

# Key topic questions: Input for the development of Forum sessions

Initial Results as of 4 February 2008 (132 responses, 272 questions proposed)

## Theme 1: Global Changes & Risk Management

### 1. Adapting to climate change

- How to assist local decision makers in considering global change for long term infrastructure decisions? (7%)
- Is the development of more storage to ensure water security and to overcome future droughts and to mitigate impacts of floods a primary measure for climate adaptation? (6%)
- What measures should be designed so that both water utilities and water users receive appropriate incentives for water savings? (5%)
- What priority measures are needed for water utilities, on what time scales? (4%)
- Many farmers mostly in Asian countries are keeping indigenous farming practices which have been historically developed. With the advent of climate change, their water situation will have significant changes such as decrease of river flow due to disappearance of high mountain glaciers, increase/decrease in rainfall, elongation of dry spells, rise of temperatures, etc. Will they be able to change their farming practices to adapt to those climatic changes quickly enough to evade the disaster of food shortage? (2%)
- Should transboundary water treaties be revised in provision for climate change? (2%)
- How can (urban) planners and the water sector work together to create better and adapted plans and strategies for the future? (2%)
- How could political will to implement strategy for adapting climate change be raised? (2%)
- How shall decision makers be provided with the best information about likely climate change in their region and projected impacts on their water and sanitation services? (1%)
- What role can desalination play in securing water supplies in areas affected by climate change (dry is becoming drier)? (1%)
- How do we promote watershed development or restoration of degraded watersheds through forestation and soil & water conservation techniques so as to create a cushion, a buffer or a resilient interface between the forthcoming harsh climatic pattern and hydrology? (1%)
- Which additional rules should be agreed upon for meeting of evenness and size of extreme situation? (1%)
- Would shift in distribution or composition of the ecosystem attributing to climate change be acceptable? (0%)

#### *New suggestions:*

- How will adaptation measures be applied in mountainous and small island countries?
- In order to respond to drought caused by global changes, is just natural water enough as water resources?
- How to cope with increasing flood risk under diverse societal conditions of the basin?
- What is the potential contribution of wastewater re-use as a remedy to climate change?

- Establishing small-scale storages to provide drinking water
- What could be the implications of transboundary migration due to drought related to the changes in precipitation regimes as a result of climate change?
- Does global climate change affect Turkey or is it a periodical drought experienced?
- Considering the implications of global warming within the context of increasing population and climate change, what are the action plans and approaches towards increasing productivity in short-medium-long terms?
- Developing new predictions on the effects of climate change on the sectoral use of water in the future
- Land use decisions are the water decisions, as well, What kind of relations are there in the climate change

## 2. Migration and changing land uses, human settlements and water

- What measures should be taken to improve the coordination between land use policies and water policies? (to serve what purpose?) (17%)
- Should territorial development policies give more emphasis to medium scale cities to avoid the uncontrolled development of megacities? How? (7%)
- Are there wat/san measures applicable in rural areas that might reduce migration or rural population to cities? (i.e., water security for agriculture, safe domestic water supply, school sanitary facilities) (5%)
- Land and water rights for women will better the situation and create opportunities for better management. How can we achieve that / speed up this process? (4%)
- Is giving priority to investments in the water services in towns, small cities and rural areas a preferred measure to mitigate uncontrolled development of mega-cities. (1%)
- Could remittances from emigrate populations be better used for water services development? How? (0%)
- Given population concentrations in coastal cities and growing urbanization, would desalination become a contributing element towards increasing urbanization? (0%)

### *New suggestions:*

- Migration and changing land uses, human settlements and water in most developing countries gear around rural population, which is now characterized by this New Rurality: How can these complex differentiated multi-location livelihood systems best be served with water and sanitation (related) deliver of public, private or other operators/agents' services?
- Urban planning decision is at the same time a Water USAGE decision. How to work collaboratively? What sort of a planning?
- Decision of land use is at the same time a water decision
- Role of urban planning in demand-oriented water management
- Handling of water usage productivity in urban planning
- What are the determinants of domestic water consumption in the urban areas?
- Water demand management policies are insufficient for controlling water consumption when confronted with structural changes in urban development. What is the role of the change in the urban form generated by residential mobility?
- What are the pros and cons water supply and demand approaches in the urban and regional plans?
- Managing and controlling urban development appear to lie beyond the parameters of a water demand management approach unless other policies (land use, transportation etc.) are implemented in order to reduce tensions regarding water and other resources. In this sense, what are the main indicators for better sectoral integration?

### 3. Mitigating disasters

- How to ensure and disseminate quick and quality diagnosis of the water and sanitation needs in response to a disaster? (6%)
- How could structural and non-structural measures be adopted and best complement each other to mitigate impacts of disasters? (6%)
- What are the main obstacles to the wide-spread development of early warning systems? How could they be removed? (5%)
- What are the community approaches that could be most effective in risk management and disaster reduction? (5%)
- Can risks be reduced by land use strategies, such as afforestation, forbidding building on flood plains, preventing new water uses in water-scarce areas, etc.? How do we promote watershed development or restoration of degraded watersheds through forestation and soil & water conservation techniques so as to create a cushion, a buffer or a resilient interface between the forthcoming harsh climatic pattern and hydrology? (5%)
- Should micro-insurance systems for poor and vulnerable populations be developed and in which countries and conditions? How could they best protect against water related damages? (4%)
- Can gravity and water-related disasters such as landslides, floods, avalanches, mudflows, etc. be monitored to show the climate change effects on the world? (1%)
- Is the world ready for a severe El-Nino event? What action plan should be envisaged to cope with such an event? (1%)
- What role can desalination play in securing water supplies in areas affected by coastal disasters? (1%)
- Should “large-scale” reorganization and relocation of land use be made, e.g., in highly populated area? (1%)
- How could awareness of risks be raised among communities who are subject to disasters? (0%)
- How can snow-related disasters be minimized for better welfare of local inhabitants? (0%)
- What is the approximation of cost entry working system related to possible damage? (0%)

#### *New suggestions:*

- How to cope with increasing flood risk?
- How can strong society and communities against water-related disasters be built?
- How do we promote international sharing of knowledge, technology and information related to flood countermeasures, and international cooperation in flood management?
- How can we send flood forecasting warning to reduce flood damage in areas that are not equipped with telemeter, etc.?
- Should the international community take the serious influence on water caused by climate change into consideration, recognise that water-related disaster management is an important element of IWRM, and promote the necessary measures?
- Taking into account serious impacts on climate change, how do we cope with increasing water-related disaster risk? Furthermore, should we promote adaptation to climate change in the field of water-related disaster.
- In order to tackle the increasing risk of water-related disasters and promote the countermeasures for mitigating damages, is it indispensable to provide the disaster risk information, using hazard map and real-time river information system, etc.?

- For reducing human loss in a short time, will it be efficient to improve and reinforce the current information transmission systems, leaving no zones uninformed?
- How can the capacities of community-centred disaster management be developed?
- Should new technology such as satellite rainfall data be used to reduce water-related disasters?
- Should the way of providing information leading to prompt evacuation in dangerous areas be examined?
- Towards flood disaster reduction, should flood issues be addressed as universal ones rather than locally limited ones and should the knowledge and experiences in each area be shared and exchanged?
- What is to be done to manage water supply and sewerage systems in coastal areas if sea level will increase clearly?
- Preliminary preparations in floods and flood management

## **Theme 2: Advancing Human Development and the MDGs**

### **4. Ensuring water, sanitation & hygiene for all (ensuring adequate infrastructure; protecting public health in the near term)**

- What are the major obstacles to a better coordination between water and health policies? What policy and concrete measures should be taken to bridge them? (13%)
- How to make sanitation a tool for economic development? Should it be better integrated with other industrial/commercial services? If yes, how? (6%)
- What would be the best way to enable civil society to make "informed choices" and take matters in their own hands? (4%)
- How can we integrate ground water into rural drinking water supply schemes and make them less vulnerable to variations in availability of surface water? (2%)
- How to educate the public on the need for improved sanitation & drainage, once domestic water supply is available? (Otherwise mosquito menace becomes a problem.) (2%)
- Do you think about need to reserve source of water? (1%)
- What answers can be found in water harvesting research? (1%)
- How can population management (e.g. moving users away from certain areas or denying them the right to set up new water demands in drought prone areas) increase capacity to mitigate against drought events? (1%)
- What is the role of desalination or similar treatment technologies used for wastewater treatment in integrated water management? (1%)
- How can global and regional weather forecast models be connected in order to improve knowledge on regional climate variability? (0%)
- What are the possibilities for discovering new biotech solutions to deactivate and sanitize feces? (0%)

#### *New suggestions:*

- What is the current progress towards water and sanitation for all, how do we know, and how can we improve our indicators and/or monitoring systems?
- How can the water and sanitation sector learn more from other human development sectors (e.g. health, education)?
- What are the great new ideas, approaches and technologies that could make really big contributions to water and sanitation for all?

- How can we change our mentality from doing projects to providing sustainable services?
- Can pilot projects actually be successfully scaled up, or should we instead plan to work at scale in the first place?
- How can we close the gap between the numbers of people who have water and those who have sanitation?
- What were the achievements and shortfalls of the International Year of Sanitation, and how can we build upon them now?
- How can we make sanitation a tool for economic development, both as a service industry itself and in its positive impact on people's economic position?
- How can integrated and sustainable investment for capacity development and water infrastructure be optimized, in order to improve water and sanitation in urban and rural areas?
- In order to achieve the MDGs, is there anyone or any organisation that has the way to select adequate wastewater management according to the situation in each country?
- Is water infrastructure development able to impact positively the achievement of the MDGs?
- Can emerging players in the water field, such as securities companies that deal with water funds, accelerate solving water issues in the world?
- How can capacities of water supply be developed in developing countries?
- How can we improve global access to sanitation?
- How to convince decision makers of the necessity of proper sanitation and water pollution control (almost 5 billion people have some problems here!)
- What are roles of the CSR (Corporate Social Responsibility) activities of private companies (e.g. SRI—Social Responsibility Investment, etc.) for solving water issues in the world?
- How can the regional and urban planning decisions on sustainable use of resources and saving water be regulating as a water consumption decision?
- Could there be water banks established in mega cities?
- Why isn't adequate importance paid on cross subsidies in urban drinking water?
- What are the effects of urbanization in water basins?
- What could be the tasks for developed countries to “provide clean drinking water to Africa”?
- How could the fact that the understanding of “water as a commercial asset” coming into question with global water privatizations be linked to the basic humanity aim of “water for everyone”?

## **5. Water for energy, energy for water**

- What are the costs and benefits of desalination in different contexts? Where and when can it be an alternative water supply in a context of increasing energy prices? At which acceptable costs for the environment? (7%)
- Biofuels: How to minimize their impacts on water quantity and quality? How can their development contribute to poverty alleviation, water and food security and reduction of CO<sub>2</sub> emissions? (5%)
- How can research answer the question of how biofuels affect regional and global water balances and how will this influence prices for agricultural products? (1%)
- What is the real impact of dams and hydropower on greenhouse gas emissions? (4%)
- There seems to be an urgent need for certification of biofuels to ensure proper management etc. How can the water sector at large contribute to this? (1%)

- What potential for energy savings is associated with various water efficiency measures and various sanitation alternatives? (6%)
- Can water for energy be complementary to water for food? (6%)

*New suggestions:*

- How can the usage of water for energy/energy for water ensure sustainability?
- How to minimize the “water footprint” of electricity generation and the “carbon footprint” in water management?
- How to reconcile environmental and developmental concerns in hydropower development?
- Will the topic of geothermal be evaluated within the theme “energy for water”?
- How economic is it to use other renewable energy resources instead of hydroelectric plants to protect water resources?

## **6. Water and food for ending poverty and hunger**

- Can we improve our understanding of the evolution of food diets? What will be its impacts and what consequences for water resources management and virtual water trade? (12%)
- How to promote and develop supplementary irrigation/basic water management for small scale farming? (7%)
- How to get more crop per drop, in particular through modernization of irrigation methods at all levels (where it is still a rather primitive technology as compared to many other fields of business)? (4%)
- Can water development efforts for agricultural improvements be sustainable and contribute to poverty reduction without major breakthrough in the international trade and subsidy regimes? (4%)
- Concrete lined canals are indispensable to increasing the water use efficiency of water for food, but it gives considerable damage to ecosystems. How can the efficiency increase of water for food can coincide with preservation of ecosystems? How can both eco-friendly and efficient irrigation facilities be developed? (4%)
- Do you have in your country size of maximal water limitation in case of drought? (1%)

*New suggestions:*

- Can water infrastructure development contribute to ensuring access to water by pro-poor?
- How can service delivery of complex interactions (e.g. as in agricultural water management) be mainstreamed into the debate of public-private partnerships and be adapted to context specificity and institutional and asset endowments frameworks?
- How can water be managed more effectively for sustainable agriculture to continue to be a key pathway out of poverty and means to achieve food security, especially for the poor?
- Is it possible to keep an extraordinary amount of stock in cereals in order to mitigate the effects of global warming?
- Re-interpreting the strategic approach in water production, consumption and industrial utilities
- The effects of urbanization on underground water reserves?
- How could we assess water as an element of support for global peace?
- How could the problems and threats due to the unequal distribution of water resources on earth be turned into opportunities and cooperation?

## **7. Multiple uses of water, e.g. water supply and irrigation**

- How to ensure an absolute priority to the satisfaction of vital domestic water needs in contexts of intense stress on water resources? (8%)
- What can be done to curb ineffective use of water for irrigation and consequent overspending of water? (4%)
- How will inland water transport be developed? Could it contribute/play a significant role in the reduction of CO<sub>2</sub> emissions? In which countries? Could it play a valid role in urban revitalization by utilising waterfronts? (4%)
- What balance between irrigated agriculture and rainfed agriculture to optimize the protection of terrestrial and aquatic ecosystems and increase food production? (4%)
- Paddy rice is the main staple crop in monsoon-climate Asian countries where more than one-third of the world's population lives. In these areas, water balance has historically been maintained between irrigation water and other multiple uses of water, such as for domestic purposes, feeding ground water, allowing aquaculture and ecosystems, etc. How can the water use efficiency in food production be increased while keeping those multiple effect/usage of water for food? (4%)
- What are the main obstacles to an enhanced integration of demand- and supply-driven water management policies? How could they be overcome? (3%)
- How can irrigation be boosted by new technologies? (2%)
- How can we promote eco sanitation and composting and "beat" the cost argument? (2%)
- How will climate change and climate variability affect rainfed agriculture? (1%)
- Can IWRM permit to avoid damage from water security in irrigation? (1%)

### *New suggestions:*

- How can waterborne transportation (WT) contribute a significant role in the reduction of CO<sub>2</sub> emissions and sustainable development?
- How can we encourage multiple use of water infrastructure for the benefit of the poor?
- How can we promote positive impacts on natural ecosystems provided by agricultural water?
- Is water infrastructure development able to impact positively the achievement of MDGs?
- Why are the most effective mechanisms to encourage multiple use of water systems of the benefit of the poor, particularly in peri-urban and rural areas (e.g. for improved hygiene, horticulture, livestock, cottage industry, etc.)?
- What should be done to mitigate leakages and losses in water supply?
- What is the general opinion about converting irrigation networks into pressured (piped) networks and their rehabilitation?
- Why isn't enough importance paid to saving in agricultural irrigation?
- Problems related to the illegal and legal irrigation from water basins.

## **Theme 3: Managing and Protecting Water Resources and their Supply Systems to Meet Human and Environmental Needs**

### **8. Basin management and transboundary water cooperation**

- What does IWRM mean for river basin management and transboundary waters? Are IWRM plans not a vehicle for sharing strategies and solutions to transboundary river problems? Are there other mechanisms to achieve integrated planning and effective implementation of strategies across political boundaries? (7%)

- In which cases and for which purposes can basin authorities be a solution to water pollution problems? What alternatives in situations where they are not? (5%)
- How can we create more ways of cooperation so to prevent conflicts over water-use? (5%)
- What tools and decision making processes should be developed/used in different contexts for optimal water allocation to optimize the economic, social and environmental benefits? (4%)
- Do international treaties have to be adjusted to accommodate a re-distribution of water in international basins using human rights and the right to water as fundamental principles? (4%)
- Do international treaties have to be adjusted to be able to deal with exchange between different (hydropower <math>\leftrightarrow</math> irrigation) use? How can integrated basin management models (socio-economic and hydrological) be used for this purpose? (1%)
- What processes have been developed and proven to help key stakeholders understand the issues relating to their basin and work with each other to resolve in a mutually agreeable and sustainable manner? (1%)
- What processes have proven to be most successful in which situations, and which have proven to be failures? Why? How can we address these shortcomings in the future? How can we help others learn from these successes and failures? (1%)
- How can the right mix be found between using technology to enhance our scientific understanding of water resources and river basins and keeping processes simple? (1%)
- What tools are available to inform and facilitate the processes developed? (0%)
- How can we promote catchment management including pollution control and stakeholder participation in transboundary water resources management? How can we ensure that the downstream water users contribute to the management of catchments upstream? (0%)

*New suggestions:*

- How to strengthen participation levels of communities and civil society in transboundary water management?
- What are the main obstacles blocking the ratification of the UN Convention on the Law of the non-navigational uses of international watercourses?
- How should we handle wastewater for protection of the global environment?
- What is the institutional mechanism to enable protection and restoration of a lake as source of a river in its whole river basin?
- How do river basin organisations intervene on basin water issues, such as allocating water for water users or resolving water conflicts?
- How can we promote stakeholder participation in the restoration of water environments in trans-governmental waters—lake/river basin?
- How to better use natural groundwater processes for the improvement of the quality of drinking water sources?
- Borders of water basin management? What is the status of local authorities?
- How should the international agreements be formed for better productivity in using the global water potential?
- What could be the effects and solutions for water transfer between water basins in an economic, environmental and social point of view?
- Water transfer between water basins - Best Management Practicer
- Are the regulation efforts for basin management at an adequate level? What are the difficulties and solution suggestions for implementation of the regulations concerned?



- Integrated water management in Turkey

## **9. Ensuring adequate water resources and storage infrastructure to meet agricultural, energy and urban needs**

- Could carbon markets provide new opportunities to financing water storage infrastructure/measures? If so, how to proceed? (15%)
- Should widespread household- and community-scale rainwater harvesting and storage be emphasized over larger centralized storage schemes? (8%)
- How can we create financing instruments for (eco)-sanitation at a household, community (urban and/ or rural) and national level? (5%)
- How can we promote options assessment in infrastructure taking into account environmental consideration? (2%)

### *New suggestions:*

- How should the concept of IWRM be applied in river basins for the appropriate water utilisation?
- Is just natural water enough as water resources?
- How do we develop new water resources with minimizing negative environmental impact?
- How do we follow-up the livelihood of the relocated people in the reservoir area?
- How do we transfer and adjust experiences on water resources management of developed countries to the developing countries, in order to achieve better water infrastructure management?
- How can inland water transport be integrated into urban and regional development?
- How can we meet the increased demand for food (globally 67% in the next 25-30 years) particularly under increased scarcity of water and land, and what storages, infrastructure investments and processes are required to achieve this, and where should this be focused?
- What storage and improvements in infrastructure are required for national and global food security, and to meet the food, energy and water needs of an urbanising population?
- Security of Dams - Importance in terms of energy & water supply security?
- How can we promote close relation with water policies and urban planning including water use efficiency in water users sectors?

## **10. Preserving natural ecosystems**

- What strategies and policies should be taken to promote the consideration of ecosystems in water development, management and use? (12%)
- Water pollution by pharmaceutical ingredients (including endocrine disruptors): Which impacts on ecosystems and health? Which preventative and curative measures? (11%)
- How can frameworks such as the EWF directive be used to curb use of pollutants? (4%)
- How can developing countries forecast the impact of climate change on aquatic ecosystems under different scenarios? (2%)
- What strategies can be adopted to deal with storm water volume and pollution in the face of more extreme weather events and increased urbanization? (1%)
- Are there changes to infrastructure design (roadways, gutters, culverts) or to engineering of pollution sources (cars and trucks, petrol and oil formulations) that would mitigate damage to natural systems? (1%)

- How can the value of natural ecosystems as efficient climate change mitigation tools be promoted? (1%)
- To what extent should mineral requirements be emphasized in water supplies particularly in desalinated water used for domestic purposes? (0%)
- What size of limitation can be permitted for ecosystem of delta? (0%)

*New Suggestions:*

- Is water resources development aiming at securing water volume and area to preserve an ecosystem under the water and waterside necessary?
- Should river environments with biodiversity be conserved?
- How can we promote positive impacts on natural ecosystems provided by agricultural water?
- How should we deal with water environmental conservation such as water pollution control?
- How can mycoremediation be used to ameliorate the impact of pollutants on aquatic environments?
- What is the reasonable balance between development and preservation of ecosystems to maintain healthy water and river environments in urban areas?
- What should be the preliminary measures for defining the factors polluting water resources and preventing these factors? What is the level of adequateness of legal and penal sanctions against pollutants?
- What should be the preliminary measures for defining the factors polluting water resources and preventing these factors? What is the level of adequateness of legal and penal sanctions against pollutants?
- Change in water quality - how can the amount of micro pollutants be removed?
- Focusing on recycling of water in industrial and other manufacturing sectors, paying attention to environmental balance not to affect the sustainability of the ecosystem negatively
- What are the measures for preventing the contraction of wetlands?
- How could the problem of the negative effects of water structures today (dams, reservoirs, etc.) on historical places and world cultural heritage be solved? Could there be a global approach on this issue developed?

**11. Managing and protecting surface, ground and rainwater**

- How to better integrate the protection of groundwater resources in urbanised areas with sanitation policies? (12%)
- What are the priority measures to better integrate groundwater, surface and rain water resource management? How could they be better implemented? (7%)
- What is the contribution of rainwater harvesting to climate change adaptation and poverty alleviation and how can rainwater be included in water policies in both rural and urban policies? (5%)
- How could development imperatives and preservation of the ecosystem be balanced in river basin management and water resources management? (2%)
- How can increased monitoring improve management and protection of water resources?(1%)
- How to set up awareness-raising activities and more advertisement about rainwater collection systems? (1%)
- How do you promote conjunctive use of ground and surface water taking the environmental needs into consideration? (1%)

- How much water, in terms of both quality and quantity, is needed for the ecosystem? (1%)
- What are the basic measures for mountain and highland pastures for improving the social welfare of the people living there, for preventing them from settling in lower lying estuaries? (0%)
- What policies should govern groundwater recharge measures to ensure water quality safety and stabilize the water table? (0%)
- How to avoid illegal wells, are there any success stories? (0%)
- How much return flow can you use in case of drought? (0%)

*New Suggestions:*

- What are the main obstacles preventing sustainable management of transboundary groundwater?
- How should we deal with water environmental conservation such as water pollution control?
- What strategies or approaches are effective to improve surface water resources and river environments in urbanised areas?
- Watershed zone management preventing illegal settings in the watershed zones... How can pollution of surface reservoirs be prevented by illegal settlements?
- Protecting forests for quality water production?
- It is hard to rehabilitate underground water when the quantity and quality balance is interrupted. What could be done in such a case?
- What is the current condition and usage rate of natural water resources on earth? What should be done for minimum resource usage?
- The underground water gradient in plains of Harran, Ceylanpınar and Kızıltepe causes groundwater flow towards Syria and this issue is neglected. It should be revived.
- What are the effects of pollution caused by domestic & industrial wastewaters? What should be done to mitigate these effects and reuse wastewater?
- How much do we know about the quality of underground water in Turkey?
- Do you think geophysics methods are well made use of in researches for geothermal and underground water?
- Usage of geothermal resources
- Storage of clean water underground
- How much can we store of our existing water potential and how much of it can we manage?

#### **Theme 4: Governance & Management**

##### **12. Implementing the right to water and sanitation for improved access**

- How to clarify the duties that correspond to the rights to water and sanitation (nature of, entity responsible for those duties). (11%)
- How can the recommendations emerging from the 2008 Year of Sanitation be effectively implemented? (8%)
- What appropriate measures should be promoted at various levels (from national to local) to make the right to water and sanitation a tool to raise water higher on the political agenda? (8%)
- Can the right to sanitation become an enforceable right? How can it be implemented in practice? (5%)
- How to put in place international campaigns for promoting national legislation? (0%)

*New Suggestions:*

- What progress has been made internationally on the recognition and implementation of the Human Right to Water?
- Through which types of measures could groundwater withdrawals be best controlled by users to reduce groundwater mining? At what costs and for which efficiency?
- What strategies can be adopted to deal with water pollution in the face of increased urbanisation?
- After the right to water has been recognised in national legislation, what further steps should be put in place to make the right to water effective in a country?
- What are the pros and cons of different stakeholders of rights-based approaches in water? How can such rights be enforced? By whom? At what social cost and benefit?
- Rights to safe drinking water. What can be done to achieve WHO Drinking Water Standards in underdeveloped nations?

**13. Improving performance through regulatory approaches**

- Through which types of measures could non point source pollution of surface and groundwater be reduced? (15%)
- Through which types of measures could groundwater withdrawals be best controlled by users to reduce groundwater mining? At what costs and for which efficiency? (7%)
- What policies should govern groundwater recharge measures to ensure water quality safety and stabilize the water table? (5%)
- How to implement the WEF directive approach? (2%)
- Can government temporarily install a higher limit for use saline ground water in compensation to lack of fresh? (1%)
- What strategies can be adopted to deal with storm water volume and pollution in the face of more extreme weather events and increased urbanization? Are there changes to infrastructure design (roadways, gutters, culverts) or to engineering of pollution sources (cars and trucks, petrol and oil formulations) that would mitigate damage to natural systems? (0%)

*New Suggestions:*

- Given the fragility of many states and the predominance of traditional land and water governance in such states, what are the perspectives of enforcement approaches to regulations of public and private goods such as land and water?
- How best could regulatory and market-based approaches complement each other in order to preserve water bodies, meet water needs and adapt to climate change threats?
- What strategies can be adopted to deal with water pollution in the face of increased urbanisation?
- What should be done to reuse wastewater?
- Improvement of local inspection mechanisms (how to improve local entities for inspection, treatment, usage and reuse)
- Policies necessary to implement in order to use minimum water and receive maximum productivity in land use and implementation

**14. Ethics, transparency, and empowerment of stakeholders**

- What does "participation of users" really mean at the different geographic levels of water resources and water services management? (15%)
- Costing and pricing water services: what priority measures to increase transparency? Should international standard(s) be designed to improve the situation? (8%)

- What are the different models of user participation (elected water commissioners, water user boards, etc.) and what are the different conditions for their effectiveness? (6%)
- How to empower the village council for water governance at grass-root level? (4%)
- What are the advantages/disadvantages to international guidelines vs. international standards? (2%)
- How can we "add" / integrate "outcome" into monitoring systems and reward a good process? (0%)

*New Suggestions:*

- For empowerment of stakeholders, what should we do?
- How can we share precise information on water resources among stakeholders in basins?
- What is the appropriate organisational arrangement to draw the cooperation and collaboration among water-related ministries in National Government?
- How to coordinate the roles and needs of public sectors, private sectors and habitants, in order to reach the consensus about IWRM among all kinds of stakeholders, with coexistence of water values as an economical property as well as public?
- How can we strengthen local authorities for a better management of water services and water resources?
- Is water a natural resource? If so, shouldn't countries have the right to privilege its use, just like petroleum and natural gas?
- Is water a natural resource? If so, should not the countries have the right to for privilege of use just like petroleum and natural gas?
- It is often said that water will be valuable like petroleum. What is the reason for this? What suggestions and measures are brought along in the world?
- What uses can the international organizations have for having the water-related organizations work effectively?
- How should the political commitment be stated in finding solutions for corporal problems of water-related associations in developing and underdeveloped countries?

**15. Optimizing public and private roles in water services**

- What institutional arrangements should be implemented to make best use of the respective qualities/virtues of the public and private sectors? (19%)
- How to teach stakeholders about real participation (and not just hearings)? How to implement accepted policies into real practise? (6%)
- How to interface management of a public good (government) with projects (mostly private enterprise)? (4%)
- Can public society assist in this matter? (1%)

*New Suggestions:*

- How to promote institutional diversity, in addition to biodiversity?
- Which is the best level (city, region, nation...) to decide on the way drinking water and sanitation services should be rendered, and what obligations/limitations should be imposed by law?
- Which is the use of innovative management intervention tools (such as Strategic Institutional Positioning) in the water sector?
- How can tourism sector be positioned within the water-politician axis?
- How could the protection of water resources be legally secured in urban/rural planning?
- Effects (interaction) of tourism development plans on usage of water resources

- Participatory approach in investments for developing water resources

#### **16. Institutional arrangements for efficient and effective water management**

- What are the major obstacles to proper maintenance of infrastructure? What are the key policy measures to implement in order to ensure sustainability of various types of water infrastructure? (18%)
- What measures could be taken to integrate private pumping practices with the surface water management in irrigated systems? (2%)
- How can dams be safely maintained, taking into account cost recovery and lack of funding with governments? (2%)
- What would be the best way of training local people to maintain their own systems (vocational training)? How to involve non-traditional groups? (2%)
- Are there any strategies that might sustain water and sanitation services when governments have failed due to conflict or disorganization? (1%)
- Should government compensate to former investment for more effective use of water? (1%)

#### *New Suggestions:*

- To what extent would an International Framework Convention on Water, as currently exists for climate change, contribute to sustainable water management?
- What gaps lie between water pollution control policies and their implementation to ensure safe water supply? What actions are necessary to fill the gaps?
- Is it possible to have water resources management aiming at sustainability?
- What is the appropriate organisational arrangements to draw the cooperation and collaboration among water-related ministries in National Government?
- How can Participatory Irrigation Management (PIM) be promoted to achieve more efficient and effective water use?
- What should be the role and obligations of the central government in helping/stimulating better performance from decentralised water utilities? What should central governments do to allow decentralised water authorities to perform their tasks?
- What is the future of water-based tourism activities?
- How should the relation between land use, water and tourism be?
- Revising the procedures and principles of water basin management
- How should the rationalist use of water in tourism sector be?
- Taking into consideration the national problem of drought implementation of close-circuit systems on a national and social basis
- Status of the responsibilities of State Waterworks (DSI) and increase of tasks and responsibilities of Municipalities
- Role of local authorities in sanctions and (absolute, short, long-term) effective uses of protected areas of dams for drinking water supply

### **Theme 5: Finance**

#### **17. Sustainable means of financing local water authorities and systems**

- What is the current application of the recommendations proposed by the Camdessus Report to allow for sub-sovereign financing? (12%)
- Under what circumstances is micro-financing an effective strategy for providing sustainable water and sanitation services? (7%)

- Cost-recovery: what are the pros and cons of water meters in different contexts? How to determine the appropriate level (householding, building...) for their installation? (6%)
- Should central and local governments allow local water authorities to access the private capital market to ensure investments in development and management of the systems? (6%)
- Who should pay for installing water metering networks in irrigated system? (1%)
- Why are private water companies the best placed to access financing? (0%)

*New Suggestions:*

- How could conflicts resulting from unequal distribution of water resources within local groups in countries, especially in underdeveloped regions of Asia, Africa and South America be prevented?

### **18. Pricing strategies to ensure fairness and sustainability**

- How to balance the cost of new expansion of water and sanitation systems between those who have and do not have access to the service? (16%)
- Could private water providers be associated with the development of public water services? How and to what extent? (4%)
- Can pricing strategies ever be fair if there is no transparency and reporting on real cost of service provision? (2%)
- How to ensure payment of maintenance costs for infrastructure? Should specific financial measures be designed for that purpose? (2%)
- How can we change the cost thinking into "investment thinking" including looking at the best way to finance daily-cost afterwards? (2%)
- What are the best tariffication or cost recovering practices for the poor or very poor persons or families? (2%)

*New Suggestions:*

- Can proper pricing be available for water through market approaches, although the demand and supply of water is influenced greatly by weather?
- Under which context-specific scenarios would cost-recovery from (primary and secondary) consumers/users/beneficiaries contribute to the sustainability of the intended effects of use of physical and organisational infrastructure?
- Where do cost-recovery considerations consider and respect the user perspective on accessibility of law enforcement/dispute resolution/claim settlement when (monopolistic) providers breach contractual terms of water deliver (quantity, quality, timing, etc.) and consequential damage to health, dignity, livelihoods?
- What is the price of water?
- Legal basis for water usage and water rights

### **19. Pro-poor policies and strategies**

- What should pro-poor policies and strategies concretely contain to give access to water and sanitation to poor people and especially the poorest (slums, villages, popular suburbs ...) over one billion? (6%)
- What are the best financial measures or decisions (tariffication, subsidies etc..) that facilitate the access of the poorest people to water and sanitation? What are the best practices? (6%)
- How can new policies be put in place combining investment and capacity development for management of systems? (5%)

- What are the effects of pre-poor policies and for which level of cross-subsidy do they start to have perverse effects? (4%)
- Do cross-subsidies mechanisms really have positive redistributive effects? (4%)
- Are the pro-poor financing strategies really affecting the poor? (2%)
- What are (which capitalisation could be available for?) the innovating, alternative or most adapted and low-cost techniques allowing poor people, and especially the poorest (little villages, slums, popular suburbs containing over one billion people) in developing countries to have access to water and sanitation? (2%)

*New Suggestions:*

- What are the lessons learnt from the use of Output Based Aid in pro-poor water projects?
- Is water a right or a property?

## **Theme 6: Education, Knowledge and Capacity Building**

### **20. Education and capacity-building strategies**

- How can education partnerships (e.g. UNESCO IHP/IHE programmes) be used as a basis for capacity development? (8%)
- Should training and/or education start at the level of farmers? If so, how can this be transferred to those who are illiterate with no ICT infrastructure? (5%)
- How to develop and strengthen cooperation between local authorities from North and South and make this a useful tool for capacity building? (4%)
- Should a framework for the evaluation of water educational programmes be designed? On which basis and how could it best be used? (4%)
- Could twinning programs be used to pair cities or countries facing similar climate-change scenarios, for mutual learning? (2%)
- How to "implement" vocational training and who should be doing this (since basic education and academic training have a "homw" but vocational training (basic level) has not? (2%)

*New Suggestions:*

- What should be the capacity-building strategy?
- Capacity-building water professionals has led to a myopic “silo” view on water development options: How can the embeddedness of the water agenda be best reflected in CB programmes for the water and sanitation sector?
- How to develop university water curricula more towards institutional, management and policy issues? There is heavy bias now towards treatment technologies or water monitoring in nature. These will not improve service provision to people who need them.
- What is the most effective method to improve farmers’ capacities to practice Participatory Irrigation Management?
- What methods can be used for effective knowledge transfers between water utilities (in the framework of water operators partnerships)?
- How could active local participation into water decisions be realized?
- Are the proper implementation examples on the reflection of conscious use of water on Ministry of National Education shared?
- Importance for education of users of water in rural areas on a national level and creation of such an awareness



## **21. Water science and technology: appropriate and innovative solutions for the 21st Century**

- How can traditional and local techniques be combined with advanced technology to produce the most effective solutions to water problems? (13%)
- Are decentralized, smaller-scale water and sanitation systems suitable alternatives, for which cities and at which time scale? What would be the technological gaps to overcome? (13%)
- How can religion and/or local ethics be incorporated in convincing farmers to use the most efficient way of irrigation? (2%)
- What technology gaps must be overcome to reduce pollution: for example (a) re-engineering cars and fuels to reduce pollution from road surfaces; (b) new bio-tech solution to render faeces inert; (c) cropping changes to reduce use of fertilizers and pesticides?(2%)
- How can water treatment technologies be widely disseminated and how can these technologies be absorbed by developing scientific societies? (1%)
- How can small-scale systems and business operation models be used to improve water access and delivery? (0%)

### *New Suggestions:*

- Which out-of-the-box innovations from the non-water and sanitation sector may offer perspectives for application in the W&S sector?
- How can the national and regional participants (NGOs) make more use of the existing water protection methods to use water resources more efficiently? What contributions can they achieve?
- The importance of data and information systems in water resources management
- How should the effective monitoring and inspection methods be against pollutants in water basins?
- Flood warning systems
- Exchange of observations
- Establishing geographical information system-based water data system, planning and directing water basin planning tasks over this system
- How can continental/global climate models be incorporated into operation to improve water supply, delivery and water saving to spread development of early warning systems under climate change and risk management?

## **22. Using professional networks and associations to strengthen the water sector**

- How can institutions be encouraged to work together to cooperate on monitoring issues? (16%)
- How can adequate financial and other support be obtained for the development of the technology needed to solve water problems? (7%)
- Could the water professional associations develop a global monitoring system to keep track of the progress or of difficulties on water issues? (5%)
- What are the criteria (practise) for really successful partnership that overcame the gap in "power" differences? (5%)
- How is attention given to education of stakeholders for climate change adaptation? (1%)

### *New Suggestions:*

- Is there any association that has networks covering almost all of the world to improve the global water environment?

- How can we develop a knowledge-sharing mechanism among policy-makers, water experts and other stakeholders to effectively promote water quality management?
- Does IWRM depend on characteristics of hydrology, water uses (rice cropping, upland cropping, domestic and industrial use) and levels of socio-economic progress in the region? Therefore, do we need the indigenous IWRM guideline for the relevant river basin?
- In the context that agricultural water is the main user of water and is multi-function, how can experts' activities on irrigation and agriculture be enhanced to solve water problems as a whole?
- If professional associations and networks embrace the MDGs, how can the “divide” (mistrust) between government (all levels, i.e. decentralised, judiciary, legislative and executive branches), harmonised donors (Paris Declaration), Civil Society (farmer organisations, ombudsmen) effectively partner together?
- How should organizations for the modern and functional irrigation be realized?