Biodiversity and Ecosystem Services
An Opportunity and Challenges for REDD+
Implementation in the Upper Mahakam

REDD+: Safeguard; Fundamental, Not an add on

Tokyo
December 4th-5th, 2013
Upper Mahakam Overview

- Size: 31.628,70 km²
- Administratif: 2 districts, 21 sub districts and 223 villages.
- Population: 167.700
VISION

“Natural resources are conserved and sustainably managed as a key part of a Green Economy where governments, business and communities value key ecosystem services, stop conversion of natural forests, reduce GHG emissions, and generate equitable livelihoods”
Forest Cover

**Legend**

- **Forested**
- **Non Forested**

**Forested Area**

- 2,427,716.67 Ha

**Non Forested**

- 868,465.76 Ha

Source: Landsat 2009
The Protected Forest
859,941.75 Ha

The Production Forest
1,325,608.47 Ha

Development Area/ other utilization area
1,082,602.39 Ha

The Nature Reserve
5,855.04 Ha

Legend
- Protected Forest
- Nature Reserve
- Production Forest
- Development Area
- Water Bodies

Source: Bappeda Kutai Barat
### The District Emission, sector based

**MtCO₂e, 2010**

<table>
<thead>
<tr>
<th>Palm Oil</th>
<th>Agriculture</th>
<th>Forestry</th>
<th>Oil and Gas</th>
<th>Coal Mining</th>
<th>Others</th>
<th>Total</th>
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<tbody>
<tr>
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<td>Deforestation</td>
<td>Peat decay</td>
<td>POME¹</td>
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<td>Deforestation</td>
<td>Peat Decay</td>
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<td>3.2</td>
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<td>9.4</td>
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</tbody>
</table>

1. Palm oil mill effluent
2. 0-1 Mt CO₂e
3. 2-5 Mt CO₂e
4. 1-2 Mt CO₂e
5. 5-10 Mt CO₂e
6. 10+ Mt CO₂e

Source: Analysis by McKinsey Tim
Kutai Barat is the biggest second emitter of CO2e in Kalimantan Timur

Gross emission occurred in each district within East Kalimantan contributed by five production sectors

<table>
<thead>
<tr>
<th>District</th>
<th>Emission per ha (MtCO2e/ha)</th>
<th>Sharing total emission by district (%)</th>
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</thead>
<tbody>
<tr>
<td>Kutai Barat</td>
<td>52</td>
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<td>Kutai Timur</td>
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<td>Paser</td>
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<td>Bontang</td>
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<td>Malinau</td>
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<td>Panajam Paser Utara</td>
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<td>Balikpapan</td>
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<td>Samarinda</td>
<td>6</td>
<td></td>
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<tr>
<td>Tana Tidung</td>
<td>6</td>
<td></td>
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<tr>
<td>Tarakan</td>
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<td>Other sectors</td>
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<td>Oil &amp; Gas</td>
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</tr>
</tbody>
</table>

Gross emission occurred in each district within East Kalimantan contributed by five production sectors:
- Oil palm
- Agriculture
- Forestry
- Mining
- Oil & Gas

Sources: Kaltim Green; Wetlands International; East Kalimantan Statistics 2009; Team Mc Kinsey analysis
Economy & Emissions of Upper Mahakam

Palm Oil
Contribute to 4% of Upper Mahakam economy

Coal Mining
Is very important part of Upper Mahakam economy

62% of economy sources:
Depend on primary production such as: Coal, plantation (Palm oil & Rubber), agriculture, and timber

27Mt CO$_2$e
Emitted from deforestation and degradation activities
There are 12,469 Ha of non-forested area located in the protected forest.

There are 164,005,17 Ha of non-forested area located in the Production Forest.

There are 433,763,73 Ha of forested area located in the Development Area.

Source: - Landsat 2009
- Bappeda Kutai Barat
Overlapped Concession

By licenses, all concessions established occupied an area of 2,718,795.02 ha, but in fact only 2,233,135.92 ha existed in the field. There are overlapped area among some concessions as large as 485,659.10 ha.

By forest cover:
- Forested area (1,556,680.90 ha)
- Non-Forested area (676,455.02 ha)

<table>
<thead>
<tr>
<th>Concession</th>
<th>Area (Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest Concession</td>
<td>1,443,139.00</td>
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<tr>
<td>Timber Plant.</td>
<td>175,557.76</td>
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<tr>
<td>Plantation</td>
<td>560,012.02</td>
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<tr>
<td>Mining</td>
<td>540,086.24</td>
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<tr>
<td>Grand Total</td>
<td>2,718,795.02</td>
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<td>Overlap</td>
<td>485,659.10</td>
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<tr>
<td>Area with Concession</td>
<td>2,233,135.92</td>
</tr>
</tbody>
</table>

Source: - Landsat 2009
- Bappeda Kutai Barat
There are 42 timber concessions occupied 1,443,139.00 Ha of natural forest. These areas are home to very few endemic faunas such as rhino and orangutan and provides services for hundred thousands people living in and surrounding those areas.
Biodiversity Safeguard Design for REDD+ Implementation in the upper Mahakam

Forest Managers

Forest

“Managed ecosystem, well function and useful for biodiversity and community”

Implementation approaches & Tools:
- Certification scheme
- HCVF
- RIL
- FPIC
- Benefit Sharing Mechanism

Target
- Capacity improvement at forest managers
- Strengthening government and civil society in supervision and monitoring

Sustainable forest management

Economic, social, culture and identity

Aims:

- Managed ecosystem, well function and useful for biodiversity and community

Actors:
Government; Private Sector; Community groups
Community-Private Partnership to Safeguard Environmental Service
Next Challenges

- REDD+ discourse should be landed to the Earth

- Good communication skill in explaining REDD+ is very important
- Need expertise support to translate the REDD+ more operational that could solved economic challenge at the field level
- Biodiversity and ecosystem services provided by nature are not deemed sufficiently profitable for related private sector compared to the its maintenance cost.
THANK YOU

Join survey and monitoring for bornean rhino