



## RESEARCH CONFERENCES

ESF Conference in Partnership with LFUI

# Water Governance: Meeting the Challenges of Global Change

Universitätszentrum Obergurgl (Ötz Valley, near Innsbruck) • Austria  
5-10 June 2011

Chair: **Claudia Pahl-Wostl**, University of Osnabrück, DE and Stockholm Resilience Centre, SE

Co-chairs: **Joyeeta Gupta**, IVM VU University Amsterdam and UNESCO-IHE Institute for Water Education, Delft, NL & **Theo Toonen**, TU Delft, NL

[www.esf.org/conferences/11364](http://www.esf.org/conferences/11364)

With support from



**GWSP**



## Conference Highlights

---

*Please provide a brief summary of the conference and its highlights in non-specialist terms (especially for highly technical subjects) for communication and publicity purposes. (ca. 400-500 words)*

### **What is required of Water Governance to meet the Challenges of Global Change?**

This timely question was addressed by a recent ESF research conference on “Water Governance meeting the Challenges of Global Change” co-sponsored by the Global Water System Project. The main objectives of the conference were to assess insights and advances in concepts and methodologies for analysing water governance and policy, to identify knowledge gaps and priorities for future work, to bridge regional and global scales in multi-level analyses of water governance and to strengthen the emerging community of water governance scholars.

The conference design with interactive sessions aimed at supporting exchange among experienced scholars and younger researchers. The open and engaged atmosphere of the lively discussions reflected the spirit of the diverse and highly motivated international research community that was attracted by this conference.

The contributions were organized around the major conference themes global governance of water, water governance addressing global and climate change, conceptual foundations of multi-level water governance, comparative analyses of multi-level governance regimes as well as water governance and the environmental dimension.

There was overall agreement that despite significant improvements within this broad field of research, major challenges need yet to be tackled. Further development and wider application of shared conceptual and analytical frameworks as base for comprehensive comparative analyses were identified as priority areas for future work. Such work is required to contextualize insights without losing ability of being general. Sharing frameworks does and should not imply to follow bandwagons. To the contrary, it might help to develop as a community more self-reflexivity and build up cumulative knowledge and develop synergies among disconnected research fields. Governance research should not be conducted detached from the problems on the ground. A strong claim was made for more engaged research. A number of concrete steps were identified to foster progress.

I hereby authorize ESF – and the conference partners to use the information contained in the above section on 'Conference Highlights' in their communication on the scheme.

# Scientific Report

## Executive Summary

(2 pages max)

A few recurrent themes were raised in all sessions:

Water governance and management are particularly challenging since they relate to all policy fields and their analysis requires a systemic and interdisciplinary approach across the different disciplines within the social and across the natural and social sciences. Promising progress could be identified in the development of conceptual approaches that embrace the complexity of water governance and management systems as well as methods for comparative analyses. However, innovations are not widely adopted yet which is mainly a consequence of the quite fragmented nature of the community of water governance scholars. Hence, conferences such as this ESF conference are of vital importance to promote exchange and progress.

Global change requires increasing adaptive capacity of water governance and management to deal with uncertainty and surprise. Despite considerable improvement in the knowledge on factors that determine the adaptive capacity more research and systematic comparative analyses are required to develop general insights that nevertheless take into account the importance of the societal and environmental context. Empirical evidence shows that simplistic panaceas (e.g. privatization or decentralization) are not effective but are replaced by broader principles like the need for a balance between bottom-up and top-down processes and the importance of polycentric regimes to increase adaptive capacity. Such principles refer to more general system features which can be realized in different ways in different countries depending on context and history.

An improved understanding of requirements for effective and efficient vertical (across spatial scales) and horizontal (across sectors) coordination in multi-level governance regimes has been another point of general concern. The scale issue provides be an interesting link to the natural sciences. Other important areas in this respect are the role of uncertainties in policy and decision making and the use of ecosystem services as bridging concept.

Finally, the role of ethical considerations, the role of power and different value systems received considerable attention. Science must improve in making such impacts explicit and transparent.

## Scientific Content of the Conference

(1 page min.)

- Summary of the conference sessions focusing on the scientific highlights
- Assessment of the results and their potential impact on future research or applications

The conference covered five main themes within the overall context of “Water Governance: Meeting the challenges of Global Change”. The main scientific issues and challenges identified for each of these themes are summarized in the following:

### Theme 1: Global governance of water – current developments and future prospects

Issues raised within this theme:

- Complexity and fragmentation: Complexity underlies the challenges of water governance, as there are many actors and institutions in place, and often skewed in representation and representativeness. This fragmentation requires collective actions including a wide range of different stakeholders – both state and non-state actors. At the same time, water related problems are particularly intricate and connected to other policy fields, in particular but not

only at the global scale.

- Politics and the production of knowledge: Global debates are framed in specific terms. The power of those in international and national institutions who frame and establish the debate can exclude marginalized voices in the production of concepts, paradigms and approaches to water governance and management.
- Narrow decision-making excluding informal ethics and knowledge systems: Perceptions of differences and the interpretation of values have a key role to play in how water governance is defined and experienced.

Major challenges:

- Equity and social fairness were identified to be an overriding challenge of water governance which is relevant at all scales from regional to global and for cross-level interactions.
- Understanding the dynamics of politics and power is crucial to identify and address barriers to equity including issues of participation.
- Assess the 'traditions' of water management and learn equally from their benefits and limitations in order to avoid the inappropriate imposition of value and knowledge structures.
- Develop approaches to improve dialogue (between disciplines, cultures, etc) and valuation to arrive at consensus on fundamental standards rather than an assumption of what they should be.

## **Theme 2: Water governance addressing (global and) climate change**

Issues raised within this theme:

- Water can be understood as a major driver in adaptation and is a key connecting factor e.g. between health, energy, agriculture, etc. The experienced and expected impacts of climate change on water resources are a way to make people aware of climate change challenges and the deficits in prevailing resource governance systems.
- Much of the research is still dominated by the natural sciences but the results are often not put into context to make them usable for water resources management practice.
- Uncertainties play an important role and pose a challenge for successful water governance, which represents a long-term process entailing trade-offs between environment, sustainability and livelihoods.

Major challenges:

- There is a need for effective capacity building in science and policy to draw lessons from experience and translate them into guidance for action.
- Find pathways for developing countries to make affordable adaptive policies without dependence on developed countries.
- A more systemic perspective embracing the complex dynamics of social-ecological systems needs to be incorporated into management research.
- Science must be communicated to decision-makers and society without losing its meaning.

In this session, again, equity was an issue and it was noted that there is an absence of what equity means in the context of development and climate change. Answers must be found to the question of what the variables are that make up 'equity'.

## **Theme 3: Conceptual foundations to understand properties and dynamics of multi-level water governance regimes**

Issues raised within this theme:

- Our understanding of complex governance regimes, their components and transformation processes has improved and different approaches to explain regime transitions exist (i.e. by

focusing on agency, institutions, discourses, windows of opportunity).

- There is no *one size fits* all governance system or management approach. It is therefore crucial to first understand the context and processes of knowledge creation. Multiple research tools and concepts are required just as much as a shared framework.
- Networks are crucial components of polycentric governance systems and can assist in understanding vertical and horizontal interactions as well as formal and informal engagements. They can facilitate or hamper transitions towards adaptive and sustainable governance systems.

Major challenges:

- Develop tools and methodological approaches to map the hitherto fragmented knowledge base on regime properties and dynamics onto a common framework.
- Develop methodologies and a framework for analyzing the interactions between different governance modes, viz. networks, hierarchies and markets.
- Analyze the interplay between formal and informal institutions, under which conditions this interplay increases adaptive capacity, and if and how it is detrimental to sustainable resource governance.

#### **Theme 4: Methods for comparative analyses of multi-level water governance regimes**

Issues raised within this theme:

- Tools for developing 'cumulative' research to build upon existing results and overcome fragmentation in the social sciences are needed.
- Engaged research involves dilemmas of mismatches within the scientific community (applied science vs. theoretical/ exploratory science) as well as between science and policy.
- Translation agents and institutions are required to bridge the science-policy gap.

Major challenges:

- Develop common frameworks and methods to promote 'cumulative' knowledge development rather than a fragmented knowledge base.
- Research must take into account societal and environmental context in a systematic way and focus on causal linkages.
- Identify the role and priority of different governance levels at different phases of a policy process.
- Operationalize scientific knowledge to overcome the science-policy gap.

#### **Theme 5: Water governance addressing the environmental dimension**

Issues raised within this theme:

- The ecosystem services approach is a helpful concept to highlight the interdependence between societal and environmental systems as well as the importance of certain ecosystem functions and processes and detrimental impacts of overexploitation of certain service. It should be analyzed critically with regard to quantification and valuation.
- The concept of ecosystem services in terms of trade-offs and a framework for mobilizing stakeholders can be used as a communicative tool during decision making processes.
- There is a need to reflect on the role and accountability of researchers and consultants as both providers of knowledge and implementers of policy.

Major challenges:

- The analysis and valuation of ecosystem services without reducing it to monetary values.
- The design of participatory evaluation processes.
- The need for comprehensive assessments prior to the implementation of management



measures to avoid unwanted trade-offs and adverse consequences.

- Application of an adaptive management approach in policy implementation.

## Forward Look

(1 page min.)

- *Assessment of the results*
- *Contribution to the future direction of the field – identification of issues in the 5-10 years & timeframe*
- *Identification of emerging topics*

Based on the aforementioned issues and major challenges identified within the various sessions future directions for research in the field of water governance and global change were discussed:

### **Theme 1: Global governance of water – current developments and future prospects**

Future research should incorporate questions evolving around justice, dialogue, ethics and equity. Key questions raised are:

- Are development and ecological integrity mutually exclusive? Is the trade-off between human development and integrity of the environment inevitable? Why has the focus of science and policy been mainly on trade-offs and differences and not on synergies and similarities?
- How do humans relate to their physical environment? How to move away from the instrumental view of water? Does the design of institutional responses need to reflect the interrelationship between human society and the physical environment?
- How to develop shared values and focus on problem solving? How can dialogue and consultation contribute to understanding diverse needs?
- How to better understand the role of ethics and value systems in creating modes of interpretation?

### **Theme 2: Water governance addressing (global and) climate change**

Interdisciplinary approaches of combining natural and social sciences including historical research are required to arrive at effective solutions. Future research should address the following:

- The effects of climate change on transboundary relations.
- How can scientific results be operationalized?
- Effective multi-level governance needs a platform to achieve best practice processes and identify areas of further research. Local adaptation can be very progressive and there is a need to determine how to capitalize on local experiences and innovation.

### **Theme 3: Conceptual foundations to understand properties and dynamics of multi-level water governance regimes**

Future research should incorporate insights from various disciplines and take into account experiences in other sectors such as energy. There should be greater focus on the historical evolution of water governance regimes and management literature or organizational theory may provide concepts for better understanding regime dynamics. Specific research questions include:

- What are the underlying variables in transitions of governance regimes?
- What are the conditions and what is the role of the different governance structures for change?
- Which institutions are more likely to help human actors “to learn a way out” from a currently undesirable state?
- What is and what should be the role of the nation state in water governance?

#### Theme 4: Methods for comparative analyses of multi-level water governance regimes

Future research needs to build the foundation for comparative analyses of a large number of case studies to build a knowledge base that allows deriving more general statements and derive context-sensitive policy advice.

- Development of frameworks and methods that address the underlying dynamics of multi-level governance processes as well as the links between governance regimes and performance.
- Streamline of frameworks and diverse approaches to increase comparability without sacrificing the ability to adopt different theoretical and conceptual perspectives.
- Attribute more importance to engaged research which may also be an effective means to overcome the science-policy gap.

#### Theme 5: Water Governance Addressing the Environmental Dimension

Again the role of engaged research was emphasized and the need to develop tools supportive of the governance of transformation learning capacity during the process of change, and the establishment of a global learning network.

- Analyze under which conditions governance systems overcome the trade-offs between increasing human water security and sustaining a healthy ecosystem.
- Assess comprehensively and further develop available interdisciplinary frameworks and models that bridge the natural and social sciences.
- Address how to create deliberative processes that transform the political landscape and how to account for long-term impacts of land use and other policies.

- Is there a need for a foresight-type initiative?

In principle the field would be at the right stage for a type of foresight initiative. However, the current ESF instrument on Foresights might not have the appropriate format. Given the fact that several concrete topics have been identified, exploratory workshop might be an interesting alternative to focus and develop the state of the art on selected themes.

#### Atmosphere and Infrastructure

▪ *The reaction of the participants to the location and the organization, including networking, and any other relevant comments*

The location and organization of the event were generally well received by participants. Participants appreciated the opportunities for interaction both during and between the sessions and liked the mix of age groups and countries of origin. One young participant noted it would have been good to have an enabling tool (e.g. small group discussions, mentoring scheme) to specifically encourage young researchers to freely exchange with senior researchers.

#### Sensitive and Confidential Information

This report will be submitted to the relevant ESF Standing Committees for review.

In order to promote transparency, it is ESF policy to also publish the Scientific Reports on its website. Any confidential information (i.e. detailed descriptions of unpublished research, confidential discussions, private information) should therefore not be included in this report. Confidential issues can be addressed in the next page, which will not be published.

X I hereby authorize ESF to publish the information contained in the above Scientific Report on the ESF Research