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Forest protection in the Philippines

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Forest Protection in the Philippines

Sonny N. Domingo and Arvie Joy A. Manejar



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Forest Protection in the Philippines

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PHILIPPINE INSTITUTE FOR DEVELOPMENT STUDIES

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Abstract

Philippines has a land mass of 30 million ha, 52.7 percent of which was classified as forestlands. The country was identified as a megadiverse area in terms of tropical forests and biodiverse ecosystems. Laws and policies were laid since 1975 in order to inform forest management strategies. The forestry sector recently banked its future in two landmark executive orders in 2011 which were EO 23 and EO 26, the former declaring a moratorium on logging and the latter implementing a National Greening Program. The significant reduction in forest cover may have been brought about by decades of lax legislations promoting extractive industries. It can be said that the policy landscape for the said sector experienced shifting priorities which resulted to overlapping priorities and implementation delays on the ground and across regions. Overall, it lacked provisions in enforcement and institutionalization. Demographic, economic, technological, institutional, and cultural factors were still predominant in the sector in the form of upland encroachment, multiple land uses, ineffective initiatives, and prevalence of non-complying extractive industries. Forest protection initiatives such as Lawin Program and the E-Filing Monitoring Systems were underway, but these could be strengthened with the passage of Sustainable Forest Management Bill in order to establish more sustainable methods of forest management.

Keywords: forest protection, extractive industry, land use, sustainability

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Forest protection in the Philippines

Sonny N. Domingo and Arvie Joy A. Manejar¹

1. Introduction

Philippines has a total land mass of approximately 30 million ha, 14.2 million (47.3%) of which was classified as alienable and disposable lands while the other 15.8 million ha (52.7%) was identified as forestlands. The bigger land classification was further subdivided into closed or open forest formations, young natural stands, plantations, forest nurseries, seed orchards, bamboo, palm, and fern (PNRPS, 2012). The country was considered as one of the megadiverse regions with most tropical forests in the world, nourishing biodiversity and carbon-rich ecosystems which “sequester carbon through reforestation, agroforestry, and conservation of existing forests” as indicated by the lush forest cover (Rubas-Leal et al. 2017).

Presidential Decree No. 75 issued in 1975 became the blueprint of forest management in the country. Forty-three years later, the same law was still practiced. It has not been updated, revised, or improved into a Republic Act which can further strengthen the forestry sector. The past administrations believed two landmark executive orders in 2011 will solve the problem pertaining to logging and reforestation. The influx of functional policies down DENR’s chain of command were all in the process of maintaining forestlands however, the sector still faced pressures and problems similar to developing countries with rich natural resources which eventually decreased the forest cover. These concerns included deforestation, illegal logging, and land conversions among others. In line with this, initiatives have been put in place by DENR and related institutions to mitigate the problems. These were in the form of National Greening Programs, and stricter implementation of tree-cutting and earth balling permits.

The policy landscape for the forestry sector spanned decades of shifting priorities and policy directions which resulted to competing initiatives on the ground across time and across regions. Thus, the study aimed to determine the impacts of these actions to the state of the country’s forest resources. A policy review would help identify strengths, weaknesses and gaps in the formulation and implementation of legislations, and this will also provide corresponding recommendations and ways forward appropriate for the sector.

1.1. Objectives

The study generally aimed to undertake a policy review focusing on the various aspects of forest protection in the Philippines.

Specifically, the study aimed to:

1. Describe the forestry sector’s policy landscape and evolution;
2. Identify development issues related to the forestlands;
3. And determine the status of forest protection initiatives.

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2. Methodology

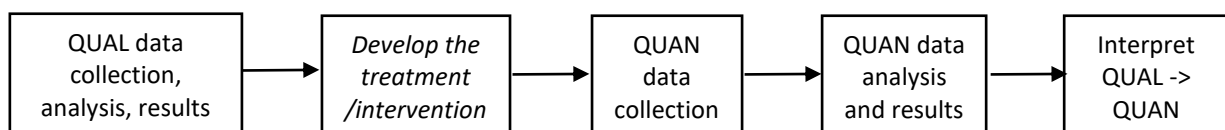
Rapid urban development and progress are accompanied with large demands of resources that are mostly found in the forestlands of the Philippines. The drastic conversion of forested lands have resulted to deforestation which in turn affected the functions of the site and degraded the quality of ecosystem services (FAO 2006). Various policy interventions have been employed by the Philippine government to counter the effects of deforestation, even joining international agreements and streamlining policies with other sectors such as mining, and climate change. Ploet et al. (2011) identified problems on overlapping duties, and inconsistencies in existing laws and regulations.

The study aims to conduct a comprehensive policy review focusing on the different aspects of forest protection, particularly on the sector's policy landscape; development issues related to our forestlands; and the status of our forest protection initiatives.

2.1. Approach of the study

The research design of this study will fall under the mixed-methods approach since it will involve both qualitative and quantitative data. Evaluating and reviewing the policies geared towards forest protection in the Philippines will include the numbers and data from agencies such as DENR and NAMRIA among others while also gathering insights from the communities affected by the policies and interventions set in their areas. Thus, it may utilize the exploratory-sequential approach. It first analyzes the qualitative data, the findings of which is followed by a quantitative analysis. This approach is intended for development of a new instrument, theory/taxonomy or treatment protocol/intervention (Creswell and Plano Clark 2011). Under this approach, the most fitting design to utilize with the study on "Forest protection in the Philippines" is treatment-development design. It treats both qualitative and quantitative data as emphasis in the framework and then proceeds to test the treatment, or in this case, a policy to a population.

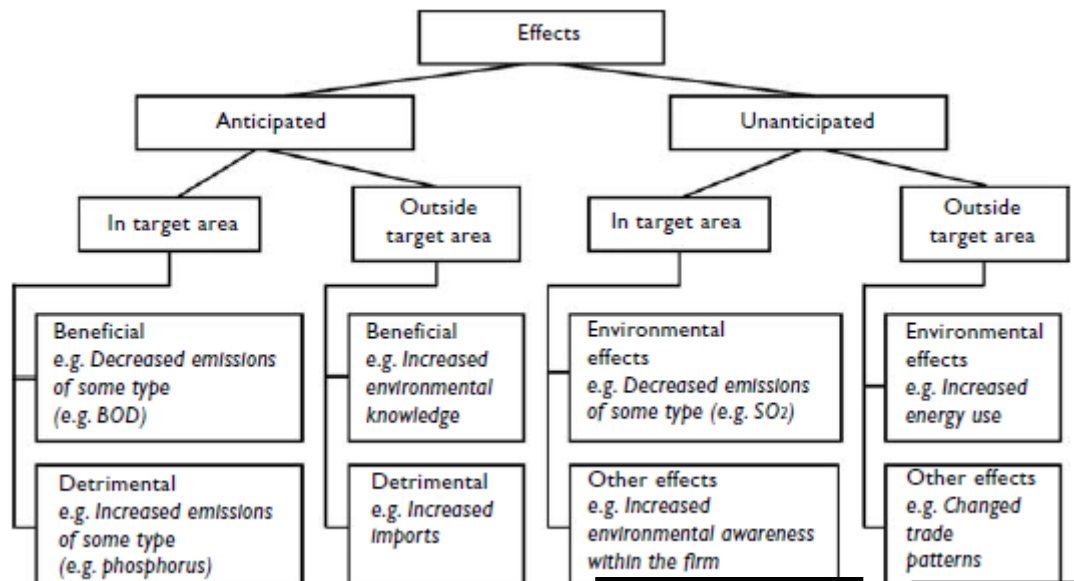
Figure 1. Treatment-development design (Edmonds and Kennedy 2013)



2.2. Analytical framework

Evaluation models for environmental policies are designed for various functions, and the one most fitting for this study would be the side-effects evaluation model which takes into account the complexity and uncertainty of problems associated with the environmental policy. The model categorizes first the effects of the policy instrument into anticipated and unanticipated effects, then it determines whether the effects are within or outside the target area, and finally, it divides the effects into environmental and other effects (Vedung 1997).

Figure 2. Side-effects evaluation framework



Forms of criteria are also used in assessing policies in order to arrive at normative judgments. Mickwitz (2003) was able to compile the most important criteria however, for a certain criteria to function, there should be relevant data available. If lacking, there is a need to modify the criteria with the core issues intact.

Table 1. Different criteria for environment policy evaluation

Criteria	Questions
<i>General</i>	
Relevance	Are environmental problems covered by the goals of the instruments?
Impact	Are impacts from the implementation of policy instruments identifiable?
Effectiveness	To what degree do the achieved outcomes correspond to the intended goals of the policy?
Persistence	Do the effects have a longer-lasting effect on the state of the environment?
Flexibility	Can the policy adapt to a changing landscape and conditions?

Predictability	Is it possible to foresee the administration, outputs and outcomes of the policy instrument? Is there room for preparation to take into account the implications brought by the policy?
<i>Economic</i>	
Efficiency (cost-benefit)	Are the benefits equal to the costs incurred?
Efficiency (cost-effectiveness)	Do the results reflect the resources used overtime? Could they have been achieved with lesser resources?
<i>Democracy-related</i>	
Legitimacy	How acceptable is the policy to the individuals, non-governmental organizations (NGOs), civil society organizations (CSOs), and private sector?
Transparency	Are the processes of implementation and output of such open to the public?
Equity	How are the outcomes and costs of the policy distributed? Do equal opportunities to participate exist for all participants?

This criteria method of evaluation is similar to the methodology applied to a study on the assessment of forest policy in Ghana. The policy was evaluated through several factors: “coherence, relevance, efficiency of the implementation process, stakeholder participation, equity in benefits-sharing, and sustainability” (Boon et al 2009). The process was then complemented with a SWOT analysis.

Morestin (2012) suggests 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. The initial two-pronged criteria that the paper introduced was divided into six dimensions.

Table 2 Dimensions for analyzing public policies

Dimension	Questions
Effectiveness	<p>What are the effects of the public policy on the targeted problem?</p> <p>What are the policy's intermediate effects?</p> <p>Is the intervention logic of the policy possible?</p> <p>How does implementation context influence the policy's effectiveness</p> <p>How long until the effects are observed? Are they sustained over time?</p>
Unintended effects	<p>Are the unintended effects of the policy positive or negative?</p> <p>In what ways can the negative effects be mitigated?</p>
Equity	<p>What are the effects of the policy among various stakeholder groups?</p> <p>Are existing social inequalities created, reinforced, or corrected through the policy?</p>
Cost	<p>What are the costs incurred and benefits gained by the government and other stakeholders (CSOs, private sector)?</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? What is the cost-effectiveness of the policy for the government, and for the society?</p>
Feasibility	<p>Are all needed resources (human, material, and technological) available and accessible?</p> <p>Is the policy in line with existing legislations?</p> <p>Can this policy be administered by pre-existing mechanisms?</p> <p>How many actors are involved in the implementation process? Is cooperation from these actors observed?</p> <p>Do the opponents have the ability to interfere and intervene in the implementation process?</p>
Acceptability	<p>Which actors would be affected by the policy?</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> <p>Are there suggestions from the stakeholders for better intervention methods?</p> <p>What insights do the stakeholders involved have towards the implementation of the policy?</p> <p>Can the policy's acceptability evolve throughout its implementation period?</p>

2.3. Conceptual framework

Data Collection. The study has initially gathered materials and insights from key national government agencies. The mandates and functions of said government institutions will be most helpful in providing information and in-depth understanding of related policies and ordinances.

To cater different perspectives apart from the implementing agencies and to validate the data gathered from other sources, focus group discussions (FGDs) will be held which will involve

stakeholders that have participated in and were affected by the forest protection policies. A stratified purposive sampling will be utilized to identify participants among the sectors to arrive at equal representation.

Table 3. Summary of data sources

Key Informant Interviews	Focus Group Discussion
<i>Government Agency</i>	<i>Sector</i>
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 Officer	Timber businesses

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

Evaluation criteria will also be modified to adequately cover all aspects of forest protection that need to be discussed. It will follow a hybrid template derived from the evaluation criteria introduced by Mickwitz (2003), Boon et al. (2009), and Morestin (2012).

The evaluation matrix for the KIIs and FGDs can be found on the next pages.

Table 4. Modified evaluation criteria adapted from Mickwitz (2003), Boon et al. (2009), and Morestin (2012)

Criteria	Questions
Relevance	Are the current problems of the forestry sector adequately responded to by the existing forest policies? Are the policies still working in current conditions? Is there a need for a Republic Act directly addressing forestry?
Impact	Are the impacts from the implementation of the policy instruments identifiable and felt by stakeholders?
Effectiveness	What are the effects of the policy on the targeted problem (deforestation, climate change, biodiversity loss)? How does the implementation process influence the effectiveness of the policy instrument?
Unintended effects	What are the unintended effects of forest protection policies on other sectors such as mining, and timber? Are these effects negative or positive? For negative impacts, in what ways can they be mitigated?
Cost	What are the costs incurred by the government and other stakeholders? How are the costs distributed across time? To what extent are the costs observable and apparent?

	How do the costs of the policy fare compared to potential policies, and inaction? What is the cost-effectiveness of the policy for the government, and for the society?
Persistence and sustainability	Were the effects within the expected time frame of the policy? How long until the effects are observed for the newly-implemented policy? How can effects be sustained over time?
Inclusivity	Which actors would be affected by the policy? Are these actors included in the conceptualization and implementation processes of policy instruments? Is the targeted problem by the policy a social issue that needs intervention? What are the stakeholders' reactions to the idea of intervening? Are there suggestions from the stakeholders for better intervention methods? What insights do the stakeholders involved have towards the implementation of the policy? Can the policy's acceptability evolve throughout its implementation period?
Feasibility	Are all needed resources for the implementation available and accessible? Is the policy in line with existing legislations? Is cooperation from stakeholders observed?
Transparency	Are the processes of implementation and output of such open to the public? Do the stakeholders have any power to intervene and/or participate? Up to what degree are they able to participate in the implementation process?
Equity	What are the effects of the policy among various stakeholder groups? Are existing social inequalities created, reinforced, or corrected through the policy? What are the benefits gained by the government and other stakeholders? How are these benefits distributed across time?

Figure 3. First part of conceptual framework

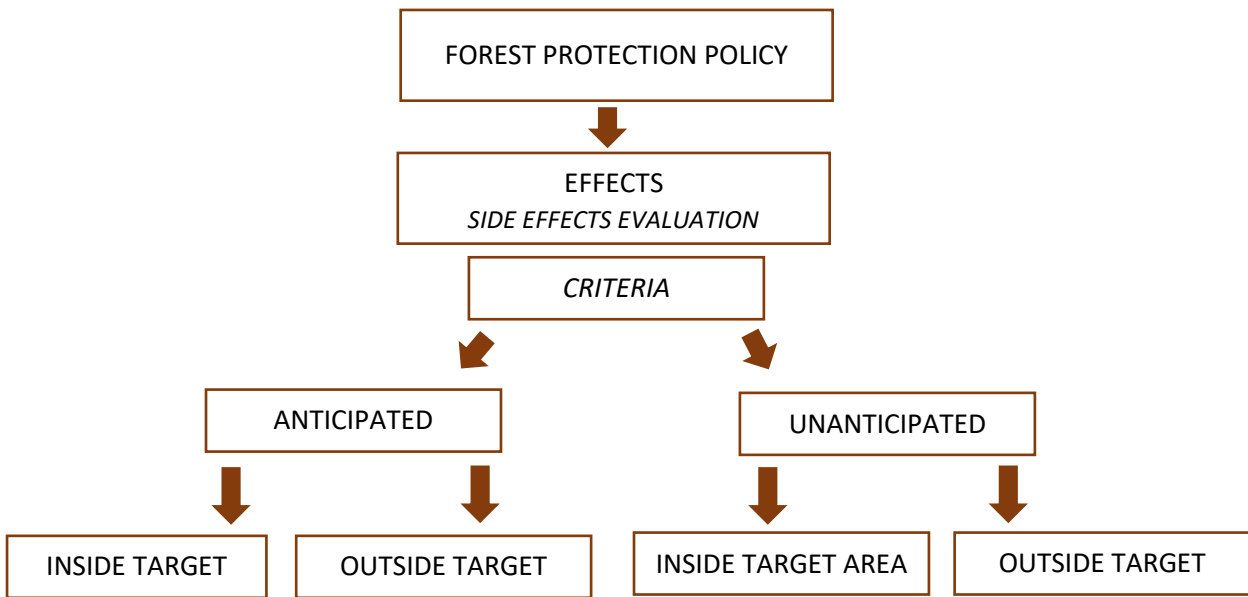


Figure 4. Second part of conceptual framework

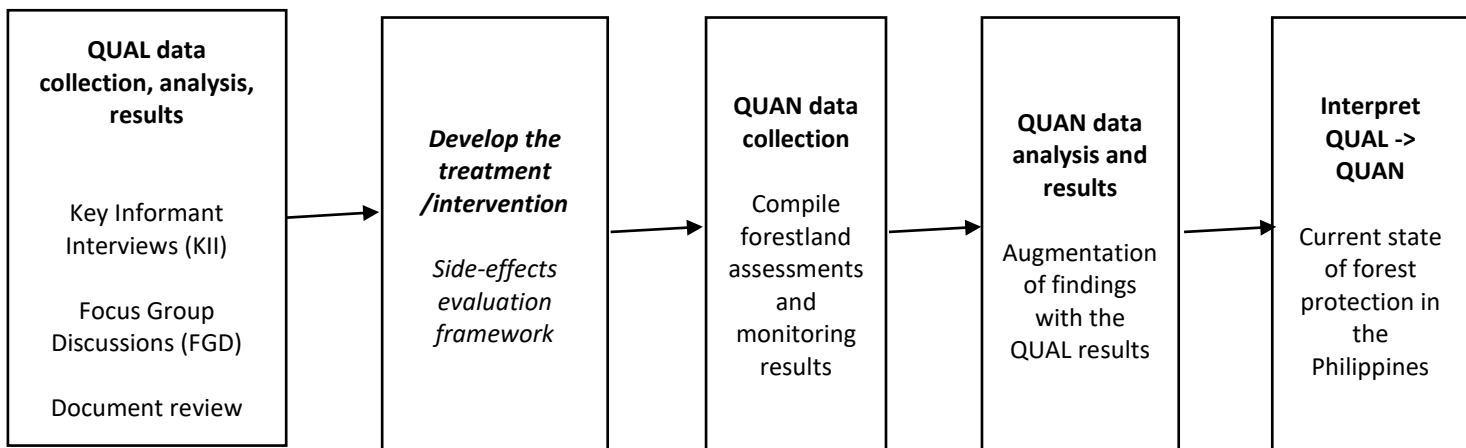


Table 5. Evaluation Criteria Matrix: Forest Protection in the Philippines adapted from Mickwitz (2003), Boon et al. (2009), and Morestin (2012)

CRITERIA AND KEY ANALYSES	INDICATORS	SOURCES OF EVIDENCE
RELEVANCE		
Are the current problems of forest sector adequately responded to by existing forest policies?	<ul style="list-style-type: none"> The policies in place have provisions in place addressing the biggest problems of the forest sector. 	<ul style="list-style-type: none"> 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?	<ul style="list-style-type: none"> The policies lack definite authority over forest protection. 	<ul style="list-style-type: none"> KII and FGDs with DENR, FMB, and community stakeholders
Is there a need for a Republic Act directly addressing forestry?	<ul style="list-style-type: none"> There is a need for a Republic Act on forestry to cement the country's need and to prioritize protection of its forests. 	<ul style="list-style-type: none"> KII with DENR-FMB
IMPACT		
Are the impacts from the implementation of the policy instruments identifiable and felt by stakeholders?	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> FGD with community stakeholders Impacts in form of monitoring results from NAMRIA, regional offices of DENR (C/PENRO)
EFFECTIVENESS		
What are the effects of the policy on the targeted problem (deforestation, climate change, biodiversity loss)?	<ul style="list-style-type: none"> The policy is expected to curb the rate of deforestation, climate change, and biodiversity loss across years. 	<ul style="list-style-type: none"> Documents/reports from NAMRIA, 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?	<ul style="list-style-type: none"> The implementation process follows the provisions of laws prescribed for forest protection. The processes do not overlap or contradict with other existing laws. 	<ul style="list-style-type: none"> 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)
UNINTENDED EFFECTS		
What are the unintended effects of forest protection policies on other sectors (e.g. mining and timber)?	<ul style="list-style-type: none"> The forest protection policies set in place protected areas where mining and timber operations cannot legally take place. 	<ul style="list-style-type: none"> KII and FGDs with mining and timber businesses, and community stakeholders (LGU) Complementation with monitoring results on illegal logging Cases of green courts
Are these effects negative or positive?	<ul style="list-style-type: none"> The unintended effects of the policies are positive for some stakeholders and negative for others (e.g. mining and timber businesses) 	
For negative impacts, in what ways can they be mitigated?	<ul style="list-style-type: none"> These impacts are balanced with dialogues between the forestry sector, and mining and timber industries mitigating the losses with agreements. 	
COST		
What are the costs incurred by the government and the other stakeholders?	<ul style="list-style-type: none"> There are both monetary and non-monetary costs shouldered by government and other stakeholders. 	<ul style="list-style-type: none"> Fiscal reports of FMB and regional offices of DENR (C/PENRO) KII with oversight and implementing agencies
How are costs distributed across time?	<ul style="list-style-type: none"> Trend analysis can show the distribution of costs across time and across stakeholders. 	
To what extent are the costs observable and apparent?	<ul style="list-style-type: none"> The costs are apparent and easily identified. 	

How do the costs of the policy fare compared to potential policies and inaction?	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • KII with oversight and implementing agencies
What is the cost-effectiveness of the policy for the government, and for the society?		
PERSISTENCE AND SUSTAINABILITY		
How long until the effects are observed for the newly-implemented policy?	<ul style="list-style-type: none"> • The effects can be monitored through reports of DENR and NAMRIA. 	<ul style="list-style-type: none"> • Monitoring results of regulatory bodies (NAMRIA, DENR) • KII with oversight and implementing agencies, and stakeholders
How can the effects be sustained over time?	<ul style="list-style-type: none"> • When current policies are reinforced and given more support, these effects can be sustained over time. 	
INCLUSIVITY		
Which actors would be affected by the policy?	<ul style="list-style-type: none"> • The forest protection policies affect the communities, and the mining and timber businesses. 	<ul style="list-style-type: none"> • KII and FGD with stakeholders • KII with oversight and implementing agencies • Document review of national and local policies and ordinances
Are these actors included in the conceptualization and implementation processes of policy instruments?	<ul style="list-style-type: none"> • The actors/stakeholders are included in the conceptualization of policy instruments and are being considered in the implementation. 	
Is the targeted problem by the policy a social issue that needs intervention?	<ul style="list-style-type: none"> • The policy is intended to target and solve environmental problems along with accompanying socio-economic issues. 	
What are the stakeholders' reactions to the idea of intervening?	<ul style="list-style-type: none"> • 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?	<ul style="list-style-type: none"> Stakeholders are able to give suggestions and insights on the implementation process through consultation. 	
What insights do the stakeholders involved have towards implementation of the policy? Up to what degree are they able to participate?		
Can the policy's acceptability evolve throughout its implementation period?	<ul style="list-style-type: none"> The implementation might depend on the leadership of the regional oversight agency along with political will. 	
FEASIBILITY		
Are all needed resources for the implementation available and accessible?	<ul style="list-style-type: none"> Resources for implementation for implementation may be lacking before on manpower and technology and are currently being augmented now. 	<ul style="list-style-type: none"> KII with DENR-FMB and regional implementing bodies
Is the policy in line with existing legislations?	<ul style="list-style-type: none"> The existing policies complement each other towards a unified goal of forest protection. 	<ul style="list-style-type: none"> Complementation of national laws and policies International agreements on forest protection
Is cooperation from stakeholders observed?	<ul style="list-style-type: none"> The stakeholders are involved and are participating in the implementation process. 	<ul style="list-style-type: none"> KII with community stakeholders
TRANSPARENCY		
Are the processes of implementation and output of such open to the public?	<ul style="list-style-type: none"> The outputs of the policy implementation are open to the public. 	<ul style="list-style-type: none"> KII with oversight agencies Transparency of needed documents
EQUITY		
Are existing social inequalities created, reinforced, or corrected through the policy?	<ul style="list-style-type: none"> The policy provided an equitable distribution among stakeholders. 	<ul style="list-style-type: none"> KII and FGD with stakeholders

<p>What are the benefits gained by the government and other stakeholders?</p>	<ul style="list-style-type: none"> • The benefits gained either come in forms of environmental benefits that increase over time. 	<ul style="list-style-type: none"> • Fiscal documents • KII with oversight agencies and FGD with stakeholders
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**other key analyses have been deleted due to repetition*

3. Results and Discussion

3.1. Policy analysis

Philippines has a timeline of forest rehabilitation divided into colonial, national, internationally supported, and participatory forest rehabilitation eras. The first era started out as early as 1910 and accelerated in the 1930s. Around late 1940s, the government accomplished 35 projects in Luzon which covered 26,000 ha, but they did not involve the communities in these activities and even evicted them from lands undergoing rehabilitation (De Jong 2010). However, this type of rehabilitation yielded short-term success since the underlying problems remain unaddressed, and there were negative consequences given to local communities instead of benefits.

The post-World War II era saw national governments across Asia conduct endogenous forest rehabilitation aimed at rural development, and export-friendly forestry at the same time limiting agricultural and forestry production, wood and fuel supply, and continued environmental degradation. In the Philippines, this meant increased timber taxes for forest rehabilitation with largely indigenous species. A presidential decree was also issued to encourage every 10-year or older citizen to plant 12 seedlings for five consecutive years (De Jong 2010). The problems associated with this era were poor implementation and monitoring. During the early 1970s, DENR has established an array of forest support programs such as Administrative Order No. 62 in 1971 or *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 by *kaingineros* on shifting cultivation and entered into contractual agreements with small family groups for forest management (Harrison et al. 2004).

There were only three Republic Acts related to forestry, and these were Central Cebu Protected Landscape Act of 2007 (RA 9486), Reforesting 3,000 ha of public land in Cagayan de Oro in 2012 (RA 10452), and Forestry Profession Act of 2015 (RA 10690). These were preceded by Presidential Decrees signed by Marcos during the 70s. The most significant of which was PD 705 or the Revised Forestry Code of the Philippines, and it still remained until today as the blueprint of implementation of programs in the forestry sector. Study sites would defer this law later on in the discussion as it was believed to be outdated and no longer appropriate for the current policy landscape of the country. Twelve years after the issuance of PD 705, EO 192 was declared which called for the reorganization of Department of Environment, Energy and Natural Resources, renaming it as the Department of Environment and Natural Resources and for other purposes. It also created the Forest Management Bureau with the mandate of providing technical assistance not only to the central office but also to the field offices for the effective protection, development, and conservation of forestlands and watersheds. The bureau also has the power to recommend interventions in meeting the goals of sustainable forests with good governance (FMB 2016).

The third rehabilitation era recognized the worldwide concern over forest decline and soil erosion. International organizations such as Food and Agricultural Organization of the United Nations, Asian Development Bank, and World Bank handed out support in form of funds. More local and national projects were carried out in the Philippines with an increased participation of non-governmental actors, communities, and private sector. DENR's programs during the 1980s and 1990s fall under this era. The National Forestation Program (NFP) with loans from ADB and the Overseas Economic Cooperation Fund (OECF) of Japan has three main components, namely contract reforestation, watershed rehabilitation, and timber stand improvement; contracts were awarded to corporations, communities, and families. The Integrated Social Forestry Program (ISFP) was initiated in 1982 to maximize land productivity, improve ecological stability, and enhance socioeconomic conditions of forest occupants and communities. DENR eventually transferred areas under ISFP to local government units (LGUs) and later on were integrated with CBFM. Low Income Upland Communities Project (LIUCP) targeted upland forest resources with the goal to alleviate rural poverty. The program benefitted about 7000 tribal and lowland migrant families (Harrison et al. 2004). Between 1960 and 2002, almost 1.7 million ha were rehabilitated, two-thirds by the government and the rest by the remaining stakeholders (Pulhin et al. 2006). Tenures such as Forestland Management Agreement, Industrial Forest Management Agreement, and Socialized Industrial Forest Management Agreement will be elaborated later on. The lack on technical expertise was addressed in this era along with improved consideration towards local communities.

The last era was named as such due to the proliferation of roles particularly in technical knowledge and monitoring by diverse stakeholders in the rehabilitation projects. Along with property rights, the needs of the community have also been granted in the projects which supposedly led to more successful and sustainable outcomes. Community-based forest management program has been implemented in 1995 as a national strategy across all plantations in the Philippines (De Jong 2010). It was here that rehabilitation was diversified and now entailed participation of local communities, giving them more room to obtain the proper benefits. There was also an increase in technical knowledge and monitoring. The Community Forestry Program was funded by ADB and US Agency for International Development (USAID) and operated from 1989-1999. From 2003, focus was given to various tenurial instruments such as CBFMA, SIFMA, and TLA through administrative orders. The subsector on trade and forest charges was more concerned with ports and proper documentation for imports, fees and income. Beside the development of the trade industry of forest-related products were appropriate measures for the establishment and operations of wood processing plants. Tree-cutting privileges exercised by the tenurial instrument holders were facilitated through MC 2004-08 by streamlining the necessary permits from the EMB. From 2000-2005, most legislations pertained to the opening of forestlands to multiple uses such as farming, tourism, cropland, and grazing. This policy direction carried over until 2009, fostering programs of upland development, fishery, and agroforestry. Delineation of borders and titling concerns emerged during this time to clarify the definition of forest cover and land use, assess and determine boundaries between agricultural lands, national parks, and forestlands, and to review titled properties within a protected area.

Licenses of tenurial instruments and wood processing plants were initially suspended from 2005, particularly the timber ones, but have been lifted later on. Tree-cutting permits started to devolve, starting with Cordillera Administrative Region which issued permits for less than 30 trees. The department also issued a memorandum to conduct an inventory of rattan and timber resources. The legal side of the sector have also begun to rise, placing conveyances seized, confiscated, and forfeited in the favor of the government.

In 2011, two landmark policies were declared, EO 23 and EO 26. The first one was declaration of moratorium on the cutting and harvesting of timber in natural and residual forests while the second one was the announcement for National Greening Program that took place from 2011 to 2016. NGP supposedly covered the forestlands, mangrove and protected areas, ancestral domains, civil and military reservations, urban areas under the greening plan of the LGUs, inactive and abandoned mine sites, and other suitable lands. The latter was later on expanded in 2015 to increase its coverage. To strengthen the issued orders, an anti-illegal logging task force was created. It formed the triumvirate partnership of DENR-AFP-PNP. All forest products they confiscated were transformed into furniture and were donated to DepEd and other government institutions. Permitting guidelines became stricter for availing of permits for tree-cutting and earth balling, the latter being denounced as contradictory and not environmentally sound by the key informants in the study sites. Memorandum orders were also circulated demanding a uniform replacement ratio for cut or relocated trees. Currently, the ratio stood at 100 replanted trees for each one cut tree. The future of the remaining valid tenurial instruments depended on the provisions with MC 2013-28 since it contained the guidelines on renewal and cancellation of Certificate of Stewardship Contracts. It was only in 2013 and 2014 where joint collaboration with other agencies like DENR, DPWH, and DSWD were established to help out with the tree replacement projects of the department. Participation was also asked from local government units and the barangays to support the greening program.

Policies and legal foundations were in place to ensure the participation and inclusion of local government units. Some of the laws also delineated the functions and responsibilities of the LGU to aid DENR in its goals of sustainable development and management of natural resources. For instance, Presidential Decree No. 1067 issued on December 31, 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, Urban Development and Housing Act was passed which was the basis for eviction and demolition of occupations within dangerous areas such as the shoreline and riverbanks. Joint Memorandum Circular No. 1998-01 by DENR and DILG served as the foundation for the collaboration and partnership of LGU and DENR towards sustainable management and development of forest resources.

An added unique feature to Palawan was the Proclamation No. 2152 which declared the entire province and certain parcels of public domain as mangrove swamps and forest reserves. As for the barangay level, baseline policy like the Local Government Code of 1991 stated in Section 389 of Book Three that the chief executive should be able to enforce laws and ordinances applicable within the barangay in relation to pollution control and environmental protection.

Memorandum Circular No. 2008-101 called for the creation of a Barangay Peace and Order Committee which should 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. IEC in proper garbage segregation, recycling, collection and disposal; and development of a Material Recovery Facility).

There were over three republic acts; seven of combined executive orders, proclamations, and presidential decree; and 87 memorandum orders, memorandum circulars, and administrative orders tackling the many areas of the forestry sector, but there were minimal laws provided for the sector's protection. From 2000-2010, the policies mostly focused on extractive industries – export, timber businesses, multiple land uses – until the results have materialized into dwindling forest cover by the end of the decade. There were non-existing provisions strengthening institutional mandates of the Forest Management Bureau to enforce laws and to provide limits for extraction. 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, lack of understanding of the biosphere and the compounding effects it will have on the future generations. The gradual onset of degradation pressures on the sector have resulted to reactionary policies by the end of 2010 as a race against time to return the previous forest cover, and present institutional arrangements have borne the brunt of the negative impacts, particularly in the areas of enforcement and legal protection. The previous laws have set sight towards an unsustainable forestry direction, and it would require more than tree-planting to change gears.

Salient features of draft Executive Order on Environmental Protection and Enforcement Bureau (EPEB) of DENR

The Environmental Protection and Enforcement Bureau (EPEB) of DENR, henceforth be referred to as the Bureau, shall be mandated to carry out environmental law enforcement in the Philippines including territorial waters, exclusive economic zones, continental shelf, and other areas where Philippine sovereignty is exercised. The bureau shall be led by an Executive Director equivalent to a PENRO or may be a retired uniformed personnel, and one deputy executive director for each of the island group namely, Luzon, Visayas, and Mindanao. There will be 20 island group environmental police officers for each enforcement unit, and this will be composed of administrative and finance services (2); operations and logistics for PD 705 as amended by RA 7161, PD 953, and RA 9175 (3); NIPAS Act, Wildlife Act, Caves Act (2); Fisheries Code, Clean Water Act (3); Mining Act for both small and large-scale (3); Air (2); solid waste (3); and toxic and hazardous waste (2). Under the set of environmental officers will be an enforcement unit per region which is further subdivided into enforcement units of six members under the PENRO, and units of 12 members under the CENRO. The number of members seemed to vary across the regions as seen in the draft order. All these enforcing personnel shall undergo proper training for six months.

The bureau shall mainly function to undertake detection and surveillance, and it has the power to arrest, search, apprehend, and confiscate. Additionally, it can conduct demolition and also monitor the progress of cases and proper implementation of sanctions and penalties which were features admittedly absent in the current functions of the enforcement unit of the CENRO. To standardize procedures, there will be a uniform guidebook crafted which will contain the standard operating procedures on existing and future protocols, and there will also be an organization of Special Joint Fact-finding/Investigation Teams. In this line, there was a provision written mandating AFP, PNP, Marina, PCG, NBI, PDEA, CIDG, and PCTC to provide intelligence, surveillance, and security services to the Bureau along with the assistance in enforcement and security. This provision helps avoid the arbitrary institutional arrangements made on the ground in moments of apprehension. Other partner agencies such as the MGB, EMB, FMB, other DENR-attached agencies, DA-BFAR, and LTO shall coordinate with the Bureau during investigation and prosecution of environmental crimes. Partner agencies shall also be forced to provide relevant information and data under their respective jurisdictions.

Adjudication proceedings, as observed from the draft, were made to facilitate the case faster. The process flow will start during apprehension which will be 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, motions for postponement will not be allowed, 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.

Salient features of Sustainable Forest Management Act, and for other purposes (Senate Bill No. 402)

The bill mandates sustainable and rational development of forestland resources as well as protection of existing forest resources and conservation of biodiversity. The plan also follows guiding principles such as watershed management, multi-sectoral 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 shall then be included in the LGUs' Comprehensive Land Use Plan (CLUP), and will be a precursor to consultations prior to any forestry project to be implemented 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 alienable and disposable 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 of DENR to develop and adopt a sustainable forest management strategy for each watershed and forest unit which aims to answer: (1) allocation of forestland uses and productivity; (2) protection and conservation of biodiversity; (3) rehabilitation; (4) enhancement of local communities dependent on forest resources; (5) promotion of closer institutional coordination; (6) adoption of CBFMA as principal strategy; and (6) integration of FLUPs to CLUPs. It also 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. City or municipal parks, communal forests, and tree parks are also planned to be developed.

Forest protection is highlighted in Chapter 8 of the Bill; Section 25 of the bill declares a permanent commercial log ban across the country, section 26 institutionalizes assistance of law enforcement agencies such as PNP, AFP, and 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. The next section provides for the creation of a multi-sectoral forest protection council which will be placed in every province, city and municipality. It will be comprised of representatives from but not limited to DENR, LGU, NGOs, POs, church and local academic institutions.

Table 6. Timeline of policies under the forestry sector

1970s-1980s	1990s-2000s	2000-2005	2005-2010	2010-2018
Agreements and Licenses				
		AO 2003-11 CBFMA	RA 9486	MC 2013-28 renewal and cancellation of Cert of Stewardship Contract
		AO 2004-29 revised rules on CBFMA	MO 2007-336 liftin suspension of harvesting&transpo of timber in plantation under tenure	
		AO 2004-30 Revised rules on SIFMA	Memo from Sec defining parameters in processing	
		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	MO 2011-52 declaring moratorium on

	drifted tops for charcoal	timber cutting, anti-illegal logging task force
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 transpo 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
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 sched of forest fees		

Legal proceedings

AO 2003-18 disposition	MO 2009-459 conveyances seized, confiscated and forfeited in favor of govt	
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Wood Processing Plants

AO 2003-41	MC 2007-09 clarifications on	
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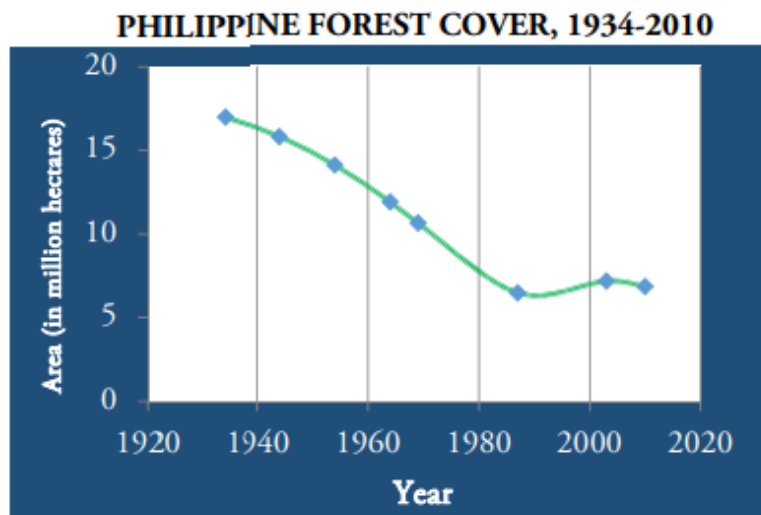
			implementation of moratorium
	AO 2003-53 estab and operations of WPP		Ao 2007-13 lifting of mora on WPPs
Land use planning			
PD 705 – Revised forestry code	AO 2003-42 plantation for herbal	MC 2005-05 adopting forestry definition concerning forest cover/land use	EO 193 – expanded NGP
EO 192 reorganization	MC 2004-06 guidelines in integration of rainforestation farming strategy	AO 2005-25 upland agroforestry program	Proclamation No. 2013-663 Busuanga Pasture reserve
	AO 2004-04 guidelines on planted trees in private lands	AO 2005-23 collaborative approach to watershed mgmt.	EO 26 – NGP
	AO 2004-28 forestlands for tourism	MC 2006-01 non-titling of lands suitable for fishery ops	
	AO 2004-35 for grazing	MO 2007-313 review of titled properties within protected area	MC 2012-01 implementation of NGP
	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;	AO 2008-24 assessment and delineation of boundaries between forestlands, national parks and agri lands	MC 2013-06 guidelines and procedure for plantation development for NGP

2004-50 Nueva Ecija	MC 2009-03, MC 2009-04, MC 2009-05, 2009-06, 2009-07, 2009-09	JMC 2013-03 barangay forest program in support of NGP
AP 2004-59 special uses	implementation of upland development program	

3.2. Desk review

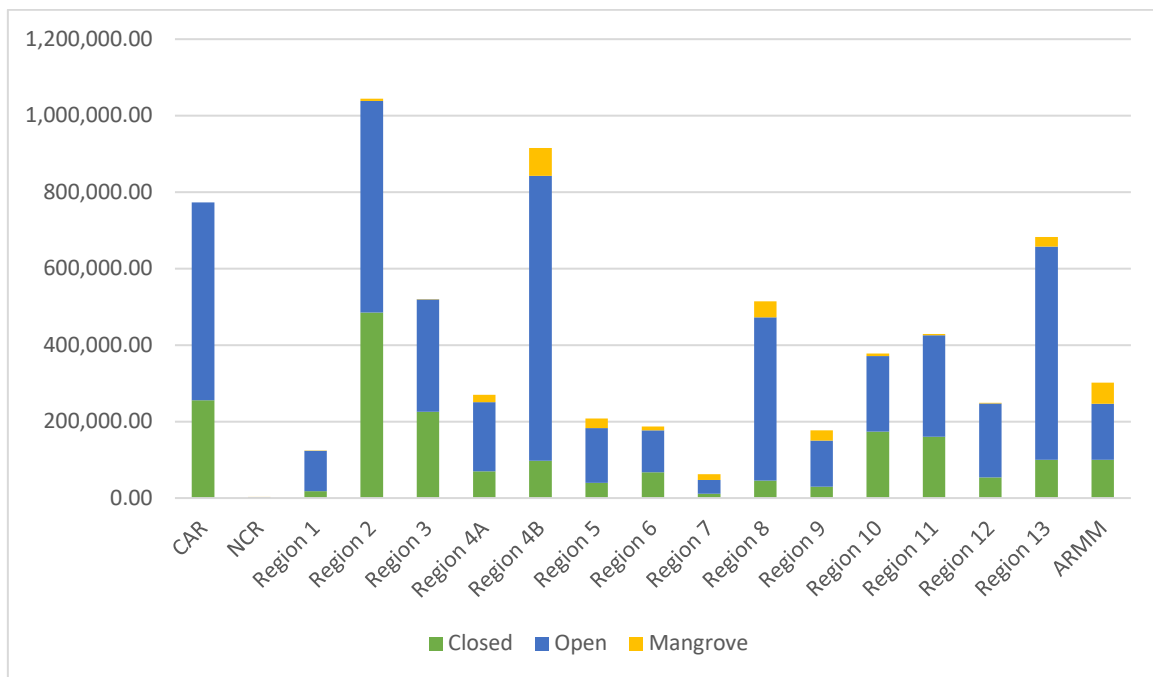
The forest cover of the Philippines decreased from 17 million ha in 1934 to around 6.840 million ha in 2010 as seen in the figure below (FMB 2016). This was comprised of three types of forest cover such as open forest, closed forests, and mangrove forests. The first one was the open forest where all lands with tree canopy has a density of 10 percent and more but less than 40 percent. Closed forests, on the other hand, has a canopy average of 60 to 100 percent, while mangrove forests were made up of the different species of mangroves that grow at 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 at 4.595 million ha, followed by closed forest with 1.934 million ha, and mangrove forest with 0.311 million ha.

Figure 5. Trend of forest cover in the country from 1934-2010 (FMB-DENR, 2013)



Among regions, it can be observed that Cagayan Valley has the most forest cover followed by MIMAROPA. Mangrove forests have declining numbers whereas open forests have the biggest share (FMB-DENR, 2013).

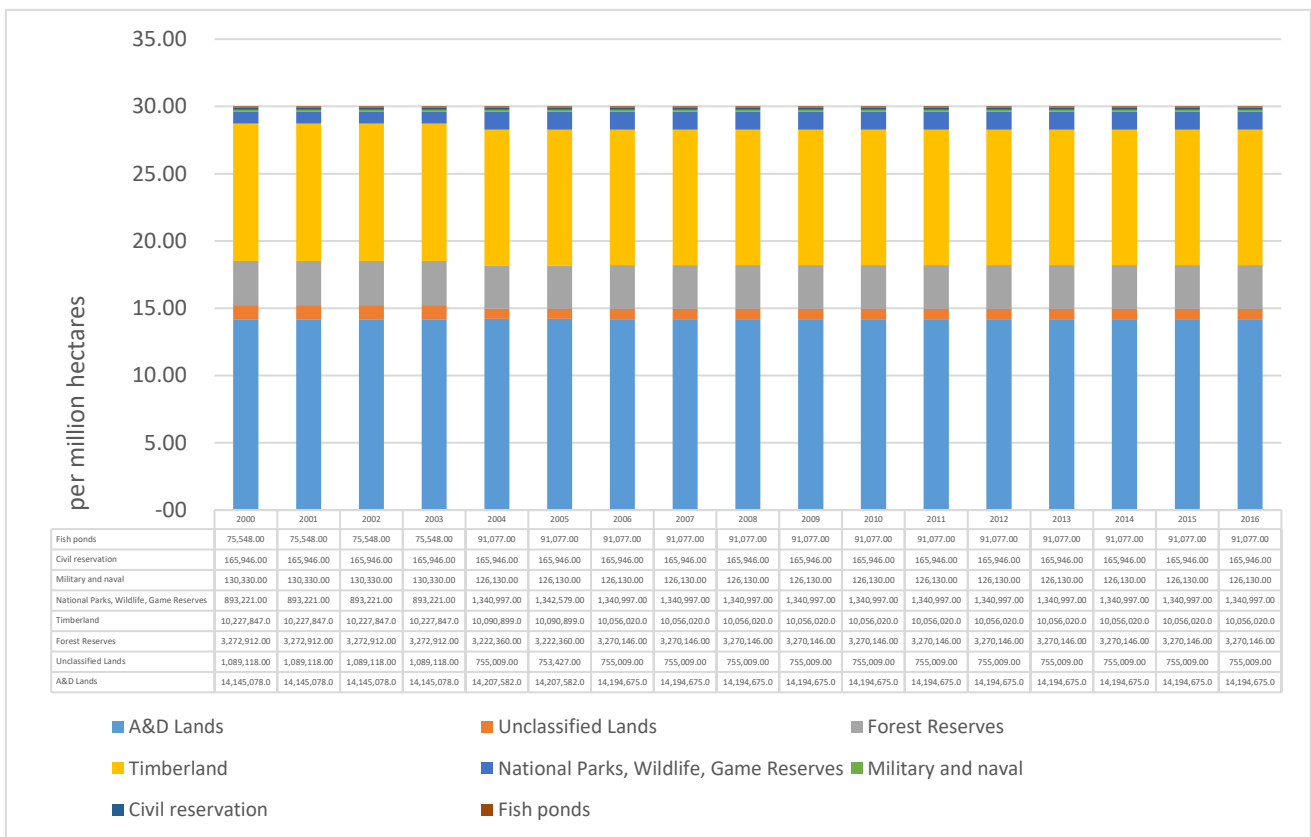
Figure 6. Forest cover across regions in the Philippines (FMB-DENR 2013)



However, one major challenge of forest protection found consistently across case study sites was the overlapping of land classifications and titles. There were some instances when what was declared in paper was different from what can be found on the ground. The inconsistency of classifications contributed to the domino effects within the sector.

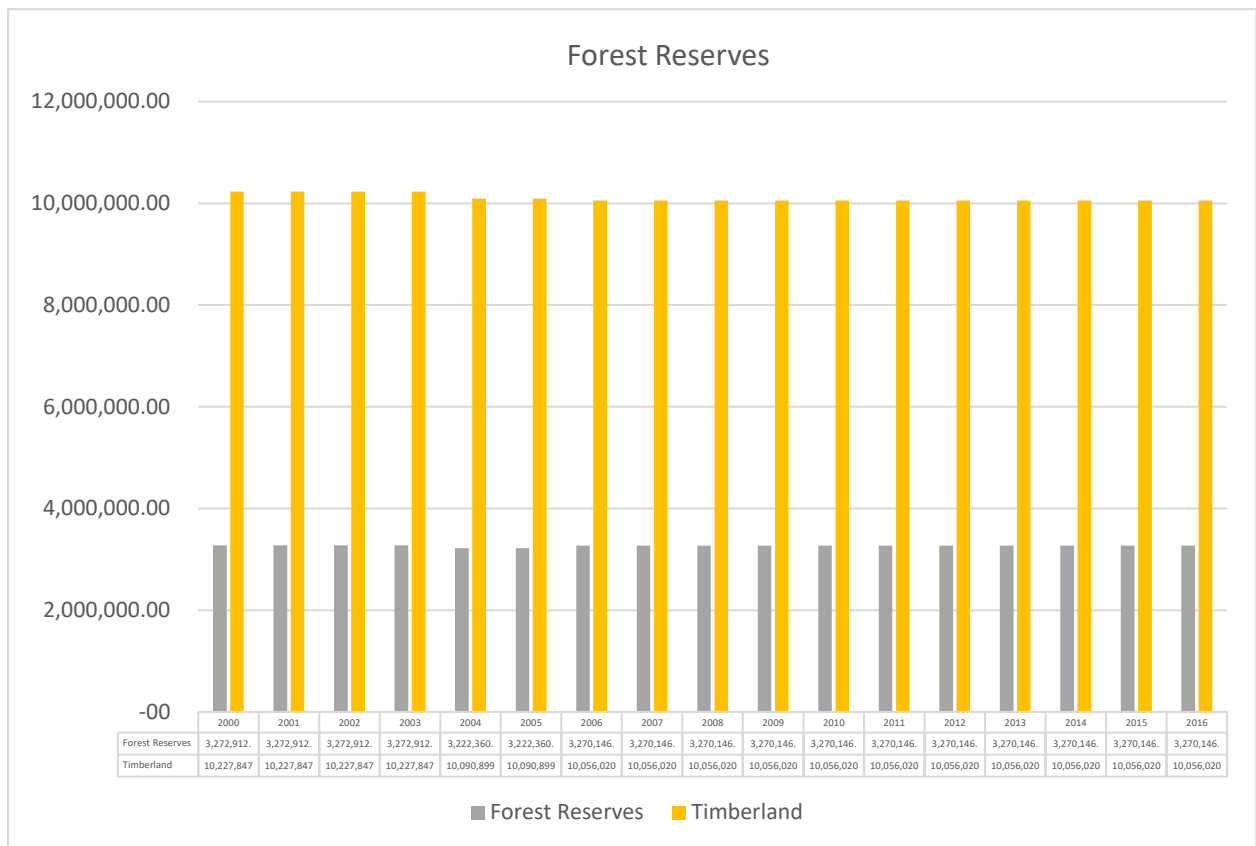
In the figure below, it can be observed that there was barely any change in land classifications and that most of the lands were declared as alienable and disposable lands. Forest reserves have dwindled by 2,000 ha while timberlands also decreased by 34,000 ha, most probably brought about by EO 23. The reduction in these lands were tempered by the added conversion of hectares to fish ponds.

Figure 7. Land classification in Philippines from 2000-2016 (DENR)



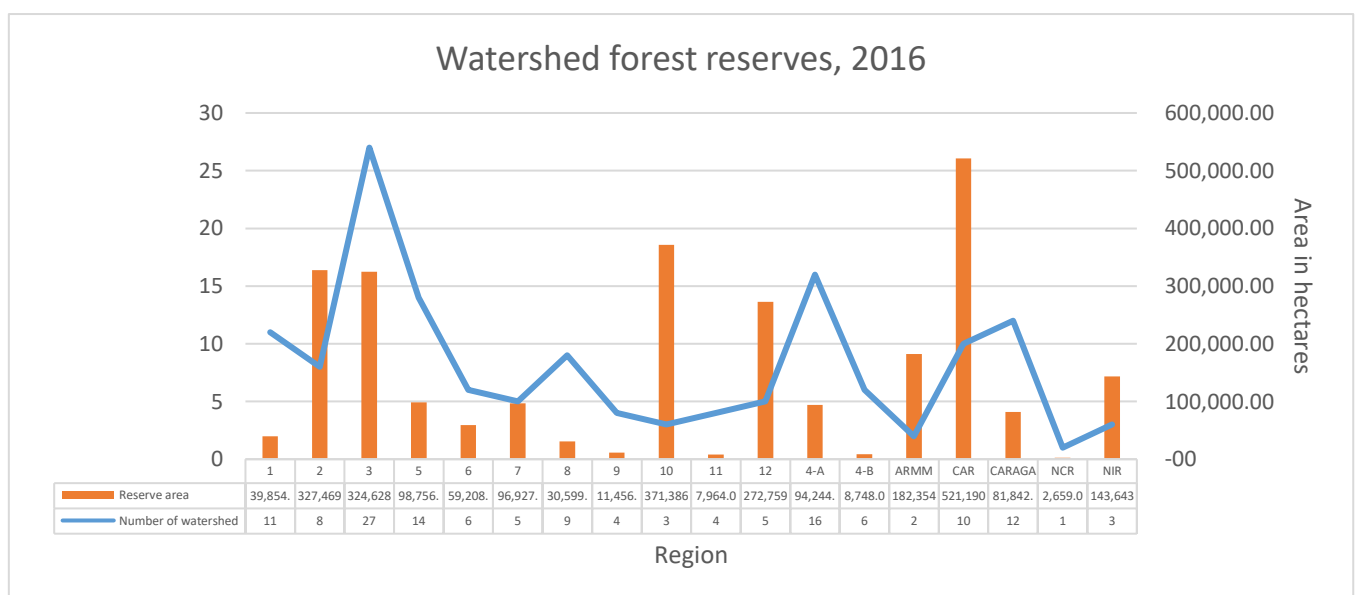
The next figure gave a closer look on the country’s forest reserves vis-à-vis the timberlands. The latter has significant land area over the former due to the many forest agreements that the government has issued in the hopes of maintaining and protecting the forest cover and the accompanying ecosystem services derived from it.

Figure 8. Comparison of land area between forest reserves and timberlands in the Philippines from 2000-2016 (DENR)



One primary benefit of forested lands identified was the maintenance of watershed forest reserves which was the main source of water for most communities. In 2016, the largest watershed reserve can be found in CAR with 521,190 ha and the greatest number of watersheds in Region 3, amounting to 27 reserves.

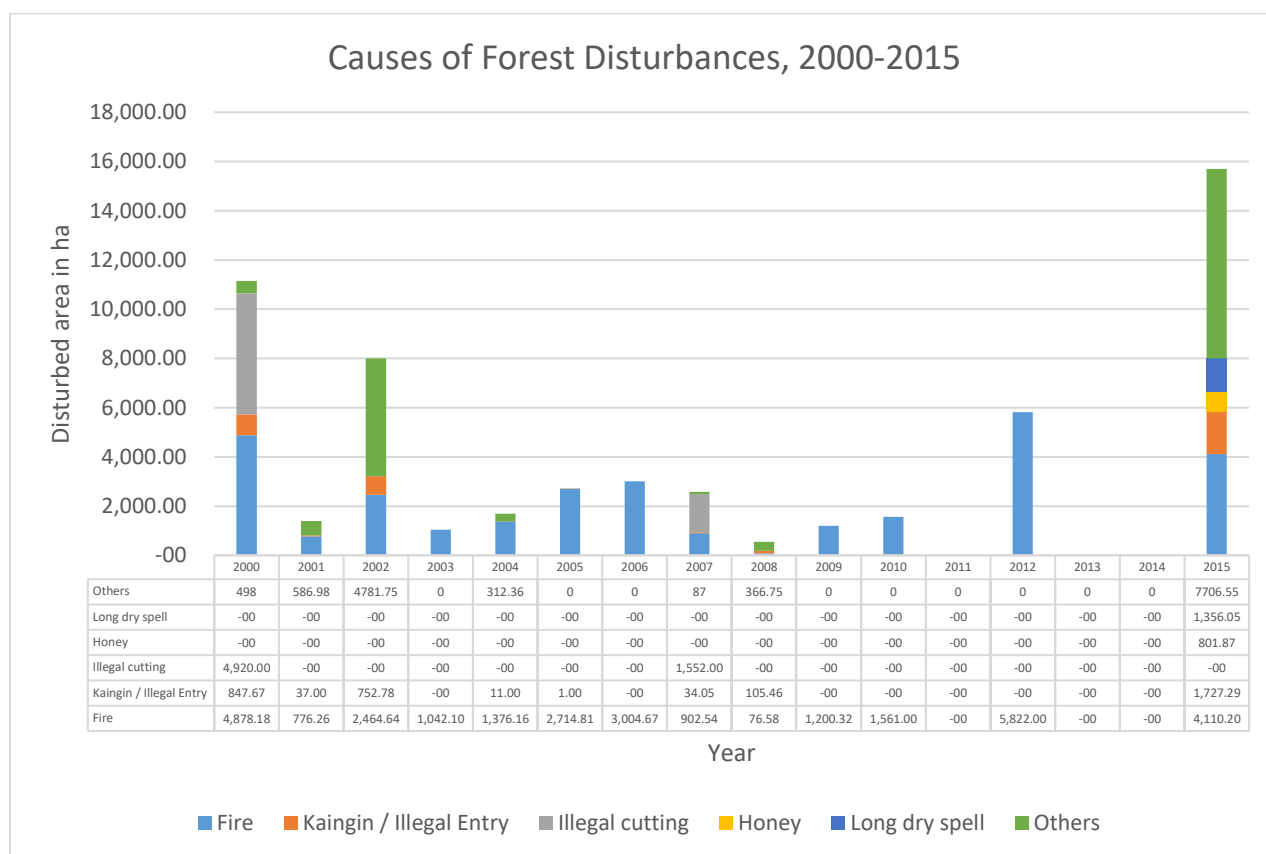
Figure 9. Watershed forest reserves across region, 2016 (FMB)



Due to the significant decline of forest cover, regional reports from DENR were compiled to document the causes of forest disturbances from 2000 to 2015. There were six general causes identified namely, fire, kaingin/illegal entry, illegal cutting, honey, long dry spell, and others. Fire was an umbrella term for incendiarism, hunting, throwing of cigarettes, forest fire, and grass fire. It can be seen in the figure below that there was no data for 2013 and 2014. DENR reported that there were available figures, however these were not disaggregated according to the major causes.

In 2000, the main causes of forest disturbances were illegal cutting and fire. Throughout the years, illegal cutting decreased until it was not observed anymore however, fire continued to persist even until 2015. It disturbed a total of 29,929.46 hectares while illegal cutting covered 6,427 hectares. 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 in areas where there were a number of declared apprehensions and confiscations related to illegal activities within the forestlands.

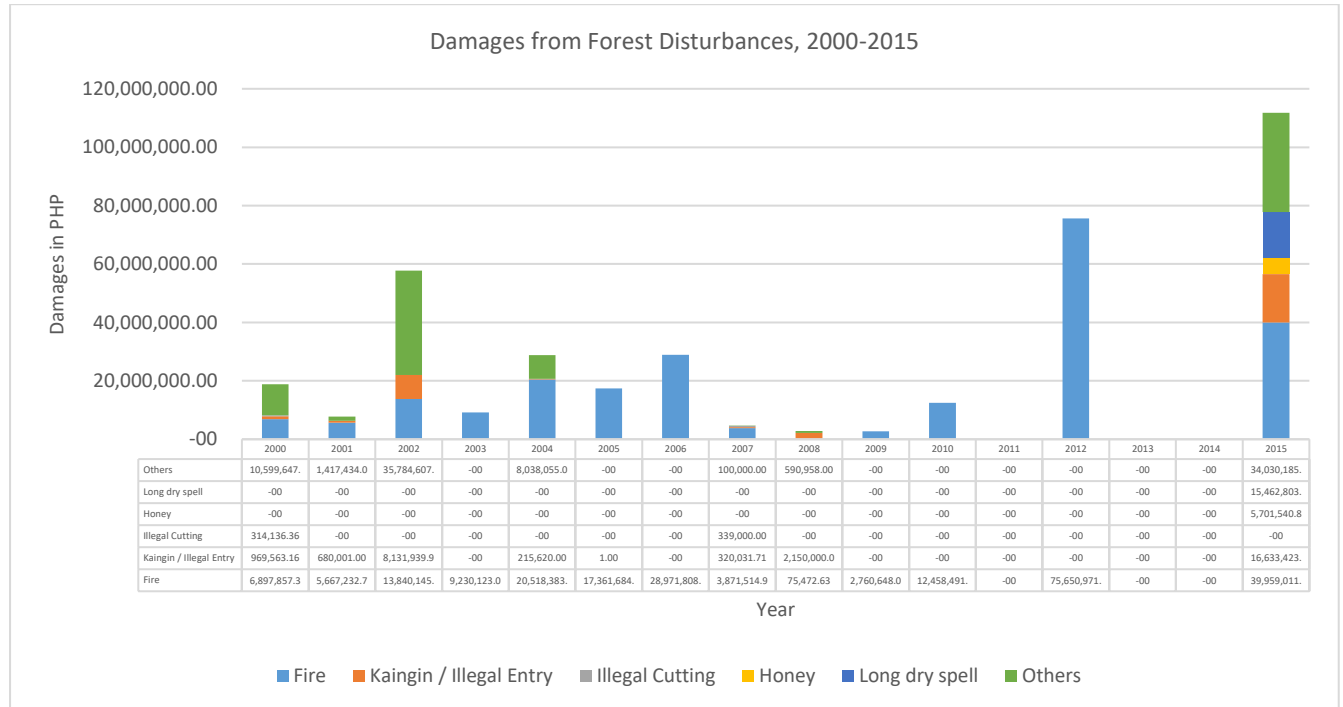
Figure 10. Causes of disturbances within forestlands from 2000-2015 (DENR Regional Reports)



An accompanying chart revealed the amount of damages incurred from these forest disturbances from 2000 to 2015. The cumulative damages from 2000 to 2015 amounted to PHP 378,742,290.75, the most coming from fire which was calculated to be PHP 238,263,343.63 followed by other causes PHP 90,560,886.58, and kaingin PHP 29,100,580.38. Illegal cutting,

despite having disturbed a lot more area than kaingin only clocked in PHP 653,136.36 in damages.

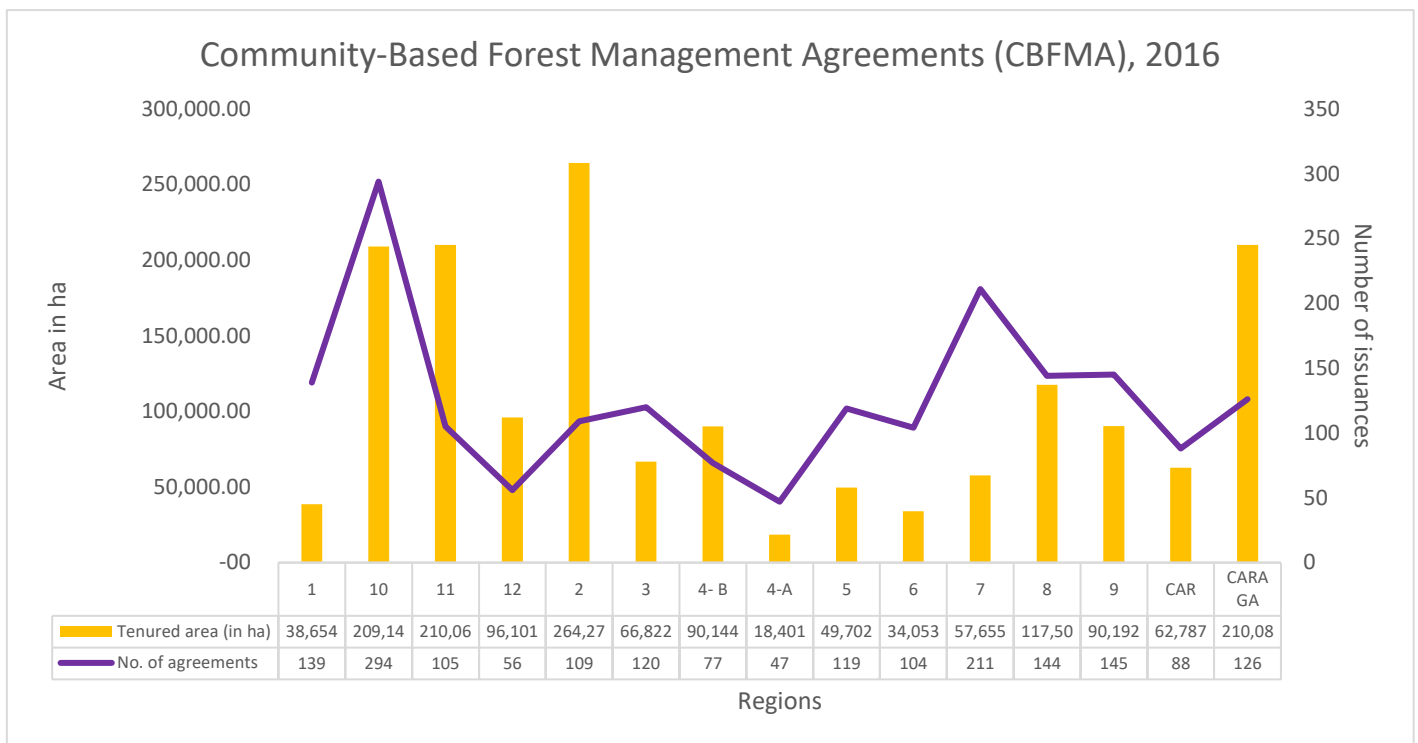
Figure 11. Damages from forest disturbances from 2000 to 2015 (DENR Regional Reports)



Contracts

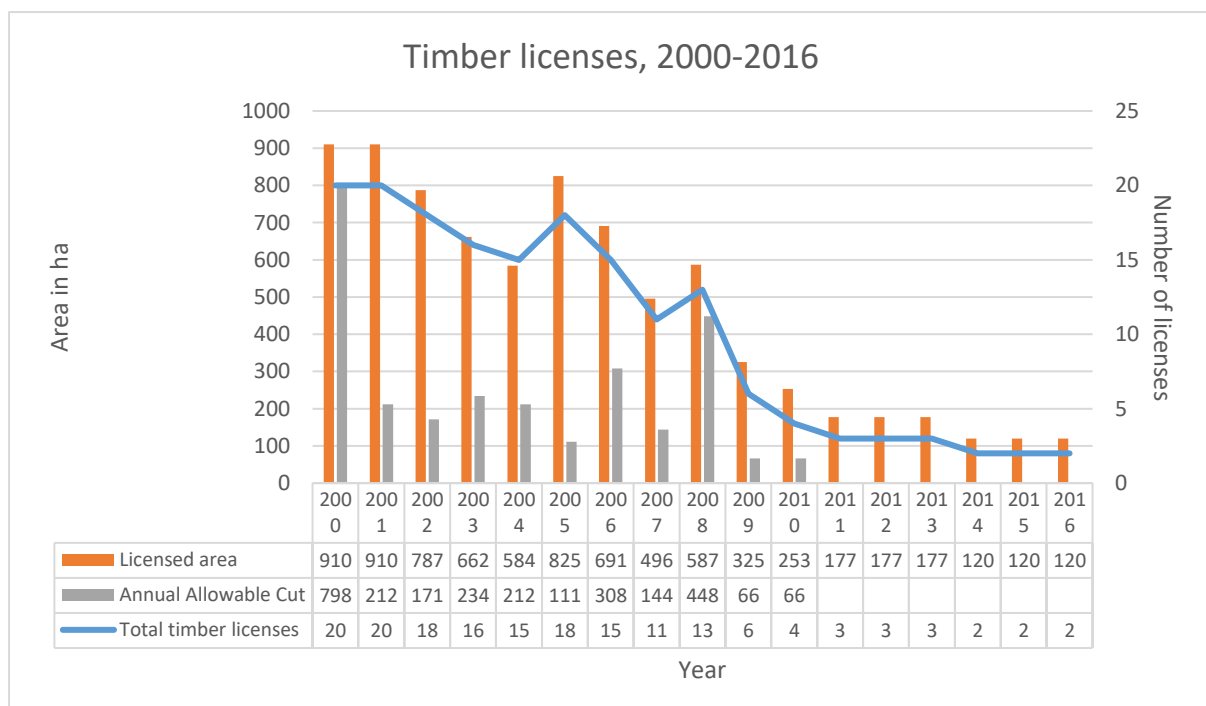
Community-Based Forest Management Agreements (CBFMA) continued until 2016. It was the most common agreement among the tenurial ones and was accommodated for the enhanced National Greening Program. Later in the case studies, the effectiveness of this particular tenurial agreement will be contested by some DENR officials. The biggest CBFMA areas were given to Regions 2 and Caraga with 264,279 and 210,082 ha respectively. However, the greatest agreements were found in Regions 10 and 7 with 294 and 211 agreements respectively.

Figure 12. Area and number of CBFMAs across regions in 2016 (FMB)



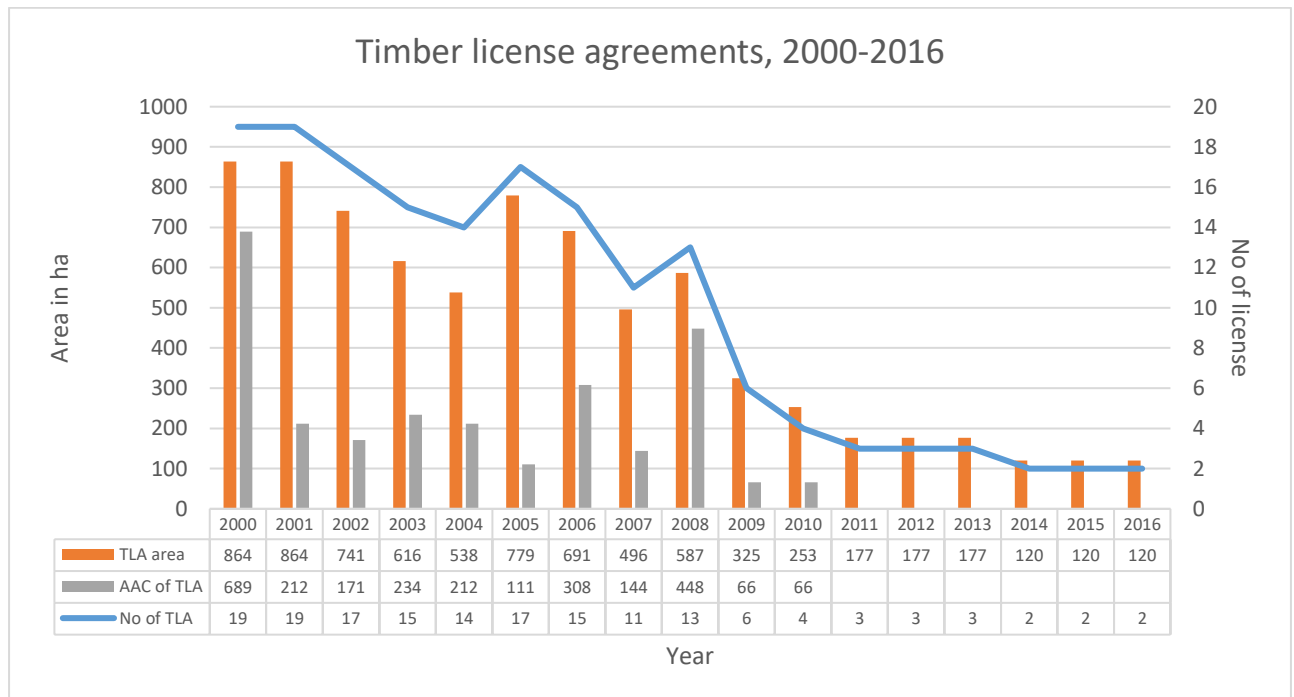
Timber licenses have been given out by the government to regulate commercial timber businesses and to also strengthen the implementation against illegal loggers. The chart below combined both the timber and pulpwood license agreements. Across years, the number of licenses has dwindled in observation of the logging moratorium. From 910 ha, it has decreased to 120 ha. The timber licenses from the start has been small and has dwindled even more to 2 licenses.

Figure 13. Area and number of timber licenses from 2000-2016 (FMB)



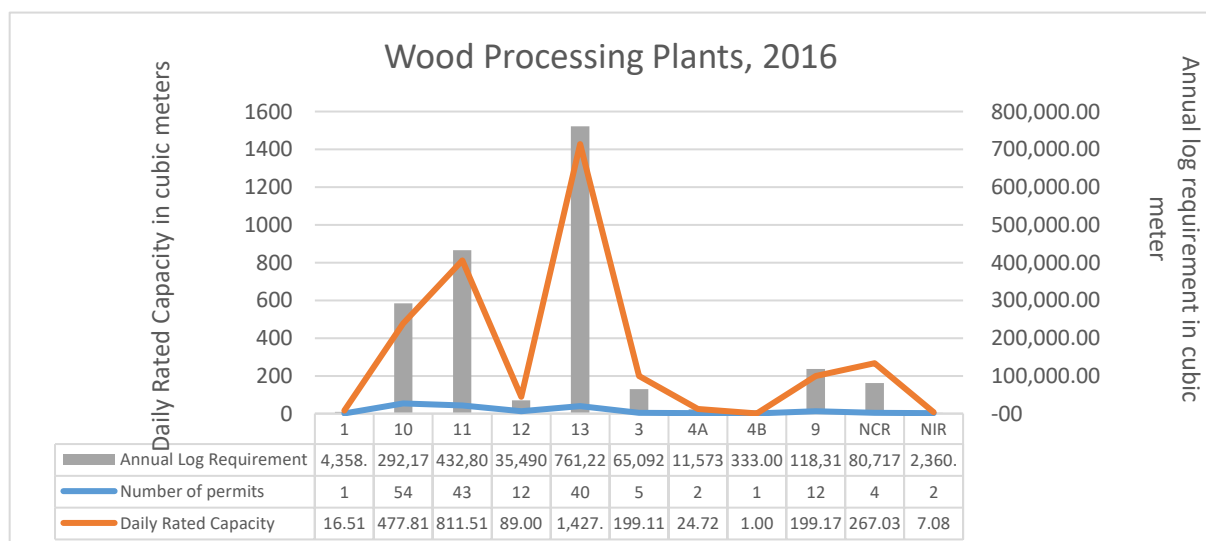
Another common tenurial agreement was the timber license agreement (TLA). In comparison to the CBFMA, it was smaller in size and lower in licenses given. TLA has experienced a decrease in the issuance of timber licenses, following the trend of the figure above.

Figure 14. Trends of timber license agreements from 2000-2016 (FMB)



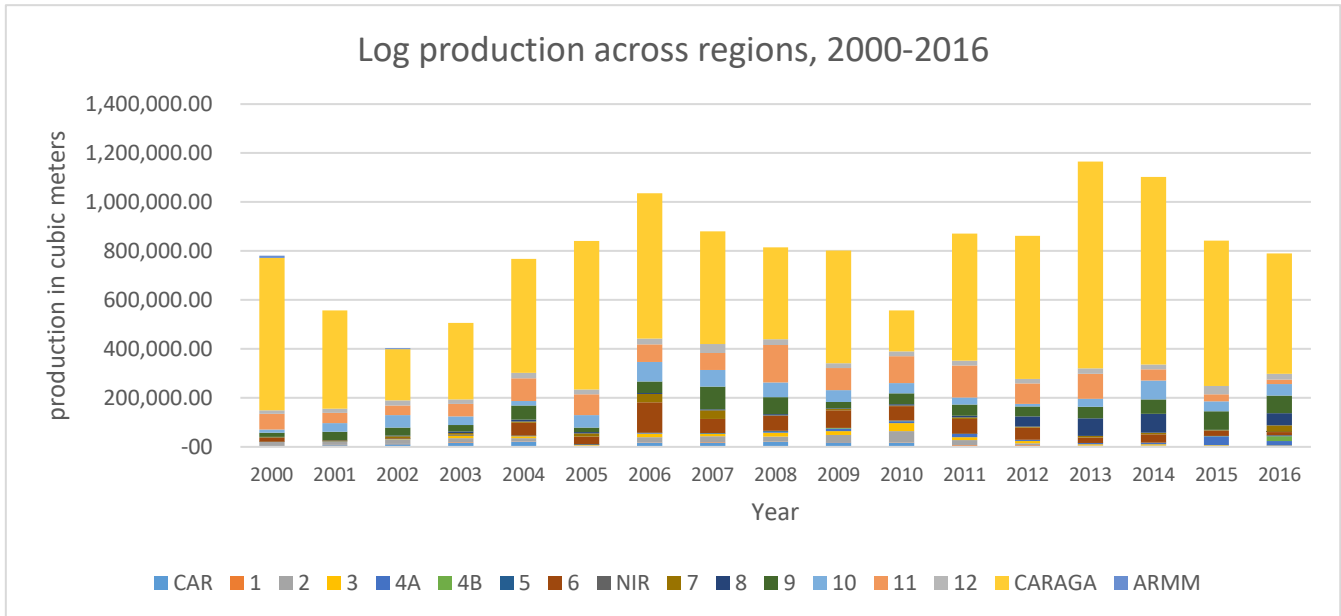
Alongside timber licensing agreements was also wood processing plants. The highest number of permits for processing plants were given to Region 10, followed by Region 11, and then Region 13, all regions found in Mindanao. As for the annual log requirement, the highest was required from Region 13 with 761,226, followed by Region 11 with 432,801, and Region 10 with 292,170.

Figure 15. Status of wood processing plants in 2016 (FMB)



Log production was noted across regions having a total of 790,099 cubic meters worth of production in 2016. The highest of which can be found in Caraga, followed by Davao region, and Zamboanga peninsula. The first two regions were consistent with the findings of the regions with the most presence of wood processing plants.

Figure 16. Log production across regions from 2000-2016 (FMB)



One strategy the government employed to encourage reforestation and protection of forestlands were tenure instruments. As of December 2013, 2.9 million ha of forestlands were secured in agreements (FMB-DENR, 2013). These were also one method of log production.

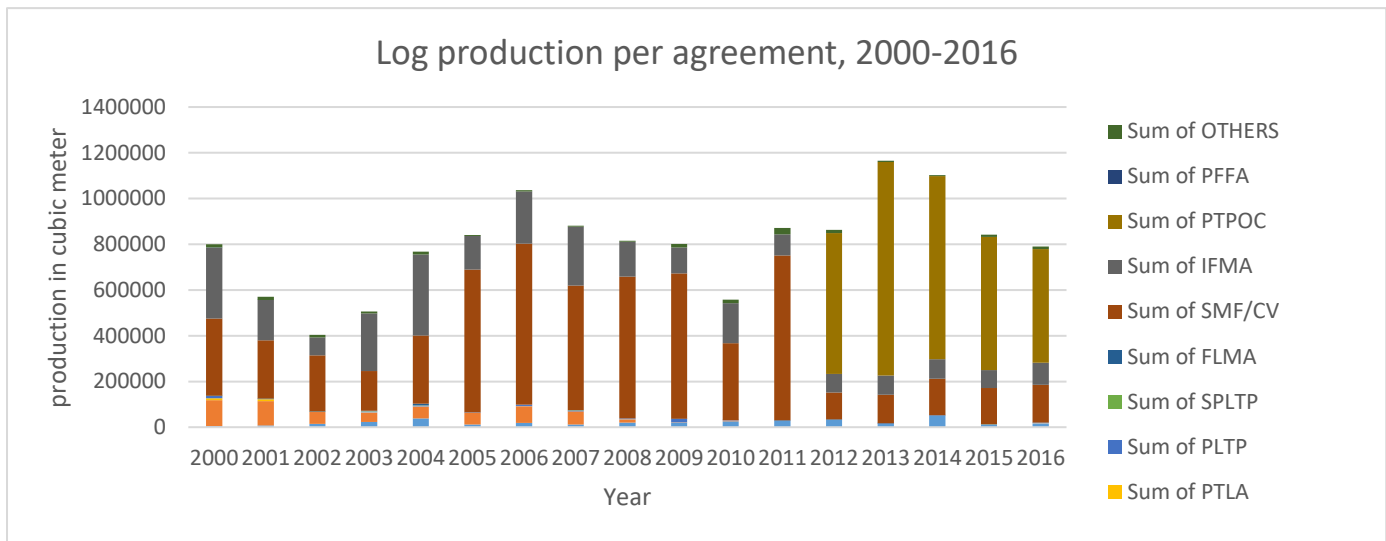
- *Community-based forest management agreement (CBFMA)*
 - This was the most commonly used agreement between a local community and the government with the initiative centered on the integration of people-oriented management and sustainable development. Under the EO 263 in 1995, the contract has a term of 25 years renewable for another 25 years. Under this tenure instrument, 1.6 million ha were developed by 1,884 people’s organizations in 2013.
- *Timber license agreement (TLA)*
 - This was defined as a long-term license granted by the DENR secretary to a company for the harvest and removal of timber and other forest products. As of 2013, 177,085 ha were under the agreement operated by three companies in Samar and Zamboanga del Norte however, there were no reported operations in the same year.
- *Integrated Forest Management Agreement (IFMA)*
 - IFMA was negotiated between DENR and a qualified individual planning to industrialize a specific forest domain. Existing IFMAs amounted to 140 totaling to 1.0 million ha with Mindanao having the most number at 83 IFMAs.

- *Tree Farm Lease (TFLA) and Agroforestry Farm Leases (AFFLA)*
 - TFLA allowed planting of commercial, non-commercial trees or both in a small tract of land while AFFLA enables sustainable land management and productivity at the same time by combining agricultural and forest crops that were compatible with the local climate, topography, and slope.
- *Socialized industrial forest management agreement (SIFMA)*
 - DENR allowed an individual the right to develop and manage a small area of forestland aligned with the sustainable development.
- *Private forest development agreement*
 - A landowner can help develop a forest plantation inside his private property through this agreement.
- *Forest and grazing management agreement (FLGMA)*
 - This tenure instrument was a production sharing agreement between the government and an individual or a corporation over the development and utilization of grazing lands.
- *Special and forestland use permits and agreement*
 - This allowed a natural or juridical person to occupy, manage, and develop a public forestland albeit temporarily and subject to government share. Special land use permit (SLUP) fell under this umbrella along with special land use lease agreement (SPLULA), forestland use agreement for tourism purposes (FLAgT), and special forestland use agreement (FLAg).

Forest tenure granted upland communities the right to finally manage and utilize their natural resources, and this was deemed as a successful reform albeit encouraging upland encroachment. To reiterate, CBFM was seen as a national strategy to facilitate sustainability in forest management and ensure a fairer benefit distribution among the stakeholders of the country's forest lands (Pulhin and Ramirez 2016). It was proven in both timeline and policies how integral the role of community participation in forest rehabilitation is. As of 2013, the reforestation programs both by the government and non-government sectors covered 1,958,928 ha while 14 million ha of untenured forests remain under protection (FMB-DENR).

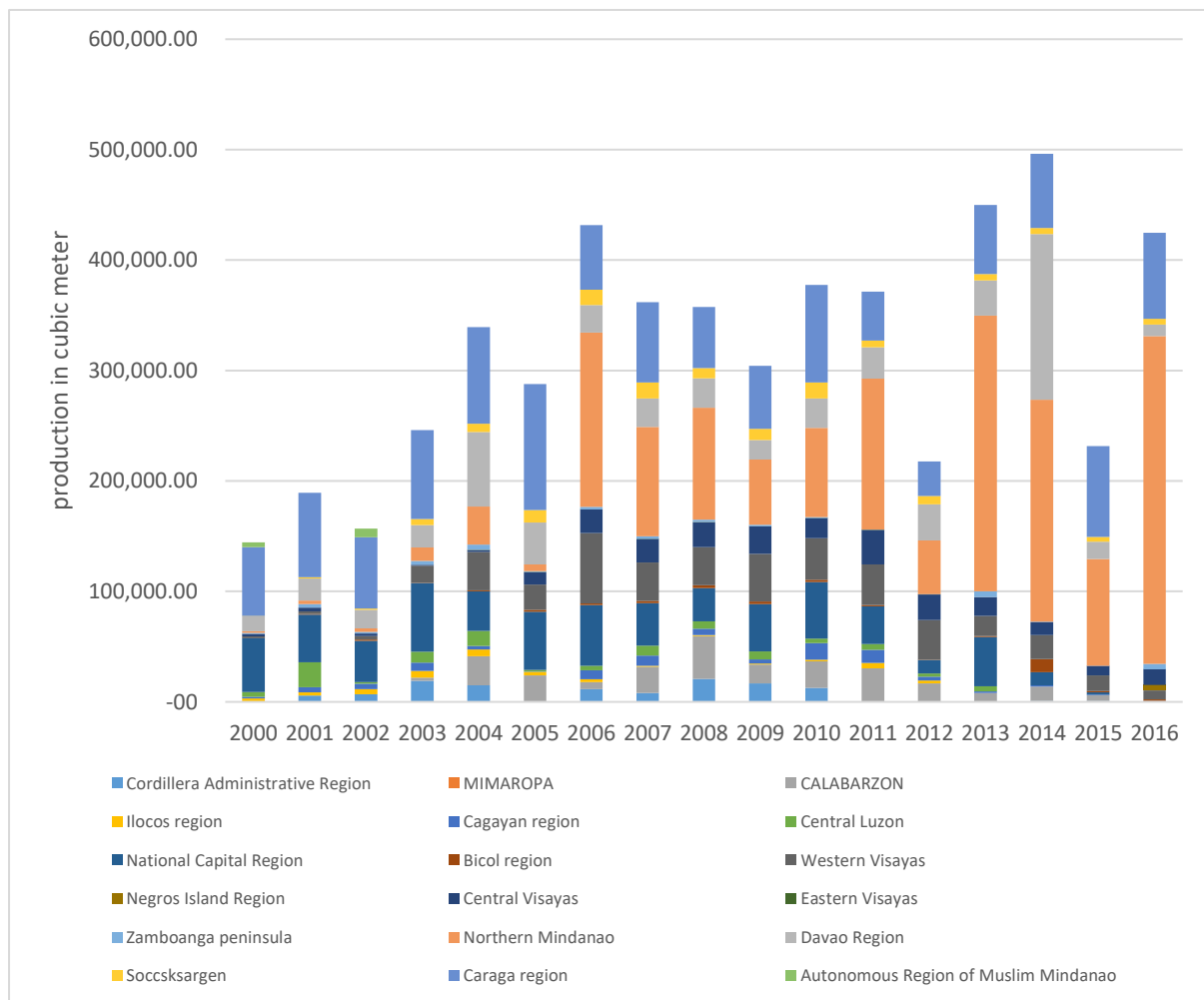
From 2000-2011, the socialized industrial forest management agreement contributed most to the agreements' aggregated log production. This figure was overtaken by PTPOC from 2012-2016.

Figure 17. Comparison of log production per agreement from 2000-2016 (FMB)



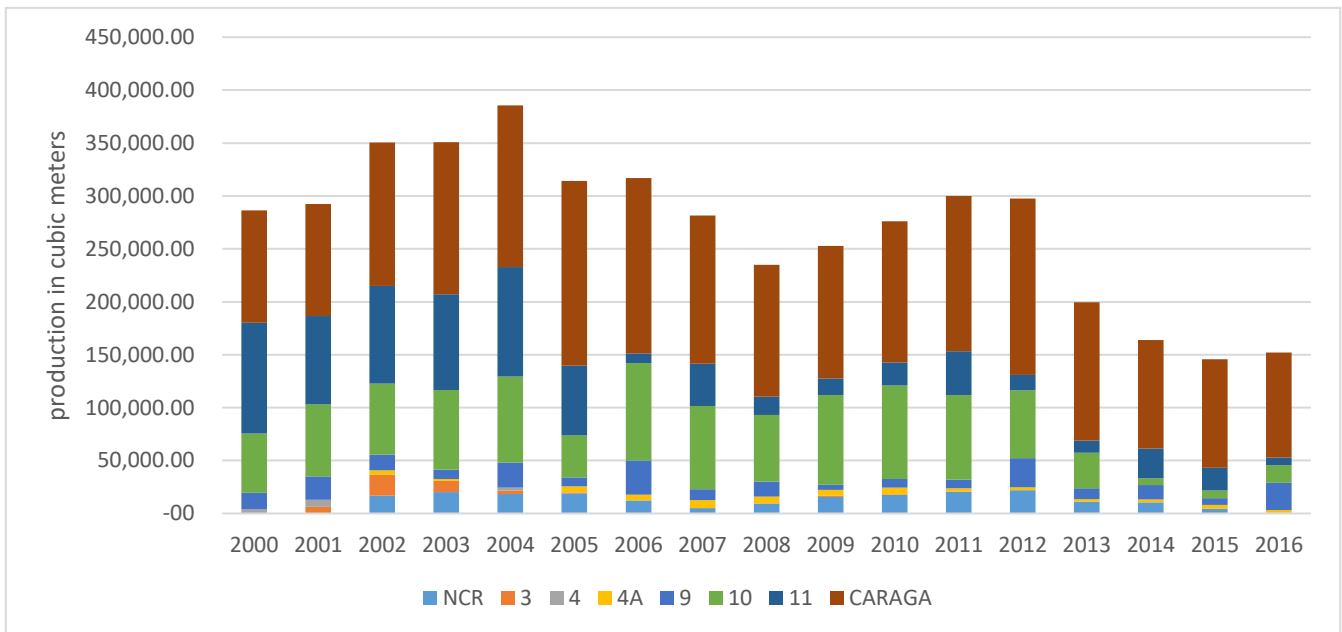
Lumber production was consistently present in Caraga and National Capital Region from 2000-2016. However, its presence was even more pronounced in Northern Mindanao (Region X) from 2006-2016, topping over other regions.

Figure 18. Lumber production per region from 2000-2016 (FMB)



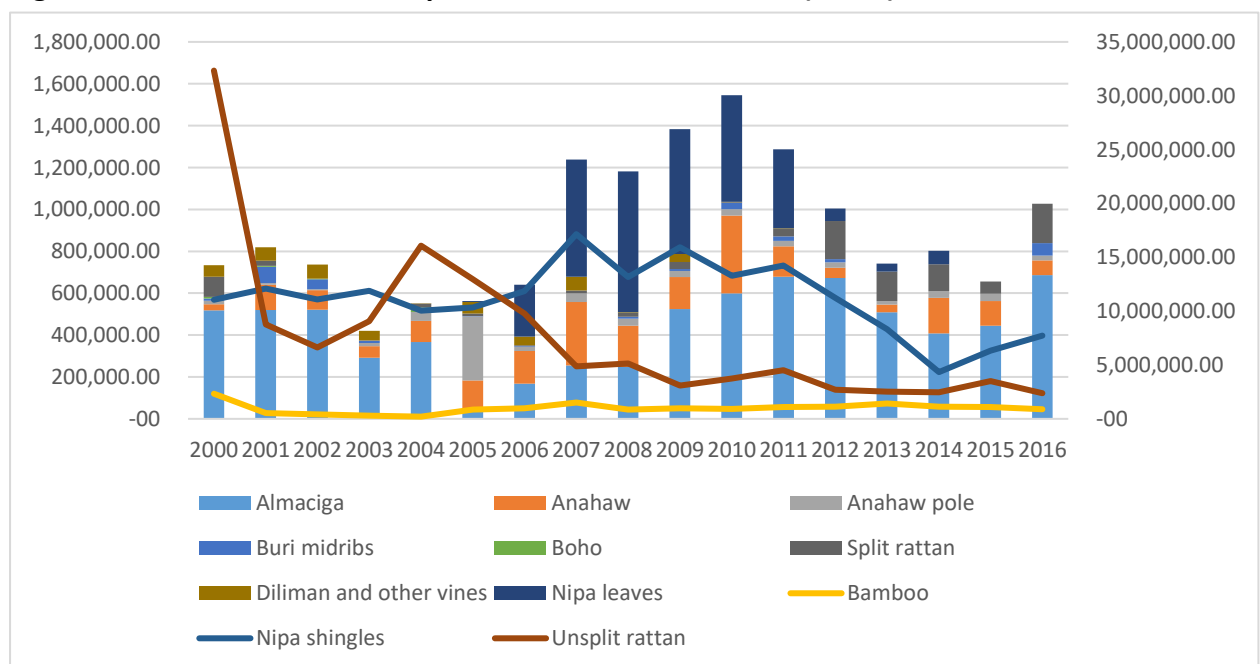
Plywood production for each region was presented below, spanning the years 2000 to 2016. This type of processing was not present for all regions and was only available through NCR, Regions 3, 4, 4A, 9, 10, 11, and Caraga. Most of this production can also be found in Caraga.

Figure 19. Comparison of plywood production per region from 2000-2016 (DENR)



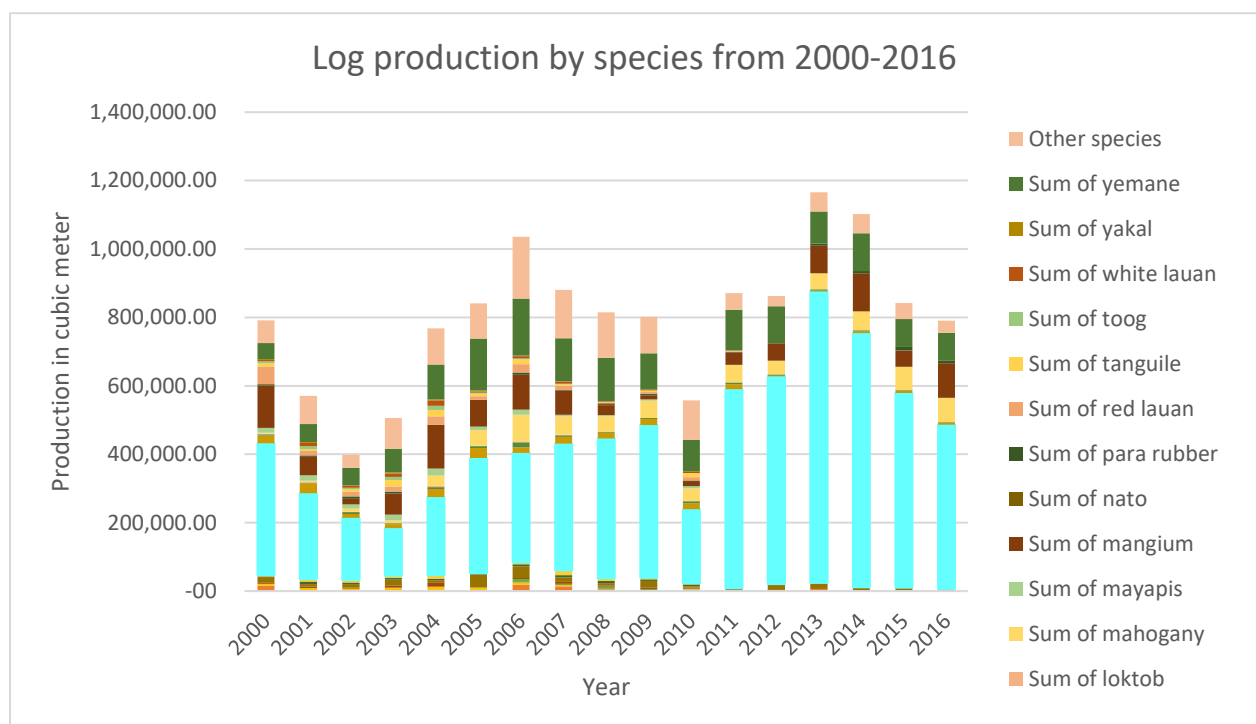
The last figure for this section revealed the trends of non-timber products from 2000 to 2016. The charts were dominated by almaciga, a source for resin; this was followed by nipa shingles and nipa leaves.

Figure 20. Trend of non-timber products from 2000 to 2016 (DENR)



The following figure showed the disaggregation of log production by species from the same years. The production all throughout the years was consistently sourced through *falcata*, and many other endemic species. The rate of timber cutting for log production may inevitably put pressure on the goals of the agreements and may have become a source of contradiction since most of the species on the chart were native and endemic to the Philippines. These were difficult to grow and re-establish again in forestlands thus cutting them in a fast rate may not equate to growing them back at the same rate. This situation begged the question whether the goal of the agreement to effectively manage the resources was actually met.

Figure 21. Log production by species from 2000-2016 (DENR-FMB)



Philippines also benefit from the products taken from the forest like wood-based manufactured articles, furniture, paper and paperboard, pulp and waste paper, and lumber. These were exported to nations such as Japan, USA, China, United Kingdom, and the Netherlands and have a total trade value of USD 3.16 billion. In turn, Philippines imported paper and paperboard, plywood, furniture, and lumber from other countries which amounted to USD 1.42 billion. The country’s top import sources were China, USA, Indonesia, Malaysia, and Japan. It can be observed that most of the forest-related products that were imported also came from Asian countries, particularly in the East and Southeast regions where forest cover and biodiversity were abundant.

Paper was mainly exported from 2003-2006 and slowly shifted to wood-based production from 2007 onwards. The former’s quantity exported amounted to 2,488,231,229 nk while the latter added up to 5,854,163,136 units. This also implied that both timber and lumber production were intensified to meet the demand for export. As for the exported value, the highest ones were wood-based and forest-based products, then followed by paper.

Figure 22. Quantity of forest-based products export from 2003-2016 (FMB)

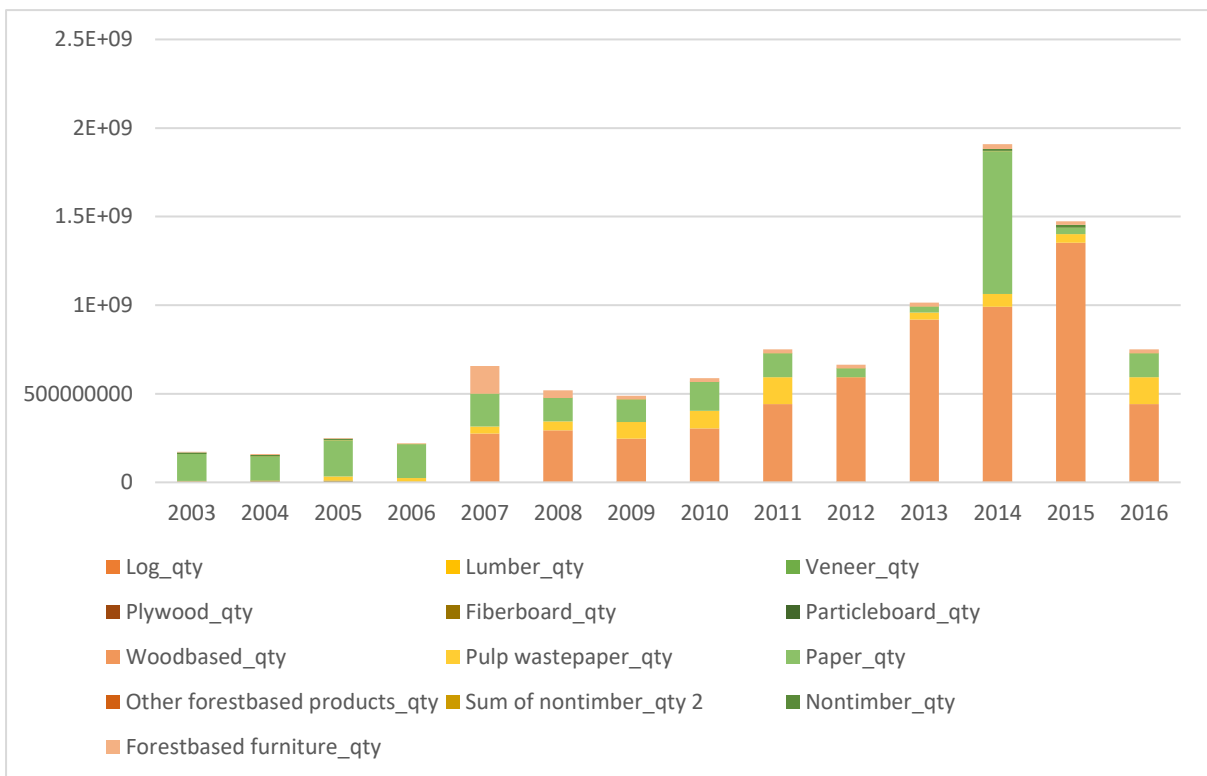
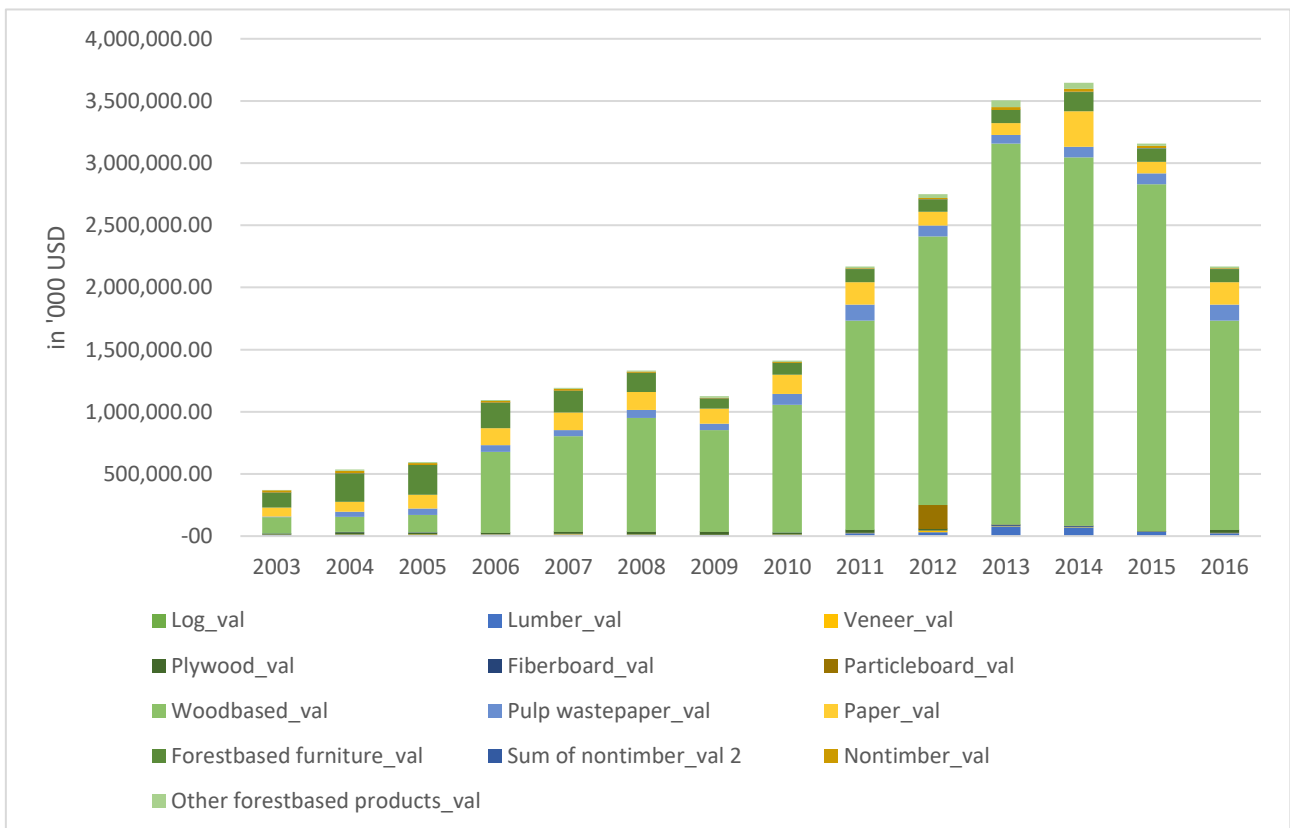


Figure 23. Value of forest-based products export from 2003-2016 (FMB)



On the other hand, Philippines mostly imported paper and pulp wastepaper. The import quantity of paper was seen to exhibit an increasing trend, but the quantity for pulp wastepaper waned. The import values exhibited an increasing trend as well with most of the costs going towards veneer, plywood, and lumber. In 2016, the import values amounted to 1.8 billion USD.

Figure 24. Quantity of forest-based products export from 2003-2016 (FMB)

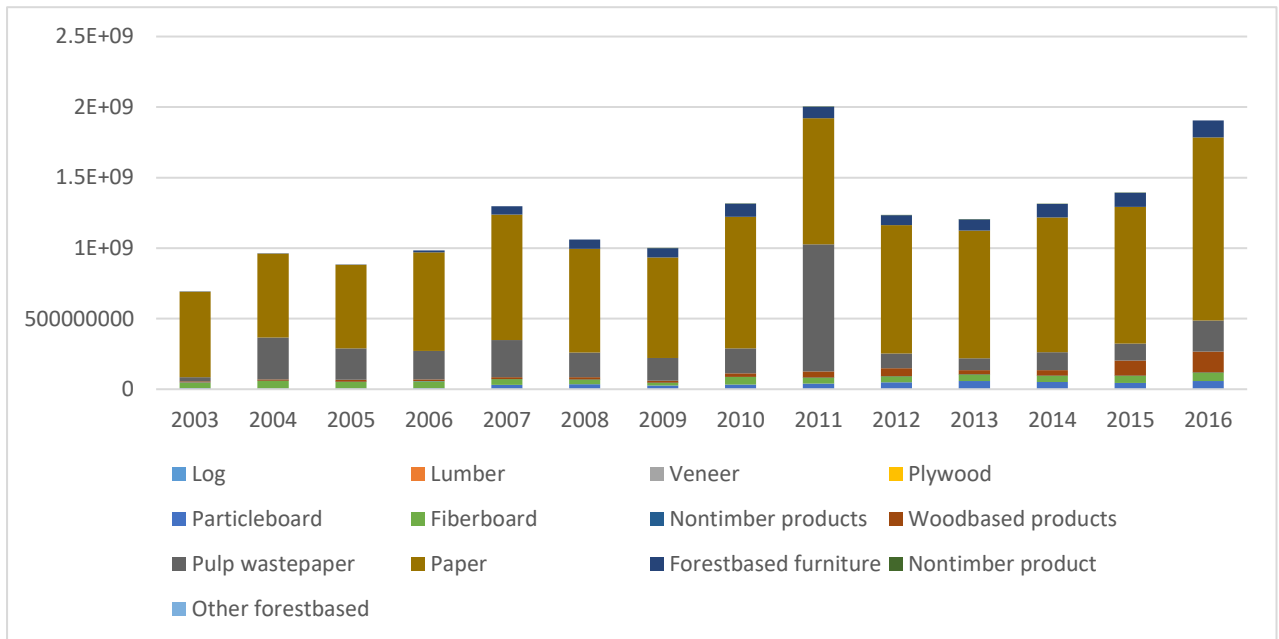
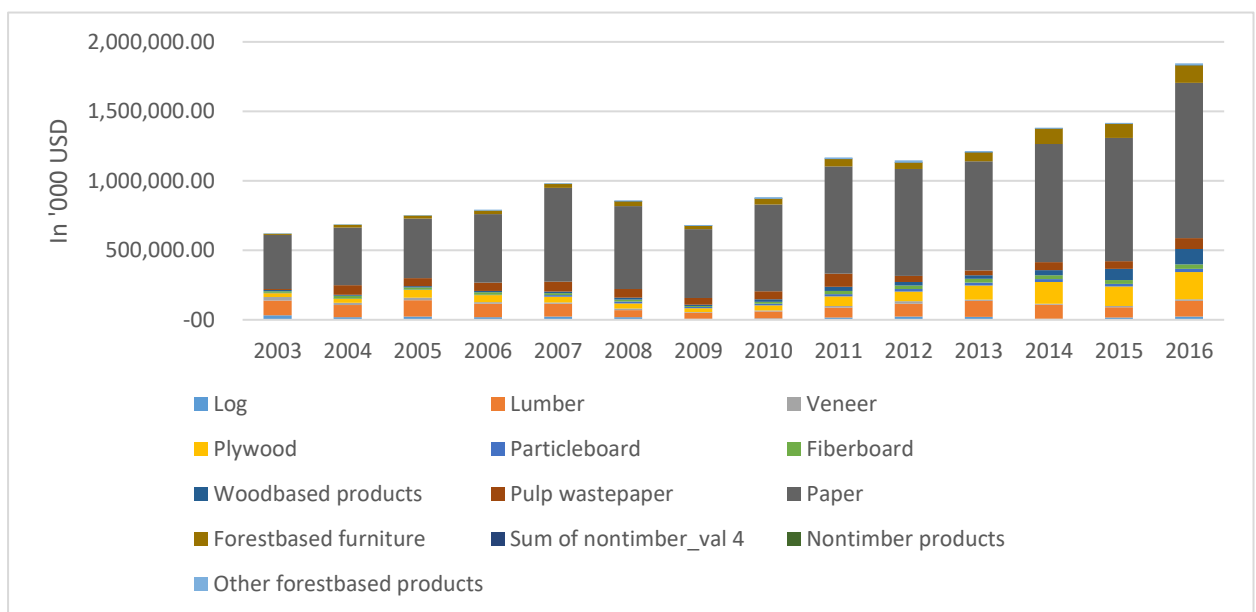


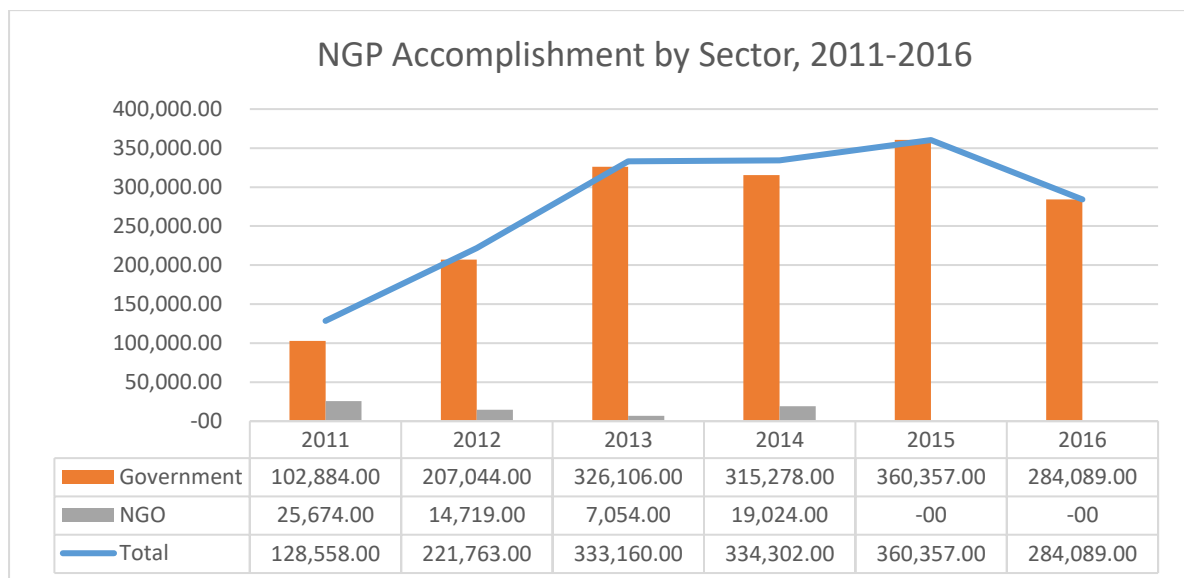
Figure 25. Value of forest-based products from 2003-2016 (FMB)



National Greening Program

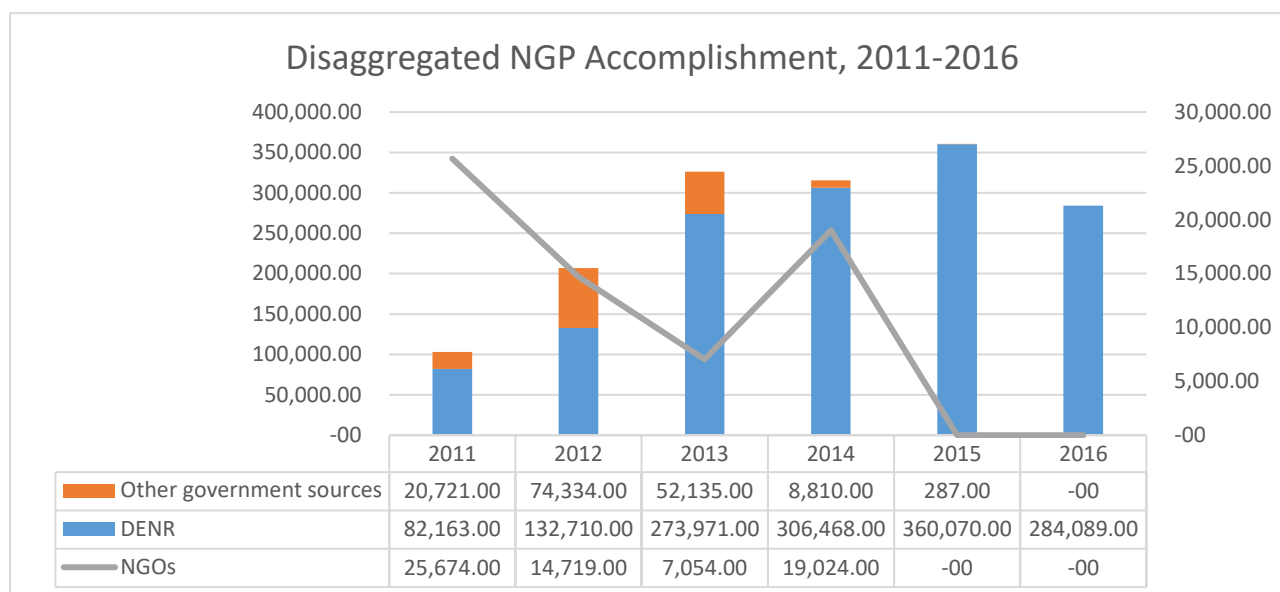
Under the guidance of the FMB was the creation of the National Greening Program mandated by EO No. 26 issued on February 24, 2011. The massive forest rehabilitation program aimed to grow 1.5 billion trees within 1.5 million ha in a span of six years from 2011-2016. The coverage of the mandate extended to all remaining unproductive, denuded, and degraded forest, and the implementation period was lengthened from 2016 to 2028 in virtue of EO No. 193 signed on November 12, 2015. In the figure below, it can be seen that from the time the program was initiated up to 2016, the program was able to plant 1,662,229 ha of trees and implanting 1.37 billion seedlings of different species. The NGP also gave 4.02 million jobs in upland communities (NGPCO, 2017). When disaggregated by sector, the government has contributed more compared to non-government organizations.

Figure 26. Comparison of NGP accomplishment between government and NGOs from 2011-2016 (FMB)



The figure below showed the accomplishments disaggregated by sector from 2011 to 2016. NGOs contributed significantly from 2011 and then declined in 2013. It rose again in 2014 but decreased the following year and it was no longer able to contribute in 2016. The percentage share of other government agencies was also dwindling from 2011 to 2015, while the bulk was shouldered by DENR.

Figure 27. Disaggregated NGP Accomplishment per sector from 2011-2016 (FMB)



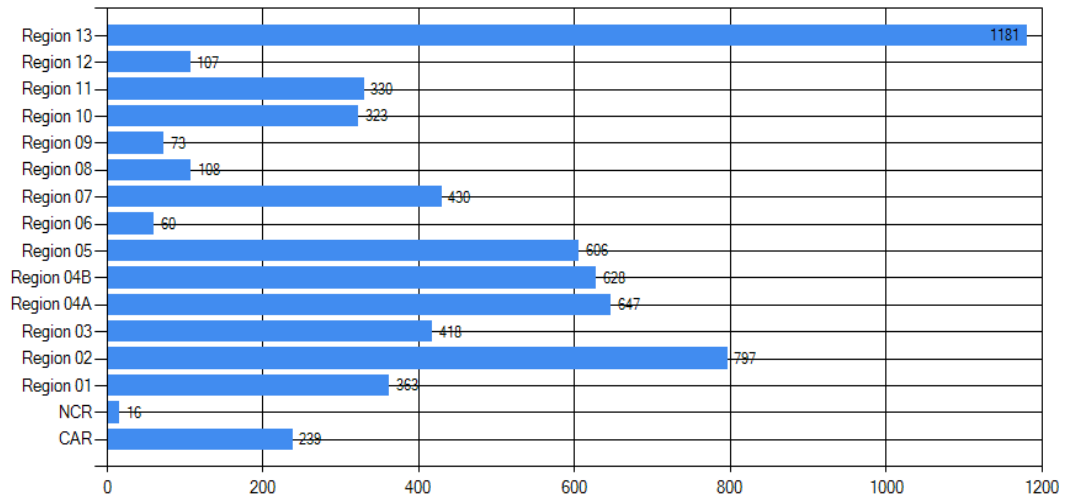
3.3. Enforcement of forest protection

3.3.1. E-Filing and Monitoring System

Deforestation has been defined as the conversion of forested land to non-forested land due to anthropological issues. On the other hand, forest degradation pertained to either natural or anthropological reasons which introduced shifts within the forest that affect the ecological structure or function of the site and degrade the quality of services the forest offers (FAO, 2006). One of the main cases of deforestation and degradation was illegal logging, and the impacts from this activity were not only contained within the sector but were carried over to other sectors such as agriculture and fisheries through siltation. However, certain local government units defer shutting down illegal logging activities due to the allegedly heavy reliance on timber revenues by the communities. This case is true for the Northern Sierra Made Natural Park which covers an area of 359,486 ha, 287,861 ha of which are terrestrial habitats. It was included in the NIPAS Act of 1992 but was only adopted in 2001 through RA 9125 (Ploeg et al. 2011). To avoid cases like this, an e-filing and monitoring system was established by DENR. EFMS was an initiative aimed to curb corruption and personal favors on the ground and to safeguard the enforcers from possible political influence.

Generated data from the EFMS portal revealed information spanning from 2000s to 2018. In terms of apprehension, the region with the most cases were in Region 13 and Region 2 with 1,181 and 797 cases respectively. The least number of cases were found in NCR and Western Visayas.

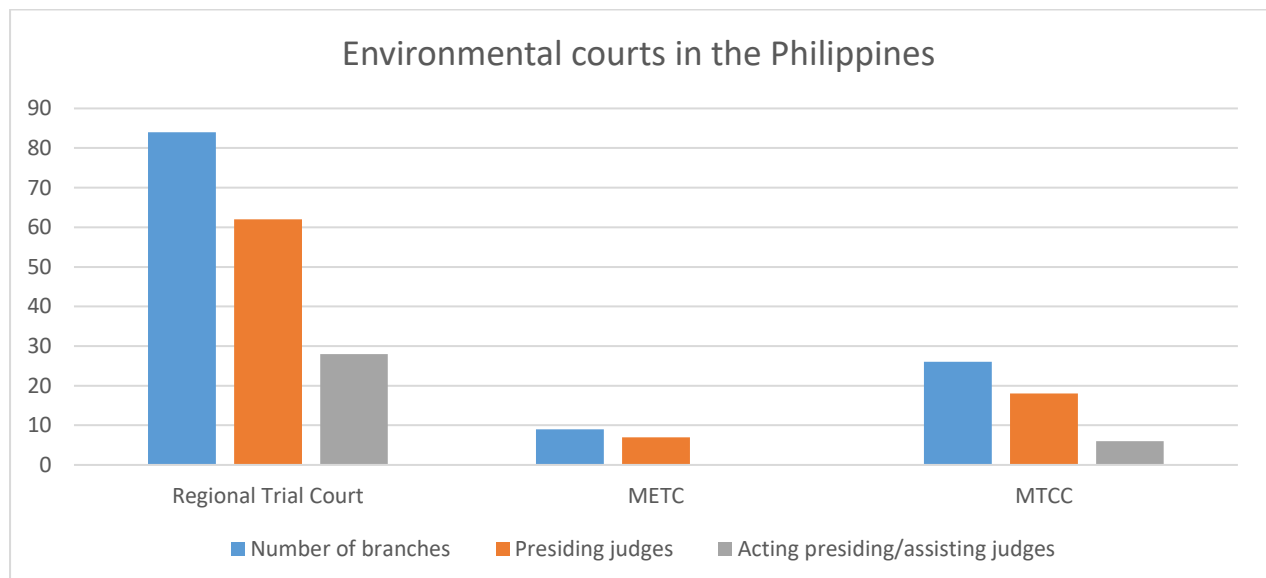
Figure 28. Forest-related apprehensions across regions from 2010 to 2018 (DENR)



3.3.2. Environmental / Green Court

As of 2017, there were over 119 environmental green courts, 28 of which were vacant of presiding judges and two were unorganized. A closer look would reveal that the Philippines has over 84 branches of regional trial courts, 9 metropolitan (METC), and 26 municipal (MTCC). There were 62 presiding judges for the RTC, 7 for METC, and 18 for MTCC, amounting to 87 presiding judges for special cases. In the absence of presiding judges were the acting or assisting judges that can perform the functions for the court; they were 34 in total. For the RTC, there were 28. None was present for METC while 6 were identified for MTCC.

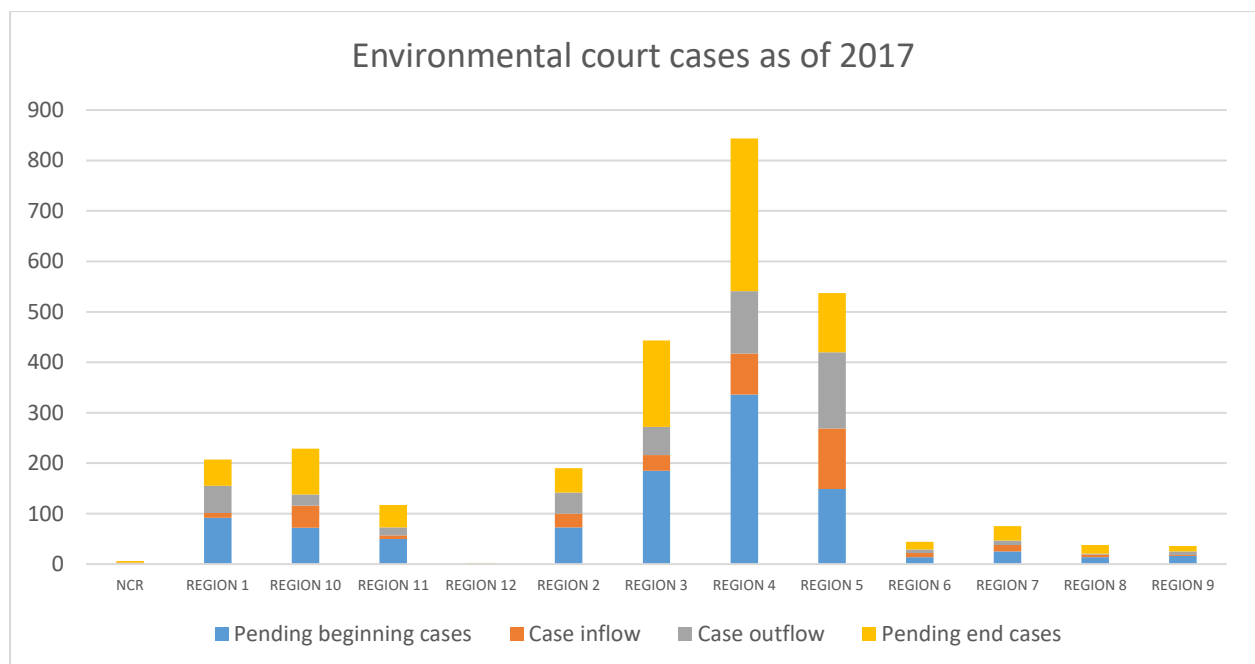
Figure 29. Status of environmental courts in the Philippines (DOJ)



Environmental court cases as of 2017 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 in NCR and Region 12. Overall, there were 1,027 cases related to environment recently 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 present for Caraga, and these were all found in Butuan City. The two branches have 14 pending beginning cases, 18 case inflows, 9 case outflows, and 21 pending end cases. For Palawan, there was only one branch, and it handled 237 pending beginning cases. Thirty cases entered into the branch for the year, 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. The region's ending cases were at 26.

Figure 30. Environmental court cases in the Philippines as of 2017 (DOJ)



3.4. Case studies

3.4.1. Caraga

Information and perspectives were gathered from varying institutional levels and agencies in Caraga with regards to forest protection. In particular, these were the Provincial Environment and Natural Resource Office (PENRO) of Surigao del Norte, Community Environment and Natural Resource Office (CENRO) of Tubod, Surigao del Norte, and regional offices of DENR and NCIP Caraga. The region is identified as one of the last ecological frontiers of the Philippines along with Palawan, and it also has 12 key biodiversity areas. Moreover, the region encompasses seven critical wetlands covering 45,613 ha in the whole country. Despite the protection offered by NIPAS (RA 7586) and Wildlife Resources Conservation and Protection Act (RA 9147), the ecological integrity of the region is still faced with problems mainly contributed by mining operations and illegal logging.

Policy and implementation

Both PENRO and CENRO carry the bulk of responsibilities for forest protection however, they have been added additional functions by DENR Central Office to be involved in monitoring processes of small-scale mining, solid waste management, and EMB-related

concerns. Sentiments were expressed that the higher-ups seem to have low awareness of how policies were implemented on the ground. Aside from this workload, the personnel have to also deal with legal repercussions, which will be discussed later, in the absence of legal policy support and framework. Consistent also among the regions was the observation that Forestry Reform Code or PD 705, the main basis of forest protection policy in the country, was outdated and which was only recently followed through by EO 23 and EO 26. The only additional amendment was RA 7161 in 1991 which only served to increase forest charges, but it was unable to provide policy support for problems that have continued to persist in the present day. It was believed that mining was one of the possible reasons why the Sustainable Forest Management Bill, the supposed policy replacement for PD 705, was not passed.

Impacts

The direct impacts of forest protection policies were difficult to identify particularly in mining areas since the enforcement team are not allowed to enter to police or monitor. Such functions were relegated to mining companies and thus direct impacts may only be felt by those personnel. Other direct impacts that were able to escape policy grounding were *kaingin* and forest fires during summer.

Effectiveness

DENR's most consistent policy in deference to the tree-cutting permit was earthballing. For Caraga, this policy was counter-effective as "transplanted" trees continued to die. This was one of the requirements needed to be complied by a mining company or developer along with mining rehabilitation plan, and NGP commitment. The proponent must initially ask the CENRO for assistance and permission to plant outside the MPSA area. This certain requirement was followed by proponents, but it was not able to plant endemic species.

Unintended effects

Mining operations and illegal logging inevitably felt the unintended or indirect impacts of forest protection policies in the region. A moratorium on logging was declared through EO 23, but this was mostly felt by poor communities near or adjacent the forested areas who saw logging as livelihood sources. Despite being stringent, the policy was able to force the companies to replace the trees they cut during mining operations, allowing the area to be reforested. However, what was lacking was a standard in complying with the provisions on area rehabilitation.

Costs

The weakness or absence thereof of a weak legal support, and the nonfunctioning of green courts contributed to the lack of protection for field personnel against death threats; conviction rate also decreased to six percent aside from the large number of dismissed cases.

In the data given below by the regional office, it can be assumed that the filed cases were not resolved quickly as pending cases remained consistently lower and increased slowly over the years. Conviction rate also slowed down. These may be considered as indicators for a slow judicial system, considering that there were 339 cases for only two existing branches of trial courts for the whole region.

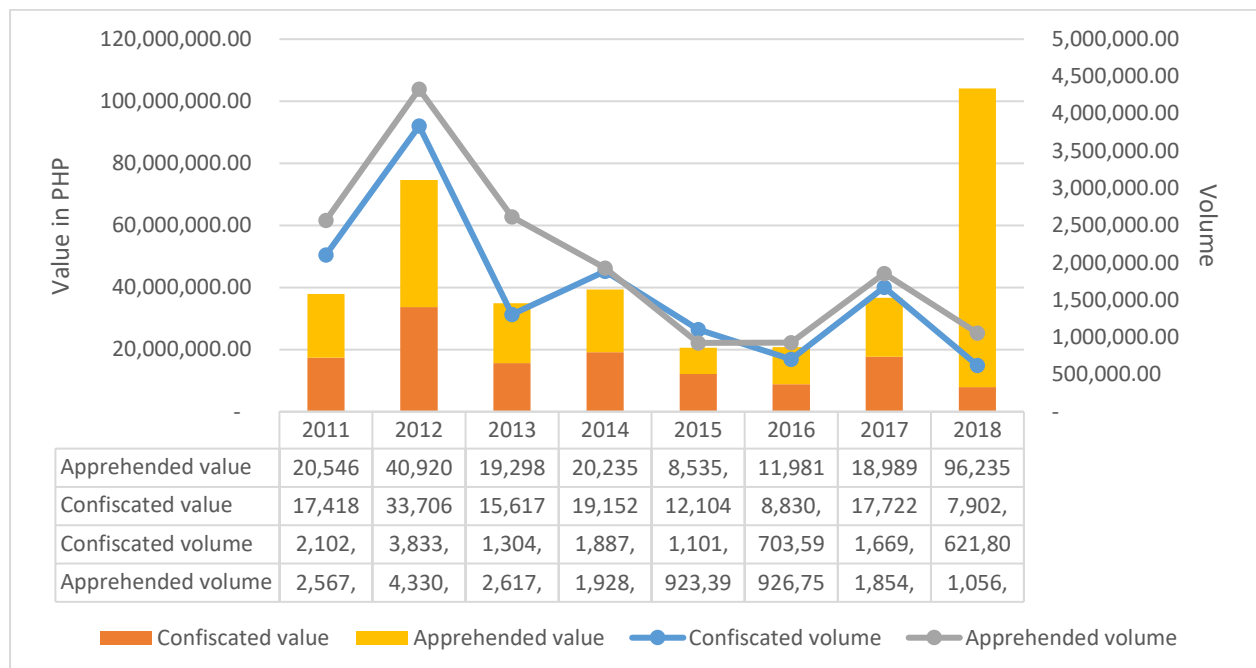
The inability to confirm if parcels of mountains were shipped to other countries was due to the difficulty of monitoring within mining areas. In terms of the legal process, the lack of ideal timeline dragged the adjudication process for too long, subjecting the confiscated conveyances and materials to depreciation and exposing the involved personnel to death threats. Moreover, DENR's minimal financial resources contributed to the consequential outcomes in enforcement. The ratio of one forest guard was observed to be equal to 4,000-7,000 ha, too wide for an accurate monitoring, and too open for armed threats with little to no security detail. Forest guards often armed themselves when patrolling in response to lack of institutional augmentation. Another expense to the policy grounding was reforestation since trees continuously get killed off due to nutrient depletion and unsuitability of species compounded with unregulated *kaingin* and cutting, practices which have persistent existence in other areas. Our informants in the field interviews recommended an update in the taxes to forest charges of products and a more market-oriented approach in forest products.

Enforcement and implementation

The forestry sector seemed to suffer from low penal provisions both in time and cash worth. While policy-oriented enforcement was in place, it still had a weak presence in forestlands and mining areas. Technicalities in rehabilitation of mining companies must also be looked into since areas available for reforestation were observed to be difficult to identify and site-species matching were not practiced. As for the region's future plans, it was disclosed by the DENR Regional Office the intent to track a tree from its stump to a final product. This proposal was also presented by the Central Office.

One prime example and evidence of trends for this region can be found in the figure below. It can be observed that both apprehensions and confiscations for Caraga decreased in trend until 2016, but in 2017, the volume shoot up. The following year, the volume decreased along with the price of confiscated products however, the value of apprehended ones increased drastically.

Figure 31. Apprehension and confiscation figures in Caraga from 2011-2018



Other regions attributed the lowered value to depreciation brought by the tedious adjudication processes.

Sustainability

Aside from the effectiveness of forest protection initiatives in place, sustainability of these actions must also be considered. One of the many responses would be to convert Forest Management Bureau into a line bureau like Mines and Geosciences Bureau and Environmental Management Bureau to better serve the forestry sector and to augment CENRO. Another option may be the reinforcement of Multipartite Forest Protection Committee which have not been functioning in other regions. Digitization of records for easier monitoring process, and a sustained IEC campaign on areas where timber poaching have been present and at the same time been recognized as hotspots.

Inclusivity

Forestry sector affects a broad range of areas and generally, residents living within the areas and indigenous peoples have been identified as the impacted stakeholders. NCIP, in particular, has to deal with recognition processes of IPs who migrated away from their ancestral domains and have to be identified through a matrix and guidelines presented in EO series of 2012. This problem pushed a recommendation to have statistics demographics through a forest occupant survey. In terms of participation process, only the IP leaders were consulted for policy recommendations and protection. Since they have high awareness regarding the hunting seasons and tree cutting provisions, they were also tasked to disseminate the information among the community. However, in cases of forest agreements, tenurial instruments such as Integrated Forest Management Agreement (IFMA) were only given to rich families in Metro Manila and not among local communities who were already present in the area.

Interventions in the forestry sector posed a question whether these were able to address social issues. Frontline enforcers acknowledged *kaingin* and illegal logging as livelihood options for poor families to offer immediate relief, and similarly, as cultural ways of indigenous peoples. The lower these people are in the poverty line, the higher the chances they will resort to illegal activities. As such, forest protection policies were not able to address the displacement of livelihood sources for this population.

Monitoring and evaluation / feasibility

In the initial part of this discussion for Caraga's case study, it has been revealed that the harmonization of DENR only added burden and tasks to the pre-existing functions of the personnel. On the other hand, this also enabled regional offices to participate in the monitoring process whereas before they were unable to do so. This did not change the fact however that the regional offices lacked adequate plantilla positions to retain its technical staff, and the wane support from other line bureaus such as MGB and EMB in enforcing duties. At the time of interview, there was an ongoing monitoring of mining companies' compliance to reforestation commitments in which it has been found out that there were overlapping and competing claims of tenurial instruments and zoning.

Transparency

Reports have been available to the public, and NCIP have been conducting seminars and trainings on recent policies and existing sustainable methods among IP communities.

Equity

Forest protection policies may be effective at the expense of dwellers in the area. Aside from being displaced, they were also limited to utilize forest resources within their ancestral domain as per the policies of DENR.

3.4.2. Palawan

Palawan has a unique set of institutional arrangement and policy backdrop. It was set apart from other regions due to the presence of Palawan Council for Sustainable Development (PCSD) and total commercial log ban. In the same province also existed an abandoned mercury mine and a badly managed landfill. Information and contending perspectives were given through FGDs and KIIs with PCSD, MGB MIMAROPA, City Environment and Natural Resource Office, Community Environment and Natural Resource Office Puerto Princesa City, PENRO Palawan, and provincial offices of EMB and NCIP. Like Caraga, Palawan has been recognized as the last ecological frontier of the country, home to 232 endemic species, 200 kinds of birds, 600 species of butterflies, 1500 plant types and a biodiverse marine life. In 1990s, Palawan was recognized as a Biosphere Reserve Status in its steady and consistent commitment to conservation and sustainable development. Ecotourism comprised the bulk of the provincial economy, making the natural and environment resources as the main drivers of local revenue.

Policy and implementation

Republic Act No. 7611 was approved specifically for Palawan. The Strategic Environmental Plan (SEP) was a landmark legislation that became the main framework in sustaining the

ecological integrity unique to the province. It provided the option to have a controlled use zone set against additional executive orders for the forest sector like EOs 23 and 26, however this created a fissure between PCSD and DENR in terms of authority over Palawan. Another disadvantage of the law was its inability to provide for ground validation aside from aerial zonation.

Another unique factor in the province was the strong presence of initiatives from the local government. They have autonomous enforcing bodies such as Bantay Dagat, and Bantay Gubat, but these were hoped to reinforce national laws rather than work separately from them. Another institutional concern was also the augmentation with Philippine National Police (PNP) since forest protection and enforcement was not its primary mandate.

DENR personnel believed it was better to fund forest protection more instead of reforestation as this would save more resources compared to reactive measures, and they similarly observed that there were unclear provisions on reforestation and tree-cutting. The province was also looking at the reintroduction of inventory of forest occupants. Other future developments in the policy landscape of the province included the support for SFMA since PD 705 was considered outdated and needed improving and updating of provisions. However, the proposed bill was met with resistance from most politicians. In addition to that, PCSD also faced the possibility of being dissolved due to the imminent passage of National Land Use Act that will repeal both SEP and RA 7611.

Impacts

Impacts of unclear policy provisions and loose implementation have compounding effects on the ground. One consistent observation across the study sites was the misclassification of lands. For Palawan's case, production forests were declared in the paper, but these were protected forests on the ground. Contradictions like these will carry over negative effects to future developments and may be difficult to reverse. These will definitely affect those living within and adjacent to the forestlands, and indigenous peoples not covered yet by ancestral domain or have chosen not to for livelihood reasons. DENR personnel will also have a hard time with their implementation strategies. However, it was not difficult to presume that the tourism industry of Palawan, its biggest contributor to the provincial economy, was linked to its environment's ecological integrity.

Effectiveness

One of the priority programs of the government was the National Greening Program. The figures in the charts above posited that the program was able to meet its goals, but the people on the ground said otherwise. The contracting approach of the program was inadequate to address the industry's most pressing issues (deforestation, illegal logging). The nursery for NGP's seedlings were more on commercial and planted species and no endemic ones, and there were inconsistencies in provisions for replanted areas since in some case, these were the same areas applied for as tenurial instruments. Suggestions to improve the effectiveness of forest protection policies pertained to enhancement of watersheds and increasing liability to those who buy illegal forest products or enablers. For the policy aspect, Bantay *Gubat* should be

looked into since the organization was not politically insulated being under the LGU's supervision, not functionally harmonized with PENRO and CENRO, and does not follow proper adjudication proceedings. DAO 2018-19 was also deemed countereffective by those on the ground as it provided DPWH an exemption in cutting trees for road expansion. The recent focus of the administration to the Build, Build, Build program may eventually lead to road expansions, thereby clearing more trees, and increasing access to supposedly protected forestlands.

Unintended effects

The unintended impacts of policy implementation for protected forests emphasized the lack of an interagency task force similar to the Multipartite Monitoring Team (MMT) in mining sector. The presence of which can force compliance from tenurial agreement holders and other stakeholders.

Costs

The weak legal support in the province may have been a wane shield against death threats directed at DENR personnel and consequences of lacking funds and frail institutionalization of security detail. Aside from death threats, personnel for enforcement have to shell out personal funds to buy motorcycles for apprehension and for legal defense. Despite the heavy workload in patrolling the forested areas, personnel still suffered from salary gap. These were the problems that Secretary Cimatú wished to address when he initiated the hiring of one lawyer for every CENRO.

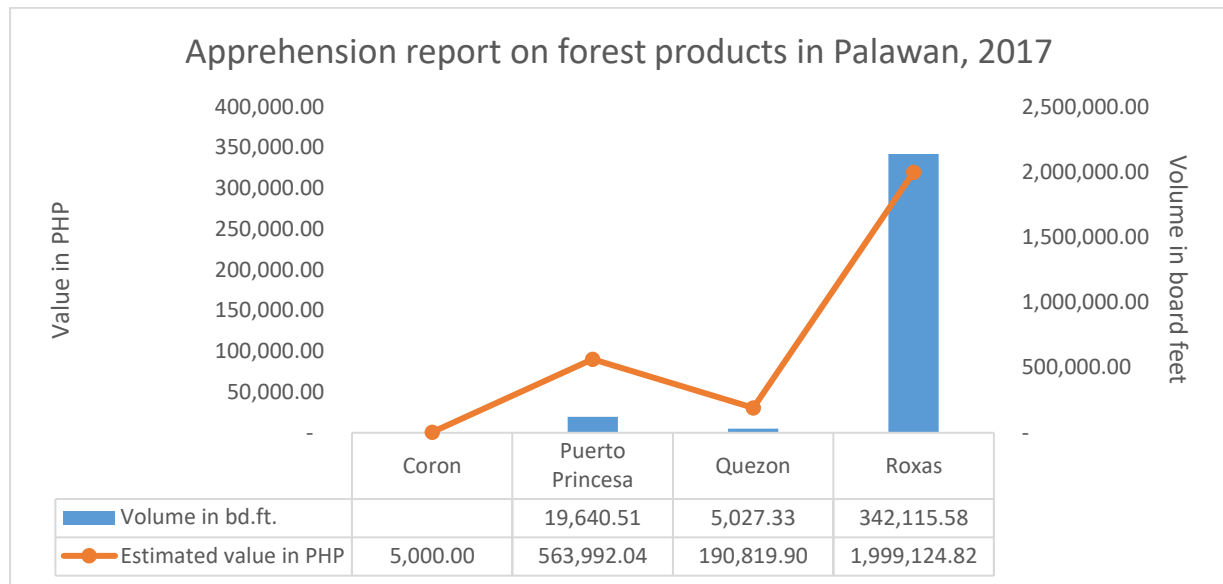
DENR's inability to invest in a nursery for this province also limited the possibilities to plant and establish native and endemic trees in the area. Planted species became more preferred due to its faster growth to meet the time frame requirement.

Enforcement and implementation

The overlapping of titles and misclassification of lands led to overlapping jurisdictions for areas within the Forest Land Use Plan (FLUP) and there was no delineation of roles for these agencies involved. The key informants in the area recommended to tap NCIP to monitor IPs within forestlands and ensure alignment of the ethnic group's development plans with ADSDPP.

Apprehension of forest-based products in Palawan mostly occurred in Roxas, followed by Puerto Princesa. The former was able to apprehend 342,115.58 board feet of forest products worth about Php 1,999,124.82. The capital of the province, on the other hand, managed to apprehend Php 563,992.04-worth of products which accumulated to 19,640.51 of board feet.

Figure 32. Volume and value of apprehended forest-based products in Palawan for 2017



Sustainability

ISF was undergoing performance evaluations in the CENRO to inform future plans. Lapses in implementation were planned to be addressed by tapping PNP and AFP for manpower and logistics augmentation. This would supposedly help sustain the efforts made in the forestry sector.

Inclusivity

In most government interventions in the forestry or mining sector, indigenous peoples more often than not get marginalized and relegated to the sidelines. Indigenous peoples were seen as stewards of forests and natural resources, and they also have the right to ownership over their ancestral domain. As of 2018, there was only one CADT registered for Puerto Prinsesa with 1,279 beneficiaries. For the whole region, there were 12 approved CADTs and three were registered in the province. If overlapping titles existed for these CADTs, it would be tackled individually instead of NCIP representing the whole community. Despite having this ownership, IPs were not allowed to use resources within the domains without permission from DENR and CENRO.

Conducting survey of forest occupants was seen as a method to aid managing of people from various culture. It was also a recommendation to integrate FLUP using ECAN as the zoning tool to improve land use planning and to avoid land overlapping in the future. Supporting this must be an arrangement of selective extraction and controlled use zone to deliver sustainable development. Information dissemination was also needed to be improved, particularly IEC conceptualization. Local languages should be used so as to have a wider reach among communities.

Interventions in the forestry sector were seen to be deprived of social lens and more of ecological aspects. Poverty targeting was not dwelled on much despite it being the main driver for illegal logging and other related apprehensions. ISF areas and CBFMA also remained underdeveloped due to lack of livelihood opportunities. Other sectors were not included in the policy formulation and were thus overlooked by interventions.

Monitoring and evaluation / feasibility

The Palawan province advocates for a security component resembling the Coast Guard that could augment manpower for enforcement. Similar to how the organization protected the seas, the proposed security arm is also projected to protect the forestlands. One gap in monitoring and evaluation was within island communities due to logistical difficulties.

Transparency

The enforcement arm of DENR acknowledged the lack of transparency from the agency, but this was primarily due to the possibility of information leak, particularly during times when they have a scheduled raid. The leakage may ultimately compromise the operation of the enforcers.

Equity

As for the benefits received, government apparently got 40 percent of the Forest Protection Fund while the remaining 60 percent was divided by province, municipality, and barangay. Revenues earned from protected areas will go to a fund – 75 percent of which goes to PAMB while the 25 percent goes to protection and maintenance.

3.4.3. Cagayan

Found in Cagayan is the longest mountain range in the Philippines, the Sierra Madre. It has been dubbed as the backbone of Luzon as it serves as barrier against incoming typhoons, and as home to watershed reserves that irrigate adjacent agricultural lands particularly in Cagayan Valley, the country's food basket. Sierra Madre's 14 million hectares comprise 40 percent of the country's forest cover and encompass 68 protected areas. For this region, information was gathered from CENRO Naguilian, Isabela, PENRO Cagayan, and regional office of DENR. Another consideration for this case study was the findings of FMB which pointed to the region as having the most amount of cases, apprehensions, and confiscations.

Policy and implementation

The region was looking into implementing a strategy in line with EO 23's logging moratorium wherein patrolling, and enforcement were decentralized among different barangays. The involved personnel were also flexible regarding the moratorium and if allowed would want to recommend a selective extraction area instead to address 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. While these were seen as contradictory to policies in place and the concept of no upland encroachment, the ground offices saw these suggestions as necessary for the region.

In terms of administrative and institutional concerns, cash-based budgeting introduced problems in procurement of necessary materials and needs such as equipment and vehicle for patrol and enforcement among others. The call for hazard pay was proposed to be included in the SFMB, but this has not yet passed in the Congress. Integration with agencies, like what the previous provinces were suggesting, were not able to decrease apprehensions and confiscations. As for the legal cases, there was no tracking system present in the region and thus, the cases' developments were not tracked.

Impacts

Direct impacts of forest protection policies were projected to affect 30 barangays along coastal towns and also the DENR personnel in charge of the implementation and enforcement.

Effectiveness

NGP has major repercussions when it came to the implementation phase. Seedling commodities downloaded to LGUs were proven not to be suitable for the location, and there was no site-species matching conducted prior to the planting program. For the personnel on the ground, NGP was effective only during its first two years. After that, replanted trees were dying, and maintenance was becoming more difficult due to the increase in open access areas. In particular, an 81-km access road was recently established in the Sierra Madre mountain range. There were issues and concerns in tenurial agreements, too, and these were mostly pertaining to TLA and CBFMA. The former promoted stewardship, but this agreement only enabled land conversion and development. The latter, on the other hand, was abused and this led to tentativeness to use selective extraction or any similar method again.

In terms of administrative functions, the LGUs of the region have more resource complement than the DENR/CENRO, but political will must be consistently present for the implementation to be pushed through. The national government, on the other hand, seemed to utilize a wrong fiscal management since fund management was not in line with the expenditure program.

Unintended effects

The moratorium on logging influenced the shift from mechanized poaching to lugged logs across river channels. It was easier for timber poachers to avoid apprehension since non-mechanized poaching was more difficult to track. It was recommended to have immediate fines given during the apprehension stage and put in place a one-strike policy.

Costs

Due to the shift from mechanized poaching to a manual one, when poachers were apprehended and were then subjected to a lengthy adjudication process with a weak legal support for the other side, there would be lesser penalties due to the depreciation and desiccation of the product, more threats and countersuits directed towards the apprehending personnel, and delayed justice. The influx of lawyers from Secretary Cimatú's directive was also not able to improve the resolution rate.

Since NGP was deemed ineffective and a waste of funds, it was recommended that the government go back to sectoral loan (ENR-Secal) where there was an identified and trained group for enforcement and apprehension. Moreover, it was cost-effective to have drone monitoring instead of on-the-ground patrol. To lessen the unintended political influences, body cameras and e-filing were suggested to be utilized.

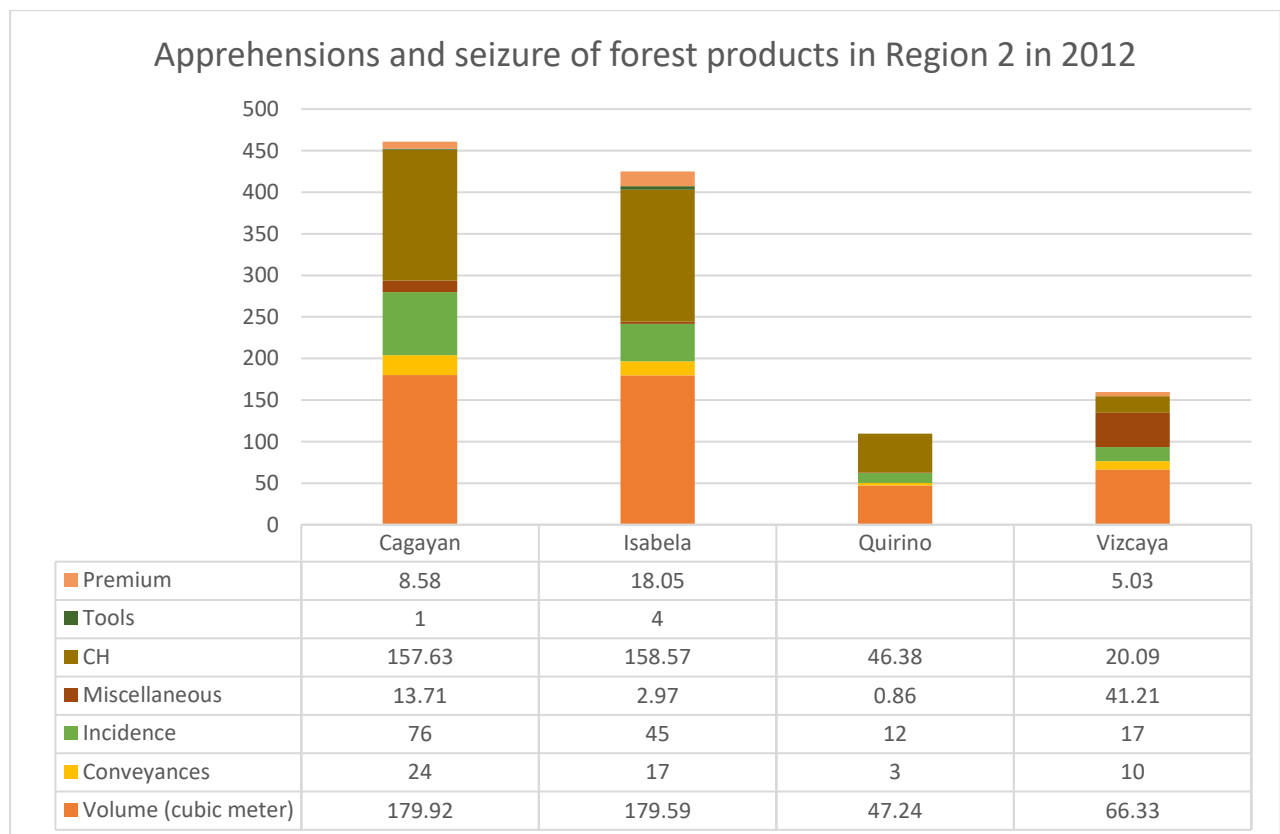
Enforcement and implementation

The current task force, in the evaluation of the ground personnel, was not functioning adequately. The outputs of employed forest protection officers (FPO) were also not structured. Thus, they recommended the re-emergence of Environment and Natural Resources Sectoral Adjustment Loan (ENR-SECAL) to provide proper training to its enforcement personnel.

The timber poachers usually get caught during operations and not the big financiers. This will only suffice in temporarily weeding out those who act, but the ones that direct the poaching were nowhere close in getting arrested. Thus, confiscated data may not be able to reflect numbers accurately due to the delaying tactics employed by the apprehenders.

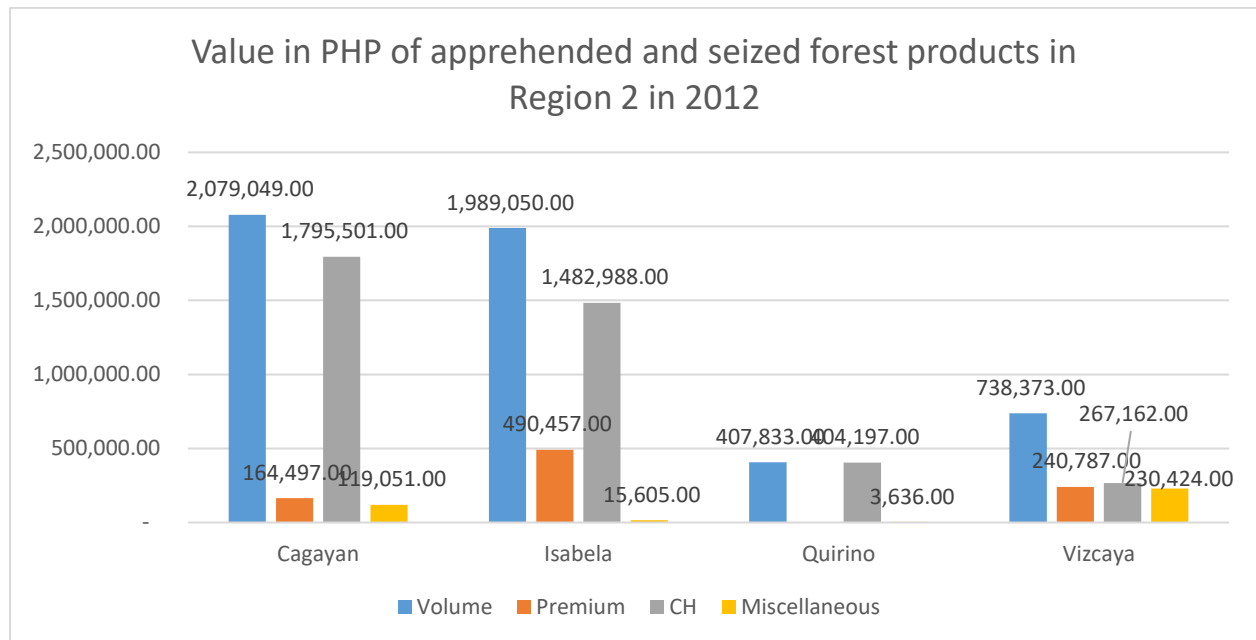
Apprehension and seizure of forest products in Region 2 were highest in the province of Cagayan, followed by Isabela in 2012. The two were the highest in terms of cubic meters of the forest-based products, and number of conveyances. These were also the same provinces where the green courts for the regions were situated.

Figure 33. Quantity of apprehensions and seizure of forest products in Region 2



In terms of value, the highest amounts were in similar provinces such as Cagayan and Isabela. The volume of products garnered PHP 5,214,305 followed by CH at PHP 3,949,848.00

Figure 34. Volume of apprehensions and seizure of forest products in Region 2



Sustainability

Lawin program was the most recent initiative of DENR in the field of monitoring. However, it may not be able to aid in apprehensions related to forest protection.

Inclusivity

Poor families take survival as precedence over compliance to policy, and poverty drive them to do illegal logging to provide for their daily needs. LGUs and CENROs were recommended to provide a communal resource for the community and employ more humanitarian approach that can be inclusive of the poor. Since there was also a need to improve the participation of LGUs, they should be aware of their ability to contribute through FLUP and integrate the plan with CLUP and exercise their right to monitor forest resources as mandated by EO 23.

Monitoring and evaluation / feasibility

Due to the lapses in enforcement, the region also sought institutional collaboration between armed personnel and CENRO, increasing the number of checkpoints of DENR. A multisectoral MMT should likewise be present in the regional level, and FPOs needed to be strengthened and given more incentives to retain them in duty. To improve the participation of the barangay, the CENRO recommended organizing forest brigade teams to monitor forest fires and kaingin especially during summer time.

Transparency

The utilization of body camera was recommended by personnel for additional documentation and possible evidence for the courts.

Equity

Implementation of forest protection policies for this study site were perceived by the informants as conditions that worsened poverty.

4. Conclusion and recommendations

The policy landscape in the forestry sector lacked adequate provisions in enforcement and institutionalization. Legislations established a decade of forestlands being open to various extractive industries such as timber and lumber businesses, exportation, contracting, and land conversions. This contributed to repercussions in the implementation process on the ground, particularly in monitoring and evaluation of forest initiatives, and legal support, and more importantly, this resulted to significant forest degradation. While the NGP may be successful in reaching its targets, DENR has to qualify the quality of its success as the program lacked in site-species matching and compliance from the mining companies. The future plan of the department to put in place EPEB will also deliver contradictory results as it will only overlap with functions of other existing agencies. It will also increase the burden of enforcement personnel within PENRO and CENRO as the draft order was not able to mainstream the representatives of EMB and MGB within those offices. It also did not consider the very recent initiative called EFMS, making the whole EPEB prone to politics and corruption which already happened with the anti-illegal logging task force.

In a study by Carandang et al (2013), several drivers were identified which facilitate the problems in forest protection. These were classified as demographic, economic, technological, institutional, and cultural factors. Problems such as upland encroachment and multiple land uses can be considered as demographic factors since they answered to the demand brought by an increasing population. Economic drivers were the umbrella term for the contracting licenses and timber businesses to meet the export demand which were high during 2000-2010. Timber and lumber business may also be placed under technological drivers. Institutional issues accurately reflected policies which promoted actions and industries detrimental to the forest cover. Whole the recent initiatives were government-led, these were deemed ineffective since site-species matching were not conducted, and there was no assurance on the compliance of mining companies in replanting.

To counter the repercussions brought by earlier policies, it was recommended that the Sustainable Forest Management Bill be passed to campaign for more sustainable methods of forest management. Along with policy formulation, people down the line, especially the enforcement personnel in CENROs and representatives of other line bureaus, be strengthened and be provided for with hazard pay and enough incentives to relatively ease the burden of enforcement. Legal offices should likewise be improved and strengthened to avoid unnecessary costs in transaction and safety. The Lawin program may be an effective program for monitoring and evaluation in comparison with manual patrolling. As for other programs like NGP, it was recommended that site-species matching be practiced as well as establishing a nursery for endemic species to retain the ecological integrity of the area.

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