

Theme 6 Report

Education, Knowledge and Capacity Development

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The world's water resources - already under severe pressure from rising demand, deteriorating quality and global changes impact - are often mismanaged due to inadequate knowledge and capacity. Better scientific understanding of water problems and knowledge-based approaches to managing water resources in an integrated manner, coupled with capacity building and technology transfer, can bring to bear more efficient solutions to these problems.

Theme 6 addresses the need of strengthening the role of education, knowledge and capacity development in sustainable use and management of water resources. The main focus of this theme is to foster knowledge transfer, capacity building, and scientific and technological innovations in addressing challenges faced in managing and protecting water resources to meet human and environmental needs, while giving due consideration to cultural significance of water and cultural practices contributing to conservation of water resources. The importance of awareness raising and education for all stakeholder groups are also addressed in the theme discussions. The theme also identifies inter-linkages between water and culture, creating diverse water cultures, including cultural diversity, biodiversity, and traditional knowledge, practices and technologies for water resources management. Furthermore, special consideration is given to developing response strategies through better understanding of the impacts of global changes.

With a view of strengthening science and education, Theme 6 calls for enhancing knowledge and capacity building within the water sector, improving data gathering, sharing and dissemination mechanisms, promoting knowledge-based, integrated approaches and informed decision-making in water resources management, and actively engaging professional associations and all stakeholders. In a rapidly changing and ever more complex world, 'wicked problems' that traditional narrowly-focused research struggles to grapple with are more and more common, including in the water sector. In the water sector, numerous good practices derived through traditional research have showed a remarkable resistance to scaling up. This session proposes to discuss experiences with different approaches that try and overcome the twin challenges of solving complex problems and to

implement more sustainable and integrated solutions at scale. Knowledge and capacity development should be better used so that all stakeholders can contribute, have equitable and meaningful access to, use and benefit from the vast and fast growing body of knowledge and experience in the water sector.

Topic 6.1. Education, Knowledge and Capacity Development Strategies

Topic Co-Coordinator: Water for women Partnership, UNESCO Institute for Water Education (UNESCO-IHE)

Topic main question: How can knowledge and capacity development be (better) used so that all stakeholders can contribute, have equitable and meaningful access to, use and benefit from the vast and fast growing body of knowledge and experience on the water sector?

In a rapidly changing and ever more complex world, ‘wicked problems’ that traditional narrowly-focused research struggles to grapple with are more and more common, including in the water sector. In the water sector, numerous good practices derived through traditional research have showed a remarkable resistance to scaling up. This session proposes to discuss experiences with different approaches that try and overcome the twin challenges of solving complex problems and to implement more sustainable and integrated solutions at scale. Knowledge and capacity development should be better used so that all stakeholders can contribute, have equitable and meaningful access to, use and benefit from the vast and fast growing body of knowledge and experience in the water sector.

Session 6.1.1: Water education and schools: Bridging divides for future generations

Since water issues all over the world require pressing attention, knowledge becomes increasingly important for developing capacities and competencies of stakeholders and finally for finding efficient, sustainable, economically affordable and socially equitable solutions. But for doing this, development of knowledge by scientists has to respond to the grassroot demands and needs of stakeholders. Collaboration and exchange of knowledge between scientists and practitioners has to be improved for more impact of knowledge.

Session 6.1.2: Get involved! Whose and what empowerment will ensure the provision of sustainable water services?

Global changes, such as climate change, population growth, the globalization of food and other markets, cause a rise in demand for water. If the MDG related to water supply and sanitation is to be achieved, an equitable allocation of water between all necessary sectors (agriculture, industry, energy, environment, etc.) will need to be achieved. Institutional capacity is needed for water management stakeholders to plan, implement and enforce policy and legal reforms to achieve

equitable allocation. Institutions need to be developed for the benefit of different sectors' needs (high agricultural productivity and low water pollution; new housing and flood plain management).

Session 6.1.3: Institutional capacity development: How to get the balance right for equitable water allocation in regions of water scarcity?

After almost two decades of capacity building, we still need answers to rather fundamental questions regarding capacity development. These questions remain relevant in the face of ongoing developments, notably the decentralisation of water management and increasing stakeholder participation that have a profound impact on the governance of water services and with that on the capacity building needs of local stakeholders. Questions about the contribution that capacity development has made to improved and sustainable water services, and about the contribution of capacity development to the large scale adoption of innovative and successful solutions to local water problems, need to be answered.

Session 6.1.4: Knowledge for All, All for Knowledge

Today's youth are an untapped source of tomorrow's water problem-solvers. Teachers and educators need support in finding new and exciting ways to engage youth for the cause of water. Local actions and solutions by children and schools to water problems are one of the bridges to future generations. What are the latest educational materials that build a sense of responsibility and create excitement? How can we empower people, and specifically children and teachers, to make a difference for water through their actions? How can children, schools, and community educators make a difference in solving water issues?

Topic 6.2. Water Science and Technology: Appropriate and Innovative Solutions For The 21st Century

Topic Coordinator: UNESCO International Hydrological Programme (UNESCO-IHP)

Topic main question: How can science and innovation help address future water issues?

With increasing global change pressures coupled with existing un-sustainability factors and risks inherent to conventional water management strategies, countries in the future will experience difficulties in efficiently managing scarcer and less reliable water resources. In order to meet these challenges we need to radically change the way we think about water management. Firstly, we need to adopt a more holistic and integrated approach to solving our water management problems. Harmonization of approaches will require a different approach to planning and development, but will allow us to consider a continuum of options (centralized and decentralized), that will lead to more sustainable solutions. Secondly, by embracing new developments in technology, we will be able to

generate optimal water management solutions and strategies that are robust, adaptable and sustainable under these future global change pressures. In addition, we must learn from other sectors to stimulate innovative breakthroughs in the water sector. Finally, to create the necessary imperative for change, it is important to bring together all stakeholders involved with, or who have interest in water management issues. These multi-stakeholder platforms will help address problems on the ground, stimulate a joint vision and action, guide innovations and ultimately promote an effective early warning and early-solving approach that will substantially contribute to enhancing local capacity and preparedness to cope with global changes.

Session 6.2.1: Thinking outside the water box

This session aims to bridge the gap between conventional engineering thinking and futuristic views of those driving technological change.

The key questions of the session will be:

- What will the future of water management be in 50 years time?
- What will be the impact of emerging technologies on how we manage the water cycle?
- How can the water sector benefit from unified personalized information platforms (GoogleEarth, YouTube, TomTom etc)?
- How can the water sector support future technology developments such as a single digital earth model (combines geographical, hydro-geological, ecological, climatologically models)?
- How can emerging technologies help us to tackle water related poverty?

Firstly, this session will be steered towards generating practical examples of inter-sector cooperation to combat (and approach) water sector issues. Secondly, the session will call for integrated development ('learn from each other'); this will be communicated during the Forum. The result of the session will be ten key recommendations, widely supported by presenters, panel members and the audience (recommendations generated through interactive workshop methods).

Session 6.2.2: Collaborative and problem-solving research in the WASH sector

This session will advocate a more open and systematic stakeholder engagement throughout the research process, as a requirement to mitigating risks in water and sanitation services and water resource management.

The key questions of the session will be:

- Should our future research & innovation be demand driven (greater stakeholder involvement)?
- Will demand driven research enable us to make better decision in an uncertain world?

- How should governance and institutional frameworks be structured to best respond to an uncertain future?

The session will place emphasis on participatory research, where inputs from various stakeholders are valued and where there is ample room for joint reflection and learning. Using several examples, the session will advocate a more systematic use of multiple stakeholder approaches, as a means to carry out research that is more grounded in the realities and challenges of the water sector, and that leads to a wider take up of research at policy and implementation level.

Session 6.2.3: Integrated water management

The session will focus on the need for a more integrated approach to solving our future water management problems and will consider what are the major constraints preventing this from happening (institutional structures, lack of technologies etc.)

The key questions of the session will be:

- Why have we not yet moved to an integrated approach to water management (is the limiting factor technology or institutional frameworks (or a combination of both))?
- How can we use technology to enable us to better manage the water cycle (more holistically and understand interactions of different components)?
- Will developments such as a single digital earth model help us view the water cycle more holistically?

The session centre around the problems of a fictitious failed city. In this city the urban water system has failed (water not able to meet demand, water bodies polluted etc.). The main cause of the failure was the lack of foresight and the lack of an integrated approach. The session will also highlight how some of these failures could have been avoided.

The session will provide 4-5 recommendations on how to move from a highly fragmented approach to water management to a more integrated approach. In addition it will develop recommendations that encourage a more adaptive management strategy.

Topic 6.3. Using the Assets of Professional Associations and Networks to Achieve the Millennium Development Goals (MDGs)

Topic Co-Coordinator: (International Association of Hydraulic Engineering and Research (IAHR), International Water Association (IWA))

Topic main question: How can professional associations and networks be used, encouraged and supported to become a key contributor to the achievement of the MDGs?

While professional associations and networks could potentially play a very significant role in achieving the Millennium Development Goals, their role at present is small. This topic concerns the question of whether the development community views professional associations as underutilized assets and how professional associations and networks could be used, encouraged and supported to become key contributors to the achievement of the Millennium Development Goals.

Session 6.3.1: Connecting the dots: How to get to the MDGs with the help of professional associations?

Professional associations and communities of practice represent a huge number of people with a vast array of experience. How can this experience be mobilised to change the face of water and sanitation management as we know it? How can these networks be tapped to accelerate the achievement of the MDGs? Do the networks really have access to the right capacities and people?

Key problem statements:

- How can professional associations and networks be used, encouraged and supported to become a key contributor to the achievement of the MDGs?
- What are the specific constraints and obstacles that are faced in engaging these stakeholders?
- What examples exist illustrating successful cases of engagement in support of the MDGs?

Session 6.3.2: Showcasing success: How professional networks and associations are making an impact?

Sustainable associations and networks are critical in generating the dialogues, information analysis, and experience sharing needed to support water management outcomes that are 1) more transparent and accountable, 2) informed by good science, and 3) inclusive of diverse stakeholder inputs. Investments in human capacity are needed to build this professional association and networking infrastructure, and adequate development agency support could speed these processes up. This session engages participants in dialogue on ways to build sustainable communities of practice. The goal of this session will be to illustrate how and where associations and networks are making a significant impact to development; identify practices that can develop successful cross-regional and cultural partnerships for capacity building and learning; illustrate where professional associations and networks take an active role improving the capacity of water resource professionals to develop stronger institutions, improve governance, and increase their professional effectiveness over time.

Key problem statements:

- How can professional associations and project-based networks productively collaborate to build communities of practice that effectively enhance the capacity to strengthen water institutions, water governance and sustainable interventions?
- What specific efforts and initiatives can make a difference in building up sustainable professional associations and communities of practice for project-based networks that address pressing water challenges over time in concert with local conditions and needs?

Session 6.3.3: No more money down the drain: Should investments be linked to professional associations' backstopping?

National governments, international financial institutions, multi-lateral donors and users themselves are investing significant funds in water and sanitation infrastructure. Without adequate personnel or technical assistance, both in terms of quantity, but critically in terms of quality of leadership, these investments run the risk of failing, or operating sub-optimally. Money down the drain? Professional associations and other professional networks can play a significant role in supporting infrastructure investments in the water and sanitation sector. Indeed, technical assistance models – where an investment is complemented by a technical assistance project that ensures that the operator is actually capable to operate and maintain the new (or rehabilitated) infrastructure – are familiar approaches. Could professional associations play a stronger role?

Key problem statements:

- Should funding of infrastructure to meet the MDGs be tied to the establishment of regional/local professional/technical institutional structures?
- Could/should a means of globally monitoring the state of “professional infrastructure and capacity” be developed?
- Should professional associations and networks be tasked with this responsibility?

Topic 6.4: Data for All

Topic Co-coordinators: International Associations of Hydrological Sciences (IAHS), World Meteorological Organization (WMO)

The topic main question: How can we unlock the data treasure chest?

A deeper understanding and a better assessment of the world's freshwater resources are urgently needed as a basis for their future management, especially in the face of current global change, including changes in climate. Water managers require accurate data to provide policy options and facilitate effective decision making in order to meet various societal needs and overcome risks due to water-related hazards. Much progress has been made in developing means to collect, analyze and make available the wide range of data and information that are needed for this purpose. Emphasis

needs to be put on developing integrated information systems at national, regional and global scales, together with the evaluation of key indicators. Water is a fundamental human right and as such water-related data and information should be treated as public goods that have real economic value. Adequate institutional arrangements are fundamental to this regard and the international exchange of data is essential where shared water resources are concerned, as well as for global studies such as those of climate change. Investment in the collection and analysis of water-related data of all types must be increased throughout the world, and the resulting data and information freely exchanged, if we are to apply effective and sustainable solutions to the world's water problems.

The aim of this topic is to raise awareness, build common understanding, trigger co-operation, encourage improved practices, foster political commitment and build bridges:

- between the scientific and management communities, and
- between our stated targets, the current situation and the needs for action.

Session 6.4.1: Data needs and acquisition

The question of what data and information to collect and present as a basis for decision making in the water sector is vital if our decisions are to be founded on real facts and not just on hypotheses and are to take into consideration all of the many factors concerned: geophysical, economic and social. The water sector is intimately linked to a wide range of social and political issues and if these interactions are to be considered when making the relevant decisions on political and social issues, then it is important to study the interactions concerned which, in turn, requires that we have available the data and information required for us to fully understand the complexity of the issues concerned. Past experience is that those in high places do not pay as much attention to this subject as it deserves. For example, it was not on the agenda for the previous Forum because it was not thought to be of sufficient importance or interest. It is on the agenda for the Fifth Forum "by popular demand", but it remains to be seen how much interest will be expressed in the subject of data and information at the Forum itself. As more and more regions of the world come face-to-face with water shortages, or start to realise the potential consequences for increased floods and droughts as a consequence of climate change, there will be an increased recognition of the need to study past records and understand more fully the complex interactions between climate and freshwater: floods and droughts. Nevertheless it will still be a challenge, especially in these hard financial times, to obtain the necessary financial support for the data collection and storage programmes that are so sorely needed.

Key aspects include:

- The development of water resources and alleviation of water-related hazards have many facets and it is no easy task to identify a priori what data need to be collected, in what locations or from which groups and at what times.

- As the collection of data and information can be quite costly, it is important to make a balanced decision as to what to collect and what not to collect and store.
- New techniques for data collection are constantly being developed and it is a challenging task to decide what equipment to purchase and when to replace old systems.
- Quantity is not enough: the data must also be of good quality, but how far do we go in refining our techniques? There is a point when it is not worth the expense to increase the quality in the light of the use that will be made of the data.

The collection of adequate sets of data and information is expected to become increasingly important as demand rises to equal and then surpass supply. The challenge of predicting the impact of climate change on water resources will also call for ever more regional and global sets of water data. Therefore, in the medium-term, we can expect an marked increase in the demand for data, matched - hopefully - by an increase in the investment in data collection, storage and exchange programmes. The long-term will undoubtedly bring new, more precise and effective, data collection systems which will lead to a far greater integration of data collection and dissemination systems into the operational practice of all water-related agencies.

Session 6.4.2: Data integration and dissemination

It is important to highlight the need to serve the user community with high quality and integrated data and for this it will be important to engage the user community in defining what they need and making users aware of the frameworks and processes currently in use by data producers. Emphasis should be on defining the needs for national, regional and global integrated data sets and the standards that must be applied in each case. We must take account of current state-of-the-art frameworks for data analysis and presentation and analysts should be challenged to use the most effective tools and indicators to present their results in a form that facilitates their being understood and used by others, including the general public.

Key questions include:

- How should we organize, store and manage these data?
- What frameworks, classifications and methods are available now to organize, assess the quality, store and convert the data into information that is tuned to the needs of users?
- Can the various organizations producing water data learn from each other in this respect?
- What does the future hold for integrated data analysis and presentation?

To quote from the Second World Water Development Report: "Data on almost every subject related to water issues is usually lacking, unreliable, incomplete or inconsistent. We have learned that merely collecting data is not enough. It must be brought together, analysed and converted into information and knowledge, then shared widely within and between countries and stakeholders to focus attention on water problems at all scales. It is only when the data has been collected and

analysed that we can properly understand the many systems that affect water (hydrological, socio-economic, financial, institutional and political alike), which have to be factored into water governance.”

Each region and country has its own water issues and priorities. In some countries water scarcity is the main issue, while in other countries water quality is the main issue. With increasing competition for water, stakeholders are interested in access to water, and high value added uses of water. Water is increasingly being discussed in economic terms as well as environmental and social terms. Many government institutions have administrative functions that either relate to water or affect water. Institutional arrangements are fundamental to managing water and the data required in making informed decisions. And even though water is essential for society and the economy, we must also remember that water is essential to sustain ecosystems, and as such, measurement of environmental flows of water must be improved.

Institutional arrangements, cooperation and coordination between agencies with water data is essential to the successful integration and use of water data. In addition to this there needs to be reinvestment in water monitoring networks, additional survey data collections regarding the economic use of water and additional data collections regarding household water use.

In addition to this, data users need to work more closely with agencies in setting the priorities for data collection and compilation and funding these activities. Finally there is a lack of awareness of how to effectively use integrated data, which requires an interdisciplinary approach including an understanding of economics, social issues and water.

In the short term countries need to address their institutional arrangements and the coordination between agencies, so that in the short to medium term we have greater access to, and integration of, water data. This integrated data should be in the form of a system of information including indicators, statistics and accounts, as this will meet the needs of the wide range of data users. The long term issue is whether countries and agencies succeed in integrating data, and decision making regarding water.

Session 6.4.3: Barriers to data availability

It is important to bring together the data providers and suppliers and to seek among high level officials the political and managerial commitment to support the institutional arrangements and the financial resources needed for the collection, systematic organization and analysis of comprehensive water-related data. This includes, where needed, enacting legislation and introduce practices that make the resulting data and information available to all who need them with the minimum of constraint.

Key questions include:

- Why it is important to share data and with whom it should be shared?
- Who collect the data and who owns it?
- Who should pay for its collection and subsequent use?
- What are the consequences of collecting insufficient data?
- Why are data gathering programmes being cut back at exactly the time when water related data and information are needed more than ever before?
- Does the Pareto principle (the 80-20 rule) apply to data?
- What can be done to encourage institutions and organizations to work together and make better use of the data already collected?
- How can we obtain access to data for scientific and operational purposes?
- What mechanism and instruments/tools exist to improve the data sharing process?

Knowledge of water availability and its distribution and variability, in space and time, is an essential pre-requisite for a number of activities, ranging from flood forecasting to the wise management and development of this scarce resource. However, even when data are available, they are not always shared with those who need them and could most benefit from them. The acquisition, processing and distribution of data are expensive and chronically under-funded. Can we find the will to overcome the financial, legal and policy barriers that block access to the data that are needed and try to find solutions to problems which stop us from unlocking the data treasure chest?

There is a very wide range of established practices, local and national policies and even legislation governing the sharing of data, whilst are in the realm of national policy and, in some cases, bi-lateral or even international agreements. Particular attention should be paid to the needs of developing countries and the difficulties they face as a result of the “digital divide” and funding limitations.

Considering the responsibility of countries and their National Hydrological Services (NHSs) to provide security and well-being for the people of their countries, through mitigation of water-related hazards and sustainable management of water resources, there are opportunities for more efficient management of water resources and there are also need for cooperation in mitigating water-related hazards in transboundary river basins and their water bodies which depend on the international exchange of hydrological data and information.

This requires full, open and prompt exchange of hydrological data and products in support of various international conventions, such as the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change, and the Convention to Combat Desertification,

Governments have the right to choose the manner by which, and the extent to which, they make water related data and products available domestically and internationally, and also to choose the extent to which they make available internationally data which might effect national defence and security. Some countries support their NHSs to earn revenue from users, and/or adopt commercial

practices in managing their businesses, the long-established provision of some hydrological products and services on a commercial basis and in a competitive environment, and the impacts, both positive and negative.

Despite of the wide recognition that hydrological information is needed; the past decades have seen a worldwide decline in the coverage and reliability of systems for the collection of hydrological data and the issue of data exchange still need to be also addressed.

Key questions include:

- Data is simply not measured in the first place due to several reasons including inadequate networks;
- Data is measured, but the quality is not of the required standard;
- Data is measured with good quality, but cannot be accessed due to poor data management systems;
- Data is available in a system but can not be accessed due to high charges;
- Data provided by different suppliers with different definitions.

The issue of hydrological data is a world-wide issue which needs to be addressed globally to solve the data exchange barriers. It also needs to be addressed particularly at regional and national level to find acceptable and realistic solutions to the technical, legal, political and economical barriers to respond to the demand of all stakeholders, including providers and users participating in the integrated management of water resources.

Identifying new ways of gathering support, both strategic and financial, for data collection activities; and to open a dialogue between the data custodians and those who need the data in a search for ways of understanding and, if possible, overcoming the restrictions put on data exchange. The outcome will be used in the continuing debate on these issues at both national and international levels.

Topic 6.5: Water and Culture

Topic Co-Coordinator: Istanbul Metropolitan Municipality, Istanbul Water and Sewerage Administration (ISKI), Turkish Women Cultural Association (TURKKAD)

Sustainably managing water resources is crucial to the accomplishment of the Millennium Development Goals (MDGs); indeed it is water that cuts through and connects the eight MDGs. In order to manage water in a sustainable manner, it is necessary to address the complexity of issues surrounding water and water use, which includes not only the natural scientific and engineering approaches that have dominated water resources management, but also social, cultural, economic and political dimensions. The main focus of this topic is to discuss the inter-linkages between water

and culture, considering the value of culture in creating diverse water cultures, in addressing challenges faced in managing and protecting water resources which meet human and environmental needs.

There is always a very dynamic and constantly evolving relationship between environment and socio-cultural structure, which could better explain the environmental conflicts and provide resolution to them. Diversity of cultures, including religious, regional, traditional, and environmental, has a tremendous influence on the way societies perceive, use and manage natural resources. Consequently, it is necessary to define the interdependencies between sustainable solutions to water problems and diverse water cultures that are flourished around similar environmental conditions. A non-sustainable approach to water resources management focuses almost exclusively on water technologies such as water supply, sanitation, irrigation, hydropower, etc. Thus, Topic 6.5 calls for building bridges among diversities in water management practices and policies for sustainable solutions.

Appreciating the value of culture, through interdisciplinary and systematic efforts, to increase public awareness and creating sounder education strategies is now more unavoidable than ever, for the policy-makers and governing bodies. As a result, without gaining a holistic apprehension towards socio-cultural aspects of water related issues, no sustainable solutions can be achieved.

Session 6.5.1: Cultural Diversity: Key to Water Sustainability

Managing water in a sustainable way does not only depend on scientific and engineering methods, but also on social, cultural, economic and political dimensions as well.

1. What kinds of opportunities and challenges does social, cultural and political diversity present for sustainable water resources management?
2. Will an interdisciplinary approach help formulate practices and policies that are more culturally sensitive?

Session 6.5.1 would first explore, from a variety of cultural perspectives, the question What is water? then address the key question by providing an assessment of research and case studies on the topic of water and cultural diversity, and linking worldwide activities dealing with this topic.

Session 6.5.2: Water and History: Understanding the Water Cultures of Past Civilizations and Deriving Lessons for the Present

Making use of historical and cultural knowledge in water management and governance is a prerequisite for shaping sustainable solutions. However, historical, social and cultural research on water interactions, including traditional knowledge systems, has so far received comparatively little

attention in the water discourse. To date, no systematic collection of the existing knowledge is available.

By adopting a cross-cultural, historical perspective on current water problems and by placing technological solutions within their appropriate cultural and historical contexts, we are bound not only to achieve greater success in developing effective means to cope with the current water crisis, but also to gain uplifting insights into the vast and diverse human experiences that will make it possible to shape future sustainable solutions and enhance the quality of our lives.

Session 6.5.3: Fostering Socio-cultural Perspectives in Water Sciences and Management: Identifying Bridges and Barriers

Human societies depend on the sensible use of water, yet human perception of this use can vary dramatically across time and place. Patterns of water use are ultimately embedded within everyday cultural practices and landscapes: they extend from historical relationships between human societies and the natural environment. Yet traditional and informal patterns of water use must now engage with modern political jurisprudence and environmental science: 'cultural practices' are now 'resource policies'.

This session asks how the objective parameters of water resources can be clarified and brought into balance with socially and culturally appropriate patterns of water use, while also harmonizing with actual institutional techniques. The session will focus on identification of potential 'bridges' and 'barriers' to socio-culturally relevant and scientifically legitimate water management policy. To this end the session presents example cases and discussion of community perception and use of limited water resources as these behaviors confront social, managerial, or institutional barriers in particular places. It will emphasize the need to analysis and policy that is: integrative—that includes cultural perceptions and behaviors; and flexible—that corresponds to dynamic hydrological processes and social institutions.

Session 6.5.4: Traditional Water Management and Global Environmental Change: Charting Sustainable Paths for the Future

This session responds to the Topic's priority of finding diverse cultural perspectives on water management. This session focuses on how Indigenous perspectives can inform water management. One of the priority problems for this topic is in how to integrate diverse water cultures in water resource management and this panel aims to unearth some innovative solutions about how to incorporate Traditional Knowledge in water resource management.

With increasing uncertainties due to global environmental change, more emphasis is being placed on the role that Traditional Knowledge and Indigenous Peoples are going to play in adapting to an uncertain future. This panel will form the basis for future discussions on the topic of traditional knowledge, water, and global environmental change. It will also be the catalyst for the development of policies for medium-long term incorporation of traditional knowledge in water policies.