Ecosystem Accounts in Southern Palawan, Philippines

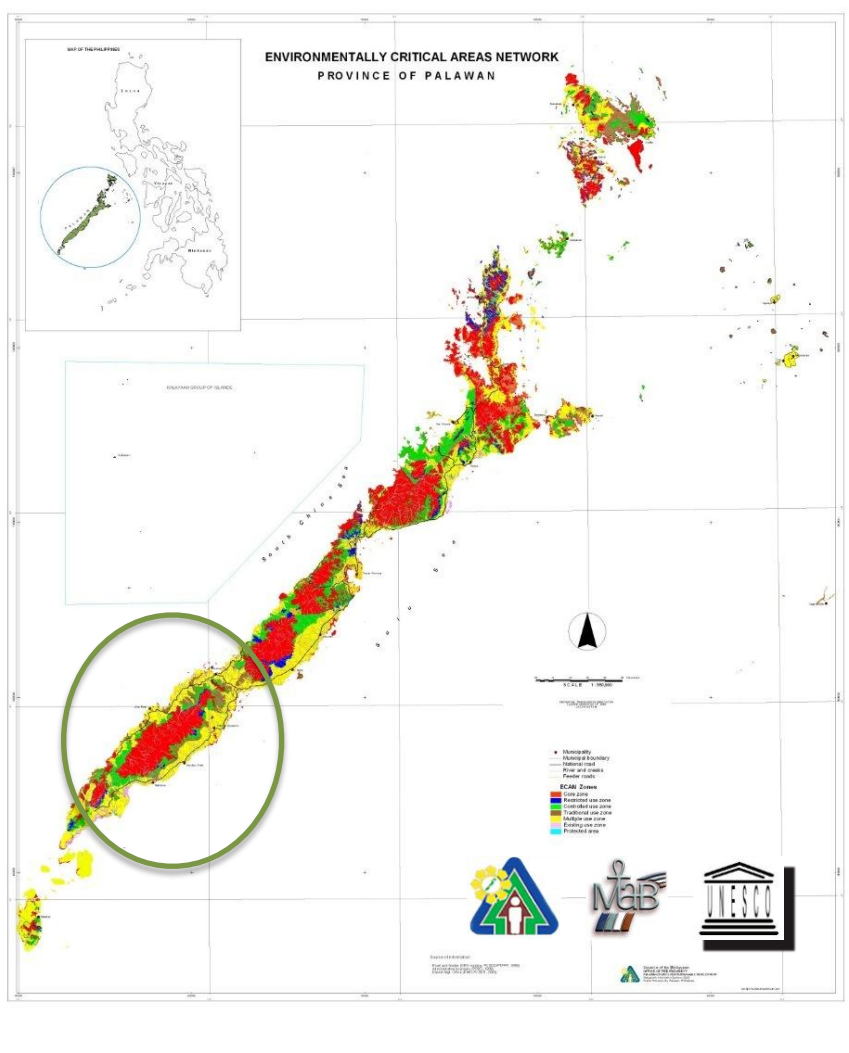
February 14, 2014

© CI

Context of Ecosystem Accou

Context of Ecosystem Accounts

Drivers of Ecosystem Change in Southern Palawan



Global demand for minerals

High demand for cash crops

Population growth

3 Key Policy Issues

3 Key Policy Issues

Conflicting land uses

Conservation vs. extractive resource use

Governance

Policy Uses

Policy Uses

Enhanced monitoring of Tenurial instruments compliance to existing policies i.e. mining law, water, wildlife act & solid waste

Regulation of resource use, i.e. non-timber forest products

Zoning i.e. input to catchment mgt. planning & CLUPs, PA subzone & ADSDPP

Compensation, charges, benefit sharing, PES

Policy Review of R.A. 7611, inputs to EO 79, RA establishing the Mt. Mantalingahan and other

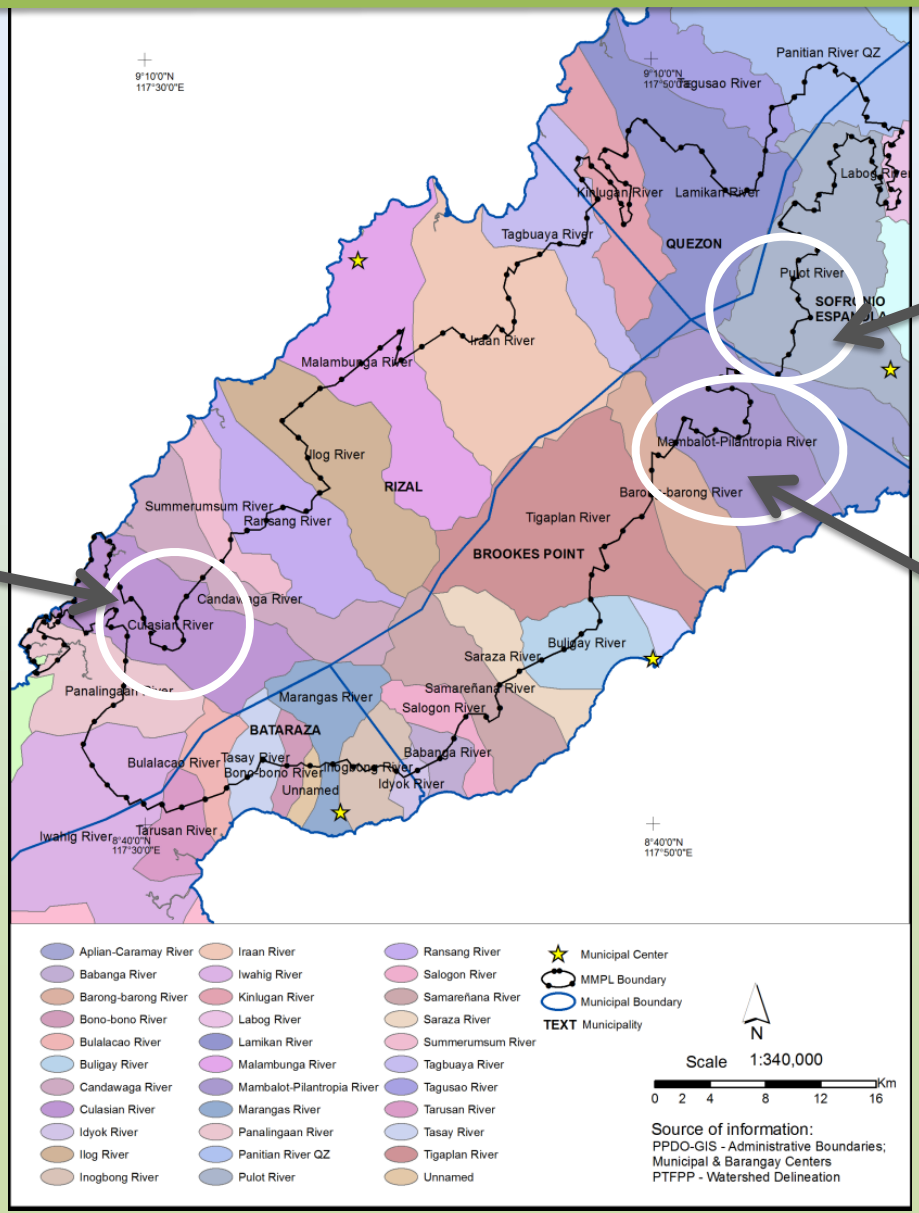
Scope and Coverage

Scope and Coverage

Pulot Watershed (Espanola)

Culasian Watershed (Brookes Point)

Mambalot-Filantropia Watershed (Brookes Point)



Accounts

Accounts

Land

Water

Ecosystem

Biodiversity

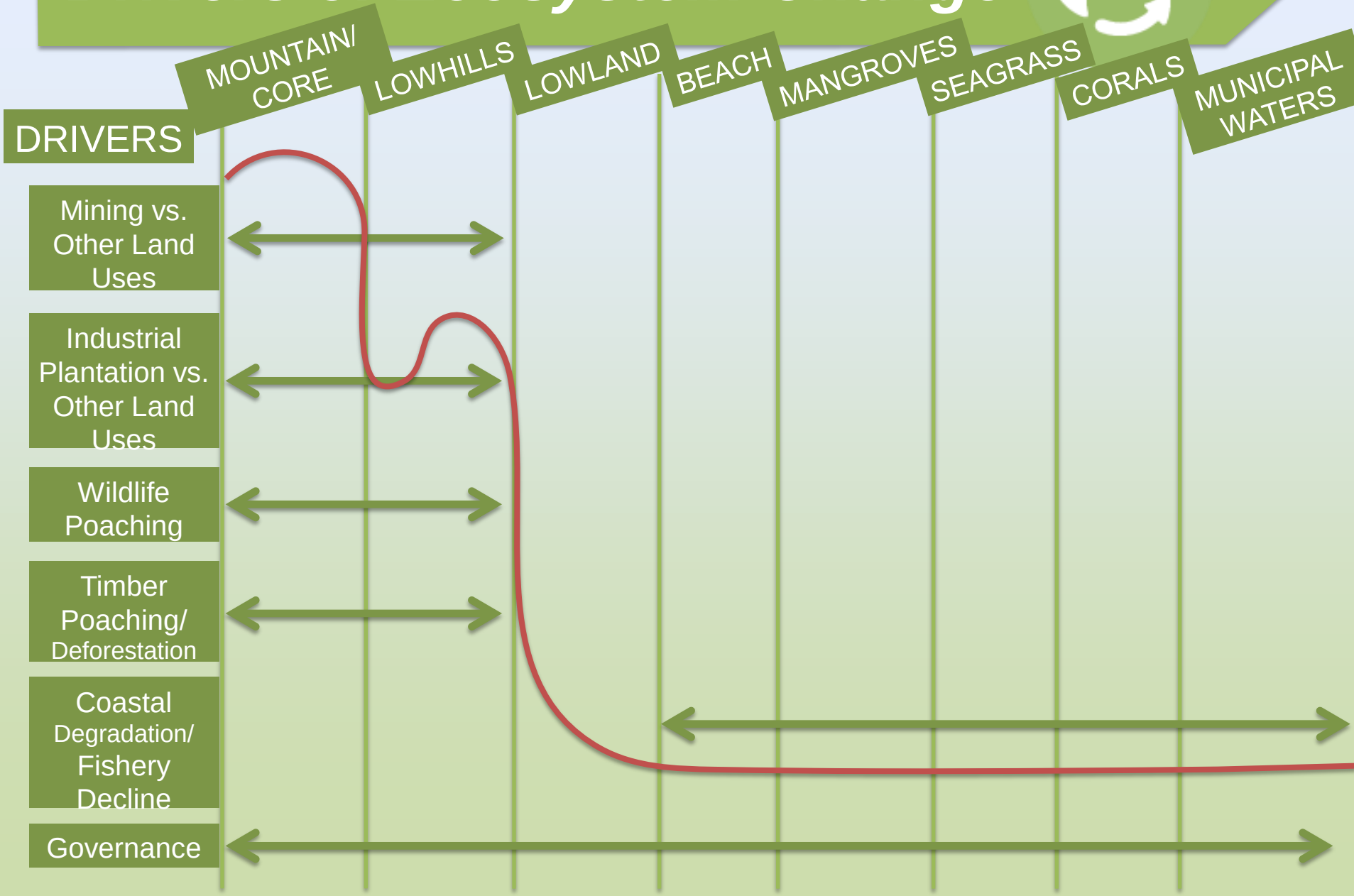
Land Account

Land Resource	Land Use	Land Ownership and Land Tenurial Instruments

Water Account

Water Quality	Water Use				
	Agriculture use	Domestic Use	Industrial Use	Mining	Others

Drivers of Ecosystem Change



Ecosystem Services Accoun

Pressure	Ecosystem condition	Ecosystem Service	Impact indicators	Metho-dology	Data Require-ments	Data Availa-bility	Respon-sibility
Mining Quarrying	• Soil • Water • Vegetation	• Crop production • Water for drinking, bathing, swimming & fishing • Carbon storage	• Fertility - NPK (conc. soil) • Surface Water quality • Parameters (TSS, TDS & heavy metals) • Extent, density & volume	• Primary data (soil analysis) • Surf ace Water sampling and analysis	• Metallic & nonmetallic mineral reserves	OPAEP/MGB	Rose – NAMRIA (lead) Ted – MGB (support) Apollo – PCSDS
					• Tenement map	OPAEP/MGB tenement div	
					• Mining claims	MGB LGSD	
					• Geologic map • Soil map • Geohazard map • Mineral (metallic/no nmetallic) production	OPAEP	
					• List of small-scale mining (existing) • Settlements • Water quality & quantity	PMRB/PCSDS	
Timber poaching	• Land cover • Water • Biodiversity • Vegetation • Carbon	• Timber production • Carbon storage • Water for drinking, bathing, swimming & fishing • Non-timber	• Wood/timber for harvest • (Cubic meters) • (tons carbon) • Volume of surface water	Analysis of land cover change	• Land cover change matrix • Natural stand and stock table • LC map • PA & AD Map • List of		Tess (BMB) Jun (FMB) - lead Ley (FMB) Myles (ERDB) Apollo (PCSD) Allaine (WPU)

Ecosystem Services Accoun

		resources	• Volume or cu m of non-timber		apprehensions • Timber pricing • Harvest • Census of forest occupants (c/o NAMRIA)		
Wildlife poaching	• Biodiversity • Vegetation	• Pls see biodiversity account	• Wildlife • Tourism		• Habitat map • Species list • Cases filed (on wildlife poaching) • List of apprehensions	? CI PCSDS Katala Foundation	Tess (BMB) – lead Jnee (CI) May (PCSDS) Mike (PSU)
Expansion of industrial planta-tions	• Land cover • Biodiversity	• Carbon storage (tons carbon) • Raw Material for processing (metric tons) • Pls see biodiversity account	• Oil palm nuts • Carbon storage		• Plantation data (by species) • Water quality & quantity • EIA • Environmental Mgt Plan ENRMP • Production & revenue		John (PCSDS – lead Jun (FMB) Allaine (WPU) Michi (EMB)
Conver-sion of forests to agricultural land; Agricul-tural expansion	• Land cover • Biodiver-sity	• Carbon storage (tons carbon) • Raw Material for processing (metric tons) • Pls see biodiversity account • Non-timber forest product (per unit)	• Carbon storage	Survey	• Land cover change matrix (2003 & 2010) • Settlement • Population • Existing cultivation areas • CLOA (certificate of land	LGU socio-econ profiles MMPL SRPAO	Jun (FMB) – lead Ley (FMB) Cynthia Lozano (LMB) PENRO (For. Caluya) Myles (ERDB) Tess (Planning) May

Ecosystem Services Accoun

					ownership agreement) • PA map • AD map • Cultivated areas • Prime agricultural lands • Existing agricultural lands • Crop production • IP population •		(PCSDS) John (PCSDS) NCIP Allaine (WPU) Ley (FMB) Tess (BMB) LGUs
					Tourist arrivals Tourist spending Tourism establishments	DOT Provincial Tourism Office	
Coastal Degrada-tion Fishery decline	• Coral reefs • Seagrass • Mangroves • Beaches • Marine/coastal waters	• Fish stock • (ha. Of coral reefs) • (ha. Of mangroves) • Carbon storage • Timber stock • Tourism (# of mandays) • Fish stock	• Water quality • Coral reefs • Mangrove • Seagrass • Fish stock	Ecosystem capacity measure-ment	Rate of sedimentation Erosion data Pollution data Fishery production		Allaine (WPU) – lead Jess (PCSDS))

Biodiversity Account

Palawan Fruit Bat
Acerodon leucotis

Crab-Eating Macaque
Macaca fasicularis

Pollination & Dispersal

Biodiversity Account

Species Level	Indicator	Metho-dology	Data Require-ments	Data Availa-bility	Respon-sible Agency
Flora	Diversity Index	Biodiversity Assessment	Species List		
Fauna		Community FGD (Validation)	Population		
Habitat Level					
Terrestrial	Has natural forest				
Coastal and marine	Has coral reefs, sea grass and mangroves in good health	Has coral reefs, sea grass and mangroves in good health per municipality			

Activities for 2014-2015

Activities for 2014-2015

1. Data collection and gap analysis
2. Spatial association of data
3. Physical accounts
4. Initial policy analysis based on physical accounts
5. Monetary accounts

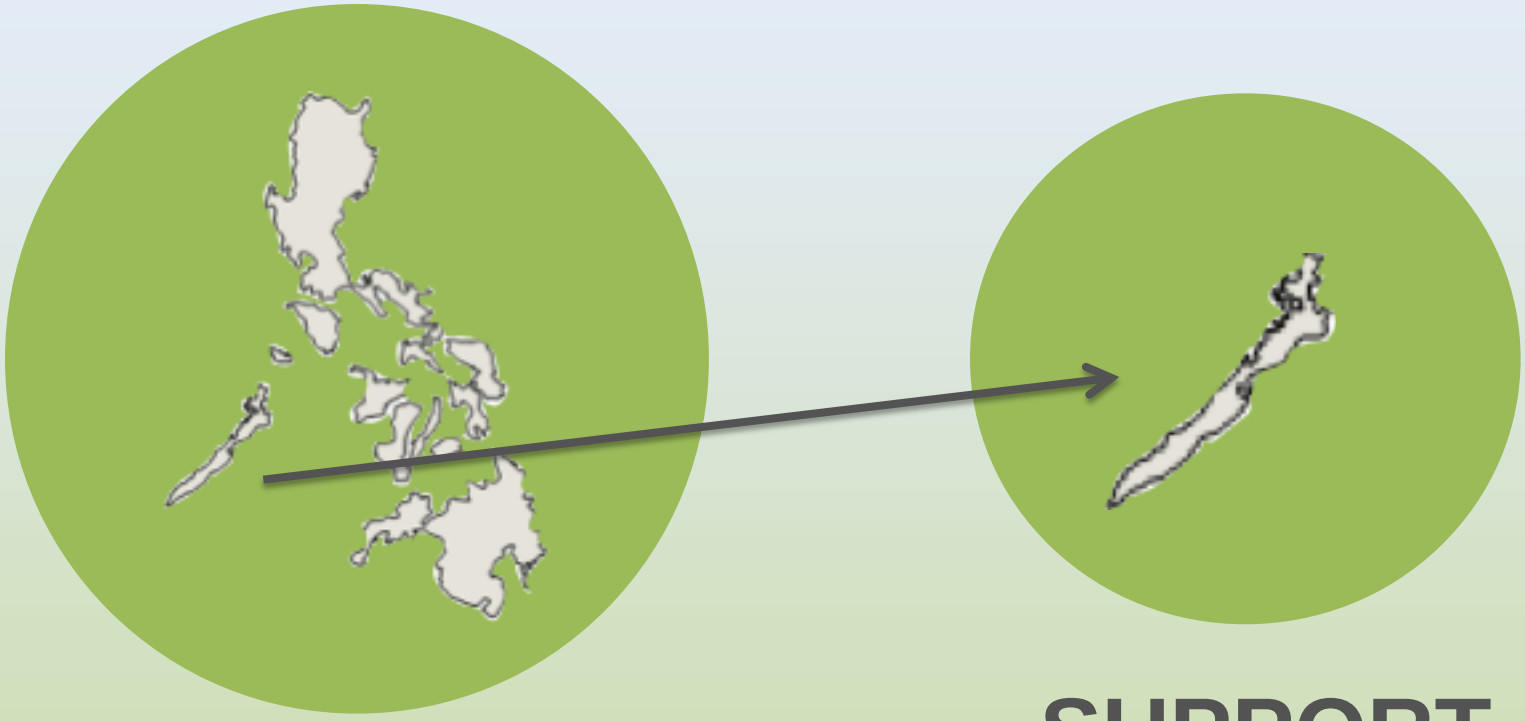
Challenges

Challenges in Developing Accounts

1. Data consistency
2. Data outdated
3. Consolidating data from different generators
4. Limited experience
   ecosystem accounting
5. Institutional challenges
   - integrative analysis of the accounts
   - Internal capacity for policy analysis
   - Implementation arrangement

Institutional Arrangements

Implementation Arrangements



LEAD

National technical working group

SUPPORT

Local technical working group

Dakelang salamat demyo gensan!

THANK YOU!

WAVES