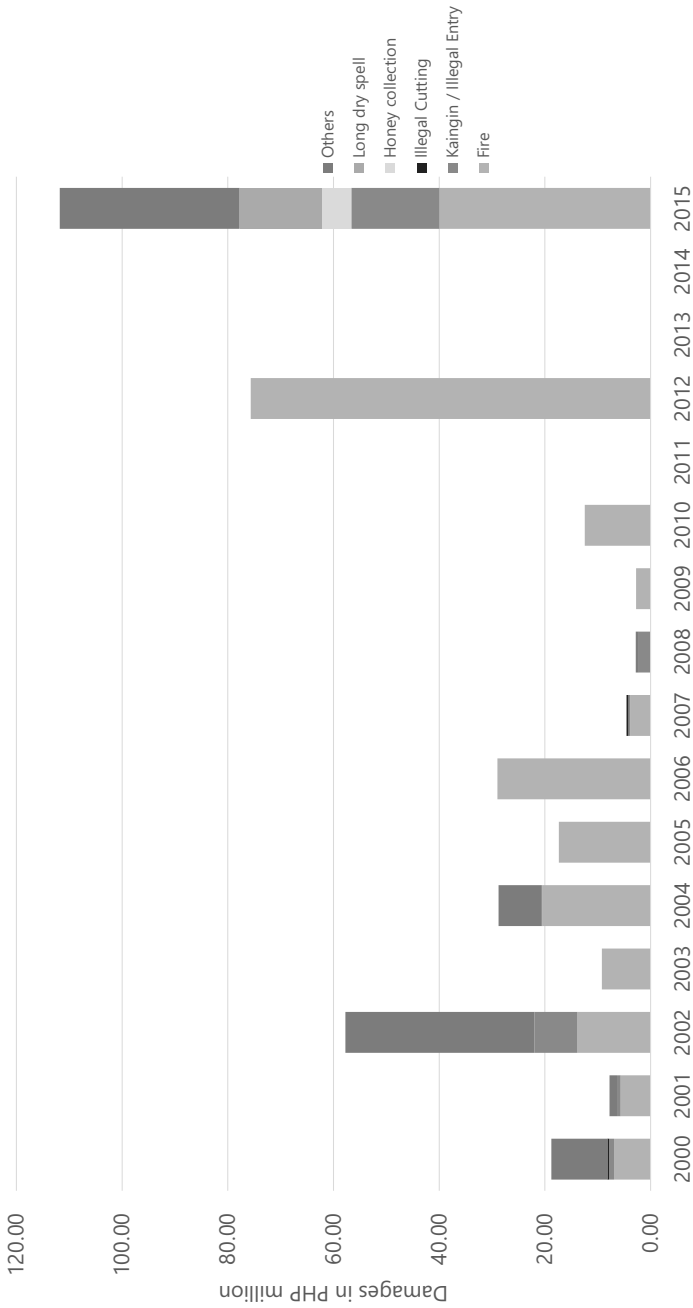
Figure 13 revealed the value of the damages from forest disturbances in the country from 2000 to 2015. The cumulative damages from 2000 to 2015 amounted to a little more than PHP 378 million, the largest contribution was caused by fire (PHP 238.3 million) followed by other causes (PHP 90.6 million), and kaingin (PHP 29.1 million). Illegal cutting, despite having disturbed a lot more area than kaingin, contributed only PHP 653.1 million in damages.

**Figure 12. Causes of disturbances within forestlands: Philippines, 2000–2015**



Source: DENR (2016)

**Figure 13. Damages from forest disturbances: Philippines, 2000–2015**



PHP = Philippine Peso  
 Source: DENR (2016)

### **Tenurial strategy**

To address the continuing loss in forest cover, nationally supported management regimes have started issuing contracts and agreements to communities in the hope of placing these forests under stewardship. Tenurial instruments were seen by the government as a strategy to encourage reforestation and protection of forestlands. As of December 2013, 2.9 million ha of forestlands were secured in agreements (FMB-DENR 2013).

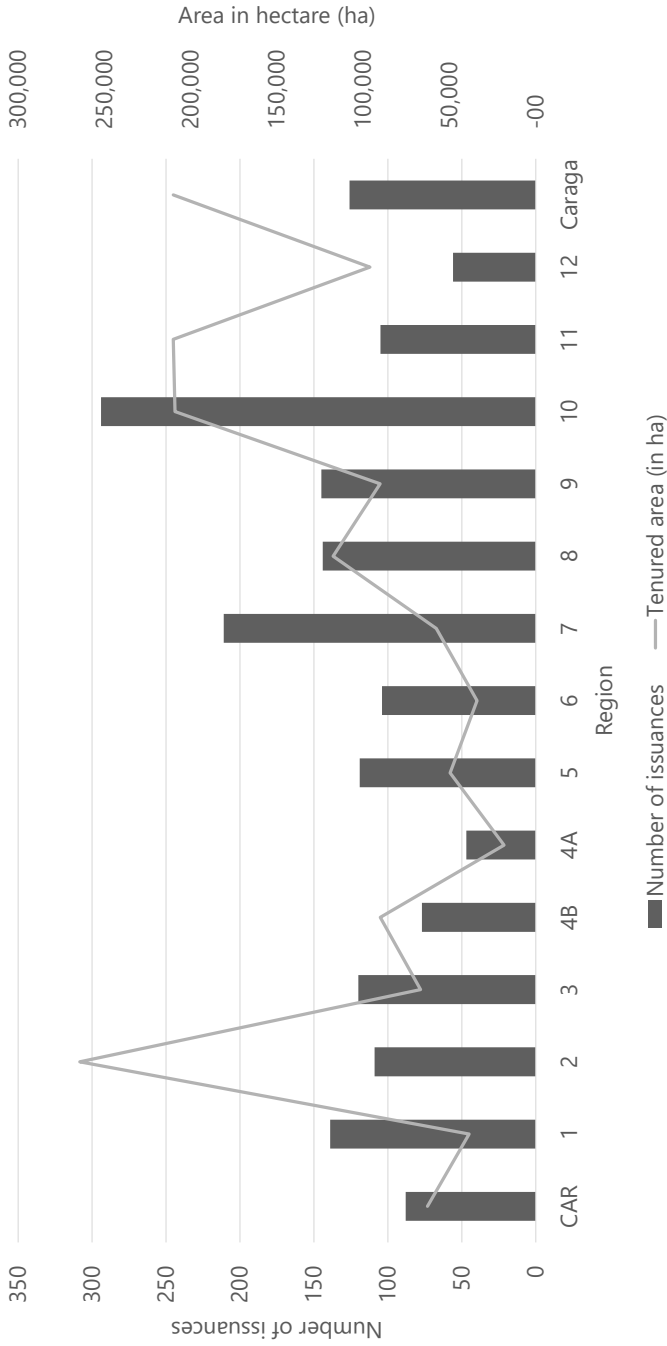
The most common of these instruments were the CBFMA, which continued until 2015 and was even accommodated in the enhanced NGP. The biggest CBFMA areas were given to Regions 2 and Caraga with 264,279 and 210,082 ha, respectively (Figure 14). However, the regions with the most number of agreements were Regions 10 and 7 with 294 and 211 agreements, respectively.

Another common instrument was the timber license agreement system (TLA) issued by the national government to regulate commercial timber businesses and to strengthen the implementation of policies against illegal loggers. The area and number of these agreements were reflected in Figure 15. Accompanying the TLAs was also the establishment of pulp and wood processing plants, which streamlined the supply of forest and nonforest-based products. Across the years, however, the number of licenses dwindled in observance of the logging moratorium. From 910 ha, it decreased to 120 ha. Timber licenses have been small from the start but have decreased to just two licenses by 2016.

Forest tenure granted upland communities the right to finally manage and utilize their natural resources. This was deemed as a successful reform albeit encouraging upland encroachment according to the field personnel of DENR. CBFM was seen as a national strategy to facilitate sustainability in forest management and ensure fairer benefit distribution among the stakeholders of the country's forestlands (Pulhin and Ramirez 2016). As of 2013, the reforestation programs, both by the government and nongovernment sectors, covered 2 million ha while 14 million ha of untenured forests remain under protection (FMB-DENR 2016).

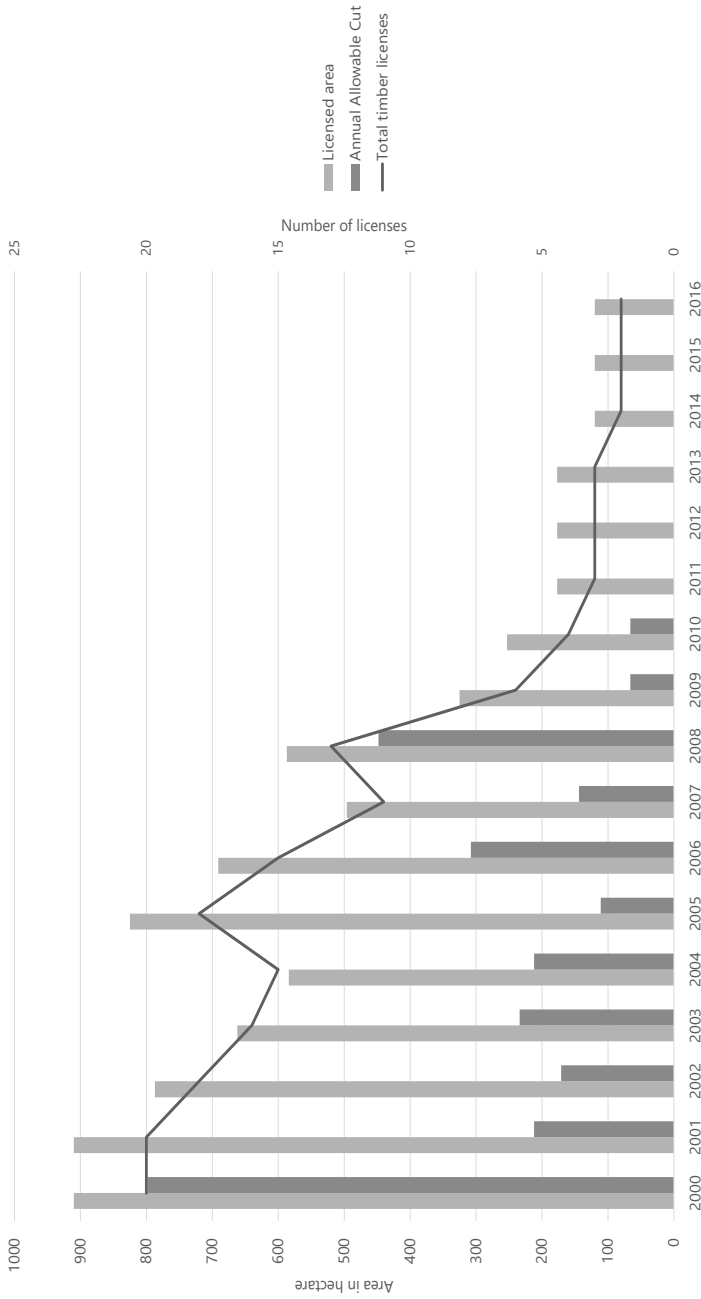
Tenurial contracts and agreements were among the many strategies that the national government employed to counter decreasing forest cover and density. Other interventions discussed in this study were apprehension and enforcement mechanisms as supplementary actions

**Figure 14. Area and number of Community-Based Forest Management Agreements across regions: Philippines, 2015**



CAR = Cordillera Administrative Region  
 Source: FMB-DENR (2016)

**Figure 15. Area and number of timber licenses: Philippines, 2000–2016**



Source: DENR (2016)

to the moratorium on logging, and rehabilitation and reforestation programs (e.g., NGP).

### **Apprehension and enforcement**

The moratorium on logging and tree cutting through EO 23 was a strategic intervention in the forestry sector. However, the success of said legislation should go hand in hand with monitoring and enforcement mechanisms. Most of these actions were directives from the national government and were devolved to field offices to effectively counter deforestation and mitigate its effects. In the previous discussion, it was brought up that some LGUs allowed timber businesses to continue due to the revenues generated (Ploeg et al. 2011). To avoid cases like this, DENR established the EFMS. EFMS was an initiative aimed to curb corruption and personal favors on the ground and to safeguard the enforcers from possible political influence.

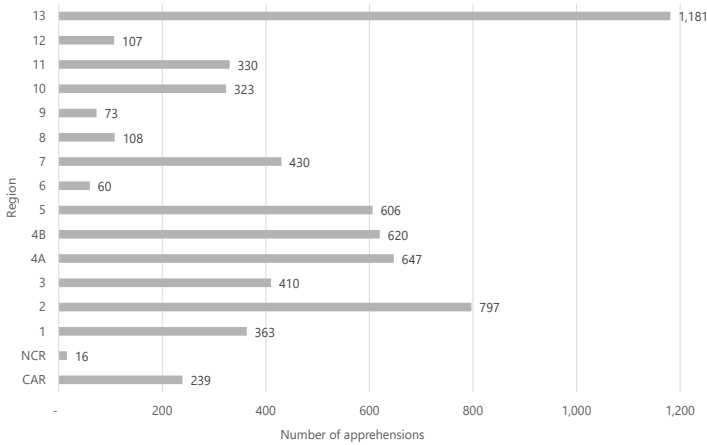
It was formulated to be in the form of an application installed in a smartphone or a tablet carried during ground patrols. In the event of poaching and illegal logging, the forest guard can directly input the details of the incident and have it transmitted directly to DENR's central office. This addressed the issue of lax security by forest guards since they will now be able to avoid alleged political pressure from parties involved.

Generated data from the EFMS portal revealed information spanning from the 2000s to 2018 (Figure 16). In terms of apprehension, the regions with the most cases were Regions 13 and 2 with 1,181 and 797 cases, respectively. National Capital Region (NCR) and Western Visayas Region were the regions with the least number of cases.

These cases were discussed in what the Department of Justice (DOJ) referred to as green courts, particularly established to address and decide on cases involving the environment. As of 2017, there were over 119 environmental green courts scattered across the country, 28 of which lacked presiding judges and two were unorganized. A closer look would reveal that the Philippines has over 84 branches of regional trial courts (RTCs), 9 metropolitan trial courts (METCs), and 26 municipal trial courts (MTCCs). Figure 17 shows there were 62 presiding judges for the RTC, 7 for METC, and 18 for MTCC, totaling 87 presiding judges to hear and decide special cases. In the absence of presiding judges, acting or assisting judges are expected to perform the functions of the court.



**Figure 16. Forest-related apprehensions across regions: Philippines, 2010–2018**



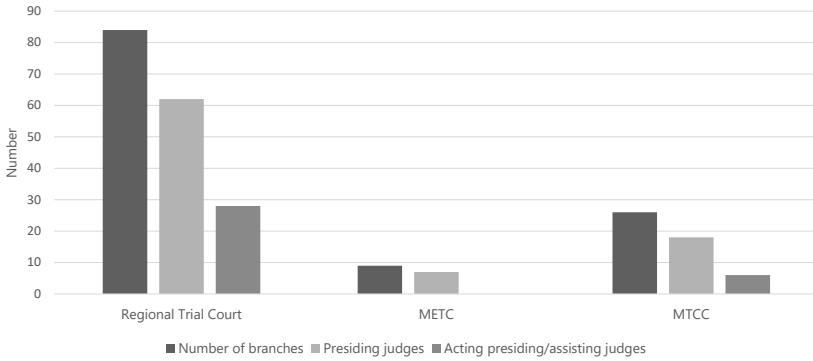
NCR = National Capital Region; CAR = Cordillera Administrative Region  
 Source: DENR (2018)

There were 34 in total—28 for the RTCs, 6 for the MTCCs, and none for the METCs.

Environmental court cases revealed that the bulk of the cases were found in Regions 2, 3, 4, and 5. The regions with the least or no cases were NCR and Region 12. Overall, there were 1,027 cases related to environment filed in 2017, 350 case inflows, and 490 case outflows. A total of 901 cases were in the process of finalization.

As for the study sites, there were two branches of environmental courts present for Caraga, and these were all located in Butuan City. Figure 18 shows that two branches have 14 pending beginning cases, 18 case inflows, 9 case outflows, and 21 pending end cases. For Palawan, its sole branch can be found in Puerto Princesa City where it handled all 237 pending beginning cases. Thirty cases were filed in the branch as of December 2017, and 95 were resolved. However, there were still 172 pending cases in the process of finalization. For Region 2, there were two regional trial courts found in Ilagan City, Isabela, and Tuguegarao. Another municipal trial court was also present in Tuguegarao. As of 2017, there were 11 pending beginning cases in Tuguegarao and 25 in Ilagan. There were 13 case inflows and 21 case outflows. Cases with decisions given and in the process of finalization or what were sometimes referred to as ending cases totalled 26 in the region.

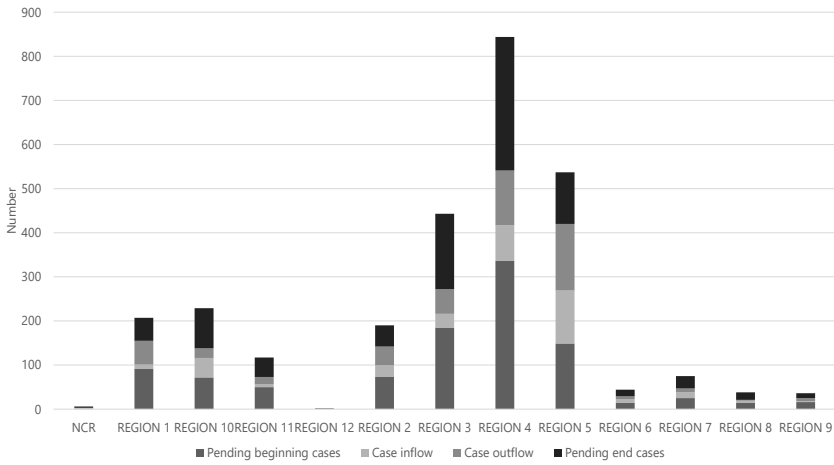
**Figure 17. Status of environmental courts in the Philippines**



METC = metropolitan trial court; MTCC = municipal trial court

Source: Department of Justice (DOJ) (2017)

**Figure 18. Environmental court cases: Philippines, as of 2017**



NCR = National Capital Region

Source: DOJ (2017)

The next subsection discussed the rehabilitation and reforestation programs with focus on the NGP, a government strategy to complement the moratorium on logging. These programs were also laid out to facilitate faster regeneration of lost forest cover and density due to decades of tenurial agreements and extractive activities.

### **National Greening Program**

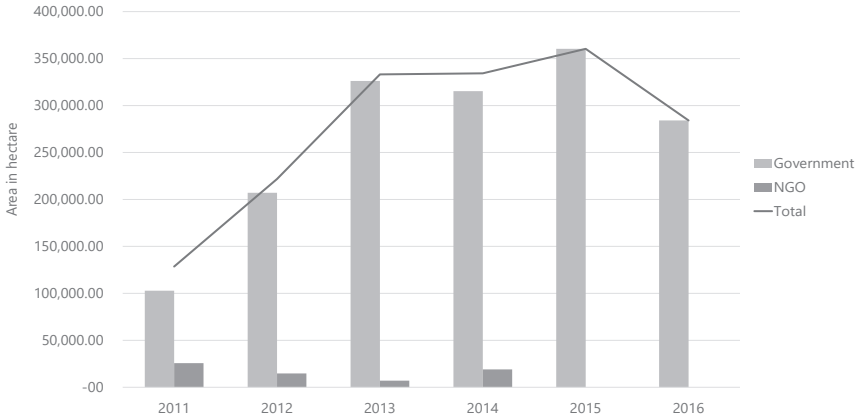
Another landmark legislation considered in the forestry sector was EO 26, which mandated the establishment of the NGP—a massive forest rehabilitation program aimed at growing 1.5 billion trees within 1.5 million ha from 2011 to 2016, under the guidance of FMB. The law covered all remaining unproductive, denuded, and degraded forest. EO 193, signed on November 12, 2015, lengthened its implementation from 2016 to 2028. In Figure 19, it can be seen that from the time the program was initiated up to 2016, 1.66 million ha were planted with trees and 1.37 billion seedlings of different species. The NGP also gave way to 4.02 million jobs in upland communities (NGPCO 2017). Disaggregation of data by sector revealed that the government has contributed more compared to nongovernment organizations (NGOs).

From another perspective, Figure 20 shows the accomplishments from 2011 to 2016 disaggregated by sector. NGOs contributed significantly from 2011 and then declined in 2013. It rose again in 2014 but decreased the following year. By 2016, it was no longer contributing to NGP accomplishments. The percentage share of other government agencies also dwindled from 2011 to 2015, while the bulk of the accomplishment was contributed by the DENR.

It was discussed earlier that NGP was considered to be under the participatory management regime of forest protection initiatives, but the results presented above have shown that a large portion of the accomplishments were from government agencies. The least share was from the NGOs while there were no figures provided for civil society organizations (CSOs) or peoples' organizations. The qualitative part of the study shall validate this finding.

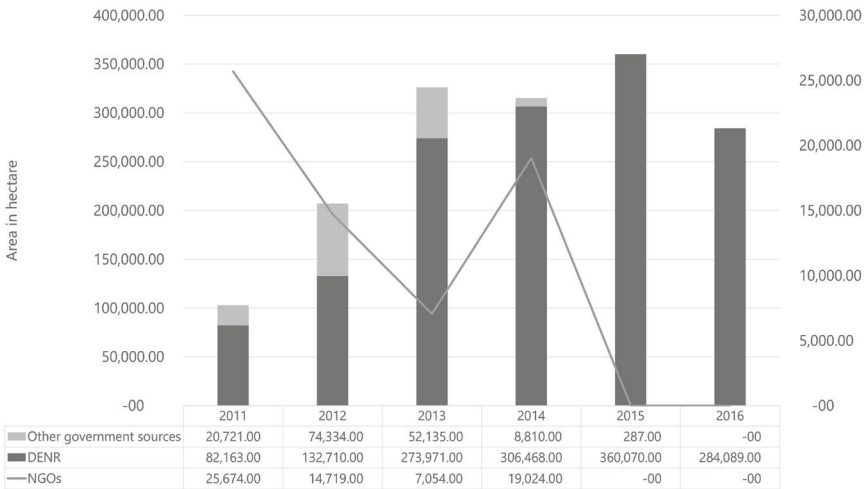
To supplement analysis of concrete data from national agencies, qualitative data derived from the case studies were also examined in the next section. The merging of these two analyses provided a substantial look at the status of forest protection initiatives in the country.

**Figure 19. Comparison of National Greening Program accomplishments between government and NGOs, 2011–2016**



NGO = nongovernment organization  
Source: FMB-DENR (2016)

**Figure 20. Disaggregated National Greening Program accomplishment per sector, 2011–2016**



NGO = nongovernment organization; DENR = Department of Environment and Natural Resources  
Source: FMB-DENR (2016)

### *Evaluation analysis of case studies*

Using the side-effects evaluation framework, with a list of modified evaluation criteria adapted from the studies of Mickwitz (2003), Boon et al. (2009), and Morestin (2012), common forest protection initiatives from the three case study sites in Caraga, Palawan, and Cagayan were assessed. These three areas were chosen due to their rich forest covers, as well as the proliferation of forest-related cases and apprehensions. Insights and perspectives were also obtained from DENR regional offices, as well as related agencies such as National Commission on Indigenous Peoples (NCIP), Palawan Council for Sustainable Development (PCSD), Provincial Environment and Natural Resource Office (PENRO), and Community Environment and Natural Resource Office (CENRO). The forest initiatives likewise explored covered tenurial agreements, apprehension and enforcement mechanisms, the NGP, and other related rehabilitation projects.

### **Overview of regions and institutional arrangements**

When the DENR underwent reorganization, the FMB was relegated to a staff bureau more involved with policies and strategies rather than being hands-on in forest management. Due to the change in functions, the mandate of forest protection was devolved mainly to the field offices of DENR, particularly the PENRO. However, the bulk of enforcement and apprehensions were carried by the CENRO. Aside from forest protection, additional functions on small-scale mining, solid waste management, and Environmental Management Bureau (EMB)-related concerns were given to both PENRO and CENRO. These arrangements were uniform in all regions across the country with slight differences in the unique participation of external agents such as *Bantay Gubat*, LGU, or NGOs.

Caraga or Region 13 was identified as one of the last ecological frontiers of the Philippines, along with Palawan, and was home to 12 key biodiversity areas. Further, the region also has seven critical wetlands comprising a total area of 45,613 ha. Despite the protection offered by the NIPAS Act and RA 9147, mining operations and illegal logging still threatened the ecological integrity of the region.

Palawan was chosen as the second case study site. Aside from being a known ecological frontier and having a Biosphere Reserve Status, it is unique due to the presence of the PCSD, which sets it apart from other regions with institutional arrangements. The PCSD was established

through RA 7611 that pushed for the Strategic Environmental Plan as the province's main framework in sustaining the environment through the creation of controlled-use zones. There was also strong participation from LGU's Bantay Dagat and Bantay Gubat. Ecotourism comprised the bulk of its economy, making the natural resources the main drivers of local revenue.

The third and last study site was Cagayan Valley where the longest mountain range in the country can be found. The Sierra Madre Mountain Range has been known to act as barrier against incoming typhoons, as home to watershed reserves that irrigate adjacent agricultural lands, and as site to 68 protected areas. Forty percent of the country's forest cover can be found in the mountain range alone. Many cases of apprehensions and confiscations were also found in the region.

All three study sites held importance in terms of biodiversity and ecological integrity, but there were differences in terms of institutional arrangements and threats. However, all three sites were also subjected to devolved national policies. Thus, the on-ground implementation of strategies were evaluated using the modified evaluation criteria.

### **Modified evaluation findings**

*Tenurial contracts and agreements.* The direct impact of forest protection policies on tenurial arrangements was in the cessation of issuances. While tenurial arrangements were considered borderline extractive, there were also mechanisms that enabled the participation of communities and local stakeholders. Unintended effects were then felt by poor communities near or adjacent the forested areas in Caraga, which consider logging as a major livelihood source. Retained tenurial contracts such as the ISF agreement and CBFMA remained underdeveloped due to lack of livelihood opportunities.

For Palawan, the province's major problem was the misclassification of lands. By virtue of their controlled-use zone policy, they have delineated areas of production and protected forests. There were instances when papers declared the area as a production forest but, in reality, the area is considered a protected zone. PCSD believed that such contradictions have direct negative impacts on future developments such as implementation strategies and welfare of the upland dwellers. Presently, there were overlapping jurisdictions for areas within the Forest Land Use Plan (FLUP).

These findings also touched on the aspect of inclusivity and equity as the initiatives have directly and indirectly affected the indigenous peoples (IPs) and indigenous cultural communities (ICCs). Forest protection policies were implemented at the expense of dwellers in the area. Aside from being displaced, IPs were also constrained to use forest resources within their ancestral domain per the policies of DENR.

*Apprehension and enforcement mechanisms.* The devolution of forest protection to PENRO and CENRO was not complemented with labor and fiscal resources. Existing forest guards were each in charge of 4,000 to 7,000 ha which were too wide for an accurate monitoring and too open for armed threats with little to no security detail. Moreover, these forest guards suffered from salary gap. They also held irregular positions and are not entitled to receive hazard pay. It was only in Palawan where the Forest Protection Fund was mentioned. The government has a 40-percent share in the fund while the remaining 60 percent was divided among the province, municipality, and barangay. There was no further elaboration on how the fund was used. These could have helped procure equipment for the forest guards or add to their compensation.

Direct impacts of forest protection initiatives and policies were most difficult to identify particularly in mining areas because the enforcement team was not allowed to enter the area to police or monitor. Such functions were relegated to mining companies and thus, direct impacts may only be felt by personnel of the mining companies. Furthermore, the PENRO and CENRO have to interface with the Bantay Gubat and other initiatives by the LGU. While the Bantay Gubat was not actively present in Caraga, they were actively involved in Palawan. There are some instances, however, where DENR field offices complained about the noncompliance in adjudication proceedings, nonharmonization with PENRO and CENRO, and their lack of political insulation.

Indirect impacts were more apparent through costs incurred during apprehension and enforcement operations. There was an observed weakness or absence of a legal support combined with the nonfunctioning of green courts—factors detrimental to the personal safety of field personnel. These can be observed in the trends of apprehension and confiscation numbers.

In terms of apprehensions and confiscations, the trend in Caraga decreased from 2011 until 2016 but rose again in volume in

2017 (Figure 21). The following year, the volume decreased along with the price of confiscated products. However, the value of apprehended products increased drastically. In the data given by the DENR regional office in Caraga, the filed cases were not resolved quickly although pending cases remained consistently lower and increased slowly over the years. There were only 339 cases for the two existing branches of trial courts for the whole region, but conviction rate also slowed down. The findings reflected the national data given by the DOJ on green courts as they also lacked judges to decide on cases. The field personnel identified the lengthy adjudication process as one factor influencing the slow resolution of cases. The delay in resolution also led to the depreciation of confiscated products and decrease in penalty.

Apprehension of forest-based products in the province of Palawan mostly occurred in municipality of Roxas, followed by Puerto Princesa, the provincial capital (Figure 22). The former was able to apprehend 342,115.58 board feet (bd. ft.) of forest products worth about PHP 2 million. Puerto Princesa, on the other hand, managed to apprehend PHP 563,992.04-worth of products that accumulated to 19,640.51 bd. ft.

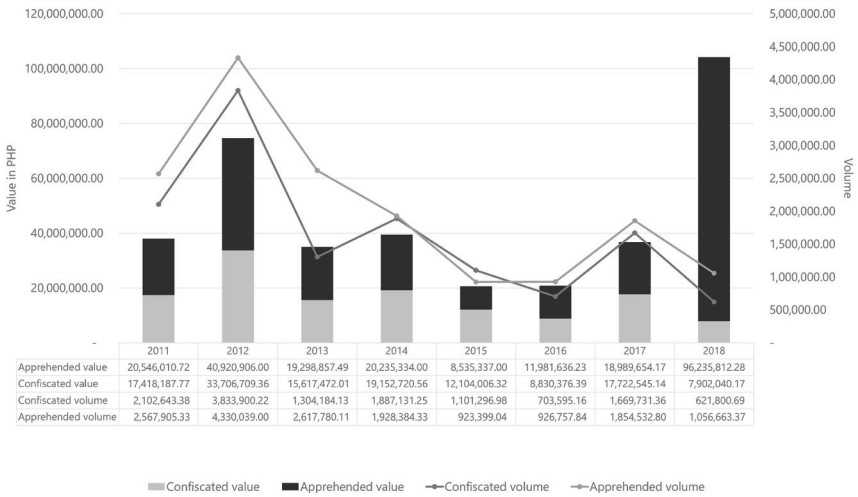
An unintended effect of the nationwide log ban in the Cagayan Valley region was the shift from mechanized to manual poaching for harder tracking. Poachers were often caught in most operations and not the financiers that helped illegal logging persist. Making the process more difficult, according to DENR regional office, was the cash-based budgeting that severely affected the procurement of necessary materials and requirements needed for law enforcement, such as equipment and vehicle for patrol, among others, by delaying the procurement process. There was also no tracking system present in the region, making the tracking of case developments difficult.

In terms of apprehensions and seizure of forest products, the figures were highest in the province of Cagayan, followed by Isabela in 2012. Figure 23 also shows that the two were the highest in terms of cubic meters of forest-based products and number of conveyances. These were also the same provinces where the green courts for the regions were situated.

In terms of value, Cagayan and Isabela have the highest cumulative values of apprehensions and seizures with Nueva Vizcaya and Quirino trailing behind (Figure 24). For the whole region, much of the values were from the seizure of chainsaws at PHP 4 million followed by premium hardwood at PHP 895,741.00, and the rest lumped in miscellaneous



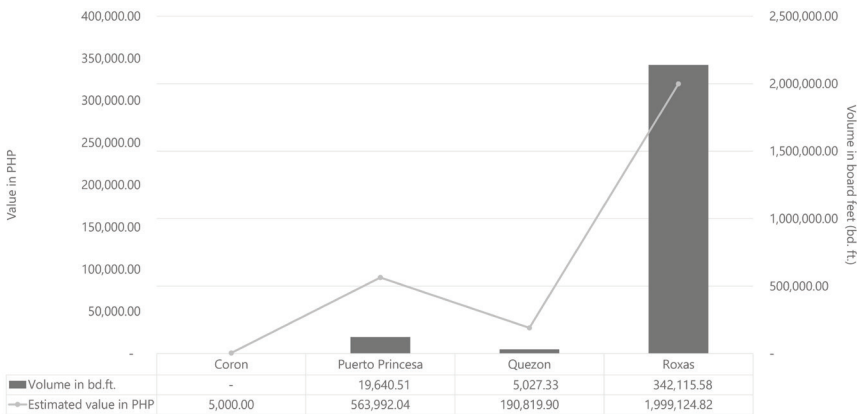
**Figure 21. Apprehension and confiscation figures: Caraga region, 2011–2018**



PHP = Philippine Peso

Source: Authors' calculations based on records provided by DENR-Caraga

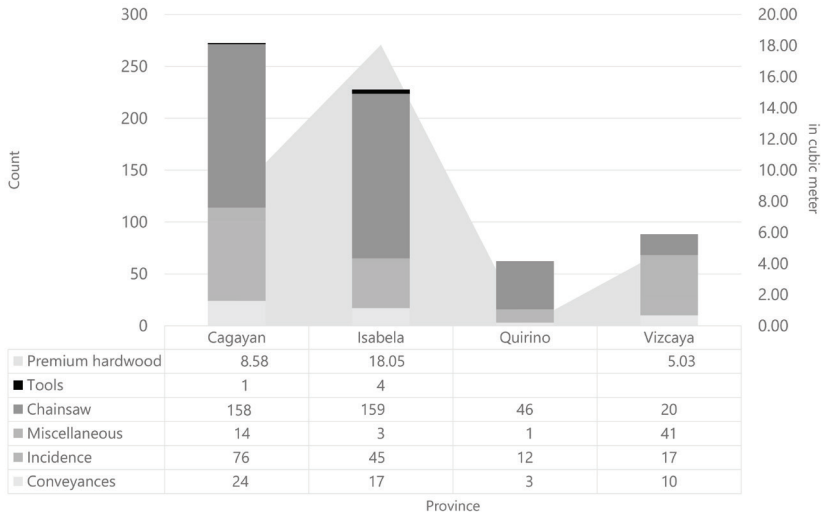
**Figure 22. Volume and value of apprehended forest-based products in Palawan for 2017**



PHP = Philippine Peso

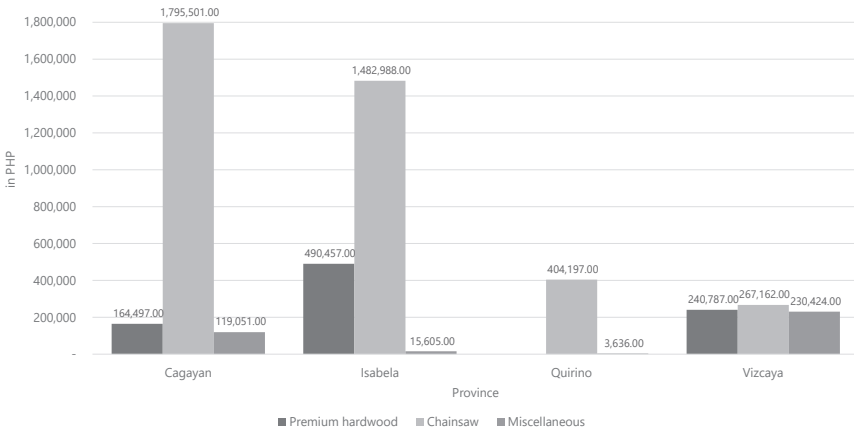
Source: Authors' calculations based on records provided by PENRO Palawan

**Figure 23. Quantity of apprehensions and seizure of forest products in the Cagayan Valley region**



Source: Authors' calculations based on records provided by DENR–Cagayan Valley

**Figure 24. Value of apprehensions and seizure of forest products in the Cagayan Valley Region**



PHP = Philippine Peso

Source: Authors' calculations based on records provided by DENR–Cagayan Valley

items (tools, equipment, conveyances) at PHP 368,716.00. These were the annual amounts foregone by the region due to the weak support for enforcement mechanisms.

*NGP and other rehabilitation programs.* A consistent policy related to rehabilitation was the required replacement enclosed with the tree cutting and earth balling permits. These were set prior to NGP and were already in practice as part of the rehabilitation plan of mining companies. However, in Caraga, these practices were deemed countereffective as transplanted trees continued to die. Moreover, the replacement trees were not even endemic species thereby affecting not only the forest cover but also the ecological integrity of the area.

NGP was also considered as an additional expense to reforestation because trees eventually die due to nutrient depletion and unsuitability of species compounded with unregulated kaingin and cutting. The same situation was experienced in Palawan. In their case, the commercial and planted species were more preferred as they grow fast enough to meet the required period. Cagayan, on the other hand, has the seedling commodities downloaded from the CENROs to LGUs, but these were not suitable to the planting location, which echoed the finding that site-species matching prior to the rehabilitation program was indeed not implemented. Moreover, there was no mention of communities taking part in NGP activities. The figures from LGUs may have been lost through absorption by respective CENROs as the latter were the ones conducting the activity. This explained the lack of figures of communities and stakeholders from NGP contributors.

### **Best practices**

A best practice identified in Palawan was the imposition of controlled-use zones. The province's land-use planning and zonation helped delineate borders while providing a win-win situation between development activities and environmental protection. This zoning tool, when applied, also prevented overlapping of titles and misclassification of lands. However, this was only enabled due to the unique presence of PCSD in Palawan, an institution that remained absent in the rest of the provinces.

As for Cagayan, one best practice was in the aspect of monitoring and feasibility where lapses in enforcement are properly addressed. They actively sought institutional collaboration between armed personnel and CENRO and increased the number of checkpoints of DENR

vis-à-vis the checkpoints of PNP and AFP to insulate the apprehension process from political influence and *padrino* system.

DENR Secretary Roy A. Cimatu issued a directive in 2017 to hire one lawyer for every CENRO to alleviate the heavy burden of the offices in apprehensions and cases (Simeon 2017). To retain these lawyers and to ensure the continuity and progress of proceedings, the central office should supplement them with adequate compensation and resources that fit their credentials. Otherwise, CENRO would deal with a fast turnover rate of legal officers and low-resolution rate in cases.

In all three case studies, Palawan has the most effective forest protection policy set in place. A big factor in its success was the presence of PCSD and the implementation of local initiatives like the controlled-use zoning tool and the province-wide commercial logging ban. The province was a good example of a balanced policy between sustainability of forest resources and economic need, especially since ecotourism was its biggest contributor in the local economy. Other regions may lack the institutionalization of an agency similar to PCSD, but it can replicate the Environmentally Critical Areas Network (ECAN) and controlled-use zones in their respective forest protection initiatives. The arrangement also mimicked the goal of the proposed Sustainable Forest Management Act discussed in the recommendations.

## Conclusion

Half of the Philippines' lands are classified as forestlands, providing a number of ecosystem services like watersheds and forest-based products for exports. However, the forest cover has significantly declined over time, mainly due to deforestation. Forest protection, as a policy, lacked adequate provisions for enforcement and institutionalization. Conflicting policy also opened forestlands to various extractive industries such as mining, timber and lumber businesses, exportation, contracting, and land conversions. Such weakened policy implementation—particularly in the grounding of forest protection initiatives, the provision of legal support to both institution and individual staff, the cascading and translation of policy at national and subnational levels, and the systematic monitoring and evaluation and continuity of policy implementation and legal case progressions.

As response, the government pursued a set of forest protection policies covering stringent tenurial arrangements, set up of apprehension

and enforcement mechanisms, and implementation of the NGP. Among the three initiatives observed in the case study sites, the second initiative was most lacking as there was no apt and consistent legal support institutionalized in the forestry sector, particularly at the subnational level. Even the staff of the mandated state institution are subject to harassment and dragging legal woes. The third initiative was seen as complementary to other forest protection initiatives and had qualified successes. An articulated concern was the program's lack of in-site species matching and failure to consider site demographics and critical environmental and topographical issues.

Recommendations and best practices have been culled from the case studies in the hope of improving the current policy landscape of the sector. These are discussed in the final section. For the tenurial arrangement, zoning tools such as ECAN and controlled-use zones practiced by the Palawan province were suggested along with a stronger integration with IPs/ICCs, adjacent communities, and relevant agencies to improve the inclusivity of the policies. Stronger interface and land use planning with local governments and subnational structures are also necessary. In the aspect of apprehension and enforcement mechanisms, revised sets of penalties and stronger DENR in-house legal support are needed. Recently issued directives by the incumbent department secretary, like the provision of legal officers per CENRO, the EFMS portal, and the Lawin program for monitoring, partly addressed the identified lapses. However, more sustained and better-funded remedies are required. Site-species matching for the NGP was articulated, with improved participation from CSOs, NGOs, and local communities to promote stakeholder stewardship and program transparency. A positive note is that the ongoing attempts at policy and institutional reforms, like the proposal of EPEB and the passage of the Sustainable Forest Management Bill, are forward looking in their take on ecological integrity and socioeconomic issues within the country's forest ecosystems.

## **Recommendations**

Initiatives in forest protection, while groundbreaking, still faced challenges, particularly during the implementation process. Several drivers that contributed to these problems have been identified in a study

by Carandang et al. (2013). These were classified into demographic, economic, technological, institutional, and cultural factors. Problems such as upland encroachment and multiple land uses were considered as demographic factors as they were associated with the demand, driven by an increasing population. Economic drivers were the umbrella term for contracting licenses and timber businesses to meet the high export demand during 2000–2010. Illegal timber poaching was also driven by the lack of economic opportunities and worsening poverty and, thus, can likewise be associated with this type of driver. Technological drivers, on the other hand, referred to the lucrative timber and lumber businesses. Institutional issues pertained to the present arrangements in the forestry sector, and it was shown in previous discussions how the unique networks of institutions and agencies in each case study site either became a success factor or a hindrance to the initiatives. Falling also under this category was the long-lasting impact of previous policies and management regimes that promoted actions and industries detrimental to the forest cover. Lastly, cultural factors pertained to practices and ways of the IPs and indigenous cultural communities that went against the set of policies and initiatives. These may be in form of traditional planting practices like *kaingin*, which was pointed out to be a major cause of forest degradation, and the delineation of ancestral domains, which is commonly in conflict with land classifications.

In the findings, however, it was revealed that forest protection policies marginalized the surrounding communities and IPs/ICCs as they were barely considered for inclusivity and benefit distribution. Moreover, current initiatives also have to deal with the piled-up cases and apprehensions. The next discussion presented the recommendations culled from case studies to address issues and concerns.

### *Tenurial arrangement*

Palawan planned to address the lapses with IPs/ICCs in the inclusivity criterion by tapping NCIP to monitor IPs within forestlands and ensure alignment of the ethnic group's development plans, i.e., Ancestral Domain Sustainable Development and Protection Plan. In addition, they also aimed to integrate FLUP using ECAN as the zoning tool. The Cagayan region acknowledged poverty as a driver for *kaingin* and timber poaching. Hence, they planned to mimic the controlled-use zone policy of Palawan to have a selective extraction area addressing the demand for

lumber from increasing residential population in its provinces. They were lobbying for personal consumption of products for shelter and convergence between protection and development.

### *Apprehension and monitoring*

To sustain the effects of forest initiatives currently in place, Caraga recommended the conversion of FMB into a line bureau and the reinforcement of the Multipartite Forest Protection Committee, which was not present in most regions. The absence of this interagency task force in Palawan made them suggest the creation of a Multipartite Monitoring Team similar to the mining sector to fill in the tasks in monitoring. Another suggestion from the interviews in Palawan was to tap the PNP and the AFP for manpower and logistics augmentation since CENROs were not allowed to carry firearms. Most of the time, these forest guards operated without security detail and were exposed to great risks during apprehension process. Cagayan, on the other hand, planned to decentralize patrolling and enforcement among different barangays. Cagayan harkened back to the reformation of the Environment and Natural Resources Sectoral Adjustment Loan wherein an identified and trained group for enforcement and apprehension was formed. Short-term monitoring proposals were proposed by the DENR personnel through organization of forest brigade teams in summer and utilization of barangay stakeholders. The formation of such groups could help alleviate the burden of monitoring for the CENRO and could also help augment the logistical needs to properly survey and evaluate the area for illegal conducts. Another suggestion of the region was to implement a one-strike policy among check points to avoid the fines lost over depreciation of confiscated products instead of waiting for the results of the lengthy administrative proceedings and have the penalties lessened.

Drone monitoring, body cameras, and EFMS of apprehensions and cases were similarly suggested to ease the burden of manual and on-foot ground patrol. At the national level, these were already being implemented through the EFMS and the recently launched Lawin Program. Moreover, the utilization of body cameras by the field personnel could provide additional documentation and possible evidence for the courts. These could also hasten the adjudication process.

### *National Greening Program*

A consistent observation among the study sites was the need to have a new baseline policy for forest protection as the PD 705 was outdated

and unable to address the more pressing concerns of the present forestry landscape. Consistent across the study sites was the call for an encompassing policy that will cover both forest management and protection at the same time. The next subsection provided the salient features of this recommended bill along with a draft of a proposed structural change in DENR.

### *Future policy directions*

Throughout the interviews and FGDs, informants have been emphasizing the need for a replacement to PD 705 since the said legislation was outdated and unfit for the current landscape of the forestry sector. When asked for possible alternatives, the Sustainable Forest Management Bill (Senate Bill 402) has been brought up several times.

The bill mandates the need for a sustainable and rational development of forestland resources, as well as protection of existing forest resources and conservation of biodiversity. The plan will follow guiding principles such as watershed management, multisectoral representation, community-based forest management, economic and ecological reforestation, equitable access to forest resources, and professionalism in forest service.

DENR shall remain as the leading agency responsible for the management. However, responsibility in the utilization of forest resources shall be devolved to the LGUs. A forest management plan will be conceptualized by the department and related agencies. This plan shall then be included in the LGUs' Comprehensive Land Use Plan and will be a precursor to consultations prior to the implementation of any forestry project in their jurisdiction. To meet consumer services, the bill allows forest resources to be harvested, transported, sold, contracted, conveyed, or disposed without clearance from oversight agency when found inside A&D lands. Those within forestlands, however, shall be issued with permits and clearances deemed as integral by the department and the bureau.

The proposed law highlights the need for DENR to develop and adopt a sustainable forest management strategy for each watershed and forest unit and mandates the creation of an inventory of all biological and economic features of forests. Reforestation and afforestation programs shall also be put in place along with corresponding incentives to organizations and entities that will participate in the said programs. Forest



protection is highlighted in Chapter 8 of the proposed bill. Section 25 declares a permanent commercial log ban across the country while section 26 institutionalizes assistance of law enforcement agencies such as PNP, AFP, and the National Bureau of Investigation (NBI) to ensure the implementation of logging ban. The same section also strengthens the mandate of DOJ to provide special courts to tackle environmental cases. Section 27 provides for the creation of a multisectoral forest protection council in every province, city, and municipality. It will be comprised of representatives from, but not limited to, DENR, LGU, NGOs, people's organizations, church, and the academe.

Present institutional arrangements have borne negative impacts, particularly in the areas of enforcement and legal protection. To address this, a draft EO was circulated among environmental offices during the third quarter of 2018. It called for a creation of a bureau that can address issues on monitoring and enforcement within the sector. Discussed in the following paragraphs are the salient features of the draft order.

The Environmental Protection and Enforcement Bureau (EPEB) of DENR, henceforth referred to as the Bureau, shall be led by an executive director equivalent to a PENRO. It should be noted that a retired uniformed personnel could fill in the position. Additionally, there will also be one deputy executive director for each of the island groups, namely, Luzon, Visayas, and Mindanao. There will be 20 island group environmental police officers for each enforcement unit. Under the set of environmental officers will be an enforcement unit per region, to be further subdivided into enforcement units of six members under the PENRO, and units of 12 members under the CENRO.

The Bureau shall mainly function to undertake detection and surveillance, and it will have the power to arrest, search, apprehend, and confiscate. Additionally, it can conduct demolition and monitor the progress of cases and proper implementation of sanctions and penalties—features that are admittedly absent in the current enforcement functions of the CENRO. To standardize procedures, there will be a uniform guidebook that will contain the standard operating procedures on existing and future protocols. There will also be an organization of a Special Joint Fact-finding/Investigation Teams. In this line, there was a provision written mandating the AFP, PNP, NBI, Maritime Industry Authority, Philippine Coast Guard, Philippine Drug Enforcement Agency, Criminal Investigation and Detection Group, and the Philippine Center on

Transnational Crime to provide intelligence, surveillance, and security services to the Bureau along with enforcement and security assistance. This provision helps avoid the arbitrary institutional arrangements made on the ground in moments of apprehension. Other partner-agencies such as the Mines and Geosciences Bureau, EMB, FMB, other DENR-attached agencies, Bureau of Fisheries and Aquatic Resources of the DA, and the Land Transportation Office shall coordinate with the Bureau during investigation and prosecution of environmental crimes. Partner-agencies shall also be required to provide relevant information and data under their respective jurisdictions.

Adjudication proceedings, as observed from the draft, were made to facilitate cases faster. The process flow will start during apprehension followed by a summary hearing from the legal division of the regional office where the apprehension has been done. Apprehended equipment, materials, and conveyances shall be declared properties of the state by the same regional office within 15 days from the date of apprehension. To limit and prevent the delaying tactics of the accused, the court will not allow motions for postponement and hearings will only take place twice. If the provisions for the green courts were strengthened, reinforced, and incentivized more, effectiveness of the proceedings shall be ensured.



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The Philippines has a total land mass of 30 million hectares, 52.7 percent of which was classified as forestlands. Various management strategies have been laid in place through policies and laws to protect these lands, but forest degradation and extractive industry-focused legislations have significantly contributed to the loss of forest cover. To address these problems, three forest protection initiatives were looked into across three case study areas namely, tenurial arrangements, apprehension and enforcement mechanisms, and National Greening Program (NGP). Lapses in the implementation process characterized by the absence of site-species matching and failure to incorporate site demographics and topographical issues, and weak institutionalization of the legal support particularly at the subnational level remained present. Best practices were identified from each area and recommendations were drawn to improve the current policy landscape. These included the use of controlled use zones as management tool, stronger interface with local stakeholders, strengthening of legal support for City Environment and Natural Resources Office, use of Electronic Filing and Monitoring System portal, institutionalization of the *Lawin* program, practice of site-species matching, and stronger stakeholder participation in the NGP. Reforms in the structure of oversight agencies and an update in national baseline policy were sought in the form of an Environmental Protection and Enforcement Bureau proposal and the persistent lobbying for the Sustainable Forest Management Bill.



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