Investing in Natural Capital for Green Growth in Lao PDR:

Presentation
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So what is capital?

- First of all, **capital** is the building block of green growth and development
- **Capital** is the assets that are used to **produce goods and services**
- Forms of capital are:
  - **Produced capital** (the stock of infrastructure, factories and equipment, etc.)
  - **Human capital** (the stock of physical labour, skills and knowledge, creativity and ingenuity, etc.)
  - **Natural capital** (the stock of natural resources that provide goods and services)
How do we calculate the value of Natural Capital?

In two steps:

First we calculate the annual rent from natural capital (e.g. water used for hydropower electricity production):

- the value of a good or service (e.g. electricity) $100
- cost of produced capital - $60
- cost of human capital (labour) - $5
- cost of O&M - $5

= annual rent from natural capital (water) $30

Value of natural capital $550
What is the value of Natural Capital in Lao PDR?

Total wealth = human capital + produced capital + natural capital + net foreign assets
(Net foreign assets is -7% of total wealth)

Value of natural capital in Lao PDR

Figure 2: Value of natural capital in Lao PDR (US$ billion, 2018)

- Water resources: 64
- Forests and protected areas: 53
- Agricultural land: 32
- Sub-soil assets: 8
Natural Capital Values (NCV) in Lao PDR (US$ per Capita, 2018)

<table>
<thead>
<tr>
<th>Category</th>
<th>Value (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop land</td>
<td>4,629</td>
</tr>
<tr>
<td>Household water supply</td>
<td>4,515</td>
</tr>
<tr>
<td>Timber</td>
<td>3,455</td>
</tr>
<tr>
<td>Hydro</td>
<td>3,417</td>
</tr>
<tr>
<td>Tourism</td>
<td>2,737</td>
</tr>
<tr>
<td>Fisheries, wild food</td>
<td>1,247</td>
</tr>
<tr>
<td>Watershed protection</td>
<td>612</td>
</tr>
<tr>
<td>Wood fuel</td>
<td>382</td>
</tr>
<tr>
<td>Irrigation</td>
<td>222</td>
</tr>
</tbody>
</table>

Note: The values are in US dollars per capita for the year 2018.
But the use of natural assets can also undermine sustainable green growth

- **Examples:**
  - **Fossil fuels** including coal and diesel: Local air pollution and climate change
  - **Wood fuels** (fuel wood and charcoal): Household air pollution, forest degradation
  - **Hydro power**: Downstream effects, community relocation
  - **Loss of forest**: Compromise watershed protection values, and NTFPs for rural livelihood
  - **Agricultural land**: Erosion, agro-chemical pollution
An example from Lao PDR

Use of wood fuels for cooking (household air pollution): Annual deaths

Use of Clean Energies for Cooking in ASEAN, 2016 (% of population)

- Brunei: 100%
- Singapore: 100%
- Malaysia: 96%
- Thailand: 74%
- Vietnam: 67%
- Indonesia: 58%
- Philippines: 43%
- Myanmar: 18%
- Cambodia: 18%
- Lao PDR: 6%

Population Use of Clean Energies for Cooking in Relation to GDP per Capita (\$ PPP), 2016
Use of electricity for cooking is on the rise: An opportunity for promoting clean cooking

Household primary cooking fuel in Khammouane (% of population), LECS III-VI (LSB)
Electricity is cheaper than LPG: Cost of cooking in Khammouane (LAK million per household per year)

- Electricity price of LAK 898 per kWh; Induction stove efficiency of 75%; Cost of health effects of firewood and charcoal is not included
How do we maximize the value of Natural Capital for **sustainable** and **socially responsible** green growth?

Economic growth vs. Environmental value:

1. Environmental improvement but negative economic growth
2. Economic growth **and** environmental improvement (Green Growth)
3. Economic growth **with no** environmental improvement
4. Economic growth **with reduced** environmental quality
What is the sustainable and socially responsible green growth potential from Natural Capital?

- Economic growth
- Environmental value
- Efficiency frontier

**Land**
- Agriculture
- Forestry plantations
- Charcoal production
- NTFPs
- Nature-based tourism
- Electric power plants
- Aquaculture
- Floating solar power

**Forests**
- Nature-based tourism

**Water**
- Nature-based tourism

**Sun**
- Floating solar power
The ‘Efficiency Frontier’ approach has many advantages

- In principle it allows us to calculate the additional economic production value (or economic growth) and additional environmental value we can achieve from natural assets.
- It allows us to calculate potential trade-offs between economic production value (or economic growth) and environmental value from a natural asset.
- It thus allows us to set realistic green growth indicator (GGI) targets that move us onto a targeted point on the ‘efficiency frontier’.
- This provides us a much desired balance of economic growth and environmental sustainability.
We can use the ‘Landscape approach’ to enhance Green Growth from Natural Capital

- **The landscape approach:**
  - Recognizes the multitude of natural assets in a geographic area
  - Provides a clearer picture of potential trade-offs and synergies between different natural assets
  - Makes it easier to sustainably maximize the natural capital value across all of these assets
What are some of the instruments available to achieve green growth from natural capital?

- Apply the ‘Efficiency Frontier’ and ‘Landscape’ approaches to identify opportunities and scope for increasing NCVs and green growth.
- Use Strategic Impact Assessments (SEAs) and Environmental and Social Impact Assessments (ESIA) to improve policy decision-making.
- Improve decision-making through modernizing information and data systems.
- Expand socio-economic surveys to be representative at district level.
- Scale-up valuation of natural assets in national statistics (Natural Capital Accounting).
- Continue support for the Lao Statistics Bureau (LSB).
THANK YOU