BIODIVERSITY -
trends, drivers of change, and policy options:
outcomes of the IPBES Regional Assessment
for Europe and Central Asia

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Setting the scene

➢ Biodiversity continues dangerous decline
➢ Biodiversity is key to human wellbeing
➢ The decline is due to multiple interacting drivers, which undermine efforts to achieve the Aichi Targets and the SDGs
➢ We need more and better scientific information
➢ IPBES regional assessment
Europe and Central Asia

- Western Europe (WE)
- Central Europe (CE)
- Eastern Europe (EE)
- Central Asia (CA)

56 countries
40 – members of IPBES
Biodiversity: Marine/freshwater habitats and species

- The abundance, range and habitat size of many marine species is shrinking:
  - 48% of marine animal and plant species have been declining in the last decade

- Freshwater species and inland surface water habitats are particularly threatened across ECA
  - 75% of catchment areas in ECA are heavily modified
  - 37% of freshwater fish and 23% of amphibians are currently threatened with extinction in CE and EE
Biodiversity: Terrestrial species

- Terrestrial species and habitats have long-term declining trends in population size, range, habitat intactness and functioning:

  - 42% of terrestrial animal and plant species have been declined in population size

  - 75% of local bird breeds and 58% of local mammal breeds are threatened with extinction.
## Trends in nature’s contributions to people

<table>
<thead>
<tr>
<th>Nature’s Contributions to People</th>
<th>WE</th>
<th>CE</th>
<th>EE</th>
<th>CA</th>
<th>ECA</th>
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<td><strong>Regulating nature’s contributions to people</strong></td>
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<td>Regulation of air quality</td>
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<td>Formation and protection of soils</td>
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<td>Regulation of organisms (removal of carcasses)</td>
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### Confidence level:
- **Increase**: Well established
- **Decrease**: Established but incomplete/ unresolved
- **Variable**: Inconclusive

### Notes:
- WE: Well established
- CE: Complete/established
- EE: Evidence exists
- CA: Conflicting evidence
- ECA: Evidence contradicting the consensus
II. Biodiversity: Driver of change

Effects on biodiversity, nature’s contribution to people (NCP), and good quality of life

INDIRECT DRIVERS

- Demographic drivers
- Institutional drivers
- Cultural drivers
- Economic drivers
- Science and technological drivers

DIRECT DRIVERS

- Land use change
- Invasive alien species
- Natural resource extraction
- Climate change
- Pollution
Land use change: Forestry

**Trend 1:** Increasing intensity of management on forested land:
- increasing extraction of bioenergy resources
- increasing area of forest plantations
- intensification of forest management

**Trend 2:** Continuous logging of intact forest landscapes
- Russia is among three countries that comprise 52% of the total reduction of intact forest landscapes

**Effects on biodiversity and NCP:**
- Loss of structural components; Simplified spatial structure;
- Simplification of natural processes; Fragmentation of forest habitats
Land use change: Agriculture

Intensification of conventional agriculture:

- Large-scale monocultures
- High level of agrochemical inputs
- Irrigation
- High level of mechanization
- Genetically modified crops
Land use change: Agriculture

Effects of conventional agriculture intensification:

➢ Transformation and modification of natural and semi-natural habitats physically, biologically and chemically

➢ Reductions in species richness and diversity of plants, wild bees and birds

➢ Introduction of genetically modified crops

➢ Erosion of natural capital (e.g. pollinators, natural enemies of pest, soil biodiversity)
Other drivers of change in biodiversity

- Extraction of abiotic and biotic resources:
  - Overfishing
  - Extraction of mineral resources (e.g., CA and EE)

- Pollution:
  - Have decreased across the ECA, but due to time-lag effects and organic pollution/pesticides - still threaten biodiversity

- Invasive alien species:
  - Have increased for all taxonomic groups
Impact of indirect drivers on direct drivers

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The colour shows the impact of an indirect driver on a direct driver’s effect on biodiversity and NCPs along a gradient from negative to positive effects. The colour intensity from high to low indicates a level of confidence from established to unresolved.

**LEGEND**

- **Orange:** Negative
- **Orange:** Both ways
- **Green:** Positive
- **Gray:** Lack of evidence
Biodiversity: Policy options

THREE major directions:

1. **Mainstreaming** the conservation and sustainable use of biodiversity and the sustained provision of NCPs into policies, plans, programmes, strategies and practices of public and private actors:

   - Raising awareness of the dependence of good quality of life on nature
   - Defining policy objectives concerning all sustainability dimensions
   - Designing policy instruments and policy mix to support policy implementation
Biodiversity: Policy options

2. Developing *integrated approaches across sectors*:

- Coordination between sectors and sustainable management practices within each sector

- Measure national welfare beyond current economic indicators, taking into account of the diversity values of nature

- Introduction of ecological fiscal reforms
Biodiversity: Policy options

3. Participation of a wide range actors and stakeholders in governance process:

- Development of public-private partnership, co-management arrangements or even private governance involving many stakeholders

- Increasing funding from both public and private sources, together with innovative financial mechanism (e.g. ecological fiscal transfers)

- Education and training
Conclusions

• Biodiversity loss is due to a complex systems of multiple interacting drivers

• The major trend is increasing intensity of land use and climate change that lead to biodiversity loss which is posing substantial risks for human well-being

• Single-driver and single-sector approaches are likely to misrepresent the direction, magnitude or spatial pattern of impacts on biodiversity, leading to poor management or policy decisions

• Future impacts on biodiversity are underestimated because most decisions/scenarios consider only one or few drivers, and largely ignore interaction between drivers and important feedbacks