

# **Cordillera Administrative Region (CAR)**

## **Asset Accounts for Timber Resources: 1999-2015**

**System of Environmental - Economic Accounting 2012**  
**Central Framework**



REPUBLIC OF THE PHILIPPINES

**PHILIPPINE STATISTICS AUTHORITY**

REGIONAL STATISTICAL SERVICES OFFICE

CORDILLERA ADMINISTRATIVE REGION

**Cover photo:**

Forest stand above Sumaguing Cave  
Sagada, Mountain Province, Philippines

Photo by AFR Bahit Jr.

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## Foreword

The Philippine Economic-Environmental and Natural Resources Accounting (PEENRA) System of the Philippine Statistics Authority (PSA) serves as a valuable tool to assess and monitor the state of natural resources and the impacts of human economic activities to the environment.

The PEENRA was piloted in the Cordillera Administrative Region with accounts covering four resources including forest resources encompassing an eight-year period, from 1990 to 1998. With the initiative of Regional Statistical Services Office – CAR to compile and further develop the environmental accounts of the region, the asset accounts for forest resources were prepared following the System of Environmental-Economic Accounting (SEEA) 2012 – Central Framework.

Starting 2016, another pilot activity of the CAR is the development of the asset accounts for timber resources with pilot estimates for 1999 to 2015 in the RSSO-CAR. The release of this report is a significant accomplishment of the PSA to guide policy-makers, project implementers and regional stakeholders in making evidence-based decisions on the environment, preparing environmental policies and programs, and mainstreaming environmental concerns for the region. It is our desire that these environmental statistics will help build and institutionalize the region's databank of the environment statistics to support the region's implementation of the Sustainable Development Goals (SDG) indicators.

  
**LISA GRACE S. BERSALES, Ph. D.**

Undersecretary  
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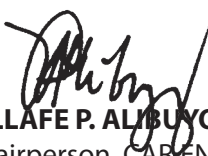
The CAR Environment and Natural Resource Accounting (ENRA) Project Team headed by Aldrin Federico R. Bahit Jr. provided the legwork in the compilation of the environmental accounts. The SOCD Technical Staff involved were Camille Carla U. Beltran (Project Coordinator), Betina Joy V. Bermillo, Ma. Gina V. De Guzman, Jocelyn O. Tayaban, and Warren B. Mamanteo. Dennis D. Gundran, Cherry D. Kiaw, Aimee M. Cabay, Brozybroz Y. Mateo and Jezl R. Boado also provided technical support to the project.

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The CAR ENRA Steering Committee examined and approved the processes and results of the project. The committee was co-chaired by Director Ralph C. Pablo of the DENR and Director Milagros A. Rimando (NEDA), Director Fay W. Apil (MGB), Director Reynaldo S. Digamo (EMB), Dr. Carlos S. Arida (WWRRC), ARD Augusto D. Lagon (DENR) and Engr. Francis G. Basali (DENR) as members.

Jeannel Barcayan (Project Staff) compiled the draft publication manuscript and Winsky B. Salisa designed the cover and the graphics for the publication and led the typesetting process.

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# Executive Summary

Timber resources are important environmental assets. They provide inputs for construction and the production of paper, furniture and other products, and are both a source of fuel and an important sink of carbon.<sup>1</sup> They can be found in different places and most common on forestlands. Out of the total land area of the Cordillera Administrative Region, 84.9 percent or 1,553,599 hectares are considered forestland.

Forests, like timber, are vital natural resources. They are the main source of oxygen and take in carbon dioxide from the atmosphere. They produce goods, timber and non-timber products and provide ecosystem services that are crucial for human. They serve as the main watershed of rivers, streams and creeks preserving adequate water supply and habitat of diverse flora and fauna considered as important genetic sources of medicine, food and other products of economic use.<sup>2</sup> Forests also play a major role in climate change and disaster mitigation serving as carbon sink and agent in disaster risk reduction.

Stock of timber resources are derived from the forestlands of the region. Forests in the Cordillera are classified into three major types, namely: closed forest, open forest and plantation forest. The three major types of forests are further categorized as broad-leaved, coniferous and mixed. As of 2015, the region's total forestland area covers 869,856 hectares. The forestland comprised 47.5 percent of the region's total land area of 1,829,368 hectares. Closed forest covers 250,238 hectares, open forest covers 578,177 hectares and plantation forest consists of 41,442 hectares.

As of 2010, around 66.0 percent of the standing volume of timber comes from open forest, 32.0 percent comes from closed forest while the remaining 2.0 percent comes from plantation. No significant change in the share of closed forest was noted across the period covered.

The closing stock of timber resources in 2015 in terms of volume was estimated at 139.2 million cubic meters of which 31.3 percent or 43.6 million cubic meters was in closed forests. Timber resources in closed forest was classified as not available for wood supply according to the System of Environmental-Economic Accounting 2012- Central Framework and therefore not to be included in the actual valuation. The remaining 68.7 percent or 95.6 million cubic meters of timber was valued at ₱159.6 billion at constant prices and ₱406.6 billion at current prices.

However, to indicate the importance and richness of timber resources in the region, the protected areas covering 68.2 percent or 170,720 hectares of the total land area of closed forest were also valued. Standing timber in the protected areas was estimated at 29.7 million cubic meters. It was valued at ₱119.3 billion at constant prices and ₱237.9 billion at current prices.

At the end of 2015, value of actual valuation plus value of protected areas amounted to a total of ₱278.9 billion and ₱644.5 billion at constant and current prices respectively.

<sup>1</sup> Australian Bureau of Statistics, Asset Account for Timber Resources: Physical Terms

<sup>2</sup> Environment and Natural Resource Accounting: The Cordillera Experience, 2001

# Introduction

The Cordillera Administrative Region is dubbed as the “Watershed Cradle of North Luzon.” As of December 2013, there were 46 major proclaimed forests and watersheds in the region. Forestland covers an area of 1,553,599 hectares or about 84.9 percent of the 1,829,368 hectares of the region’s total land although not all forestlands are covered with trees.

The region abounds in forest resources such as timber and minor forest products. It hosts 13 major river basins with an estimated drainage area of 18,293 square kilometers suitable for water and energy exploration and other economic purposes. The water bearing capacities of the region’s river basins provide continuous supply of water for irrigation. It is estimated to be able to irrigate some 68,623 hectares of farmlands or 36.0 percent of the irrigable areas in CAR. CAR is also irrigating the Northern Luzon regions.

Available water resource could likewise support hydro-power generation with a potential to reach 659 megawatts.<sup>3</sup> The region’s forestlands also serve as the habitat for a diverse number of flora and fauna that are important sources of medicine, food and other products of economic importance.<sup>4</sup>

How well the region perform its role as a watershed cradle hinges on the state of its forest resources. It is therefore the aim of this study to come up with estimates on the stock of forest and timber resources and the factors that lead to the changes in the stock. Also, the study aims to develop economic and environmental indicators that are useful for policy formulation regarding resource utilization and management and, at the same time, mobilize support for the protection of the region’s forest resources.

## State of the Forest: Cordillera Administrative Region<sup>5</sup>

According to the Forest Management Bureau (FMB) of Department of Environment and Natural Resources (DENR), 84.9 percent or 1,553,599 hectares of the region’s total land area is legally classified as forestland. Forestland is a legal and not a botanical description (Rebugio et al., 2007). Forestland refers to land owned by the government that is still in public domain based on official system of classification.

Not all forestland have forested areas. The 2010 land cover map of the National Mapping and Resource Information Authority (NAMRIA) showed that only 42.8 percent or 782,973 hectares of the region’s total land area can be categorized as forest cover. Total forest cover reported is further classified into closed forest, open forest, and plantation forest.

**Table1. Land Area by Forest Type, CAR: 2010**

Forest Type	Area (in hectares)	% to Total Forestland	% to Total Land Area
<b>Total land area</b>	<b>1,829,368.0</b>	..	..
<b>Total forestland*</b>	<b>782,973.0</b>	..	<b>42.8</b>
Closed Forest	250,237.6	32.0	13.7
Open Forest	517,358.6	66.0	28.3
Plantation Forest	15,376.8	2.0	0.8

Source: Philippine Statistics Authority

Note: (..) Not Applicable

\* tree-covered area

<sup>3</sup> Cordillera Regional Development Plan 2011-2016

<sup>4</sup> Ibid, footnote no. 2

<sup>5</sup> Adopted from the paper presented on the 13th National Convention on Statistics entitled “Accounting for Forest Cover of the Philippines: A Tool for Sustainable Management” by Bathán, Virginia M. et al.



The 2010 figure on forest cover showed a slight improvement in the region's total forest cover. In 1987, forest cover had fallen to about 34.0 percent. Forest cover increased in 2003 at 38.0 percent and in 2010 at 42.8 percent. The massive forest loss was mainly attributed to unsustainable logging practices across the years. Other factors that contributed in forest degradation include population growth, upland migration, expansion of agricultural lands, and fuelwood harvesting.

### **Global importance of forest cover <sup>6</sup>**

Forests are crucial in human development and survival. Forests provide direct and indirect contribution to food security, as well as poverty reduction through increase in income and in employment (UNFF, 2014). More than 1.6 billion people worldwide depend on forests for food, medicine, fuel, jobs, and livelihood. Around 12.7 million people are employed in forestry and logging (FAO, 2015). Forestry and logging activities include, but are not limited to, harvesting and silviculture operations, collection of fuelwood and non-wood forest products, and forest management and conservation.

Forests also act as natural filtration and storage systems, providing adequate water supply. More than three-quarters of the world's usable freshwater supply comes from forested catchment (Fischlin, et al., 2007). Another key ecosystem service provided by forests is assistance to biodiversity conservation. Thirteen percent of the world's forests are designated for the conservation of biological diversity (FAO, 2015).

Forests also play a role in climate change mitigation. Forests sequester the largest fraction of terrestrial ecosystem carbon stocks, which is about 220 percent of atmospheric carbon (Fischlin, et al., 2007). Forests also store vast amount of carbon, estimates to be about 296 gigatonnes (Gt) in biomass alone (FAO, 2015).

### **Forest cover in Sustainable Development Goals (SDGs) <sup>7</sup>**

The economic, social, and environmental importance of forests have been recognized and sustainable use and management of forests has been included in the United Nations' (UN) Sustainable Development Goals (SDGs). The SDGs are a follow-up to the framework developed in the Millennium Development Goals (MDGs). They are set of targets and indicators adopted by the UN as tools for ending poverty, fighting inequality and injustice, and tackling climate change (UNDP, 2016).

Goal Fifteen of the SDGs, "protection, restoration and promotion of sustainable use of terrestrial ecosystems, sustainable management of forests, combatting desertification, and halting and reversion of land degradation, and halting of biodiversity loss" (UNDP, 2016), recognizes the need for sustainable use and management of forests. Target 15.2 under Goal Fifteen specifically aims to "promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally" (UNDP, 2016) by 2020.

Forests' water supply function and role in biodiversity conservation, are also acknowledged in two other targets. Target 15.1 intends to "ensure the conservation, restoration

<sup>6,7</sup> Ibid

and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements” (UNDP, 2016) by 2020, while target 6.6 aims that by 2020, all water-related ecosystems, including mountains and forests, be protected and restored.

Measuring the effectiveness of steps taken to ensure sustainable management and use of forest requires determining the extent of forest cover and monitoring its changes. By monitoring change, and its drivers, the effectivity and sustainability of current programs and policies can be analyzed.

## Objectives of the Study

The main objective of the study is to support the institutionalization of environmental-economic accounting following the UN System of Environmental-Economic Accounting (SEEA) 2012 – Central Framework, particularly in timber resources accounting. By highlighting the limitations encountered, the study also hopes that stronger data support for environmental accounting be addressed. Indicators that can be derived from the accounts will also provide relevant information in support of the sector level development planning and policy of the Department of Environment and Natural Resources (DENR), Department of Budget and Management (DBM), relevant sectoral agencies and the Local Government Units (LGUs) of the Cordillera. Similarly, indicators may also be used in monitoring policies and programs that ensure sustainable development, including the targets stated in the SDGs.<sup>8</sup>

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<sup>8</sup> Ibid

# Framework of the Study

## Scope and Coverage

Environmental assets are naturally occurring living and non-living components of the Earth, together constituting the biophysical environment, which may provide benefits to humanity (UN, 2014, p.13). Timber resources are one of the seven individual components of the environment that are considered environmental assets in the Central Framework. Timber resources are defined by the volume of trees, living or dead, and include all trees regardless of diameter, tops of stems, large branches and dead trees lying on the ground that can still be used for timber or fuel (UN, 2014, p.192).

The focus of the physical and monetary asset accounts presented in this study is on the timber resources found in areas of forest and other wooded land/afforested areas. Forest resources in the region are classified into three major types, namely: closed forest, open forest and plantation forest. These forest types are further categorized to broadleaved, coniferous and mixed.

## Forest

These are lands with an area of more than 0.5 hectare and tree crown (or equivalent stocking level) of more than 10 percent. The trees should be able to reach a minimum height of 5 meters at maturity in situ.

- **Closed forest** – formations where trees in the various storeys and the undergrowth cover a high proportion (>40 percent) of the ground and do not have a continuous dense grass layer. They are either managed or unmanaged forest, in advance state of succession and may have been logged over one or more times, having kept their characteristics of forest stands, possibly with modified structure and composition (FAO, 2000).
- **Open forest** – formations with discontinuous tree layer with coverage of at least 10 percent and less than 40 percent. They are either managed or unmanaged forests, in initial state of succession (FAO, 2000).
- **Plantation forest** – forest stands established by planting or/and seeding in the process of afforestation or reforestation (FAO, 2000).

## Other woodland

These are lands either with crown cover (or equivalent stocking level) of 5-10 percent of trees able to reach a height of 5 meters at maturity; or crown cover (or equivalent stocking level) of more than 10 percent not able to reach a height of 5 meters at maturity (e.g. dwarfed or stunted trees); or with shrubs or bush cover of more than 10 percent (FAO, 2000).

- **Shrubland** – where the dominant woody vegetation are shrubs, generally of more than 0.5 meter and less than 5 meters in height in maturity and without a definite crown.

The growth habit can be erect, spreading or prostate. The height limits for trees and shrubs should be interpreted with flexibility, particularly the minimum tree and maximum shrub height, which may vary between 5 and 7 meters approximately.

- **Wooded grassland** – areas predominantly vegetated with grasses such as Imperata, Themeda, Saccharum and where the tree cover is between 5 to 10 percent of area and their height may reach 5 meters at maturity.
- **Fallow** – refers to woody vegetation resulting from the clearing of natural forest for shifting agriculture. It is an intermediate class between forest and non-forest land uses. Part of the area, which is not under cultivation, may have the appearance of a forest.

## Conceptual Framework

The asset accounts for timber resources in the region, in physical and monetary terms, used the UN SEEA 2012 – Central Framework. The SEEA 2012 – Central Framework has been formally adopted by the United Nations Statistical Commission (UNSC) as the international statistical standard for environmental-economic accounting. It is a multipurpose conceptual framework for understanding the interaction between the economy and the environment, including that of stocks and changes in stocks of environmental assets (UN, 2014, vii).

The opening stock represents the stock of resources at the beginning of the accounting period. Similarly, the closing stock represents the stock of resources at the end of the accounting period. Within the period, several factors may occur resulting to changes in the stocks. These changes could either be due to natural growth, reclassifications and afforestation/reforestation for additions to stock or removals, forest disturbances, felling residues, natural losses, catastrophic losses and reclassifications for reductions in stock. The closing stock for a year is equal to the opening stock of the succeeding year.

Changes due to natural growth, felling residues, natural losses, catastrophic losses and reclassifications are not reported according to DENR-CAR. Afforestation/reforestation projects are the main contributor to the additions to stock and removals (which include confiscation of forest products and timber productions) and forest disturbances (which include kaingin, forest fire, illegal logging, pest/diseases and others) are the main contributor to the reductions in stock.

Data on National Greening Program (NGP) of DENR which started in 2011, although available, are not included in the accounting matrix for physical asset account of timber resources in terms of volume. Additions to stock of timber resources because of afforestation/reforestation and other such activity can only be accounted after five years with reference to the date of planting.

After identifying the drivers of change, the physical and monetary accounts are then computed for an accounting period. The monetary value of the physical account is computed by multiplying each transaction item by the stumpage value, or the value of the standing timber.

## Basic accounting structure of physical account for timber resources

Asset accounts for timber resources organizes relevant information that include quantities of stock and changes over time. A basic structure for physical asset account for timber resources based on the SEEA 2012 – Central Framework used in this study is presented in Table 2.

**Table 2. Basic Structure of Physical Asset Account for Timber Resources**

<b>Opening stock of resources</b>	
<b>Additions to stock</b>	
Natural growth	An increase in the stock which is measured in terms of the gross annual increment.
Afforestation/ Reforestation*	An increase in the stock due to the establishment of forest plantations on temporarily unstocked lands that are considered as forest. Also called artificial regeneration.
Reclassifications	An increase in the area of forest land, other wooded land and other areas of land that lead to an increase in the volume of available forest resources.
<b>Reductions in stock</b>	
Removals	A decrease in the stock due to confiscation of forest products and timber productions.
Forest Disturbances*	A decrease in the stock due to forest destruction.
Felling residues	A decrease in the stock due to damage caused by logging, excess in terms of size requirements and those that are rotten at the time of felling.
Natural losses	A decrease in the stock due to natural mortality.
Catastrophic losses	A decrease in the stock due to exceptional and significant losses due to natural causes.
Reclassifications	A decrease in the area of forest land, other wooded land and other areas of land that lead to a decrease in the volume of available forest resources.
<b>Closing stock of resources</b>	

Source: SEEA 2012 - Central Framework

\* Not included in the basic structure of physical asset account for timber resources but identified as main contributors to the changes in stock of timber resources in the region.



# Operational Framework

## Sources of Data

The data used in the estimation of physical asset account on forest cover were mostly from line bureaus and offices under the DENR. Georeferenced data used as baseline came from NAMRIA, the agency mandated to provide natural resources data in the form of maps, charts, texts and statistics. Other data used for the additions and reductions to stock of timber resources come from administrative data of the FMB and the Program Monitoring and Evaluation Division (PMED) of the DENR.

- i. The 2010 Land Cover Maps and Statistics are the result of the latest national mapping activity carried out by NAMRIA using ALOS-AVNIR-2, SPOT5 and Landsat imageries with 10 meter resolution. Data presented include area and land cover type from provincial to national level. Land cover classification follows the DENR Department Memorandum Circular 2005-05: Adopting Forestry Definitions Concerning Forest Cover/Land Use.
- ii. Reports on area reforested/planted are submitted to and collated by the FMB. Historical data are available in the Philippine Forestry Statistics (PFS), an annual publication of DENR-FMB. Prior to 2011, data reported had been disaggregated by sector that initiated the reforestation efforts, namely, government sector and non-government/private sector. By 2011, data on area reforested/planted have been disaggregated by area of development per Executive Order No. 26: Declaring an Interdepartmental Convergence Initiative for a National Greening Program.
- iii. Annual administrative data on area affected by forest disturbances come from PMED of DENR. Data include information on causes of forest disturbance (e.g., fire, kaingin, illegal logging, etc.), extent of damaged area, and estimated value of damages. Data are available at national and regional level.

## Forest

Land cover of the region provided by DENR-CAR from NAMRIA in 2003 and 2010 were the only years with data of the same format. However, the 2003 Land Cover was not used as advised by NAMRIA since no ground validation was conducted. The land area of the region in 2010 based on cadastral map was adjusted to equal the official total land area of 1,829,368 hectares.

Data on other additions and reductions to stock i.e. natural growth, felling residues, natural losses, catastrophic losses and reclassifications are not available/not reported according to DENR-CAR. It is also not possible to separate afforestation from reforestation data. The Philippines has no data on afforestation/forest expansion (FRA Philippine Report, 2015).

Also, several problems on data provided by PMED of DENR on area affected by forest disturbances were encountered. No guidelines for forest disturbance reporting were available. Forest disturbances due to different causes are sometimes grouped together in reports. It is also not possible to differentiate damages caused by natural phenomena from damages caused by manmade events.

Data format on forest destruction, timber production, confiscation of forest products and afforestation/reforestation do not indicate the affected forest, e.g. open forest. It was assumed that these data fall either on open forest or cultivated timber resources/plantation forest.

Aside from the physical asset accounts for timber resources in terms of volume, asset accounts in terms of area are also presented in this study. This dimension of accounting is not included in SEEA 2012 - Central Framework as well as the previous environmental accounts of the region. Also, the monetary asset account is estimated at constant and current prices.

## Estimation Methodology

### Physical Asset Accounts, Area

Information on the area of forestlands were generated from the data provided by NAMRIA and DENR. Land Cover of the region in 2010 was used as baseline data and entry on the opening stock for 2010 in the accounting matrix.

Entries on the natural timber resources, available for wood supply, were estimated using the area of open forests. Area of closed forests fall under natural timber resources, not available for wood supply. Plantation forests were used as entries for cultivated timber resources, available for wood supply.

Procedure:

1. The adjusted land cover of the region in 2010 served as baseline data and used as the opening stock for 2010. Area of closed forest (not available for wood supply) and open forest (available for wood supply) were used to estimate the stock of natural timber resources while area of plantation forest was used to estimate the stock of cultivated timber resources. The adjusted land cover was derived using the following formula:

$$LCA_{adj,t} = LCA_t - [LCA_{diff} * (PC)]$$

Where:

$LCA$  = Land Cover Area

$LCA_{diff} = |TLA_t - TLA_{CAR}|$

$TLA_{CAR}$  = Total Land Area of CAR = 1,829,368

$TLA_t$  = Total Land Area for a given year

$PC$  = Percent Contribution =  $(LCA_t / TLA_t)$

$adj$  = adjusted value

$t$  = year

2. Summary of reforestation efforts was used as an input to the additions to stock of timber resources (afforestation/reforestation). It was assumed that seventy percent of the total area reforested fall under open forest (available for wood supply) and the remaining thirty percent fall under plantation forest (cultivated timber resources).
3. Timber production and summary of confiscated timber resources were accounted for the reductions in stock of timber resources (removals). The formula in converting

volume (in m<sup>3</sup>) to area (in ha) was established in a study conducted by Mr. Lagon of DENR-CAR and is presented as follows:

$$Area_{ha} = (Volume_{m^3} / 0.9) / 200$$

Where:

*ha = hectare*

*0.9 m<sup>3</sup> = 1 tree*

*200 trees = 1 ha*

It is also assumed that seventy percent of the total area fall under open forest (available for wood supply) and the remaining thirty percent fall under plantation forest (cultivated timber resources).

4. Forest destruction by cause also constitute to the reductions in stock (forest disturbances). Just like the afforestation/reforestation and removals, it was assumed that seventy percent of the total area destroyed fall under open forest (available for wood supply) and the remaining thirty percent fall under plantation forest (cultivated timber resources).
5. In general, opening stock for a given year plus the total additions to stock minus the total reductions in stock gives the closing stock which will be used as the opening stock for the succeeding year but this is only applicable for the year 2010 and above. The year 2009 and below, the formula used is given below:

Since the only given area is 2010 (closing stock of 2009), we will transpose the general equation to come up with the opening stock of 2009:

$$OS_t = CS_t - TA_t + TR_t$$

Where:

*OS = Opening Stock*

*CS = Closing Stock = Opening Stock of the succeeding year*

*TA = Total additions to stock*

*TR = Total reductions in stock*

*t = year*

## Physical Asset Accounts, Volume

Opening volume was estimated by multiplying the area with an assumed harvestable volume per unit hectare. The factor used was 174.22 cubic meters for closed, open and plantation forests (FRA-Philippine Country Report, 2005). Seventy percent of the afforestation/reforestation efforts by government, non-government and private sectors were assumed to have been done on open forests and denuded areas which fall under natural timber resources, available for wood supply and 30 percent of the total efforts fall under plantation forests or cultivated timber resources. Areas affected by forest disturbances, data on confiscation of forest products and data on timber production also hold the same assumption.

In terms of natural growth and mortality in closed forest, it was assumed that net growth is equal to zero, that is, natural growth equals natural mortality. The net stand growth for other

types of forests are not available/not reported. The closing stock for each year was derived by removing the net effect of all changes in the volume of stocks. The closing stock would serve as the opening stock for the following year.

Procedure:

1. The 2010 Land Cover that was used as baseline data (opening stock for 2010) as well as the changes in stock (additions and reductions) on the table of physical account for timber resources in terms of area were converted using the following formula to get the value of assumed harvestable volume (AHV) per unit hectare.

For data measured in terms of hectares (Land Cover, Summary of Reforestation Efforts and Forest Destruction by Cause):

$$AHV_{m^3} = (Area_{ha} * 174.22)$$

For data measured in terms of cubic meters and board feet (Timber Production and Summary of Confiscated Timber Resources respectively):

$$Volume_{m^3} = Volume_{bd.ft.} / 424$$

$$AHV_{m^3} = Volume_{m^3}$$

where:

*AHV = assumed harvestable volume in thousands of cubic meters*

*174.22 = assumed harvestable volume per unit area (ha)*

*424 = divisor to convert board feet to cubic meters*

2. Stocks in reforested areas can only be accounted as timber resources five years after the date of planting. This means the additions to stock of timber resources in 2010 due to afforestation/reforestation in terms of volume was traced back from 2005, so as the other year.
3. In general, opening stock for a given year plus the total additions to stock minus the total reductions in stock gives the closing stock which will be used as the opening stock for the succeeding year. But this is only applicable for the year 2010 and above. The year 2009 and below, the formula used is given below:

Since the only given area is 2010 (closing stock of 2009), we will transpose the general equation to come up with the opening stock of 2009:

$$OS_t = CS_t - TA_t + TR_t$$

Where:

*OS = Opening Stock*

*CS = Closing Stock = Opening Stock of the succeeding year*

*TA = Total additions to stock*

*TR = Total reductions in stock*

*t = year*

## Monetary Asset Accounts

After deriving the physical volume estimates, the monetary account was then computed by multiplying the volume accounts by the stumpage value of forest resources adopted from the ENRA CAR project 2001. For constant prices, the volume was directly multiplied with the stumpage value of 1998 while on current prices, the inflation rate for all items for each year were incorporated with the stumpage value before multiplying it with the estimated volume. Natural timber resources, not available for wood supply were not included in the asset accounts for timber resources in monetary terms. Protected forests and where logging is prohibited, the value of the standing timber in terms of income from the sale of timber resources is reduced to zero.

The framework provides information on the effect of the year to year change in price through the item revaluation. In the monetary accounts for timber resources, revaluation was computed as a residual. This was done by deducting from the closing stock the difference between the opening stock and the net changes.

Procedure:

At constant price:

1. The volume of timber resources in cultivated and natural timber resources, available for wood supply were disaggregated according to the defined category (broad-leaved, coniferous and mixed). The process of disaggregation is presented in the formula below:

$$D_{type,cat,t+1} = Volume_{type,cat,t} + (PC_{type,cat,t} * Net_t)$$

For year 2010 and above use t+1; for 2009 and below use t-1.

Where:

*D* = Disaggregated value  
*Volume* = Volume of timber  
*PC* = Percent Contribution  
*Net* = Net changes  
*type* = Forest type  
*cat* = category  
*t* = year

2. After disaggregating, we multiply the 1998 stumpage value adopted from the first ENRA Project. The stumpage value of second growth dipterocarp was used to estimate the stumpage value of broad-leaved, both for open and plantation forest. Likewise, the stumpage value of pine forest was used to estimate the stumpage value of coniferous. The stumpage value for mixed is the average of the stumpage value of broad-leaved and coniferous. The formula used is presented below:

$$EP_{t,cat} = D_{t,cat} * SV_{cat}$$

The average stumpage value or the stumpage value for mixed is used as a factor for estimating the prices of the changes (additions and reductions) in the stock:

$$EP_t = Changes_t * SV_{ave}$$

Where:

$EP$  = Estimated price  
 $D$  = Disaggregated value  
 $SV$  = Stumpage value  
 $Changes$  = Additions and reductions to stock  
 $cat$  = category  
 $ave$  = average  $SV$  or the  $SV$  for mixed  
 $t$  = year

3. After multiplying the corresponding stumpage value, we then get the total price of timber resources in open forest (natural timber) and plantation forest (cultivated timber) and put in the table of monetary asset account along with the corresponding value of additions and reductions.

At current price:

1. The volume of timber resources in cultivated and natural timber resources, available for wood supply were disaggregated according to the defined category (broad-leaved, coniferous and mixed). The process of disaggregation is presented in the formula below:

$$D_{type,cat,t+1} = Volume_{type,cat,t} + (PC_{type,cat,t} * Net_t)$$

For year 2010 and above use  $t+1$ ; for 2009 and below use  $t-1$ .

Where:

$D$  = Disaggregated value  
 $Volume$  = Volume of timber  
 $PC$  = Percent Contribution  
 $Net$  = Net changes  
 $type$  = Forest type  
 $cat$  = category  
 $t$  = year

2. The monetary asset account for timber resources at current prices were derived by incorporating the inflation rate. The formula for estimating the stumpage value and estimated prices are as follows:

$$SV_{t,cat} = SV_{t-1,cat} * IR_t$$

$$EP_{t,cat} = D_{t,cat} * SV_{t,cat}$$

The average stumpage value or the stumpage value for mixed is used as a factor for estimating the prices of the changes (additions and reductions) in the stock:

$$EP_t = Changes_t * SV_{t,ave}$$

Where:

*SV* = Stumpage value  
*IR* = Inflation rate  
*EP* = Estimated price  
*D* = Disaggregated value  
*Changes* = Additions and reductions to stock  
*cat* = category  
*ave* = average *SV* or the *SV* for mixed  
*t* = year

3. After multiplying the corresponding stumpage value, we then get the total price of timber resources in open forest (natural timber) and plantation forest (cultivated timber) and put in the table of monetary asset account along with the corresponding value of additions and reductions.
4. The formula for revaluation is presented below:

$$Rev_t = CS_t - (OS_t - Net_t)$$

Where:

*Rev* = Revaluations  
*CS* = Closing stock  
*OS* = Opening Stock  
*Net* = Net changes  
*t* = year



# Results and Discussion

## Forestland

Forestland of the region covers 782,973 hectares or 42.8 percent of the region's total land area on which 28.3 percent is open forest, 13.7 percent is closed forest and 0.8 percent is plantation forest (Table 1).

It can be observed from Table 3 that the estimates of stock of timber resources in terms of area increased from 751,836 hectares in 1999 to 869,856 hectares by the end of 2015. The area increased by 15.7 percent from 1999 to 2015 representing an annual average increase of 0.9 percent or 6,942 hectares per year.

Also in Table 3, estimates showed that the stock of timber resources in terms of volume increased from 132,313,738 cubic meters in 1999 to 139,239,777 cubic meters in 2015. The volume increased by 5.2 percent from 1999 to 2015 representing an annual average rate of 0.3 percent or 432,878 cubic meters per year.

**Table 3. Stock of Timber Resources, CAR: 1999-2015**

Year	Area (hectares)		Volume (thousands of m3)	
	Opening Stock	Closing Stock	Opening Stock	Closing Stock
<b>1999</b>	751,836.1	756,556.0	132,176.5	132,313.7
<b>2000</b>	756,556.0	759,946.1	132,313.7	132,465.7
<b>2001</b>	759,946.1	763,502.7	132,465.7	132,678.3
<b>2002</b>	763,502.7	765,628.2	132,678.3	133,022.9
<b>2003</b>	765,628.2	766,836.4	133,022.9	133,809.9
<b>2004</b>	766,836.4	767,026.8	133,809.9	134,617.5
<b>2005</b>	767,026.8	767,606.0	134,617.5	135,184.7
<b>2006</b>	767,606.0	767,642.9	135,184.7	135,697.1
<b>2007</b>	767,642.9	770,360.2	135,697.1	136,161.7
<b>2008</b>	770,360.2	774,540.6	136,161.7	136,364.3
<b>2009</b>	774,540.6	782,973.0	136,364.3	136,409.6
<b>2010</b>	782,973.0	783,421.3	136,409.6	136,247.9
<b>2011</b>	783,421.3	790,339.7	136,247.9	136,364.3
<b>2012</b>	790,339.7	800,032.0	136,364.3	136,865.6
<b>2013</b>	800,032.0	829,169.2	136,865.6	137,575.9
<b>2014</b>	829,169.2	852,789.8	137,575.9	138,971.8
<b>2015</b>	852,789.8	869,856.0	138,971.8	139,239.8

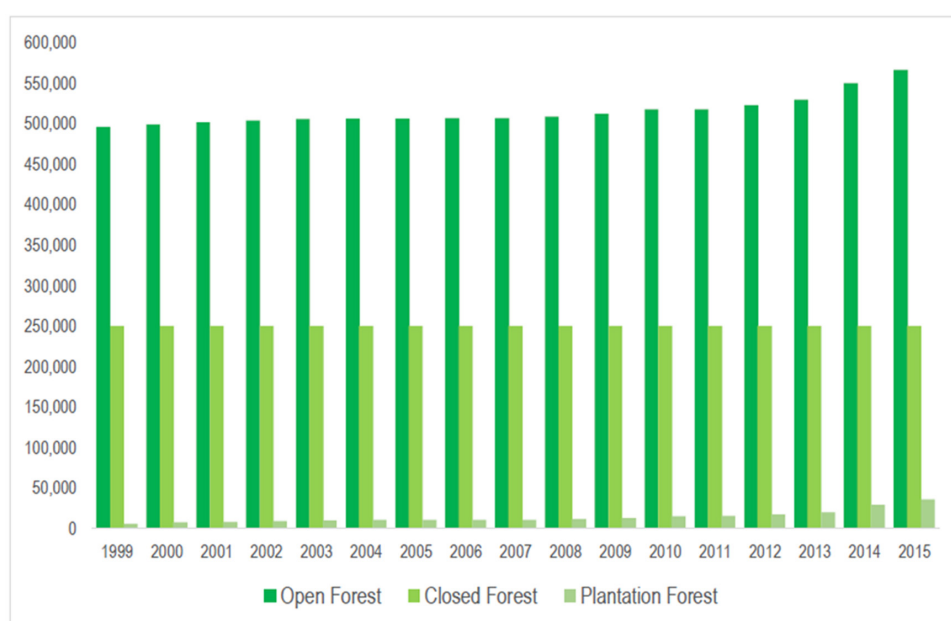
Source: Philippine Statistics Authority

## Physical Asset Accounts, Area

The region's closed forest covers 250,238 hectares or 32.0 percent of the region's forestland and 13.7 percent of the region's total land area (Table 1). These areas are legally closed to any form of intensive human activities and occupation. That is the reason why the assumed level of regional stock on closed forests remain unchanged throughout the accounting period (Figure 1). The logging moratorium that was imposed through Executive Order No. 23 series of 2011 suspending timber harvesting in all natural forests also had significant effect to the level of stocks of the region's forest resources.

The area of plantation forest in the region significantly increased from 6,036 hectares opening stock in 1999 to 36,322 hectares opening stock in 2015 representing an annual average growth of 11.9 percent or 1,893 hectares per year. The area of open forest also exhibited an increasing trend. It increased by an average growth of 0.8 percent from an opening stock of 495,563 hectares in 1999 to 566,230 hectares opening stock in 2015 or 4,417 hectares annually (Figure 1 and Appendix Table 73 and 74). Production of timber resources and extraction of other timber products for consumption in these areas are active.

**Figure 1. Opening Stock per Forest Type, CAR: 1999-2015 (in Hectares)**



Source: Philippine Statistics Authority

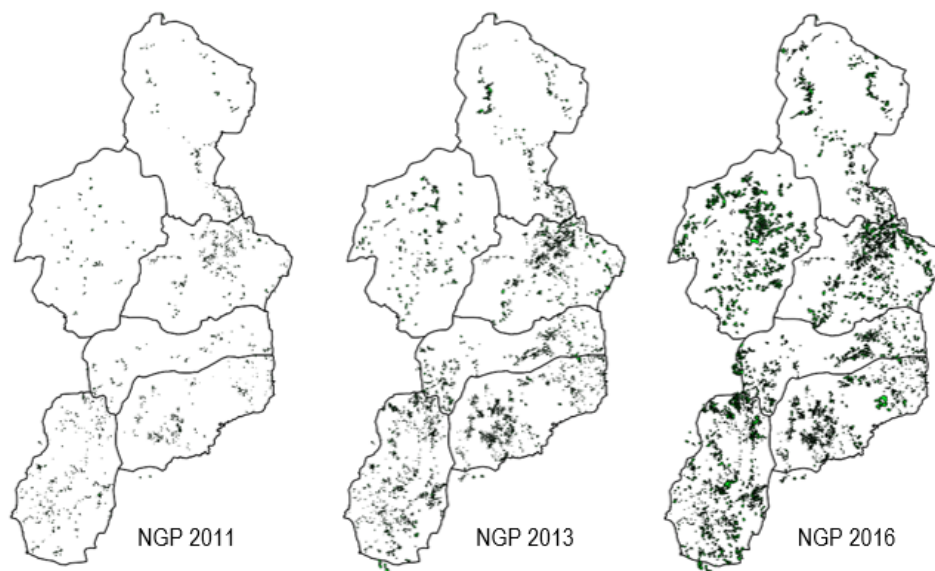
It can be gleaned from Figure 1 that the estimated forest cover exhibits an increasing trend for all years. The largest increase in stocks as can be seen in Appendix Table 1 was incurred in 2013 (29,137 hectares) while smallest increase occurred in 2006 (37 hectares).

The increase in forest cover can be mainly attributed to the afforestation/reforestation activities of the DENR, other government agencies and the private sector. Annual average area reforested by various sectors from 1999 to 2010 is about 3,008 hectares, with largest area reforested recorded in 2009 and smallest area reforested in 2004 with a total of 8,570 hectares and 401 hectares respectively.<sup>9</sup>

<sup>9</sup> Adopted from the paper presented on the 13th National Convention on Statistics entitled "Accounting for Forest Cover of the Philippines: A Tool for Sustainable Management" by Bathán, Virginia M. et al.

Figure 2 below shows the progress of afforestation/reforestation activities through the implementation of the National Greening Program via Executive Order No. 11, series of 2011. From 2011 to 2015, a total of 87,974 hectares were afforested/reforested with largest increase of 29,400 hectares in 2013. Annual average area afforested/reforested increased to around 17,595 hectares.

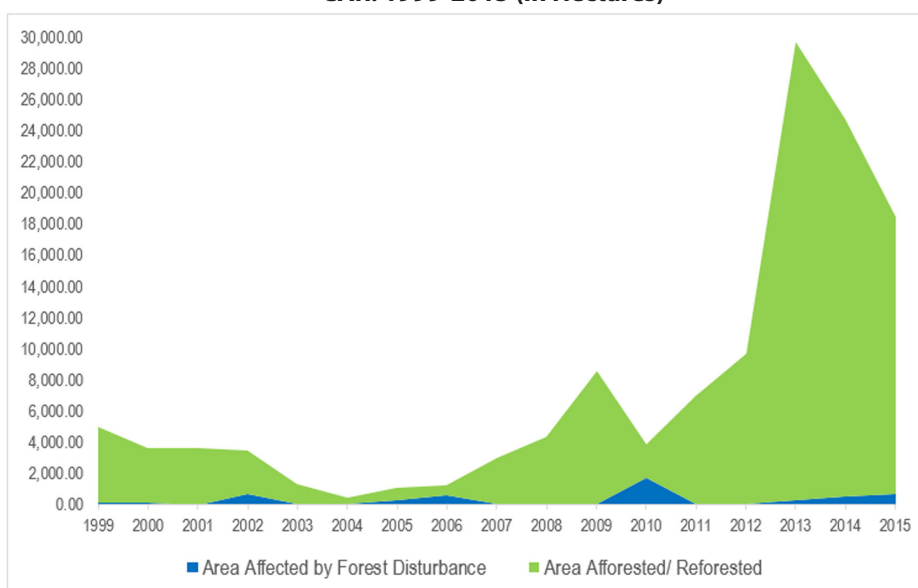
**Figure 2. Area Afforested/Reforested Via National Greening Program, CAR: 2011, 2013 and 2016**



Source: Department of Environment and Natural Resources

On the other hand, only about 953 hectares of area affected by removals and 5,100 hectares of area affected by forest disturbances were estimated for the period covered. The widest area affected by forest destruction was recorded in 2010 with a total of 1,679 hectares on which 96.2 percent or 1,616 hectares were damaged by forest fires (Figure 3).<sup>10</sup>

**Figure 3. Area Afforested/Reforested Versus Area Affected by Forest Disturbance, CAR: 1999-2015 (in Hectares)**



Source: Department of Environment and Natural Resources

<sup>10</sup> Ibid

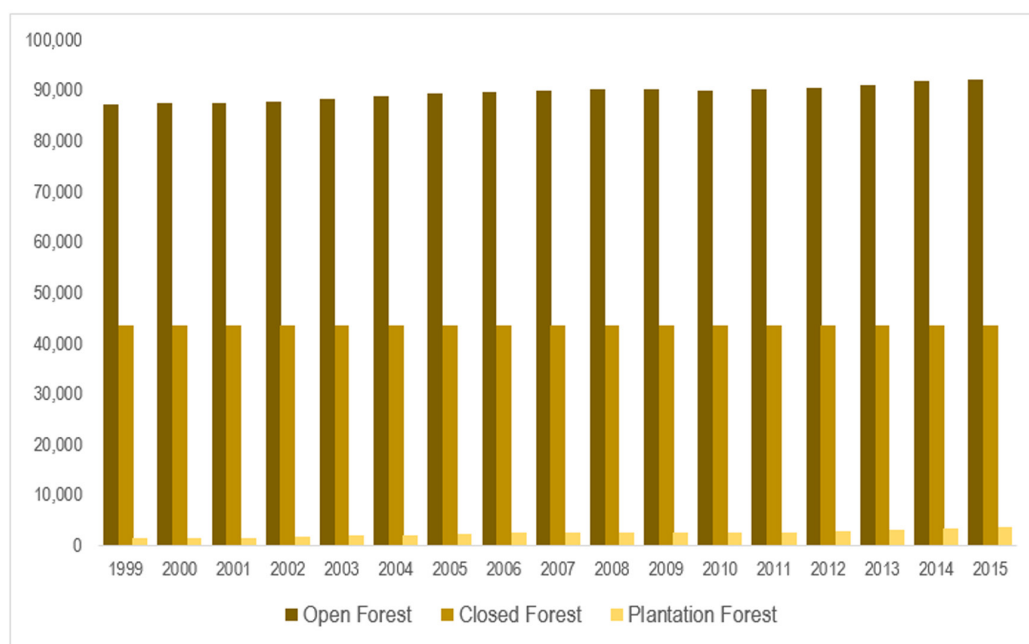
## Physical Asset Accounts, Volume

By the end of 2015, the region had an estimated volume of timber resources of 139.2 million cubic meters, 66.2 percent or 92.1 million cubic meters of which came from open forest, 31.3 percent or 43.6 million cubic meters came from closed forest and 2.5 percent or 3.5 million cubic meters came from plantation forest (Table 3).

Changes in the stock of timber resources in terms of volume were positive throughout the accounting period except for 2010 when a decrease of 161,610 cubic meters was recorded due to forest destruction. The largest increase in stock was observed in 2014 with 1,395,839 cubic meters.

Closing volume in closed forest remain unchanged at 43.6 million cubic meters throughout the accounting period. The closing volume for open forest and plantation forest gradually increased during the accounting period from 87.3 million cubic meters and 1.4 million cubic meters in 1999 to 92.1 million cubic meters and 3.5 million cubic meters in 2015 respectively (Figure 4). The minimal volume reduction in open forests and plantation forests was due to the implementation of the logging moratorium.

**Figure 4. Closing Volume of Timber Resources in Open, Closed and Plantation Forest, CAR: 1999-2015 (in Thousands of Cubic Meters Over Bark)**



Source: Philippine Statistics Authority

## Monetary Asset Accounts

The monetary estimates revealed an increment on the value of timber resources during the accounting period. At current prices, the total value of timber resources in the region from ₱203.7 billion in 1999 to ₱406.6 billion in 2015. This represented an annual average growth of 4.4 percent or increments of ₱12.7 billion annually (Table 4). The positive growth of the value of timber stocks was largely due to the increase of volume of timber resources.

**Table 4. Summary of Monetary Asset Account for Timber Resources, at Current Price, CAR: 1999-2015 (in '000 Pesos)**

Year	Cultivated timber resources	Natural timber resources (available for wood supply)	Total
1999	2,419,674.4	201,299,666.6	203,719,341.0
2000	2,583,184.9	208,599,204.0	211,182,388.9
2001	2,720,429.8	211,044,288.7	213,764,718.5
2002	3,060,676.3	223,266,116.5	226,326,792.8
2003	3,723,020.4	239,271,987.9	242,995,008.3
2004	4,450,606.2	255,253,396.4	259,704,002.6
2005	5,054,161.3	269,725,955.4	274,780,116.6
2006	5,568,607.9	279,747,444.1	285,316,051.9
2007	6,295,817.3	300,417,252.8	306,713,070.1
2008	6,675,286.6	311,724,824.2	318,400,110.9
2009	7,018,420.8	326,180,425.7	333,198,846.5
2010	7,119,231.4	336,522,810.0	343,642,041.4
2011	7,473,326.8	348,952,858.0	356,426,184.8
2012	8,163,396.1	362,222,439.4	370,385,835.6
2013	9,106,082.0	377,689,501.4	386,795,583.4
2014	10,520,400.5	387,473,055.5	397,993,456.0
2015	10,970,268.9	395,640,750.6	406,611,019.5

Source: Philippine Statistics Authority

At constant prices, the monetary valuation as shown in Table 5 revealed a slight decrease in 2010 as a result of negative net changes. The value of timber resources in the region from ₱149.3 billion in 1999 to ₱159.6 billion in 2015 represented an average growth of 0.4 percent or increments of ₱641.5 million yearly.

**Table 5. Summary of Monetary Asset Account for Timber Resources, at Constant Price, CAR: 1999-2015 (in '000 Pesos)**

Year	Cultivated timber resources	Natural timber resources (available for wood supply)	Total
1999	1,423,243.1	147,890,784.5	149,314,027.6
2000	1,468,038.0	148,071,117.6	149,539,155.6
2001	1,530,727.8	148,323,490.5	149,854,218.3
2002	1,632,395.5	148,732,778.9	150,365,174.3
2003	1,864,463.1	149,667,024.2	151,531,487.3
2004	2,102,672.7	150,625,995.5	152,728,668.2
2005	2,269,790.9	151,298,771.3	153,568,562.2
2006	2,420,934.7	151,907,237.8	154,328,172.5
2007	2,558,025.0	152,459,128.3	155,017,153.2
2008	2,617,958.9	152,700,407.2	155,318,366.1
2009	2,631,483.4	152,754,853.1	155,386,336.5
2010	2,584,008.9	152,563,733.1	155,147,742.0
2011	2,618,274.2	152,701,676.3	155,319,950.5
2012	2,765,995.6	153,296,365.1	156,062,360.7
2013	2,975,318.1	154,139,044.6	157,114,362.7
2014	3,386,632.6	155,794,892.2	159,181,524.8
2015	3,465,603.7	156,112,809.9	159,578,413.6

Source: Philippine Statistics Authority

Protected areas cover 68.2 percent or 170,720 hectares of the total area of closed forest. These areas can also be a source of timber but cannot be harvested because of their role in the conservation of biodiversity of the region and it follows that they are excluded in monetary valuation and reduced to zero. But to emphasize their significance and impact to the total forest cover of the region, this study included a valuation of timber in protected areas.

Protected areas in Abra are classified as broadleaved while the rest are classified as coniferous. They were valued according to category using their respective stumpage value. As shown in Table 6, protected areas in CAR was valued at ₱119.3 billion and ₱237.9 billion at constant and current prices respectively.

**Table 6. Valuation of Timber in Protected Areas, CAR: as of 2015 (in '000 Pesos)**

Protected Area	Area (in ha)	Volume (in thousands of m3)	Valuation at constant price (in peso)	Valuation at current price (in peso)
CAR	170,720.2	29,742.9	119,326,202.6	237,919,954.3
Abra	1,701.2	296.4	126,852.7	636,098.1
Apayao	-	-	-	-
Benguet	142,802.2	24,879.0	100,710,153.8	200,478,389.1
Ifugao	1,355.2	236.1	955,772.9	1,902,606.7
Kalinga	23,307.8	4,060.7	16,437,617.3	32,721,497.4
Mt. Province	1,553.8	270.7	1,095,805.9	2,181,363.0

Source: Philippine Statistics Authority

## Conclusions and Recommendations

The following conclusions were derived from the results of this study:

- a. CAR has a significant area devoted to forestry. With the region's forestland constituting about 84.9 percent of the region's total land area, the region exceeds the 60-40 ideal forest-to-non-forest ratio.
- b. Volume reductions have a significant impact on timber stand volume. This, coupled with reductions from timber poaching, emphasizes the need for an even more effective implementation of forest protection programs.
- c. Afforestation/reforestation on grassland, shrub land, other wooded land and major forest land increased forest cover as well as the monetary account for timber of the region.
- d. The increase in forest cover is one way to address climate change. Forests serve as carbon sink; they reduce atmospheric carbon dioxide and carbon footprint by carbon sequestration. They are also an agent for disaster mitigation preventing flood and erosion.

Based on the above conclusions as well as the limitations mentioned, the following are therefore recommended:

- a. A necessary step in ensuring the quality of statistics and accounts is the review and update of local land cover terms and definitions in accordance with international standards. The standardization not only ensures comparability of statistics produced by different government agencies, it also guarantees that terms and statistics are at par with other countries.
- b. The region's current pool of data on forest resources is insufficient for the conduct of a complete and more meaningful timber resource accounting. Data on the following should be continuously updated, and where appropriate and possible, incorporated in the reports regularly submitted by the DENR's field offices:
  - i. Actual area effectively afforested/reforested by both private and government organizations and the corresponding change in standing volume through the years. This also includes the species of trees planted and to what type of forest they are rendered;
  - ii. Impact of agriculture, illegal logging, cutting by indigenous peoples for domestic consumption, forest fires, pests and diseases, and natural disasters on forest volume and area including the effect of natural growth, natural losses, reclassifications and felling residues;
  - iii. Updated stumpage value and/or prevailing market price of timber by tree species, and if possible, by province (also to include production cost by area);



- iv. Timber confiscations (including type of timber, source); and
  - v. As much as possible, all data must have a provincial estimate or disaggregation to make way for asset accounting at provincial level
- c. All forest areas that remained generally undisturbed by human activities shall remain as forest at all times. On the other hand, lands being intensively used for agriculture or human settlement and are no longer functioning as a forest reserve but are located within the boundaries of protected area, should not be classified as protected area. However, in as much as they are still part of the forest ecosystem, activities within these areas should still be in accordance with the sustainable development and biodiversity conservation goals of the country.
- d. Characterization of watersheds, particularly the more critical ones, should also be regularly updated to reflect changes in land use with the help of the integration of Forest Land Use Plan (FLUP) into the Comprehensive Land Use Plan (CLUP) to gain better appreciation and understanding of forest land use planning.
- e. Forest resource-related studies should be conducted, such as, but not limited to:
- i. Determination of the true value of forest resources, which reflects full economic, environmental, and social benefits;
  - ii. Development of timber-harvesting technologies that are less destructive to the forest ecosystem; and,
  - iii. Inventory of existing forest resources (flora and fauna, ground and surface water, trees) and the changes in demand for such resources.
- f. Resource accounting should also be expanded to include other types of forest. The present study only covered about 50.0 percent of CAR's entire forestland.

## Appendices

**Appendix Table 1**  
**Physical Asset Account for Timber Resources, CAR: 1999-2015 (in Hectares)**

	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>Opening stock of timber resources</b>	751,836.1	756,556.0	759,946.1	763,502.7	765,628.2	766,836.4	767,026.8	767,606.0	767,642.9
<b>Additions to stock</b>									
Natural growth	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Afforestation/Reforestation	4,850.4	3,521.0	3,594.0	2,849.0	1,327.0	401.0	845.0	687.0	2,896.0
Total additions to stock	4,850.4	3,521.0	3,594.0	2,849.0	1,327.0	401.0	845.0	687.0	2,896.0
<b>Reductions in stock</b>									
Removals	2.6	12.8	37.4	78.1	91.9	139.1	7.2	86.6	112.7
Forest Disturbances	128.0	118.0	...	645.4	26.9	71.5	258.6	563.4	66.1
Kaingin	...	3.0	...	-	-	-	15.8	2.3	4.3
Forest Fire	95.0	35.0	...	644.5	26.3	71.3	240.9	560.1	61.3
Illegal Logging	33.0	61.0	...	0.8	0.6	0.3	1.9	1.0	0.5
Pest/Diseases	-	-	...	-	-	-	-	-	-
Others	-	19.0	...	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Total reductions in stock	130.6	130.8	37.4	723.5	118.8	210.6	265.8	650.0	178.8
<b>Closing stock of timber resources</b>	756,556.0	759,946.1	763,502.7	765,628.2	766,836.4	767,026.8	767,606.0	767,642.9	770,360.2
<b>Supplementary information</b>									
Fellings	...	...	...	...	...	...	...	...	...

Note: Values may not add-up due to rounding .

(...) Data not available

(-) Nil or Zero

**Appendix Table 1 Continued**  
**Physical Asset Account for Timber Resources, CAR: 1999-2015 (in Hectares)**

	2008	2009	2010	2011	2012	2013	2014	2015
<b>Opening stock of timber resources</b>	770,360.2	774,540.6	782,973.0	783,421.3	790,339.7	800,032.0	829,169.2	852,789.8
<b>Additions to stock</b>								
Natural growth	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Afforestation/Reforestation	4,340.0	8,570.0	2,218.0	6,938.0	9,711.0	29,400.0	24,179.0	17,746.0
Total additions to stock	4,340.0	8,570.0	2,218.0	6,938.0	9,711.0	29,400.0	24,179.0	17,746.0
<b>Reductions in stock</b>								
Removals	136.5	122.2	91.1	8.3	6.8	6.1	5.1	8.5
Forest Disturbances	23.1	15.4	1,678.6	11.3	11.9	256.7	553.3	671.3
Kaingin	3.0	1.1	62.2	-	1.4	93.5	87.7	60.7
Forest Fire	19.9	13.8	1,616.2	8.8	7.8	160.7	464.1	608.4
Illegal Logging	0.2	0.6	0.2	2.6	2.8	0.9	1.5	2.2
Pest/Diseases	-	-	-	-	-	1.6	-	-
Others	-	-	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Total reductions in stock	159.6	137.6	1,769.7	19.6	18.7	262.8	558.4	679.8
<b>Closing stock of timber resources</b>	774,540.6	782,973.0	783,421.3	790,339.7	800,032.0	829,169.2	852,789.8	869,856.0
<b>Supplementary information</b>								
Fellings	...	...	...	...	...	...	...	...

Note: Values may not add-up due to rounding .

(...) Data not available

(-) Nil or Zero

**Appendix Table 2****Physical Asset Account for Timber Resources, CAR: 1999 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	6,035.8	495,562.7	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	1,455.1	3,395.3	...
Total additions to stock	1,455.1	3,395.3	-
<b>Reductions in stock</b>			
Removals	0.8	1.8	...
Forest Disturbances	38.4	89.6	...
Kaingin	...	...	...
Forest Fire	28.5	66.5	...
Illegal Logging	9.9	23.1	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	39.2	91.4	-
<b>Closing stock of timber resources</b>	7,451.7	498,866.7	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 3**  
**Physical Asset Account for Timber Resources, CAR: 2000 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	7,451.7	498,866.7	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	1,056.3	2,464.7	...
Total additions to stock	1,056.3	2,464.7	-
<b>Reductions in stock</b>			
Removals	3.8	9.0	...
Forest Disturbances	35.4	82.6	...
Kaingin	0.9	2.1	...
Forest Fire	10.5	24.5	...
Illegal Logging	18.3	42.7	...
Pest/Diseases	-	-	...
Others	5.7	13.3	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	39.2	91.6	-
<b>Closing stock of timber resources</b>	8,468.8	501,239.7	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 4**  
**Physical Asset Account for Timber Resources, CAR: 2001 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	8,468.8	501,239.7	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	1,078.2	2,515.8	...
Total additions to stock	1,078.2	2,515.8	-
<b>Reductions in stock</b>			
Removals	11.2	26.2	...
Forest Disturbances	...	...	...
Kaingin	...	...	...
Forest Fire	...	...	...
Illegal Logging	...	...	...
Pest/Diseases	...	...	...
Others	...	...	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	11.2	26.2	-
<b>Closing stock of timber resources</b>	9,535.7	503,729.4	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*



**Appendix Table 5**  
**Physical Asset Account for Timber Resources, CAR: 2002 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	9,535.7	503,729.4	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	854.7	1,994.3	...
Total additions to stock	854.7	1,994.3	-
<b>Reductions in stock</b>			
Removals	23.4	54.7	...
Forest Disturbances	193.6	451.8	...
Kaingin	-	-	...
Forest Fire	193.4	451.2	...
Illegal Logging	0.2	0.6	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	217.1	506.5	-
<b>Closing stock of timber resources</b>	10,173.4	505,217.2	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 6**  
**Physical Asset Account for Timber Resources, CAR: 2003 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	10,173.4	505,217.2	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	398.1	928.9	...
Total additions to stock	398.1	928.9	-
<b>Reductions in stock</b>			
Removals	27.6	64.3	...
Forest Disturbances	8.1	18.8	...
Kaingin	-	-	...
Forest Fire	7.9	18.4	...
Illegal Logging	0.2	0.4	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	35.6	83.2	-
<b>Closing stock of timber resources</b>	10,535.8	506,062.9	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 7**  
**Physical Asset Account for Timber Resources, CAR: 2004 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	10,535.8	506,062.9	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	120.3	280.7	...
Total additions to stock	120.3	280.7	-
<b>Reductions in stock</b>			
Removals	41.7	97.4	...
Forest Disturbances	21.5	50.1	...
Kaingin	-	-	...
Forest Fire	21.4	49.9	...
Illegal Logging	0.1	0.2	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	63.2	147.4	-
<b>Closing stock of timber resources</b>	10,593.0	506,196.2	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 8**  
**Physical Asset Account for Timber Resources, CAR: 2005 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	10,593.0	506,196.2	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	253.5	591.5	...
Total additions to stock	253.5	591.5	-
<b>Reductions in stock</b>			
Removals	2.2	5.1	...
Forest Disturbances	77.6	181.0	...
Kaingin	4.7	11.1	...
Forest Fire	72.3	168.6	...
Illegal Logging	0.6	1.3	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	79.7	186.1	-
<b>Closing stock of timber resources</b>	10,766.7	506,601.6	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 9**  
**Physical Asset Account for Timber Resources, CAR: 2006 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	10,766.7	506,601.6	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	206.1	480.9	...
Total additions to stock	206.1	480.9	-
<b>Reductions in stock</b>			
Removals	26.0	60.6	...
Forest Disturbances	169.0	394.4	...
Kaingin	0.7	1.6	...
Forest Fire	168.0	392.1	...
Illegal Logging	0.3	0.7	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	195.0	455.0	-
<b>Closing stock of timber resources</b>	10,777.8	506,627.5	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 10**  
**Physical Asset Account for Timber Resources, CAR: 2007 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	10,777.8	506,627.5	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	868.8	2,027.2	...
Total additions to stock	868.8	2,027.2	-
<b>Reductions in stock</b>			
Removals	33.8	78.9	...
Forest Disturbances	19.8	46.3	...
Kaingin	1.3	3.0	...
Forest Fire	18.4	42.9	...
Illegal Logging	0.2	0.4	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	53.6	125.1	-
<b>Closing stock of timber resources</b>	11,593.0	508,529.6	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 11**  
**Physical Asset Account for Timber Resources, CAR: 2008 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	11,593.0	508,529.6	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	1,302.0	3,038.0	...
Total additions to stock	1,302.0	3,038.0	-
<b>Reductions in stock</b>			
Removals	41.0	95.6	...
Forest Disturbances	6.9	16.2	...
Kaingin	0.9	2.1	...
Forest Fire	6.0	13.9	...
Illegal Logging	0.1	0.1	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	47.9	111.7	-
<b>Closing stock of timber resources</b>	12,847.1	511,455.9	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*



**Appendix Table 12**  
**Physical Asset Account for Timber Resources, CAR: 2009 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	12,847.1	511,455.9	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	2,571.0	5,999.0	...
Total additions to stock	2,571.0	5,999.0	-
<b>Reductions in stock</b>			
Removals	36.7	85.5	...
Forest Disturbances	4.6	10.8	...
Kaingin	0.3	0.8	...
Forest Fire	4.1	9.7	...
Illegal Logging	0.2	0.4	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	41.3	96.3	-
<b>Closing stock of timber resources</b>	15,376.8	517,358.6	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 13**  
**Physical Asset Account for Timber Resources, CAR: 2010 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	15,376.8	517,358.6	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	665.4	1,552.6	...
Total additions to stock	665.4	1,552.6	-
<b>Reductions in stock</b>			
Removals	27.3	63.8	...
Forest Disturbances	503.6	1,175.0	...
Kaingin	18.7	43.5	...
Forest Fire	484.9	1,131.3	...
Illegal Logging	0.1	0.1	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	530.9	1,238.8	-
<b>Closing stock of timber resources</b>	15,511.3	517,672.4	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 14**  
**Physical Asset Account for Timber Resources, CAR: 2011 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	15,511.3	517,672.4	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	2,081.4	4,856.6	...
Total additions to stock	2,081.4	4,856.6	-
<b>Reductions in stock</b>			
Removals	2.5	5.8	...
Forest Disturbances	3.4	7.9	...
Kaingin	-	-	...
Forest Fire	2.6	6.2	...
Illegal Logging	0.8	1.8	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	5.9	13.7	-
<b>Closing stock of timber resources</b>	17,586.8	522,515.3	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 15**  
**Physical Asset Account for Timber Resources, CAR: 2012 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	17,586.8	522,515.3	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	2,913.3	6,797.7	...
Total additions to stock	2,913.3	6,797.7	-
<b>Reductions in stock</b>			
Removals	2.0	4.7	...
Forest Disturbances	3.6	8.3	...
Kaingin	0.4	1.0	...
Forest Fire	2.3	5.5	...
Illegal Logging	0.8	2.0	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	5.6	13.1	-
<b>Closing stock of timber resources</b>	20,494.5	529,299.9	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 16**  
**Physical Asset Account for Timber Resources, CAR: 2013 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	20,494.5	529,299.9	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	8,820.0	20,580.0	...
Total additions to stock	8,820.0	20,580.0	-
<b>Reductions in stock</b>			
Removals	1.8	4.2	...
Forest Disturbances	77.0	179.7	...
Kaingin	28.0	65.4	...
Forest Fire	48.2	112.5	...
Illegal Logging	0.3	0.6	...
Pest/Diseases	0.5	1.1	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	78.8	184.0	-
<b>Closing stock of timber resources</b>	29,235.7	549,695.9	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 17**  
**Physical Asset Account for Timber Resources, CAR: 2014 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	29,235.7	549,695.9	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	7,253.7	16,925.3	...
Total additions to stock	7,253.7	16,925.3	-
<b>Reductions in stock</b>			
Removals	1.5	3.6	...
Forest Disturbances	166.0	387.3	...
Kaingin	26.3	61.4	...
Forest Fire	139.2	324.9	...
Illegal Logging	0.4	1.0	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	167.5	390.9	-
<b>Closing stock of timber resources</b>	36,321.9	566,230.3	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 18**  
**Physical Asset Account for Timber Resources, CAR: 2015 (in Hectares)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	36,321.9	566,230.3	250,237.6
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	5,323.8	12,422.2	...
Total additions to stock	5,323.8	12,422.2	-
<b>Reductions in stock</b>			
Removals	2.6	6.0	...
Forest Disturbances	201.4	469.9	...
Kaingin	18.2	42.5	...
Forest Fire	182.5	425.8	...
Illegal Logging	0.7	1.6	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	203.9	475.9	-
<b>Closing stock of timber resources</b>	41,441.7	578,176.7	250,237.6
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 19**  
**Physical Asset Account for Timber Resources, CAR: 1999-2015 (in Thousands of Cubic Meters Over Bark)**

	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>Opening stock of timber resources</b>	132,176.5	132,313.7	132,465.7	132,678.3	133,022.9	133,809.9	134,617.5	135,184.7	135,697.1
<b>Additions to stock</b>									
Natural growth	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Afforestation/Reforestation	160.0	174.8	219.2	471.1	808.2	845.0	613.4	626.1	496.4
Total additions to stock	160.0	174.8	219.2	471.1	808.2	845.0	613.4	626.1	496.4
<b>Reductions in stock</b>									
Removals	0.5	2.2	6.7	14.0	16.5	25.0	1.2	15.5	20.3
Forest Disturbances	22.3	20.6	...	112.4	4.7	12.5	45.1	98.2	11.5
Kaingin	...	0.5	...	-	-	-	2.8	0.4	0.7
Forest Fire	16.6	6.1	...	112.3	4.6	12.4	42.0	97.6	10.7
Illegal Logging	5.7	10.6	...	0.1	0.1	0.1	0.3	0.2	0.1
Pest/Diseases	-	-	...	-	-	-	-	-	-
Others	-	3.3	...	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Total reductions in stock	22.8	22.8	6.7	126.4	21.2	37.5	46.2	113.7	31.8
<b>Closing stock of timber resources</b>	132,313.7	132,465.7	132,678.3	133,022.9	133,809.9	134,617.5	135,184.7	135,697.1	136,161.7
<b>Supplementary information</b>									
Fellings	...	...	...	...	...	...	...	...	...

Note: Values may not add-up due to rounding.

(...) Data not available

(-) Nil or Zero



**Appendix Table 19 Continued**  
**Physical Asset Account for Timber Resources, CAR: 1999-2015 (in Thousands of Cubic Meters Over Bark)**

	2008	2009	2010	2011	2012	2013	2014	2015
<b>Opening stock of timber resources</b>	136,161.7	136,364.3	136,409.6	136,247.9	136,364.3	136,865.6	137,575.9	138,971.8
<b>Additions to stock</b>								
Natural growth	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Afforestation/Reforestation	231.2	69.9	147.2	119.7	504.5	756.1	1,493.1	386.4
Total additions to stock	231.2	69.9	147.2	119.7	504.5	756.1	1,493.1	386.4
<b>Reductions in stock</b>								
Removals	24.5	22.0	16.4	1.4	1.2	1.1	0.8	1.5
Forest Disturbances	4.0	2.7	292.4	2.0	2.1	44.7	96.4	117.0
Kaingin	0.5	0.2	10.8	-	0.2	16.3	15.3	10.6
Forest Fire	3.5	2.4	281.6	1.5	1.4	28.0	80.9	106.0
Illegal Logging	0.0	0.1	0.0	0.5	0.5	0.2	0.3	0.4
Pest/Diseases	-	-	-	-	-	0.3	-	-
Others	-	-	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Total reductions in stock	28.6	24.6	308.8	3.3	3.2	45.8	97.2	118.4
<b>Closing stock of timber resources</b>	136,364.3	136,409.6	136,247.9	136,364.3	136,865.6	137,575.9	138,971.8	139,239.8
<b>Supplementary information</b>								
Fellings	...	...	...	...	...	...	...	...

Note: Values may not add-up due to rounding .

(...) Data not available

(-) Nil or Zero

**Appendix Table 20**  
**Physical Asset Account for Timber Resources, CAR: 1999**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	1,407.7	87,168.1	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	48.0	112.0	...
Total additions to stock	48.0	112.0	-
<b>Reductions in stock</b>			
Removals	0.1	0.3	...
Forest Disturbances	6.7	15.6	...
Kaingin	...	...	...
Forest Fire	5.0	11.6	...
Illegal Logging	1.7	4.0	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	6.8	15.9	-
<b>Closing stock of timber resources</b>	1,448.9	87,264.1	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 21**  
**Physical Asset Account for Timber Resources, CAR: 2000**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	1,448.9	87,264.1	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	52.4	122.4	...
Total additions to stock	52.4	122.4	-
<b>Reductions in stock</b>			
Removals	0.7	1.6	...
Forest Disturbances	6.2	14.4	...
Kaingin	0.2	0.4	...
Forest Fire	1.8	4.3	...
Illegal Logging	3.2	7.4	...
Pest/Diseases	-	-	...
Others	1.0	2.3	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	6.8	16.0	-
<b>Closing stock of timber resources</b>	1,494.5	87,370.5	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 22**  
**Physical Asset Account for Timber Resources, CAR: 2001**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	1,494.5	87,370.5	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	65.8	153.5	...
Total additions to stock	65.8	153.5	-
<b>Reductions in stock</b>			
Removals	2.0	4.6	...
Forest Disturbances	...	...	...
Kaingin	...	...	...
Forest Fire	...	...	...
Illegal Logging	...	...	...
Pest/Diseases	...	...	...
Others	...	...	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	2.0	4.6	-
<b>Closing stock of timber resources</b>	1,558.3	87,519.4	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 23**  
**Physical Asset Account for Timber Resources, CAR: 2002**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	1,558.3	87,519.4	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	141.3	329.7	...
Total additions to stock	141.3	329.7	-
<b>Reductions in stock</b>			
Removals	4.1	9.5	...
Forest Disturbances	33.7	78.7	...
Kaingin	-	-	...
Forest Fire	33.7	78.6	...
Illegal Logging	0.0	0.1	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	37.8	88.2	-
<b>Closing stock of timber resources</b>	1,661.8	87,761.0	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 24**  
**Physical Asset Account for Timber Resources, CAR: 2003**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	1,661.8	87,761.0	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	242.5	565.7	...
Total additions to stock	242.5	565.7	-
<b>Reductions in stock</b>			
Removals	4.8	11.2	...
Forest Disturbances	1.4	3.3	...
Kaingin	-	-	...
Forest Fire	1.4	3.2	...
Illegal Logging	0.0	0.1	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	6.2	14.5	-
<b>Closing stock of timber resources</b>	1,898.1	88,312.2	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 25**  
**Physical Asset Account for Timber Resources, CAR: 2004**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	1,898.1	88,312.2	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	253.5	591.5	...
Total additions to stock	253.5	591.5	-
<b>Reductions in stock</b>			
Removals	7.3	17.0	...
Forest Disturbances	3.7	8.7	...
Kaingin	-	-	...
Forest Fire	3.7	8.7	...
Illegal Logging	0.0	0.0	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	11.0	25.7	-
<b>Closing stock of timber resources</b>	2,140.6	88,878.1	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 26**  
**Physical Asset Account for Timber Resources, CAR: 2005**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	2,140.6	88,878.1	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	184.0	429.4	...
Total additions to stock	184.0	429.4	-
<b>Reductions in stock</b>			
Removals	0.4	0.9	...
Forest Disturbances	13.5	31.5	...
Kaingin	0.8	1.9	...
Forest Fire	12.6	29.4	...
Illegal Logging	0.1	0.2	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	13.9	32.4	-
<b>Closing stock of timber resources</b>	2,310.7	89,275.0	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*



**Appendix Table 27**  
**Physical Asset Account for Timber Resources, CAR: 2006**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	2,310.7	89,275.0	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	187.8	438.3	...
Total additions to stock	187.8	438.3	-
<b>Reductions in stock</b>			
Removals	4.5	10.6	...
Forest Disturbances	29.4	68.7	...
Kaingin	0.1	0.3	...
Forest Fire	29.3	68.3	...
Illegal Logging	0.1	0.1	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	34.0	79.3	-
<b>Closing stock of timber resources</b>	2,464.6	89,634.1	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 28**  
**Physical Asset Account for Timber Resources, CAR: 2007**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	2,464.6	89,634.1	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	148.9	347.4	...
Total additions to stock	148.9	347.4	-
<b>Reductions in stock</b>			
Removals	5.9	13.7	...
Forest Disturbances	3.5	8.1	...
Kaingin	0.2	0.5	...
Forest Fire	3.2	7.5	...
Illegal Logging	0.0	0.1	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	9.3	21.8	-
<b>Closing stock of timber resources</b>	2,604.2	89,959.7	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 29**  
**Physical Asset Account for Timber Resources, CAR: 2008**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	2,604.2	89,959.7	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	69.4	161.8	...
Total additions to stock	69.4	161.8	-
<b>Reductions in stock</b>			
Removals	7.1	16.6	...
Forest Disturbances	1.2	2.8	...
Kaingin	0.2	0.4	...
Forest Fire	1.0	2.4	...
Illegal Logging	0.0	0.0	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	8.3	19.5	-
<b>Closing stock of timber resources</b>	2,665.2	90,102.1	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 30**  
**Physical Asset Account for Timber Resources, CAR: 2009**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	2,665.2	90,102.1	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	21.0	48.9	...
Total additions to stock	21.0	48.9	-
<b>Reductions in stock</b>			
Removals	6.4	14.9	...
Forest Disturbances	0.8	1.9	...
Kaingin	0.1	0.1	...
Forest Fire	0.7	1.7	...
Illegal Logging	0.0	0.1	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	7.2	16.8	-
<b>Closing stock of timber resources</b>	2,679.0	90,134.2	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 31**  
**Physical Asset Account for Timber Resources, CAR: 2010**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	2,679.0	90,134.2	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	44.2	103.1	...
Total additions to stock	44.2	103.1	-
<b>Reductions in stock</b>			
Removals	4.8	11.1	...
Forest Disturbances	87.7	204.7	...
Kaingin	3.3	7.6	...
Forest Fire	84.5	197.1	...
Illegal Logging	0.0	0.0	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	92.5	215.8	-
<b>Closing stock of timber resources</b>	2,630.6	90,021.4	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 32**  
**Physical Asset Account for Timber Resources, CAR: 2011**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	2,630.6	90,021.4	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	35.9	83.8	...
Total additions to stock	35.9	83.8	-
<b>Reductions in stock</b>			
Removals	0.4	1.0	...
Forest Disturbances	0.6	1.4	...
Kaingin	-	-	...
Forest Fire	0.5	1.1	...
Illegal Logging	0.1	0.3	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	1.0	2.4	-
<b>Closing stock of timber resources</b>	2,665.5	90,102.8	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 33**  
**Physical Asset Account for Timber Resources, CAR: 2012**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	2,665.5	90,102.8	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	151.4	353.2	...
Total additions to stock	151.4	353.2	-
<b>Reductions in stock</b>			
Removals	0.4	0.8	...
Forest Disturbances	0.6	1.5	...
Kaingin	0.1	0.2	...
Forest Fire	0.4	1.0	...
Illegal Logging	0.1	0.3	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	1.0	2.3	-
<b>Closing stock of timber resources</b>	2,815.9	90,453.7	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 34**  
**Physical Asset Account for Timber Resources, CAR: 2013**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	2,815.9	90,453.7	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	226.8	529.3	...
Total additions to stock	226.8	529.3	-
<b>Reductions in stock</b>			
Removals	0.3	0.7	...
Forest Disturbances	13.4	31.3	...
Kaingin	4.9	11.4	...
Forest Fire	8.4	19.6	...
Illegal Logging	0.0	0.1	...
Pest/Diseases	0.1	0.2	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	13.7	32.1	-
<b>Closing stock of timber resources</b>	3,029.0	90,951.0	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*



**Appendix Table 35**  
**Physical Asset Account for Timber Resources, CAR: 2014**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	3,029.0	90,951.0	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	447.9	1,045.1	...
Total additions to stock	447.9	1,045.1	-
<b>Reductions in stock</b>			
Removals	0.3	0.6	...
Forest Disturbances	28.9	67.5	...
Kaingin	4.6	10.7	...
Forest Fire	24.3	56.6	...
Illegal Logging	0.1	0.2	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	29.2	68.1	-
<b>Closing stock of timber resources</b>	3,447.7	91,928.0	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 36**  
**Physical Asset Account for Timber Resources, CAR: 2015**  
**(in Thousands of Cubic Meters Over Bark)**

	Type of Timber Resource		
	Cultivated Timber Resources	Available for Wood Supply	Not available for Wood Supply
<b>Opening stock of timber resources</b>	3,447.7	91,928.0	43,596.4
<b>Additions to stock</b>			
Natural growth	...	...	...
Reclassifications	...	...	...
Afforestation/Reforestation	115.9	270.5	...
Total additions to stock	115.9	270.5	-
<b>Reductions in stock</b>			
Removals	0.4	1.0	...
Forest Disturbances	35.1	81.9	...
Kaingin	3.2	7.4	...
Forest Fire	31.8	74.2	...
Illegal Logging	0.1	0.3	...
Pest/Diseases	-	-	...
Others	-	-	...
Felling residues	...	...	...
Natural losses	...	...	...
Catastrophic losses	...	...	...
Reclassifications	...	...	...
Total reductions in stock	35.5	82.9	-
<b>Closing stock of timber resources</b>	3,528.1	92,115.6	43,596.4
<b>Supplementary information</b>	...	...	...
Fellings	...	...	...

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(-) Nil or Zero*

**Appendix Table 37**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 1999-2015 (in '000 Pesos)**

	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>Opening stock of timber resources</b>	149,110,760.4	149,314,027.6	149,539,155.6	149,854,218.3	150,365,174.3	151,531,487.3	152,728,668.2	153,568,562.2	154,328,172.5
<b>Additions to stock</b>									
Natural growth	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Afforestation/Reforestation	358,068.7	391,210.5	490,679.0	1,054,235.1	1,808,781.9	1,891,207.7	1,372,833.8	1,401,316.3	1,110,837.5
Total additions to stock	358,068.7	391,210.5	490,679.0	1,054,235.1	1,808,781.9	1,891,207.7	1,372,833.8	1,401,316.3	1,110,837.5
<b>Reductions in stock</b>									
Removals	1,030.4	5,025.3	14,984.7	31,346.1	36,935.2	55,989.9	2,616.9	34,800.1	45,335.2
Forest Disturbances	49,907.8	46,008.7	...	251,644.3	10,488.4	27,878.2	100,829.3	219,672.1	25,772.7
Kaingin	...	1,169.7	...	-	-	-	6,160.5	896.8	1,676.6
Forest Fire	37,040.9	13,646.7	...	251,293.4	10,254.5	27,800.2	93,928.0	218,385.4	23,901.1
Illegal Logging	12,866.8	23,784.2	...	311.9	233.9	117.0	740.8	389.9	195.0
Pest/Diseases	-	-	-	-	-	-	-	-	-
Others	-	7,408.2	...	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Total reductions in stock	50,938.2	51,034.0	14,984.7	282,990.4	47,423.7	83,868.0	103,446.2	254,472.2	71,107.8
<b>Revaluations</b>									
<b>Closing stock of timber resources</b>	149,314,027.6	149,539,155.6	149,854,218.3	150,365,174.3	151,531,487.3	152,728,668.2	153,568,562.2	154,328,172.5	155,017,153.2

Note: Values may not add-up due to rounding.

(...) Data not available

(..) Not Applicable

(-) Nil or Zero

**Appendix Table 37 Continued**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 1999-2015 (in '000 Pesos)**

	2008	2009	2010	2011	2012	2013	2014	2015
<b>Opening stock of timber resources</b>	155,017,153.2	155,318,366.1	155,386,336.5	155,147,742.0	155,319,950.5	156,062,360.7	157,114,362.7	159,181,524.8
<b>Additions to stock</b>								
Natural growth	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Afforestation/Reforestation	517,403.1	156,351.6	329,469.2	267,864.3	1,129,163.0	1,692,184.9	3,341,480.4	864,807.9
Total additions to stock	517,403.1	156,351.6	329,469.2	267,864.3	1,129,163.0	1,692,184.9	3,341,480.4	864,807.9
<b>Reductions in stock</b>								
Removals	54,933.3	49,139.5	36,659.7	3,075.9	2,598.1	2,368.1	1,866.1	3,263.0
Forest Disturbances	9,006.8	6,004.5	654,493.5	4,405.9	4,639.9	100,104.0	215,726.3	261,738.9
Kaingin	1,169.7	428.9	24,252.1	-	545.9	36,452.2	34,202.4	23,671.1
Forest Fire	7,759.1	5,380.7	630,163.4	3,431.2	3,041.3	62,665.4	180,958.5	237,198.3
Illegal Logging	78.0	233.9	78.0	1,013.8	1,091.7	347.0	565.4	869.5
Pest/Diseases	-	-	-	-	-	639.4	-	-
Others	-	-	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Total reductions in stock	63,940.1	55,144.0	691,153.1	7,481.8	7,238.0	102,472.2	217,592.4	265,001.9
<b>Revaluations</b>								
<b>Closing stock of timber resources</b>	155,318,366.1	155,386,336.5	155,147,742.0	155,319,950.5	156,062,360.7	157,114,362.7	159,181,524.8	159,578,413.6

Note: Values may not add-up due to rounding .

(...) Data not available

(..) Not Applicable

(-) Nil or Zero

**Appendix Table 38**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 1999**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	1,382,797.9	147,727,962.5	149,110,760.4
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	107,420.6	250,648.1	358,068.7
Total additions to stock	107,420.6	250,648.1	358,068.7
<b>Reductions in stock</b>			
Removals	299.2	698.1	997.3
Forest Disturbances	14,972.3	34,935.4	49,907.8
Kaingin	...	...	-
Forest Fire	11,112.3	25,928.6	37,040.9
Illegal Logging	3,860.1	9,006.8	12,866.8
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	15,271.5	35,633.6	50,905.1
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	1,423,243.1	147,890,784.5	149,314,027.6

Note: Values may not add-up due to rounding

(...) Data not Available

(..) Not Applicable

(-) Nil or Zero

**Appendix Table 39**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2000**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	1,423,243.1	147,890,784.5	149,314,027.6
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	117,363.2	273,847.4	391,210.5
Total additions to stock	117,363.2	273,847.4	391,210.5
<b>Reductions in stock</b>			
Removals	1,501.1	3,502.5	5,003.6
Forest Disturbances	13,802.6	32,206.1	46,008.7
Kaingin	350.9	818.8	1,169.7
Forest Fire	4,094.0	9,552.7	13,646.7
Illegal Logging	7,135.2	16,648.9	23,784.2
Pest/Diseases	-	-	-
Others	2,222.5	5,185.7	7,408.2
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	15,303.7	35,708.6	51,012.4
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	1,468,038.0	148,071,117.6	149,539,155.6

Note: Values may not add-up due to rounding

(...) Data not Available

(..) Not Applicable

(-) Nil or Zero

**Appendix Table 40**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2001**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	1,468,038.0	148,071,117.6	149,539,155.6
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	147,203.7	343,475.3	490,679.0
Total additions to stock	147,203.7	343,475.3	490,679.0
<b>Reductions in stock</b>			
Removals	4,373.3	10,204.3	14,577.5
Forest Disturbances	...	...	-
Kaingin	...	...	-
Forest Fire	...	...	-
Illegal Logging	...	...	-
Pest/Diseases	...	...	-
Others	...	...	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	4,373.3	10,204.3	14,577.5
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	1,530,727.8	148,323,490.5	149,854,218.3

Note: Values may not add-up due to rounding

(...) Data not Available

(..) Not Applicable

(-) Nil or Zero

**Appendix Table 41**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2002**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	1,530,727.8	148,323,490.5	149,854,218.3
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	316,270.5	737,964.6	1,054,235.1
Total additions to stock	316,270.5	737,964.6	1,054,235.1
<b>Reductions in stock</b>			
Removals	9,140.6	21,328.0	30,468.6
Forest Disturbances	75,493.3	176,151.0	251,644.3
Kaingin	-	-	-
Forest Fire	75,388.0	175,905.4	251,293.4
Illegal Logging	93.6	218.3	311.9
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	84,633.9	197,479.0	282,112.9
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	1,632,395.5	148,732,778.9	150,365,174.3

Note: Values may not add-up due to rounding

(...) Data not Available

(..) Not Applicable

(-) Nil or Zero



**Appendix Table 42**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2003**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	1,632,395.5	148,732,778.9	150,365,174.3
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	542,634.6	1,266,147.3	1,808,781.9
Total additions to stock	542,634.6	1,266,147.3	1,808,781.9
<b>Reductions in stock</b>			
Removals	10,752.1	25,088.1	35,840.2
Forest Disturbances	3,146.5	7,341.9	10,488.4
Kaingin	-	-	-
Forest Fire	3,076.3	7,178.1	10,254.5
Illegal Logging	70.2	163.8	233.9
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	13,898.6	32,430.0	46,328.6
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	1,864,463.1	149,667,024.2	151,531,487.3

Note: Values may not add-up due to rounding

(...) Data not Available

(..) Not Applicable

(-) Nil or Zero

**Appendix Table 43**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2004**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	1,864,463.1	149,667,024.2	151,531,487.3
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	567,362.3	1,323,845.4	1,891,207.7
Total additions to stock	567,362.3	1,323,845.4	1,891,207.7
<b>Reductions in stock</b>			
Removals	16,269.2	37,961.5	54,230.7
Forest Disturbances	8,363.4	19,514.7	27,878.2
Kaingin	-	-	-
Forest Fire	8,340.1	19,460.1	27,800.2
Illegal Logging	35.1	81.9	117.0
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	24,632.7	57,476.2	82,108.9
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	2,102,672.7	150,625,995.5	152,728,668.2

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(..) Not Applicable*

*(-) Nil or Zero*

**Appendix Table 44**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2005**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	2,102,672.7	150,625,995.5	152,728,668.2
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	411,850.1	960,983.6	1,372,833.8
Total additions to stock	411,850.1	960,983.6	1,372,833.8
<b>Reductions in stock</b>			
Removals	844.0	1,969.4	2,813.5
Forest Disturbances	30,248.8	70,580.5	100,829.3
Kaingin	1,848.1	4,312.3	6,160.5
Forest Fire	28,178.4	65,749.6	93,928.0
Illegal Logging	222.2	518.6	740.8
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	31,092.8	72,549.9	103,642.7
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	2,269,790.9	151,298,771.3	153,568,562.2

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(..) Not Applicable*

*(-) Nil or Zero*

**Appendix Table 45**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2006**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	2,269,790.9	151,298,771.3	153,568,562.2
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	420,394.9	980,921.4	1,401,316.3
Total additions to stock	420,394.9	980,921.4	1,401,316.3
<b>Reductions in stock</b>			
Removals	10,131.7	23,640.7	33,772.5
Forest Disturbances	65,901.6	153,770.5	219,672.1
Kaingin	269.0	627.7	896.8
Forest Fire	65,515.6	152,869.8	218,385.4
Illegal Logging	117.0	272.9	389.9
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	76,033.4	177,411.2	253,444.6
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	2,420,934.7	151,907,237.8	154,328,172.5

Note: Values may not add-up due to rounding

(...) Data not Available

(..) Not Applicable

(-) Nil or Zero

**Appendix Table 46**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2007**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	2,420,934.7	151,907,237.8	154,328,172.5
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	333,251.3	777,586.3	1,110,837.5
Total additions to stock	333,251.3	777,586.3	1,110,837.5
<b>Reductions in stock</b>			
Removals	13,177.1	30,746.6	43,923.8
Forest Disturbances	7,731.8	18,040.9	25,772.7
Kaingin	503.0	1,173.6	1,676.6
Forest Fire	7,170.3	16,730.8	23,901.1
Illegal Logging	58.5	136.5	195.0
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	20,908.9	48,787.5	69,696.4
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	2,558,025.0	152,459,128.3	155,017,153.2

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(..) Not Applicable*

*(-) Nil or Zero*

**Appendix Table 47**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2008**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	2,558,025.0	152,459,128.3	155,017,153.2
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	155,220.9	362,182.2	517,403.1
Total additions to stock	155,220.9	362,182.2	517,403.1
<b>Reductions in stock</b>			
Removals	15,967.1	37,256.6	53,223.8
Forest Disturbances	2,702.0	6,304.8	9,006.8
Kaingin	350.9	818.8	1,169.7
Forest Fire	2,327.7	5,431.4	7,759.1
Illegal Logging	23.4	54.6	78.0
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	18,669.2	43,561.4	62,230.5
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	2,617,958.9	152,700,407.2	155,318,366.1

Note: Values may not add-up due to rounding

(...) Data not Available

(..) Not Applicable

(-) Nil or Zero

**Appendix Table 48**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2009**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	2,617,958.9	152,700,407.2	155,318,366.1
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	46,905.5	109,446.2	156,351.6
Total additions to stock	46,905.5	109,446.2	156,351.6
<b>Reductions in stock</b>			
Removals	14,290.5	33,344.4	47,634.8
Forest Disturbances	1,801.4	4,203.2	6,004.5
Kaingin	128.7	300.2	428.9
Forest Fire	1,614.2	3,766.5	5,380.7
Illegal Logging	70.2	163.8	233.9
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	16,091.8	37,547.6	53,639.4
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	2,631,483.4	152,754,853.1	155,386,336.5

Note: Values may not add-up due to rounding

(...) Data not Available

(..) Not Applicable

(-) Nil or Zero

**Appendix Table 49**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2010**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	2,631,483.4	152,754,853.1	155,386,336.5
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	98,840.8	230,628.4	329,469.2
Total additions to stock	98,840.8	230,628.4	329,469.2
<b>Reductions in stock</b>			
Removals	10,657.1	24,866.5	35,523.5
Forest Disturbances	196,348.0	458,145.4	654,493.5
Kaingin	7,275.6	16,976.4	24,252.1
Forest Fire	189,049.0	441,114.4	630,163.4
Illegal Logging	23.4	54.6	78.0
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	207,005.1	483,011.9	690,017.0
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	2,584,008.9	152,563,733.1	155,147,742.0

Note: Values may not add-up due to rounding

(...) Data not Available

(..) Not Applicable

(-) Nil or Zero



**Appendix Table 50**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2011**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	2,584,008.9	152,563,733.1	155,147,742.0
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	80,359.3	187,505.0	267,864.3
Total additions to stock	80,359.3	187,505.0	267,864.3
<b>Reductions in stock</b>			
Removals	968.6	2,260.1	3,228.7
Forest Disturbances	1,321.8	3,084.1	4,405.9
Kaingin	-	-	-
Forest Fire	1,029.3	2,401.8	3,431.2
Illegal Logging	304.1	709.6	1,013.8
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	2,290.4	5,344.2	7,634.6
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	2,618,274.2	152,701,676.3	155,319,950.5

Note: Values may not add-up due to rounding

(...) Data not Available

(..) Not Applicable

(-) Nil or Zero

**Appendix Table 51**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2012**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	2,618,274.2	152,701,676.3	155,319,950.5
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	338,748.9	790,414.1	1,129,163.0
Total additions to stock	338,748.9	790,414.1	1,129,163.0
<b>Reductions in stock</b>			
Removals	792.9	1,850.1	2,643.0
Forest Disturbances	1,392.0	3,247.9	4,639.9
Kaingin	163.8	382.1	545.9
Forest Fire	912.4	2,128.9	3,041.3
Illegal Logging	327.5	764.2	1,091.7
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	2,184.9	5,098.0	7,282.9
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	2,765,995.6	153,296,365.1	156,062,360.7

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*(..) Not Applicable*

*(-) Nil or Zero*

**Appendix Table 52**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2013**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	Total
		Available for Wood Supply	
<b>Opening stock of timber resources</b>	2,765,995.6	153,296,365.1	156,062,360.7
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	507,655.5	1,184,529.4	1,692,184.9
Total additions to stock	507,655.5	1,184,529.4	1,692,184.9
<b>Reductions in stock</b>			
Removals	710.0	1,656.6	2,366.6
Forest Disturbances	30,031.2	70,072.8	100,104.0
Kaingin	10,935.6	25,516.5	36,452.2
Forest Fire	18,799.6	43,865.8	62,665.4
Illegal Logging	104.1	242.9	347.0
Pest/Diseases	191.8	447.6	639.4
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	30,741.2	71,729.4	102,470.6
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	2,975,318.1	154,139,044.6	157,114,362.7

Note: Values may not add-up due to rounding

(...) Data not Available

(..) Not Applicable

(-) Nil or Zero

**Appendix Table 53**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2014**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	2,975,318.1	154,139,044.6	157,114,362.7
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	1,002,444.1	2,339,036.3	3,341,480.4
Total additions to stock	1,002,444.1	2,339,036.3	3,341,480.4
<b>Reductions in stock</b>			
Removals	599.6	1,399.0	1,998.5
Forest Disturbances	64,717.9	151,008.4	215,726.3
Kaingin	10,260.7	23,941.7	34,202.4
Forest Fire	54,287.6	126,671.0	180,958.5
Illegal Logging	169.6	395.8	565.4
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	65,317.4	152,407.4	217,724.8
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	3,386,632.6	155,794,892.2	159,181,524.8

Note: Values may not add-up due to rounding

(...) Data not Available

(..) Not Applicable

(-) Nil or Zero

**Appendix Table 54**  
**Monetary Asset Account for Timber Resources, at Constant Price, CAR: 2015**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	3,386,632.6	155,794,892.2	159,181,524.8
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	259,442.4	605,365.5	864,807.9
Total additions to stock	259,442.4	605,365.5	864,807.9
<b>Reductions in stock</b>			
Removals	995.2	2,322.2	3,317.5
Forest Disturbances	78,521.7	183,217.2	261,738.9
Kaingin	7,101.3	16,569.8	23,671.1
Forest Fire	71,159.5	166,038.8	237,198.3
Illegal Logging	260.8	608.6	869.5
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	79,516.9	185,539.5	265,056.4
<b>Revaluations</b>	..	..	-
<b>Closing stock of timber resources</b>	3,465,603.7	156,112,809.9	159,578,413.6

Note: Values may not add-up due to rounding

(...) Data not Available

(..) Not Applicable

(-) Nil or Zero

**Appendix Table 55**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 1999-2015 (in '000 Pesos)**

	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>Opening stock of timber resources</b>	192,276,896.5	203,719,341.0	211,182,388.9	213,764,718.5	226,326,792.8	242,995,008.3	259,704,002.6	274,780,116.6	285,316,051.9
<b>Additions to stock</b>									
Natural growth	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Afforestation/Reforestation	422,268.5	488,111.0	633,644.8	1,375,014.3	2,488,905.5	2,771,475.4	2,132,532.3	2,289,968.8	1,875,185.6
Total additions to stock	422,268.5	488,111.0	633,644.8	1,375,014.3	2,488,905.5	2,771,475.4	2,132,532.3	2,289,968.8	1,875,185.6
<b>Reductions in stock</b>									
Removals	1,215.2	6,270.0	19,350.7	40,884.0	50,823.3	82,050.5	4,065.1	56,868.7	76,529.5
Forest Disturbances	58,856.0	57,404.8	...	328,213.8	14,432.2	40,854.1	156,626.2	358,978.4	43,506.4
Kaingin	...	1,459.4	...	-	-	-	9,569.6	1,465.5	2,830.2
Forest Fire	43,682.2	17,026.8	...	327,756.1	14,110.3	40,739.8	145,905.8	356,875.8	40,347.1
Illegal Logging	15,173.8	29,675.4	...	406.8	321.9	171.4	1,150.8	637.2	329.1
Pest/Diseases	-	-	...	-	-	-	-	-	-
Others	-	9,243.1	...	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Total reductions in stock	60,071.1	63,674.8	19,350.7	369,097.7	65,255.5	122,904.7	160,691.2	415,847.2	120,035.9
<b>Revaluations</b>	11,080,247.1	7,038,611.8	1,968,035.6	11,556,157.8	14,244,565.6	14,060,423.5	13,104,273.0	8,661,813.6	19,641,868.4
<b>Closing stock of timber resources</b>	203,719,341.0	211,182,388.9	213,764,718.5	226,326,792.8	242,995,008.3	259,704,002.6	274,780,116.6	285,316,051.9	306,713,070.1

Note: Values may not add-up due to rounding.

(...) Data not available

(-) Nil or Zero

**Appendix Table 55 Continued**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 1999-2015 (in '000 Pesos)**

	2008	2009	2010	2011	2012	2013	2014	2015
<b>Opening stock of timber resources</b>	306,713,070.1	318,400,110.9	333,198,846.5	343,642,041.4	356,426,184.8	370,385,835.6	386,795,583.4	397,993,456.0
<b>Additions to stock</b>								
Natural growth	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Afforestation/Reforestation	934,558.6	292,576.7	644,887.2	541,606.8	2,365,296.9	3,665,197.5	7,505,285.7	1,971,578.1
Total additions to stock	934,558.6	292,576.7	644,887.2	541,606.8	2,365,296.9	3,665,197.5	7,505,285.7	1,971,578.1
<b>Reductions in stock</b>								
Removals	99,223.2	91,953.3	71,755.9	6,219.2	5,442.4	5,129.3	4,191.4	7,439.1
Forest Disturbances	16,268.5	11,236.1	1,281,074.1	8,908.5	9,719.3	216,820.9	484,541.9	596,709.1
Kaingin	2,112.8	802.6	47,469.8	-	1,143.4	78,953.8	76,821.9	53,965.1
Forest Fire	14,014.9	10,068.7	1,233,451.7	6,937.6	6,370.6	135,730.5	406,450.2	540,761.7
Illegal Logging	140.9	437.8	152.6	2,049.7	2,286.9	751.6	1,269.9	1,982.2
Pest/Diseases	-	-	-	-	-	1,385.0	-	-
Others	-	-	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Total reductions in stock	115,491.7	103,189.5	1,352,830.0	15,127.7	15,161.7	221,950.2	488,733.3	604,148.1
<b>Revaluations</b>	10,867,973.9	14,609,348.4	11,151,137.7	12,257,664.4	11,609,515.5	12,966,500.6	4,181,320.3	7,250,133.4
<b>Closing stock of timber resources</b>	318,400,110.9	333,198,846.5	343,642,041.4	356,426,184.8	370,385,835.6	386,795,583.4	397,993,456.0	406,611,019.5

Note: Values may not add-up due to rounding.

(...) Data not available

(..) Not Applicable

(-) Nil or Zero

**Appendix Table 56**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 1999**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	2,222,035.0	190,054,861.6	192,276,896.5
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	126,680.5	295,587.9	422,268.5
Total additions to stock	126,680.5	295,587.9	422,268.5
<b>Reductions in stock</b>			
Removals	352.8	823.3	1,176.1
Forest Disturbances	17,656.8	41,199.2	58,856.0
Kaingin	...	...	-
Forest Fire	13,104.6	30,577.5	43,682.2
Illegal Logging	4,552.1	10,621.7	15,173.8
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	18,009.6	42,022.5	60,032.1
<b>Revaluations</b>	88,968.5	10,991,239.6	11,080,208.1
<b>Closing stock of timber resources</b>	2,419,674.4	201,299,666.6	203,719,341.0

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*() Negative Value*

*(-) Nil or Zero*



**Appendix Table 57**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2000**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	Total
	Available for Wood Supply		
<b>Opening stock of timber resources</b>	2,419,674.4	201,299,666.6	203,719,341.0
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	146,433.3	341,677.7	488,111.0
Total additions to stock	146,433.3	341,677.7	488,111.0
<b>Reductions in stock</b>			
Removals	1,872.9	4,370.1	6,243.0
Forest Disturbances	17,221.4	40,183.4	57,404.8
Kaingin	437.8	1,021.6	1,459.4
Forest Fire	5,108.1	11,918.8	17,026.8
Illegal Logging	8,902.6	20,772.7	29,675.4
Pest/Diseases	-	-	-
Others	2,772.9	6,470.2	9,243.1
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	19,094.3	44,553.5	63,647.8
<b>Revaluations</b>	36,171.6	7,002,413.2	7,038,584.8
<b>Closing stock of timber resources</b>	2,583,184.9	208,599,204.0	211,182,388.9

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*() Negative Value*

*(-) Nil or Zero*

**Appendix Table 58**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2001**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	2,583,184.9	208,599,204.0	211,182,388.9
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	190,093.4	443,551.4	633,644.8
Total additions to stock	190,093.4	443,551.4	633,644.8
<b>Reductions in stock</b>			
Removals	5,647.5	13,177.4	18,824.9
Forest Disturbances	...	...	-
Kaingin	...	...	-
Forest Fire	...	...	-
Illegal Logging	...	...	-
Pest/Diseases	...	...	-
Others	...	...	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	5,647.5	13,177.4	18,824.9
<b>Revaluations</b>	(47,201.1)	2,014,710.8	1,967,509.7
<b>Closing stock of timber resources</b>	2,720,429.8	211,044,288.7	213,764,718.5

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*() Negative Value*

*(-) Nil or Zero*

**Appendix Table 59**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2002**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	2,720,429.8	211,044,288.7	213,764,718.5
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	412,504.3	962,510.0	1,375,014.3
Total additions to stock	412,504.3	962,510.0	1,375,014.3
<b>Reductions in stock</b>			
Removals	11,921.9	27,817.7	39,739.5
Forest Disturbances	98,464.1	229,749.6	328,213.8
Kaingin	-	-	-
Forest Fire	98,326.8	229,429.2	327,756.1
Illegal Logging	122.1	284.8	406.8
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	110,386.0	257,567.3	367,953.3
<b>Revaluations</b>	38,128.2	11,516,885.1	11,555,013.3
<b>Closing stock of timber resources</b>	3,060,676.3	223,266,116.5	226,326,792.8

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*() Negative Value*

*(-) Nil or Zero*

**Appendix Table 60**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2003**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	3,060,676.3	223,266,116.5	226,326,792.8
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	746,671.6	1,742,233.8	2,488,905.5
Total additions to stock	746,671.6	1,742,233.8	2,488,905.5
<b>Reductions in stock</b>			
Removals	14,795.0	34,521.6	49,316.5
Forest Disturbances	4,329.7	10,102.5	14,432.2
Kaingin	-	-	-
Forest Fire	4,233.1	9,877.2	14,110.3
Illegal Logging	96.6	225.3	321.9
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	19,124.6	44,624.1	63,748.7
<b>Revaluations</b>	(65,202.9)	14,308,261.6	14,243,058.7
<b>Closing stock of timber resources</b>	3,723,020.4	239,271,987.9	242,995,008.3

Note: Values may not add-up due to rounding

(...) Data not Available

() Negative Value

(-) Nil or Zero

**Appendix Table 61**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2004**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	Total
		Available for Wood Supply	
<b>Opening stock of timber resources</b>	3,723,020.4	239,271,987.9	242,995,008.3
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	831,442.6	1,940,032.8	2,771,475.4
Total additions to stock	831,442.6	1,940,032.8	2,771,475.4
<b>Reductions in stock</b>			
Removals	23,841.8	55,630.8	79,472.5
Forest Disturbances	12,256.2	28,597.9	40,854.1
Kaingin	-	-	-
Forest Fire	12,222.0	28,517.9	40,739.8
Illegal Logging	51.4	120.0	171.4
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	36,098.0	84,228.7	120,326.7
<b>Revaluations</b>	(67,758.9)	14,125,604.4	14,057,845.5
<b>Closing stock of timber resources</b>	4,450,606.2	255,253,396.4	259,704,002.6

Note: Values may not add-up due to rounding

(...) Data not Available

() Negative Value

(-) Nil or Zero

**Appendix Table 62**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2005**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	4,450,606.2	255,253,396.4	259,704,002.6
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	639,759.7	1,492,772.6	2,132,532.3
Total additions to stock	639,759.7	1,492,772.6	2,132,532.3
<b>Reductions in stock</b>			
Removals	1,311.1	3,059.3	4,370.4
Forest Disturbances	46,987.8	109,638.3	156,626.2
Kaingin	2,870.9	6,698.7	9,569.6
Forest Fire	43,771.7	102,134.1	145,905.8
Illegal Logging	345.2	805.5	1,150.8
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	48,299.0	112,697.6	160,996.5
<b>Revaluations</b>	12,094.4	13,092,483.9	13,104,578.3
<b>Closing stock of timber resources</b>	5,054,161.3	269,725,955.4	274,780,116.6

Note: Values may not add-up due to rounding

(...) Data not Available

() Negative Value

(-) Nil or Zero

**Appendix Table 63**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2006**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	Total
		Available for Wood Supply	
<b>Opening stock of timber resources</b>	5,054,161.3	269,725,955.4	274,780,116.6
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	686,990.6	1,602,978.2	2,289,968.8
Total additions to stock	686,990.6	1,602,978.2	2,289,968.8
<b>Reductions in stock</b>			
Removals	16,556.8	38,632.6	55,189.5
Forest Disturbances	107,693.5	251,284.9	358,978.4
Kaingin	439.6	1,025.8	1,465.5
Forest Fire	107,062.7	249,813.0	356,875.8
Illegal Logging	191.1	446.0	637.2
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	124,250.4	289,917.5	414,167.9
<b>Revaluations</b>	(48,293.7)	8,708,428.0	8,660,134.4
<b>Closing stock of timber resources</b>	5,568,607.9	279,747,444.1	285,316,051.9

Note: Values may not add-up due to rounding

(...) Data not Available

() Negative Value

(-) Nil or Zero

**Appendix Table 64**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2007**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	5,568,607.9	279,747,444.1	285,316,051.9
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	562,555.7	1,312,629.9	1,875,185.6
Total additions to stock	562,555.7	1,312,629.9	1,875,185.6
<b>Reductions in stock</b>			
Removals	22,244.1	51,902.8	74,146.9
Forest Disturbances	13,051.9	30,454.5	43,506.4
Kaingin	849.1	1,981.2	2,830.2
Forest Fire	12,104.1	28,243.0	40,347.1
Illegal Logging	98.7	230.4	329.1
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	35,296.0	82,357.3	117,653.3
<b>Revaluations</b>	199,949.7	19,439,536.2	19,639,485.9
<b>Closing stock of timber resources</b>	6,295,817.3	300,417,252.8	306,713,070.1

Note: Values may not add-up due to rounding

(...) Data not Available

() Negative Value

(-) Nil or Zero



**Appendix Table 65**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2008**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	Total
		Available for Wood Supply	
<b>Opening stock of timber resources</b>	6,295,817.3	300,417,252.8	306,713,070.1
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	280,367.6	654,191.0	934,558.6
Total additions to stock	280,367.6	654,191.0	934,558.6
<b>Reductions in stock</b>			
Removals	28,840.6	67,294.7	96,135.3
Forest Disturbances	4,880.6	11,388.0	16,268.5
Kaingin	633.8	1,479.0	2,112.8
Forest Fire	4,204.5	9,810.4	14,014.9
Illegal Logging	42.3	98.6	140.9
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	33,721.1	78,682.7	112,403.8
<b>Revaluations</b>	132,823.0	10,732,063.1	10,864,886.0
<b>Closing stock of timber resources</b>	6,675,286.6	311,724,824.2	318,400,110.9

Note: Values may not add-up due to rounding

(...) Data not Available

() Negative Value

(-) Nil or Zero

**Appendix Table 66**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2009**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	Total
		Available for Wood Supply	
<b>Opening stock of timber resources</b>	6,675,286.6	311,724,824.2	318,400,110.9
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	87,773.0	204,803.7	292,576.7
Total additions to stock	87,773.0	204,803.7	292,576.7
<b>Reductions in stock</b>			
Removals	26,741.3	62,396.5	89,137.8
Forest Disturbances	3,370.8	7,865.3	11,236.1
Kaingin	240.8	561.8	802.6
Forest Fire	3,020.6	7,048.1	10,068.7
Illegal Logging	131.3	306.4	437.8
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	30,112.2	70,261.7	100,373.9
<b>Revaluations</b>	285,473.3	14,321,059.5	14,606,532.9
<b>Closing stock of timber resources</b>	7,018,420.8	326,180,425.7	333,198,846.5

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*() Negative Value*

*(-) Nil or Zero*

**Appendix Table 67**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2010**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	7,018,420.8	326,180,425.7	333,198,846.5
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	193,466.2	451,421.0	644,887.2
Total additions to stock	193,466.2	451,421.0	644,887.2
<b>Reductions in stock</b>			
Removals	20,859.6	48,672.5	69,532.1
Forest Disturbances	384,322.2	896,751.9	1,281,074.1
Kaingin	14,240.9	33,228.9	47,469.8
Forest Fire	370,035.5	863,416.2	1,233,451.7
Illegal Logging	45.8	106.8	152.6
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	405,181.9	945,424.3	1,350,606.2
<b>Revaluations</b>	312,526.3	10,836,387.6	11,148,913.9
<b>Closing stock of timber resources</b>	7,119,231.4	336,522,810.0	343,642,041.4

Note: Values may not add-up due to rounding

(...) Data not Available

() Negative Value

(-) Nil or Zero

**Appendix Table 68**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2011**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	7,119,231.4	336,522,810.0	343,642,041.4
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	162,482.0	379,124.7	541,606.8
Total additions to stock	162,482.0	379,124.7	541,606.8
<b>Reductions in stock</b>			
Removals	1,958.5	4,569.7	6,528.2
Forest Disturbances	2,672.6	6,236.0	8,908.5
Kaingin	-	-	-
Forest Fire	2,081.3	4,856.3	6,937.6
Illegal Logging	614.9	1,434.8	2,049.7
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	4,631.0	10,805.7	15,436.7
<b>Revaluations</b>	196,244.4	12,061,728.9	12,257,973.3
<b>Closing stock of timber resources</b>	7,473,326.8	348,952,858.0	356,426,184.8

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*() Negative Value*

*(-) Nil or Zero*

**Appendix Table 69**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2012**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	7,473,326.8	348,952,858.0	356,426,184.8
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	709,589.1	1,655,707.9	2,365,296.9
Total additions to stock	709,589.1	1,655,707.9	2,365,296.9
<b>Reductions in stock</b>			
Removals	1,660.9	3,875.5	5,536.4
Forest Disturbances	2,915.8	6,803.5	9,719.3
Kaingin	343.0	800.4	1,143.4
Forest Fire	1,911.2	4,459.4	6,370.6
Illegal Logging	686.1	1,600.8	2,286.9
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	4,576.7	10,679.0	15,255.7
<b>Revaluations</b>	(14,943.0)	11,624,552.6	11,609,609.5
<b>Closing stock of timber resources</b>	8,163,396.1	362,222,439.4	370,385,835.6

Note: Values may not add-up due to rounding

(...) Data not Available

() Negative Value

(-) Nil or Zero

**Appendix Table 70**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2013**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	Total
		Available for Wood Supply	
<b>Opening stock of timber resources</b>	8,163,396.1	362,222,439.4	370,385,835.6
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	1,099,559.2	2,565,638.2	3,665,197.5
Total additions to stock	1,099,559.2	2,565,638.2	3,665,197.5
<b>Reductions in stock</b>			
Removals	1,537.8	3,588.1	5,125.8
Forest Disturbances	65,046.3	151,774.6	216,820.9
Kaingin	23,686.1	55,267.6	78,953.8
Forest Fire	40,719.2	95,011.4	135,730.5
Illegal Logging	225.5	526.1	751.6
Pest/Diseases	415.5	969.5	1,385.0
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	66,584.0	155,362.7	221,946.8
<b>Revaluations</b>	(90,289.4)	13,056,786.5	12,966,497.1
<b>Closing stock of timber resources</b>	9,106,082.0	377,689,501.4	386,795,583.4

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*() Negative Value*

*(-) Nil or Zero*

**Appendix Table 71**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2014**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources	
		Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	9,106,082.0	377,689,501.4	386,795,583.4
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	2,251,585.7	5,253,700.0	7,505,285.7
Total additions to stock	2,251,585.7	5,253,700.0	7,505,285.7
<b>Reductions in stock</b>			
Removals	1,346.7	3,142.2	4,488.9
Forest Disturbances	145,362.6	339,179.4	484,541.9
Kaingin	23,046.6	53,775.3	76,821.9
Forest Fire	121,935.1	284,515.1	406,450.2
Illegal Logging	381.0	888.9	1,269.9
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	146,709.2	342,321.6	489,030.8
<b>Revaluations</b>	(690,557.9)	4,872,175.7	4,181,617.8
<b>Closing stock of timber resources</b>	10,520,400.5	387,473,055.5	397,993,456.0

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*() Negative Value*

*(-) Nil or Zero*

**Appendix Table 72**  
**Monetary Asset Account for Timber Resources, at Current Price, CAR: 2015**  
**(in Thousand Pesos)**

	Type of Timber Resource		
	Cultivated Timber Resources	Natural Timber Resources Available for Wood Supply	Total
<b>Opening stock of timber resources</b>	10,520,400.5	387,473,055.5	397,993,456.0
<b>Additions to stock</b>			
Natural growth	...	...	-
Reclassifications	...	...	-
Afforestation/Reforestation	591,473.4	1,380,104.7	1,971,578.1
Total additions to stock	591,473.4	1,380,104.7	1,971,578.1
<b>Reductions in stock</b>			
Removals	2,269.0	5,294.2	7,563.2
Forest Disturbances	179,012.7	417,696.3	596,709.1
Kaingin	16,189.5	37,775.5	53,965.1
Forest Fire	162,228.5	378,533.2	540,761.7
Illegal Logging	594.7	1,387.6	1,982.2
Pest/Diseases	-	-	-
Others	-	-	-
Felling residues	...	...	-
Natural losses	...	...	-
Catastrophic losses	...	...	-
Reclassifications	...	...	-
Total reductions in stock	181,281.7	422,990.6	604,272.2
<b>Revaluations</b>	39,676.6	7,210,580.9	7,250,257.5
<b>Closing stock of timber resources</b>	10,970,268.9	395,640,750.6	406,611,019.5

*Note: Values may not add-up due to rounding*

*(...) Data not Available*

*() Negative Value*

*(-) Nil or Zero*



**Appendix Table 73**  
**Physical Asset Account for Cultivated Timber Resources, CAR: 1999-2015 (in Hectares)**

	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>Opening stock of timber resources</b>	6,035.8	7,451.7	8,468.8	9,535.7	10,173.4	10,535.8	10,593.0	10,766.7	10,777.8
<b>Additions to stock</b>									
Natural growth	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Afforestation/Reforestation	1,455.1	1,056.3	1,078.2	854.7	398.1	120.3	253.5	206.1	868.8
Total additions to stock	1,455.1	1,056.3	1,078.2	854.7	398.1	120.3	253.5	206.1	868.8
<b>Reductions in stock</b>									
Removals	0.8	3.8	11.2	23.4	27.6	41.7	2.2	26.0	33.8
Forest Disturbances	38.4	35.4	...	193.6	8.1	21.5	77.6	169.0	19.8
Kaingin	...	0.9	...	-	-	-	4.7	0.7	1.3
Forest Fire	28.5	10.5	...	193.4	7.9	21.4	72.3	168.0	18.4
Illegal Logging	9.9	18.3	...	0.2	0.2	0.1	0.6	0.3	0.2
Pest/Diseases	-	-	...	-	-	-	-	-	-
Others	-	5.7	...	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Total reductions in stock	39.2	39.2	11.2	217.1	35.6	63.2	79.7	195.0	53.6
<b>Closing stock of timber resources</b>	7,451.7	8,468.8	9,535.7	10,173.4	10,535.8	10,593.0	10,766.7	10,777.8	11,593.0
<b>Supplementary information</b>									
Fellings	...	...	...	...	...	...	...	...	...

Note: Values may not add-up due to rounding .

(...) Data not available

(-) Nil or Zero

**Appendix Table 73 Continued**  
**Physical Asset Account for Cultivated Timber Resources, CAR: 1999-2015 (in Hectares)**

	2008	2009	2010	2011	2012	2013	2014	2015
<b>Opening stock of timber resources</b>	11,593.0	12,847.1	15,376.8	15,511.3	17,586.8	20,494.5	29,235.7	36,321.9
<b>Additions to stock</b>								
Natural growth	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Afforestation/Reforestation	1,302.0	2,571.0	665.4	2,081.4	2,913.3	8,820.0	7,253.7	5,323.8
Total additions to stock	1,302.0	2,571.0	665.4	2,081.4	2,913.3	8,820.0	7,253.7	5,323.8
<b>Reductions in stock</b>								
Removals	41.0	36.7	27.3	2.5	2.0	1.8	1.5	2.6
Forest Disturbances	6.9	4.6	503.6	3.4	3.6	77.0	166.0	201.4
Kaingin	0.9	0.3	18.7	-	0.4	28.0	26.3	18.2
Forest Fire	6.0	4.1	484.9	2.6	2.3	48.2	139.2	182.5
Illegal Logging	0.1	0.2	0.1	0.8	0.8	0.3	0.4	0.7
Pest/Diseases	-	-	-	-	-	0.5	-	-
Others	-	-	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Total reductions in stock	47.9	41.3	530.9	5.9	5.6	78.8	167.5	203.9
<b>Closing stock of timber resources</b>	12,847.1	15,376.8	15,511.3	17,586.8	20,494.5	29,235.7	36,321.9	41,441.7
<b>Supplementary information</b>								
Fellings	...	...	...	...	...	...	...	...

Note: Values may not add-up due to rounding .

(...) Data not available

(-) Nil or Zero

**Appendix Table 74**  
**Physical Asset Account for Natural Timber Resources, Available for Wood Supply, CAR: 1999-2015 (in Hectares)**

	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>Opening stock of timber resources</b>	495,562.7	498,866.7	501,239.7	503,729.4	505,217.2	506,062.9	506,196.2	506,601.6	506,627.5
<b>Additions to stock</b>									
Natural growth	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Afforestation/Reforestation	3,395.3	2,464.7	2,515.8	1,994.3	928.9	280.7	591.5	480.9	2,027.2
Total additions to stock	3,395.3	2,464.7	2,515.8	1,994.3	928.9	280.7	591.5	480.9	2,027.2
<b>Reductions in stock</b>									
Removals	1.8	9.0	26.2	54.7	64.3	97.4	5.1	60.6	78.9
Forest Disturbances	89.6	82.6	...	451.8	18.8	50.1	181.0	394.4	46.3
Kaingin	...	2.1	...	-	-	-	11.1	1.6	3.0
Forest Fire	66.5	24.5	...	451.2	18.4	49.9	168.6	392.1	42.9
Illegal Logging	23.1	42.7	...	0.6	0.4	0.2	1.3	0.7	0.4
Pest/Diseases	-	-	...	-	-	-	-	-	-
Others	-	13.3	...	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Total reductions in stock	91.4	91.6	26.2	506.5	83.2	147.4	186.1	455.0	125.1
<b>Closing stock of timber resources</b>	498,866.7	501,239.7	503,729.4	505,217.2	506,062.9	506,196.2	506,601.6	506,627.5	508,529.6
<b>Supplementary information</b>									
Fellings	...	...	...	...	...	...	...	...	...

Note: Values may not add-up due to rounding .

(...) Data not available

(-) Nil or Zero

**Appendix Table 74 Continued**  
**Physical Asset Account for Natural Timber Resources, Available for Wood Supply, CAR: 1999-2015 (in Hectares)**

	2008	2009	2010	2011	2012	2013	2014	2015
<b>Opening stock of timber resources</b>	508,529.6	511,455.9	517,358.6	517,672.4	522,515.3	529,299.9	549,695.9	566,230.3
<b>Additions to stock</b>								
Natural growth	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Afforestation/Reforestation	3,038.0	5,999.0	1,552.6	4,856.6	6,797.7	20,580.0	16,925.3	12,422.2
Total additions to stock	3,038.0	5,999.0	1,552.6	4,856.6	6,797.7	20,580.0	16,925.3	12,422.2
<b>Reductions in stock</b>								
Removals	95.6	85.5	63.8	5.8	4.7	4.2	3.6	6.0
Forest Disturbances	16.2	10.8	1,175.0	7.9	8.3	179.7	387.3	469.9
Kaingin	2.1	0.8	43.5	-	1.0	65.4	61.4	42.5
Forest Fire	13.9	9.7	1,131.3	6.2	5.5	112.5	324.9	425.8
Illegal Logging	0.1	0.4	0.1	1.8	2.0	0.6	1.0	1.6
Pest/Diseases	-	-	-	-	-	1.1	-	-
Others	-	-	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Total reductions in stock	111.7	96.3	1,238.8	13.7	13.1	184.0	390.9	475.9
<b>Closing stock of timber resources</b>	511,455.9	517,358.6	517,672.4	522,515.3	529,299.9	549,695.9	566,230.3	578,176.7
<b>Supplementary information</b>								
Fellings	...	...	...	...	...	...	...	...

Note: Values may not add-up due to rounding .

(...) Data not available

(-) Nil or Zero

**Appendix Table 75**  
**Physical Asset Account for Natural Timber Resources, Available for Wood Supply, CAR: 1999-2015 (in Thousands of Cubic Meters)**

	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>Opening stock of timber resources</b>	1,407.7	1,448.9	1,494.5	1,558.3	1,661.8	1,898.1	2,140.6	2,310.7	2,464.6
<b>Additions to stock</b>									
Natural growth	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Afforestation/Reforestation	48.0	52.4	65.8	141.3	242.5	253.5	184.0	187.8	148.9
Total additions to stock	48.0	52.4	65.8	141.3	242.5	253.5	184.0	187.8	148.9
<b>Reductions in stock</b>									
Removals	0.1	0.7	2.0	4.1	4.8	7.3	0.4	4.5	5.9
Forest Disturbances	6.7	6.2	...	33.7	1.4	3.7	13.5	29.4	3.5
Kaingin	...	0.2	...	-	-	-	0.8	0.1	0.2
Forest Fire	5.0	1.8	...	33.7	1.4	3.7	12.6	29.3	3.2
Illegal Logging	1.7	3.2	...	0.0	0.0	0.0	0.1	0.1	0.0
Pest/Diseases	-	-	...	-	-	-	-	-	-
Others	-	1.0	...	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Total reductions in stock	6.8	6.8	2.0	37.8	6.2	11.0	13.9	34.0	9.3
<b>Closing stock of timber resources</b>	1,448.9	1,494.5	1,558.3	1,661.8	1,898.1	2,140.6	2,310.7	2,464.6	2,604.2
<b>Supplementary information</b>									
Fellings	...	...	...	...	...	...	...	...	...

Note: Values may not add-up due to rounding .

(...) Data not available

(-) Nil or Zero

**Appendix Table 75 Continued**  
**Physical Asset Account for Natural Timber Resources, Available for Wood Supply, CAR: 1999-2015 (in Thousands of Cubic Meters)**

	2008	2009	2010	2011	2012	2013	2014	2015
<b>Opening stock of timber resources</b>	2,604.2	2,665.2	2,679.0	2,630.6	2,665.5	2,815.9	3,029.0	3,447.7
<b>Additions to stock</b>								
Natural growth	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Afforestation/Reforestation	69.4	21.0	44.2	35.9	151.4	226.8	447.9	115.9
Total additions to stock	69.4	21.0	44.2	35.9	151.4	226.8	447.9	115.9
<b>Reductions in stock</b>								
Removals	7.1	6.4	4.8	0.4	0.4	0.3	0.3	0.4
Forest Disturbances	1.2	0.8	87.7	0.6	0.6	13.4	28.9	35.1
Kaingin	0.2	0.1	3.3	-	0.1	4.9	4.6	3.2
Forest Fire	1.0	0.7	84.5	0.5	0.4	8.4	24.3	31.8
Illegal Logging	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Pest/Diseases	-	-	-	-	-	0.1	-	-
Others	-	-	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Total reductions in stock	8.3	7.2	92.5	1.0	1.0	13.7	29.2	35.5
<b>Closing stock of timber resources</b>	2,665.2	2,679.0	2,630.6	2,665.5	2,815.9	3,029.0	3,447.7	3,528.1
<b>Supplementary information</b>								
Fellings	...	...	...	...	...	...	...	...

Note: Values may not add-up due to rounding .

(...) Data not available

(-) Nil or Zero

**Appendix Table 76**  
**Physical Asset Account for Natural Timber Resources, Available for Wood Supply, CAR: 1999-2015 (in Thousands of Cubic Meters)**

	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>Opening stock of timber resources</b>	87,168.1	87,264.1	87,370.5	87,519.4	87,761.0	88,312.2	88,878.1	89,275.0	89,634.1
<b>Additions to stock</b>									
Natural growth	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Afforestation/Reforestation	112.0	122.4	153.5	329.7	565.7	591.5	429.4	438.3	347.4
Total additions to stock	112.0	122.4	153.5	329.7	565.7	591.5	429.4	438.3	347.4
<b>Reductions in stock</b>									
Removals	0.3	1.6	4.6	9.5	11.2	17.0	0.9	10.6	13.7
Forest Disturbances	15.6	14.4	...	78.7	3.3	8.7	31.5	68.7	8.1
Kaingin	...	0.4	...	-	-	-	1.9	0.3	0.5
Forest Fire	11.6	4.3	...	78.6	3.2	8.7	29.4	68.3	7.5
Illegal Logging	4.0	7.4	...	0.1	0.1	0.0	0.2	0.1	0.1
Pest/Diseases	-	-	...	-	-	-	-	-	-
Others	-	2.3	...	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...	...
Total reductions in stock	15.9	16.0	4.6	88.2	14.5	25.7	32.4	79.3	21.8
<b>Closing stock of timber resources</b>	87,264.1	87,370.5	87,519.4	87,761.0	88,312.2	88,878.1	89,275.0	89,634.1	89,959.7
<b>Supplementary information</b>									
Fellings	...	...	...	...	...	...	...	...	...

Note: Values may not add-up due to rounding .

(...) Data not available

(-) Nil or Zero

**Appendix Table 76 Continued**  
**Physical Asset Account for Natural Timber Resources, Available for Wood Supply, CAR: 1999-2015 (in Thousands of Cubic Meters)**

	2008	2009	2010	2011	2012	2013	2014	2015
<b>Opening stock of timber resources</b>	89,959.7	90,102.1	90,134.2	90,021.4	90,102.8	90,453.7	90,951.0	91,928.0
<b>Additions to stock</b>								
Natural growth	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Afforestation/Reforestation	161.8	48.9	103.1	83.8	353.2	529.3	1,045.1	270.5
Total additions to stock	161.8	48.9	103.1	83.8	353.2	529.3	1,045.1	270.5
<b>Reductions in stock</b>								
Removals	16.6	14.9	11.1	1.0	0.8	0.7	0.6	1.0
Forest Disturbances	2.8	1.9	204.7	1.4	1.5	31.3	67.5	81.9
Kaingin	0.4	0.1	7.6	-	0.2	11.4	10.7	7.4
Forest Fire	2.4	1.7	197.1	1.1	1.0	19.6	56.6	74.2
Illegal Logging	0.0	0.1	0.0	0.3	0.3	0.1	0.2	0.3
Pest/Diseases	-	-	-	-	-	0.2	-	-
Others	-	-	-	-	-	-	-	-
Felling residues	...	...	...	...	...	...	...	...
Natural losses	...	...	...	...	...	...	...	...
Catastrophic losses	...	...	...	...	...	...	...	...
Reclassifications	...	...	...	...	...	...	...	...
Total reductions in stock	19.5	16.8	215.8	2.4	2.3	32.1	68.1	82.9
<b>Closing stock of timber resources</b>	90,102.1	90,134.2	90,021.4	90,102.8	90,453.7	90,951.0	91,928.0	92,115.6
<b>Supplementary information</b>								
Fellings	...	...	...	...	...	...	...	...

Note: Values may not add-up due to rounding .

(...) Data not available

(-) Nil or Zero



# Acronyms

CAR	Cordillera Administrative Region
CLUP	Comprehensive Land Use Plan
DBM	Department of Budget and Management
DENR	Department of Environment and Natural Resources
EMB	Environmental Management Bureau
ENRA	Environment and Natural Resource Accounting
ENRAD	Environment and Natural Resources Accounts Division
FLUP	Forest Land Use Plan
FMB	Forest Management Bureau
MAS	Macroeconomic Accounts Service
MDG	Millennium Development Goals
MGB	Mines and Geosciences Bureau
NAMRIA	National Mapping and Resource Information Authority
NEDA	National Economic and Development Authority
NGP	National Greening Program
PEENRA	Philippine Economic-Environmental and Natural Resources Accounting
PFS	Philippine Forestry Statistics
PMD	Planning Management Division
PMED	Program Monitoring and Evaluation Division
PSA	Philippine Statistics Authority
SDG	Sustainable Development Goals
SEEA	System of Environmental-Economic Accounting
SNA	System of National Accounts
SOCD	Statistical Operations and Coordination Division
UN	United Nations
UNSC	United Nations Statistical Commission
WWRRC	Watershed and Water Resources Research Center

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