Forest Account

Republic of the Philippines

Regional Experts Workshop on Land Accounting for SDG Monitoring

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OUTLINE

▶ Philippine initiatives in Land Asset Accounting

▶ Environmental concerns to be addressed by forest account

▶ Approach in producing the forest account

▶ Results of the forest account

▶ Challenges

▶ Policy application

▶ Further work

PHILIPPINE INITIATIVES IN LAND ASSET ACCOUNTING

Environmental and Natural Resources Accounting Project, 1991

- The initial compilation of natural resources accounts in the Philippines took place in 1991 through the Environmental and Natural Resources Accounting Project (ENRAP), a US Agency for International Development (USAID) funded project.

- It was spearheaded by the Department of Environment and Natural Resources, with technical support from the defunct National Statistical Coordination Board (NSCB).

PHILIPPINE INITIATIVES IN LAND ASSET ACCOUNTING

Environmental and Natural Resources Accounting Project, 1991

- Adopting the Peskin Framework, the ENRAP compiled natural capital accounts (i.e. forests, fisheries, minerals, soils, air & water pollution), as well as conducted special studies for the generation of a number of parameters.

- Among major outputs of the Project is the development of area accounts for dipterocarp forests, mangrove resources, pine forests, plantation forests, and rattan resources for the period 1970-1989.

PHILIPPINE INITIATIVES IN LAND ASSET ACCOUNTING

Integrated Environmental Management for Sustainable Development (IEMSD) Programme: Environment and Natural Resources Accounts, 1995

- In 1995 the United Nations Development Programme's (UNDP) Country Programme on Integrated Environmental Management for Sustainable Development (IEMSD) was implemented in the Philippines.

- The Programme's ENRA component was spearheaded by the former NSCB, adopting the UN System of Integrated Environmental and Economic Accounting (SEEA) 1993 framework, a satellite account of the SNA.

PHILIPPINE INITIATIVES IN LAND ASSET ACCOUNTING

Integrated Environmental Management for Sustainable Development (IEMSD) Programme: Environment and Natural Resources Accounts, 1995

- Built on some of the earlier works of ENRAP, five asset accounts – fishery, forest, minerals, land and soil, and water resources – were compiled.

- Physical and monetary accounts for the period 1988-1994 on dipterocarp forests, pine forests and rattan for forest resources, and physical and monetary account for the period 1988-1993 on land resources devoted to agricultural uses were among the Project's outputs.

PHILIPPINE INITIATIVES IN LAND ASSET ACCOUNTING

ENRA II Project: Institutionalization of the Philippine Economic-Environmental and Natural Resources (PEENRA) System, 1998

- The ENRA II Project focused on the development and enhancement capacities for environmental and natural resource accounting.

- The fundamental objective of the Project was to institutionalize the generation and utilization of the PEENRA that will contribute to the mainstreaming of environmental concerns in policy formulation, planning and decision making at the national level and in selected regions and provinces.

PHILIPPINE INITIATIVES IN LAND ASSET ACCOUNTING

ENRA II Project: Institutionalization of the Philippine Economic-Environmental and Natural Resources (PEENRA) System, 1998

- Compilation of asset accounts were also piloted at the sub-national level.

- The Cordillera Asset Accounts was compiled, including physical and monetary accounts of the region's dipterocarp and pine forest resources, as well as its lands devoted to agricultural uses.

PHILIPPINE INITIATIVES IN LAND ASSET ACCOUNTING

Philippine Economic-Environment and Natural Resources Accounting (PEENRA) Project, 2014 – Present

- Focusing on updating and development of environmental accounts and statistics based on international frameworks such as the UN System of Environmental-Economic Accounting (SEEA) 2012 and the UN Framework for the Development of Environment Statistics (FDES) 2013.

- The Project aims to compile environmental accounts following the UN SEEA 2012 – Central Framework.

- In particular, asset accounts on water, energy and land resources are currently being compiled.

ENVIRONMENTAL CONCERNS TO BE ADDRESSED BY FOREST ACCOUNT

▶ Deforestation due to unsustainable forest management

▶ Migration from upland to forest areas

▶ Lack of monitoring of changes on forest cover and effectiveness of programs on forest management and rehabilitation

▶ Biodiversity loss due to unsustainable forest management and conversion of forest areas to other uses

Approach in producing the manual

OBJECTIVES OF THE STUDY

▶ To support the institutionalization of environmental-economic accounting following the UN SEEA 2012 – Central Framework, particularly in land 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 DENR, Department of Budget and Management, and relevant sectoral agencies.

▶ Indicators may also be used in monitoring policies and programs that ensure sustainable development, including the targets stated in the SDGs.

FRAMEWORK OF THE STUDY

- ► System of Environmental-Economic Accounting (SEEA) 2012—Central Framework as the accounting framework

- ► Asset accounting - measure the quantity and value of environmental assets and to record and explain changes in those assets over time (UN SEEA 2012—CF, 2014, p. 133).

- ► Environmental assets - the naturally occurring living and non-living components of the Earth, together constituting the biophysical environment, which may provide benefits to humanity (UN SEEA 2012—CF, 2014, p.13).

FRAMEWORK OF THE STUDY

- ▶ Land – a unique environmental asset that delineates the space in which economic activities and environmental processes take place and within which environmental assets and economic assets are located (UN SEEA 2012—CF, 2014 p.174).

- ▶ Land use – reflects both the activities undertaken and the institutional arrangements put in place for given area (UN SEEA 2012—CF, 2014 p. 175)

- ▶ Land cover – the observed physical and biological cover of the Earth's surface and includes natural vegetation and abiotic (non-living) surfaces (UN SEEA 2012—CF, 2014, p. 176)

FRAMEWORK OF THE STUDY

▶ General structure of physical account for land cover

Opening stock of resources	
Additions to stock	
Managed expansion	Represents an increase in the area of land cover type due to human activity.
Natural expansion	An increase in the area resulting from natural processes including seeding, sprouting, suckering or layering.
Upwards reappraisals	Reflect changes due to use of updated information that permits a reassessment of the size of the area of different land covers.
Reductions in stock	
Managed regression	A decrease in the area of land cover type due to human activity.
Natural regression	A decrease in the area of land cover type due to natural reasons.
Downwards reappraisals	Reflect changes due to use of updated information that permits a reassessment of the size of the area of different land covers.
Closing stock of resources	

Source: UN SEEA 2012—Central Framework, p. 179

OPERATIONALIZATION OF THE FRAMEWORK

▶ Bridge Table between the SEEA 2012 Interim Land Cover Classification and NAMRIA Land Cover Classification

SEEA 2012—Central Framework	Department of Environment and Natural Resources – National Mapping and Resource Information Authority (DENR-NAMRIA)
Tree-covered areas	Closed Forest
	Open Forest
Tree covered areas/ Shrub covered areas/Grassland	Fallow
Artificial surfaces (including urban and associated areas)	Built-up
Herbaceous crops	Annual cropland
Woody crops	Perennial cropland
Multiple or layered crops	Annual cropland/ Perennial cropland
Grassland	Grassland
	Wooded grassland

Note: The land cover classification "Permanent snow and glaciers" is not applicable in the Philippines. Also, no equivalent local classification matched for the "Sparsely natural vegetated areas" and "Coastal water bodies and inter-tidal areas". "Fallow" area can either be classified as "Tree-covered area", "Shrub covered areas", or "Grassland" depending on major physical characteristics.

OPERATIONALIZATION OF THE FRAMEWORK

▶ Bridge Table between the SEEA 2012 Interim Land Cover Classification and NAMRIA Land Cover Classification

SEEA 2012—Central Framework	DENR-NAMRIA
Mangroves	Mangrove forest
Shrub covered areas	Shrubland
Shrubs and/or herbaceous vegetation, aquatic or regularly flooded	Marshland
Terrestrial barren land	Open/barren area
Inland water bodies	Inland water
	Fishpond
Sparsely natural vegetated areas	
Coastal water bodies and inter-tidal areas	
Permanent snow and glaciers	

Note: The land cover classification "Permanent snow and glaciers" is not applicable in the Philippines. Also, no equivalent local classification matched for the "Sparsely natural vegetated areas" and "Coastal water bodies and inter-tidal areas". "Fallow" area can either be classified as "Tree-covered area", "Shrub covered areas", or "Grassland" depending on major physical characteristics.

OPERATIONALIZATION OF THE FRAMEWORK

▶ Scope and coverage: Closed Forest and Open Forest (in hectares); 2003—2013

▶ Data and Data Source: Georeferenced data from the NAMRIA; and administrative data from the Forest Management Bureau (FMB) and DENR – Central Office Philippines

RESULTS

▶ Area of forest cover increased from 6.35 million hectares in 2003 to 7.19 million hectares in 2013, with an annual average growth rate of 1.2%.

▶ The Increase can be mainly attributed to the afforestation/reforestation activities of the DENR. A significant increase in reforested area was recorded starting 2011.

▶ Only about 47,000 hectares of area affected by forest disturbance was estimated for the period covered.

RESULTS

Physical Asset Account on Land Cover: Forest Cover, Preliminary Estimates, Philippines

	Area (In thousand hectares)										
	2003	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Opening Stock	6,343	6,354	6,371	6,382	6,385	6,408	6,448	6,498	6,529	6,651	6,863
Addition to Stock	15	20	16	7	26	42	53	35	127	221	326
Managed expansion[1]	15	20	16	7	26	42	53	35	127	221	326
Area Reforested/Planted[1a]	15	20	16	7	26	42	53	35	-	-	-
Reforested Areas for Development under NGP[1b]	-	-	-	-	-	-	-	-	127	221	326
Ancestral Domain	-	-	-	-	-	-	-	-	5	6	15
Forestland	-	-	-	-	-	-	-	-	104	199	289
Forestland/Riverbanks	-	-	-	-	-	-	-	-	0	0	4
Military Reservation	-	-	-	-	-	-	-	-	0	0	0
Protected Area	-	-	-	-	-	-	-	-	13	11	15
Urban Areas, School Parks, Roadside	-	-	-	-	-	-	-	-	5	5	3
Reduction to Stock	4	3	4	4	3	2	3	4	6	9	4
Managed/ natural regression[2]	4	3	4	4	3	2	3	4	6	9	4
Area affected by forest disturbances[3a]	4	3	4	4	3	2	3	4	6	9	4
Closing Stock	6,354	6,371	6,382	6,385	6,408	6,448	6,498	6,529 [a]	6,651	6,863	7,185

Data sources:

1/ *Department of Environment and Natural Resources, Forest Management Bureau* . Area Reforested/Planted

    2a/ Total area adjusted to exclude coastal and/or mangrove projects

    2b/ Start of the National Greening Program (E.O. 26, series of 2011). Total area adjusted to exclude reforestation activities in "Mangrove areas"

2/ *Department of Environment and Natural Resources, Program Monitoring and Evaluation Division* . Area affected by forest disturbances

    3a/ Total area affected by forest disturbances adjusted to fill data gaps using imputation for Kaingin and Illegal logging, and interpolation for Forest Fire.

a/ *National Mapping and Resource Information Authority* . 2010 Forest/Land Cover Statistics

Closing Stock and Changes in Stock, 2003 to 2013
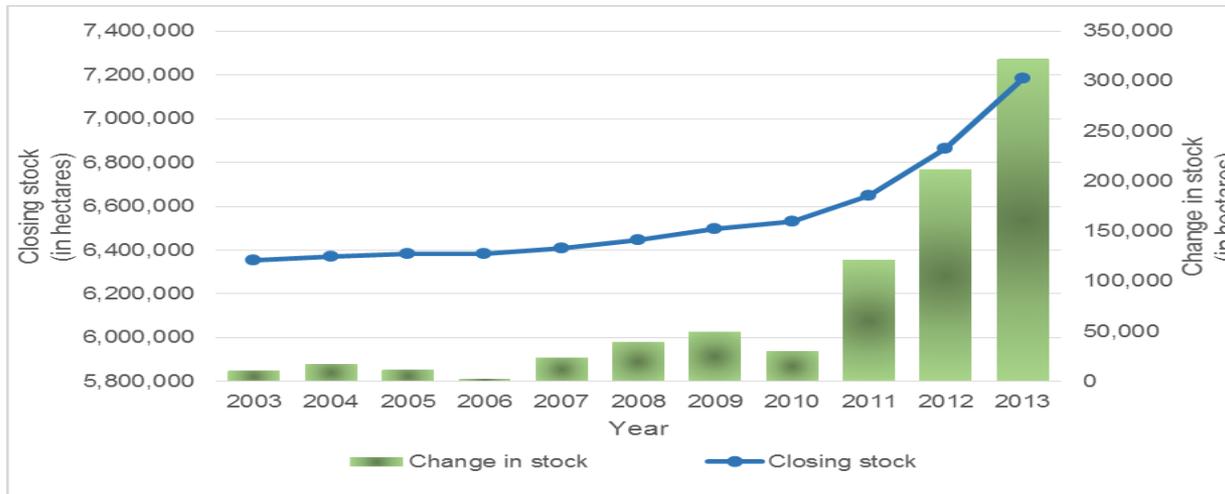
Area reforested/planted versus Area Affected by Forest Disturbance, 2003 to 2013
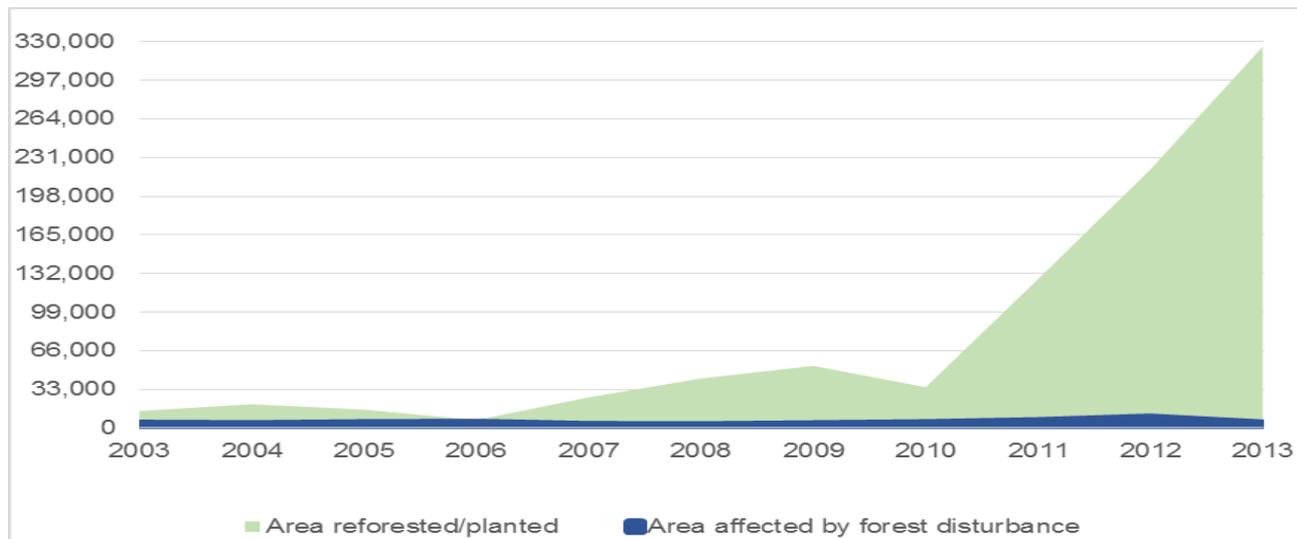
Challenges

▶ Availability of data (e.g., deforestation rate, growth of the natural forest)

▶ Addressing inconsistencies of geospatial information (e.g., extent of public forest and alienable and disposable lands)

▶ Sustaining coordination between data providers and account producers, and the account users

▶ Validating results of the account

▶ Application of the results for policy and decision-making

Challenges

▶ Enactment of Forest Land Boundary delineation through legislation

▶ Use of forest account in monitoring SDGs (Goal 15.2), 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.

Policy applications

- ▶ Monitoring changes in forest cover

- ▶ Identification of needed intervention for sustainable forest management

- ▶ Assessment of effectiveness of programs on forest management and rehabilitation

- ▶ Address the increasing rate of deforestation in natural forest

Next Steps

- ▶ Research on other factors that can affect forest cover area (deforestation rate; regrowth rate of forests, etc.)

- ▶ Review and standardize local land cover terms and definitions

- ▶ Strengthen data support through coordinative mechanism

- ▶ Validation of the results of the accounts

Next Steps

▶ Implementation of the Natural Forest Monitoring System

▶ Address inconsistencies in geospatial data thru the DENR Control Map

▶ Regular updating of spatial information/data in the Philippine Geoportal (www.geoportal.gov.ph)

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