



Insights on Collaborative Modelling for Water Resources Management

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With the support:



WORLD BANK GROUP

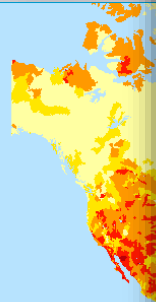


Why Collaborative Modelling?

SUSTAINABLE DEVELOPMENT GOALS



Protect the planet and enhance welfare of communities, and support their livelihood activities



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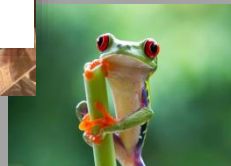
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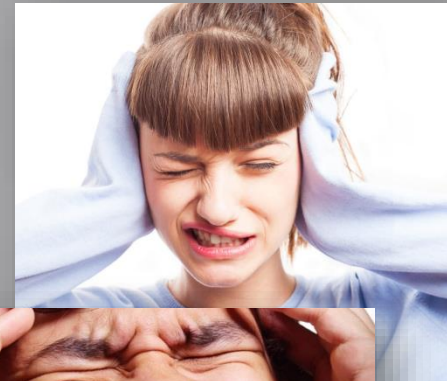


A new Era

1 Technology available and accessible

2 The world is changing at an unprecedented rate
Planning needs to respond in more **innovative** ways

- More complex and multi-dimensional objectives
- Higher levels of uncertainty - climate, markets...
- Resilience requires integrated strategies
- Implementation requires inclusiveness, negotiation



The traditional approach

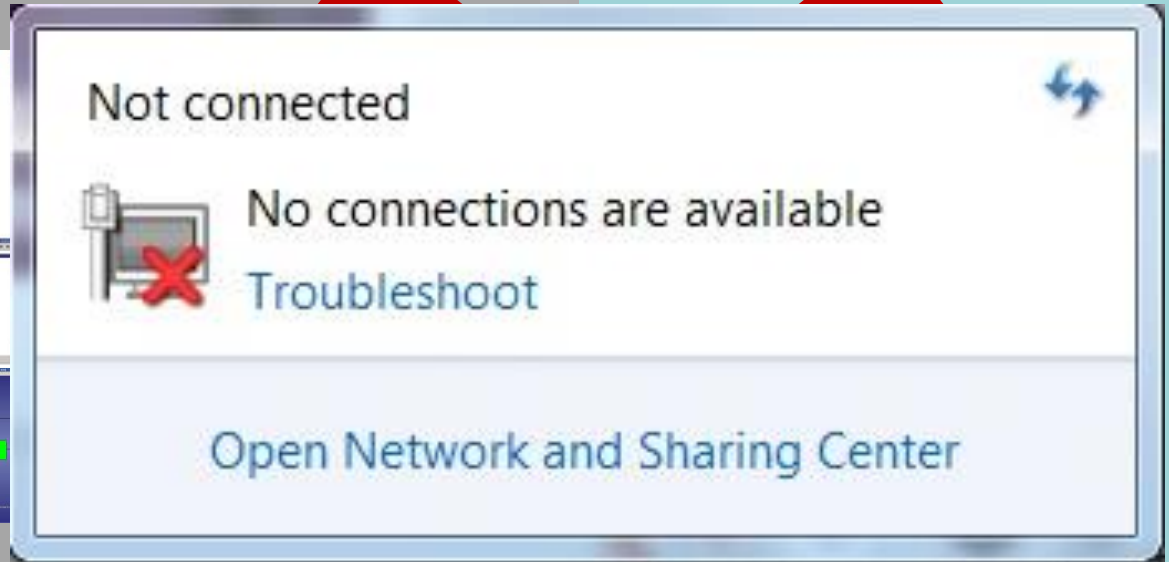
Black Boxes



Decision Support Systems

Stakeholder engagement

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The use of scientific knowledge for decision making allows a better understanding of:

- The **performance** of the water resources system
- The **response** of the water resources system to measures

Decision Support Tools are usually developed by engineers. The modeler is the central part of the process.

Little or **no stakeholder interaction.**

Participatory planning methods (e.g. workshops, public consultations)

*“Need to simplify and translate **complex models and datasets** into information that can be easily communicated and understood by **local stakeholders**, as models and tools are a means to support **dialogue** between stakeholders”*

(WB & ADB at Stockholm #WWWeek 2016)

Collaborative Modelling

Involvement of stakeholders in the modelling process

- ▣ **Participatory mapping** and data collection that builds trust and ownership of data and information by stakeholders
- ▣ User centered **design and co-development of modelling platforms** or decision support tools to meet specific target groups and decision making needs
- ▣ **Co-creation of knowledge** and **use of modelling platforms** that allow different stakeholder groups to contribute to / act on obtained analysis

Elements of Collaborative Modelling



Benefits

WHY

Acceptance and Ownership

Increased acceptance and ownership over developed plans and strategies

System understanding

Improved system understanding and model performance through the incorporation of shared multi-sector and local knowledge

Transparency

Increased transparency of both modelling and decision-making processes

Consensus

Increased acceptance and ownership over developed plans and strategies

Stakeholder relations

Improved stakeholder relations, by opening channels of communication, generating mutual understanding and negotiating compromise solutions

HOW

Stakeholder participation in design and construction

Data collection → model definition → model construction → Model validation → Verification

Stakeholder involvement in application

High level of influence and control over the developed product or plan and

Create the necessary cooperative environments to facilitate the joint formation of negotiated solutions

Collaborative modelling for decision support

Collaborative modelling

– Engaging stakeholders in solving complex problems
of water management



Analytical models play an ever-increasing role in the complex world of water resources planning and management. They support key decision-making for managing flood risk, building dams, managing groundwater, and bringing together the social, economic, and environmental issues and challenges of integrated water resources management (IWRM).

But models only provide us with one view of the world. There are other views, like those of stakeholders who live and work in river basins. If decisions about water management are to be widely accepted and implemented, asking stakeholders to approve pre-selected solutions is not good enough.

This paper argues for bringing stakeholders and technical experts together in a formal procedure much earlier in the planning process, and for developing models not just for analytical purposes but to build consensus, trust, and improve decision-making. This approach is called 'collaborative modelling'.

This Perspectives Paper was prepared by Laura Basco Carrera and Guillermo Francisco Mendoza. It is intended to galvanise discussion within the network and the larger water and development community.

www.gwp.org

www.gwptoolbox.org

Thank you!

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