Science-Policy Interfaces: a necessary ingredient of biodiversity governance

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Content

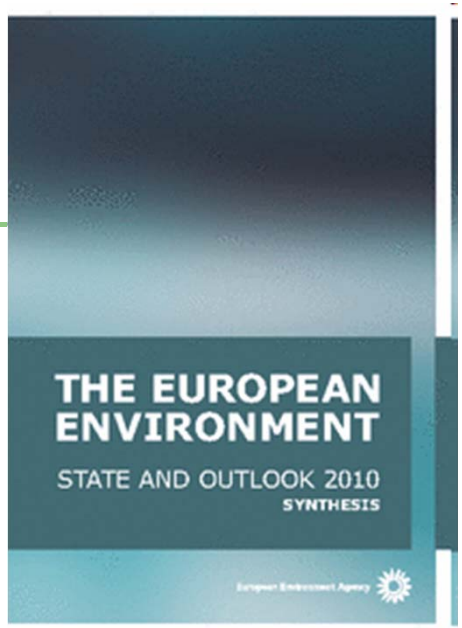
- Nature of the biodiversity issue
  - systemic
  - interconnectedness
  - central status
- implications for research & governance
- a little detour through precaution
- implications for science-policy links
- science-policy interfaces

The biodiversity issue…

It's about complex socio-ecological systems

- Multiple drivers (direct and indirect)
  - lifestyles, production & consumption patterns, population, economic growth, conflicts, land- and sea-use changes, climate change, ocean acidification, over-exploitation of natural resources, pollution, invasive species, soil erosion…
- Multiple scales
  - drivers and consequences at multiple levels, from the very local to the global;
- Cross-sectoral:
  - biodiversity and ecosystem services are affected by or affect almost every aspect of human life, in part. cuts across policy sectors;
- Relates to a broad set of values:
  - Ethical, political, economic, social, cultural, …
  - … from use values to ethical or stewardship values

Interconnectedness



- A complex landscape of interconnected environmental and societal challenges:
  - poverty; food security; population; water; health; energy; climate change; chemical contamination; ocean acidification,…
- Interconnection between:
  - systems (drivers, effects, approaches to address the issues…)
  - systemic risks associated with both risks of sudden change and slow (hidden) failures
- Consequences:
  - Spreading and/or transferring risks and uncertainties
  - More holistic approaches needed ⇒ transformative
- **Biodiversity at the heart of this complex landscape**
  - Because we are living beings and it is our life support
  - Natural capital, biodiversity and ecosystem services provide an **integrative starting point** for addressing these challenges: the foundation for transformation(s)…

Implications for knowledge…

The knowledge needed to understand the biodiversity issue and to support action:

- must be integrated in a highly interdisciplinary way and include the natural, social and technical sciences;
- must bring together and acknowledge diverse understandings, perspectives, and values;
- must include detailed local, regional, indigenous, socio-political, moral and institutional knowledge;
- must be transparent in the treatment of assumptions, uncertainties and value statements;

Multiplicity of knowledge providers

Implications for governance (some)

- Needs to operate on an evolving knowledge basis ⇒ openness to redefinition of issues (and options) as knowledge and societal priorities evolve;
- Models and paradigms underpinning governance and management must embrace complexity, risk, uncertainty, indeterminacy, ambiguity and ignorance;
- Needs flexibility, cooperation, cross fertilisation, joint-learning, and sharing of best practices across issues, areas, scales and sectors
  - for the production and sharing of knowledge
  - for policy-making;
- Needs to build on concepts such as the ecosystem approach, natural capital, ecosystem services, the precautionary principle, adaptive management, transformative capacity, …

A false antinomy

- We have to live with uncertainty, ignorance and imperfect (or absent) evidence: humility is ‘de rigueur’!
- There are ways to do that: precautionary principle
- There is no antinomy between aiming at improving the knowledge basis to inform decisions and applying a precautionary approach in situations of uncertainty, ignorance, high and irreversible risks, …

More on precaution

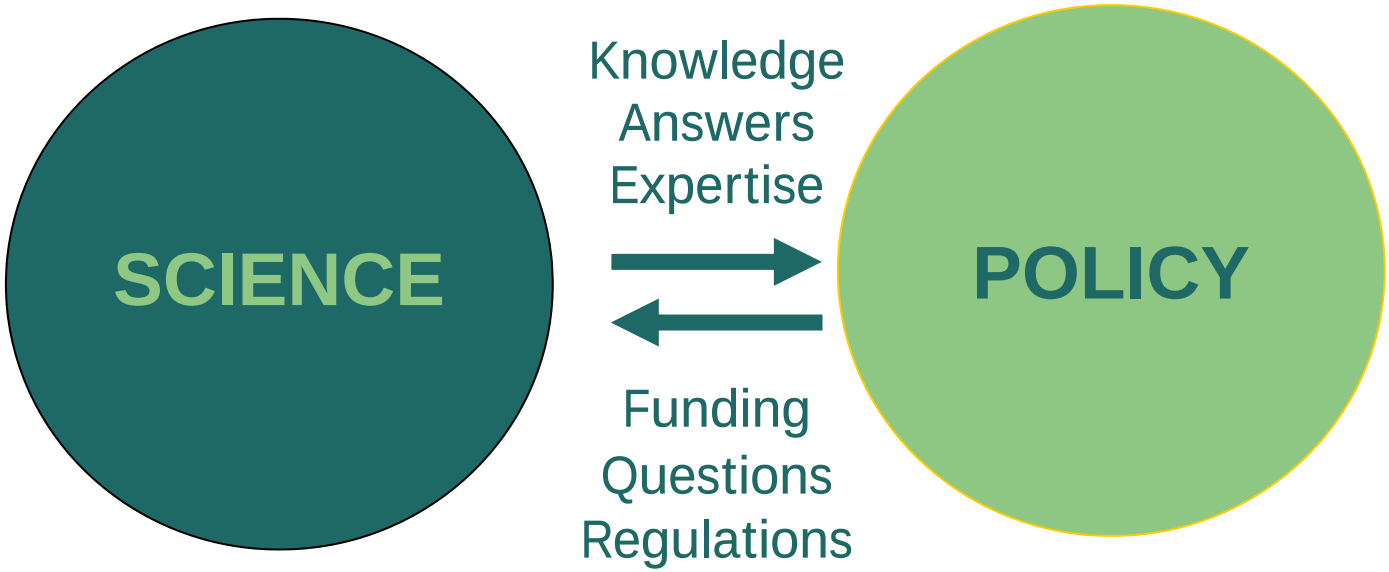
An asymmetry in error types

Type I error False positive	Accept a false hypothesis	In science: avoid them because you don't want to be wrong	Excessive credulity
Type II error False negative	Reject a true hypothesis	Maybe these should be avoided when stakes are high and damages irreversible!	Excessive skepticism

Acknowledge the possibility of surprise, keep your options open, diversify to build resilience, avoid lock-ins, revisit, adapt, …

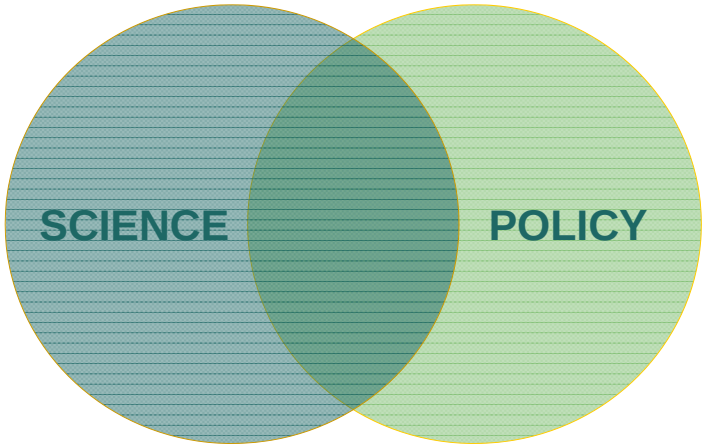
Implications for science-policy links

From a naïve vision...



- Mutually exclusive and hermetic categories
- Two independent monologues which intermittently exchange products
- Science as an isolated and deterministic system providing value-free 'truths'

… to a vision of **co-evolution**



Processes to manage the intersection

≡

science-policy interfaces

- Well-functioning science-policy interfaces are a necessary ingredient of (more) effective governance of complex issues.
- Not a sufficient condition… the existence of strong political will and institutions is of crucial importance and is affected by other factors than knowledge.

Science-Policy interfaces: functions

- Allow for exchange and **co-evolution** of scientific and policy **knowledge**;
- Facilitate timely **translation** of research into policy option or advice and early use of results in practice;
- Facilitate or produce integrated **assessments** and demand-driven targeted assessments , incl. foresights and scenarios;
- Provide **advice** (demand-driven and scientific-driven);
- Alert decision-makers about **emerging issues**;
- Contribute **new thinking** to address complex problems;
- Contribute to the **scientific quality** process by allowing critical assessment of scientific outputs in light of users needs and of other types of knowledge;
- Ensure strategic **orientation of research** and appropriate funding of research in support of policies and societal issues;
- Raise public **awareness**;
- Raise **willingness to act** amongst the public and stakeholders.

⇒ improve quality of decision-making processes

A multiplicity of S-P Interfaces

- at local, national, regional and international levels;
- can be closer to the policy or to the scientific processes;
- can be formal and institutionalised, or informal and more flexible;
- many of them are intertwined or embedded in one another;
- operate at different stages of the policy process (early warning, issue identification, policy design, implementation, assessment, review)

⇒ Build on existing interfaces, improve, create links, complement, innovate

Examples in biodiversity field

- Agencies and institutes (ICES, EEA, ...);
- Scientific advisory bodies and councils;
- Expert groups;
- International, regional or thematic assessment processes (MA, GBO, the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, ...);
- Intergovernmental panels (IPBES, IPCC);
- Strategic initiatives (TEEB, ...);
- Subsidiary bodies of scientific expertise to biodiversity-related conventions (SBSTTA of CBD, Scientific and Technical Review Panel of Ramsar, ...)
- Interfaces of specific projects or networks (HERMIONE, ...).
- Sectoral interfaces (EPBRS for research policy, ...)
- Face to face communication between a scientist and a policy maker;
- And many other...

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Interfacing Biodiversity and Policy

Science-Policy Interfaces for Biodiversity: Research, Action, and Learning

- **Research** project:
  - Improve our knowledge and understanding of Science-Policy Interfaces for biodiversity
- **Action** project:
  - Contribute to designing or improving real-life science-policy interfaces: Test cases, recommendations
  - Resource group

SEVENTH FRAMEWORK PROGRAMME

Concluding

- Complexity of issue has implication in terms of science, governance, and the links between them
- Interconnectedness of environmental and societal challenges

⇒ Paradigm shift: place biodiversity and natural capital at the heart of governance

⇒ The precautionary principle is rational

⇒ Science-policy interfaces are a necessary condition of biodiversity governance

  - No one size fits all ⇒ cherish diversity
  - Build on existing processes and innovate when needed ⇒ dynamic network of network reaching across scales and sectors

Thank you!

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