Ecosystem services assessment: a simple-scenario-building exercise

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Valuation approaches and guides – lots of steps in common

The rationale: Picking the low-hanging fruit in valuation…

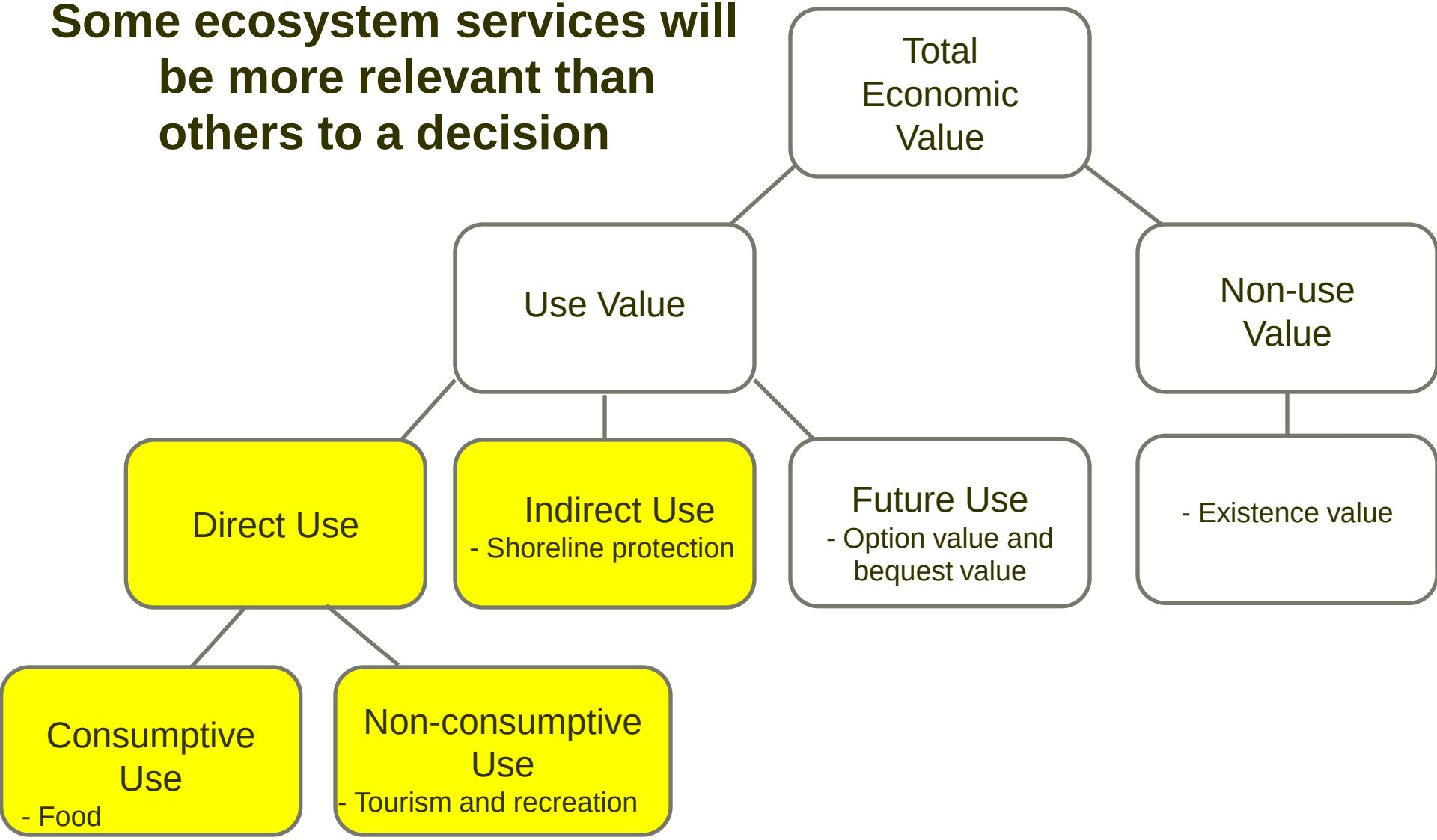
Many valuation tools are costly and time-consuming to apply, and require considerable technical expertise…

- ➢ <u>Apply a cost-benefit-criterion to the valuation exercise itself</u>
  - ✓ Aim to capture the most important ecosystem services/elements of TEV in a specific context – do not seek comprehensiveness at all cost
  - ✓ Use simpler tools whenever appropriate
  - ✓ Consider using qualitative/semi-quantitative representations; do not monetize at all cost

Generic steps to decision-relevant valuation…

1. Identify and agree on the policy question (i.e., the decision-making problem at hand)
   - ➢ This may involve the definition of (stylized) scenarios for the different options
2. Identify the most important or relevant ecosystem services (or components of TEV) in the specific context
   - in many situations, these will be a few key direct and indirect use values
   - Stakeholder engagement will be critical (example: identification of the role of fisheries for local well-being!)
   - aim for option and existence value only when there is a clear indication that these values are significant in the specific context (because those are particularly difficult to evaluate)

Some ecosystem services will be more relevant than others to a decision



Source: Waite et al. (2014), adapted from Pagiola et al. (2004).
Note: The most policy-relevant components are shown in yellow.

Steps (continued)…

3. Define the information needs and select appropriate methods.

Consider using the following (comparatively simple) tools:

- Existing market data: for many direct use values (e.g.: local market prices for many NTFR; tourism revenues;…)
- Cost-based approaches: e.g. replacement cost associated with the loss of indirect use values
- Benefits transfer: for rapid assessments, and with due caution
- Change-in-productivity method: for important indirect use values when good scientific data is available

Steps (continued)…

4. Assess the expected changes on the flow of ecosystem services

- Use indicators for human well-being which are meaningful and practicable in the present context (and important to your target audience)
- In some cases, using highly aggregated monetary figures will actually obfuscate the contribution of ecosystem services to local well-being

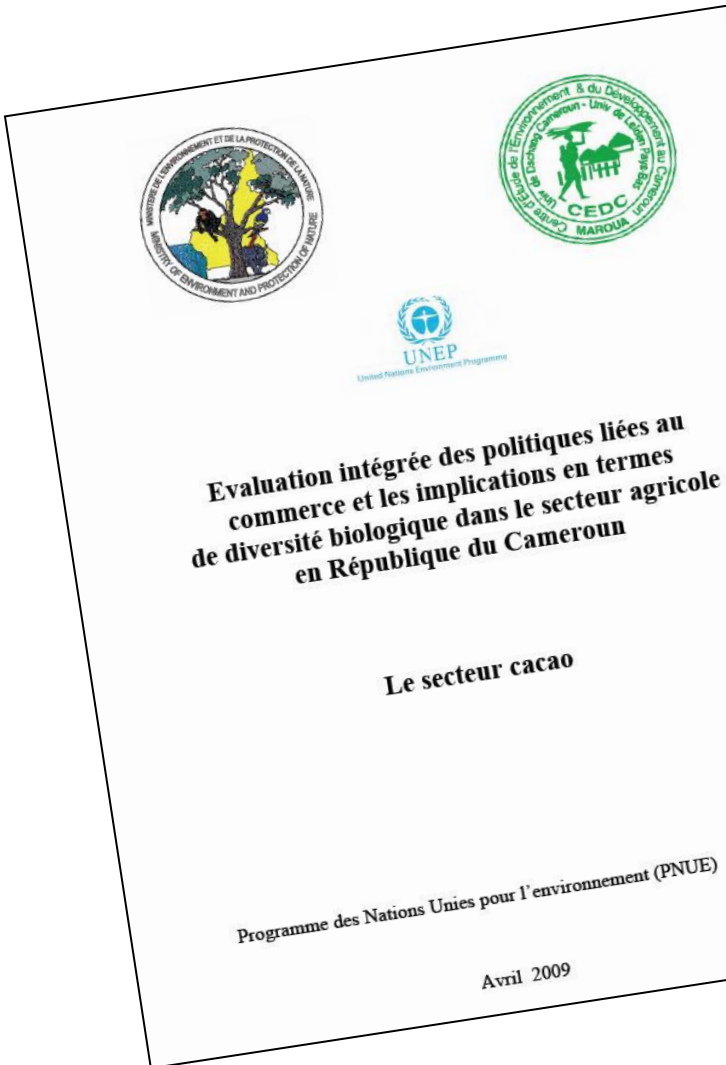
  For instance, the monetary figures for fisheries in the Caribbean are often low in absolute terms (compared to other ecosystem services) and need to be complemented by indicators of their relative importance for human well-being

- Examples for possible indicators:
  - Percentage share of NTFR in monetary/non-monetary income
  - Dietary contribution of fisheries
  - Annual revenue from tourism sector
  - Number of type of jobs created
  - Etc.

Case example 1:
Cacao development policy in Cameroon
(Assessment supported by UNEP)

Storyline: Cameroon seeks to expand its export base by promoting cacao production. Potentially negative impacts on forest-related ecosystem services are expected to result, in particular through forest conversion. However, much of the coffee is still shade-grown, under traditional agro-forestry systems, and this is an interesting potential asset, in particular from the perspective of biodiversity conservation and sustainable use.

Objective: The study seeks to inform policy-makers on the best way to implement cacao promotion.



Case example 1:
Cacao development policy in Cameroon
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1. Scenarios:
   Three stylized scenarios:
   (i) no conversion (status quo);
   (ii) intensive conversion (full-sun with hybrids);
   (iii) promotion of agro-forestry

2. Most critical ecosystem services:
   - Cacao production
   - Other agricultural production from agro-forestry (in particular fruit trees)
   - Forest-related services, in particular NTFR
   - Carbon sequestration

Semi-quantitative assessment of impacts under the three scenarios

I. No conversion

0	additional net income from cacao production
0	other additional income from agroforestry
+++	carbon sequestration
+++	NTFR and associated services

II. Intensive conversion

+++	additional net income from cacao production
0	other additional income from agroforestry
0/+	carbon sequestration
0/+	NTFR and associated services

III. Promotion of cacao agroforestry

+/++	additional net income from cacao production
+/++	other additional income from agroforestry
++	carbon sequestration
++	NTFR and associated services

Case example 2:
Wetland conservation

Storyline: Wetlands adjacent to urban agglomerations are increasingly encroached on by urban development, possibly including illegal settlements, and increased discharge of household and industrial pollutants. In many cases, this puts a number of critical ecosystem services at risk.

Objective: The study seeks to inform policy-makers on the best way to address this issue.

Sources: Emerton 2003; Emerton et al. 1999

Case example 2:
Wetland conservation

1. Most critical ecosystem services:
   - Fish farming and weed harvesting (small-scale income generation)
   - Water purification
   - Amenity values

2. Scenarios:
   Three stylized scenarios:
   (i) business as usual;
   (ii) technology-intensive approach (sewage plants);
   (iii) strengthen spatial planning and community co-management

Semi-quantitative assessment of impacts under the three scenarios

I.	**BAU**
0	Fish farming/weed harvesting
0	Drinking water provision
+	Amenity values
0	financial/opportunity cost
II.	**Technogarden**
+++	Fish farming/weed harvesting
+++	Drinking water provision
++	Amenity values
--- (?)	financial/opportunity cost
III.	**Spatial planning and co-management**
++	Fish farming/weed harvesting
++	Drinking water provision
+++	Amenity values
- (?)	financial/opportunity cost

Group work (by table)

1. Discuss and agree on a specific decision-making problem of relevance in your countries.
2. Identify and agree on possible (stylized) scenarios.
3. Identify the most important ecosystem services associated with the case.
4. Develop the scenarios by assessing, in semi-quantitative terms, the changes in ecosystem services under each scenario.