

Water Governance: A Research Agenda

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ABSTRACT *This paper summarizes the discussions held during a brainstorming session on water governance organized as part of the First Global Water Policy Dialogue of the Institute of Water Policy of the Lee Kuan Yew School of Public Policy, Singapore, and the Third World Centre for Water Management, Mexico. The objective was to formulate a priority research agenda on water governance which would focus on vital issues ahead such as linkages and drivers of change in the water sector and the type of institutions and instruments that are and will be needed in order to face the increasing challenges in the sector.*

Introduction and Background

Given the interest in the topic of water governance, the complexity of its implementation, and the consideration of the priority issues needed to ensure good water governance, two interrelated events were organized in the Lee Kuan Yew School of Public Policy as part of the 2009 Global Water Policy Dialogue of the Institute of Water Policy. The first of these two events was a workshop within the framework of the Singapore International Water Week which focused on critical issues related to water governance (Tortajada, 2010). The second one was an invitation-only workshop of international experts the objective of which was to develop a priority research agenda that could help the water profession to better understand what constitutes good water governance and how best to implement it.

The participants in the brainstorming session were from different water sectors, countries and disciplines, and from both national and international institutions. They were leading and influential figures from academia, the public and private sectors, and non-governmental organizations. The experts were selected exclusively on the basis of their knowledge in the field of water governance. They were invited in their personal capacities, and thus all the views expressed were their own, and not of their institutions.

The participants were requested to send an outline of their personal views before the session on what they considered to be the three priority issues of good water governance, as well as the reasons thereof. These views were circulated to the entire group in advance to promote a free and spirited discussion.

The brainstorming session started with brief presentations on the critical issues each expert had proposed earlier, justifying the rationale behind the selections. Following the

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presentations, there were in-depth discussions on the overall topic of water governance. Finally, each one of the participants identified only one specific priority area of research on water governance, explaining the reason why he/she considered it to be the most important area from the own perspective.

The discussions were wide-ranging and considered different issues, approaches, successes, failures, constraints, road maps, and research agenda on the overall topic of water governance. In order to focus the discussions further, two questions were subsequently posed to the group: (1) what in their view were the two most important issues related to water governance; and (2) what did they consider to be the two most important topics in terms of research in the area of water governance?

Vital Issues Ahead for Water Governance

The group discussed a diverse series of topics based on their broad knowledge and years of experience. Issues such as policies, institutions, regulations, paradigms and their implementation, development of infrastructure, tariffs and subsidies, use of technology, as well as capacity building were considered to lie at the heart of water governance constraints.

It was recognized that in most of the developing world, policies currently in place have not reached the expected results in terms of water management and governance due to reasons that range from the usual constraints like short-term planning, shortage and inappropriate use of financial resources, to lack of institutional and human capacities. A main lacuna was considered to be the lack of vision to develop strategies that go beyond short-term political and economic considerations, that focus on the long-term needs of the water sector for alleviating poverty, improving quality of life, and protecting the environment. Other reasons identified were legislation and regulations that lack the necessary implementing instruments, inefficiency inherent in public expenditure on water services, subsidy regimes that do not promote innovative ideas, and water organizations that do not attract or retain staff with the skills required for efficient service delivery.

For the countries in the developed world, even though the water sector provides better water supply and sanitation services, management-related issues need serious attention. Some examples include water quality problems, mainly in terms of lack of control of non-point sources of pollution, and the overall inability to coordinate the management of water resources with other resource sectors and development- and environment-related issues.

Concerns that are equally relevant for both developed and developing countries include insufficient investment for infrastructural development and rehabilitation, inadequate coordination and communication between and among agencies, and lack of mechanisms for effective participation of different partners or stakeholders at different levels of decision making. A main problem identified is the lack of realization that water is a cross-sectoral issue, and thus, that its governance increasingly depends on policies in other sectors.

There was a general consensus on the need for critical, objective and in-depth case studies of urban water governance, the reasons for their success, and governance processes used. Only with such an approach will it be possible to identify diverse 'models' of urban water governance that could be considered for possible use in different parts of the world, with appropriate modifications to suit site-specific local conditions.

While the experiences and priorities of the different experts varied, some clear themes emerged as vital areas to focus on regarding water governance both at present and looking towards the future. These are explored below.

Linkages and Drivers of Change in the Water Sector

There are increasing numbers of linkages and drivers of change which are already having an impact on the water sector and its governance. These driving forces include not only population and urbanization, economic growth, energy generation and agricultural production, but also far more complex issues like globalization, free trade, immigration, advances in technology (biotechnology and desalination, for example), changing management paradigms, and evolving social attitudes and perceptions. Water is increasingly becoming a central consideration for food, energy and environmental security and thus is having significant implications for future human development at the global, regional, national and sub-national levels. As such, it is essential that policies and strategies for the water sector are not developed in isolation, as it is mostly done at present, but viewed in a broader and systematic manner so that their impacts on other sectors are considered, and vice-versa.

The pace at which changes in development and technology are happening at present in the world makes it essential that the implementation of changes in water governance can match the constant evolution of the other sectors. However, the required reforms in the governance of the water sector are taking place very slowly, partly due to the lack of administrative capacity, but also partly due to the lack of incentives or interests for actors to change, an issue which may be economic in nature but which also may be related to leadership capabilities. The slow pace of formulating a much needed vision for the future governance and management of water, which can actually be implemented, is now a major constraint.

Within the water sector itself, it is necessary to link efficiently the several diverse components of the water supply, reuse and sanitation loop, with administrative and financial strategies along with a decentralized decision making and implementation at the appropriate regional or local levels. Administrative decentralization can be very effective if successfully implemented along with financial and technical decentralization. Any such process, if it is to be effective, will require a building up of the local capacity. Otherwise, there can only be an extension of bad governance, with the expected poor outcomes.

Importance of Institutions

Properly structured and managed institutions should be able to reach both the macro- and micro-levels of any society in terms of policies and services. Institutions can also assist in improving human welfare through better services, generation of employment, advances in knowledge, education and training, dissemination of information and improved communication. The roles water institutions can play in the future through their interactions with institutions of other sectors and various societal groups, can indicate how much these institutions can contribute to improve the quality of life of the population, promote social cohesion, and protect the environment, through the good governance of water resources.

Functioning institutions can accommodate mixed demands and interests, not only from the public sector, but also from the private sector, academic and research institutions and

non-governmental organizations. Institutional arrangements can directly contribute to the success or the failure of the formulation and implementation of good water governance practices, including the design, execution and management of water projects.

In terms of water governance in the urban areas, many failures can be attributed to poor institutional and financial structuring of programmes and projects. Regarding governance of water utilities, there was a general consensus that the structure of utilities could often be of less importance than their ability to meet key objectives such as production and delivery of high quality drinking water, financial viability, and sustainable business models.

In this sense, water tariffs emerged as an important requirement of good and sound water governance. Generally, tariffs cover about 10% of the total operating costs of many water utilities in the developing world. Several arguments were thus made on the need to price water properly:

- If there are no tariff reforms, there is little capital investment in water infrastructure since governments simply do not have adequate or unlimited resources to provide heavily subsidized water.
- Tied to the previous point is the relatively backward nature of technology in water since there is no market incentive for innovation given the low rates of returns.
- From a consumer point of view, if there are no tariffs, there are no incentives for conservation.

Institutions also need to be accountable. Nevertheless, an important issue to discuss is accountable to whom: elected representatives, governmental checks and balances, or the general public? This has implications in terms of modalities and processes, since the different groups will require different types of information for accountability requirements.

It was also noted that there should be clearer implementation and planning guidelines since so far there is very weak articulation of specific policy targets and outcomes with respect to service delivery. Even when these goals are defined, follow up activities to achieve them remain sporadic. Too often, accountability takes the form of building an asset, whereas the important tasks of operation and maintenance as well as acceptable service delivery continue to receive inadequate attention.

Strong institutions which are governed, planned and financed adequately are therefore vital for providing reliable water services, including ensuring access to clean water for the people who may not be able to afford to pay for the full price for the service received. Nonetheless, governments, and mainly politicians, often underestimate the actual cost borne by the people in getting access to water, such as collecting it from wells and rivers, or paying providers at high costs for poor quality water. There is often the erroneous perception among many politicians that there is a heavy political cost for charging the full price for a reliable supply of water when, in fact, this could actually result in increasing public support since many people may have to pay higher economic and social costs by buying poor quality water from private water vendors, the supply of which is also unreliable. Consequently, issues of equity and poverty could be of structural nature. A system with heavy subsidies could thus be changed to one where there is full cost recovery with subsidies targeted only to the poor.

Finally, the study of water institutions needs to be governed by good information. This includes reliable data on water supply-demand relationships, as well as related indicators,

which would provide benchmarking for common understandings and inter-utility comparisons. At the same time, there should be objective analysis of current practices in order to learn from them.

Holistic Views and Their Complexity for Implementation

Holistic approaches are considered to be of fundamental importance to natural resource management, including water. However, both developed and developing countries have faced, and continue to face, serious constraints which have made implementation of the current paradigms either impossible or exceedingly complex, including all those related to holistic approaches.

For decades, water management trends have included, at least in theory, the implementation of concepts such as sustainable development, river basin management, integrated water resources management and now lately, water governance. The drawback has been that none of these paradigms have thus far rendered practical results at a perceptible scale. This should encourage water policy-makers, managers and users to rethink how these paradigms could be modified, or even replaced, so that they could be implementable under different contexts. Rather than naively assume that it would be possible to achieve the implementation of any of these paradigms without drastic changes, mainly at the institutional and regulatory levels, it would be more practical if policy-makers, managers and practitioners made an effort to prioritize their requirements, objectively identify the constraints on the implementation of the current paradigms and how to overcome them, and then focus on improving management and governance of water resources in real terms.

So far, inappropriate and inefficient resource management practices often prevail. A long-term futuristic vision for a much needed broader perspective on key-issues related to management of water, and institutional arrangements and coordination between resource policies of various sectors, are missing. Performance indicators are often disregarded, and there is questionable public sector leadership. There is almost no consideration to develop new capabilities and knowledge to identify long-term water governance issues, issues which will certainly be very different from present and past matters.

Additionally, despite the fact that the policies on water, agriculture, energy, industry and environment are closely interlinked with each other, water is managed as if it was independent from all other sectoral issues. In fact, the missing link between the water sector and the other sectors is one of the big gaps in the management and governance of this resource that will have to be addressed sooner than later. Tackling problems, individually or partially (for example without explicit consideration of land use and other related issues) has been the practice for years mainly because of administrative, institutional and legal convenience. But experience has shown that the *status quo* will not yield optimal results in the future. Decision-makers will have to consider before long how to develop a holistic systems approach that improves water governance and which benefits society significantly.

Political will is more than a buzzword. It is an essential requirement to ensure that water resources and urban planning are planned and managed strategically in relation to the development of cities as a whole. This may sometimes mean safeguarding the resource from pressure to develop. For example, in Singapore there has been a determined political will for decades to protect the central catchment area in spite of significant pressure from

developers, because development would mean increasing water requirements in the future. Part of good water governance, therefore, has to come from balancing land and water resources in terms of future development plans, an issue which will make the governance of water increasingly difficult and complex in the years to come.

A holistic view of the governance of urban water resources also includes human access to clean and drinkable water from the tap. This issue, as well as the development of strategies to deliver services to every one, especially the poor, has much to gain from an efficient system which includes not only the reliable provision of clean drinking water, but also fair and equitable water pricing for people at all socio-economic levels. What is needed is universal access to clean water at affordable prices for the totality of the population, and it can be achieved with better governance practices.

The holistic view of the governance of water resources should also allow policy-makers to take virtual water into account. Neglecting this component of water could be an economic miscalculation since it may not reflect the true costs (or price) of water. In addition, the concept of the food self-sufficiency of nations should give way to ensuring food security, with consideration of water requirements for the agricultural sector.

The increasing complexities of the problems associated with efficient water resources management and governance, and growing societal interests in water-related issues, have necessitated a broader and systemic approach that cannot be provided by the engineers and/or by the economists alone. Broadening participation to disciplines and stakeholders other than those related to the public sector at the central level may result in the consideration of different alternatives which the present institutions have been unable to frame so far. It is thus crucial to consider a whole range of partnership modalities with industry and business, as well as groups from academia and society, which vary depending on the specific situation. An example is the '3-P model' in Singapore where public, private and 'people' sectors are included in the equation. It is important to keep in mind that transparency and dissemination of information are fundamental requirements to set the foundation of any partnership so that it can render the expected results both in the long and the short terms.

An overall constraint is that people in general are not aware of the critical nature of water issues that the world is facing; many times debates focus on trivial issues. Nevertheless, engagement of local communities and exchange of views and information is fundamental to obtaining public support. In terms of the provision of water services and the governance of supply systems, the challenge for governments is to decide how and when specific responsibilities can be delegated to several stakeholders, ensuring at the same time the efficiency of the systems. This most probably would require clear regulations as well as the introduction of instruments such as incentives and disincentives to encourage responsible behaviour, whether on the part of industry, business, civil groups, or individuals.

The processes to ensure real and efficient participation of different stakeholders and the roles they could play according to their capabilities, interests or relevance, also add to the complexity of good water governance. Stakeholders' participation in the water sector is a topic that has been extensively discussed and promoted at various national and international levels. Irrespective of the rhetoric, however, not very much has been achieved to ensure its real implementation, or even prove definitely that it always improves water governance. A reason for this may be that the participation of stakeholders has become an end in itself in many cases, with the end objective, the achievement of good water management and governance, being overlooked by those involved in decision making.

Institutions at the international, national, regional and local levels have yet to realize that in order to achieve an effective and realistic participation by the several stakeholders, many other needs like education, training, information and communication must be met concurrently. Participation for the sake of participation may produce results which are not even beneficial for good water governance. It is also necessary to develop flexible processes on how best to reconcile the different interests of the stakeholders which often could be polar opposites. Without clear ideas of processes available to mediate such differences of interest, stakeholder participation has the potential to improve the governance system, but also to produce complete paralysis.

Research Agenda on Water Governance

For the discussion on the research agenda, each participant of the workshop was requested to identify one priority research area on water governance. This was followed by a general discussion on what should be an overall priority agenda on the topic of water governance (names and positions of the participants who took part in this session and the areas recommended, can be found in the extended report prepared for this session (Tortajada, 2009)).

The following topics were considered important as part of a priority research agenda. They are not presented in any specific order or priority because their importance and relevance may vary from one country to another and may even vary over time.

It is vitally important that research conducted provides a fundamental theoretical basis for a conceptual framework of water governance that is implementable. By developing a research agenda on water governance, and with the results obtained, there is the potential to shape how water is governed in the future.

1. Future-oriented governance research. Water governance will have to change radically to manage cost-effectively and in a timely manner the impacts of new drivers such as globalization, free trade, migration problems between countries and within countries and information and communication revolutions. In addition, the nature of the existing drivers will also change significantly in the coming years. Among the changes of existing drivers such as population are the declining population in many Western countries, population stabilization in many developing countries within the next four to five decades, changes in the age structure of the population (for example, by 2030, China will have more elderly people than the entire current population of the United States), and rapid growth of small-to-medium-size cities. A very important topic to study will thus be the direct and indirect water requirements in terms of quantity and quality, and the indirect water-related impacts through sectors like energy, agriculture, environment and health, including how the current structure of water governance should change to identify and respond to these expected changes, and how such changes should be managed within the water sector.
2. Urban water governance. It is essential to identify 6–10 case studies of cities where significant improvements in water governance have taken place over the course of a decade during the past 50 years. These could be analyzed through reverse engineering to determine the key enabling factors that allowed them to make such progress within such a limited period. A very important issue will also

- be the replicability potential of these success stories in other cities of the world.
3. Governance of the water sector as a whole. Participants felt that difficult though it has been, governance of urban water systems, compared to overall water resources management and governance as a whole (including water for agriculture, energy, environment and other sectors) is relatively simple since the objectives of urban water management can be clearly defined without any controversy or serious debate. In contrast, overall water management and governance is a complex issue, where objectives are many, some of which may be subjective in nature and even conflict with each other. Thus, while it is relatively simple to identify good and functional governance of urban water systems, it is comparatively difficult to identify what are the best examples of comprehensive water management and governance. However, irrespective of the complexities and the difficulties, an attempt should be made to identify cases where the management of specific systems can be considered some of the best, and the current governance processes can be considered as sustainable over the long-term. These cases should then be studied to determine why and how good water governance has been achieved, what are the individual strengths and weaknesses, and what the potential replicability is in other parts of the world after necessary modifications to suit the local conditions.
 4. Institutions. What are the different types of institutional arrangements that may contribute to a functional and coordinated approach to important water-linked sectors like energy, agriculture and environment, including how policies, which are compatible and do not conflict with each other, in the four interlinked sectors can be developed and implemented.
 5. Tariffs and subsidies. There is a wide misconception on the impacts of tariffs and subsidies, both among politicians and water professionals. Research is therefore needed on how best to structure tariffs, and on identifying the best types of subsidies that simultaneously satisfy the objectives of the financial sustainability of institutions governing water, equity issues, management of demands, and water conservation.

Some of the issues discussed during the brainstorming session are being incorporated by the Institute of Water Policy in its own research agenda in partnership with several other institutions in different parts of the world. By disseminating the ideas discussed in this brainstorming session, it is expected that more institutions will also consider taking them into consideration in their own programmes and projects.

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References

- Tortajada, C. (2009) Extended report of the brainstorming session on water governance, Institute of Water Policy, LKYSPP, Singapore.
- Tortajada, C. (2010) Water governance: some critical issues, *International Journal of Water Resources Development*, 26(2), pp. 297–307.