Developing indicators for environmental, social and economic sustainability

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Contents

- The rationale for impact assessment
- The concept of sustainability
- DPSIR: Drivers-State-Pressure-Impact-Response
- Criteria for identifying indicators
- The indicators in the SENSOR project
- Application to land use



The rationale for impact assessment

- Prediction of policy effects
 - In relation to objectives
 - Side effects
- Can that be done?
- IA vs. CBA:
 - Quantification of impact
 - Valuation
 - Transparency of decision-making

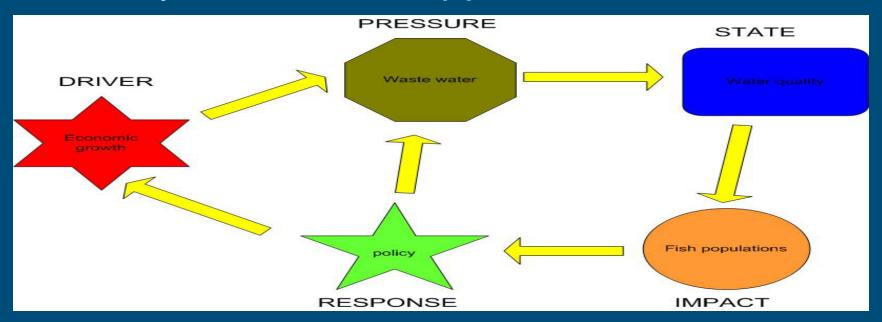


The concept of sustainability

- Brundtland (1987):
 - meeting the needs of the present without compromising the ability of future generations to meet their own needs
- The Triple Bottom Line
 - Environmental, social, economic
 - Adopted in EC Guidelines for Impact Assessment
- Intergenerational sustainability:
 - What will the needs of future generations be?
 - What technology will they have to fulfil them?
- Weak & strong sustainability:
 - Substitution
 - Sustainability & welfare



Causality: the DPSIR approach



- Indicators: impact
- But sometimes not practicable: pressure or state



Criteria for identifying indicators

- Political relevance: stakeholder involvement
- Scientific validity
- Practicality: capable of being modelled
- Responsiveness to policies being assessed
- As few as possible!



Sustainability indicators (1)

- Air quality (NH₃)
- Water quality (N & P surpluses)
- Water quantity (abstraction rate, water balance)
- Soil erosion
- Soil sealing
- Greenhouse gas emissions (CO₂, CH₄, N₂O)
- Carbon sequestration & carbon stocks



Sustainability indicators (2)

- Habitats at risk from eutrophication
- Populations of farmland birds
- Area of High Nature Value farmland
- Volume of dead wood in forests
- Consumption of pesticides in agriculture
- Spatial cohesion of nature areas
- Diversity of landscapes
- Landscapes as cultural heritage

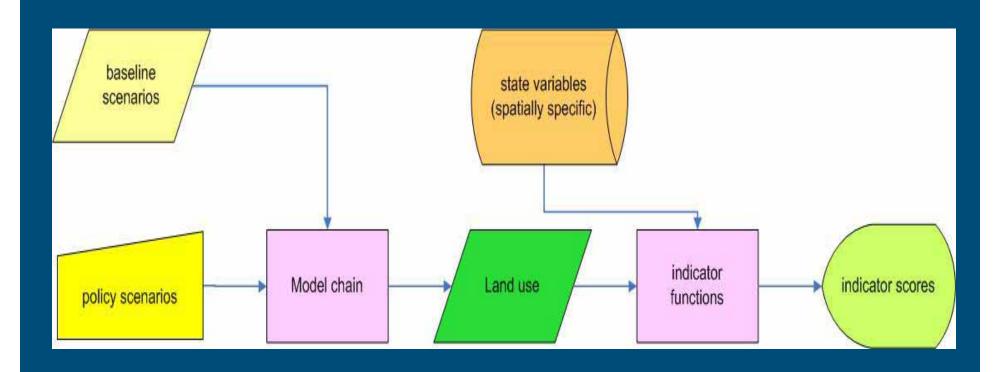


Welfare indicators

- GDP
- Employment by sector
- Administrative costs
- Exposure to toxic chemicals (NO_x, pesticides)
- Exposure to disasters (floods, forest fires)
- Tourism pressure
- Visual attractivity of landscapes
- Interregional migration



Application to land use





Thank you

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