River basin management
Complexity

• Natural system: surface water- ground water- soil- sediment interactions
• Social-ecological system: interaction between the natural and human system
• Government and governance system: many policies involved

• Many influences, interdependencies, and boundaries
Boundaries in river basin management

Spatial Planning
- Ministry
- Province
- Municipality

Soil
- Ministry
- Province
- Municipality

Surface water
- Ministry
- Province
- Municipality
- Water Board

Ground water
- Ministry
- Province
- Municipality
- Water Board

Politics

Stakeholders

Civilians

Spatial planning research
- Sociology

Toxicology

Ecology

Hydrogeology

Regional economics

Geology

Hydrology

Chemistry

Improving Science Policy Links
Science-Policy is too simple:

• Fragmentation
• Many Boundaries:
  • science-science boundaries
  • policy-policy boundaries
  • science-policy boundaries
• Multifold relationships
• Tailor made solutions

• How to connect?
Boundary Spanning Theory

• Boundary Spanners: mediators, knowledge brokers,…..
• Boundary Objects: joint papers or policy notes, joint models, joint maps, joint ……………
• Boundary Spanning Processes

• Coproduction of knowledge: scientists together with policy makers, stakeholders, etc.
Example: constructing a ground water model

- Scientists together with policy makers and stakeholders
- Gathering and processing ‘general’ data, Identifying modelling concepts, Static and dynamic calibration of the initial model

15 half-day workshops in 12 months

Feedback based on local knowledge

Looking into anomalies together in the field
Learning cycle for biophysical/social systems

- Monitoring
- Evaluation
- Common system understanding
- System "as it is"
- Knowledge Tools Processes
- System in the future
- Possible threats
- Interventions
- Experiments

Improving Science Policy Links
Observations from practice:

• Finding common goals and language
• Instruments can help: scenario building, joint visioning, joint problem descriptions, policy games, etc.
• Connections on three levels necessary: professional-management-political board
• Different types of knowledge: procedural, scientific, local knowledge
• Different roles of knowledge: in preparation, in monitoring, implementation, etc.
• Timing of the two processes: policy process – research process
• Political influence can hamper the science-policy process
• Knowledge brokers are important
Conclusions

• Science – Policy links in a highly specialised world
• Asks for joint processes of knowledge production
• Commitment, dedication and understanding from both sides
• It is difficult
• But it can be done!
Thank you for your attention!