

Science for Society: linking marine and climate change research with policy



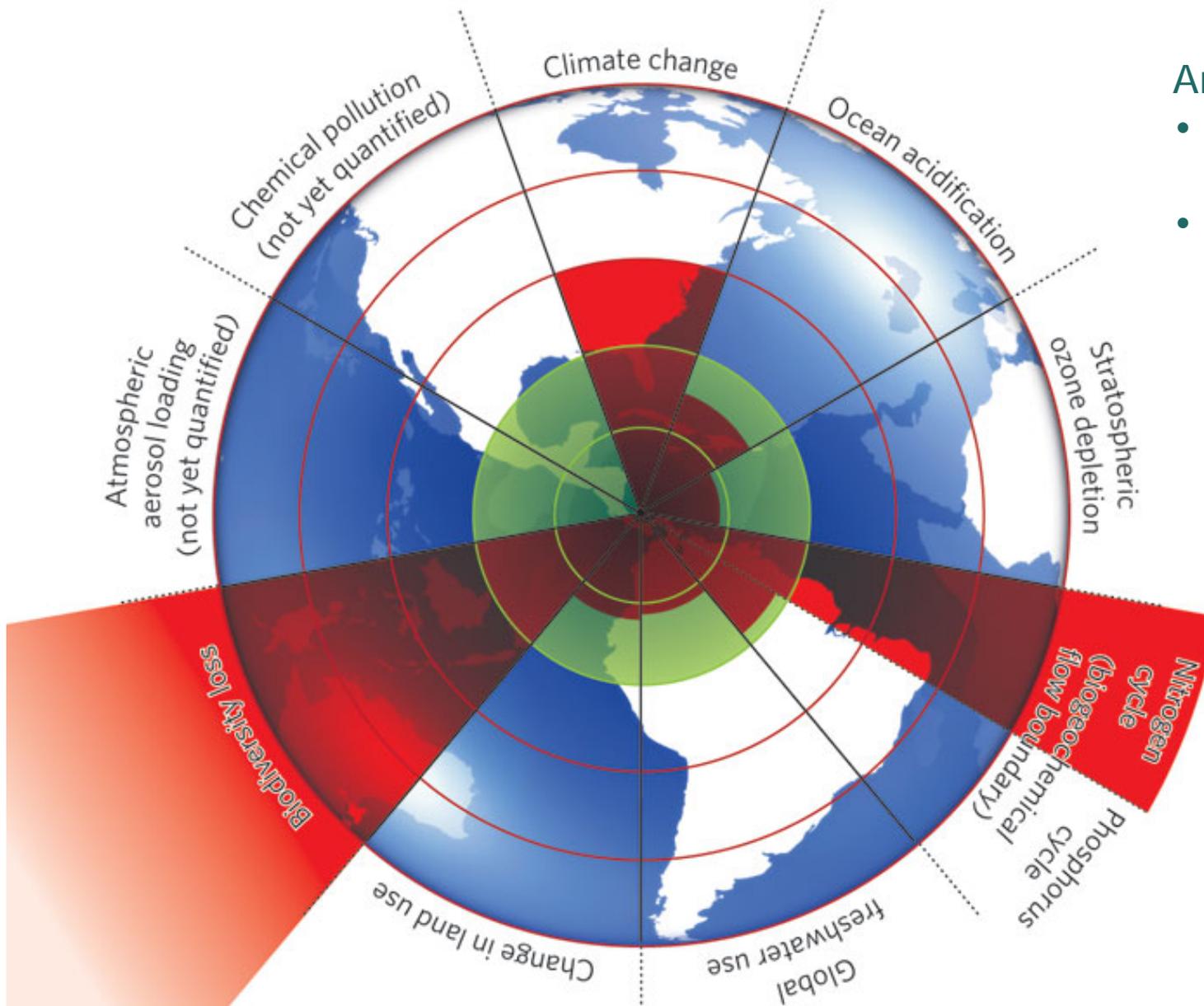
Sybille van den Hove
Median, Barcelona

Content

- Why strengthen the science-policy interfaces?
- How to do it?
- Critical times...



Environmental issues... (crises)



And...

- Radioactive pollution
- New forms of contamination (GMOs, nanotechs?...)

Rockström et al. 2009 "A safe operating space for humanity"

Environmental issues: 2 characteristics

Complexity

- ❑ Complex far-from equilibrium socio-ecological systems ⇒
 - emergence
 - non-linear internal causalities
 - irreducible uncertainties, ignorance, indeterminacy
 - irreversibility

Interconnectedness

- ❑ A complex landscape of interconnected environmental and societal challenges:
 - poverty; food security; population; water; health; biodiversity; energy; climate change; chemical contamination; ocean acidification,...
- ❑ Interconnections between: systems, risks, crises



Implications for knowledge

The **knowledge** needed to understand environmental issues and support action...

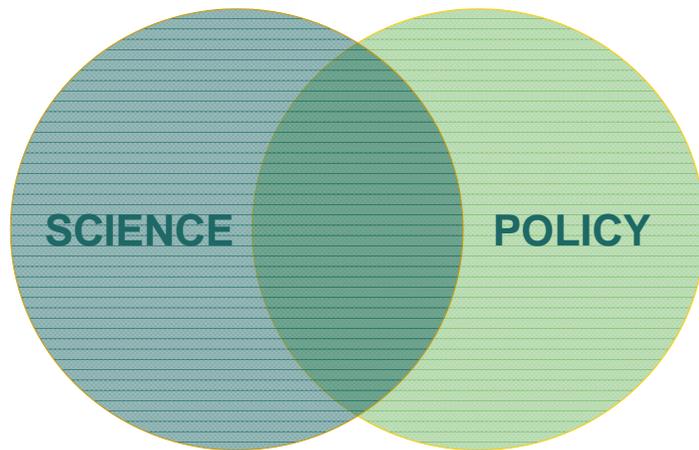
- ❑ is necessarily interdisciplinary and often transdisciplinary
- ❑ will always entail uncertainties and ignorance
- ❑ is in constant evolution
- ❑ is plural and owned by a variety of knowledge-holders

Implication for governance

The **governance** of environmental issues...

- needs to operate on an evolving knowledge basis
⇒ openness to redefinition of issues (and options) as knowledge, societal priorities and technologies evolve;
- must embrace complexity, risk, uncertainty, indeterminacy, ambiguity and ignorance;
- Must reach across many policy sectors;
- needs flexibility, cooperation, cross fertilisation, joint-learning, and sharing of best practices across issues, sectors and scales
- Holistic, transformative...

Implications for science-policy links



science-policy interfaces:

Processes to manage the intersection

- 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

Objective: improve quality of decision-making processes and/or research

- 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**;

Science-Policy interfaces: functions (2)

- ❑ 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.

Objective of this afternoon 'Policy' workshops:
suggestions on how to improve the SPIs between
climate and marine research and marine and maritime
policies

Critical times

- The future European research, development and innovation policy is currently being defined (Horizon 2020)

Environmental research, including climate and marine ecosystems research, is at risk:

- Dominance of a **narrow concept of innovation** as a way to bring more products to markets and deliver economic growth in the short term

VS.

- Need to **concentrate on human health, wellbeing and quality of life**, and to embark on a more ecologically, socially and economically sustainable path.

Innovation with a human purpose!

- ❑ Re-balancing market focussed innovation and socially meaningful and responsible innovation
- ❑ Environmental research is a driver of socially meaningful innovation in all its forms
 - Because of the interconnectedness of the financial/economic crisis with the climate/energy crisis and the biodiversity/ecosystems crisis
 - Can contribute to new and socially meaningful ways of transforming the socio-ecological system in which we live
 - Innovative epistemologies and methodologies applicable to other areas
 - Upstream of many technological innovations (e.g. biomimicry, blue biotechnologies, green technologies,...)

Thank you!

