

# LAND ASSET ACCOUNTS: THE CORDILLERA EXPERIENCE

by

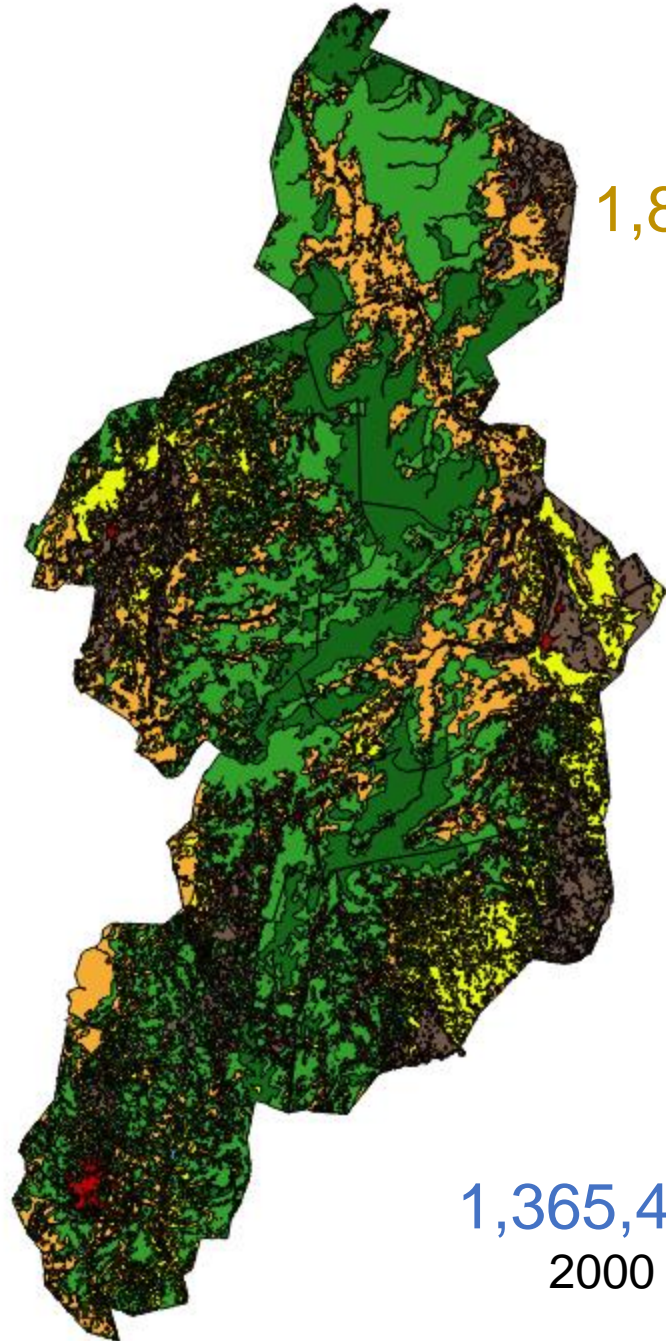
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# Introduction



1,829,368 ha | Land Area

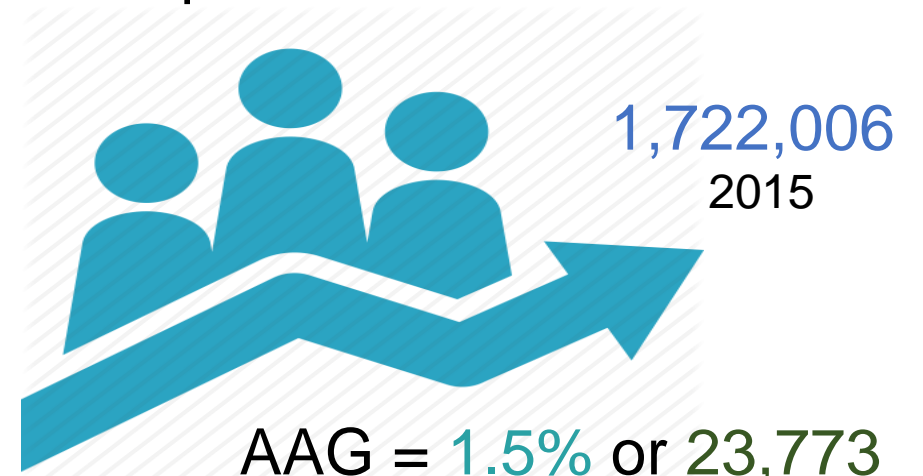
275,769 ha of A&D (15.1%)

1,553,599 ha of forest land (84.9%)

Source: DENR-NAMRIA (2015)

## Population Growth

1,365,412  
2000



1,722,006  
2015

AAG = 1.5% or 23,773

Source: PSA (2015)



# Objectives of the Study

## Main Objectives



Support the institutionalization of environmental-economic accounting



Strengthen data support for environmental accounting

## Specific Objectives



Come up with the asset accounts for land



Value the land according to use in the economy



Establish database on physical and monetary asset accounts for land



Come up with recommendations for the improvement of the accounting



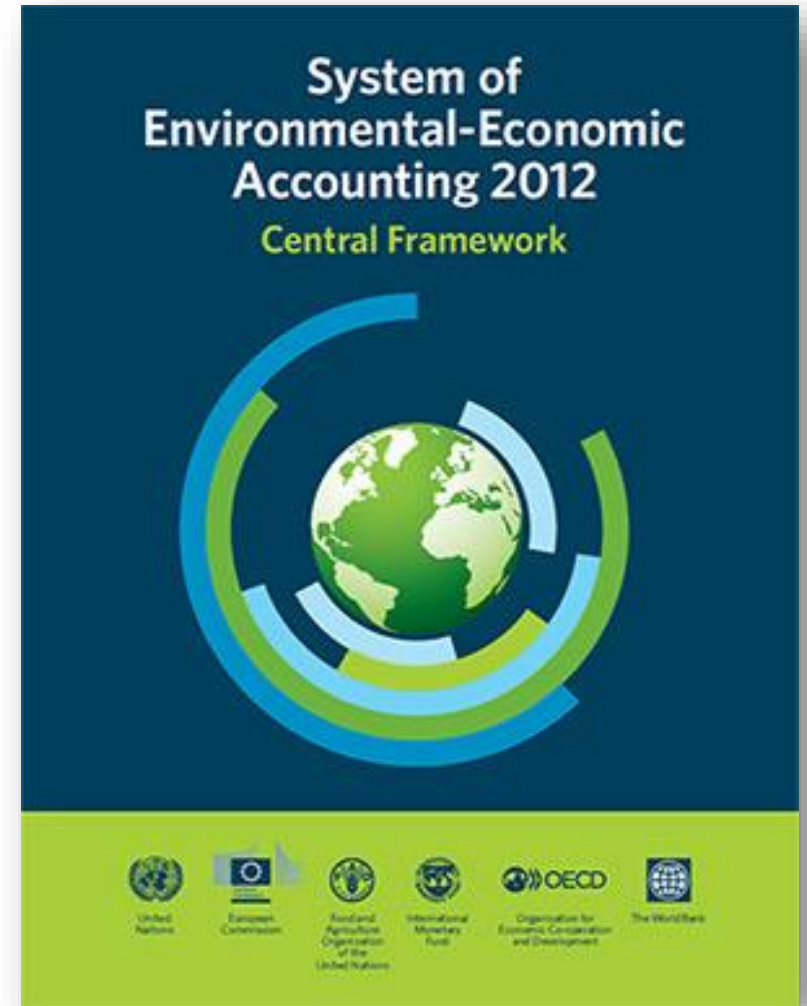
## Framework of the Study

**Land use** reflects both the activities undertaken and the institutional arrangements put in place in an area

Example: Protected Areas

**Land Cover** refers to the observed physical and biological cover of the Earth's surface

Examples: Built-up areas and tree-covered areas





## Table 1. Bridge Table on SEEA 2012 Interim Land Cover Classification and NAMRIA Land Cover

SEEA 2012 – Central Framework	DENR-NAMRIA
Artificial surfaces (including urban and associated areas)	Built-up area
Crops	Annual cropland
	Perennial cropland
Shrub-covered areas	Shrub land
	Fallow
	Wooded grassland
Tree-covered areas	Closed Forest
	Open Forest
	Plantation Forest
Inland water bodies	Inland water
	Fishpond
Mangroves	Mangrove forest
Grassland	Grassland
Terrestrial barren land	Barren land
Regularly flooded areas	Marshland/Swamp
Sparse natural vegetated areas	
Permanent snow and glaciers	
Coastal water bodies and inter-tidal areas	





# Operational Framework

## Sources of Data



CAR Land Cover, 2010 & 2015  
Reforestation Efforts  
Timber Production  
Confiscated Timber Resources  
Forest Destruction by Cause



Land Conversion



Area for Aquaculture



Zonal Value



# Operational Framework

## Estimation Methodology

### Physical Asset Account

- 2010 & 2015 Land Cover served as baseline data (adjusted)
- Stocks increase due to natural and/or managed expansion
- Decrease in stock is brought about by natural and/or managed regression

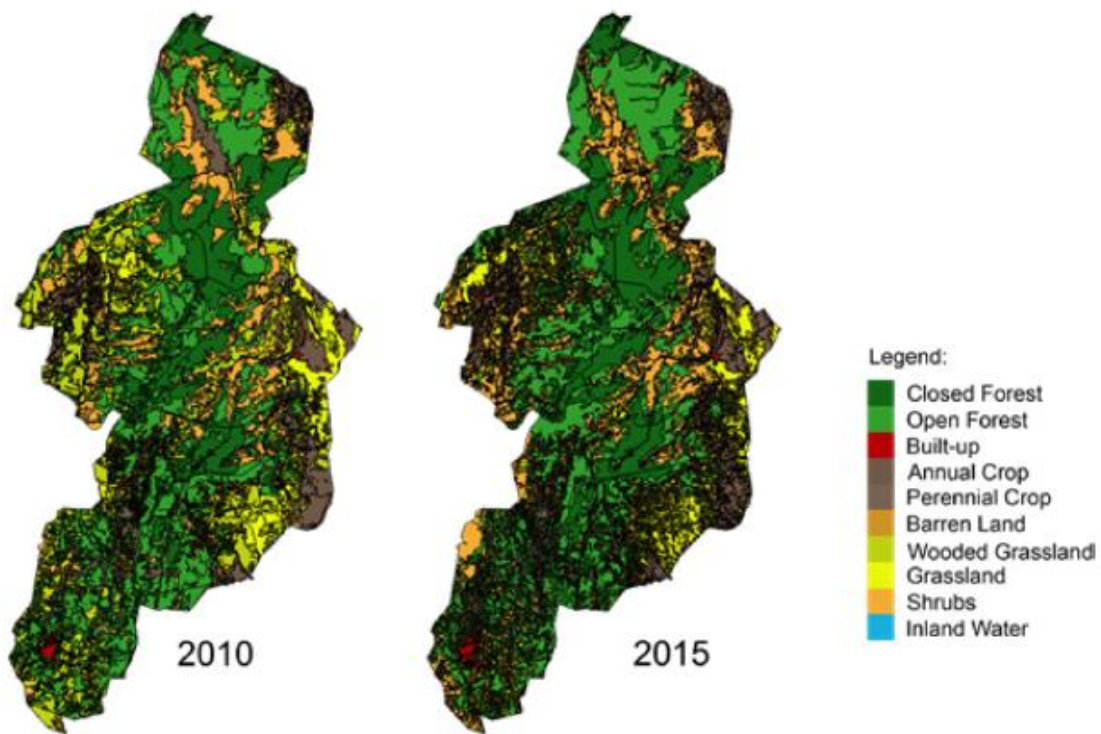
### Monetary Asset Account

- Area of land was multiplied by the average zonal value
- Revaluation was computed as residual



## Results and Discussions

**Figure 1. Land Cover Map, CAR: 2010 and 2015**



Source: NAMRIA

**Table 2. Land Cover\*, CAR: 2010 (in Hectares)**

Land Cover	2010	2015
Closed forest	249,149.1	249,123.2
Open Forest	536,075.6	567,021.2
Plantation Forest	15,376.8	40,620.8
Built-up area	15,646.1	23,346.3
Annual Crop	226,397.0	240,354.5
Perennial Crop	2,355.1	5,019.9
Barren land	12,915.0	10,627.7
Grassland	457,087.9	159,122.7
Fallow	-	-
Shrubs	291,350.0	510,377.8
Wooded grassland	-	-
Fishpond	-	218.5
Inland Water	22,745.4	23,535.4
<b>Total</b>	<b>1,829,368.0</b>	<b>1,829,368.0</b>

Note: \* Adjusted land cover

Source: PSA-CAR





### Table 3. Land Cover Estimates, CAR: 1999-2015 (in Hectares)

Year	Artificial surfaces	Crops	Grassland	Tree-covered area	Shrub-covered area	Regularly flooded areas	Terrestrial barren land	Inland water bodies
1999	15,604.1	228,794.2	465,152.9	787,665.8	296,490.7	..	12,915.0	22,745.4
2000	15,604.1	228,794.2	463,175.3	790,903.9	295,230.2	..	12,915.0	22,745.4
2001	15,604.1	228,794.2	461,003.2	794,460.5	293,845.7	..	12,915.0	22,745.4
2002	15,608.1	228,790.1	461,279.6	794,008.1	294,021.8	..	12,915.0	22,745.4
2003	15,616.1	228,782.1	460,605.9	795,111.1	293,592.4	..	12,915.0	22,745.4
2004	15,619.8	228,778.4	460,663.9	795,016.2	293,629.4	..	12,915.0	22,745.4
2005	15,624.8	228,773.4	460,937.3	794,568.6	293,803.6	..	12,915.0	22,745.4
2006	15,629.8	228,768.5	462,288.6	792,355.9	294,664.9	..	12,915.0	22,745.4
2007	15,631.4	228,766.8	460,789.3	794,810.8	293,709.3	..	12,915.0	22,745.4
2008	15,641.5	228,756.7	458,292.2	798,899.6	292,117.6	..	12,915.0	22,745.4
2009	15,646.0	228,752.2	453,178.8	807,272.3	288,858.3	..	12,915.0	22,745.4
2010	15,646.1	228,752.1	457,087.9	800,871.5	291,350.0	..	12,915.0	22,745.4
2011	17,384.0	228,932.2	434,177.8	805,443.5	308,025.9	..	12,457.5	22,947.1
2012	18,633.6	232,475.0	399,541.0	811,857.1	331,712.5	..	12,000.1	23,148.8
2013	21,621.7	238,925.4	300,271.0	830,535.8	403,121.0	.	11,542.6	23,350.5
2014	23,262.9	241,622.8	218,218.3	845,939.5	465,687.2	..	11,085.2	23,552.2
2015	23,346.3	245,374.3	159,122.7	856,765.3	510,377.8	..	10,627.7	23,753.9
2016	23,347.4	245,373.2	156,031.3	869,772.2	500,462.3	..	10,627.7	23,753.9
2017	23,348.0	245,372.7	152,149.3	886,105.5	488,011.0	..	10,627.7	23,753.9
2018	23,348.7	245,371.9	149,418.4	897,595.8	479,251.6	..	10,627.7	23,753.9

Note: (..) Data not available  
 Source: PSA-RSSO CAR



# Table 4. Estimated Value of Land, CAR: 1999-2015 (in million PHP)

Year	Agriculture	Forestry	Aquaculture	Built-up	Total
1999	17,266.83	21,004.42	...	1,055,604.61	1,093,875.86
2000	17,266.83	21,090.77	...	1,055,604.61	1,093,962.21
2001	17,266.83	21,185.61	...	1,055,604.61	1,094,057.05
2002	33,526.25	38,115.83	...	1,050,898.44	1,122,540.52
2003	33,525.07	38,168.78	...	1,051,437.11	1,123,130.96
2004	33,524.53	38,164.23	...	1,051,685.61	1,123,374.37
2005	33,523.80	38,142.74	...	1,052,024.25	1,123,690.78
2006	33,523.07	38,036.52	...	1,052,356.81	1,123,916.41
2007	33,522.83	38,154.37	...	1,052,470.35	1,124,147.54
2008	33,521.35	38,350.65	-	1,053,146.25	1,125,018.25
2009	59,953.63	59,118.40	67.97	911,356.76	1,030,496.76
2010	61,605.93	65,950.26	64.31	911,549.49	1,039,169.99
2011	61,654.43	66,326.76	66.54	1,012,798.44	1,140,846.16
2012	62,608.55	66,854.90	68.12	1,085,597.10	1,215,128.67
2013	64,345.74	68,393.06	69.32	1,259,686.87	1,392,495.00
2014	65,072.18	69,661.53	68.30	1,355,302.40	1,490,104.41
2015	66,082.52	70,553.01	65.66	1,360,162.60	1,496,863.79
2016	66,082.21	71,624.11	68.86	1,360,229.17	1,498,004.35
2017	66,082.07	72,969.12	66.02	1,360,259.34	1,499,376.55
2018	66,081.86	73,915.33	66.02	1,360,304.51	1,500,367.72

Note: (..) Data not available  
 (-) Nil or zero  
 Source: PSA-RSSO CAR



## Recommendations

- a. Consolidate result in a databank;
- b. Improve and update databanks. Update the following statistics:
  - i. Actual area effectively converted
  - ii. Data implying the changes in the area of land cover and;
  - iii. Provincial estimates of data
- c. Standardize local terms and definitions in accordance to international standards
- d. Conduct special studies on land valuation to provide overview of existing land market

*Good day and Mabuhay!*