FINAL REPORT for APN PROJECT
ARCP2009-03CMY-Nikitina

Reducing Water Insecurity through Stakeholder Participation in River Basin Management in the Asia-Pacific

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OVERVIEW OF PROJECT WORK AND OUTCOMES

Non-technical summary

Pervasive land-use and water-use changes are being compounded by changes in climate to fundamentally alter water insecurity in river basins across the Asia-Pacific. This comparative and synthetic study included gathering of new empirical data and new analyses of water related risks and responses to reduce them with a particular focus on how stakeholders are engaged. Risk management efforts associated with changes in both water quantity and quality were considered—from floods through to water shortages as well issues of access to good quality water. Our research looked at patterns of stakeholder participation in river basin water management in five Asia-Pacific countries (Vietnam: Red and Mekong; Russia: Amur; China: Salween; Thailand: Ping-Chao Phraya; Australia: Latrobe). A key finding was that success in dealing with water-related insecurities depends on efforts not only by governments, but also by non-state stakeholders. Different groups of stakeholders take on a subset of roles each with limitations for addressing major water insecurities. To address differences in capacities and interests improving stakeholder coordination and building stakeholder partnerships is crucial and also contributes to good water governance. Effective coordination, for example, is often a precondition for effective policy process, capacity building, and transfer of "good practices" across basins worldwide.

Objectives

1. Comparison and synthesis of water insecurities, roles and responses by multiple stakeholders in river basins in 5 countries
2. Assessment of opportunities and limitations for stakeholder engagement/partnerships in water governance in river basins
3. Enhancing capacity-building for basin water management in the Asia-Pacific through stakeholder participation and partnerships

Amount received and number years supported

US$ 45,000 for Year1, 2008/2009
US$ 40,000 for Year 2, 2009/2010

Activity undertaken

1) Project workshop *Reducing Water Insecurity through Stakeholder Participation in River Basin Management in Asia-Pacific,* Hanoi, 18-20 Jan. 2009; 2) Project synthesis workshop *Adaptive water governance and stakeholder participation in river basin management in Asia and in Europe*, Chiang Mai, 25-28 March, 2010; 3) Policy Dialogue with local policy-makers *IWRM: Policy dialogue and good practices*, Hanoi, 19 Jan. 2009; 4) Two Policy Round Tables (PRT)with stakeholders: *PRT-1 Securing meaningful participation,* and *PRT-2 Adaptive water governance*, Chiang Mai 26 March 2010; 5) REWIND special session *Reducing water insecurity through stakeholder participation in river basin management*, IHDP Open Meeting, 29 Apr. 2009, Bonn; 6) Convening the session *Water governance and stakeholder participation*, GECHS Synthesis Conference "Human Security in an Era of Global Environmental Change" 23 June 2009, Oslo; 7) Presentation of project results by partners at various international conferences; 8) Joint presentation of project results at 4th International Symposium on Transboundary Water Management 21 Sept. 2008, Thessaloniki; International Disaster Risk Conference 2009, Aug. 2008; 9) Participation in 2009 Amsterdam Conference on the Human Dimensions of Global Environmental Change; 10) Participation in the 2nd APN Southeast Asia Sub-regional committee meeting, Bangkok, 20 Aug. 2009;11) Expanded Asia-Pacific water networks of experts representing multiple stakeholders; 12) Cooperation and partnerships with international research projects including M-Power, ASEMWaterNet, Twin2Go, CABRI; 13) support for national capacity building through the recently established IHDP national partnership in Russia; international seminar *Human Dimensions of Global Change Research: Humanities Research Agenda in Russia,* Moscow, 13 Nov. 2008*;* 14) data exchange via the web www.sea-user.org

Results

1) Co-authored book chapter *Governing risks: climate change, water insecurities, and disaster management*, Emerald Publishers; 2) Co-authored article *How stakeholder participation and partnerships could reduce water insecurities in shared river basins,* In UNESCO Documents Technical Series; 4) Series of publications in journals and manuscripts based on REWIND results; 3) Abstracts of REWIND session at the IHDP Open Meeting 2009; 5) REWIND Working Papers based on case-study research in five countries; 6) Series of Working Papers focusing on stakeholder participation/partnerships, including *Inclusive and adaptive water governance; Critical reflections on multistakeholder dialogues on water: experiences from Asia and Europe; Gender relations, ethnicity and water insecurities in the Upper Ping river basin, northern Thailand; Codes of conduct, affected communities and accountability of hydropower developers in the Mekong Region;* 7) Key messages about roles and 'good practices' of stakeholders from expert discussions at Policy Round Tables; 8) REWIND/Twin2Go joint inventory of water governance regimes and stakeholder participation in river basins in Vietnam and Thailand; 9) Dissemination of REWIND results at *Global Water Governance and UN System*, GWSP Oct. 2010; at Stockholm Resilience Center 1-3 Sept. 2010 *(pending)*.

Relevance to APN's Science Agenda and objectives

This project is relevant both to the APN *science agenda* on the intersection of environmental changes with management of water resources, and to the APN *policy agenda* with its emphasis on consolidating interface between science and decision-making by various stakeholders at different levels. The core objective and accomplishment was the exchange of lessons about 'good practices' between countries, between river basins and between stakeholder groups.

Self evaluation

REWIND has conducted activities in a broader scale than envisaged by its work-plan. Transborder opportunities and constraints for stakeholder engagement in water management in shared river basins (Mekong, Amur, Salween) were analyzed; however, more profound investigation and discussion of the topic is needed. The gender issues had been dealt with in detail. Assessment of water-related risks and insecurities induced by global climate change had been undertaken in the northern prefectures of China and it produced interesting findings. Partners feel that more systematic attention should be given to evaluating the roles of particular stakeholder groups, to 'cross-stakeholder groups' comparisons, to investigation of limitations for their participation-partnerships in decision-making and action in river basins. Refining of findings and synthesis requires additional efforts. More emphasis should be on comparative analysis of such potentially challenging issues as 'context', performance and 'good practices', their transfer and adaptation to specifics of particular river basins and to domestic socio-economic situations. Enhancing networking, capacity-building and mobilizing internal potential of each stakeholder in the developing countries and transition economies in Asia is of a must. Although REWIND has accomplished much more than initially planned for consolidating science-policy interface through special Policy Round Tables, profound dialogue with practitioners, discussion and testing its findings with experts and stakeholder representatives need to be further encouraged.

Potential for further work

Project partners plan to proceed with synthesis and comparative research on assessing roles and influence of each stakeholder group within water governance systems in river basins in the Asia-Pacific. One of the goals is in addition to already published works to write a co-authored article on this innovative topic. Contrasting major trends to worldwide context is among potential challenges. Another goal is to further refine project findings, and extracting 'global' messages. Several project partners plan to contribute to the aggregation efforts of Twin2Go international initiative in coordinating twinning partnerships towards more adaptive governance in river basins. Discussion of REWIND findings with Global Water Systems Project, at the Global Water Governance and UN System conference, and at Stockholm Resilience Center is planned for autumn 2010. Partners

recognize the importance of continuation of science-practice dialogue on the issue. REWIND briefing notes and major lessons learned will be presented at the expert meetings with policy-makers and stakeholders in Nepal and project messages will be tested with the Vietnam Water Partnership - both to be held in autumn 2010. Finally, the detailed mechanisms through which stakeholder participation and coordination reduce water insecurities in shared basins deserve further investigation. Ensuring wider sharing and better understanding of knowledge and 'good practices' and higher public acceptance of policies and measures proposed by governments or under international transborder agreements is essential for them to be viable.

Publications

Dutta D, W Wright eds. (2010) Coastal Zones and Climate Change: Assessing the Impacts and Developing Adaptation Strategies. *Proceedings of the International Symposium*, School of Applied Sciences and Engineering, Monash University; 474 pp.

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Lebel L, B T Sinh (2009). Risk reduction or redistribution? Flood management in the Mekong region. Asian Journal of Environment and Disaster Management 1:23-39

Lebel L, B T Sinh, E Nikitina (2010) Governing risks: climate change, water insecurities, and disaster management. In R Shaw, ed. *Climate Change Adaptation and Disaster Risk Reduction,* Emerald Publishers

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Nikitina E, L Lebel, V Kotov, B T Sinh (2010) How stakeholder participation and partnerships could reduce water insecurities in shared river basins. In J.Ganoulis, ed. *Water Resources Across Borders: A Multidisciplinary Approach to Transboundary Water Management*, *UNESCO Technical Documents Series*, Selected articles from IV International Symposium on Transboundary Water Management *(in press)*

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Xu J (2010) The Highlands: A Shared Water Tower in a Changing Climate and Changing Asia In A History of Water, Series 2 Volume 3

Xu J (2009) The Mekong and Beyond: Institutions and governance for climate change in the Asian Highlands, In F Ludwig, P Kabat, H van Schaik, M van der Valk, eds. *Climate change adaptation in the water sector*. Earthscan, London

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TECHNICAL REPORT

Preface

This report focuses on water governance at a river basin level, role of institutional coordination, participation and partnerships between multiple stakeholders to reduce water insecurities they are facing. River basins in the Asia-Pacific demonstrate the emerging trend of state-centric governance evolving towards encompassing multi-stakeholder approaches. Broadening engagement, interaction and consolidating partnerships between public, private and civil society actors is among effective tools in good water governance. Project explores and compares stakeholder involvement and partnerships, possibilities and constraints for their participation in water management in river basins in Australia, China, Russia, Thailand and Vietnam. Findings are contrasted to worldwide trends.

Table of Contents:

1.0 Introduction

Pervasive land-use and water-use changes are being compounded by changes in climate to fundamentally alter water insecurities in river basins across the Asia-Pacific. Water-related risks and insecurities to places and people within river basins include challenges of shifting flood regimes, seasonal water shortages and multi-year droughts, deteriorating water quality, and persistent problems of access to safe drinking water and sanitation.

There is a growing recognition worldwide that poor water governance is a major factor underlying persistent and aggravated problems of water insecurity. Water governance refers to the range of political, social, economic and administrative systems that are in place to regulate development and management of water resources and provision of water services at different levels of society [UNDP 2000], and it encompasses a variety of interactions between actors, between different levels of administration and power relationships. Inadequacies of existing water governance systems and mechanisms through which they perform in the river basins in the Asia-Pacific countries also explain to a high extent the vulnerabilities of societies to water-related insecurities and shortages in adapting to rapid global changes.

New trends in water governance are emerging, in part in response to these problems. Integrated water resources management (IWRM) and basin-level planning and coordination, for example, have widely been promoted; but practices have often changed much more slowly [Biswas 2005; Gyawali & Dixit 2001; Molle 2008]. Nevertheless, in many places, water governance systems have begun to shift from strongly state-centric approaches towards more inclusive and participatory modes with greater opportunities for interactions between stakeholders. At the same time it has become clear that success of water governance systems depends on multi-scale efforts not only by the governments of Asia-Pacific countries, which remain critical players, but also the roles of other stakeholders within a basin having an interest, or capacity to act. Coordination among state agencies and partnerships between state and non-state actors are key elements of strengthening water governance. Coordination includes horizontal and vertical relationships between government authorities within a river basin and may include agencies from different countries in trans-border contexts. Partnerships and other forms of interaction with other non-state actors, including committees, dialogues and joint assessment activities are producing a plethora of possible modes of engagement with multiple stakeholders in water and river basin management.

A variety of water governance arrangements, including legislation, programmes , water administrations and river basin organizations, as well as bilateral and multilateral arrangements in shared waters are in place in most Asia-Pacific countries. The systems of most countries, on paper, appear to be quite extensive. Taken together they potentially provide substantial capacity to address water related insecurities in river basins. But at the same time practices and actual performance demonstrate many limitations, weaknesses, and gaps. In many cases stakeholder engagement is disconnected from decision-making and engagement in implementation or action is weak or non-existent. Stakeholders, it appears, are often not been effectively engaged in problem solving in river basins.

The goal of this report is to critically examine the roles of stakeholders in management of water in river basins with an emphasis on existing coordination and partnerships among stakeholder groups, assessing possibilities and constraints for further development. The report provides evidence from case-studies research in river basins in five Asia-Pacific countries, compares the main findings and results of research and expert assessments, and it provides broader generalizations, including those in the worldwide context and directions for future actions.

2.0 Methodology

2.1. Design

REWIND research and actions were organized into two major phases:

- During the ***first phase*** (2008-2009) the discussion of water related risks and *insecurities* in selected river basins, their *causes*, *impacts* on societies and ecosystems, as well as of major management *responses* to them in five countries of the Asia-Pacific, namely Australia, China, Thailand, Russia, and Vietnam was undertaken. The set of risks analyzed includes (1) the water quality, especially the quality if drinking water, (2) water supply and water availability for agriculture; (3) floods, (4) water in urbanised areas. Exploring possible impacts and insecurities associated with global climate change was emphasized [Progress 2009].

- The ***second phase*** (2009-2010) had as a major focus assessing *stakeholder* engagement and roles in water management and in addressing water insecurities in river basins or sub-basins in five countries of the Asia-Pacific. Three major clusters of stakeholders were considered—government authorities, business—and interactions between them are explored. Work covered both *analytical* assessment of findings from case-study research in river basins and on *comparative analysis* of evidence and results from country studies. *Aggregation* of results from case-studies, their synthesis and contrasting them to the worldwide trends was also part of the analysis.

Research in the second phase on stakeholder engagement, coordination and partnerships in river basin water management was organized according to **three Workpackages:**

- **Workpackage 1:** After assessing major water related risks, their causes and impacts, it outlines the design of domestic institutional systems in five countries into which stakeholder participation/partnerships is embedded. It explores the specifics of existing water governance practices with their possibilities and constraints for actor engagement in decision-making and action in river basins or their sub-basins.

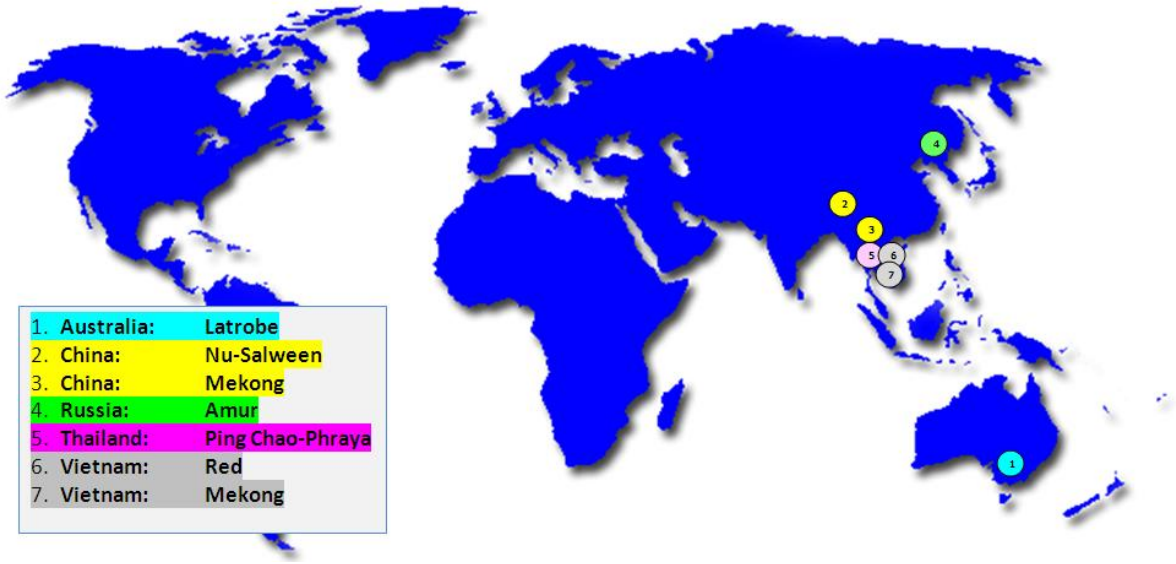
- **Workpackage 2:** Concentrates on case-studies analysis of stakeholder participation, their roles and coordination in river basin water management in selected river basins, or their sub-basins in five countries. They include the Latrobe river basin in Australia, Nu-Salween and Mekong in China, Amur in Russia, and Ping-Chao Phraya in Thailand. Roles of stakeholder engagement in shared waters are explored.

- **Workpackage 3:** Deals with synthesis and comparison of project findings from river basins case-studies in five countries. Results of generalisation, aggregation and comparative analysis of stakeholder roles and good practices in water management, problems, possibilities, constraints for their partnerships are contrasted with findings in the global context. Potential for engagement in adaptive water governance is a part of inquiry. Good practices and lessons learned from stakeholder groups are used to develop recommendations and future directions.

2.2 Activities and Analysis

2.2.1. Country case-studies in river basins

Five country teams perform compatible studies of stakeholder responses to water related insecurities and their roles in river basin water management. This is a country-based and river basin/sub-basin - based analysis. The studies are undertaken in sub-basins of Latrobe in Gippsland region in Australia, in northern sub-basins of the Nu-Salween and northern Mekong in China, Ping-Chao Phraya in northern Thailand, Red and Mekong in Vietnam and in the Russian provinces of the Amur.



Analytical exploration and data collection about stakeholders' participation in river basins are organised according to a common format applied by each country case study. Major sections of a common research protocol target to answering the following questions:

- Which stakeholders participate in water management in the river basin?
- What are the main differences in interests, perceptions, and capacities among stakeholders?
- How and to what extent a stakeholder is affected by water related insecurities?
- Which stakeholders cooperate with each other and how?
- What level of influence do different stakeholders have on water management?
- What have been the main trends in public participation over the last decade? What are the prospects for expanding public participation?
- Does government enhance stakeholder involvement (in laws, water programmes and plans) or provide incentives for participation?

In order to answer these questions each country team starts its analysis with exploring new trends in *participatory patterns* and possible responses of main actor *groups* to water related insecurities identified within initial phase of research in particular basins/sub-basins. It focuses on those groups which have an interest and capacity to participate in decision-making within river basin management and to take actions to reduce water-related insecurities From a variety of multiple stakeholders from three major clusters mentioned above the following five major groups are selected for analysis: (1) government authorities, (2) business, (3) scientific community and experts, (4) non-government and community-based organizations, and (5) women/ households. After such inventory the stakeholder *roles* are assessed. It includes an inquiry about interests, goals, and needs of particular group and its

capacity (ability) to realize them. Possible conflict of interests of various groups and common visions for problem solving are explored. Part of this exercise includes assessing the role(s), opportunities and limitations for local public participation in reducing current and future water insecurities which is still a weak element in participatory river basin water management. Stakeholder participation is a very 'context' oriented issue being highly dependent on domestic specifics (geographic, socio-economic, political) and situational factors; it allows to explain patterns of stakeholder behavior. Findings about the stakeholder roles are particularly important for decision-making within river basins.

The study of stakeholder participation, roles, possible conflicts and common visions is followed by inquiry about *partnerships* and *coordination* in river basins which is a powerful tool in good water governance and capacity building. Inquiries are made about concrete forms such as dialogues, consultations, consensus-building, coordination of interests, volunteer participatory action networks and associations, joint actions and projects. Case-studies explore the existing experiences in multi-scale coordination between government authorities within basins and sub-basins. Possibilities and shortages relating to such comparatively new form of coordination as river basin council type organisations - with clear responsibilities and mandate in stakeholder coordination and in application of integrated water resource management approaches, are among the key elements of REWIND inquiry. How to better establish interaction within a triangle authorities-business-public and build partnerships between them which is also a promising tool in good water governance are analyzed. At the same time as bureaucratic competition is among typical features of water management in river basins under study the project teams are analyzing this phenomenon. Inadequate and poor use of scientific and traditional knowledge, weak communication and data sharing which are still widely spread and are regarded as considerable constrains for effective water management. Problems of transborder cooperation and coordination, as well as stakeholder engagement in shared waters management, including in the Mekong, the Amur and transboundary watercourses originating in the Greater Himalayan region are investigated in case-studies.

Results of country-based and river-based case-studies research are presented in the following REWIND Working Papers:

- Bach Tan Sinh. Stakeholder roles and participation in adaptive water management in Vietnam. *REWIND WP-1.*
- Dutta Dushmanta, Wendy Wright. Engaging stakeholders for identification of key issues and establishment of impact response functions for vulnerability analysis and adaptation measures in coastal zones under climate change conditions: A case study in Gippsland Coastal Region, Australia. *REWIND WP-2.*
- Kotov Vladimir, Elena Nikitina. Assessment of stakeholder responses, involvement and partnerships in the Amur River Basin, Russia. *REWIND WP-3.*
- Lebel Louis, Songphonsak Rattanawilailak, Phimphakan Lebel, Geeta Bhatrai Bastakoti, Ram Chandra Bastakoti. Gender relations, ethnicity and water insecurities: multi-stakeholder engagement in the Upper Ping River basin, northern Thailand. *REWIND WP-4*
- XU Jianchu. The Mekong and Beyond: Institutions and governance for climate change in the Asian Highlands. *REWIND WP-5*
- XU Jianchu. Future Scenarios for the Rivers of the Greater Himalayas. *REWIND WP-6*

2.2.2. Comparative analysis and synthesis

The focus of comparative analysis is on stakeholder participation/partnerships and their roles in water related risk reduction in selected river basins in five countries of the Asia-Pacific. Comparisons are based on results of case-study analysis by project partners in river basins, or sub-basins. Identifying similarities and differences, and common and specific problems is in the core of comparative analysis.

It includes cross-country comparison in river basins in five countries – '*what is compared'*:

- Package of water insecurities and risks and their impacts and places within river basins
- Existing domestic institutional frameworks for river basin water management
- Stakeholder participation/partnerships
- Forms of coordination
- Stakeholder roles, capacities, interests
- Opportunities and constraints for stakeholder engagement
- Lessons learned about success and failures

Results of comparative analysis are used for further aggregation of findings and generalization of project results. REWIND approach is that aggregation is an essential (although a tricky task) if comparative analysis is to be valuable. Thus, project partners search for generalizations, for regularities in behavior across countries and across river basins, or more ambitiously – for rules and common patterns of stakeholder engagement and institutional processes. It is difficult, but provides interesting results, and will be followed by partners after the project ends.

REWIND attempts to identify distinctive ways, instruments, mechanisms in which different societies deal with water risks they are facing in river basins and to assess roles of each stakeholder in this endeavor. Aggregation of common and specific features, trends in development of participatory patterns as a part of good water governance is useful output of the project. Explaining similarities and differences in patterns and processes, in practices applied by societies contributes to better understanding the diversity of water governance systems in river basins of the Asia-Pacific.

Project based articles in pier reviewed journals and chapters in manuscripts are published, or prepared for publication (*see,* Publications). Partners plan to write a synthesizing article based on final findings.

Results of generalization about stakeholder roles in water management across river basins, problems, possibilities, constraints for their partnerships are contrasted to findings in the global context. They contribute to ongoing worldwide discussion on new trends in reforming the water governance systems away from state-centric towards multiple participatory patterns. Project partners will proceed further with analysis and comparison of their findings with the worldwide trends.

Joint efforts undertaken together with the EC international Twin2Go project during the synthesis workshop hosted by REWIND in Chiang Mai, March 2010 (Annex, Chiang Mai Workshop) is a useful means for sharing project results globally. It allows: 1) presenting for international discussion the project results on the role of stakeholder participation in adaptive water governance, 2) benefiting from Twin2Go worldwide inventory of water governance systems in river basins, including those in

other countries of Asia – in Nepal, Bhutan, India and Kazakhstan, and both in developed and developing countries worldwide (in total, 23 river basins), 3) discuss project results with international experts invited to the joint workshop. Such synergy between projects is extremely useful for contrasting project findings to global trends.

REWIND results and refined findings will be presented for discussion within ongoing international research activities and programmes, including the Stockholm Resilience Center, Stockholm University, the Global Water Systems Programme (GWSP), Environment and Human Security (UNU/EHS), Twin2Go project and others.

2.2.3 Science-practice interface and expert assessments

Supporting science-practice interface is among REWIND practical tools. Results of discussion of 'good practices' of stakeholders in river basin water management, exploring major lessons learned from various groups of actors, and identifying existing possibilities and constraints for expanding their engagement and cooperation, limitations in application of tools to promote them are used for development of policy advice and follow-up actions. Good practices and lessons learned from stakeholder groups are used to develop policy recommendations and suggest future directions on how to increase the effectiveness of stakeholder participation in water related risk reduction within river basins in the Asia-Pacific. Special consideration is given to how actions of stakeholders taken now could influence societal resilience to water related risks under the future global changes.

Our approach drew on the knowledge and experiences of experts and practitioners representing various stakeholder groups. First, project teams include both of scholars from social and natural sciences, and practitioners. Second, invited external experts and practitioners share their particularly valuable knowledge about good practices and experiences on how to better use and establish links between scientists and decision-makers. How to overcome the knowledge gaps and enhance communication of data and monitoring results to decision-makers in a user-friendly manner and basing on their needs? How to improve water information sharing with the public to gain its support and participation? How stakeholders can learn from each other in exchanging good practices and application of innovative instruments in river basin water management? These questions are discussed with experts and practitioners. They are also aimed at strengthening regional interactions between the scientific community and policy-makers. Recommendations and future actions are the result of a thorough consultation process with the experts from various stakeholder groups.

In practice, the science-policy interface is maintained by REWIND through a series of policy dialogues with domestic and international experts during the entire life-time of the project. Three special rounds of consultations with experts are organized by REWIND. It includes two events held in Chiang Mai (26 March 2010): Policy Round Table - 1 (PRT-1) "Securing meaningful participation of stakeholders in river basin water management" and Policy Round Table – 2 (PRT-2) "Adaptive water governance practices" attended by about 30 experts and practitioners. Another one is "IWRM: Policy Dialogue and Good Practices" held in Hanoi 19 January 2009; with about 30 domestic experts from local water networks, business, flood and dyke control authorities, Vietnam national Mekong committee taking part in discussions and sharing their insights and lessons about stakeholder roles.

3.0 Results & Discussion

This section begins with a concise review of the main water insecurities and risks present in the case study basins. In all the case studies studied water insecurities remain a significant management challenge. In the sections that follow we then critically examine the roles of different forms of stakeholder engagement in addressing water management challenges, especially, at basin levels. This analysis of stakeholders begins with a discussion of the different types of stakeholders typically present and the roles they take on. Subsequent sections deal with different aspects of engagement from coordination and partnerships, public participation, through to communication and deliberation issues. The analysis ends with examination of some of the additional considerations for stakeholder engagement in trans-boundary settings.

3.1 Water Insecurities and Risks

Despite a variety of domestic socio-economic contexts in the Asia-Pacific countries, effects of global changes, the specifics and underlying factors for emerging water related risks, their scales, impacts and particular groups they are affecting most, there is a common set of insecurities places and people in river basins are facing. Main risks include floods and droughts, access to water, insecurities associated with river diversions, dams and channeling, water quality, especially drinking water quality, and sanitation, impacts of climate change. Case studies in river basins or their sub-basins provide some illustrations.

The greater Himalayan region with the largest population density in the world and widespread poverty has been identified as an area of quickly emerging water crisis due to climate change, rapid economic growth, deteriorating ecosystem and increasing demand for water. The Himalayas represents hazards and risks and disasters. Water-induced disasters include flash and riverine floods, droughts, landslides and debris flow, snow avalanches, even wildfire due to lack of rainfall. Large fluctuations in the melting of snow and ice can result in excessive or insufficient water supplies: heavy snowfalls can block roads or overload structures. Intense seasonal precipitation during monsoons in the Himalayas can trigger hazard events at different elevations. While snow avalanches and glacial lake outburst floods (GLOFs) predominate at very high elevations, landslides, debris flows, and flash floods are common in the middle mountains. Floods are the principal hazards in the lower valleys and plains.

Environmental change in the Himalayas affects much of Central and South Asia and the mainland of Southeast Asia. Climate change impacts are superimposed on a variety of other environmental and social stresses, many of them already recognised as severe. The Himalayas straddle some of the world's poorest regions and the plains below them are densely populated. Within these populations and communities, the impacts of climate change are not evenly distributed, either in intensity within the region, or among different sectors of society. The more fragile the ecosystem and the poorer and more marginalized the people, the earlier and greater the impact. This is inevitable unless concerted and effective action is taken to engage and assist them to cope with the changes.

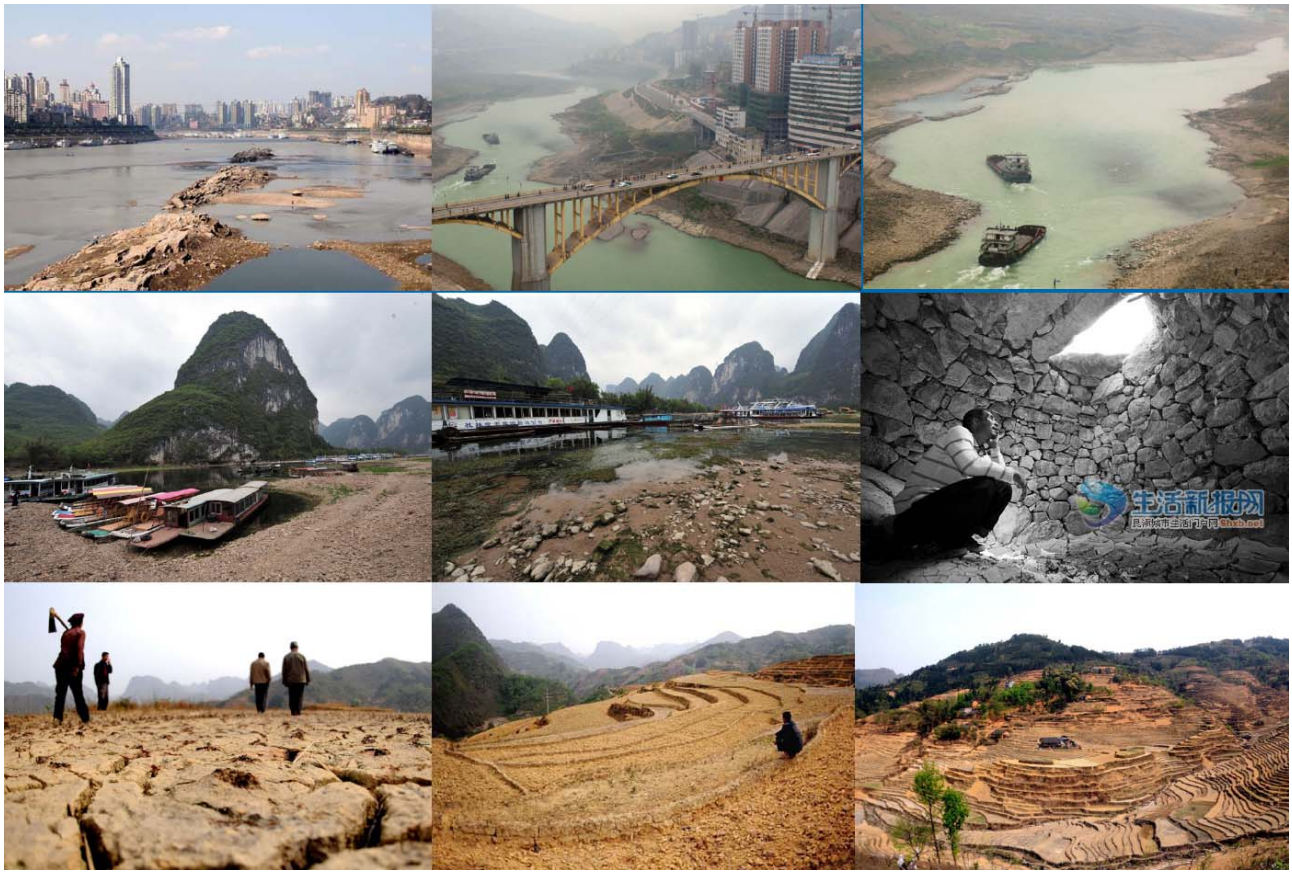
In the Himalayan region in general the water resources are overexploited, while the agriculture-based economy largely depends on water resources. The Himalayan people shared water resource is far below the world average. Water has heavily exploited by resource rich users through indigenous practices such as water harvesting and small wells and large infrastructure such as dams, reservoirs

and inter-river diversion program from rainfall, surface runoff and underground water causing more scarcity downstream. Water quality and sanitation is quite poor. It causes waterborne diseases, reduces agricultural production, damages ecosystems, and adversely affects nearly every dimension of environmental sustainability and human well-being. While poor water quality and pollution may result from direct inputs from chemical and other industries, it can also involve direct inputs from land use practices such as over-use of chemical fertilizers and pesticides, habitat modification, poor sanitation, improper use of manure and poor water management.

Project partners from China while describing the vulnerability of Himalayan Rivers to climate change noted that the low flows in March 2010 that greatly affected Mekong and other major rivers in Southwest China were a consequence of severe drought [Xu 2010a]. Much less rainfall than usual has fallen in vast areas both at the end of the last wet season and through the drier months. Such climate variability is not unheard-off. Historical studies show major impacts of past variability in the Asian Monsoon on Chinese culture and dynasties.

The current drought has already exposed several important lessons [Xu 2010a]. Poor farmers living in mountains are among most vulnerable. Past investments in water infrastructure did not help as much as should have because of lack of maintenance. Local communities need to be engaged more as they have a strong stake in improving water storage and management [Xu et al 2009].

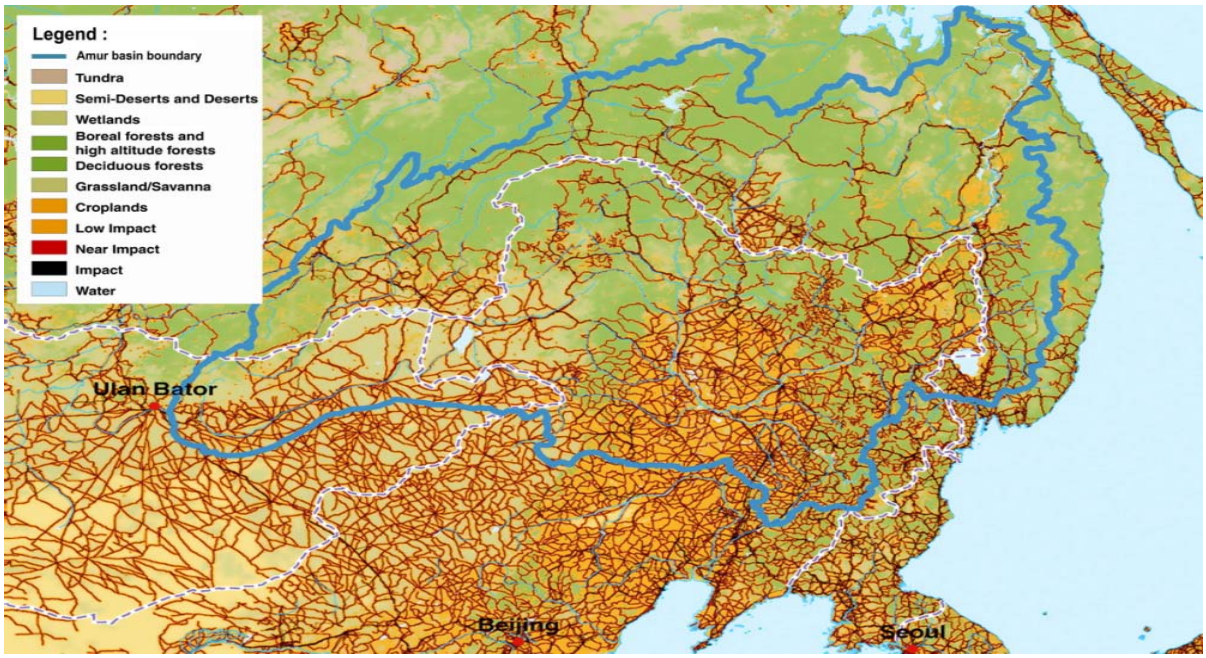
Figure 1. Drought conditions in Southwest China and its impacts. Series of images by Xu Jianchu [Xu 2010a].



In the Amur a combination of natural and human induced factors contribute to a set of water-related insecurities. The major are floods, low water levels, pollution, forest fires and changes in river course [Kotov & Nikitina 2010]. Many of the regions in the Amur Basin are among the least developed and poorest in Russia: they have been developed as periphery provinces and still are heavily subsidised by the government.

For example, although water pollution remains a serious problem, significant improvements in problem-solving in the Amur provinces in Russia are underway. Today, pollution from industries had been reduced by about one third from the beginning of the nineties. Many municipal treatment facilities had been installed in urbanised areas; however water pollution from households remains to be a serious challenge. About one third of water discharges into Amur basin are not adequately purified. Significant insecurities are associated with the drinking water quality, which does not meet existing standards. Water services and water infrastructure is underdeveloped in rural areas. Another serious problem is accidental transborder pollution coming from upstream rapidly developing provinces of China[1]. Also, hydro-technical construction and bank-proofing upstream is associated with additional risks of river channel modifications with resulting flooding and 'sweeping away' the settlements in Amur lower courses. It is a source for regular transborder tensions between two countries. Poor communities, especially rural population, and indigenous people are the most vulnerable groups across all Amur provinces on Russia.

Figure 2. Amur River Basin: Environmental Footprint of Human Activities.

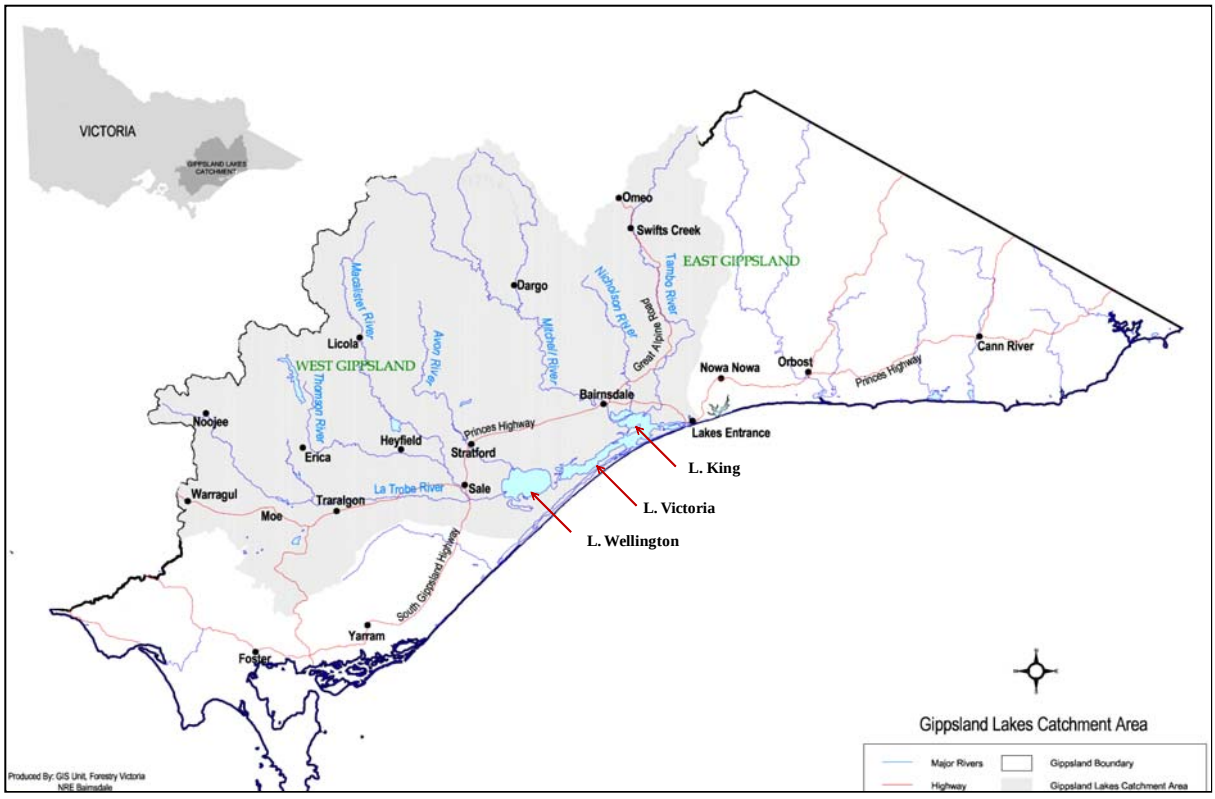


Source: http://amur-heilong.net

[1] Water quality in Amur upper flow and the waters of the Argun at the border area between China and Russia are qualified as 'polluted', or 'severely polluted'[1]: level organic pollutants exceeds the allowable concentrations by 2-7 times, while for copper contents it is 28 fold higher. The waters of the Sungari tribute flowing from China[1] are considered as a permanent major source of severe water pollution in the middle course of the Amur. About 15 billion tons of polluting substances, including pesticides, herbicides and oil products are discharged into the Sungari river in China.

Case-studies in Australia [Dutta 2009] applied the approach according to which the stakeholders were engaged in identifying the key water related insecurities in the local catchment area at Victoria coast. Under climate change floods and water quality are identified as the priority water related risks for the Gippsland lakes catchment area fed by several rivers including the Latrobe. However, despite the strong common opinions about the set of water risks, their scales and impacts are regarded differently by various stakeholders whose concerns and priorities considerably vary. Hence, no single common adaptation approach can work, as it will vary markedly between different groups of stakeholders, whether these stakeholders represent communities, industries or regional areas. Different stakeholders can have different opinions on and priorities for adaptation responses and measures. For adaptive management, the prioritization of issues should involve the stakeholders relevant to issues that are particularly vulnerable to the potential impacts of climate change. In Australia, in general, natural resource management agencies are increasingly recognising the importance of community consultation and placing more emphasis on engaging stakeholders and locales in identification of risks and in discussions of responses to them [Gardner *et al.*, 2009].

Figure 3 Latrobe River Basin: Map of the Gippsland Lakes Catchment [Dutta 2009].



In the Mae Kuang and Mae Hae sub-basins within the Upper Ping water scarcity in dry season is a major issue (Table 1). In addition in this monsoonal climate floods are also an annual risk. Here are also competing interests as diversion to protect built-up areas can result in loss of crops or inundation of poor low-lying areas [Lebel 2010b]. A lot of pressure exists from urban residents to remove traditional irrigation structures from within built-up areas as these can worsen floods during peak flows. Such actions are highly contested as these represent part of “cultural heritage”. There is also history of conflicts over water pollution among farmers, urban water users, industrial and service operators, especially in lower parts of Mae Kuang sub-basin in Lamphun Province.

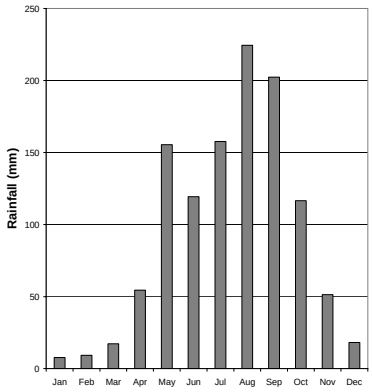
Table 1. Percentage of households reporting water shortages as typical in each month in two sub-basins of the Upper Ping River.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mae Kuang	1	2	12	18	6	2	1	1	0	1	1	1
Mae Hae	2	6	30	38	23	12	7	2	1	1	1	2

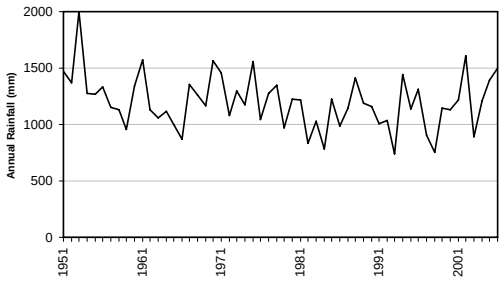
The monsoonal climate is strongly seasonal with an annual rainfall of 1,100 to 1,500 mm of which nearly 90% falls between May and October in the rainy season (Figure 4A). February is the coolest month with average daily minimum of just over 14 C; and April the warmest with an average daily maximum temperature of 36 C. Streamflows rise several months after start of wet season, but decline rapidly with end of rainfall, underlining low storage capacities in soils and groundwater in the mountain catchments [Alford 1992]. Water managers, therefore, may have to deal with periods of both excess (flood risk) and shortage (demand greater than supply) each year. Inter-annual variability is moderately high (CV=20%) and for at least the main city station there has been a long-term decline in annual rainfall of about 3.3 mm yr^{-1} or 0.28% yr^{-1} (Figure 4A). The inflow into Bhumipol Dam at the end of the Upper Ping River Basin is a good integrative signal of changes in rainfall and water-use by vegetation (agriculture, gardens and natural). The main pattern of high and lows is similar to that for rainfall (Figure 4B), but with higher inter-annual variability (CV=31%). There is also a significant long-term decline, as for rainfall, of 0.47% yr^{-1} relative to long-term average [Sharma et al. 2007].

Figure 4 (A) Monthly variation in rainfall for Chiang Mai City. Based on monthly mean 1971-2000. (B) Inter-annual variability in total annual rainfall for Chiang Mai (1951-2006).

A



B

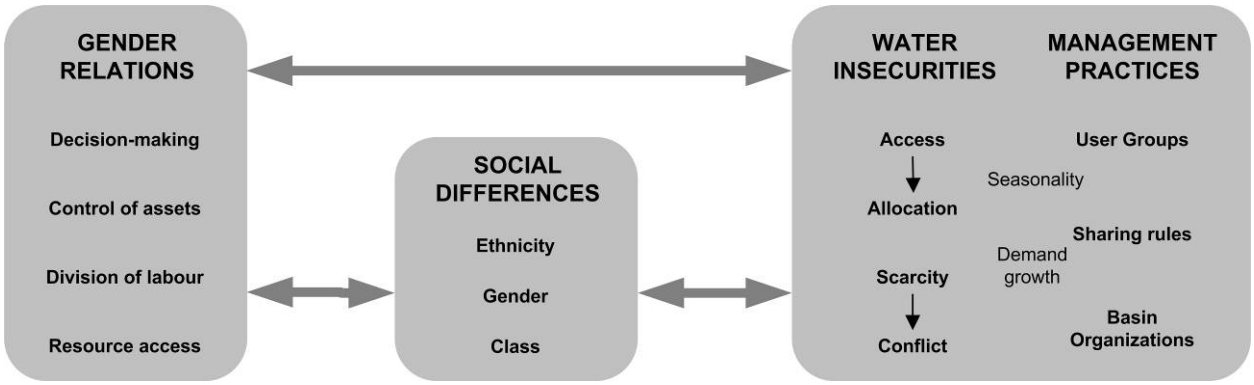


Women often have less access to water and related natural resources than men; what access they do have often depends on relationships with men. Although women may be farmers and water users they are often under-represented in water and river management organizations. Unequal representation may be a contributing cause to water-related insecurities experienced by women [Lebel et al. 2010]. A contributing study to the REWIND project compared two contrasting watersheds in the Upper Ping River Basin in Thailand to explore associations between water

insecurities, gender relations, ethnicity and representation in water management [Lebel 2010a]. Some of the main findings are summarized concisely here.

There were many similarities but also some substantial differences in perception of men and women and among cultures with respect to whether certain argument and conflict-related behaviors were feminine or masculine. These observations have implications for facilitating negotiations or conflict resolution in multi-ethnic contexts. Women are major users of water for agriculture in the uplands, but less so in the lowlands. In the lowland, Muang, culture, irrigation is viewed as a masculine activity. In the uplands the role of women is more widely accepted and acknowledged; women are frequently part of water user groups. Men, however, dominate 'decision-making' positions in both community-based and state-led water organizations in upland and lowland areas. Formal roles of women in water management decision-making bodies do not reflect their actual roles and responsibilities as farmers or irrigators. Local institutions related to water management, both in lowland and upland settings were important for resolving disputes and are not affected much by gender relations within households. Gender differences and relations are an important, but still relatively neglected dimension of efforts to expand stakeholder participation in water management [Lebel et al. 2010].

Figure 5 Gender relations, we suggest, are one of the important driver of social differences that underline water insecurities experienced by men and women [Lebel et al. 2010].



3.2 Stakeholders

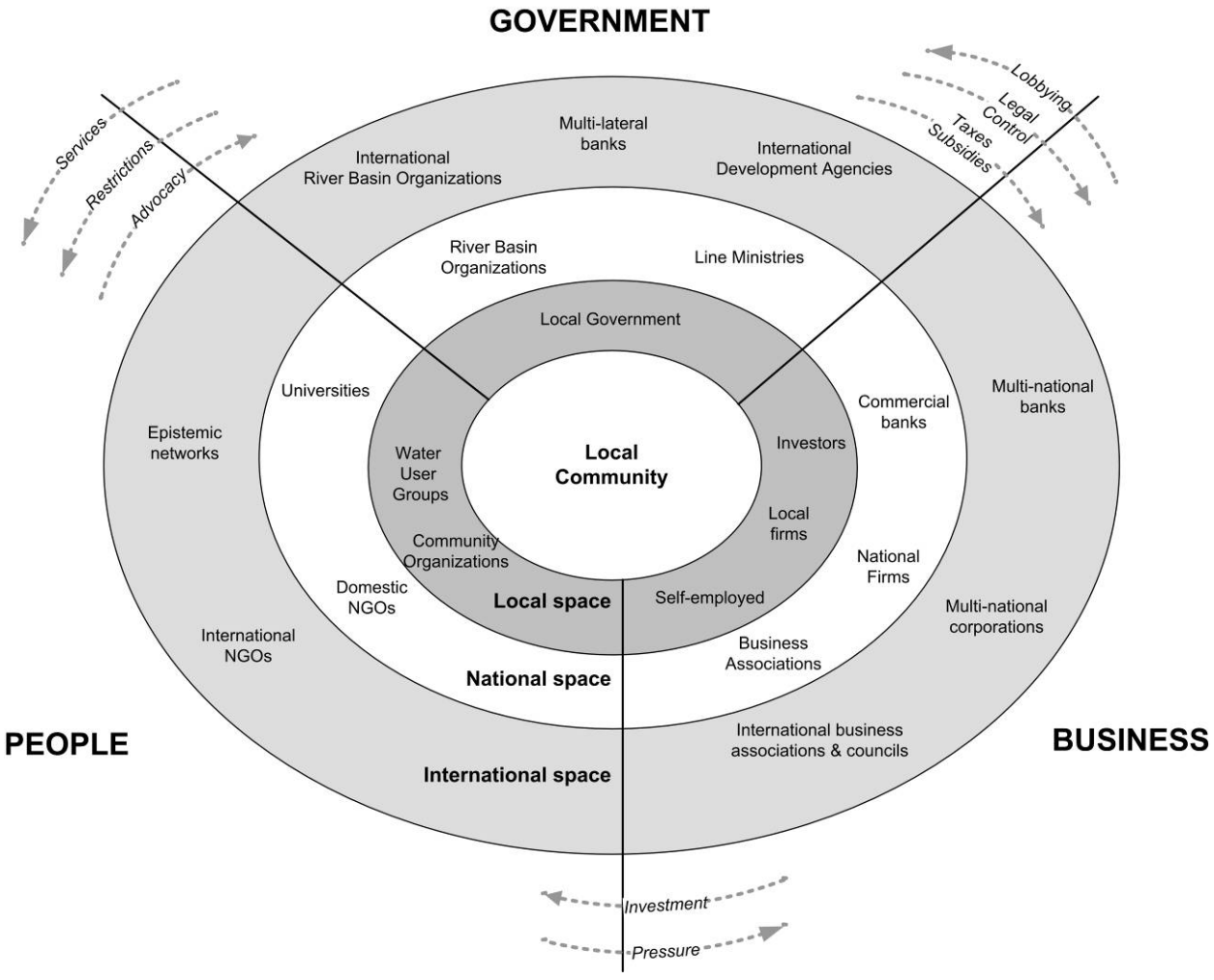
Aggregation of project results across five countries shows that many different stakeholders are involved in management of water resources in river basins. Stakeholders include state and non-state actors. Many are concerned with just particular uses, issues or places; a few take on more integrative perspectives. Interests, capacities, influence and power of stakeholders vary widely across problem domains and scales.

In this study a *stakeholder* is "an actor which has stakes (or interests) including a capacity to *influence* decisions, take *actions* or be *affected* by decisions and actions" as, for example, local (or river basin) authorities, business, non-government and community-based organizations, households, international agencies and groups

REWIND specifics are based on the broad approach to analysis of stakeholder engagement in water governance. It supports the notion that stakeholders' involvement is a crucial component not only in *decision-making* and formulating water policies in a river basin, but it is equally important for taking concrete *actions* to implement these policies and quickly react to emerging problems in practice [Nikitina 2006]. While discussing the issues of stakeholder participation it is often perceived that stakeholders mainly include actor groups representing the public. REWIND has a wide approach which encompasses the multiplicity of stakeholders involved in water governance, including, for example, also government authorities and intergovernmental international organizations and the private sector.

Stakeholders can be classified into three main groups— government, business and people—at different levels (Figure 6). The stakeholder meta-class 'people' in this framework is also described as "civil society" or "non-profit" or "the public" by others.

Figure 6 Conceptual framework for thinking about different types of stakeholders at different levels.



REWIND case-studies show that water governance and water-related risk reduction efforts presupposes combination of policies and measures undertaken not only by the governments of the Asia-Pacific countries, but by each of multiple stakeholders within a river basin.

Stakeholder participation in water management in all river basins under study is an evolving issue. Multiple stakeholder engagement in Asia-Pacific is broadening especially during the last decade. It has similar features to worldwide processes. However, the extent of stakeholder engagement in decision-making and in real actions varies considerably across river basins. Domestic context and situational factors increasingly matter, and they significantly shape the specifics in stakeholder participation in river basins across Asia-Pacific.

Increased role of business in water management is a new trend registered in all river basins under study. Big businesses are neglected but key stakeholders in water management – as drivers of changes in water quality and allocation. Surveys in Russia show that large firms are environmentally aware, more so than smaller firms and state enterprises [Poussenkova 2010]. Political correctness with respect to environment is important part of corporate image; actual practices may be another matter altogether. Businesses concerned with their green image (especially those with orientation to export markets) are also emerging as important stakeholders in joint basin management activities in the Amur (Nikitina 2010); green image is gradually becoming an important factor in strengthening their competitiveness. Private firms are more transparent than state companies about their environmental policies and practices [Poussenkova 2010]. Businesses in Bang Pakong and lower reaches of the Mae Kuang basin in Thailand are also very important stakeholders as polluters and users of water (Aekeraj 2010; Ganjanapan & Lebel 2009]. Consolidating environmental responsibilities of business is of a particular importance, and growing attention is paid to develop a dialogue and *state-private partnerships* to mobilize potential of business community and use it as an important tool for good water governance[2].

In the *Amur* basin key types of stakeholders include local authorities, river basin organizations, business, international agencies, local non-governmental organizations, water users and indigenous people [Kotov & Nikitina 2010]. Formally, the Russian Water Code (2006) defines multi-scale types of subjects involved water relations, including: federation, federation subjects, and local municipalities, physical and juridical persons [Nikitina 2010]. It is a top-down framework. Federal Agency for Water Resources (FAWR) and its regional affiliations – river basin water authorities, including in the Amur are the key players in water management. River Basin Councils aiming at the dialogue with multiple stakeholders are being established for each river basin in this country. Since beginning of 2000s the role of international agencies in the Amur basin has grown. They significantly affect the participatory patterns and focus on broadening the non-state actors' involvement in environmental and water management. Especially active are WWF and environment and development agencies like GEF and UNDP.

In the *Upper Ping Basin* stakeholders can be grouped into local government, central government, water users, and non-state actors and organizations [Lebel 2010b]. Irrigation Department historically has been, and still remains, the most important water manager. It builds and controls most infrastructure. The Department of Water Resources is looking to increase its role and is main proponent behind IWRM and RBOs but meets substantial resistance from traditional administrative hierarchies (Ministry of Interior) and the Irrigation Department. In the Ping basin farmers also continue to have a large aggregate impact on how water is managed in practice, even as this

[2] For example, in 2006 total environmental investments in Russia had increased by 16% from the previous year, and considerable share, i.e. about 44 percent is directed to water protection, including in reconstruction and installation of water purification facilities, water recycling, and into reconstruction of hydro-technical facilities.

influence is being challenged as a consequence of urbanization and industrial-tourism sector development [Lebel et al. 2009a].

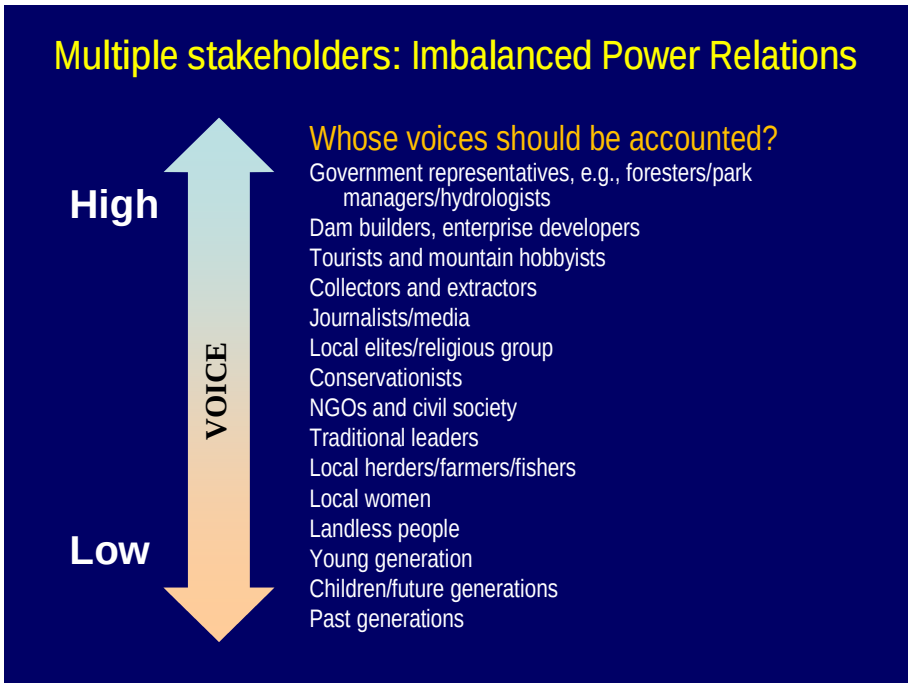
REWIND studies in China show that in the *Mekong* river basin water governance at all scales and stakeholder participation in it remains the main concern. This includes water management in the local community, the interactions between different domestic stakeholders, domestic pressure groups, and also transboundary upstream/downstream issues with a focus on equity and participation. Experts indicate that in the Hymalayan provinces both in case of hazards and in case of environmental services, the inhabitants of the mountain regions play significant roles, either in providing a direct environmental service in terms of water, by reducing their impact on the resource or in conservation of the upland areas in order to reduce the risk of natural hazards. Their impact through land use and management of the upland resources however needs further discussion as their role is often unclear and sometimes based on myths rather than scientific evidence. Common challenges related to the Mekong region include growth in water and energy demand, altering the natural flows, and maintaining wetland, riverine and fishery ecosystems [Xu 2010c].

3.3 Stakeholder Roles

By roles we mean the positions, responsibilities and tasks taken upon by a stakeholder group as part of its interactions with other stakeholders. An example of a key role is convening or facilitating interactions among stakeholders. In river basin management this is typically a role taken on by a state authority often from a water-related bureaucracy but such a role could also, in some cases, be filled by non-state actors like farmers running a water user group around a locally-managed irrigation system. Analysis of stakeholder interests, goals and needs in many cases shows that in practice they do not always correspond to stakeholder capacity and ability to realize them. The most powerful and active groups are, usually, those whose interests and ability to take actions – correlate. For example, studies in the Amur basin in Russia indicate that most motivated among stakeholders in the Amur are regional and local river basin authorities and local administrations. The potential influence and capacity of federal water related authorities are much higher, but they have much less interest in getting involved. Our research shows that interests of the local administrations to solve water quality problems at a sub-basin level are also higher than their economic/financial capacity; while the ability of the federal government is much higher than its interest.

In other cases the roles of the government authorities was also comparatively high. For example, in the Upper Ping Basin in Thailand the Irrigation Department within the Ministry of Agriculture and Agricultural Cooperatives (MOAAC) historically has been, and still remains, the most important water manager. It builds and controls most infrastructure. The same relates to Vietnam, where Ministry of Agriculture and Rural Development (MARD) and Ministry of Natural Resources and the Environment (MoNRE) are major actors in water management and about 90% of finance is provided by the public sector. Dominant government financing for water management is the specific feature for other river basins. In Russia, about 75% of funds derive from public sources, while in Thailand the role of government funding is also considerable. Similar messages are coming from Nepal and Bhutan, where expert assessments had been made by the international Twin2Go project [Questionnaire 2010]. In general, the roles, influence and possibility to 'have a say' in decision-making vary considerably across groups of actors. For example, the imbalance in power relations in the Himalayan region of China is illustrated by Figure 7.

Figure 7 Multiple stakeholders and their influence in decision-making, Xu Jianchu.



Some common messages from river basins regarding stakeholder roles and the process of their engagement provide the ground for discussion, and a number of opinions of project participants and external experts have been documented as a result of the REWIND Synthesis Workshop and Policy Round Table organized in Chiang Mai 25-28 March 2010.

First, affected groups, not just direct users of water, are also important stakeholders. They can include, for example, people displaced by large-scale infrastructure projects and the communities that may be forced to make way for new settlers. Important point is stakeholders are not just the "beneficiaries" of a project or policy; but also those burdened or placed at risk, and those with responsibilities. This is illustrated by impacts of major infrastructure in the Mekong, Amur and Bang Pakong basins.

Second, from the perspective of conveners identifying participants or stakeholders for particular events and processes is a difficult challenge. Who really "represents" a particular set of interests is not always clear and may be contested. REWIND experts involved in everyday water management practices indicate that "finding the real stakeholders takes time". Others suggest that stakeholder analysis that is issue specific can help conveners identify who should be engaged. In selection process it is also useful to bear in mind not only affected actors and people, but also to combine with assessment of possible responsibilities of each stakeholder.

Third, stakeholders usually assess the costs and benefits of participation. If the benefits are not made clear, or are in reality insufficient it means that extended engagement is unlikely. Time-costs are particularly important in extended dialogues around planning management and allocation of water. If progress is too slow or stakeholders feel that talk will not influence decisions and actions than such processes may collapse. Conveners must recognize that many stakeholders carry out their own stakeholder analysis to better understand who their allies and opponents are and who they need to influence.

Fourth, it is important when stakeholder participation happens. If it is only after decisions have been effectively made then it greatly reduces the meaningfulness of stakeholder engagement. In this case participation is at best gaining public acceptance and at its worst purely an exercise in legitimization. Stakeholders are strategic about what events they participate in and avoid. On the one hand participants can be sensitive about legitimizing a process that is flawed from the start; on the other they may want to make sure they are present when need to protect their interests.

Fifth, building trust among participants in a multi-stakeholder platform was repeatedly identified as important dimension of meaningful engagement. How this is done, however, needs more exploration. Local culture, for example, can be important. In rural Thailand, village headmen, still have important roles in representing and linking with a wider public. How they are handled in public engagement exercises in river basin management is therefore important.

Sixth, conveners of multi-stakeholder dialogues should not be seen by any major stakeholders as "biased". Although "neutrality" of facilitators and venues is usually sought it does not have to be perfect for representatives of different groups to accept. Ensuring adequate mix of participants and meeting formats and facilitation which allow all sides to make their views heard are the most important elements.

3.4 Coordination and Partnerships

REWIND studies show that stakeholder coordination and partnerships appear to be among powerful tools in good water governance in river basins. It allows to consolidate institutional capacity for water problems solving and to enhance the flexibility of responses to problems associated with water insecurities. Much of discussion on water problems concerns the need to engage stakeholders in a dialogue to provide strategic advice, consultations and knowledge and 'insiders' information exchange on environmental and sustainable development issues. It correlates with the worldwide evidence suggesting that participation, partnerships and coordination between stakeholders is an important precondition for effective policy process and capacity building, enabling application of 'common goal' approach within a river basin, promoting coordination of multiple interests, conflict resolution and establishing links between science and practice [OECD 2008, Cowie & O'Toole 1998].

In some basins under study a few stakeholders have begun take on more integrated and basin-oriented perspectives on water management – typically as part of Integrated Water Resources Management (IWRM) and River Basin Organization (RBO) policies or projects. These initiatives are of particular interest to our investigations but cannot be understood without attention to administrative and political histories and alternative institutions and platforms that continue to be relevant to water management. After considering these we will look at other forms of coordination including partnerships and networks.

3.4.1 Integrated water resource management (IWRM)

IWRM is a conceptual approach to water problems, planning and practice in water resources use and water resources protection/conservation. Today there is a variety of perceptions and notions related to IWRM. Typically this approach stresses three main interrelated components: 1) combination of economic, social and ecological uses of water, 2) cross sectoral water management, and 3)

institutions at various levels [Conca 2006, White 1998]. There is a growing recognition that good water governance needs to be based upon IWRM at the river basin level [Directing 2006]. Besides coordination of government policy and measures to apply this approach, involvement of major stakeholder groups, including public, private and civil society actors from the river basin both in decision-making and in concrete action is essential. This notion includes (a) institutional coordination - horizontal and vertical - between various government bodies which are regarded as a stakeholder group, and (b) participation, partnerships, dialogue, conflict resolution and consensus-building between multiple stakeholders.

Integrated water resources management has elegance on paper that is rarely reflected in practice. In Vietnam, MONRE declares "Water resources exploitation and use should be made in an integrated and multi-purpose manner, harmoniously incorporating interests of individual sectors, localities and communities in a global inter- relationship between upstream and downstream regions and between different sectors, to ensure balanced, focused, high socio-economic efficiencies and environmental protection" [Bach Tan Sinh et al. 2010].

In Russia, IWRM principle is formally spelt out in domestic water legislation, it has been included into river basin planning, and it has been incorporated into the recent RF Water Strategy up to 2020. But there is a big gap between formal principles and their implementation in practice. Although Federal Agency for Water Resources (FAWR) and its river basin administrations in the Amur declare IWRM, it is not effectively applied. One of its drawbacks is the existence of overlapping authorities and functions.

Today, a number of problems are encountered worldwide in application of IWRM approach, and river basins under REWIND study are not an exception. All studies show, that usually, there are significant loopholes in the water governance system at a basin level and in institutional coordination (horizontal and vertical). For example, cooperation in integrated water-related risk management between various administrative regions and sub-basins is usually insufficient. Coordination between stakeholders and integration of multi-stakeholder partnerships into river basin management often top the river basin agendas.

3.4.2 River basin organisations (RBOs)

The trend to establishing the basin council type organizations – River Basin Organisations (RBOs) with a consultative status, along with usually functioning water basin administrations, or boards is underway in the river basins under study. The creation of RBOs has, overall, increased the opportunities for wider stakeholder participation [Aekeraj 2010; Bach Tan Sinh et al. 2010]. RBOs through meetings of their main committees and working groups as well as through their representation in other events and convening public consultation exercises at different levels have taken on some of the characteristics of multi-stakeholder platforms.

RBOs largely function, in short, as platforms for consultation [Bach Tan Sinh et al. 2010] and aggregation of plans [Ganjanapan & Lebel 2009]. Aspirations may be broader. In Bang Pakong basin, for example, there are preparatory steps underway to register water users with the goal of taking a pro-active role in dealing with water allocation challenges in the future [Aekeraj 2010].

The budgets for RBOs are very limited relative to their mandates in both Vietnam and Thailand. The Red River is a huge basin (Figure 8) but the RBO has just enough funds to run 2 meetings a year, issue a newsletter and run a website (about 60,000 USD). Staffing is part-time. Nascent RBOs at different levels (they are often nested in larger basins) may be little more than committees without much full-time secretariat or office support or even an independent physical office. Financing is a key issue in effective stakeholder engagement at the river basin and sub-basin levels.

Figure 8 Red River Basin is divided into several sub-basins [Bach Tan Sinh et al. 2010].

Issues of scale have arisen in both Thailand and Vietnam with large RBOs. Experiences in the Upper Ping and Red River suggest participatory planning exercises may be easier at small river sub-basin levels [Bach Tan Sinh et al. 2010; Ganjanapan & Lebel 2009; Thomas 2006]. This does not mean that higher level issues don't need to be addressed.

In Russia, the Amur Basin Council (ABC) – like in Vietnam – is another new structure in process of formation. It is to be responsible for integrated water resources management with a consultative status[3]. How this system will be actually implemented is still a considerable challenge for the Amur. However, in practice, it appears that it is highly dominated by government officials from various

[3] The system of River Basin Councils (RBC) introduced by the Water Code in 2007 is an institutional innovation for Russia. Its major goal is to promote the coordination of interests, a dialogue and consensus building between major stakeholders in the basin. Among its important missions is enhancing the local public participation in decision-making which is still a weak segment in capacity building in the country. RBC is intended to have a broad representation from various water-users, local NGOs, indigenous people and government of various levels.

levels of authority.[4]. Similar observations have been made for committees of river basins in Thailand and Vietnam [Molle & Hoanh 2007; Thomas 2006].

At the moment, the impression is that ABC is a kind of a cross-sectoral coordinating agency, rather than a forum for a dialogue between various stakeholders and water-users. Among other problems related to river basin councils in Russia is that there is no culture when the public or water users have influence on how water is managed. However, council type organisations could be the first step in developing such attitude to water management and provide an opportunity to overcome one of the biggest barriers in the country by establishing a dialogue between local public and government officials.

Although external organizations (like ADB, WWF) were important in pushing formation of RBOs at critical periods, and some continue to give valuable assistance in their ongoing evolution, current development is now driven primarily by needs of domestic stakeholders [Bach Tan Sinh et al. 2010]. In Russia WWF has played an important role in promoting IWRM ideas [Kotov & Nikitina 2010] and enhancing local public participation and awareness – it is much stronger driver than local environmental NGOs.

For the most part RBOs remain nascent organizations with still limited capacities to coordinate stakeholder dialogues and actions.

3.4.3 Bureaucratic competition

In Vietnam and Thailand there are many laws and regulations relevant to water resources management. Vietnam passed its framework "Law on Water Resources" in 1998 [Bach Tan Sinh et al. 2010]; in contrast the draft water law in Thailand has been in discussion for more than a decade without being passed. This fundamental difference in legal framework has made rather little difference to practice or performance. In Vietnam there is still a major struggle to get institutional arrangements or cooperation structures among different elements of the bureaucracy working together. In Thailand similar problems persist and it is not clear that a stronger legal framework would actually make water management easier given pre-existing competition among line agencies as well as local authorities [Aekeraj 2010; Ganjanapan & Lebel 2009]. Indeed it was suggested that the lack of formal backing by law has encouraged an approach based on dialogue and negotiation which may ultimately be more appropriate in many contexts [Bach Tan Sinh et al. 2010].

Bureaucratic competition with respect to water management in Thailand and Vietnam has some strong similarities. In Vietnam the Ministry of Agriculture and Rural Development (MARD) has historically played a dominant role [Bach Tan Sinh et al. 2010]; In Thailand the Irrigation Department within the Ministry of Agriculture and Agricultural Cooperatives (MOAAC) has been the key agency [Ganjanapan & Lebel 2009]. In the last decade administrative reforms in both countries have shifted

[4] In 2009, the membership of the Amur Basin Council was approved. It is chaired by the head of the Amur BWMB, and about 70% seats are occupied by the government representatives - from territorial affiliations of the federal ministries and from provincial administrations. From its 39 members, there are only 5 representatives from provincial and local water-users and 7 representatives from ecological and civil society organisations and from indigenous people.

some water management responsibilities to the Ministries of Natural Resources and the Environment (MONRE). In Thailand, for instance, the Department of Water Resources took on responsibilities for establishing and supporting RBOs.

Similar trends are registered in Russia [Kotov 2009]. The Amur Water Management Board (AWMB) is the territorial water management organization under the Federal Agency for Water Resources (FAWR), RF Ministry for Natural Resources [Kotov & Nikitina 2010]. The latter is the main national authority responsible for water management. There is a number of government ministries and bodies dealing with sectoral water management including, for example, RF Ministry for Emergencies (Emercom) that deals with floods; RF Hydrometeorological Service that deals with water monitoring, as well as RF Ministry for Economic Development, RF Ministry for Regional Development, RF Ministry for Agriculture, etc.; all of them have territorial affiliations in the provinces of the Amur basin. AWMB coordinates water conservation, pollution protection, floods/droughts and water allocations. It interacts with other administrations and stakeholders in the basin, for example with respect to access rights to water bodies and pollution fees [Nikitina 2010]. It also coordinates activities of its 5 local branches that do much of the implementation. Its competence spreads over the territory of the Amur basin and eastern coastal areas (Figure 9).

Figure 9 Amur River basin in Russia is divided into five sub-basins.

Source: http://www.amurbvu.ru

One of the reasons behind the creation of water agencies is that they could provide some separation of management and exploitation or use functions and thus create better system of checks and balance. In any case, this separation in both Thailand and Vietnam has proven difficult to complete as established agencies and their partners resist such shifts and, in any case, continue to control most of the resources [Bach Tan Sinh et al. 2010; Ganjanapan & Lebel 2009]. Corruption and insufficient transparency, for instance, despite some recent improvements in the field, still remain important dimensions of the water governance context in Russia [Kotov & Nikitina 2010]. Thus, bureaucratic competition remains one of the major obstacles constraining good water governance in river basins under study.

In Vietnam, the River Basin Planning Management Board (RBPMB) is under MARD and oversees 8 basins. The Board is chaired by Vice-Minister of MARD. The Board runs in parallel with a MONRE initiated Committee which oversees 3 basins. The 120/2008/ND-TG decree is supposed to create a hierarchy of "River Basin Committees" under MONRE but has not yet been established.

In the Upper Ping cooperation is primarily within coalitions of similar interests when dealing with "whole basin" issues – for instance allocation of water for dry season agriculture vs. other uses [Ganjanapan & Lebel 2009]. Water allocation is an issue at end of each dry season. Upstream and downstream farmers in different sub-schemes compete for stored and diverted water, for instance, from the Mae Kuang Dam. Needs to supply domestic water authorities act as a further cap, although as much 95% of water use remains for agriculture. Farmers are generally better organized than urban residents who rely more on government authorities to look after their interests [Lebel 2010b]. Distinct coalitions or factions exist around major water uses that include both state and non-state actors.

3.4.4 Forms of cooperation

Although stakeholder partnerships in water management have started to develop, still in many river basins under study their interactions and cooperation is not extensive. But, forms of coordination are rapidly diversifying. REWIND experts suggest that stakeholder partnerships as a new form of joint action need to be widely supported and get additional incentives from domestic authorities. In some instances, public-private partnerships are being successfully constructed.

Question about "how stakeholders cooperate with each other" in the river basins has been posed by REWIND. Interesting responses about forms of coordination and partnerships in practice had been given even from those basins where stakeholder cooperation is not widely spread. For example, in the Amur Basin in Russia several types of multi-level coordination of public and private actors – domestic and transborder, were identified, and they are summarized blow (Box 1).

It shows that besides such 'routine' forms of coordination as water basin administration involved in water management, in the 2000s new forms are evolving, including basin councils, domestic partnerships between Amur provinces, transborder cooperation of regions of locales in China and Russia, WWF supported local stakeholder capacity building and international partnerships between provinces.

Box 1 Amur River Basin: Forms of stakeholder coordination.

Amur Water Management Board (AWMB): AWMB - major river basin administration in charge of water management in Amur; territorial body of Federal Agency for Water Resources, Ministry for Natural Resources. Responsible for *vertical* coordination – through 5 local branches: Amur oblast, Primorsky and Khabarovsky krays, Evreyskaya autonomous oblast, and Zabaikalskaya local branches. It provides *horizontal* coordination: integrates various aspects of water use, hydro-facilities and hydrological regimes, water protection and water monitoring and flood/droughts management in the basin. It coordinates actions with other authorities with regulatory functions in water use. Interacts with different actors, administers the allocation of water access rights, the water pollution fees, allowable norms for sewage discharge, agreements with water users.

Amur Basin Council (ABC): ABC is in the process of formation as it is among domestic institutional innovations. It has a consultative status, and it promotes coordination of interests of water-users within the basin district, a dialogue and consensus building, and participation of experts in river basin decision-making. Enhancing local participation in water related decision-making is in its mission. Its membership includes representatives of water-users, local civil society organisations and indigenous people, authorities of federation subjects and municipalities.

Amur provinces partnership: In 2003, six Russian provinces established a joint Coordination Committee for sustainable development of the Amur Basin, with the aim to develop common policies and programs for environmental management.

International cooperation between provinces: Cooperation between Amur provinces and locals of Russia and China is expanding. Since 2002 cooperation is underway in monitoring of Amur Basin transborder watercourses by Khabarovsk kray, Evreyskaya AO, Chitinskaya oblast and the Heilunjian province of China and Inner Mongolia Autonomous Region of China. Provincial agreement envisages joint expeditions, exchange of specialists, and dissemination information to the public, exchange of monitoring results, and development of common methods for assessment of water quality on the basis on international standards, data analysis and processing. Joint water pollution protection is at the agenda.

Cooperation between parliaments of Russia and China: Environmental cooperation is underway between the parliaments of Russia and China – the RF State Duma and the All-Chinese Meeting of People Representatives. Dialogue on cooperation in environmental field and coordinated eco- policies, prevention of emergencies and water pollution in Russian-Chinese shared waters is maintained.

WWF support for stakeholder partnerships in Amur basin, Russia: Since 2005 the WWF-Amur office is operational in mobilizing stakeholder involvement and building partnerships among them. It organizes campaigns in all regions of the Amur basin, including in the Amur oblast, Chitinskaya oblast, Aginsko Byriatsky AO, Evreiskaya AO, in Primorsky and Khabarovsky kray. About 20 000 participants join them annually, and support from 18 natural reserves, 7 local environmental NGOs, and 4 students environmental groups is secured.

Amur basin transboundary partnerships: In 2002, the WWF established its large eco-regional program in the Amur shared river basin aiming at creating the international ecological network of its regional branches in Russia, Northeast China and eastern Mongolia, i.e. *"Green belt of Amur"*. It performs a number of joint projects with a major focus on conservation and rational use of water and biological resources, ecosystems protection in the Amur basin. Expanding the system of natural protected areas connected by ecological corridors and buffer zones is among its goals. In 2002 WWF-Amur, in cooperation with 7 regional environmental NGOs developed and adopted the Conservation Action Plan for Amur-Heilongjiang Freshwater Eco-Region, and in January 2003 formed the joint Amur Coalition to promote implementation of this plan.

Similar new trends are developing during the last decade in other river basins under study. Partnerships at the local level between authorities, communities and other stakeholders become an important form of coordination towards reducing water insecurities. Several lessons can be learnt from practical experiences in the Mekong Delta of Vietnam. Following reunification in 1975, government resettlement policies brought people from the North to the least densely populated and regularly flooded areas of the Delta. New economic zones were established for intensive rice cultivation: typically three crops per year, including one during the riskier peak flood season. Resettlement schemes were accompanied by technical solutions including construction of dams and embankments around new residential clusters. These structural measures resulted in prolonging floods, causing losses of earnings for farmers and social tensions. In response to public pressures, local authorities in An Giang province launched innovative projects with substantial local stakeholder inputs in design and implementation to diversify incomes during the flood season [Sinh et al. 2009]. Partnerships between provincial departments of agriculture and rural development, private firms and farmers made the project highly successful.

3.5 Public Participation

Constructive engagement between civil society and state authorities is increasing in all countries studied. Partnerships between state and non-state actors are becoming important in Russia as an alternative to highly polarized conflicts. Progress is not, however, linear with public and bureaucratic norms often hard to change.

Social norms with respect to public participation are an important dimension of the context in which efforts to expand stakeholder engagement are pursued. In Russia the legacy of a paternalist state means that in many areas ordinary citizen expect government to “take care of things” like water management. At the same time there are many signs of change, with significant mobilization of the public on environmental issues and large-scale infrastructure projects.

REWIND comparisons indicate that extent of public awareness and participation in water management varies significantly across cases and river basins. For example, public involvement in water management is much higher in Thailand, than in Russia where environmental awareness of the public and responsibility to take water-related actions is low, and the public still heavily relies on ‘paternalism’ of the government authorities. Thai local public is more responsible and relies on its own internal capacity to deal with water-related insecurities and risks. In Australia, with its well developed democratic traditions the civil society involvement is much higher. Such state-of the-art to a high extent is rooted in specifics and pathways of socio-economic and cultural traditions of different countries, and it demonstrates that water governance takes place in complex socio-economic contexts of the Asia-Pacific countries. For example, in China, Vietnam and Russia despite rapid socio-economic transformations, the elements of centralized planning and communism political culture still affect the approaches to water governance.

In Russia public participation in water management is enshrined in the 2006 Water Code (Article 3.6) and supported by regional water legislation [Nikitina 2010]. There is still, however, a great gap between formal rules and everyday practices. Despite incorporation of public participatory right in water management into the national and regional laws, people rarely participate. Decision-making regarding large water infrastructure projects, including construction of dams at the Amur tributes

remain an area where people rarely have a voice [Nikitina 2010]. They even do not have their say in cases when these projects have significant implications for their well-being and security of the local livelihoods: people are being resettled from the areas affected by infrastructural developments without any prior consultations and public discussion.

In Vietnam commitments to public participation in water management has clearly increased. The 1998 Law of Water Resources in Vietnam has no explicit article on public participation in water resources management; the public is obliged to follow the law. Decree 120/2008 on River Basin Management is much more explicit: "The Government encourage, provide all organizations, individuals, social communities public with facilitated conditions to participate in investment, management, protection and sustainable water resources development in river basin..." (Article 7 Chapter 1). Further expansion of public participation in water management in Vietnam could be achieved by strengthening and implementing the existing framework. The media could play a role [Bach Tan Sinh et al. 2010].

Public participation as a social norm is more extensive in Thailand than in either Russia or Vietnam. Domestic non-governmental organizations and various advocacy networks regularly challenge state policies and decisions on water-related infrastructure with critiques in mass media and well-organized protests and campaigns. Thai-based groups also tackle projects in neighboring countries including those in which Thai firms are major investors or consumers are potential beneficiaries – for example hydropower development in Lao PDR.

Public participation in many dimensions of Thai life expanded after the 1997 "peoples" constitution including the strengthening of key local government reforms begun in 1995 with more and more local authorities downwardly accountable through electoral process. Many of these reforms were halted and reversed following October 2006 military coup. Changes in water sector reflect wider political dynamics with move towards staking of basin working groups and committees with more and more state actors and less wider participation which instead takes place in "informing/consultation" modes. Key RBO and RSBO programs have been affected by budget cuts, failures to pass water law, and changes in national government often requiring new appointments of committees etc. Grass-root interest and commitments to "public participation", however, remain high and alternative platforms (local networks) and tactics (advocacy, media) etc. are a very important part of "water governance" in Thailand.

In the Mekong there has been significant progress in expanding public participation at the regional level, although for major infrastructure projects it is still not sufficient. During the last 5 years as the Mekong River Commission has increasingly reached beyond governments (as there designated primary stakeholders) to a much wider range of participants in regional consultation exercises, for instance, with respect to the Basin Development Plan.

In some areas concrete forms of public participation are gradually embedded into existing institutional water-related practices. In the low-lying areas of the Mekong, a long history of experiences with seasonal flooding as part of the Monsoon has often been embedded in local institutions and practices providing a useful source of knowledge and norms to apply more widely. In the Mekong Delta in Vietnam, temporary 'emergency kindergartens' where parents can leave their children under organized supervision are opened in some locales during the peak flood season. In rice-growing areas social institutions associated with sharing of water and diversion of seasonal

flood waters are also important. High level of local participation in local management and decision-making, however, is not necessarily translated into a voice when it comes to large water infrastructure projects, such as hydropower dams or major irrigation schemes. Here, the only ways open to poor farmers and fishers to influence decision-making may be through protest, mass-media and networking [Molle et al. 2009].

3.6 Communication and Deliberation

All case studies in river basins indicate that the quality of information made available by public agencies is crucial to effective stakeholder engagement in river basin management. Communication and information sharing issues are important as stakeholder diversity increases. Environmentalists and big business, for example, often speak distinct languages and rarely have history of meeting. Research and technical evidence, in particular, needs translation and care in communication. These challenges are significant even when major elements of the evidence and understanding are not highly contested. Facilitating interaction among disparate stakeholders implies overcoming many communication and trust barriers.

Information and scientific knowledge presented in a 'user-friendly' manner is equally important for the decision-makers, and for the public regularly facing a number of choices in every-day practices. These days communication of information to the public is becoming a 'must'. Water related data and information about practices and problems should be clear and understandable for a layman, but this goal is quite difficult to attain. Sharing and circulation of information is critical to mobilising public support for actions towards rivers rehabilitation. It is necessary to establish close links with mass media and make all water quality information easily accessible, understandable and transparent. Local NGOs can be a powerful driver towards problem-solving [Comor 2001].

Expert assessments on the issue presented during the REWIND Policy Round Table in Chiang Mai indicate that the management and sharing of quality information underpins stakeholder engagement efforts. Technical support, in short, is crucial to dialogue processes and learning in river basins. Situational data is often important first step to start of discussions. The technical knowledge base is often provided by the state and levels other than 'local' so cooperation among stakeholders at different levels is needed for adequate information sharing and access.

Experts also stress that regular basin-wide monitoring and data sharing with all stakeholders are among preconditions for integrated water basin management; the latter can be effective only if it is based on profound data. In the past, hydro-meteorological and environmental monitoring in Russia, in general, and in the Amur, in particular, was well organized and coordinated[5], which ensured high comparability of data. Unfortunately, this strong network has been dismantled during the nineties in a course of the transition period and data gaps were among significant constraints in coordination of water management efforts. There is a common opinion today that it is essential to urgently restore and maintain multi-level hydro- monitoring infrastructure in the Amur basin, which will allow besides other thing to ensure better communication with stakeholders.

On the other hand, experts argue that scientific and expert information is not always as important to multi-stakeholder deliberations as scientists and experts might expect or wish. For key elements of

[5] Monitoring results were regularly provided through the hydro-meteorological network of the Hydromet – the chief Russian federal agency responsible for meteorological, hydrological and environmental data compilation and processing

large-scale water resource development projects or major policy changes the claims of experts are often contested as knowledge about vulnerabilities and impacts, costs and benefits, involve substantial uncertainties as well as heterogeneous interests. Expertise in short should not expect to replace political arguments over interests and values.

3.7 Transboundary Waters

3.7.1 Coordination and shared waters

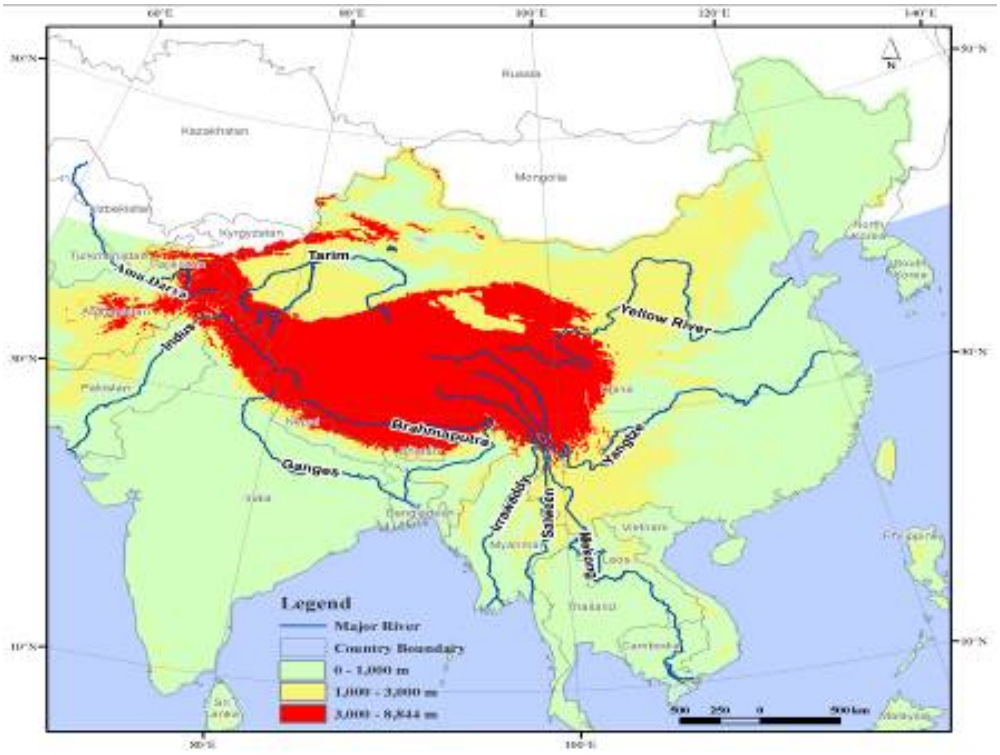
Coordination among stakeholders is evolving not only in domestic river basins, but in transboundary watercourses as well. In international shared rivers it is expected to be even more challenging than within countries. The Amur and Mekong provide two different transboundary configurations: upstream-downstream and opposite banks. The Amur runs along the border of Russia and China which have approximately half of the watershed area each with a small section also in Mongolia [Kotov & Nikitina 2010]. There is significant cooperation recently emerging between Russia and China along the border reflecting trends towards greater economic integration. After a long negotiation process the intergovernmental bilateral agreement on protection of transborder watercourses between Russia and China was signed in 2008.

Figure 10 The Amur River Basin in Russia, China and Mongolia.

The Greater Himalayan region also known as 'the Asian water tower', covers approximately 7 million km^2. Its glaciers, snowpacks, lakes are wetlands provide a common birth site for the ten largest rivers in the South-East Asia (Figure 11). Pressures on the water in the great Himalayan River Basins had been considerable for a long period of time, and it is likely to continue to increase in the future. As a result several of the rivers flowing across national boundaries have been source of interstate

disputes and conflicts. Today, there is a great need for cooperation in transboundary watercourses. The Himalayan river basin states are generally lacking the regional water agreements. However, a number of bilateral treaties have been put into place since 1960, which have been of great importance for bilateral relationships. For example, the Indus treaty, signed in 1960 had remained functional even during the times of conflicts and distrust, indicating the potential for using cooperation on water resources as an important take off point for regional sustainable development and economic growth. India and Bangladesh have also signed an agreement on Ganges water sharing in 1996. Fruitful and long lasting cooperation on shared waters need a comprehensive approach, for instance to address water scarcity issues, or joint hazards protection [Xu 2010c].

Figure 11 Location of the Greater Himalayan region [Xu Jianchu 2010].



REWIND case study research in the Asian shared river basins[6] contributes to the ongoing worldwide debate on the issue. Effective water governance in transboundary river basins appears to depend on a complex combination of domestic government policies and measures, sound multilateral and basin–specific agreements, and broader cooperation and dialogue involving multiple stakeholders. The debate involves both researchers and practitioners, with significant attention paid to enhancing the design and implementation of transborder intergovernmental agreements and soft law arrangements. One of the messages is that poor coordination within and across state borders is frequently identified as an underlying problem. Another is the lack of stakeholder involvement.

Stakeholder participation, in particular, is increasingly seen as an essential component of water governance in transboundary river basins [Pahl-Wostl 2007, Nikitina Lebel at al 2010; Conca 2006]. Stakeholder inputs to deliberations are valued because they can help to identify new opportunities for cooperation as well as new burdens and risks that need to be taken into account in policies and

[6] According to the recent survey, the number of international rivers in Asia accounts for 57, while the percentage of land area in international river basins comprises accordingly 39 percent [Conca 2006].

agreements [Dore 2007]. Coordination of stakeholder activities is often crucial for planning, implementation and evaluation. Coordination maybe achieved through diverse mechanisms, including formal regulations between agencies, or in river basin councils through to much less formal networks and partnerships [Nikitina 2009].

Governments have not conceived of water management in transboundary contexts as requiring participation of actors apart from the state. Thus many international legal arrangements for shared river basins do not contain provisions for stakeholder participation. However, since recently the situation is gradually changing [Nikitina & Kotov 2008].

For example, the Mekong River Basin Agreement, 1995, does not contain provisions on enhancing stakeholder involvement. But, subsequent development of this regime has encouraged broader stakeholder participation. Under the first phase of the Basin Development Plan (BDP), national governments were identified as the primary stakeholders by referring to them as "internal"; non-state actors were referred to as "external". Non-state actors could engage only in national and basin or sub-area forums [MRC 2005]. The early drafts of the Phase Two plan for BDP were severely criticized for lack of attention to alternative views, but eventually revised with commitments to "institutionalize the participatory planning process established during BDP Phase I" [MRC 2006]. In practice, however, expanding stakeholder participation has had modest impact, as the BDP process itself has failed to keep up with the plans and actions of individual country governments in the river basin [Dore and Lazarus 2009].

The recent intergovernmental bilateral agreement on protection of transborder watercourses between Russia and China, 2008, contains provisions on stakeholder involvement[7]. It supports cooperation of non-government and research organizations in water use and protection in the Amur, ensures public access to information on water, and takes into account the interests of the indigenous populations. However, in many cases, such international legal provisions still remain kind of window-dressing [Razzaque 2009].

Although conveners from within water bureaucracies are often keen to place water centrally in stakeholder engagement activities and dialogues, solutions to conflict situations, may in practice demand more on looking beyond water [Sadoff & Grey 2005]. The logic of "sharing benefits" has often proved useful in dealing with, for example, upstream-downstream interests in water allocation conflicts.

3.7.2 Partnerships in transboundary settings

Coordination of the activities of stakeholders is usually regarded as an important function of good water governance in shared river basins. Coordination does not imply consensus; disagreement and deliberation are often essential to improving governance arrangements. Coordination may be relatively formal, for example, as between various government bodies and authorities within states, or representatives, in international negotiations, or may be more informal.

The extent of coordination varies significantly across countries and across river basins. Overall, there is significant experience in management of small and intermediate size watersheds [Thomas 2006].

[7] Water border along the Amur River and its tributes is shared by Russia and China along 3544 kilometers.

Successful informal partnerships or coalitions for larger watersheds that cross national borders appear to pose more difficulties.

Our research confirms that most river basin organizations in shared river basins face substantial difficulties to achieve their objectives. Several common problems are apparent. First, most are dominated by bureaucrats and officials. This suppresses active deliberation with and by non-state actors. Agendas, instead, are dominated by bureaucratic competition and rivalry for controlling over funds. Second, members on committees or councils often have multiple roles and competencies resulting in confusion about specific responsibilities within the river basin organization. A common consequence is lack of clear responsibilities for implementation and practical results. Third, coordination problems persist despite initial intentions. Different agencies represented in a council continue to pursue their own plans for the watershed or sector when not immediately engaged in council discussions. Pre-existing water management institutions if overlooked can greatly affect implementation of new plans [Mollinga et al. 2007]. Negotiating of shared compromise visions has been proven difficult. How to improve stakeholder coordination in shared rivers often remains a serious challenge.

3.7.3 International – Domestic linkages

Stakeholders are the key for addressing water-related insecurities in shared river basins; both within and across national borders. Stakeholders are the major drivers in routine domestic implementation of interstate accords once they are signed. The roles of targeted stakeholders in compliance with, or violating the norms and behavioural prescriptions of intergovernmental agreements are crucial but their commitment is often not properly secured, so implementation is poor. Of course, in some instances, stakeholder may not wish to be involved and resort to non-compliance or protest, where agreements don't adequately respect their interests. In other cases, the problem stems more from the lack of opportunities or incentives for stakeholder participation.

Finding mechanisms and tools to consolidate participatory capacities is one of the keys for institutional successes within and across state borders. Forging interactions in the triangle 'state-business-society' have been touted as important instrument for domestic implementation of interstate accords. Partnerships among diverse stakeholders can help to reduce conflict and lead to pro-active approaches to water-related risk reduction.

Multi-stakeholder dialogues, by creating and supporting spaces for meaningful conversations, have the potential to play a significant role in improving governance of regional and transboundary waters [Warner 2006; Dore 2007]. Dialogues may, for instance, contribute to reducing water conflicts, ensuring equitable and fair allocation, and ecological sustainable use and management. Dialogues may also inform, and help to shape more formal negotiations and decision-making processes, by bringing in a wider range of perspectives on needs, impacts and options, and having them deliberated openly [Dore 2007]. For example, the WWF-Russia is putting a lot of efforts into initiating the stakeholder dialogue not only in the Amur basin in Russia, but in a wider transborder context with the counterparts in Northeast China and eastern Mongolia. It is an integral part of its new programme '*Green Belt of Amur*'. Over the past decade, dialogues around water resource infrastructure programs and management policies have sprouted around the world at many different levels of governance; river basins in Asia are the part of them.

In Vientiane, Lao PDR, in July 2006, for example, an alliance of actors in the Mekong Region came together to publicly discuss The World Bank's Mekong Water Resources Assistance Strategy, the Asian Development Bank's Greater Mekong Sub-Region Programme and the Mekong River Commission's Draft Strategic Plan (WB & ADB 2006). An ambition of the organizers was that the dialogues will lead to constructive analysis and adaptation of these strategies as they are implemented [IUCN et al. 2007]. Non-state actors from local communities, academia, non-governmental organizations and private sector participated in discussions along with government officials and representatives of multilateral agencies [IUCN et al. 2007]. In a region with authoritarian states and partial democracies regional forums sometimes allow safer and more open discussion of projects and issues than in the individual countries.

Stakeholder participation is equally important for domestic implementation and enacting in every-day practices soft law and less formal arrangements such as joint declarations or memoranda of intent, or cooperative action plans and programmes established within specific river basins. It appeared to be particularly useful, for example, during the Amur Basin regime formation and long and controversial negotiations process between Russia and China.

3.8 Adaptive Water Governance

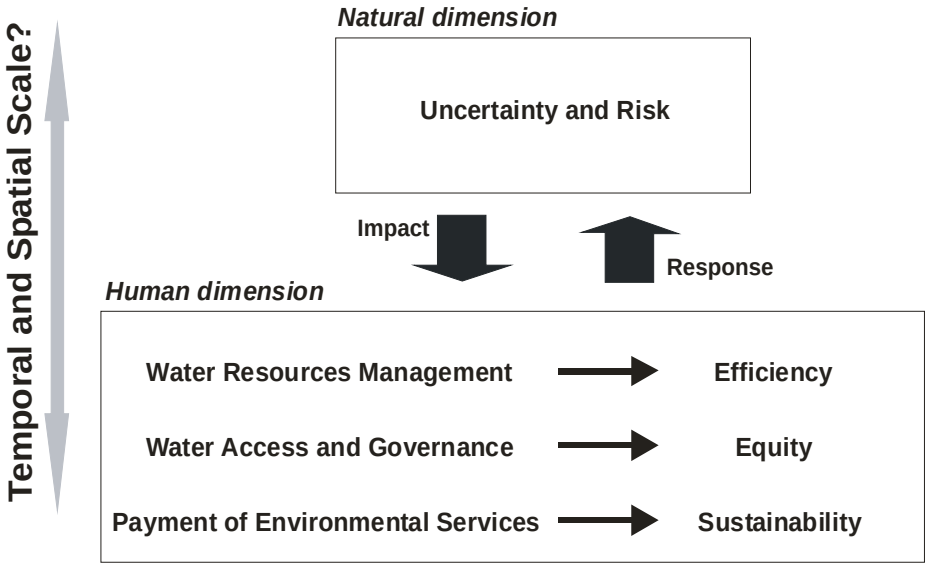
Part of REWIND activities aims at building interactions with other international research in the field, including the already finalized (NeWater, CABRI, ASEMWaterNet) and ongoing (Twin2Go) international projects. That allows wider cross-basin comparisons and to contribute and enrich the current discussion on river basin water governance ongoing worldwide.

Of a particular interest in this context are deliberations on *adaptive water governance.* Recently it is perceived that adaptive water governance is especially needed in the context of global environmental change, particularly climate change and increased vulnerabilities to water related disasters. "The major challenge is to create governance structures that are flexible and robust in the face of uncertainties and inevitable surprises...adaptive water governance is necessary when related uncertainty cannot be reduced in short-term, or where policy decisions cannot be postponed until better knowledge is available"[Twin2Go 2010]

During the REWIND Synthesis Workshop held in Chiang Mai (25-28 March 2010) active discussion on adaptive water governance issue took place. Its adaptive governance panel highlighted some of the key findings from the NeWater project focused on European river basins [Huntjens 2010]. Cooperation structures and information management were identified as two inter-dependent and critical elements of water governance regimes that enhance the possibilities of adaptive water management. Several limitations were identified to bottom-up governance to water management problems in large and complex river basins [Huntjens et al. 2010] concluding on the importance of multi-level governance.

Apart from caring for rivers through appropriate use of water resources the logic of sharing benefits as a basis of cooperation in river basin management is also important for adaptive responses to water insecurities like seasonal scarcity (Xu 2010b). Payments for environmental services are one way to align incentives with management objectives. A draft framework was developed (Figure 12).

Figure 12 Possible frameworks for the water resources management [Xu 2010b].



In a working paper submitted to the REWIND workshop it was argued that adaptive governance is a neglected but critical dimension of efforts to integrate adaptation to climate change into disaster and water management [Lebel et al. 2009b]. Adaptive governance is critical because both wider policies and more specific management interventions take place in the context of large uncertainties and variation in risks, the effectiveness of interventions, and the dynamics of social-ecological systems. Disaster management, water resources management and climate change adaptation – as domains of policy and practice – appear to be undergoing transitions towards more holistic and integrated perspectives (Table 2). These transitions are creating new opportunities for exploiting synergies among policies as well as addressing inconsistencies and trade-offs.

For example, in all three policy areas there is a growing recognition that the sources of knowledge relevant to improving management of risks need to be expanded beyond the conventional reliance on technical knowledge held by a few experts in the bureaucracy. Experienced-based knowledge of water users, flood-plain dwellers and operational water managers whether with state agencies or not is often crucial to finding workable solutions. Local knowledge may provide additional options for adaptation that are not easily visible to central agencies, for instance, that take advantage of, and help to maintain, services provided by local ecosystems and social networks. Broad convergence in different conventional policy domains support more integrated approaches. Recognizing more sources of knowledge as legitimate and potentially salient also increases the chances of claims being contested. Deliberative and evaluative procedures become increasingly important. Recognition of multiple sources of knowledge is just one dimension; others include consideration of multiple stressors, and expanding public participation (Table 2).

Table 2 Comparison of policy transitions in disaster and water management [Lebel et al. 2009b].

Features	Disaster management	Water resources management	Climate change adaptation
Problem frames	Reacting to events –> Prevention and risk reduction	Resource to allocate –> multiple services and risks	Resource to allocate –> multiple services and risks
Purpose of stakeholder participation	Recipients of training –> community-based preparedness	Inform –> consult or negotiate	Build awareness –> Design adaptation actions
Coordination across sectors	Modest and temporary –> part of development	Sectoral –> integrated (IWRM)	None –> Mainstream
Sources of relevant knowledge	Expert –> multiple	Expert (water engineering) –> multiple	Expert (climate science) –> multiple
Spatial planning	Hazard mapping –> social vulnerability mapping	Administrative regions –> river basins	Impact hot spots –> Vulnerability mapping
Climate and weather	Warnings for individual events –> trends in disturbance regimes	Seasonal variability –> Longer-term trends	Mean differences –> Variability and extremes
Integration across stressors	Single risks –> integrated risk management	Water only –> Water- and land-use	Single risk (climate) –> Climate as confounder
System emphasis	Hazards and exposure –> Sensitivity and resilience	Supply driven –> Demand management	Biophysical impacts –> Adaptive capacity
Priority target level	National –> Local	National –> Basin-level	International or region –> Local

A dynamic context for water management is typical – whether changes arise from urbanization and globalization affecting types of water uses and users, changes in policy frameworks or political leadership.

Integrated water resources management is a promising entry point for introducing climate change adaptation into development. Water resource planners, managers and users often have substantial experience in dealing with climate-related flow variability and new paradigms encourage more integrated perspectives [Lebel et al. 2009b]. At the same time inserting institutional reforms and new projects into the existing complex web of power and decision-making relationships around water management is challenging. Collaborative enterprises that aim to build trust, mutual

understanding and respect for other interests, viewpoints and beliefs have to proceed in a context where there are often strong vested interests and polarized coalitions.

4.0 Conclusions

1 Existing systems of water management in river basins in five countries of Asia-Pacific under study are diverse and frequently designed to deal with major water related insecurities. They include a variety of legislation, administrations, strategic planning and programmes, sets of concrete measures and tools in water sector, in pollution control, in water services, in agriculture, hydro-engineering, floods protection to name few. However, still these systems are not adequate to significantly reduce the water insecurities local societies are currently facing and to respond to new emerging risks associated with rapid global changes. Innovative approaches, adjustments and reforms to increase effectiveness of water governance in river basins are needed. Results of REWIND case studies confirm that many water related problems result from shortcomings in water governance.

2 Institutional reforms undertaken in water sector, however, are frequently unsuccessful both in terms of meeting own mandates and targets and based on assessment against tougher criteria of sustainability and fairness. Constraints and limitations for good water governance under existing systems include (a) shortages in public policies and their performance, (b) weaknesses in identifying clearly water related risks and respective response options, (c) inadequate coordination (horizontal a vertical) between authorities and , (d) inadequate support and incentives for stakeholder engagement, (e) weak respect of the rights of indigenous groups and those actors who have 'long-standing relations with a river', (f) limited use of scientific and traditional knowledge, (g) fragmented adaptation to climate changes. These are regarded as common gaps in addressing water insecurities through existing systems in water management in river basins under study. They are compounded by specific problems in particular places.

3 During the recent decade a common trend to incorporate innovative approaches into existing water governance systems is registered in all basins. Among such approaches is (a) integrated water resource management and tighter coordination between levels and between various authorities, and (b) shifting from predominant state-centric governance to include multiple stakeholders. While the role of the authorities in water governance in Asia-Pacific remains dominant effectiveness, it is increasingly recognized, depends on recognizing the contributions of non-stated actors.

4 Participation is expanding in all river basins under study, although the scales and forms vary across basins. More intensive and diversified it is in the countries with developed economies and democracies (Australia), while in transition societies (Vietnam, China, Russia) it is more limited due to various reasons, including the heritage of the centrally planned systems and lower public awareness.

5 The importance of non-state actors in all river basins under study is growing. Multiple local stakeholders such as business, indigenous people organizations, households, nongovernmental organizations, river councils, sub-national units of government are starting to play increasing roles in reducing water related insecurities. Decentralization, dialoguing to provide strategic advice, consultations, partnerships, building trust and mutual understanding, knowledge and 'insiders' information sharing on environmental and sustainable development issues are critical to build awareness, acceptance and support for water innovations to move forward and to establish common platforms.

6 Studies indicate that in some countries there are attempts to institutionalize stakeholder engagement. Existing water management systems reflect to a different extent the issue of stakeholder engagement - from formal acknowledgement in domestic legislation, to thorough support and incentives mechanisms, creation of public-private partnerships, or establishing basin council types fora. Still, our studies show that there is a gap between formal acknowledgement and its application in every-day practice as sometimes it appears to be just a window-dressing.

7 There is gradual recognition that successful water policy implementation and water reforms requires all stakeholders involved, especially end-users, can have their say in decision-making process and afterwards 'personally' participate in every-day action towards sustainable water use and protection. In most cases top-down decisions are regarded as being imposed upon local actors and make policies difficult to implement effectively. Local stakeholders often know what 'security' challenges they face best. It is easier for them than for the cumbersome government structures to routinely adapt to local changes.

8 In our previous research it was acknowledged that not only the design of an institution is decisive in determining how effectively, equitably and resiliently it functions; but also action of institutions in particular domestic settings and results of their performance is equally important for assessing institutional capacities of societies to reduce water related responsibilities (Lebel et al. 2006). REWIND has further explored this 'package', and it suggests that stakeholder involvement is a key driver in institutional performance as in their everyday practices and concrete practices they routinely contribute to insecurities reductions in the locales.

9 REWIND has identified a number of common features of stakeholder involvement in river basins in the Asia-Pacific. *First*, in all countries and river basins expanding stakeholder engagement is an underlying trend during the last decade. *Second*, although forms of public engagement vary significantly - from dialogues and discussions on water planning, or better flood protection, to regular participation in activities river basin councils their set is typical for major river basins. *Third*, the role of the government, river basin authorities in water management remains high in all countries. *Fourth,* the increased role of various businesses is a new trend. *Fifth*, public participation is widely touted as critical to gaining public acceptance for policies and projects. *Sixth,* in developing countries and transition economies the role of international agencies and organizations in mobilizing stakeholder involvement is high. *Seventh*, relationships between actors are critical and success depends on the ability to develop mutual trust between actors: when government agencies are committed and play active roles to promote increased partnerships, it increases the chances for successful outcomes.

10 Another common and comparatively new feature in the Asia-Pacific river basins is creation, or further development of river basins council type organizations which usually co-exist with river basin authorities. They increase the opportunities for wider stakeholder participation through convening public consultation and dialogues; usually they function as platforms for consultation and aggregation of plans for river basin/sub-basin developments. Their possibilities are limited so far, as for the most part RBOs remain nascent organizations with still limited capacities to coordinate stakeholder dialogues and actions. In many instances they are dominated by government authorities. Still, the potential to use this mechanism for 'hearing the voice of the public', provided that RBOs are properly institutionalized, is promising.

11 Cross-country comparisons indicate that extent of public awareness and participation in water management varies significantly across cases and river basins. Public participation as a social norm is more extensive in Thailand than in either Russia or Vietnam. Domestic non-governmental organizations and various advocacy networks regularly challenge state policies and decisions on water-related infrastructure with critiques in mass media and well-organized protests and campaigns. In Russia, the environmental awareness of the public and responsibility to take water-related actions is low, and the public still heavily relies on 'paternalism' of the government authorities; environmental awareness has been subdued during the communist regime. In Australia, with its well developed democratic traditions the civil society involvement is much higher.

12 Meaningful participation by all relevant stakeholders is critical for the effective design, negotiation and implementation of policies and measures to reduce water-related insecurities in shared river basins. Careful attention to the processes by which stakeholders activities are coordinated implies that efforts must often go beyond formal institutional arrangements between state agencies and countries. Coordination through broader networks or specific partnerships may be particularly salient where more formal procedures are cumbersome or grid-locked, for example, in bureaucratic turf wars. Regardless, interventions should pay careful attention to pre-existing water management institutions, formal and informal. Overall, expanded stakeholders' engagement and coordination appear to be important foundations for improved decision-making and effective implementation and verification of water governance arrangements in transboundary watercourses.

5.0 Future Directions: Refining Findings

1. States in the Asia-Pacific river basins tend to respond to water related insecurities and adapting to climate change with increasingly sophisticated institutional frameworks. Strengthening coordination between authorities (horizontal and vertical), building partnerships between state and non-state actors, and expanding public participation is increasingly seen as necessary to setting and effectively pursuing development goals for a basin. At the same time there is a need to identify ways of how to better integrate basin water management within sustainable development strategies and poverty alleviation programmes.

2. Integrated approaches to river basin water management imply more frequent engagement with a broader diversity of stakeholders from with government, business and public spheres. Deliberative approaches to reducing water insecurities have to become more inclusive. Stakeholder participation need to be supported and promoted through various mechanisms and capacity building, through enhancing awareness, consensus based approaches, information sharing, dialogues, consultations, constructing state-private partnerships, organization of campaigns for rehabilitation of river sites and joint actions in flood risk reduction at the locales.

3. In its turn, broader engagement of multiple stakeholders will significantly contribute and enhance the processes of implementation of existing institutional arrangements in water sector, and also their faster adaptation to impacts of global climate change. Consolidation of institutional capacities to support wider participation of stakeholders in decision-making processes in the implementation phase and in actions to reduce water related insecurities remains a challenge. This is especially true in many Asia-Pacific where establishing and then sustaining pluralistic democratic societies has, in its self, proven difficult.

4. In most Asia-Pacific countries both developing, developed and transition economies the need for additional financial resources for consolidating good water governance and its participatory structure in river basins is needed. The current levels and allocation of public funding for water uses, conservation and protection is not sufficient. It cannot be expected, especially by the developing societies, that these resources will be made available in the future from outside of the regions. They have to be generated and mobilized from within – from businesses, services, agriculture and industries – and may be also through new ways of setting priorities, for example, which give more support for demand and risk management rather than conventional emphasis on infrastructure for supply augmentation and protection. The new emerging role of business should be further encouraged. Some of the promising instruments had been already identified and being tested, such as micro-finance, payments for ecosystem services, disaster insurance, contingency funds that can be set up by regional and local governments to support recovery of property and livelihoods after flood disaster. Their possibilities and constraints need to be further explored and 'good practices' need be broader applied within river basins. Stakeholder participation especially at its initial stages is to be partially supported by funding, including for example the 'seed' grants or incentives. But in a longer perspective it is necessary to combine such approach with identifying promising instruments for internal generation of funding depending on specifics of issue area and locations.

5. There is a great deal of evidence about good practices and useful lessons learned from experiences in stakeholder participation and partnerships in the countries of Asia-Pacific on how to deal with water related insecurities and risks. More attention should be given in the future to selecting mechanisms and tools for exchange of good practices across countries. At the same time in many cases direct automatic transfer of national experiences without their prior adaptation to natural, socio-economic, cultural and political specifics of the recipient river basins in the countries of Asia-Pacific not always does provide for expected results. Thus, 'transfer and adaptation' of good practices and experiences should go hand by hand; analysis and assessment of related problems and challenges is among important avenues for future action. Stakeholder participation is a highly context oriented issue.

6. In many developing countries there is a need to improve the architecture of existing formal systems of water governance in river basins with incorporation of multiple stakeholder engagement issue on the agenda of future reforms but the time/costs of doings so are high. Short-cuts would be very welcome. Workshops or trainings for bureaucrats that could learn from best institutional practices elsewhere would be very valuable in the area of designing of systems of laws, regulations, administration, policy tools, programming as well as ways of improving compliance through penalties, sanctions and education/awareness. Training or workshops should be conducted for various stakeholder groups (including media, business, municipal services, community-based organizations, schools) at all levels local-district-provincial-national for better understanding how to effectively apply good governance principles in their river basins in practice and what problems they are facing.

7. More theoretical and practical thinking should be given to assessing particular roles and influences of each stakeholder group in the river basins under study, and how stakeholder participation-partnerships are embedded into water governance regimes and in future institutional innovations. Project partners are planning to proceed further with their research on the issue. One of the goals in addition to a set of publications already done as a result of REWIND project is to prepare a joint

synthesising article on this innovative topic for a peer-reviewed journal. Another goal is to proceed with the follow-up aggregation of results and further refining project findings, and contrasting them to the worldwide trends. It is planned to do through the partnership in the synthesis research of the international project “Coordinating twinning partnerships towards more adaptive governance in river basins”, Twin2Go. Presenting final project results and discussion of lessons learned from river basins in five countries is planned at the two expert meeting with policy-makers and stakeholders to be held in Vietnam and in Nepal in autumn 2010. Research findings will be discussed at the international conference Global Water Governance and UN System to be held in in Bonn, 13-15 October, 2010 and at the Stockholm Resilience Centre, 1-3 Sept. 2010.

8. Finally, the detailed pathways and mechanisms through which stakeholder participation and coordination reduce water insecurities in shared basins deserve further investigation. Potentially important mechanisms include: (1) making interests, capacities and risks of the most vulnerable groups, otherwise marginalized from assessment and planning procedures, more visible within and across national boundaries; (2) wider sharing and better understanding of knowledge and practices, critical for the reduction of disaster risks; (3) social learning around risks and vulnerabilities leading to new management goals and more opportunities for collective responses, linking where appropriate domestic and international efforts; (4) higher public acceptance of policies and measures proposed by governments or under international agreements.

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Appendix

Table of Contents:

Workshops

1. **Synthesis workshop and Policy Round Tables "Reducing Water Insecurity through Stakeholder Participation in River Basin Management in Asia and in Europe", Chiang Mai, Thailand, 25-28 March 2010**

INTERNATIONAL PARTNERSHIP

Adaptive water governance and stakeholder participation in river basin management in Asia and in Europe

INTERNATIONAL WORKSHOPS and POLICY ROUNDTABLE

Chiang Mai, Thailand

Business Center, Amari Rincome Hotel

25-28 March 2010

Sponsored by APN and EC

Goals:

The Chiang Mai workshop has three goals:

1) To synthesize what is known about the roles of stakeholder participation, coordination and cooperation in river basin management and good water governance.

2) To identify and review efforts to make water governance more adaptive.

3) To systematically assess the governance regimes of a few river basins and identify features and practices which support inclusive and adaptive water governance.

These analytical goals will be addressed through discussion of research studies, through policy dialogue with experts and practitioners and joint analyses in working groups for a small set of river basins in Europe and the Asia-Pacific region.

Program and format:

The program of the workshop is in three parts (See Agenda).

Day 1 of the Meeting will be dedicated to reviewing and building on a set of case studies conducted under the REWIND project, aggregating findings from these case-studies and integrating it with the experiences of invited practitioners and experts. The workshop will summarize insights about the state-of-the-art in good practices for meaningful stakeholder engagement.

Day 2 of the Meeting will start with two **Policy Roundtables.** The first will focus on identifying opportunities for improving the quality of stakeholder participation in river basin management through exchange of good practices and success stories building on findings from Day 1. The second roundtable will extend the analysis to focus on those elements crucial to adaptive policy and policy-making in river basin management. In both Policy Roundtables the potential for transfer and modification of experiences across basins will be critically explored. International and local experts from research and practice will be involved in the dialogue.

The second half of Day 2 and **Day 3** will be dedicated to the analysis of the governance regimes of at least three river basins in Asia and in Europe (Volga, Red, Mekong) using the Assessment framework developed by the Twin2Go project. This will bring together several previous or on-going projects on water governance and invited experts. The final afternoon plenary session will discuss the results of the assessment to identify key *findings* and lessons learned.

Invited experts:

The meeting will bring together about 25 participants – international and local experts and projects partners – engaged in promoting in practice, or studying stakeholder participation and cooperation in river basin management with a particular interest in adaptive water governance.

We invite participants to come to Chiang Mai to engage in new thinking, envision broader possibilities, exchange and identify innovative instruments to expand stakeholder participation and cooperation in adaptive water governance.

The meeting will be conducted under Chatham House rules: there will be no attribution of ideas or positions of participating experts during or after the event.

Synthesis of Results:

Results of discussions, assessment of river basins governance regimes, roles of stakeholders and results of Policy Round Tables will be synthesized in the Meeting Report. All papers and results will be made available for the wide public. These will be sent to all participants and will also be made available at the Twin2Go (www.twin2go.eu) and REWIND (www.sea-user.org) websites. On the basis of this meeting, the Twin2Go and REWIND intend to regularly maintain and expand the international expert networks in the countries of Asia and Europe.

Agenda

	Session and Topic	Format
Day 1 (25 March) **REWIND: Water Governance and Stakeholder participation in water insecurities reduction**		
0830-0900	**Registration and informal introductions**	
0900-1030	**Introduction to workshop** Objectives of meeting (Elena Nikitina) **REWIND Case Studies I** Institutional issues and IWRM in the Red River, Vietnam (*Bach Tan Sinh*) Climate change and Himalayan rivers (*Xu Jianchu*)	Chair: *Louis Lebel* Presentations with discussions
1030-1100	Break	
1100-1230	**REWIND Case Studies II** Gender, water insecurities and stakeholder engagement in the Upper Ping River Basin, northern Thailand (*Louis Lebel*) Water related risks and stakeholder responses in the Amur, Russia (*Elena Nikitina*)	Chair: *Bach Tan Sinh* Presentations with discussions
1230-1300	Lunch	
1300-1500	**Initial comparison and synthesis from REWIND studies** Meaningful stakeholder participation: roles, coordination and context	Two facilitated roundtables then short reports Chairs: *Xu Jianchu*
1500-1530	Break	
1530-1700	**REWIND Completion of Project and Beyond? (REWIND Partners Only)** Case study publications – Presentations - Synthesis publication - APN reporting - Internal evaluation- Future collaboration	Chair: *Elena Nikitina* Roundtable discussion
1830-2000	Group dinner at a restaurant a short walk away. All participants invited including those attending only Days 2 and 3	Hotel lobby

Day 2 (26 March) **Policy Roundtables** ***REWIND and Twin2Go Partnership***		
0800-0845	**Registration (of newly arriving participants)**	
0845-0900	**Welcome and Opening of Roundtables**	
0900-1030	**Policy Roundtable 1 – Securing meaningful participation** Stakeholders and basin management (*Elena Nikitina*) What is meaningful stakeholder participation in river basin management? How can it be achieved? Panelists: *Bach Tan Sinh, Santita Ganjanapan,Sukontha Aekeraj, Nina Poussenkova*	Chair: *Wim Cofino* Short keynote (7min) Initial short reactions (5 min) by panelists followed by facilitated discussion
1030-1100	Break	
1100-1230	**Policy Roundtable 2 – Adaptive water governance practices** Adaptive water governance (*Patrick Huntjens*) What practices support adaptive water governance, and which hinder? How can good practices be shared with other locations? Panelists: *Xu Jianchu, Yaroslav Sennik, Louis Lebel, Bussabong Chawkanha*	Chair: *Elena Nikitina* Short keynote (7min) Initial short reactions (5 min) by panelists followed by facilitated discussion
1230-1330	Lunch	
Day 2 **Assessing adaptive water governance**		
1330-1500	**International comparative studies of water governance** What comparative projects have you been involved in and what did you learn? *(Everyone)* **Proposed method for comparing water governance regimes** Explanation of scoring exercises *(Elena Nikitina, Louis Lebel)* **Short film on the CABRI-Volga project**	Chair: *Jacques Ganoulis* Round the table on different international water governance projects participants have been involved in Presentation on assessment sheet and process
1500-1530	Break	

1530-1700	**Analysis of governance regimes 1** **Clarifications, problems and solutions** Discussion of initial efforts with scoring methods			Working groups make initial exploration of scoring methods including identifying shortcomings
	Volga Chair: *Elena Nikitina*	Red River Chair: *Bach Tan Sinh*	Bang Pakong Chair: *Sukontha Aekeraj*	
1830-2030	Group dinner. Transport arranged.			Meet first in hotel lobby
Day 3 (27 March) **Assessing adaptive water governance**				
0900-1030	**Analysis of governance regimes 2**			Working groups cont.
	Volga Chair: *Nina Poussenkova*	Red River Chair: *Bach Tan Sinh*	Bang Pakong Chair: *Sukontha Aekeraj*	
1030-1100	Break			
1100-1230	**Analysis of governance regimes 3**			Working groups cont.
	Volga Chair: *Nina Poussenkova*	Red River Chair: *Bach Tan Sinh*	Bang Pakong Chair: *Sukontha Aekeraj*	
1230-1330	Lunch			
1330-1500	**Reports of analyses from project groups** What were the main findings from your assessment? (Group Rapporteurs)			Chair: Louis Lebel Presentations by working group rapporteurs and discussion
1500-1530	Break			
1530-1700	**Commonalities, transferability and cooperation** What are the most important contrasts and similarities between the river basins? Any policy recommendations? *(everyone)*			Chair: *Nina Poussenkova* Facilitated round-table discussion
1700	**Close of meeting**			

Dates and Venue:

The Meeting will take place during 25-28 March, 2010 in the Business Center, Amari Rincome Hotel, Chiang Mai, Thailand. An optional field trip is planned for 28 March. CABRI-Volga and Twin2Go partners will review their workshop findings during 29 March.

Sponsorship and organization:

The workshop is organized by the Unit for Social and Environmental Research (USER), Chiang Mai University, Thailand and EcoPolicy, Russia. It is financially supported by the APN (REWIND project) and the European Commission (Twin2Go Project).

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International Partnership:

REWIND: Reducing water insecurity through stakeholder participation in River Basin Management in Asia-Pacific, APN funded project, ARCP-2009-03CMY
www.sea-user.org/uweb.php?pg=237

Twin2Go: Coordinating Twinning partnerships towards more adaptive governance in river basins, EC, 7FP

www.twin2go.eu

CABRI: Cooperation Along a Big River. Institutional coordination aomong stakeholders for environmental risk management in the Volga basin, EC, 6 FP

www.cabri-volga.org

M-POWER: Mekong Program on Water, Environment and Resilience,

www.mpowernet.org

ASEMWaterNet: Multi-stakeholder platform for Asia- Europe Meeing Science and Technology cooperation on sustainable water use.
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2. REWIND project workshop and Policy Dialogue "Reducing Water Insecurity through Stakeholder Participation in River Basin Management in Asia-Pacific", Hanoi, Vietnam, 18-20 January 2009

REWIND

REducing Water INsecurities Deliberatively

Reducing Water Insecurity through Stakeholder Participation in River Basin Management in Asia-Pacific

APN Project

International Workshop

18 – 20 January 2009

Hanoi, Vietnam

Army Hotel Conference Center, Hanoi

Agenda

18 January, Sunday		
9:30 – 10:00	Introductions: Getting Together	Tea and coffee served
10:00 – 12:00	***Session 1*** **REWIND: Introductory Remarks to the APN Project**	Facilitator: BTS Rapporteur: *Toan*
	Welcome to the Workshop	BTS
	Welcome remark, President of NISTPASS	Dr. Mai Ha
	REWIND: APN Project Introduction	EN
	Risks: Perceptions and Summary of water related insecurities and vuknerabilities	DD
	Responses: Perceptions and Summary of stakeholder policies and measures related to water insecurities	LL
	Discussion	
12:00 – 13:00	LUNCH	
13:00 – 15:00	***Session 2*** **REWIND: Case Studies Analyses**	Facilitator: JCX Rapporteur: *Duong*
	Introduction: Common goal and format	EN
	5 Country Briefs from River Basins:	
	• Vietnam	BTS
	• China	JCX
	• Thailand	LL
	• Australia	DD
	• Russia	EN
	Discussion	
15:00 – 15:30	BREAK	
15:30 – 17:00	Risks and Responses: Summary of common and specific problems in countries and river basins	JCX
19:00 –	GROUP DINNER	

19 January, Monday		
9:00 – 10:30	***Session 3*** **Responses: Stakeholder Participation and Partnerships** • Stakeholder groups • Stakeholder roles • Stakeholder partnerships and coordination Discussion	Facilitator: LL Rapporteur: Duong
10:30 – 11:00	BREAK	
11:00 – 12:15	Summary: Lessons Learned about stakeholder roles in river basins	JCX
12:15 – 13:30	LUNCH	
13:30 – 14:30	***Session 4*** **Integrated River Basin Management:** **Science-Policy Interface and Good Practices**	Facilitator: DD Rapporteur: *Toan*
	IRBM in shared river basins	TU
	Comments from Vietnam's Perspective and experience	Madame Phan
	Summary: Lessons Learned from river basins	DD
15:00 – 15:30	BREAK	
15:30 – 17:00	***Session 5*** **REWIND: Results and Goals Ahead**	Facilitator: EN Rapporteur: Duong
	Research tasks and Working papers	
	Dissemination of results and findings	
	REWIND networking	
	Discussion of APN Interim and Progress Reports	
	Shared data (pictures, graphs, slides, diagrams) for APN reporting	
	Workshop Concluding Discussion	
19:00 -	GROUP DINNER	
20 January, Tuesday		
	From Research to Practice	
	REWIND Field Trip	BTS

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3. **REWIND project session "Reducing Water Insecurity through Stakeholder Participation in River Basin Management", IHDP Open Meeting, Session CO30, Co-Chairs E.Nikitina and L.Lebel, Bonn, Germany, 29 April 2009**

Agenda. Invited Participants.

IHDP Open Meeting 2009

7th International Science Conference on the Human Dimensions of Global Environmental Change

26-30 April 2009
World Conference Center Bonn
UN Campus
Bonn, Germany

The Social Challenges of Global Change

IHDP Secretariat | Hermann-Ehlers-Str. 10 | D-53113 Bonn | P +49 (0)228 815 0600 | F +49 (0)228 815 0620
www.openmeeting2009.org | openmeeting@ihdp.unu.edu

Time: Wednesday 29 April, 14:00 - 15:30. Session: C030

Reducing Water Insecurity through Stakeholder Participation in River Basin Management

REWIND
REducing Water INsecurities Deliberatively

GECHS
Global Environmental Change and Human Security

M-POWER
Mekong Program on Water Environment and Resilience

IHDP OPEN MEETING 2009, Bonn

29 April 2009, Session CO30, 14:00 – 15:30

Reducing Water Insecurity through Stakeholder Participation in River Basin Management
Location: World Conference Center Bonn, Room B

Convenors: ***Nikitina Elena, EcoPolicy Research and Consulting, Russian Federation and Louis Lebel, Chiang Mai University, Thailand***

This panel critically explores the opportunities and challenges involved in reducing water insecurity through expanding stakeholder participation in the management of large river basins. Forging partnerships among state agencies, non-governmental organisations and private sector has been touted as a powerful tool for reducing a variety of water-related insecurities and risks in river basins. But opportunities for meaningful participation can be restricted by capacities, conflicts, knowledge and expectations of benefits from getting engaged. The panel draws on experiences with multi-stakeholder initiatives in river basins in Asia and in Europe. It aims to contrast and synthesize some of the key science-policy issues which need to be addressed in managing water securities in a changing regional and global environment. Uncertain and changing insecurities and risks, which are associated with changes in both water quantity and water quality, underline the importance of strengthening adaptive capacities. In this panel the different presentations reflect the problems of water shortage, floods and pollution which need to be tackled in each river basin. In particular we

focus on the roles, beliefs and interests of different stakeholder groups, and how this, and existing institutional settings and policy tools applied, affect public participation and deliberation in river basin water management. This panel is a joint international initiative between the 'Mekong Program on Water, Environment and Resilience, M-Power', the APN project on 'Institutional capacity in natural disaster risk reduction', the EC concerted action 'Cooperation along a Big River, CABRI-Volga' and GECHS/IHDP.

Local Governance in Flood Management in the Mekong Delta, Vietnam: the Role of Interaction among the Local Stakeholders towards Living with Flood

Presenter: ***Tan Sinh Bach, National Institute for S&T Policy and Strategy Studies, Viet Nam***
Authors: Tan Sinh Bach (1), Hieu Trung Nguyen (1), Anh Tuan Le (1)
National Institute for S&T Policy and Strategy Studies, Hanoi, Viet Nam (1)

The concept of living with flood has existed in the Mekong Delta for many generations. Flood has not been considered as disaster when people in the Delta only live in the cities and did not cultivate rice during the flood season.
The problem starts to emerge then when the newly resettled people live in the inundation areas and cultivate rice three times including the one during the flood season. To cope with the harms caused by flood, a number of technical solutions have been proposed with limited success, e.g. setting up a number of residential clusters. Recently the notion of management of flood has changed from controlling flood to living with flood. The People Committee of An Giang Province has promote the idea of living with flood through the encouragement of people in developing their adaptive capacity to explore conditions created by flood to improve their livelihoods. The Provincial Department of Agriculture and Rural Development, together with other departments and social organizations have been instrumental in assisting farmers in Province to develop a number of income generation options replacing the traditional rice cultivation practice during the flood season.
The case of An Giang Province presented in the paper illustrates how various stakeholders have been interacting to cope with the flood impacts and sustain their livelihood for the past and coming years, and provides lessons learned regarding the role of stakeholders in shaping the way the flood is managed and the implication for the national policies on flood management.

Coordination of Stakeholders' Interests within Environmental Management in River Basins

Presenters & Authors: ***Marina Fomenko and Georgy Fomenko, Insitute Cadaster, Russian Federation***

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Sustainable use of natural resources within river basins determines the success in responses of regions, countries, and local communities to contemporary challenges defined by limited natural resources, inequity and conflicts in their use. Problem-solving in this area requires the design and implementation of the mechanisms for coordination of multiple interests of the state, industries and local population. In 2006, within the CABRI-Volga international study we have applied the interactive methods, methods of qualitative analysis and expert multi-factor 'impactsinterests' assessments in order to identify the major stakeholder groups, to evaluate the joint environmental actions, and to rank stakeholder groups' impact potential in the process of environmental problem solving within the Volga basin in Russia. We present the major findings relating to four priorities: consolidation of partnerships; strengthening institutional structures and overcoming institutional gaps; coordination of economic, social and ecological priorities; pollution prevention and control. Main stakeholder groups include federal and regional authorities, municipalities, non-government organizations, business, including SMEs, and households. Impact potential of some stakeholder groups is assessed higher than their interests (federal and regional authorities); opposite picture is characteristic for

municipalities and households. Impact potential and interest of large enterprises is higher than of small ones. Research results indicated that methodology selected can contribute for enhancing the institutional frameworks for environmental management in river basins, for applying social equity principles in providing access to limited natural resources and prevention of potential social conflicts, for solving the problems of interethnic interaction within environmental management.

Institutions and Societal Impacts of Climate in the Arizona-Sonora Portion of the U.S.-Mexico Border Region

Presenters: ***Robert Varady, Margaret Wilder, University of Arizona, United States***
Authors: Robert Varady(1), Margaret Wilder(1), Christopher Scott(1), Nicolas Pineda(2), Barbara Marehouse(1), Gregg Garfin (1)
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The U.S.-Mexico border region is arid-semiarid and subject to high climatic variability. Its occupants have devised diverse strategies for buffering climate impacts. One response has been a complex system of institutions and structures that buffer water scarcity, including laws allocating river waters, dams, and canals. Drought nevertheless looms. Institutional response mechanisms include awareness-raising, capacity-building, drought plans, water storage, and conservation rules. Several formal and informal binational institutions operate in the region, including the International Boundary and Water Commission and its Mexican counterpart the Comision Internacional de Limites y Agua, the Border Environment Cooperation Commission, and the North American Development Bank; all operate in a binational, bicultural environment with contrasting legal and administrative traditions. They manage water resources, ecosystems, and infrastructure in the context of chronic drought. Despite their efforts, border society and natural habitat remains vulnerable to changes driven by high population growth, migration and border enforcement, expansion into fire-prone areas, invasions of exotic species, and climate changes. This is especially true for rural populations lacking alternatives to their usual water sources or to alternative means of earning a living when, for example crops fail. The paper, based on research funded by U.S. NOAA (2003-07) and the Inter-American Institute for Global Change Research (2007-09), examines the impacts of transborder water-management institutions in the Arizona-Sonora part of the U.S.-Mexico border region. The paper seeks to identify new climate- actions needed to respond to likely climatic change.

Proposed model for sharing contested transboundary water resources

Presenter: ***Hamisai Hamandawana, North West University, South Africa***
Authors: Hamisai Hamandawana (1)
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The sharing of trans-boundary water resources is increasingly becoming one of the most contentious issues confronting sustainable utilization of water resources. While allocation between upstream and downstream users continues to be constrained by lack of adequate data and uncertainties on future availability because of global climate change, a related problem is lack of mutually agreeable water sharing mechanisms. This constraint appears to be persevering because of failures by the scientific community to formulate water sharing strategies that harmonise the varied interests of numerous stakeholders. Because lack of agreeable sharing arrangements tends to encourage self-centred resource use practices that undermine sustainable utilisation, research needs to formulate work-around strategies that enhance sustainable use by promoting responsible stewardship. In recognition of the general lack of agreeable sharing mechanisms, the objective of this contribution is to offer an empirically based model that is potentially capable of providing an objective basis for distributing contested trans-boundary water resources. With its underpinnings in classical game

theory, the model presented in this paper uses data on population distribution in lieu of quantitative data on absolute hydrography to determine the distribution of transboundary water resources in southern Africa's Okavango drainage basin where sustainable use of the Okavango River's water by Angola, Namibia and Botswana is threatened by disagreement over quantities each of these countries can abstract. The model offers a mechanism that is worth exploring as a basis for allocating water when collective action is undermined by lack of mutually agreeable criteria.

Participation in Transboundary Water Management - Fostering Adaptive Capacity?

Authors: ***Nicole Kranz, Ecologic Institute for International and European Environmental Policy, Germany***
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Water management in transboundary river basins is often a highly complex and contested matter due to a range of uncertainties that largely from the main challenges in water management - water pollution and scarcity - which then occur at several interrelated management levels. It has been shown that these problems are by no means static, but occur in inherently dynamic systems, which are increasingly driven by global environmental change. Important drivers include climate change and population dynamics, as well as economic factors. While IWRM has been established as the leading management paradigm for addressing these challenges in water resources management, the success and effectiveness of IWRM is highly contingent on the adaptive capacity of the system itself as well as the implementation of adaptive management practices. A solution that addresses at least in part these water management challenges has been the formation of transboundary water management institutions, e.g. basin commissions. Especially in the developing world, however, these river basin commissions are often under-capacitated. In this context, the question arises of to which extent the broad participation of non-state actors could have a positive impact on policy outcomes in terms of increased adaptive capacity and resilience of water resources management systems at the transboundary level. The paper takes a closer look at participative governance structures in the Orange-Senqu basin in Southern Africa. It shows what has been undertaken with regards to participatory approaches at the trans-boundary level, and assesses the activities implemented so far against the background of the available literature.

Compliance with and Enforcement of Water Regulations in the Volga-Caspian Basin: Government-Business Interface

Presenter: ***Elena Ostrovskaya, UNESCO-IHE, Netherlands***
Authors: Elena Ostrovskaya (1), Jan Leentvaar (2), Natalia Tanyuscheva, (3)
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Acknowledgement: The support for this Session is provided by the Asia-Pacific Network for Global Environmental Change, APN

4. REWIND session "Water Governance and Stakeholder Participation", GECHS Synthesis Conference "Human Security in an Era of Global Environmental Change", Co-Chairs Bach Tan Sinh and Ken Conca, Oslo, Norway, 23 June 2009

Agenda

22-24 June 2009
University of Oslo, Oslo, Norway
Session: Water Governance and Stakeholder Participation
Co-chaired by Ken Conca and Bach Tan Sinh

Invited participants:

Marisa Goulden
Institutions in International River Basins and their Ability to Promote Cooperation as an Adaptive Response to Climate Variability and Climate Change

Bach Tan Sinh
Local Governance in Flood Management in the Mekong Delta: The Role of Interaction Among the Local stakeholders Towards Living with Flood

Paola Ramallo
Stakeholder's Participation in Water Conflict Resolution, Case Study: Revelo River Basin, Bolivia
Tagelsir Mohamed Gasmelseid
Nile Basin Initiative and Sustainable Transitions in Shared Watersheds: The Case of the River Nile

Alice Newton
Water Consumption by Coastal Tourism in Southern Europe: A Case Study in the Algarve, Portugal

Funding sources outside the APN

Total amount of funding secured outside the APN, 2008-2010: 160 000 USD

List of agencies and organizations

EcoPolicy	38 000
USER	34 000
Cadaster Institute	12 000
Russian Scientific Fund on Humanities	12 000
M-Power	9 000
Twin2Go, EC	40 000
The International Fund for Agricultural Development and Echel Eau through Challenge Program on Water and Food (CPWF) support for Project PN50 and European Commission through support for CPWF Project PN67	15 000

List of Young Scientists

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2 Ha Hai Duong
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Carried case-study research in the Red River Basin, Vietnam. He specializes in analysis of water related risks and water resources management. He took part in preparation of the report from the REWIND workshop in Hanoi. *"REWIND experience is very important for my further research on water problems, adding global dimension to my professional interests"*
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3 Olga Smaragdova
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Smaragdova Olga during the entire life cycle of the project has been engaged in REWIND international and domestic networking activities, in public relations and promoting links with policy-makers in project administration and events organization. *"I have Masters Degree in business administration, and my involvement in the project is an extremely useful experience for my professional carrier".*
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4 Vu Canh Toan
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Toan was involved in organization of the project workshop in Hanoi in 2009 and in compilation of the analytical report from the meeting. He was engaged in interviews and case-study research in the Delta areas of the Mekong – in An Giang province and in the CanTho city, Vietnam. *"I am looking forward to continue my research in the international team of the REWIND project".*
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5 Mr. Songphonsak Rattinawilailak ('Mulu') carried out most of the field work for this study including interviews in local Karen language and their summary and translation into Thai. He has a Masters Degree in Non-formal Education and has been a Research Assistant at the Unit for Social and Environmental Research, Chiang Mai University for 3 years. He is a co-author of the Thai case study report. "*This study helped me develop skills as a field researcher. I learnt a lot about gender issues in different social groups in Thailand and how they are related to management of water."*
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Glossary of Terms

ABC	Amur Basin Council, Russia
ADB	Asian Development Bank
AWMB	Amur Water Management Board
ASEMWAterNet	Multi-stakeholder platform for Asia- Europe Meeing Science and Technology cooperation on sustainable water use
BDP	Basin Development Plan
BWMB	Basin Water Management Board
CABRI	"Cooperation along a Big River", EC project
FAWR	Federal Agency for Water Resources, Russia
GECHS	Global Environmental Change and Human Security, IHDP
GWSP	Global Water Systems Project
IFA	Institutions for Floods in Asia, APN project
IHDP	International Human Dimensions Programme
IWRM	Integrated water resources management
MARD	Ministry for Agriculture and Rural development, Vietnam
M-Power	Mekong Programme on Water, Environment and Resilience
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MOAAC	Irrigation Department, Ministry for Agriculture and Agricultural Cooperation, Thailand
NISTPSS	National Institute for Science and Technology Policy and Strategy Studies, Vietnam
NewWater	"New Approaches to adaptive water management under uncertainty", EC project
NGO	Non-governmental organization
PRT	Policy Round Table
RBO	River basin organization
RBPMB	River Basin Planning Management Board, Vietnam
REWIND	Reducing Water Insecurities Deliberatively, APN project
RGNF	Russian Scientific Fund on Humanities
Twin2Go	"Coordinating twinning partnerships towards more adaptive water governance in river basins", EC project
UNU/EHS	Environment and Human Security, UN University, Bonn
WB	World Bank
WWF	World Wildlife Fund
4TWM	4th International Simposium on Transboundary Water Management

CD Annex - Power Point Slides of conference/workshop presentations

1. REWIND project workshop and Policy Dialogue "Reducing Water Insecurity through Stakeholder Participation in River Basin Management in Asia-Pacific"
Hanoi, Vietnam, 18-20 January 2009

1.1 E. Nikitina. REWIND: APN Project Introduction

1.2 D. Dutta. Risks: Perceptions and Summary of water related insecurities and vulnerabilities

1.3 L. Lebel. Responses: Perceptions and Summary of stakeholder policies and measures related to water insecurities

1.4 Bach Tan Sinh. Institutional Issues in Relation to Sustainable Development and IWRM in Vietnam

1.5 J. Xu. Global warming changes risks into opportunities: Towards the Himalayan pathway in global change

1.6 L. Lebel, S. Rattanawilailak1, P. Lebel, G. B. Bastakoti,R. C. Bastakoti, B. Jaicchaichom, R. Daniel, S. Ganjanapan. Gender, water insecurities and stakeholder engagement in the Upper Ping River Basin, northern Thailand

1.7 D. Dutta. Country Briefs from River Basins: Australia

1.8 E. Nikitina. Country Brief. AMUR and OB in RUSSIA

1.9 Dao Trong Tu. Mekong River Commission – A model of shared river basin cooperation – challenges and opportunities.

+ several photos from the workshop

2. Synthesis workshop and Policy Round Tables "Reducing Water Insecurity through Stakeholder Participation in River Basin Management in Asia and in Europe"
Chiang Mai, Thailand, 25-28 March 2010

1.1 L.Lebel, E.Nikitina. Adaptive water governance: Comparing river basins

1.2 E.Nikitina. PRT: Stakeholder participation in river basin management: Securing meaningful participation

1.3 Bach Tan Sinh, Dao Trong Tu, Pham Tuyet Mai, Pham Nam Hung. Water management and stakeholder roles in River Basin Organisations in Vietnam

1.4 J.Xu. Climate change and water insecurities in Asian river basins

1.5 L.Lebel. Gender water insecurities and stakeholder engagement in the Upper Ping

1.6 N.Poussenkova. Contribution of the leading Russian companies to sustainable development

1.7 E.Nikitina, V.Kotov. Water governance and stakeholder roles: Amur river basin, Russia

+ several photos from the workshop

3. REWIND project session "Reducing Water Insecurity through Stakeholder Participation in River Basin Management", *IHDP Open Meeting 2009*, Session CO30
Bonn, Germany, 29 April 2009

1.1 REWIND Session Agenda

1.2 R. Varady, M.Wilder, C.Scott, J.McEvoy, N.Pineda, B.Morehouse, G.Gartin. Institutions and societal impacts of climate change in Arizona-Sonora portion of the US-Mexico border region

1.3 E. Ostrovskaya, J. Leentvaar, N.Taniushcheva. Compliance and enforcement of environmental regulations in the Volga-Caspian region.

1.4 N. Kranz. Participation in transboundary water management – Fostering adaptive capacity?

1.5 M. Fomenko, G. Fomenko. Thinking globally – Acting locally: Responses to global

challenges.

1.6 B.T. Sinh, L.A. Tuan. Local Adaptation to climate change in the Mekong Delta of Vietnam

4. REWIND session "Water Governance and Stakeholder Participation", ***GECHS Synthesis Conference Human Security in an Era of Global Environmental Change***

Oslo, Norway, 23 June 2009

4.1 B. T. Sinh, N. H. Trung, L. A. Tuan. Local governance in flood management in the Mekong Delta, Vietnam: The role of interaction among stakeholders towards living with flood

4.2 P.R. Pedrazas. Stakeholder participation in water conflict resolution: Case study in the Ravelo River Basin, Bolivia

4.3 T. M. Gasmelseid. Sustainable transitions in shared watersheds: the case of the River Nile

4.4 M. Goulden. Institutions in international river basins and their ability to promote cooperation as an adaptive response to climate change

5. 4th International Symposium on Transboundary Water Management, 4TWM Greece, October 2008

5. 1. E. Nikitina, V.Kotov, L. Lebel, B. T. Sinh. How better governance and stakeholder participation could reduce water insecurities in shared river basins?