The importance of REDD+ as a mitigating tool in addressing Climate Change impacts

Madang REDD+ Pilot Site

Roy Banka,
REDD+ Field Coordinator
Lowering Emissions in Asia’s Forests (LEAF) Program, PNG
Forests in the UNFCCC – REDD+

- Mechanism for Reducing Emissions from Deforestation (RED) first proposed by Costa Rica and PNG at 2005 Conference Of the Parties (COP) in Montreal
- Bali Action Plan in 2007 – RED became REDD+
- Continued strong support for REDD+ at Copenhagen, Cancun and Durban COP.
- Doha (COP18) unfortunately did not achieve much progress on REDD+
What Then is REDD+

• If forests are to be incorporated into a global climate change solution, developing countries must be rewarded for Reducing Emissions from Deforestation and forest Degradation (REDD+)

• REDD+ is a mechanism being designed to provide these rewards.
  – Countries measure and monitor the emissions of tCO$_2$e resulting from deforestation and degradation
  – After a certain time period, they calculate the amount of emissions that were reduced and receive funds (market or fund based) to compensate and reward these reductions.
  – Funds may come from carbon trading, where industrialized countries offset their own emissions OR other mechanisms such as a trust fund.
“REDD” = Reducing Emissions (as measured in tCO$_2$e) from
1. Deforestation
2. Degradation

“+” = Increasing GHG removals (from the Atmosphere) through:
3. Enhancement of forest carbon stocks
4. Sustainable management of forest
5. Conservation of forest carbon stocks
REDD+ Options

1. Avoiding Deforestation
2. Avoiding Forest Degradation
3. Sustainable Management of Forests
4. Enhancement of Forest Carbon Stocks
5. Conserving Forest Stocks
1. Avoiding Deforestation

**REDD+**

- **Deforestation** – Change from a forest to a “non-forest” area
  - “Non-Forest” depends on Country definition of Forest

<table>
<thead>
<tr>
<th>Forest</th>
<th>Non-Forest</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 10% Canopy</td>
<td>&lt; 10% Canopy</td>
</tr>
</tbody>
</table>

90% Canopy  →  10% Canopy
2. Avoiding Degradation

**Degradation** – In PNG, this can be defined as the reduction of forest carbon stocks through burning or the removal of trees within a Forest Area, *but no lower than 10% canopy cover.*

- Forest $\geq 10\%$ Canopy
- Forest $\geq 10\%$ Canopy (but less than before)

80% Canopy

50% Canopy
Review

- Avoiding Deforestation and Degradation

Avoiding Future Emissions (before they occur)

Type 1: Deforestation

Type 2: Degradation

Forest
\[\geq 10\% \text{ Canopy}\]

Non-Forest
\[< 10\% \text{ Canopy}\]

Forest
\[\geq 10\% \text{ Canopy}\]

Forest
\[\text{Still} \geq 10\% \text{ Canopy}\]

Forest
\[\geq 10\% \text{ Canopy}\]

Forest
\[80\% \text{ Canopy}\]

Non-Forest
\[10\% \text{ Canopy}\]

Non-Forest
\[90\% \text{ Canopy}\]

Non-Forest
\[10\% \text{ Canopy}\]

Non-Forest
\[50\% \text{ Canopy}\]
3. Enhancement of Forest Carbon Stocks

<table>
<thead>
<tr>
<th>Reforestation</th>
<th>Non-Forest</th>
<th>Forest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 10% Canopy</td>
<td>≥ 10% Canopy</td>
</tr>
<tr>
<td></td>
<td>5% Canopy</td>
<td>90% Canopy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rehabilitation</th>
<th>Forest</th>
<th>Forest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Still ≥ 10% Canopy</td>
<td>≥ 10% Canopy</td>
</tr>
<tr>
<td></td>
<td>50% Canopy</td>
<td>80% Canopy</td>
</tr>
</tbody>
</table>
4. Sustainable Forest Management

- Sustainable Forest Management can store or sequester carbon through:
  - Reduced Impact Logging (RIL)
  - Improved logging practices (e.g. Reduce impact logging)
  - Lengthening rotations
  - Improve regulation of existing forestry laws
  - Improved efficiencies in timber production
  - Improved compliance with forest codes of practice
  - Forest certification (e.g. FSC)
  - Form markets for non-timber wood or other NTFPs
Review

Non-Forest

< 10% Canopy

Forest

≥ 10% Canopy

90% Canopy

Δ

80% Canopy

Forest

≥ 10% Canopy

80% Canopy

Δ

Forest

≥ 10% Canopy

Still ≥ 10% Canopy

70% Canopy

Δ

Non-Forest

< 10% Canopy

5% Canopy

Type 3:

Reforestation & Restoration

Type 4:

Sustainable Management of Forests

Carbon Storage

(of emissions that have already occurred)

Type 5:

Conservation of Forest Carbon
Review of REDD+ Activities

Type 1: Avoiding Deforestation

Type 2: Avoiding Degradation

Type 3: Reforestation & Restoration

Type 4: Sustainable Management of Forests

Type 5: Conservation of Forest Carbon

Avoiding Future Emissions

Carbon Sequestration
Drivers of Deforestation?

Global Causes of Deforestation

- Small holder agriculture: 35-45%
- Cattle Pasture: 20-25%
- Large-scale Agriculture: 15-20%
- Logging: 10-15%
- Other: 5%
Drivers of Deforestation in PNG?

- Logging: 68-69 Mt CO$_2$e
- Subsistence agriculture: 28-43 Mt CO$_2$e
- Agriculture leases: 6 Mt CO$_2$e
- Commercial agriculture: 3 Mt CO$_2$e
- Everything else: 10 Mt CO$_2$e

Land use, land use change and forestry (LULUCF) contributes ~95% of total emissions in PNG.
The Natural Greenhouse Effect

Solar energy from the sun passes through the atmosphere.

Some energy is reflected back into space.

Greenhouse Gases (GHGs) trap some of the heat, warming the earth.

Earth’s surface is heated by the sun and radiates out heat back towards space.
Forests and Carbon – Sinks

• When a tree grows, it uses Carbon Dioxide (CO₂) gas, and produces clean Oxygen (O₂) gas.
• The Carbon from CO₂ is stored in the form of woody biomass.
• Approximately half (50%) the biomass of a tree is Carbon
Forests and Carbon – Sinks

Regional (LEAF) total forest Carbon stocks:
• 45,360 million tons C

PNG total forest Carbon stocks:
• 5,974 million tons C

Madang total forest Carbon stocks:
• 452 million tons C
Forests and Carbon - Sources

• However, when a tree dies, the carbon escapes as a greenhouse gas (GHG). This is creates GHG emissions.
Forest and Carbon – Pools of C

1. Above Ground Live Tree
2. Belowground Live Biomass
3. Dead wood
4. Above Ground Live Non-tree
5. Litter
6. Soil and Peat Carbon

Wood products
Forests and Carbon

Contains No Carbon

Contains Low Carbon

Contains Medium Carbon

Contains High Carbon
RLs are an essential step in the design of a results-based financing mechanism.
Activity Data: Which changes occurred? On how many hectares?

Collected Through Remote Sensing. Satellite technology allows us to observe forest cover from space and monitor changes in forest cover from year to year.

Forest to non-forest: 1000 ha
MRV Components

1. A Satellite Land Monitoring System to assess Activity Data, forest area and forest area changes.
2. **National Forest Inventory** or specifically designed **Forest Carbon Monitoring System for REDD+** to assess carbon stocks changes (i.e. **Emission Factors**)

MRV Components
In the context of REDD+, a safeguard is a mechanism for integrating environmental and social issues into the implementation of REDD+

Examples of potential safeguards:
- Conversion of forests to oil palm will not be permitted under REDD+
- REDD+ can not occur without the Free, Prior, and Informed Consent of community members
- REDD+ must not involve the involuntary resettlement of communities
A total of 25 communities (43,200 hectares) in the Adelbert Mountains of Madang Province are involved in setting up conservation agreements. Of these communities, 9 have signed official Community Conservation Agreements with the Bogia District. These 9 communities (18,000 hectares) have Plans of Management with defined Zones to delineate a variety of land use practices. The Conservation Zones total to 4,360 hectares.
REDD+ Field Activities in the Adelbert Ranges, Madang

Forest/Biomass/Carbon Inventory
Assess Drivers of Deforestation/Forest Degradation
Biodiversity Survey
Gender Issues
Livelihood Options (fair trade hybrid cocoa)
Benefit Distribution Systems
Participatory Land-Use Plan/systems
Training and Awareness on REDD+ at ALL levels of Govt.
Training and Awareness at Community Level
Provincial Safeguards (Social and Environment)