Significance of biodiversity and its economic value

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12th Annual EUROSAI WGEA Meeting
Session on Auditing Issues Related to Biodiversity
7 October 2014, Vilnius, Lithuania
Outline

1. Overview and status of biodiversity and biodiversity loss in Europe
2. Response to biodiversity loss by governments – CBD and other instruments
3. Suggested solutions for best practice for government as identified by TEEB and others
The Palearctic index shows an overall average decline of 30 per cent, with mixed periods of loss and stability. There is considerable variation in this index, reflecting a mixture of increases and decreases in different populations.

**Palearctic**

- Fishes: 56
- Amphibians: 13
- Reptiles: 19
- Birds: 349
- Mammals: 104
Figure 11: Primary threats to LPI populations
Information on threats has been identified for 3,430 populations in the LPI assigned to seven categories. Other populations are either not threatened or lack threat information (WWF, ZSL, 2014).

Key

- Exploitation
- Habitat degradation/change
- Habitat loss
- Climate change
- Invasive species/genes
- Pollution
- Disease

Direct threats to biodiversity (species)
Conservation status of assessed habitats in EU-25, by biogeographical regions

Extrapolations for a range of indicators suggest that based on current trends, pressures on biodiversity will continue to increase at least until 2020, and that the status of biodiversity will continue to decline.

This is despite the fact that society’s responses to the loss of biodiversity are increasing dramatically, and based on national plans and commitments are expected to continue to increase for the remainder of this decade.

This may be partly due to time lags between taking positive actions and discernable positive outcomes.

But it could also be because responses may be insufficient relative to pressures, such that they may not overcome the growing impacts of the drivers of biodiversity loss.
## Biodiversity information (examples)

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Information Provided</th>
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<tbody>
<tr>
<td>United Nations Economic Commission for Europe (UNECE, 56 member countries)</td>
<td>Environmental Performance Reviews</td>
</tr>
<tr>
<td>Organisation for Economic Co-operation and Development (OECD, 34 member countries)</td>
<td>Environmental Performance Reviews; Paying for Biodiversity: Enhancing the Cost-Effectiveness of Payments for Ecosystem Services (2010); Scaling-up Finance Mechanisms for Biodiversity (2013)</td>
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<tr>
<td>European Environment Agency (EEA, 33 member countries)</td>
<td>Biodiversity Information System for Europe (BISE, jointly with DG Environment, Joint Research Centre, Eurostat); Streamlining European biodiversity indicators (SEBI); Working Group on Mapping and Assessment of Ecosystems and their Services (MAES, with M/S, EC, universities and other stakeholders)</td>
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<tr>
<td>UNEP-World Conservation Monitoring Centre (WCMC)</td>
<td>World Database on Protected Areas (WDPA); Centres for Plant Diversity</td>
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<tr>
<td>IUCN</td>
<td>The IUCN Red List of Threatened Species™</td>
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## Intergovernmental Platform on Biodiversity & Ecosystem Services (IPBES)

<table>
<thead>
<tr>
<th>Work Programme / Deliverable 2(c): Global assessment on biodiversity and ecosystem services</th>
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<tr>
<td>• CBD COP-11 invited the Platform to prepare by 2018 a global assessment of biodiversity and ecosystem services building, on its own and other relevant regional, subregional and thematic assessments, as well as on national reports</td>
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<td>• The overall scope of the assessment will assess the status and trends with regard to such services, the impact of biodiversity and ecosystem services on human well-being and the effectiveness of responses, including the Strategic Plan and its Aichi Biodiversity Targets</td>
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<td>• It is anticipated that this deliverable will contribute to the process for the evaluation and renewal of the Strategic Plan for Biodiversity and its Aichi Biodiversity Targets in general</td>
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<tr>
<td>Strategies</td>
<td>Strategic Plan for Biodiversity 2011-2020; EU Biodiversity Strategy to 2020; The Pan-European 2020 Strategy for Biodiversity (endorsed 2011)</td>
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</tbody>
</table>

* Initially negotiated as a regional instrument, the Convention was amended in 2003 to allow accession by all the United Nations Member States. The amendments entered into force on 6 February 2013, turning the Convention into a global legal framework for transboundary water cooperation. It is expected that countries outside the ECE region will be able to join the Convention as of 2014.
Addressing the ‘economic invisibility’ of nature

<table>
<thead>
<tr>
<th>Strategic Plan for Biodiversity 2011-2020</th>
<th>EU biodiversity strategy to 2020</th>
<th>Intergovernmental Platform on Biodiversity &amp; Ecosystem Services (IPBES)</th>
<th>Proposal of the Open Working Group on SDGs (2014)</th>
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<tr>
<td><strong>Target 2</strong> By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and are being incorporated into national accounting, as appropriate, and reporting systems.</td>
<td><strong>Action 5: Improve knowledge of ecosystems and their services in the EU</strong> Member States, with the assistance of the Commission, will map and assess the state of ecosystems and their services in their national territory by 2014, assess the economic value of such services, and promote the integration of these values into accounting and reporting systems at EU and national level by 2020.</td>
<td><strong>Work Programme / Deliverable 3(d)</strong> Policy support tools and methodologies regarding the diverse conceptualization of values of biodiversity and nature’s benefits to people including ecosystems.</td>
<td><strong>Target 15.9</strong> by 2020, integrate ecosystems and biodiversity values into national and local planning, development processes and poverty reduction strategies, and accounts.</td>
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The Economics of Ecosystems & Biodiversity

**Phase 1**
- 2005
- 2006
- 2007
- 2008

**Phase 2**
2010-2012

**Sectors & Biomes**
- Water & Wetlands (2013)
- Arctic (2013-2015)
- Agriculture & Food (2014-)
- Oceans & Coasts (2014-)

**TEEB Country Studies**

**Foundations**
- National & international policy makers

**Local and regional administrators**

**Business**

**Synthesis**
## The Economics of Ecosystems & Biodiversity

| CBD | Decision IX/6. Incentive measures (Article 11); Decision IX/11. Review of implementation of Articles 20 and 21; Decision X/2 on the Strategic Plan for Biodiversity 2011-20; Decision X/21 on Business Engagement; Decision X/44 on Incentive Measures; Decision XI/7 on Business and biodiversity; Decision XI/8. Engagement of other stakeholders, major groups and subnational authorities; Decision XI/15. Review of the programme of work on island biodiversity; Decision XI/23. Biological diversity of inland water ecosystems; Decision XI/30. Incentive measures |
| Ramsar | Resolution X.12 on “Principles for partnerships between the Ramsar Convention and the business sector”; Resolution XI.17 on “Future implementation of scientific and technical aspects of the Convention for 2013-2015” |
| CITES | COP-15 Strategic Matters (Incentives for the implementation of the Convention) |
| CMS | COP-10 Guidelines for the integration of migratory species into NBSAPs (UNEP/CMS/Conf.10.27) |
| EU Biodiversity strategy to 2020 | “[TEEB] recommends that the economic value of biodiversity be factored into decision making and reflected in accounting and reporting systems”(…) The Commission will continue working with other partners to publicise and implement the TEEB recommendations at EU level and support work on valuation of biodiversity and ecosystem services in developing countries” |
Protected areas offer value for money

• Costs of setting up and managing protected areas are commonly far outweighed by the value of ecosystem services provided by such areas. However, many of the benefits of protected areas are enjoyed far away or far into the future, while costs tend to be local and immediate.

• The establishment of comprehensive, representative, effective and equitably managed systems of national and regional protected areas should be pursued.

• Ecosystem valuation can help to justify protected areas policy, identify funding and investment opportunities, and inform conservation priorities.
A mid-term assessment of progress towards the implementation of **Aichi Target 11**

- **At least 17 per cent of terrestrial and inland water areas are conserved**
  
  Extrapolations show good progress and the target will be achieved if existing commitments on designating protected areas are implemented. Inland water protection has distinct issues.

- **At least 10 per cent of coastal and marine areas are conserved**
  
  Marine protected areas are accelerating but extrapolations suggest we are not on track to meet the target. With existing commitments, the target would be met for territorial waters but not for exclusive economic zones or high seas.

- **Areas of particular importance for biodiversity and ecosystem services conserved**
  
  Progress for protected Key Biodiversity Areas, but still important gaps. No separate measure for ecosystem services.

- **Conserved areas are ecologically representative**
  
  Progress, and possible to meet this target for terrestrial ecosystems if additional protected areas are representative. Progress with marine and freshwater areas, but much further to go.

Global Biodiversity Outlook 4
https://www.cbd.int/gbo4/
Launched at CBD COP-12
A mid-term assessment of progress towards the implementation of **Aichi Target 20**

Mobilization of financial resources implementing the Strategic Plan for Biodiversity 2011-2020 from all sources has increased substantially from 2010 levels.

Limited information on many funding sources, including domestic funding, innovative financial mechanisms, and the private sector. General increase in bilateral ODA against 2006-2010 baseline.
Develop an assessment of the benefits of meeting the Aichi Biodiversity Targets, examining both direct biodiversity benefits and wider benefits to society that result from the investments and policy developments required;

Assess the range of the costs of implementing the activities needed to achieve the targets, taking into account the further work proposed in the High-Level Panel report to COP-11;

Identify opportunities to secure the benefits most cost effectively through actions in both the biodiversity sector and across economies as a whole that can mobilize / make better use of resources, to deliver greatest progress towards meeting the Aichi targets.
UNDP Biodiversity Finance Initiative (BIOFIN)

Building business case for investing in management of ecosystems and biodiversity

• review policies and institutions relevant for biodiversity finance

• determine baseline investment and assess the costs of implementing NBSAPs, thereby quantifying the biodiversity finance gap

• develop and initiate the implementation of comprehensive national resource mobilization strategies

http://www.biodiversityfinance.net/
Valuing and accounting for the benefits of parks services to the community

Protected areas as a source of social and economic benefits from wild species improving livelihoods through local use and national and international trade on the ground?

Ecosystem service valuation and valuation tools

Protected areas, natural capital accounting, and economic valuation

Mobilizing financial resources for protected areas
TEEB Recommendations (2)... Changing the incentives

• Economic incentives including market prices, taxes, subsidies and other signals play a major role in influencing the use of natural capital

• In most countries, these market signals do not take account of the full value of ecosystem services; moreover, some of them unintentionally have negative side effects on natural capital.

• Reforming and redirecting environmentally harmful subsidies in such areas as fossil fuels, agriculture, fisheries, transport and water could provide significant benefits for nature as well as for government budgets.
A mid-term assessment of progress towards the implementation of **Aichi Target 3**

- **Incentives, including subsidies, harmful to biodiversity, eliminated, phased out or reformed in order to minimize or avoid negative impacts**

- **Positive incentives for conservation and sustainable use of biodiversity developed and applied**

- **No significant overall progress, some advances but some backward movement. Increasing recognition of harmful subsidies but little action**

- **Good progress but better targeting needed. Too small and still outweighed by perverse incentives**

Global Biodiversity Outlook 4
https://www.cbd.int/gbo4/
Launched at CBD COP-12
…the biodiversity challenge means that significant further efforts are needed at the local, national and international level. Four overarching priorities for further action are:

1. **Remove or reform environmentally harmful subsidies.**
2. **Significantly scale-up private-sector engagement in biodiversity conservation and sustainable use, including via innovative financing mechanisms and the creation of markets.**
3. **Improve data, metrics and indicators, including on the economic valuation of biodiversity.**
4. **Mainstream and integrate biodiversity conservation and sustainable use into other policy areas and sectors of the economy.**

http://dx.doi.org/10.1787/9789264122246-en
TEEB Recommendations (3)...

Measuring better to manage better

- Natural resources are economic assets, whether or not they enter the marketplace.
- The present system of national accounts should be rapidly upgraded to include the value of changes in natural capital stocks and ecosystem services.
A mid-term assessment of progress towards the implementation of **Aichi Target 2**

- Biodiversity values integrated into national and local development and poverty reduction strategies
  - Differences between regions. Evidence largely based on poverty reduction strategies

- Biodiversity values integrated into national and local planning processes
  - The evidence shows regional variation and it is not clear if biodiversity is actually taken into consideration

- Biodiversity values incorporated into national accounting, as appropriate
  - Initiatives such as WAVES show growing trend towards such incorporation

- Biodiversity values incorporated into reporting systems
  - Improved accounting implies improvement in reporting
Options available to SAIs in countries that have developed some environmental accounts

- audit the reliability of environmental accounts or methodologies used to develop them,
- use environmental accounts in programme audits to assess the effectiveness of environmental policies and programmes and/or whether or not government programmes are complying with national laws,
- use environmental accounts to determine the government’s compliance with reporting requirements from international conventions, and/or
- assess the extent to which programme managers are using environmental accounts in decision-making and identify opportunities for managers to enhance their use of the accounts.
System of Environmental-Economic Accounting (SEEA): recent developments

<table>
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<tr>
<th>UNSC 43rd session (2012)</th>
<th>...44th session (2013)</th>
<th>...44th session (2014)</th>
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| • Adopted the SEEA Central Framework  
  • “encouraged Member States and regional or international organizations to initiate compilation activities in accordance with the [SEEA] Central Framework” | • adopted the implementation strategy for the SEEA Central Framework recommending a flexible and modular approach.  
• Considered the SEEA-Experimental Ecosystem Accounting as an important step in the development of a statistical framework for ecosystem accounting and encouraged its use by international, regional agencies and countries wishing to test and experiment in this new area of statistics.  
• In taking these steps the Commission recognized the growing policy demand for information about ecosystems and the linkages to economic and other human activity | • encouraged the Committee of Experts on Environmental-Economic Accounting to establish cooperation with the geospatial community and with existing initiatives on the measurement and assessment of ecosystems, such as WAVES and TEEB |
Norwegian expert commission on values of ecosystem services (Aug. 2013)

- The TEEB project was the immediate reason for the Norwegian Expert Commission on Values of Ecosystem Services being appointed (October 2011)
- National accounts and other overriding reporting systems must be developed to demonstrate the value of ecosystem services
- Norway should participate more actively in the UN’s work on developing ecosystem services accounts linked to the national accounts, as well as pilot and satellite accounts in physical units for some ecosystem services with a view to developing more complete satellite accounts for ecosystem services and the state of ecosystems.

http://www.regjeringen.no/pages/38495570/PDFS/NOU201320130010000EN_PDFS.pdf
### Natural Capital Accounting in revised NBSAPs

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<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Description</th>
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<tbody>
<tr>
<td>BE</td>
<td>2013</td>
<td>Update of the NBS focuses on the following issues: (...) Phasing out perverse incentives and using guidelines on the integration of the values of biodiversity and ecosystem services in development strategies, planning processes and reporting systems included. Developing an approach to include these values in national accounting.</td>
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<td>CH</td>
<td>2012</td>
<td>Strategic Goal 6: “By 2020, ecosystem services are recorded quantitatively. This enables their consideration in the measurement of welfare as complementary indicators to gross domestic product and in regulatory impact assessments”.</td>
</tr>
<tr>
<td>EU</td>
<td>2011</td>
<td><em>Our life insurance, our natural capital: an EU biodiversity strategy to 2020</em> (Outcome 5, under Target 2) reads: “Member States, with the assistance of the Commission, will map and assess the state of ecosystems and their services in their national territory by 2014, assess the economic value of such services, and promote the integration of these values into accounting and reporting systems at EU and national level by 2020”.”</td>
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Way forward

• Majority of targets are still achievable, if challenging to meet (GBO4, 2014).
• Achieving these targets requires innovative and bold action in many areas, and a sustained focus on biodiversity in a wide range of policy areas for the second half of this decade (GBO4, 2014).
• Many of the measures required to achieve the Aichi Biodiversity Targets will also support the goals of greater food security, healthier populations and improved access to clean water and sustainable energy for all (GBO4, 2014).
• Biodiversity in all its dimensions needs to be preserved not only for societal, ethical or religious reasons but also for the economic benefits it provides to present and future generations. We should aim to become a society that recognizes, measures, manages and economically rewards responsible stewardship of its natural capital (TEEB, 2010)