Workshop 1 (synthesis): water as a catalyst for development

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Abstract

The problem of allocating water resources is a political one, and water management teams now need to include political lobbyists and advisors. Education, at all levels, is a crucial element in any development strategy involving water.

Keywords Development; education; politics; water management

The importance of natural resources to secure socio-economic development

Water can be a catalyst for development, but it is also much more than that. Water can be an essential component in the process of development. If the water resource is degraded by pollution or over-use, it can drive development into reverse. In this case it is poor management, or lack of management of the resource, that is the constraint on development.

Water in development is a political issue

The idea that short-term poverty alleviation is an alternative to long-term growth is a false dichotomy. Both are necessary: the problem of allocating resources is a political one.

The challenge to water sector professionals in this context is to find sustainability in the management of water and development. Historically, this has involved a search for a “silver bullet”: the one right answer to the challenge of water management. We have progressed from reliance on “appropriate technology,” through attention to social aspects including community engagement and equity issues, and through the involvement of economic issues such as cost recovery and private sector engagement, to the present concern with governance.

The tough new issue facing water professionals is to recognize that water resources management and water supply and sanitation are ultimately political issues.

Politics is about power, influence, resource allocation and policy implementation. But politics is also about relationships between people, networks and trade-offs. The implementation of water sector activities (planning, design, construction and management) are undertaken within a political context and are dependent upon political “space”. Processes must not only be technically possible but also politically and socially possible.

The politics of water relates not only to Politicians (with a “big P,” meaning party politics at national level) but to all levels and activities where human interactions and decisions are made. This is an area where technical water professionals are often inadequately skilled and inexperienced.

The complexity, and therefore the political skill required, are greatest for water professionals working in the very complicated field of international water resource management. Just as we have become accustomed to having social scientists and economists as part of the team, we may need political input and expertise as part of the team in future, not necessarily in the form of politicians but more likely with people understanding the political agendas.
As an example, a set of competing priorities in Thailand shows the importance of a consistent water allocation procedure. Almost fifty per cent of the population are engaged in agriculture, using ninety per cent of the water available. While new technical inputs are necessary, such as improved hydro-climatic prediction and improved thinking about water use, the administrative allocation of water can be improved without investment, through an essentially political process.

Professionals in the water sector need to gain an understanding of political processes and dynamics, just as they need an understanding of social and economic issues without necessarily becoming experts.

The costs of ruined water resources
In southern Africa alone, 13 million people currently need food aid. Many issues other than water resources have contributed to this situation, but, where water could be a catalyst for development, the potential is never realized because the infrastructure is lacking. This has increased the harm done by both natural variation and degradation of the resources. For example, in contrast to North America, where water storage per person exceeds 6,000 m³, many African countries have less than one hundredth of this.

Social and demographic changes have added to the pressures in many parts of the developing world. High population growth in Iran, for example, has seen annual water availability decrease from 6,500 m³, in 1955 to an estimate of only 860 m³ in 2025. With additional changes in life-styles, water shortages are expected to be a key resource issue that may cause regional instability if policy makers do not focus on long-term solutions.

Water and environmental education at all levels in society are essential to increase skills and improve behaviour. Water reuse is necessary to break the deadly link between population growth (which ironically is due to better environment and hygiene) and water shortage, although the impact of population growth in itself is recognized.

In contrast, a case study from a less-developed semi-arid region of India shows how an environment can be transformed through simple good management of the resource base in the relatively short time of 25 years. The area under irrigation increased from zero in 1971 to 260 ha in 2001, thanks to the construction of small check-dams, using under-utilized local labour.

This was sufficient to permit up to three crops to be grown each year instead of just one, with a reserve of timber to provide a resource for drier years. Combining wasted manpower, wasted money and wasted resources created benefits that included more employment, more education for children, and less urban migration. This could be repeated across most of the drier parts of India, if there is a catalytic agent to organize rural people and mobilize their energy.

New thinking and new communications
Education is a crucial element in any development strategy involving water. The problem of water resources is not only one for governments. Individuals must be more involved and take more responsibility. Increasing population against a static or declining resource presents special difficulties. Education needs to start from the top, with key water messages reduced to pictures and sound bites that busy politicians can grasp, as well as from the bottom, with simple health and hygiene messages that children can use and take with them throughout their lives.

Sometimes, the message is a difficult one, involving challenging new ways of looking at problems. For example, fossil ground water has been used to catalyse social transition, turning nomads into cash-crop farmers. This should enable them to generate enough income to switch from mined water to desalinated water for irrigation, although even that may not be a sustainable solution.
In another case, water availability has proved to be a limiting factor on agriculture in the fertile North China Plain. As the irrigated crop land directly overlies the groundwater supply, improving irrigation efficiency has no benefit to the declining water-table elevation. Only by reducing evapotranspiration, for example by reducing the cropped area, can the water-table decline be alleviated. Thus urbanization may help to solve the problem.

Cities displace and contaminate water, but do not significantly “consume” it. It is difficult to get policy-makers to understand this issue as the solution is not the obvious one of improved irrigation.

To make progress with water as a catalyst for development, the case histories show that public awareness and community participation are essential. Integrated watershed management, as examples from Russia, Asia and Africa show, may be a vehicle for interaction between science and the indigenous knowledge of local communities. The ideal strategy for school-level education involves regular and focused teacher training with a problem-solving approach. Young students need to understand about humanity as well as the human environment.

The global increase in human population is as significant for water management as climate change. The trends are recognized, but we do not plan for the worst that could happen. To be reasonably prepared, we need to establish both knowledge and political will. To do this we need to educate politicians, water users and the news media.

Stories, especially stories of success, are influential in changing people’s understanding of the issues and behaviour towards them. One of the best ways to convey the stories to politicians is to take them and show them: the idea of “development tours” to successful projects has been implemented with some success. An advantage may be realized where politicians concerned with transboundary rivers have the opportunity to get to know each other and to build trust. We need to create curiosity about water.

The opposite concern, getting water professionals to understand political possibilities and to become effective in compromise, may be just as hard to resolve. The politics of water is not only about politicians, but also about how we understand human interactions generally, and how we interact with communities and non-governmental organizations specifically. Professional societies need to develop as multi-disciplinary fora for understanding. The teams involved in water management must continue to broaden: alongside water professionals we are now used to seeing social scientists and economists, but we also need political lobbyists and advisers.

The highest political will may exist, but it is up to us to transform it through administration into action. We need to engage more in political processes in the widest sense.