



The implications of the nature of scientific knowledge to linking science and policy in the case of the Baltic Sea eutrophication

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PROBALT:



- Aims to make the prevention of eutrophication of the Baltic Sea more effective by
 - analysing societal conditions for the effective protection of the Baltic Sea (WP1)
 - examining nutrient trading as an instrument for more effective protection (WP2)
 - increasing national concern about the state of the Baltic Sea in individual countries (WP3)

PROBALT consortium:



- The Finnish Institute of International Affairs
- The European University of St Petersburg
- Division for Peace and Conflict Research of the Institute of Social Sciences, Christian-Albrechts-University Kiel
- Department of Economics and Management, University of Helsinki

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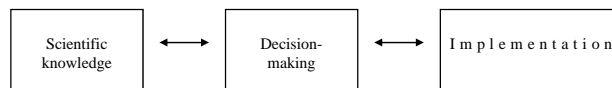


- **Case studies**
 - The linkage between science and policy from the perspective of scientists and experts – Finnish case
 - Societal conditions for the Baltic Sea protection: Russian case
 - The capacity of the European Union to solve the problem of Baltic Sea eutrophication
- **Increasing awareness**
 - training for 20 journalists from the Baltic Sea countries
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The dilemma of eutrophication



- Eutrophication is one of the most serious environmental risks for the sea
- Protective policies and measures since early 1970s
 - The problem remains
- The linkage:



- Science & Policy interface:
 - The process between the two is disturbed at some point
 - Affected by a number of intervening factors; also by the diversity and intricacy of scientific knowledge itself

Scientific knowledge & decision-making



- 18 in-depth interviews: eutrophication experts working in academia and sectoral research institutes (in Finland)
 - Eutrophication, protection policies, the role of HELCOM and the communication between scientists and decision-makers
- Analysis on different features of knowledge that have implications on the science-policy interface in the case of eutrophication of the Baltic Sea
 - "What kind of features of scientific knowledge can be distinguished, and in what ways do these features influence science – policy interface in this case?"
- Focus on knowledge production, processing and communication
- Method: thematic categories derived from the data

Thematic categories



- 1) The uncertainty of knowledge concerning ecological processes
- 2) The heterogeneity of knowledge
- 3) The societal and political call for (certain) knowledge
- 4) The contingency of the knowledge that ends up taken as a baseline for decision making and future research
- 5) The linkages of knowledge production, processing and communication to particular characteristics of individual researchers and research societies

1. The uncertainty of knowledge concerning ecological processes



- Uncertainty stems from
 - The nature of ecological processes, which makes it difficult to predict or to systemise them
 - Lack on scientific knowledge
 - On the processes, the effects of climate change, etc
 - Margin of error
- Implications for science—policy interface:
 - Can direct the public discussion towards weaknesses, thereby undermining the main message conveyed by the discovered result
 - Uncertain points can be raised into the discussion without scientific back-up, whereas their neutralisation requires more scientific evidence and argumentation
 - May slow down the process of linking scientific knowledge with policy-making and can be used to justify inaction

2. The heterogeneity of knowledge



- Results can be interpreted differently depending on the person and his/her perspective
 - Different views on the problem; e.g.
 - internal nutrient load
 - the role of phosphorous versus nitrogen in the problem
 - the magnitude of nutrient load from inland waters to the Baltic Sea eutrophication
- Implications for science—policy interface:
 - Different interpretations of the essence of the problem lead to different definitions of the solutions to the problem
 - The existence of varying and sometimes contradictory scientific knowledge implies that the society can choose which interpretation to take up

3. The societal and political call for (certain) knowledge



- Directs the research carried out in sectoral research institutes and the academia (dependence on funding)
- Sectoral research institutes need to concentrate on issues that political and administrative bodies consider relevant
 - The societal and political call for knowledge can also be influenced by the scientific knowledge introduced to them in the first place
- Implications
 - The call for certain knowledge weakens the possibilities for doing basic research and, potentially, diverts the focus of research from what is not yet known to what already is known

4. The contingency of the knowledge that ends up taken as a baseline for decision making and further research



- Not all knowledge ends up to the decision making system (and then “returns” to the focus of further research) in a logical way
 - Many issues and definitions seem virtually randomly chosen
- Simplifications are needed to communicate the issue effectively to wider audiences
- Implications:
 - Simplifications may be perceived as generally accepted facts and end up as a baseline for decision making and for further research

5. The linkages of knowledge to particular characteristics of individual researchers and research societies



- Define what kind of research a particular researcher is able to conduct
- The linkage to policy seems to depend predominantly on personal contacts and networks between researchers and policy-makers; the personality of the researcher also matters
- Only certain scientists and experts are in fact consulted and heard in policy making (which may also affect their further research interests)
 - there is confusion on how and to whom researchers actually should report their results in order to be heard in the decision making process
- Implications:
 - only *certain interpretations of certain researchers* are heard in policy making

Conclusions



- The analysis shows that science—policy interface is in many ways influenced by the nature of scientific knowledge itself
- Even when there is a unanimous scientific understanding, scientific interpretations are usually challenged by other, competing views on the issue, which can easily gain publicity
- Scientific knowledge is only one component in policy making and cannot be transformed to political advice without taking into consideration different political and societal forces
- These forces also affect on the construction of scientific knowledge itself

Thank you!!

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