

Hydrology 2020 – International water policy – Social and Governance issues

Input Paper for discussion

“One role of the sciences should be to provide information to better enable formulation and selection of environment and development policies in the decision-making process. In order to fulfil this requirement, it will be essential to enhance scientific understanding, improve long-term scientific assessments, strengthen scientific capacities in all countries and ensure that the sciences are responsive to emerging needs”

Chapter 35 of Agenda 21

Water experts and professionals have so far not been enough successful in their efforts to place water issues high enough on the political agenda. Despite the fact that there is a common knowledge about the role of water as the central resource for human development and prosperity, something often reiterated at the increasing number of international conferences being organised during the last decade, water management issues continue to be marginalized in key discussions on future development, trade and other central development themes.

A critical aspect of this is that the water sector in itself remains fragmented – at all levels. So is science dealing with water, mainly because water issues span over many scientific disciplines and it has too often proven to be difficult to overcome scientific barriers. However, global water issues will not be solved by hydrologist in isolation from social and behavioural scientist, biologists, political scientist etc. At the Second World Water Forum in the Hague, it was clearly stated as a key recommendation that water is everybody’s business.

But there is still a long way to go. There is a water crisis emerging, partly because of the communicational and co-operative gaps that still exist among those who together would have a capacity to address the problems. We have to understand the problems, identify the possible solutions and seek a way to overcome implementation barriers, be it lack of financial and/or human resources or a pure will to act due to hydroegoism, thus preventing others from gaining benefits from a common resource. This will probably remains one of the key challenges for future scientific generations – to overcome fragmentation, to establish a language that all involved stakeholders understand – all in the sake of meeting the challenges and needs facing humanity today and in the future, as defined in for instance the United Nations Millennium Development Goals.

Water and development

The pressure on the water resources will continue to increase in the foreseeable future in many regions of the world. This is an undisputed fact, and can be said to be linked to driving forces associated with population growth and distribution, and in particular the need to provide food for this growing population, and changes in consumption and production patterns. It is also linked to technological development, trade policies, and socio-economic development in general.

The latter have a major influence on societies ability to address emerging water stress and scarcity.

In 1992, both the International Conference on Water and the Environment (Dublin, Ireland) and the United Nations Conference on Environment and Development (Rio de Janeiro, Brazil) emphasized that urgent action was needed to redirect the development and use of freshwater in a more sustainable manner. The need for a more holistic and integrated approach to water management was made clear in chapter 18 of Agenda 21: *“The holistic management of freshwater as a finite and vulnerable resource, and the integration of sectoral water plans and programmes within a framework of national economic and social policy, are of paramount importance for actions in the 1990s and beyond”*. The same messages has since been reiterated at numerous international conferences – but there has been a lack of real progress on the ground, causing frustration.

For the people of the world the water situation is perhaps the most acute matter to be addressed. Over a billion people lack access to safe drinking water and close to 3 billion lack adequate sanitation. Every year 12 million people die as a result of diseases that are a result of how we treat our waters. The lack of clean water, infrastructure and efficient water management strategies represents lost opportunities for economic and social development.

On the international arena the water question is continuing to receive increased attention. For example Kofi Annan identified water as one of ten crucial issues to be addressed at the Johannesburg World Summit on Sustainable Development (WSSD) held in September 2002. In addition, water was a vital component in many of the other nine areas. And echoing the Millennium declaration, the states participating in the Summit decided to halve the number of people that lack access to safe drinking water and to halve the number of people that lack adequate sanitation. This should be achieved by the year 2015. Despite that, water issues are not present in other, maybe even more important, policy- and political processes linked to, for instance, trade, subsidies, economic development etc. It is within these processes that decisions are made that have far greater influence on the future of water than those made at meetings such as the WSSD or World Water Forums.

It is estimated that in order to achieve the goals of universal access to drinking water and sanitation, about 30 billion dollars are needed every year over the next 20 years. This is of course peanuts compared to resources spent on arms in both developed and developing countries, junk food or perfumes in developed countries. Despite that, only around one third of the needed amount is being invested. In addition to financial capital, needed both in the form of aid as well as private investments, good and effective projects are prerequisites in order to build sustainable sanitary infrastructure, develop human capacity to deal with the issues at a local level, education about the need of good hygiene etc.

However, there is a big question mark regarding if there exists a real willingness to provide aid and investment in the poor parts of the world where the bulk of the problem exists. For example, while the EU and the US provide subsidies to their own agricultural sector in the order of 250 billion USD every year, they provide less a fifth of that amount in development aid each year. Increased coherence will be crucial in management policies linked to water, agriculture and international trade.

Furthermore, within the international system water issues are treated in a largely un-coordinated manner in a wide range of international bodies. This can be seen to be quite natural since water is everywhere and is everybody's business. While it might not be desirable to establish an intergovernmental World Water Organisation to deal with the worlds waters in a comprehensive

manner, increased co-ordination is, arguably, needed. A possibility, which might be tested, is if some sort of international secretariat with the responsibility for such co-ordination could be a solution to this problem, similar to the secretariat of the International Decade on Natural Disasters Reduction, thus building on resources available in existing organizations.

In addition, from a development perspective it is acknowledged that quite often there are overlapping areas that aid agencies are active in. If an increased co-ordination could be achieved overlapping of projects could be avoided and better use of the capital invested would be achieved.

The key policy issues

Achieving the United Nations Millennium Development Goal. The international community is setting clear targets.

- Are they realistic or not?
- What will happen to the other 50%?
- Are there conflicts between the goals?
- Is it possible to better measure the benefits of water for development (not only social development – African ministers asks for a better link to economic development as well)
- The role of science – is there any role? We know the problem, maybe it is now only a matter of innovative technical solutions, institutional capacity, financial and human resources?

The calls for Integrated Water Resources Management

The calls for Integrated River Basin Management

Science as part of capacity building and governance

The lack of financial resources in the water sector is only one aspect of the problem. There are other aspects that are equally important. Referring to Chapter 18 of Agenda 21 again, it is stated that: "*In creating the enabling environment*"...."*the role of governments includes mobilization of financial and human resources, legislation, standard setting and other regulatory functions, monitoring and assessment of the use of water and land resources and creating the opportunities for public participation*".

The role of science is implicitly a part of this. To have a fundamental knowledge base is crucial. This can be to strengthen international co-operation in studying processes related to the Earth's atmosphere, hydrosphere, biosphere and geosphere as a way to strengthen our understanding of water resources and the movement of water through the systems. But it is also essential to develop viable and scientifically based solutions to current and potential future problems. Although understanding the interconnections between the different systems of the Earth is recognized as being essential, it remains a sad fact that they are often dealt with independently of each other, not least in the scientific community. Promoting exchange of knowledge and ideas through improved communication among experts belonging to the various disciplines concerned will be a continuous challenge ahead. Scientists must dare to leave their compartmentalized thinking and policymakers must encourage and promote such dialogues.

Science also has a role in the development of new technologies, such as remote sensing and Geographical Information Systems (GIS) and demonstrate the applications of such technologies to managers. They can offer the potential of increasing the capacity for monitoring of the relevant elements at a moderate price. Information must then be made available. It must be recognized, however, that such technologies are often associated with initial training and technology needs, especially in developing countries. Many international organizations will have to play a more pro-active and supporting role in the endeavour to promote the use of such technologies, and support the necessary technological exchange and training associated with them.

Strong partnerships between academic institutions in developed and developing countries are an important aspect, and should be promoted by governments and international organizations.

Bridging the communication gap - Science and policy making processes

The water management sector is one arena where socio-economic factors interact closely with physical and environmental factors, and thus need to be clearly reflected within scientific modelling and political planning. As expressed above, dialogue among various experts is a key factor for successful management strategies. However, apart from the exchange of scientific ideas, water-related issues must be brought forward to the level of political action. The knowledge gathered by various scientific and technical disciplines need to be presented in a way that it is taken seriously and can be properly used by decision makers, at all levels of society.

Scientific projects need increasingly try to respond to, or at least be linked to, issues relevant to socio-economic development. This is important, as there are signs of declining respect for science and scientists over recent years from policy and decision-makers. More than two thousand years ago, Socrates stated that “There is only one evil for humanity - ignorance”. Political ignorance is indeed dangerous, but probably some of this declining respect could partly be attributed to the inability of scientists to present relevant information and guidance in response to emerging issues, as well as in a form appropriate for policy and decision making in broader terms. To provide “yes or no” answers is difficult, but the precautionary principle, one of the Rio Principles, provide a tool where the “best guess” approach can be applicable.

Hydrological sciences are no exception, and it can even be argued that other scientific disciplines are more active in providing policy guidance in this field, which is sometimes a matter of serious concern. A problem, which often arises, is that policy-makers within water management are frequently asking long-term questions, while many scientific programmes are restrained by short-term funding. Despite such limitations, scientist involved in such programmes can intensify their efforts to enhance the visibility and applicability of scientific results by using pro-active ways of communicating them and by better addressing issues and provide guidance in response to specific societal needs.

In the international scientific debate (on water as well as on other issues) there is a tendency among scientists (including those dealing with water) to give too much weight to their own area of expertise. It is assumed that if we only are able to do this or that research-project the world would be in better shape. Still, the improvements are forthcoming. While many scientists think that good research results almost automatically permeate into policy this is seldom (if ever!) the case. Rather, if we are to understand why certain issues are highlighted and others are not we should analyse the actual policy process and what is decisive in that process. Communication strategies need to be formulated that would allow scientists to identify better communications routes to “market” their results. Otherwise our understanding will remain limited with regards to why certain aspects or research, which are highlighted by international water scientists, are incorporated in the policy of states and international organisations and why others are not.

It seems imperative for the water specialists of the world to incorporate issues such political feasibility, ideology and cultural aspects into their analysis. The politics of water is not only about politicians, but also deals with how water specialists interact with government agencies, international organisations and NGOs.

Develop a scientifically based policy language

There are certain concepts that can be developed to respond to the need of policymakers while being firmly based on scientific understanding and knowledge. Such innovative concepts can help to progress thinking and act as catalyst for more progressive policy making – responding to the needs of people while recognizing the boundaries set by the hydrological situation at each given point. Some examples are presented here:

The concept of ‘sanctioned discourse’ essentially refers a normative paradigm within which certain hypothesis might be raised why others may not. Thus, the sanctioned discourse sets the “boundaries” for what is politically feasible to do. For example, if water scientists in a water scarce region have agreed that the rational way to allocate the water would be to decrease the amounts of water being allocated to irrigated agriculture. Still, this is not being done, in spite of scientists preaching it. Why? It is argued that this is so since politicians have to act within a limited arena in which they, in this case might be heavily influenced by a strong farming lobby that pressure them to maintain existing allocations to agriculture. Thus, the sanctioned discourse sets the boundaries for action and thereby deter the politicians to act on the advise of the scientists.

The Stockholm International Water Institute has developed a concept called “Hydrosolidarity”. Hydrosolidarity could be developed into a commonly accepted framework and thus provide guidelines for stakeholder interactions and problem solving in a river basin. Rather than offering a universally agreed set of principles, the hydrosolidarity concept should be based upon what could be called *commonly accepted thinking* in relation to basic needs of different stakeholders within a basin, where the joint water resource has to be shared between both societal activities and vital ecosystem functions. Besides that, it should offer a set of recommendations linked not only to principles and norms but also to legislative and enforcement aspects of water management - recommendations that could be used as a fundamental base for stakeholder discussions, interactions and conflict reconciliation.

Recommendations for future actions – filling the gaps

The future will present us with many challenges that we, the next generation of scientist and policy makers, must handle. Some of them are already known, others will emerge. What will be the issues 1, 5, 10 years into the future?

Strong leadership is essential, based on both a positive vision on what can be achieved, but also equally important on long term persistence, not least within science. This leadership must be well informed. Only if the scientific communities work together with policy and decision-makers can water issues be successfully addressed. An integrated approach to freshwater management is the way forward as it offers the means of reconciling competing demands with dwindling supplies and a framework in which hard choices, and priorities, can be made, and effective responsive action taken.

We would like, in this paper, to present some points that we feel need to be considered to facilitate further progress:

- Knowledge and understanding of water issues is essential and must be further encouraged. National and international information networks, using modern technologies, must be strengthened. This is especially crucial in many developing countries, where international assistance needs to be enhanced;

- Efforts should be directed at facilitating the international exchange of hydrological and related data and products, so that global studies of freshwater resources and its links to socio-economic and environmental issues can be conducted and useful results produced of benefit to humankind;
- Scientific results must be translated into action-oriented recommendations so that they can be used in national and international policy evaluation, formulation, and planning. These should be formulated as clear, specific and measurable goals. This is crucial if the scientific community is to strengthen their credibility and further enhance the possibility of receiving financial support for what are sometimes costly long term projects;
- The scientific community has to find innovative ways of improving collaboration among scientific disciplines, and with new important actors such as the private sector;
- International, regional and national organizations should be encouraged to find innovative ways to strengthen co-operation among countries which share river basins or aquifers, in particular through bilateral or other intergovernmental mechanisms. This includes the development of agreements to share data and other information, and joint scientific studies of shared resources;
- International organizations, including within the scientific community, must, within their mandate, continue to be well focussed and action oriented and, in particular, enhance their efforts to strengthen the capacity of many developing countries to deal with complex environmental and socio-economic issues.
- ETC