Context of Ecosystem Accounts
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
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

Culasian Watershed (Brookes Point)

Pulot Watershed (Espanola)

Mambalot-Filantropia Watershed (Brookes Point)
Accounts
Accounts

Land    Water    Ecosystem    Biodiversity
<table>
<thead>
<tr>
<th>Land Resource</th>
<th>Land Use</th>
<th>Land Ownership and Land Tenurial Instruments</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>Water Quality</td>
<td>Water Use</td>
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<tr>
<td></td>
<td>Agriculture use</td>
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<td></td>
<td>Domestic Use</td>
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<td></td>
<td>Industrial Use</td>
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<tr>
<td></td>
<td>Mining</td>
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<tr>
<td></td>
<td>Others</td>
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</tbody>
</table>
Drivers of Ecosystem Change

Drivers:
- Mining vs. Other Land Uses
- Industrial Plantation vs. Other Land Uses
- Wildlife Poaching
- Timber Poaching/Deforestation
- Coastal Degradation/Fishery Decline
- Governance
## Ecosystem Services Account

<table>
<thead>
<tr>
<th>Pressure</th>
<th>Ecosystem condition</th>
<th>Ecosystem Service</th>
<th>Impact indicators</th>
<th>Methodology</th>
<th>Data Requirements</th>
<th>Data Availability</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining Quarrying</td>
<td>Soil</td>
<td>Crop production</td>
<td>Fertility - NPK (conc. soil)</td>
<td>Primary data (soil analysis)</td>
<td>Metallic &amp; nonmetallic mineral reserves</td>
<td>OPAEP/MGB</td>
<td>Rose - NAMRIA (lead) Ted - MGB (support) Apollo - PCSDS</td>
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<tr>
<td></td>
<td>Water</td>
<td>Water for drinking, bathing, swimming &amp; fishing</td>
<td>Surface Water quality</td>
<td>Surface Water sampling and analysis</td>
<td>Tenement map</td>
<td>OPAEP/MGB tenement div</td>
<td></td>
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<tr>
<td></td>
<td>Vegetation</td>
<td>Carbon storage</td>
<td>Parameters (TSS, TDS &amp; heavy metals)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Extent, density &amp; volume</td>
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<tr>
<td>Timber poaching</td>
<td>Land cover</td>
<td>Timber production</td>
<td>Wood/timber for harvest</td>
<td>Analysis of land cover change</td>
<td>Land cover change matrix</td>
<td>OPAEP</td>
<td>Tess (BMB) Jun (FMB) - lead Ley (FMB) Myles (ERDB) Apollo (PCSD) Allaine (WPU)</td>
</tr>
<tr>
<td></td>
<td>Water</td>
<td>Carbon storage</td>
<td>(Cubic meters)</td>
<td></td>
<td>Natural stand and stock table</td>
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<tr>
<td></td>
<td>Biodiversity</td>
<td>Water for drinking, bathing, swimming &amp; fishing</td>
<td>(tons carbon)</td>
<td></td>
<td>LC map</td>
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<tr>
<td></td>
<td>Vegetation</td>
<td>Non-timber</td>
<td>Volume of surface water</td>
<td></td>
<td>PA &amp; AD Map</td>
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<tr>
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<td>Carbon</td>
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<td>List of</td>
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</table>
## Ecosystem Services Account

<table>
<thead>
<tr>
<th>Wildlife poaching</th>
<th>Biodiversity</th>
<th>Vegetation</th>
<th>Pls see biodiversity account</th>
<th>Wildlife</th>
<th>Tourism</th>
<th>Habitat map</th>
<th>Species list</th>
<th>Cases filed (on wildlife poaching)</th>
<th>List of apprehensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td>PCSDS Katala Foundation</td>
<td>CI</td>
<td>Tess (MBM) - lead Jee (CI) May (PCSDS) Mike (PSU)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Expansion of industrial plantations</th>
<th>Land cover</th>
<th>Biodiversity</th>
<th>Carbon storage (tons carbon)</th>
<th>Raw Material for processing (metric tons)</th>
<th>Pls see biodiversity account</th>
<th>Oil palm nuts</th>
<th>Carbon storage</th>
<th>Plantation data (by species)</th>
<th>Water quality &amp; quantity</th>
<th>EIA</th>
<th>Environment al Mgt Plan ENRMP</th>
<th>Production &amp; revenue</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

| Conversion of forests to agricultural land; Agricultural expansion | Land cover | Biodiversity | 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 |
|---------------------------------------------------------------------|------------|--------------|------------------------------|------------------------------------------|-----------------------------|----------------|----------------|---------------------------------|--------------------------|-----|---------------------------------|----------------------|

Table includes columns for resources and apprehensions, detailing specific data collection methods and project leads.
## Ecosystem Services Account

<table>
<thead>
<tr>
<th>Coastal Degradation</th>
<th>Fishery decline</th>
<th>Ownership agreement</th>
<th>(PCSDS) John (PCSDS) NCIP Allaine (WPU) Ley (FMB) Tess (BMB) LGUs</th>
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</thead>
<tbody>
<tr>
<td>Coral reefs</td>
<td>Seagrass</td>
<td>PA map</td>
<td>Tourist arrivals</td>
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<tr>
<td>Seagrass</td>
<td>Mangroves</td>
<td>AD map</td>
<td>Tourist spending</td>
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<tr>
<td>Mangroves</td>
<td>Beaches</td>
<td>Cultivated areas</td>
<td>Tourism establishment</td>
</tr>
<tr>
<td>Beaches</td>
<td>Marine/coastal</td>
<td>Prime agricultural</td>
<td>DOT Provincial Tourism Office</td>
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<tr>
<td>waters</td>
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<td>lands</td>
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<td></td>
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<td>Existing agricultural lands</td>
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<td></td>
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<td>Crop production</td>
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<td>IP population</td>
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<tr>
<td>Fish stock</td>
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<td>Ecosystem capacity measurement</td>
<td>Rate of sedimentation</td>
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<tr>
<td>(ha Of coral reefs)</td>
<td></td>
<td>Water quality</td>
<td>Erosion data</td>
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<td>(ha Of mangroves)</td>
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<td>Coral reefs</td>
<td>Pollution data</td>
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<td>Carbon storage</td>
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<td>Mangrove</td>
<td>Fishery production</td>
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<td>Timber stock</td>
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<td>Seagrass</td>
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<tr>
<td>Tourism (# of</td>
<td></td>
<td>Fish stock</td>
<td></td>
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<tr>
<td>mandays)</td>
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<tr>
<td>Fish stock</td>
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</tbody>
</table>
Biodiversity Account

Palawan Fruit Bat
Acerodon leucotis

Crab-Eating Macaque
Macaca fasicularis

Pollination & Dispersal
## Biodiversity Account

<table>
<thead>
<tr>
<th>Species Level</th>
<th>Indicator</th>
<th>Methodology</th>
<th>Data Requirements</th>
<th>Data Availability</th>
<th>Responsible Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flora</td>
<td>Diversity Index</td>
<td>Biodiversity Assessment</td>
<td>Species List</td>
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<tr>
<td>Fauna</td>
<td>Community FGD (Validation)</td>
<td></td>
<td>Population</td>
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<tr>
<td>Habitat Level</td>
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<tr>
<td><strong>Terrestrial</strong></td>
<td>Has natural forest</td>
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<tr>
<td><strong>Coastal and marine</strong></td>
<td>Has coral reefs, sea grass and mangroves in good health</td>
<td>Has coral reefs, sea grass and mangroves in good health per municipality</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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!

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