



American Council for
**The United Nations
University**
The Millennium Project

IV WORLD WATER FORUM – MEXICO 2006

BROADENING PERSPECTIVES IN THE FACE OF INCREASING RISKS NEWATER – THE MILLENNIUM PROJECT

Co-organized session held on March 21, 2006, for the 4th World Water Forum (4th WWF),
celebrated in Mexico City, Mexico, from March 16 to 22

This report summarizes the development of the session regarding the participation of the representatives of the Millennium Project and it also describes the round table discussions where Argentina's local actions were presented.

It aims at outlining outstanding issues which may become the scope of research proposals, identifying links and synergies for potential cooperation between the session conveners, NeWater and The Millennium Project.

SESSION I.D. FT 5 .15 BROADENING PERSPECTIVES IN THE FACE OF INCREASING RISKS

Framework theme:

- Risk Management

Cross-cutting perspectives

- Institutional Development and Political Processes (B),
- Capacity-building and Social Learning (C),
- Application of Science, Technology, and Knowledge (D).



SUMMARY

SESSION CONVENERS

European Commission DG Research, NeWater, Wageningen University and Research Centre;
Chairperson: Dr Panagiotis Balabanis.

The Millennium Project of the American Council for the United Nations University. Dr. Jerome C. Glenn – Executive Director. Since Mr. Glenn was not present, he was replaced by **Lic. Concepción Olavarrieta, Chair of the Mexico Node**, who gave a general presentation on the scope of the Millennium Project.

Chairman of the session: Prof. Dr Wim Cofino, Head of Centre of Water and Climate, Wageningen University Research Centre.

The two hosts of this session offered their set of experiences to deal with changing conditions in water management expressed in the three key-notes and contribution of the case study and local action from their operating area.

The Millennium Project of the American Council for the United Nations University is a geographically and institutionally dispersed think tank on early warning and analysis of global long-range opportunities, strategies and challenges of the future (<http://www.acunu.org/>).

The EU-funded NeWater Project advocates adaptive water management as a proactive approach to manage water-related risks and uncertainty (<http://www.newater.info/>). Public participation is considered a basic precondition to deal with changing conditions in water management.



*Concepción Olavarrieta – Millennium Project – Mexico Node
Dr. Panagiotis Balabanis – EU - European Commission DG Research
Raquel Zabala – CeLGyP – Argentina*

Keynote speakers

Prof. Dr. Pavel Kabat, Chair and Science Director of Climate Change and Biosphere Centre, Wageningen University Research.

Prof. Dr. Pavel Novacek, Palacky & Charles University, Czech Republic;
Chair of the Czech Node of the Millennium Project.

Prof. Dr. Claudia Pahl-Wostl, Head of Institute for Environmental System Research, University of Osnabrueck, Germany.



Prof. Dr. Pavel Novacek



Prof. Dr. Pavel Kabat - Prof. Dr. Claudia Pahl-Wostl

After a plenary introduction, participants met at round tables to explore case studies and local actions being implemented to better understand adaptive water management and to share potential ideas for preparing final conclusions and suggestions. Participants chose between case studies from the Amudarya basin (Central Asia), the Guadiana basin (Southern Europe), the Orange basin (Southern Africa) and the local actions from Mendoza and Buenos Aires (Argentina) and Valle de Mexico (Mexico).

NeWater case studies aimed at implementing participatory methodologies to make water management more adaptive and ready to cope with current and future challenges. Case studies provided the ground for testing methodologies and illustrating lessons learned from examples of real-world practices. They were suitable tools for sharing and disseminating the experience built up at the regional, national and/or local level. It was shown how the research team of scientists and other members of the community work closely together in integrated, collaborative partnerships. Adaptive water management was advocated as a pro-active approach that is particularly designed to manage water-related risks and uncertainty.

The Millennium Project's presentations aimed at identifying future development pathways and providing global frameworks to adapt water management to new realities and future challenges.

The outputs of the session were:

- exchange experiences in dealing with water-related risks, focussing on four regions: Central Asia, North East Africa, Southern Europe, and Latin America;
- discuss the effect of global change scenarios on water management and how adaptively water management in the regions could or should be able to respond to water-related risks from future scenarios;
- understand the role of learning in adaptive water management under uncertainty and how the communities in the four regions are able to incorporate this;
- learn from the multi-contextual approaches of future studies to strategic planning and decision making in water management;
- find ways to improve future studies and adaptive water management in a dialogue with local actors, representatives from the case regions in the two hosting projects and other participants of the Forum.

Finally, a summing up of the debates included a set of recommendations that came out of the discussions and which aim at facilitating the implementation of the conclusions to best deal with increasing risk and uncertainty.

Key recommendations related to critical water-related problems and societies' coping mechanisms emphasized stakeholders' participation on decision making and action implementation in the field, as one of the most important issues and how it is linked to environmental awareness, resource allocation, technology adoption and the need to go beyond disciplinary and sector approaches.

PREPARATION WORK FOR SESSION FT5.15

It is worth pointing out the great difficulty that The Millennium Project had due to the lack of economic support duly solicited.

Once The Millennium Project's session proposal was approved by the IVWW Forum's organization committee, support was required to UNESCO, one of the several institutions financing the event. Jerome Glenn, The Millennium Project's Executive Director, with the support of Ambassador John Mc Donald (member of the American Council /UNU), submitted the funds request to András Szöllösi-Nagy Director, Division of Water Sciences UNESCO. Carlos Fernández-Jáuregui, answering this request, agreed that part of the requested support would be obtained through the LAC UNESCO's Regional Office – Montevideo -, under María Concepción Donoso.

The lack of funds not only made it impossible to obtain valuable contributions from other nodes which may have enriched the session, but also significantly limited the availability of The Millennium Project's disseminating material and of material promoting the session. The refusal of the economic support was surprisingly notified at the last moment, which did not allow for searching alternative financing sources and affected coordination and communication tasks, thus influencing the session development.

The session was totally different from the other ones, not only for its contents and organization but also because of the outcomes that we now need to work on to encourage more realistic solutions for the future of water management.

Now we should take advantage of the opportunity to have shared it and go forward in planning future joint activities.

What can the merge of The Millennium Project and NeWater offer to be an innovative perspective on water management?

“I would like to remind you that these World Water Forums are not international conferences, they are meeting places which provide everyone, without exception, with opportunities to meet, to exchange views, to enter into dialogues and to make proposals. One of the essential aims of these Forums is to facilitate such exchanges and to raise awareness of the important role of water issues in the world...”
- Loïc Fauchon



THE MILLENNIUM PROJECT

FUTURES STUDY METHODOLOGIES - SCENARIOS PLANNING

Futures research evolved as a way of examining the alternative futures and identifying the most probable, plausible and desirable ones.

During recent years the use of scenarios for environmental policy-making has attracted considerable attention from both the scientific community and policy-makers. The state-of-the-art environmental scenarios combine qualitative and quantitative elements and consistent assumptions with regard to major driving forces like demographic change, social and economic development, and rate and direction of technological change.

Although scenarios have not yet been so widely used, the purpose of The Millennium Project is to be an international utility to assist in organizing futures research by continuously updating and

improving humanity's thinking about the future and making that thinking available for feedback as a geographically and institutionally dispersed think tank.

Scenario Planning is a well-developed foresight methodology that is used by governments and business organizations across the world. Scenario Planning is a methodology that needs to be introduced within a broader foresight or futures approach. Scenarios can help to understand the consequences of today's decisions in a quite distant and uncertain future. They describe a range of consistent and plausible images of alternative futures in an integrated manner, considering the most important driving forces of the socio-environmental system of interest.

The scenario planning process can also be an effective stakeholder engagement tool in its own right. The point is that scenario planning can help create dialogue around contentious issues in an inclusive manner.

Apart from its heuristic ability, this methodology may increase its representation and idea-producing capacity if used in combination with other futures research methodologies and techniques such as environmental scanning, trends analysis, structural analysis, cross impact, Delphi on line, or others.

The Millennium Project offers the development of activities like:

- Capacity building in the use of scenarios, future methodologies tools and incentives developing greater common skills, understanding, and team work between stakeholders in a basin.
- Generation of scenarios in association with project partners.

The stories emerging from the scenario planning process can frame this dialogue enabling managers (defined broadly to include official agencies, local communities, non-governmental organizations (NGOs), indigenous peoples, or private parties), to consider different possible futures in water management.

ENVIRONMENTAL SECURITY

We live in a world of new and evolving threats that could not have been anticipated e.g. nuclear terrorism, state collapse, poverty, disease, and civil war.

- economic and social threats, including poverty, infectious diseases and environmental degradation;
- inter-state conflict;
- internal conflict,
- nuclear, radiological, chemical and biological weapons;
- terrorism; and
- transnational organized crime.

In contrast to more traditional conceptions of security, a new vision of collective security emphasizes the importance of promoting development as the 'indispensable foundation for a collective security system that takes prevention seriously.' The new concept of human security relates to the holistic approach and perceives global environmental change as a major threat to human security. The nexus environment and human security is definitely stressed as relevant.

In this context, The Millennium Project has been concerned about these new conceptual approaches. Therefore, studies related to environmental security have been developed due to the lack of global doctrines capable of facing threats to the soil, air, water, and biodiversity arising from trans-border events caused intentionally, because of lack of knowledge, mismanagement, or a combination of human and natural reasons. Those responsible for such threats may be armed forces, agricultural producers, industries, natural disasters, society itself (unlimited consumption), terrorists, or terrorist organizations.

Describing how to meet the challenge of prevention implies the need to assess the rise of these threats in a preventive manner in order to coordinate the necessary actions among all interested parties.

Contributing to new research towards a more holistic approach of environmental security will contribute to identifying various vulnerabilities, coping capacities and potential intervention tools in order to generate knowledge on how to promote the disaster resilience of affected societies.

The real challenge ahead, however, resides mainly in the development of truly interdisciplinary, integrative and participative research approaches and methodologies in the water management area.

LOCAL ACTIONS – ARGENTINA

In Argentina there are two local actions on water-related risk situations due to human actions. Both of them present management tools to be solved. These cases appear in two urban areas whose physiographic and demographic characteristics are completely different.



Studies carried out to diagnose and suggest solutions for both cases have concluded that the participation of many institutions is essential as well as the clear and accurate information about these problems to all the actors involved.

*Jorge Maza - Argentina
National Water Institute*

MENDOZA HYDROLOGIC SUSTAINABILITY OF HILLSIDE DEVELOPMENTS.

(LA0845) Jorge Maza , Instituto Nacional del Agua

BUENOS AIRES MITIGATION OF RISE IN GROUNDWATER LEVELS – GREAT BUENOS AIRES (LA1079) Oscar Valentín Lico, Instituto Nacional del Agua

Eng. V. Lico was absent, but Eng. Jorge Maza explained his poster.

ROUND TABLE - GENERAL CONCLUSION

LATIN AMERICA'S REGIONAL VISION

The overview of the local actions presented at the session (Mexico City, Buenos Aires and Mendoza) addresses broader concerns about water and human settlements, as well as transformations of a fast changing environment. The resulting situations are recurrent in most Latin American cities and may become particularly serious. Among the main needs identified to improve the quality of the environment in human settlements are the extension of drinking water and sanitation coverage to poorer areas, measures to reduce environmental pollution and congestion in cities, and steps to make settlements less vulnerable to natural disasters.

Recent developments in human settlements policies and institutions in the region, as well as the development of a sound regional perspective or approach will demand the inclusion of all relevant actors, such as public sector agencies, city governments, the private sector, grassroots organizations, legislative bodies and other institutions most deeply involved in this field.

The application of futures studies would enable a better use of scientific information for decision-making not only to analyze the local context (demographic, environmental, social, economic, cultural, scientific and technological trends, identification of social actors and their interests and roles in conflict or cooperation), but also the global context (information society transition, trends related to sector technologies and their future evolution, main uncertainties, possible or contingent breakages).

Speculating about urban water futures, the search for larger forces of change, patterns of growth and shifting paradigms attempt to outline the critical connection of population, water and cities. It offers a conceptual and practical tool for those involved in long-term planning and daily management of basic service provision in metropolitan regions.

The relationship among past practices, present efforts, and potential futures to originate new configurations of integrated and sustainable urban water management leads to the need to develop capacities and new planning horizons.



*Round Table
Concepcion Olavarrieta MP
Local Action - Mexico Valley
Gustavo Paz Soldan*



Gustavo Paz Soldan – Mexico Jorge Maza - Argentina

LESSON LEARNED – KEY MESSAGES –ORIENTATION FOR ACTION

This section was written right after the end of the session and to be included in this report it has been revised and completed with some suggestions and contributions from The Millennium Project's viewpoint.

Lessons learned

Adaptive water management is a promising extension of Integrated Water Resource Management (IWRM) to deal with water- related risks and changing conditions. The concept and procedures should be developed further. The concepts should be illustrated by local actions. The interaction of implementation and concept development is crucial both in building scientific evidence and in communicating the concepts. More specific lessons from the session are:

1. Institutional coordination and harmonization at national, regional and local levels are essential to facilitate change. To such effect, it should be systematised The Millennium Project's experience of over a decade in setting up an international, interinstitutional and interdisciplinary network which studies global change problems in relation with the specific node's vision at regional, national or local levels.
2. There is a need for integrated approaches that take new realities and challenges in river basin into account, considering technical as well as social aspects. Such integration should not be reduced to its special dimension. Instead, it should consider probable, plausible and preferable futures in relation with long term and very long term global scenarios such as the ones built by The Millennium Project.
3. A thorough understanding of the current water system, including its actors, adaptive capacity, environment, cultural and socio-economic settings is crucial to identify barriers and opportunities for a transition to more adaptive water management.

4. Successful small-scale pilot studies can help overcome resistance to change and increase adoption of new approaches.
5. Development of guidelines has to be location specific taking into account downstream consequences of development as well as possible alternative futures at global and sector levels.
6. Stakeholder education and the creation of bottom-up user associations appear crucial steps in attaining adaptive groundwater management, since command and control approaches have generally proven unsuitable. The transfer of futures knowledge expressed in scenarios built by The Millennium Project may act as the framework for transferring management technologies and strategy making.



Prof. Dr. Claudia Pahl-Wostl

Key messages

Water management is facing increasing uncertainty and complexity due to climate change and globalisation. “Living with change” implies a different approach to deal with risk. Likewise, futures scenarios and prospective research methodologies and techniques developed by The Millennium Project help face the uncertainties and complexities of a fast changing world. Adaptive water management is a promising extension of IWRM to deal with water-related risks and changing conditions. Key recommendations connected to adaptive water management and strengthening local actions are:

1. Current water management should explicitly account for future changes. Selected management strategies should be robust and perform well under a range of possible, but initially uncertain, future developments, which should be not only environmental, climatic and managerial, but also scientific, technological, cultural, political, and social.
2. The development of future pathways and options for change should be based on knowledge of current water management and the experience gained in past projects, taking into account the socio-economic, cultural and political realities in the river basin as well as resulting conditions arising from global and sector changes having an impact on the basin’s situation.
3. The chances of a community to deal with water-related risks depend on site and region specific aspects: economy, social cohesion, government system, scale and magnitude of water-related hazards.
4. Local actions facilitate social learning, participation, and the use of local knowledge.
5. Stakeholder education and the creation of bottom-up user associations appear crucial steps in attaining adaptive water management.
6. Stakeholder participation and partnership are strengthened through (i) community organizing; (ii) sustainable livelihood approaches; (iii) relationship building; (iv) participatory research; (v) transparency; and (vi) training and capacity building.
7. An increase in, and maintenance of, the flexibility and adaptive capacity of water management regimes should be a primary management goal.

Orientations for action

1. Intensify observation of the hydrological characteristics and the performance of economic, societal and environmental indicators and identification of decisive factor(s) guiding the future water system.
2. Set these basin and its communities’ dynamic variables in relation with the global challenges that mankind must face in the long and very long terms.
3. Establish processes of social learning finely tuned to the objectives of communities at various levels by encouraging local actions and securing policy support. Emphasize improvement of long term management capacity.

4. Improve flexibility in the system through small-scale structures at lower level supported by local society through a participatory process considering hydrological, physical and organizational changes.
5. Develop and test approaches that allow water users and managers to cope with uncertainty instead of trying to eliminate it.
6. Create space for creative and out-of-the-box thinking. Entrenched perceptions and beliefs block innovation and change.
7. Train a new generation of water management practitioners skilled in participatory system design and implementation.

PROPOSALS

MILLENNIUM PROJECT PLANNING COMMITTEE MEETING, JULY 2006 – TORONTO - CANADA

- To offer the incorporation of those proposals which may be interesting for NeWater into the meeting agenda
- To disseminate NeWater's goals and activities among The Millennium Project's nodes, especially those which supported the participation in the IV World Water Forum and which finally could not attend due to financing inconveniences, such as Russia, China and Canada.

IN EUROPE

- To suggest that the relationship already set up with The Millennium Project through Dr. Pavel Novacek, chair of the Czech node, be reinforced.
http://europa.eu.int/comm/research/water-initiative/iwrm_review_en.html#extrev_mex
http://europa.eu.int/comm/research/water-initiative/iwrm_experts_en.html
- To suggest analysis of the Launch of the European Millennium Project Nodes Initiative (EuMPI) <http://www.acunu.org/millennium/eu-0703.html#eumpi> .
- To know more details about the involvement in the foresight works of the European Commission find attached the Work Report of Brussels Area - Node of The Millennium Project – The Destree Institute- Period : July 2004 - July 2005, presented in The Millennium Project Planning Committee Meeting - July 28-29, 2005, Chicago, IL.
http://www.acunu.org/millennium/mppc-0705/Brussels_report_0705.pdf

IN ARGENTINA

Although there is a large number of documents which are well prepared and justified by the need to disseminate and train human resources in the integrated water resources management - IWRM, consolidated practices to implement this model are still missing in the country. The traditional direction followed by engineering and exact sciences dominates the “hydrological” sector not only in the academic and scientific research fields but also in the public sector’s responsibility positions.

The use of futures research methodologies is not generalized either, except for some isolated practices. However, society is more and more trained and understands that water management tends to follow different pathways from the ones taken so far: water management in the future will be completely different from the management we have seen up to now. And this is not a fashion, but a clear necessity.

Even though engineering will go on playing an important role, this will not be exclusive. The longer it takes to incorporate new actors, the use of new methodologies, and the practice of new decision-making styles, the more reduced water management capacity and preparation will be when we experience the change already seen in other regions of the world which are more severely affected than ours because of water shortage and the impact of weather change.

Therefore, and taking into account NeWater Programme’s proposal to extend its case studies to Latin America, the intervention of the Millennium Project’s Node - Globalization and Prospective Latin American Centre (Celgyp)- is offered to manage the institutional articulation required to devise a NeWater partnership project.

To such effect, the following institutions have been contacted and they have shown their interest in taking part in said project.

- **University of Buenos Aires (Universidad de Buenos Aires - UBA) School of Philosophy and Letters – PIRNA /FLACSO –**
<http://www.filo.uba.ar/contenidos/investigacion/institutos/geografia/pirna/index.htm>
Programa de Investigaciones en Recursos Naturales y Ambiente (PIRNA, Research Programme on Natural Resources and the Environment).
- **National University of La Plata (Universidad Nacional de La Plata, UNLP - School of Agrarian and Forest Sciences - Master In Integral Hydrographic Basins Management**
The Millennium Project has signed a cooperation agreement with this university.
- **National Water Institute –** <http://www.ina.gov.ar/>



Closing
Chairman of the session: Prof.Dr Wim Cofino, Head of Centre of Water and Climate,
Wageningen University Research Centre.
Fons Jasper – NeWater
Raquel Zabala – Millennium Project

FINAL CONCLUSIONS

Cooperation actions between both programmes may lead to the following results:

- call of international attention on issues and policy options that put people at the centre of strategies to meet the challenges of the future
- dissemination of new knowledge regarding a more holistic concept and framework to assess uncertainty and risk within an interdisciplinary and multi-dimensional approach.
- development and evaluation of tools and best-practice projects to translate the theoretical and complex concept of uncertainty, risk, and environmental security into day-to-day decision-making processes.
- the exchange and dialogue among various experts and institutions to strengthen the cooperation among different scientific disciplines as well as the practical cooperation in research and implementation.

Finally, it is suggested that this report be sent to the Chancellor of the United Nations University, Dr. Hans van Ginkel, who expressly stated his interest in having all the information related to The Millennium Project's activities and to the content and development of this session.

Raquel Zabala
Buenos Aires, July 2006.-