Regional assessment on biodiversity and ecosystem services for Europe and Central Asia

Bern 6 June

The co-chairs of the Europe and Central Asia assessment expert group

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UN environment

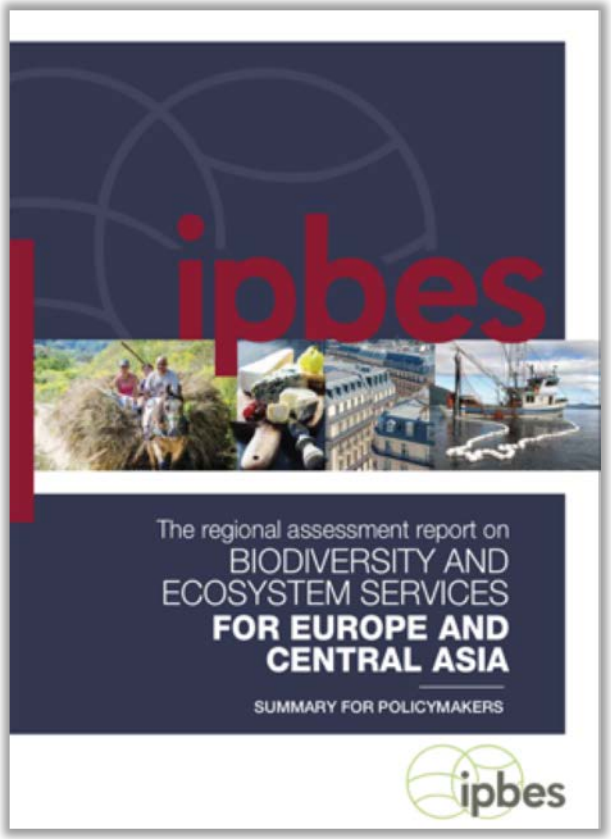
United Nations Educational, Scientific and Cultural Organization

Food and Agriculture Organization of the United Nations

UNDP

Assessment Report on Biodiversity and Ecosystem Services in Europe and Central Asia

- **>120 leading international experts** from 36 countries over three years
- More than **4,000 publications** (scientific papers, Government reports, indigenous and local knowledge and other sources)
- Refined by over **7,700 comments** from external reviewers and Governments



Regional assessment for Europe and Central Asia

Units of analysis

Figure: ECA units of analysis

Nature's contributions to people

Consideration of ecosystem services through the lens of nature's contributions to people which embodies:

- The scientific concept of ecosystems goods and services
- The notion of nature's gifts from indigenous and local knowledge systems

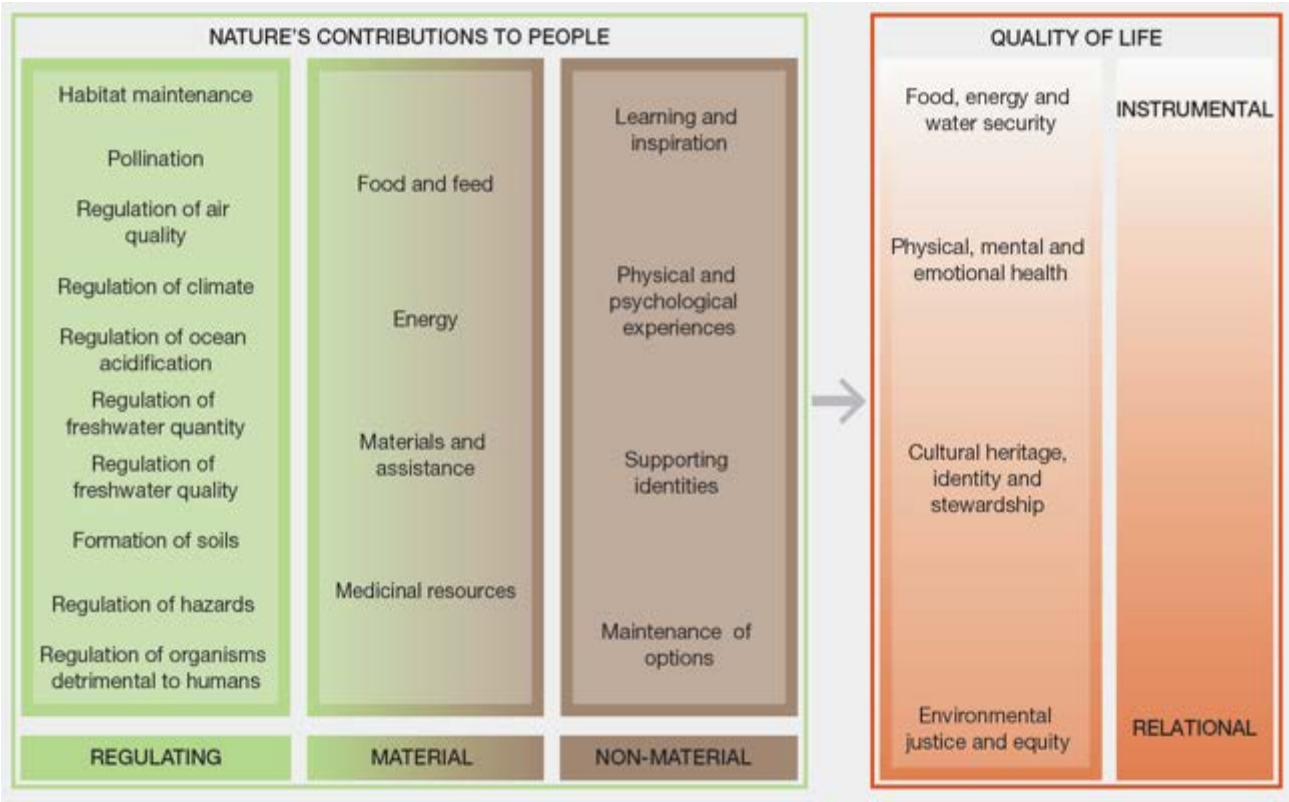


Figure: Nature's contributions to people and quality of life (instrumental and relational values)

Policy-relevant questions

2. What are status, trends and potential future dynamics?

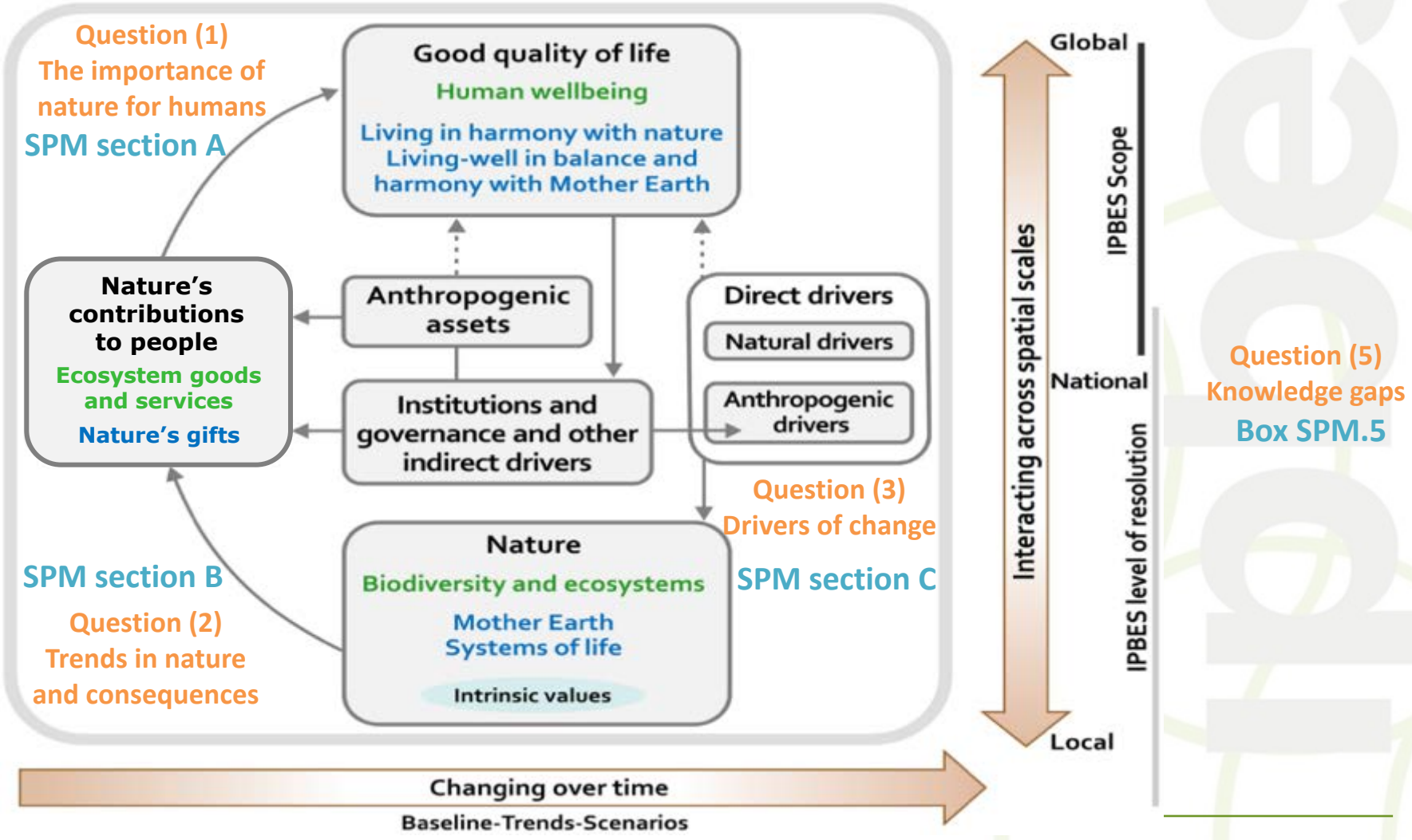
3. What are the pressures driving change?

1. How do biodiversity and ecosystem services contribute to the economy, livelihoods, food security, well-being and good quality of life?

4. What are actual & potential impacts of various policies & interventions?

5. What gaps are there in relevant knowledge?

How questions and SPM sections map on the conceptual framework



Structure of the SPM

Section A	Section B	Section C	Section D	Section E
Status & trends in nature's contributions to people	Status & trends in biodiversity	Status & trends in direct drivers	Scenarios & pathways	Policy & governance options
Attribution to biodiversity	Attribution to direct drivers	Attribution of direct to indirect drivers	Where could the region go	What are options for decisions

16 key messages, 20 background messages, 11 figures, 4 tables, 5 boxes, 2 appendices

Nature is precious, but declining, in Europe and Central Asia

- Nature's contributions to people are precious, and **essential** for human life
- Nature's contributions to people can be worth **thousands of dollars/hectare/year**
- Non-material (e.g. tourism and recreation) and regulating (e.g. air and water quality) contributions are **at least as valuable** as material contributions (e.g. food and timber)
- Material contributions have been consumed **at the expense** of regulating and non-material contributions

Nature is precious, but declining, in Europe and Central Asia

- Nature's contributions are of great value in monetary and non-monetary terms, e.g.:
  - $464 /ha/yr: estimated value of nature's **regulation of climate**
  - $765 /ha/yr: estimated value of **habitat creation and maintenance**
  - $1,965 /ha/yr : median value of **regulation of freshwater and coastal water quality**

- >50% of **nature's regulating contributions to people** declined from 1960 to 2016

Figure: Trends in nature's contributions to people

Nature is precious, but declining, in Europe and Central Asia

- Declines in nature's contributions are caused by declines in biodiversity.

Ecosystems:

- Extent of **wetlands** in Western, Central and Eastern Europe has declined by **50%** since 1970
- Extent and biodiversity status of **14 out of 15 terrestrial habitat types** across the region declining since the 1950s
- Among EU assessments of species and habitat types of conservation interest, only **9% of marine habitat types** show a "favourable conservation status"

Nature is precious, but declining, in Europe and Central Asia

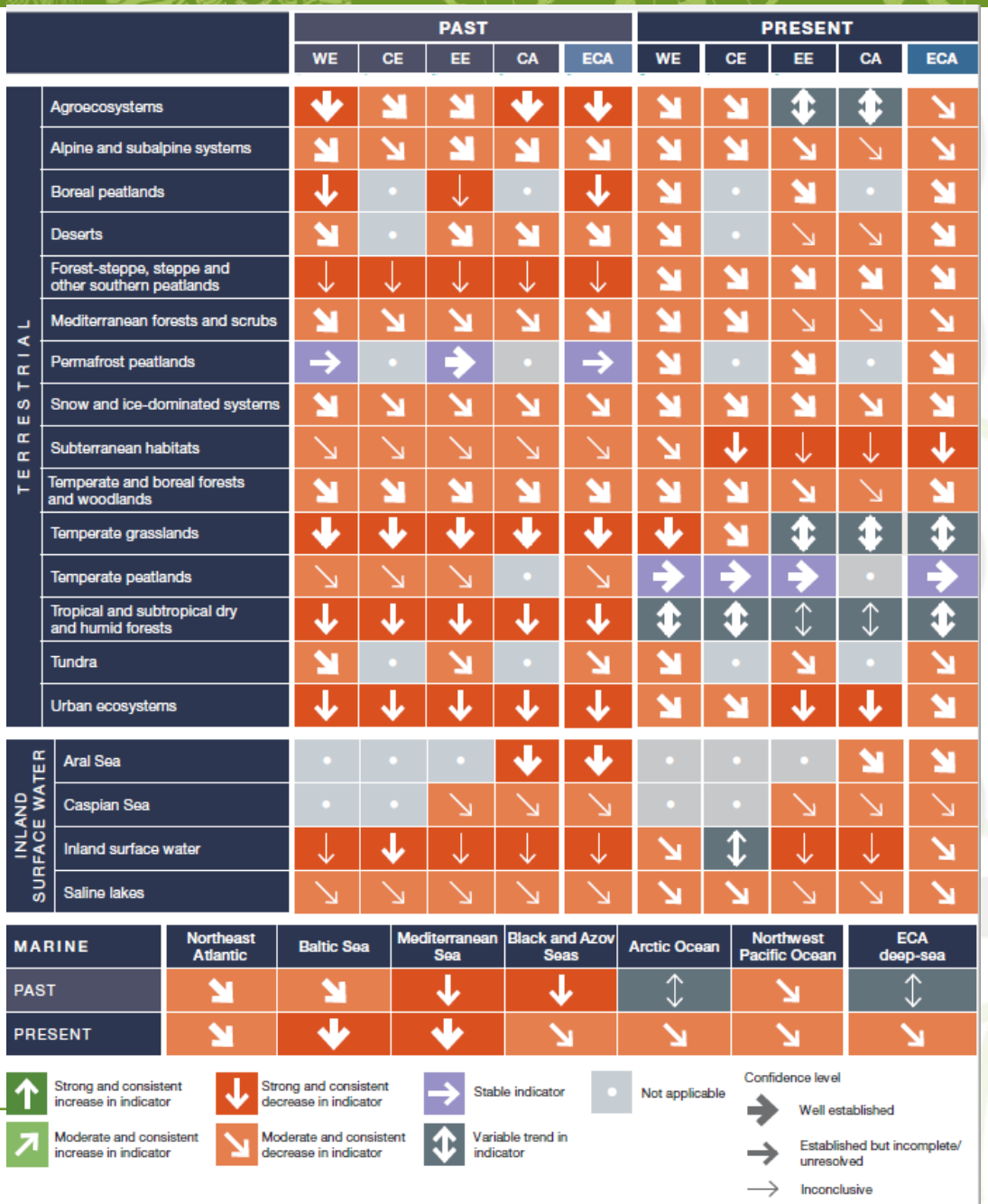
- Declines in nature's contributions are caused by declines in biodiversity.

Species:

Over the past decade:

- 26% of known **marine fish** populations in decline. Less than 2% increasing
- 42% of known **terrestrial animal and plant species** declined
- 71 per cent of **freshwater fish** and 60 per cent of **amphibians** with known population trends have been declining

Trends in biodiversity



Underlying causes of change in Europe and Central Asia

- **Human activities** cause biodiversity decline
  - **Land-use change and intensification**
  - **Climate change**
  - Natural resource extraction
  - Pollution
  - Invasive alien species

Underlying causes of change in Europe and Central Asia

- These activities reflect **societal choices, government policy, economic growth, population growth and technological development**
- **Loss of indigenous and local knowledge** and associated biodiversity-friendly practices
- Europe and Central Asia consumes more than it produces, leaving a large ecological footprint, also on the rest of the world

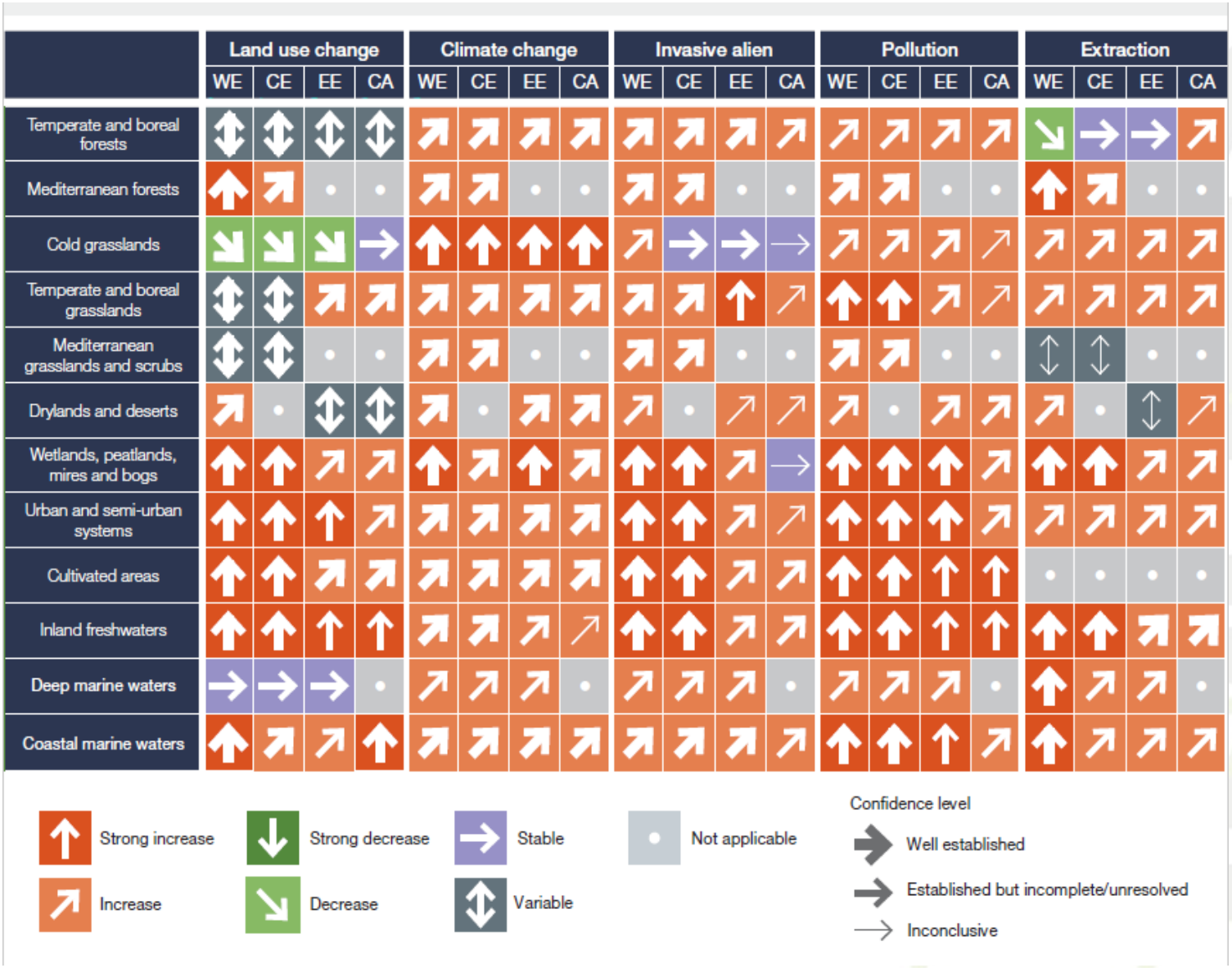


Figure: Trends in direct drivers

Table: Direct and indirect drivers

ECA's impact at home and on the rest of the world

- De-intensification of food production would reduce impacts on biodiversity
- But this would require increased imports from elsewhere
- ECA already has a large ecological footprint
- To reduce it, consumption of NCP from within and outside ECA would need to be reduced

Subregion	Ecological Footprint	Biocapacity
Western Europe	5.1 ha	2.2 ha
Central Europe	3.6 ha	2.1 ha
Eastern Europe	4.8 ha	5.3 ha
Central Asia	3.4 ha	1.7 ha

Box: Progress towards the Aichi Biodiversity Targets

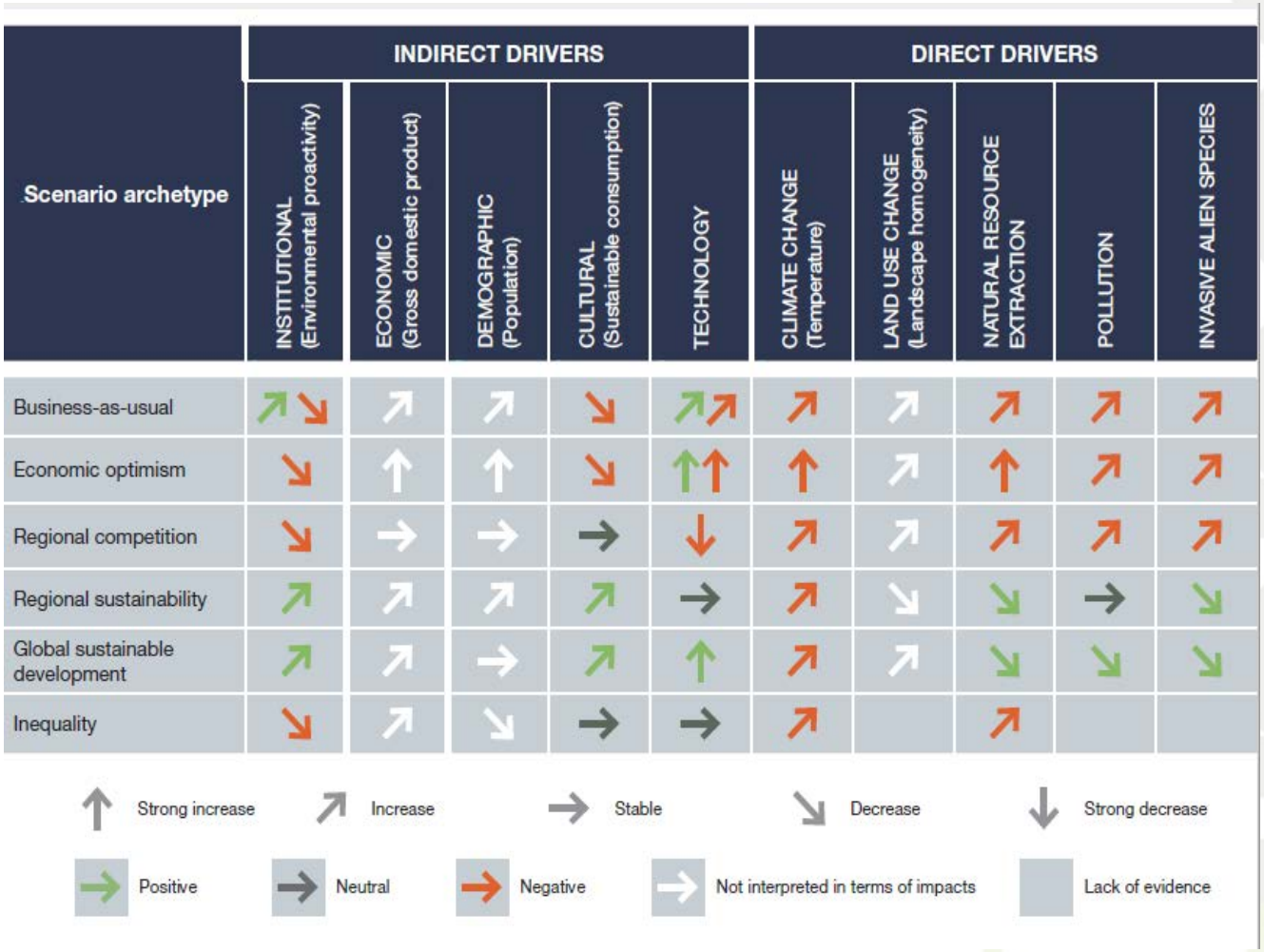
Aichi Biodiversity Targets and Strategic Goals (A to E):

- Goal A, some progress in addressing the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society; subsidies with negative impacts not yet reformed.
- Goal B, pressure from direct drivers on biodiversity unlikely to be reduced and the use of biodiversity not yet sustainable.
- Goal C, progress made in safeguarding ecosystems, species and genetic diversity through protected areas.
- Goal D, not advanced the benefits to all people from biodiversity and ecosystem services because of the deterioration of nature's capacity to provide certain contributions to people and the unequal distribution of nature's contributions.
- Goal E, implementation through participatory planning, knowledge management and capacity-building has been positive where the Aichi Biodiversity Targets have informed the development of national-level targets, except for ILK.

Future options for Europe and Central Asia

- ***Business-as-usual*** will further deteriorate biodiversity and nature's contributions to people
- A **future based on the balanced use** of nature's contributions, reflecting diverse societal values, is more likely to be sustainable
- **Decoupling** of economic growth from the degradation of nature
- Measuring **national welfare** beyond current economic indicators

Direct and indirect drivers (for scenarios)



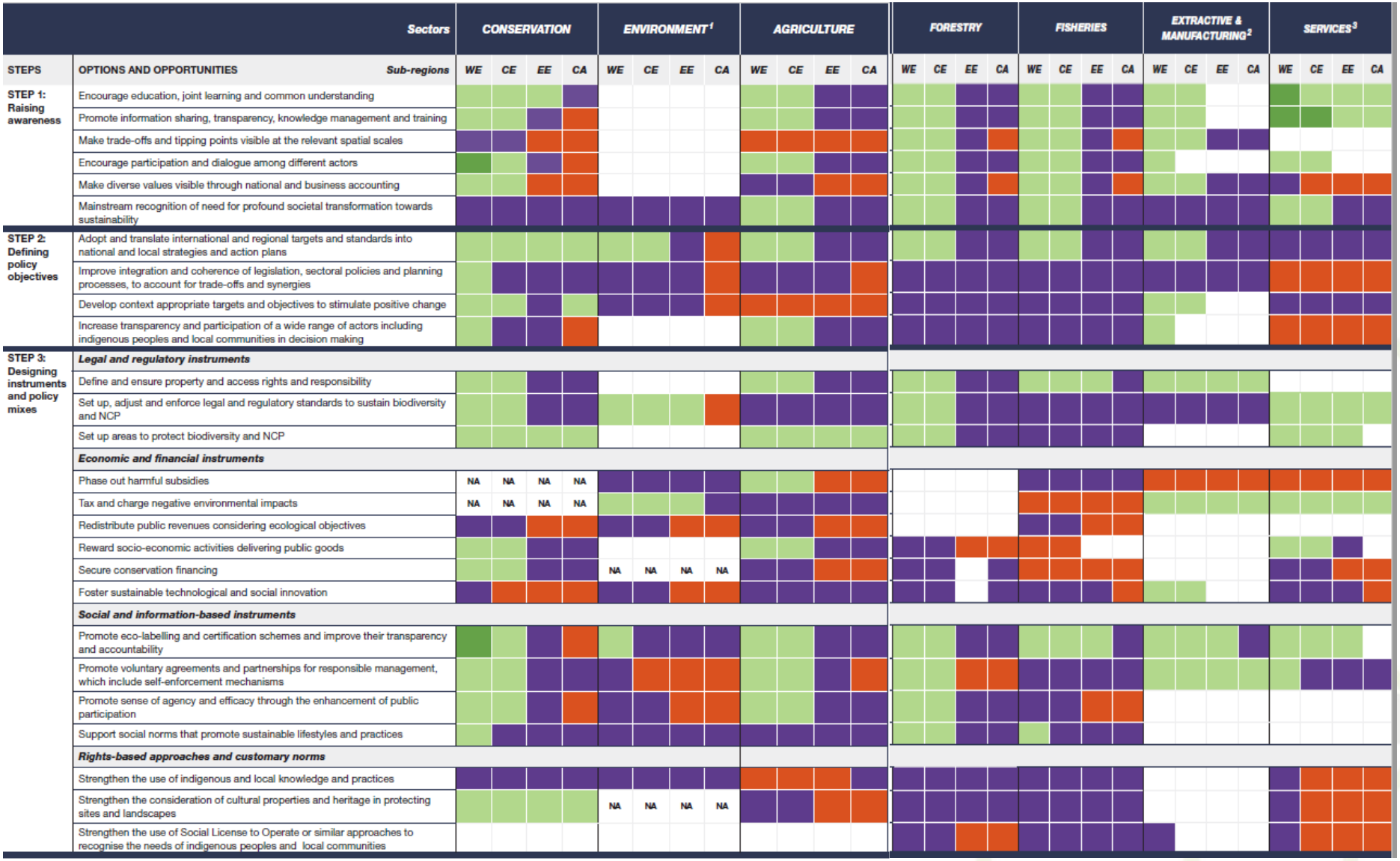
Scenario archetype	INDIRECT DRIVERS					DIRECT DRIVERS				
	INSTITUTIONAL (Environmental proactivity)	ECONOMIC (Gross domestic product)	DEMOGRAPHIC (Population)	CULTURAL (Sustainable consumption)	TECHNOLOGY	CLIMATE CHANGE (Temperature)	LAND USE CHANGE (Landscape homogeneity)	NATURAL RESOURCE EXTRACTION	POLLUTION	INVASIVE ALIEN SPECIES
Business-as-usual	↗↘	↗	↗	↘	↗↗	↗	↗	↗	↗	↗
Economic optimism	↘	↑	↑	↘	↑↑	↑	↗	↑	↗	↗
Regional competition	↘	→	→	→	↓	↗	↗	↗	↗	↗
Regional sustainability	↗	↗	↗	↗	→	↗	↘	↘	→	↘
Global sustainable development	↗	↗	→	↗	↑	↗	↗	↘	↘	↘
Inequality	↘	↗	↘	→	→	↗		↗		

↑ Strong increase ↗ Increase → Stable ↘ Decrease ↓ Strong decrease

Positive Neutral Negative Not interpreted in terms of impacts Lack of evidence

Future options for Europe and Central Asia

- Policy and governance options:
  - **Mainstreaming** biodiversity concerns (raising awareness, policy objectives, instrument design and policy mixes)
  - **Integration** across policy sectors (e.g., agriculture, fisheries, manufacturing)
  - **Participation** to integrate various values and forms of knowledge including indigenous and local knowledge
- Conservation efforts such as well-managed **protected areas**
- **Societal transformation**: education, consumption, shared responsibility



1. Include the following policy areas: Marine and freshwater quality and quantity, flood management, air and wider environmental pollution (including eutrophication and acidification), waste management, mitigation of and adaptation to climate change, soil management and land degradation. Options and opportunities in rows left blank have been covered by the other sectors, also in relation to their environmental outcomes.

WE – WESTERN EUROPE CE – CENTRAL EUROPE EE – EASTERN EUROPE CA – CENTRAL ASIA

EFFECTIVELY IMPLEMENTED
IMPLEMENTED WITH SCOPE FOR IMPROVEMENT
UNDER DEVELOPMENT OR STARTED
NOT YET INITIATED
NOT ASSESSED
NA – NOT APPLICABLE

Table: Policy options and opportunities for mainstreaming biodiversity

Beyond 2030 – scenarios and pathways

The most effective pathways stress long-term societal transformation

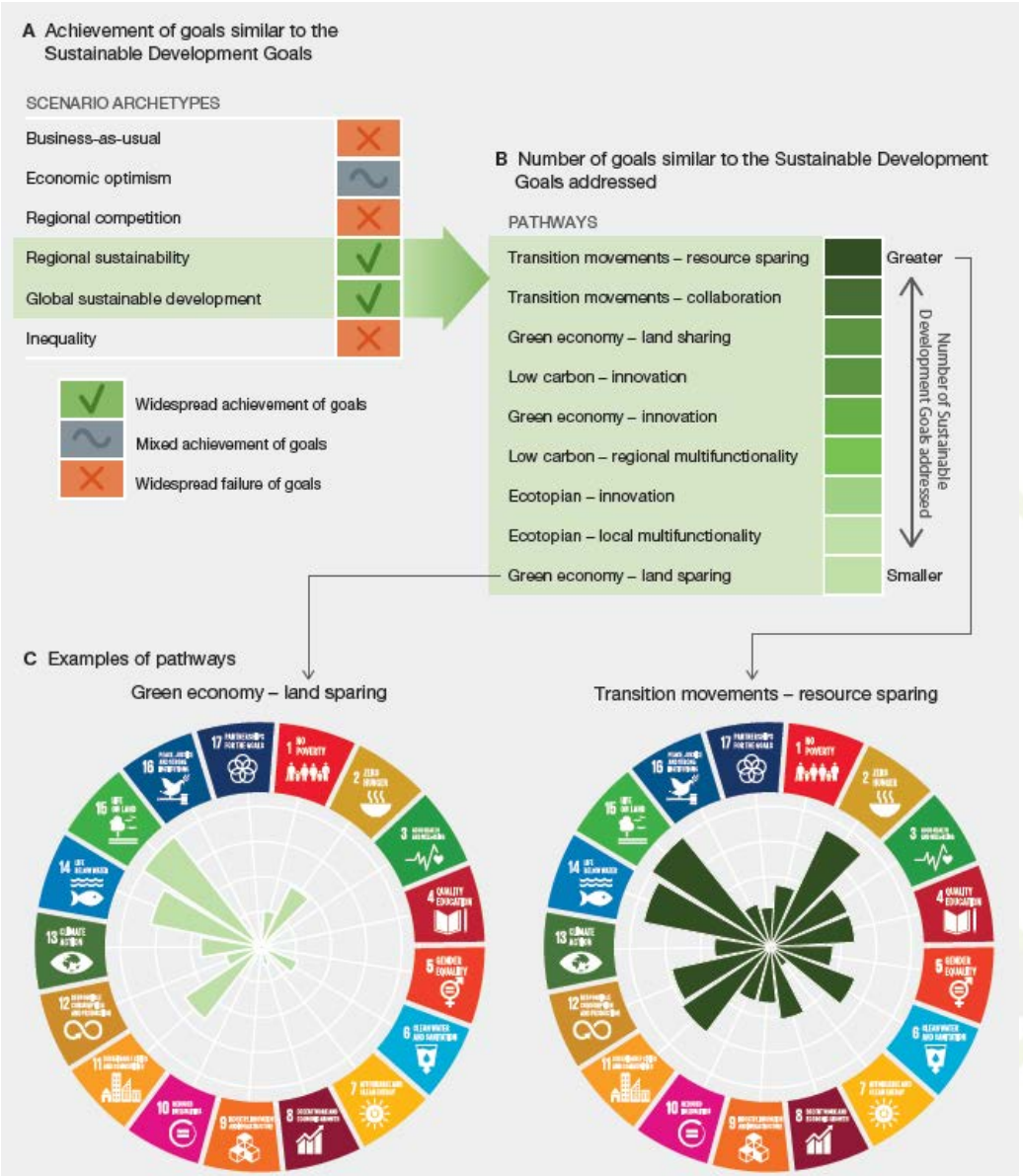


Figure: Summary of the extent to which targets and goals such as the Aichi Biodiversity Targets and Sustainable Development Goals are expected to be achieved under the six scenario types for Europe and Central Asia

Conclusions

- Biodiversity and ecosystem services extremely valuable for human wellbeing
- Biodiversity and most ecosystem services in decline, despite some positive examples
- Many opportunities for decision makers (mainstreaming, integration, mixing of policy instruments, multi-actor opportunities)

Thank you!

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Science and Policy for People and Nature

IPBES Secretariat, UN Campus
Platz der Vereinten Nationen 1, D-53113 Bonn, Germany
secretariat@ipbes.net

@IPBES
www.ipbes.net

Box: Scenario archetypes

- *Business-as-usual* assumes the continuation of past and current trends in indirect and direct drivers.
- *Economic optimism* assumes global developments steered by economic growth, resulting in a strong dominance of international markets with a small degree of regulation.
- *Regional competition* assumes an increasingly fragmented world with a growing gap between rich and poor; increasing problems with crime, violence and terrorism; and strong trade barriers.
- *Regional sustainability* assumes a shift towards local and regional decision-making that is strongly influenced by environmentally aware citizens. A proactive attitude to environmental management prevails, but poor international collaboration obstructs coordination to solve global environmental issues.
- *Global sustainable development* assumes a globalised world with an increasingly proactive attitude of policy-makers and the public towards environmental issues, and strong regulation.
- *Inequality* assumes increasing economic, political and social inequalities with power concentrated in a relatively small political and business elite who invest in green technology.

Box: Key knowledge gaps

Geographical variation in knowledge on nature and its contributions to people in Europe and Central Asia.

Gaps in our understanding of:

- nature's contributions to people
- the contribution of indigenous and local knowledge
- the status and trends of nature
- the drivers of biodiversity change

Lack of integrated scenario and modelling studies

Gaps in the quantification and timing of pathways towards desired futures

Inadequate understanding of how to mainstream policy objectives across different sectors and scales

Scoping document: General policy questions

- How do biodiversity and ecosystem functions and services contribute to the economy, livelihoods, food security, and good quality of life in the regions, and what are the interdependences among them?
- What are the status, trends and potential future dynamics of biodiversity, ecosystem functions and ecosystem services that affect their contribution to the economy, livelihoods and well-being in the regions?
- What are the pressures driving the change in the status and trends of biodiversity, ecosystem functions, ecosystem services and good quality of life in the regions?
- What are the actual and potential impacts of various policies and interventions on the contribution of biodiversity, ecosystem functions and ecosystem services to the sustainability of the economy, livelihoods, food security and good quality of life in the regions?
- What gaps in knowledge need to be addressed in order to better understand and assess drivers, impacts and responses of biodiversity, ecosystem functions and services at the regional level?

Scoping document: ECA specific policy questions

- ECA (a) How can ecosystems that provide ecosystem services, such as those underpinning ecosystem-based adaptation to climate change and nature-based solutions to sustainable development, be protected through investments, regulations and management regimes for terrestrial, freshwater, coastal and marine systems?

- ECA (b) What are the effects of production, consumption and economic development on biodiversity and ecosystem services and their contribution to human well-being? Major links with other regions will be assessed;

- ECA (c) How can sectoral policies and new policy instruments encourage opportunities arising from the contribution of biodiversity and ecosystem services to human well-being?