

A systems approach as a challenge for organizations and innovation processes

A case study concerning groundwater from the
Netherlands

TNO | Knowledge for business



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Content of the presentation

- Introduction
- Experiences from practice: MIPWA
(Method development for Interactive Policy making in Water management)
- Conclusions



Introduction

- Water policy is putting 'water' in a systems context
- This increases complexity because of:
 - the system approach: surfacewater-soil-sediments-groundwater
 - the connection to other policy issues: nature conservation/development, economic development, land use & spatial planning etc.
 - crossing the borders of scientific disciplines
 - the connection to a wider variety of stakeholders with different views, interests & knowledge and the interaction with these stakeholders

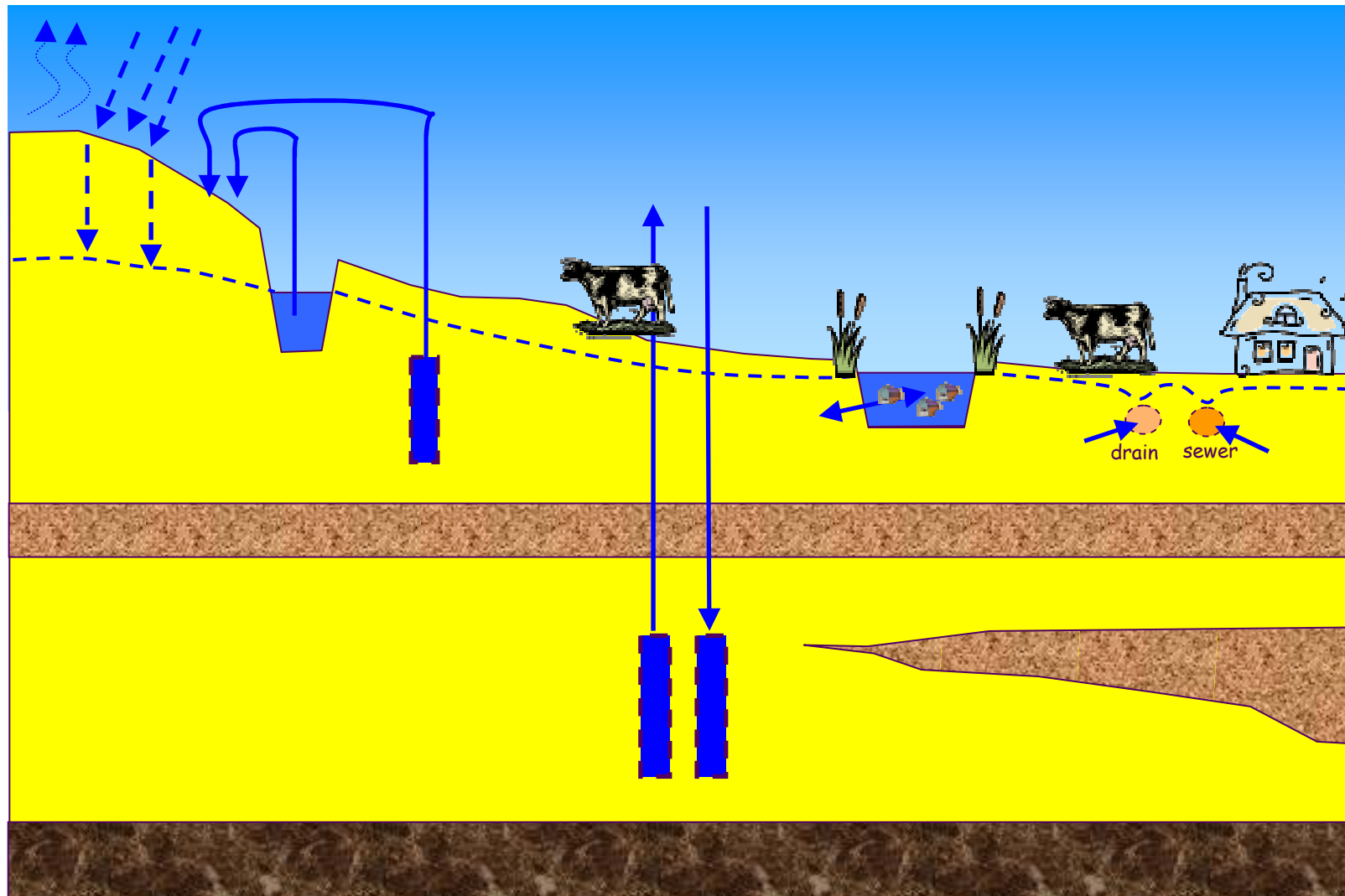
How to deal with this in an organisation and what does it mean for innovation processes?

MIPWA: Challenges for Dutch water management organisations concerning groundwater

- Societal requirements Groundwater
 - Quantity: impact on land use
 - Quality: impact on resources
- Policy/Directives requirements:
 - GGOR
Desired ground and surface water regime
 - Water management in the 21e Ct.
Adaptation concerning effects of climate change;
 - WFD/GWD
Good ecological status



MIPWA: Challenges for Dutch water management organisations concerning groundwater



MIPWA: Challenges for the organizations and for the innovation process

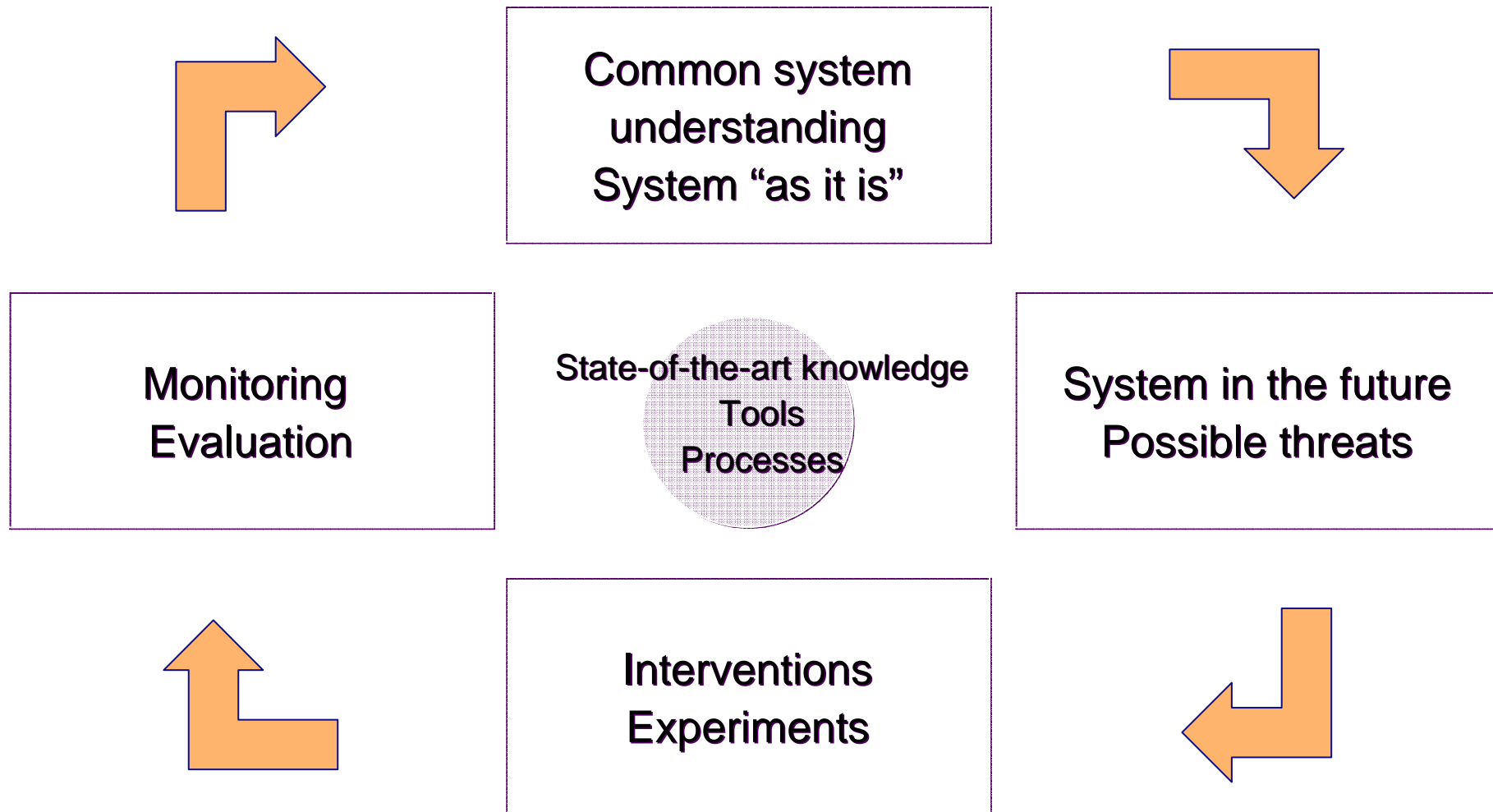
Drinking water
companies
(3)

Objective:

develop a large scale groundwater model
that has the support of the stakeholders
and supports the interaction with the
stakeholders

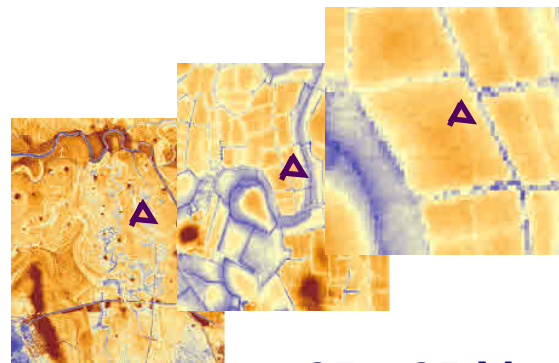
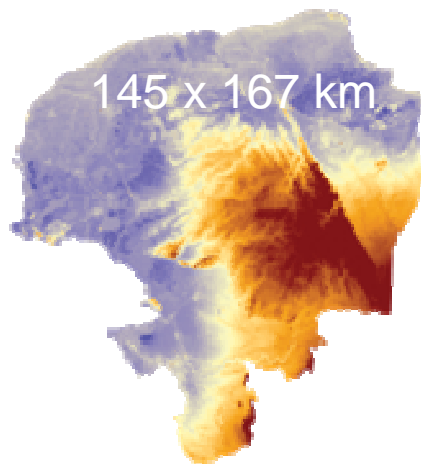
Ministry
of agriculture

Resilient approach in the MIPWA case study



MIPWA: Phases in the process

- **Phase 1 : Identifying requirements for the model and it's use**
 - What: objectives, expectations and wishes;
 - How: workshops with scientists and users, with brainstorming on: scale, level of detail, and how the model will be evaluated;
 - Result: A description of the model's technical specifications, and the process how to build it.



25 x 25 Meter



Easy and quick
to use



Building
together

MIPWA: Phases in the process

- **Phase 2: Building the model;**
 - What: Gathering and processing 'general' data, Identifying modeling 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

MIPWA: Phases in the process

- **Phase 3: Testing and deciding on the model;**
 - What: Testing the model and construction of the user interface;
 - How: by stakeholder analysis and a policy exercise



After this process MIPWA 1.0 was finished
all participants are still committed



They are now working on MIPWA 2.0

Lessons for organisations & innovation processes

- Involve Stakeholders/Polycymakers from an early stage in the process;
- Transparency and openness are essential: they built trust!
- This also means checking the expectations and policy objectives in the beginning, but also during the process, to make sure you are on the right track;
- Reserve time to prepare and execute this interactive process: listening, learning and understanding take time;
- Shape the interaction between scientists/engineers and stakeholders/policymakers as a learning process: to develop the understanding of the system and to fine tune the measures that should be undertaken.
- Innovation does not mean getting it right, right away. MIPWA 1.0 was the first step in the process towards MIPWA X.0