GIS and remote sensing supported community based biomass assessment and gender balanced equitable payments – example from community forests of Nepal

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Background

• The Reducing Emissions from Deforestation and Degradation (REDD) mechanism is a great hope for saving the world's forests

• REDD + pilot project is being implemented in three watershed of Nepal (Charnawati - Dolakha district, Ludi Khola - Gorkha district and Kayar Khola - Chitwan district)

• ICIMOD in collaboration with Federation of Community Forestry User's, Nepal (FECOFUN) and Asia Network for Sustainable Agriculture and Bioresources (ANSAB)

• RS/GIS providing support throughout the project
Project Sites - REDD
## Boundary Delineation – GIS Participatory Approach

<table>
<thead>
<tr>
<th>Watershed</th>
<th>Watershed Area (ha)</th>
<th>Number of CF</th>
<th>Number of LHF</th>
<th>Total Forest Area CF (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charnawati</td>
<td>14037</td>
<td>65</td>
<td>18</td>
<td>5477.75</td>
</tr>
<tr>
<td>Ludi Khola</td>
<td>5750</td>
<td>31</td>
<td>18</td>
<td>1867.32</td>
</tr>
<tr>
<td>Kayar Khola</td>
<td>8002</td>
<td>16</td>
<td>74</td>
<td>2282.76</td>
</tr>
</tbody>
</table>

![GIS Map of Charnawati Watershed](image1.png)

![GIS Map of Ludi Khola Watershed](image2.png)

![GIS Map of Kayar Khola Watershed](image3.png)
Spatial Land Cover Change

Landsat TM (30m Spatial Resolution)
Forest cover changes – 2002 to 2009

GeoEye-1 (2009)

Nibuwatar CF

Janapragati CF
Field Data Collection

- Circular sample plots 12.6 m radius – Slope dependent

- Trees larger than 10cm of DBH

- Height, crown width, species and topographical features like slope, aspect etc. were recorded

- Hard copies of sample area-recognized and delineated
Capacity Building

• Two national and one international training course based on GIS and REDD

• Helping hands for partners to built spatial data and dissemination

• Facilitate ITC-Netherlands to conduct research
Equitable Payments

• GIS/RS and social economic data was integrated for equitable payments

• 24% carbon stock in first (2010 or 2011) year, 16% increment in carbon stock from previous year, 10% Indigenous peoples, 10% Dalit group, 15% Females and 20% poor peoples

• $95000 distributed among three watershed’s CFUGs, under the Project Management Unit (PMU)/Forest Carbon Trust Fund
Snapshots from Project
Thanks