Integrated Landscape Management and Natural Capital Accounting

Working together for sustainable development

Johan Meijer, Ezra Berkhout, Chloe Hill, Michael Vardon
INTEGRATED LANDSCAPE MANAGEMENT AND NATURAL CAPITAL ACCOUNTING: WORKING TOGETHER FOR SUSTAINABLE DEVELOPMENT

Background document for the 4th Policy Forum on Natural Capital Accounting for Better Policy being held in Kampala Uganda, 18-19 November 2019

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DRAFT PRE-FORUM VERSION

• Draft paper at forum website: http://www.wavespartnership.org/

• Joint effort by PBL, Michael Vardon (ANU) and Chloe Hill, with input from WAVES partners
Outline

› Introduction
› Why focus on landscapes
› Use of NCA in landscapes
› Benefits of NCA for Integrated Landscape Management
› Connecting ILM and NCA processes
› Triggering the Forum on taking steps forward
Introduction

Welcome to the **Anthropocene**
Trends in human development and environmental pressures

Twentieth century human development has brought the Earth into the Anthropocene, the proposed new geological epoch defined by humanity’s impact on the planet. A sharply increasing population, especially in urban areas, alongside strong economic growth, has resulted in a rising demand for natural resources, including food, water and energy. Although economic growth has improved human well-being, growth in the demand for resources is putting increasing pressure on the environment, though there are major differences between regions. Both human well-being and the environment need to be taken into account, if we are to arrive at a sustainable future. Maintaining the balance between these two domains depends on the way we address and steer growth in production and consumption. An important question is how we support human well-being without compromising the Earth’s capacity to provide the resources that human societies need.
More food, energy and materials than ever before are now being supplied to people across distant regions.
The biosphere and atmosphere, upon which humanity as a whole depends, have been deeply reconfigured by people.

75% of the land area is very significantly altered;
66% of the ocean area is experiencing increasing cumulative impacts;
>85% of wetland area has been lost.
Why focus on landscapes (1)

- Many global challenges converge at the landscape scale
- A logical unit for managing them in an integrated way
  - Where people live and work, linking to culture and identity
  - Governance: local rules and regulations to access natural resources
- Visualize interactions and tradeoffs between SDGs
- Mapping, modelling and scenarios
  - Create awareness and support discussions
  - A catalyst for collaboration
Why focus on landscapes (2)

› The landscape approach
  - An integrated strategy that aims to bring together multiple stakeholders from multiple sectors to provide solutions at multiple scales
  - Core principles: participation, interdisciplinarity, multifunctionality and sustainability

› Integrated Landscape Management (ILM)
  - Multi-stakeholder process
  - Cycle: shared understanding, explore, plan, implement, monitor

› Various global initiatives:
Use of NCA in landscapes (1)

› NCA is undertaken or being developed in more than 100 countries
  – Integrates natural resource and economic analysis, development beyond GDP
  – Show how natural resources contribute to the economy and how the economy affects natural resources

› Roles NCA can play to inform ILM:
  – Manage and allocate land to support sustainable development
  – Assess trade-offs between social, economic, and environmental use of land
  – Maximize economic returns from investments in land and land management
  – Minimize environmental degradation from economic activities on land
Use of NCA in landscapes (2)

In practice not often recognized or used in decision-making, but various examples already exist → Table 3.3 in the paper

Experience from five stories:
- (1) ecosystem accounts (Australia)
- (2) land and peat swamp accounts (Indonesia)
- (3) agriculture and ecosystem accounts (Guatemala)
- (4) water and land accounts (Rwanda)
- (5) planning and ecosystem accounts (Netherlands)

<table>
<thead>
<tr>
<th>Country</th>
<th>Account types produced</th>
<th>Land management issues</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botswana</td>
<td>Water</td>
<td>Water supply management</td>
<td>Pole and Giesekam (2017)</td>
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<td>Brazil</td>
<td>Water resource management</td>
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<td>IBGE (2018)</td>
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<tr>
<td>Canada</td>
<td>Clean growth &amp; climate policy analysis trade agreement analysis forest carbon budget (2016)</td>
<td>Ruijs and Graveland (2019)</td>
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<td>Guatemala</td>
<td>Land Forest</td>
<td>Forest management Fuelwood supply</td>
<td>Castaneda et al. (2019)</td>
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<td>Indonesia</td>
<td>Land Ecosystem</td>
<td>Management of forest and peatland</td>
<td>Garrido, L., et al. (2019)</td>
</tr>
<tr>
<td>Madagascar</td>
<td>Water</td>
<td>Water supply</td>
<td>BRL (2016)</td>
</tr>
<tr>
<td>New Zealand</td>
<td>Forest</td>
<td>Forest management</td>
<td>Yao et al. (2019)</td>
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<td>Peru</td>
<td>Ecosystem</td>
<td>Water management Biodiversity conservation</td>
<td>Partida et al. (2018)</td>
</tr>
<tr>
<td>The Philippines</td>
<td>Ecosystem</td>
<td>Water management and pricing including valuation</td>
<td>Reported at the 2016 Policy Forum</td>
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Benefits of NCA for Integrated Landscape Management

Matching the ILM and NCA living principles:

**ILM principles**
1. Continual learning and adaptive management
2. Common concern entry point
3. Multiple scales
4. Multifunctionality
5. Multiple stakeholders
6. Negotiated and transparent change logic
7. Clarification of rights and responsibilities
8. Participatory and user-friendly monitoring
9. Resilience
10. Participatory GIS

**CORE ROLES FOR NCA:**
* Can provide a regular suite of data, transparent, open and credible, outlined in a adopted UN process
* Can provide a common and trusted entry point for diverse agencies
* Identifying common ground and work towards shared solutions.
* NCA can be scaled
* NCA includes measurements in physical and monetary units
* NCA covers a range of info, supporting understanding between different groups

**NCA principles**
- **Comprehensive:**
  1. Inclusive
  2. Collaborative
  3. Holistic
- **Purposeful:**
  4. Decision-centered
  5. Demand-led
- **Trustworthy:**
  6. Transparent and open
  7. Credible
- **Mainstreamed:**
  8. Enduring
  9. Continuously improving
  10. Embedded
Connecting ILM and NCA processes (1)

- Experiences from reports, cases and 12 experts interviewed for this forum paper
- Topics touched upon:
  - **Awareness of the concepts in both communities**
    - NCA in general is not well-known, if at all, by many people in the ILM community
    - A view that NCA was mainly about economics and putting a price on nature
    - Communication on and understanding the NCA data is sometimes a barrier
    - Missing the spatial context or granularity in NCA data
    - But, activities and research that is undertaken in ILM can be related to accounting (like ES m&m)
  - **Benefits of bringing ILM and NCA closer together**
    - Bringing environmental information into monitoring frameworks to assess landscape development progress
    - Opportunity to make development plans more coherent, between sectors and levels
    - Improving communication with financiers and providing trusted information at all
Connecting ILM and NCA processes (2)

How to bring ILM and NCA closer together

<table>
<thead>
<tr>
<th>Category</th>
<th>Reinforcing ILM &amp; NCA</th>
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<tbody>
<tr>
<td>Process and governance</td>
<td>(1) Senior representative of key stakeholders in the ILM and NCA communities need to be brought together as early as possible</td>
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<td></td>
<td>(2) Need to form a high-level strategic body as well as technical groups that cover both construction and use of accounts</td>
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<td>(3) Production of the first accounts is not the end point</td>
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<td>Data and methods (information needed)</td>
<td>(1) Need to accurately represent the quality of data in information products.</td>
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<td>(2) Need have quality assessment processes in place</td>
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<td>(3) Need to continuously improve data sources for the accounts</td>
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<td>Challenges in construction (or challenges in implementation)</td>
<td>(1) Defining boundaries for NCA that align with ILM regions</td>
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<td>(2) Gaining common understanding of terminology between ILM and NCA communities</td>
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<td>(3) Need to produce NCA quickly to demonstrate usefulness to ILM community</td>
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<td>Funding and finance</td>
<td>(1) Funding needs to be found for pilot studies of applying NCA to ILM</td>
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<td>(2) Funding by national governments and international agencies is important initially.</td>
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<td>(3) Funding can come from a range of international, national and local stakeholders and Joint funding may increase commitment to on-going production and use of accounts</td>
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<td>Communication</td>
<td>(1) Very important to identify the different audiences for NCA and ILM</td>
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<td>(2) Very important to be able to demonstrate the value of account production to the ILM community</td>
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<td>(3) Good examples are important</td>
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<td>(4) need to recognize the limits of data quality</td>
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<td>Potential in decision making (use in policy cycle)</td>
<td>(1) Monitor and review the sustainability of current land use and land management</td>
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<td>(2) Assess trade-offs between different management and investment decisions</td>
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<td>(3) Identify hotspots in need of land use and land management change</td>
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<td>(4) Can be applied to international agreements such as the SDGs and CBD</td>
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<td>Challenges in policy cycle use</td>
<td>(1) Need to align international, national and sub-national decision-making processes and priorities</td>
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<td></td>
<td>(2) Information needs to be seen as important</td>
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<td>(3) information needs to be available when decisions are being made and hence ILM and NCA need to be &quot;ahead of the game&quot;</td>
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Connecting ILM and NCA processes (3)

Linking to the policy cycle

How NCA can inform integrated landscape management in the policy cycle

- Unsustainable water or timber use
- CO₂ emissions
- Loss of water quality

Problem identification

- National development Plans
- Regional water authorities
- Payments for ecosystem services

Policy design

- Check that policies and schemes are working
- Use in State of the environment reporting

Review

- Assessing which areas provide the large benefits for minimum cost
- Assessing how which communities should benefit from natural capital

Policy implementation

Monitoring
Several topics for discussion at the Forum

- **Data coverage and quality mismatch** – Data access and data quality are recurring issues for both ILM and NCA. What are the key datasets needed for ILM and NCA?

- **Boundary selection** – The management areas of ILM seldom directly match the data output area available. How best to select the policy boundaries and then to match these to the data available?

- **Landscape-level decision-making criteria** – what approaches, like ‘carrying capacity’, ‘catchment planning’ and ‘social value’, are paramount for ILM and how can NCA best serve them?

- **Institutional reform** – how can ILM and NCA together shift institutional set-ups from silos to synergies, from overly-centralized to usefully decentralized?

- **Inclusion** – can NCA and ILM work together to reduce the risk of entrenching top-down approaches? How can better landscape level data put power in local stakeholders hands to ensure ILM is equitable?

- **Pilots** – what scope for pilot joint ILM/NCA work that would address the above?
Thank you for your attention!

› Feedback on the paper welcome!
› Send to johan.meijer@pbl.nl