Water, politics, and river basin governance: Repoliticizing approaches to river basin management.

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Abstract

Current mainstream visions of water management tend to promote a view of river basin development as a technical issue where experts and managers endeavour to match supply and demand by the application of technology, sound science, rational and neutral problem-solving approaches, and -whenever deemed necessary- an adequate cocktail of participation from relevant stakeholders. This paper, in contrast, emphasizes that river basin development and management is about shifting patterns of access to a contested and scarce resource and, as such, is inherently a political process.

I argue that an analysis of physical and social characteristics and constraints of river basins must be paralleled by giving attention to ideas, interests and institutions. In particular I focus on two crucial political drivers of river basin development that need to be given more consideration: the converging interests of the main actors involved in capital-intensive water investments and the use of discursive power in the justification of large-scale investments.

This serves as a background to explain why some river basins get overbuilt and how scarcity is generated artificially. With growing competition and pressure over resources, river basin development and management is an arena where actors mobilize discursive, political and other resources to shift benefits, costs and risk, spatially and socially, in a way that favours their interests or world view. Repoliticizing visions of river basin management offers a different and complementary perspective that allows a better understanding of society/environment relationships.

Keywords

Water management, political processes, convergence of interests, discursive power, overbuilt basins, repolitization.

Introduction

Current mainstream visions of water management tend to promote a view of river basin development as a technical issue where experts and managers endeavour to match supply and demand, while limiting or mitigating unintended negative effects. These objectives are met by the application of technology, sound science, rational and neutral problem-solving approaches, and -whenever deemed necessary- an adequate cocktail of participation from relevant stakeholders. A large part of research on water is focused on improving, among other things, water productivity, irrigation efficiency, crop management, or manipulation of hydraulic infrastructures. All these issues are extremely important and deserve the attention they receive, but governance issues, in contrast, often do not receive the attention they deserve. Although river basin development and management demand increasing technical skills they are –eventually- also about the access to, and the allocation of, a contested and scarce resource. As such, they are inherently political and this dimension must receive as much attention as the more technical ones.

This paper first provides examples of interconnectedness within river basins and shows the diversity of the hydrologic cross-basin interactions and the social-political nature of the externalities that travel across basins through the hydrological cycle. The second section exemplifies the human-made and political nature of basin overdevelopment and induced

water scarcity, while the third section illustrates the discursive dimension of power in the shaping the trajectories of river basins. The last section reflects on the concept of river-basin governance in the light of the preceding examples.

Interconnectedness of river basins

Patterns of water use are often attuned to a particular hydrologic regime, characterized by its average water availability and its variability, and tend to be affected negatively by any modifications. Hydrological interactions are typified by the commonplace upstream-downstream effect, whereby downstream users have to cope with variations in the hydrological regime occurring in upper parts of the basin. But these interactions are not socially neutral and they define geographies of environmental injustice (Molle 2008a). Users and stakeholders are not born equal and differ in their access to natural or financial resources, and by their political power. Socio-political structures will therefore shape the way resources are used and the way benefits, costs, and risks are distributed (Swyngedouw and Kaïka 2002, Molle et al. 2007). Flood-prone areas, polluted neighbourhoods, or water-short localities are generally highly correlated with the occurrence of social groups characterized by higher levels of poverty and vulnerability.

The case of the destruction of part of New Orleans by Hurricane Katrina is illustrative of the socio-political dimension of flood damage (Congleton 2006). The disaster was shaped by the engineering of nature and the profound transformations of the landscape wrought to serve particular economic and class interests:

- Protective coastal marshes and wetlands were destroyed by erosion because the delta ceased to be sustained by silt, now directed to deep waters off the continental shelf to allow for easy river navigation;
- Channelling and dredging of the rivers, canals opened to facilitate drilling for oil and natural gas and laying pipelines, eased the penetration of seawater inland;
- Dikes raised to protect industrial and urban areas and to confine Lake Pontchartrain, once a natural buffer, increased water levels in the river channels; and
- The elevation of the sea level and temperature that is in all likelihood associated with global warming.

These are all human-made ingredients for a disaster. But the disaster also did not impact the population uniformly. Most poor, black neighbourhoods are located in low-lying flood-prone areas. This emphasized in 1965 when the city was struck by Hurricane Betsy and when the Lower Ninth Ward, an area almost entirely under the poverty line and 99% black, was intentionally flooded to spare the wealthy white uptown neighbourhoods (Caldwell 2005). Although not deliberate on this occasion, flooding by Katrina was similarly much more severe in poor, black neighbourhoods.

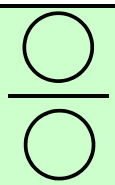
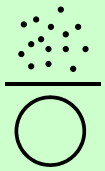
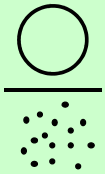
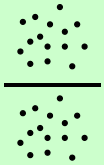
The paradigmatic example of redistribution of costs and benefits is the construction of dams. Dams usually provide electricity for urbanites and industrial interests, sometimes also allowing irrigation of downstream areas, but their impact is concentrated on rural people who have generally been displaced to marginal lands with little or no compensation. Take the example of the Pak Mun dam in Northeast Thailand. The dam produces only 0.1% of Thai electricity but has drastically impacted all the fisheries of the lower Chi-Mun basin and the thousands of fishermen living in it. Another typical conflict characterized by asymmetries of power is that between cities (or tourism) and agriculture (Molle and Berkoff 2006). Cities typically "siphon water away from agriculture" (Postel 1999), generally by stealth or by administrative fiat, rarely through market mechanisms. Cities have thus the power to impose externalities on others in terms of reallocation (benefits forgone in other uses), pollution, flood damage (see above), and aquifer depletion.

Consider industrial use of groundwater in the Bangkok Metropolitan Area, which makes up 90% of the water used by industry. The Thai federation of industries has always used its political power to stave off increases in the price of groundwater designed to reduce pumping. The resulting costs in terms of land subsidence (one third of the city is now below sea level), increased costs in drainage (pumping stations) and flood protection (dikes have to be raised continuously) are shifted to tax payers and to the country as a whole.

But the generation of waterborne externalities is often less straightforward and visible than in such clear-cut cases. Modification of groundwater dynamics by excess abstraction, for example, has indirect impact on springs and on the baseflows that support rivers in dry periods. These baseflows are invisible and can be reversed by the depletion of adjacent aquifers: instead of contributing to the river flow and to downstream users, depleted aquifers are now recharged by the river and water abstractors re-appropriate water that used to flow downstream.

Table 1 shows a variety of hydrological impacts brought about by modifications of the hydrological regime in terms of quantity, quality, timing or sediment load. Examples include both point, large-scale and scattered/diffuse human interventions. Water flows, and its four characteristics considered here, are affected by storage, water harvesting, pumping, diversions, etc. but also by land-use change. Alteration of flows impacts on aquatic ecosystems, other users, and geomorphological processes (e.g. delta fanning or land subsidence).

Table 1. Examples of upstream-downstream interactions between water users in a river basin. Source: Molle 2008a.

Upstream / downstream Variable				
Quantity	Upstream diversion scheme on downstream irrigation area	Water harvesting (or small tanks) on a downstream dam	Cities out-pumping irrigation wells	Wells on qanats; deep wells on shallow wells
Quality	Cities or industries on irrigated agriculture	Diffuse pollution of agriculture on city supplies	Cities contaminating groundwater used in pumping irrigation	Diffuse agricultural pollution on village groundwater-based water supply
Timing	Hydropower generation on large irrigation schemes or fisheries	Small tanks delay onset of wet season flows and affect biological cues	Hydropower generation on wetland ecosystems	Water harvesting reduces runoff/flood and downstream groundwater recharge
Sediment load	Large-scale deforestation on reservoirs	Overgrazing, or erosion in small-holder agriculture on reservoir (siltation)	Dam retaining silt vs. fertilization of downstream floodplains	Diffuse deforestation impact on silt load and delta fanning

 Point, large-scale user or intervention

 Diffuse, scattered users or interventions

All these examples suggest that human manipulations of the hydrologic cycle, whether direct or indirect, are all likely to generate externalities. In addition, all the interactions described above increase with human pressure on the resources and with basin closure. At the same time, basin closure means that most water is depleted and that the system has less and less resilience. Conflict resolution thus becomes a central feature of water management and politics, governance, and power also assume greater importance. As the stakes get higher and environmental externalities become harder to avoid, issues of spatial and environmental justice move to take centre stage.

The overbuilding of river basins

This raises the crucial question of why water resources invariably seem to be exploited until the 'slack' in the system is removed, that is, until the 'excess' water that is needed to absorb variations in supply, buffer impact on ecosystems, and limit restrictions to users is committed. Although pressure on resources is frequently presented as the result of a Malthusian decline in per capita water endowment, it is the inability of societies to put voluntary limits on water abstraction that is more meaningful. Basin closure is predominantly driven by a process of basin overbuilding whereby development and commitment of water resources almost invariably outstrip available resources. The societal determinants of this process revolve around a powerful convergence of interests and incentives (see more details in Molle 2008b, Berkoff, 2001). Continued development of water resources infrastructure appears to be a 'natural' option favoured by the most powerful decision makers:

- Politicians, whether at the local or government level, have long cherished iconic large-scale projects that are seen as the best way to build up constituencies (O'Mara 1990);
- State technical agencies and bureaucracies need projects to ensure sustained budgets and to uphold their professional legitimacy;
- Private consulting and construction firms look for a steady flow of business opportunities; and last
- Development banks and cooperation agencies also have vested interests in maximizing disbursement of funds (Chambers 1997).

Such a powerful convergence of interests explains why projects to develop water resources are difficult to challenge. In most cases, the segments of the population that are impacted and the civil society groups that come to the defense of the environment are weak or nonexistent. This of course is not always the case, and there are numerous cases where projects have been opposed and stalled, but these examples are few compared with the 45,000 high dams that were constructed during the 20th century, to take only one aspect of infrastructural development (WCD 2000).

Capital-intensive water projects, and this seems to apply to all countries and not just to water infrastructures alone, are prone to corruption, which siphons off public money into the pockets of private individuals (Repetto 1986).

The dominant view of infrastructure development is based on a technical and economic rationality. Engineering design and cost-benefit analyses are supposed to guide decision-makers in their investments. More recently environmental impact assessments and strategic impact assessments have been added to the planners' tool box to estimate better the social and environmental impacts, which used to be glossed over in the past. Yet, as is familiar to any practitioner involved in such matters, practice has often been little affected by these refinements. One reason is that the range of acceptable hypotheses (e.g. what will be the cropping pattern or the yield of rice after completion of the project?) is large enough to make conclusions malleable. Another is that in the absence of scrutiny, public disclosure or

discussion, many of these studies are conveniently either ignored or limited to mitigation measures. Eventually the projects tend to reflect the expectations of the agencies that fund them.

Here, again, it becomes clear that decisions regarding development of water resources are seldom the result of strict rational approaches but, rather, a reflection of the nature of dominant interests and the distribution of decision-making power. The provision of a public good is almost inevitably intertwined with financial and political interests. Failure to recognize the importance of this conclusion leads inevitably to basin overbuilding. Water scarcity is therefore artificially generated by the over commitment of resources, paving the way for future calls for yet further development.

River basins trajectories and discursive power

Continued development of water resources, but also particular policies seeking to conserve or to reallocate water, or to control floods, must be legitimized and made acceptable to the broader community, especially in terms of their anticipated impacts on society as a whole. Although plans, data and cost-benefits analyses are important, they are often secondary instruments in the wider political debate.

Decision makers or interest groups use discursive power to frame debates in ways that favour, obscure or exclude particular options. The pervasiveness and influence of discursive power in the debate over development of river basins and environmental justice overwhelm the weaker segments of the population, who have little voice and political clout, and limited access to information, media and other channels of communication.

One important aspect of the politics of knowledge is what Foucault has termed “political technologies”, that is, the devices by which inherently political debates are framed in scientific, technical, neutral and allegedly objective terms (Shore and Wright, 1997). The concept of integrated water resources management (IWRM) is an example of the woolly consensual "Nirvana concept" (see Molle 2008c), which obscures the antagonistic nature of the criteria of economic efficiency, social equity and environmental sustainability. IWRM holds the promise that with good will and benevolent stakeholders, sound data and good science, these dimensions can be reconciled for the common good. The legitimacy of IWRM, allegedly sanctioned and embraced at the international level, is mobilized to justify particular policy options or interventions.

For example, the concept of the river basin as a ‘natural’ unit for managing water resources has served to justify interventions in upper catchments by downstream stakeholders such as urban elites and state bureaucracies. In Thailand, for example, this has led to extensive ‘state enclosures’ in the north of the country. Hill tribes and their slash-and-burn cultivation practices are blamed for floods (and scarce dry-season flows alike). Widespread afforestation has been justified on the grounds that ‘trees are good’ and on the myth that forests act as ‘sponges’; dams have been built by mobilizing the support and symbolic power of the King as a means to close debates. In practice, the ‘need to control our water heads’ has resulted in displacement of minorities, eased state control over border areas, favoured urban-based interests of keeping nature for consumption (ecotourism), and business interests (e.g., logging, pulp, construction industries).

Another dimension of discursive power with impacts on basin-level equity is that of green ideologies conveyed by international conservationist NGOs. These organizations have been instrumental in "sanctuarizing" large areas of Africa as national parks, sanctuaries or game reserves. While all contribute to biodiversity conservation, they also fuel ecotourism and game-hunting industries that are largely in the hand of foreigners; and they restrain the access of local residents to natural resources (or exclude them altogether).

One particular dimension of state discursive power is the recourse to overriding justifications that "securitize" a particular issue and foreclose further debate (Molle 2008b, Warner 2008). National security, food self-sufficiency, import substitution and modernization have been heavily used to justify mega water projects and to paint their negative consequences as a necessary sacrifice. Other justifications, more frequently used nowadays, include poverty alleviation and self-sufficiency in energy. I do not suggest that these arguments are irrelevant: the problem lies in the use of a TINA (there is no alternative) type of rhetoric, where projects are withdrawn from scrutiny because the decision has already been taken.

Repoliticizing river basin governance: Why learning from the past is not enough

Few would deny, nowadays, that development of water resource has often entailed unexpected or neglected social and environmental impacts. But does not the solution, after all, lie in learning from past mistakes? And are not current paradigms giving due attention to issues that used to be overlooked?

There seems to be ample change in the way water problems and problems and solutions are framed. IWRM provides a handy integration of the competing concepts on water management, with development banks, aid agencies, consultants, and even green or livelihood-oriented NGOs have seemingly adopted this shared platform. There is a common understanding that water should be managed with due attention to its economic (efficiency), social (equity) and environmental dimensions. The massive promotion of IWRM by international agencies, conferences, academic literature, countless training and capacity building sessions suggests that integrative concepts have now been mainstreamed and have successfully displaced narrow sectoral or technocentric viewpoints.

In practice, however, the implementation of IWRM has generally remained short of expectations (Biswas 2004) and frequently appears as a smoke screen for business as usual strategies (Molle 2008c). The prevailing concept seems to be that problems have become more complex and thus need to be addressed through redoubled efforts at mobilizing more data, better information, bigger computers to come to term with this complexity.

The tendency to depoliticize problems tends to make these new approaches appear as mere extensions of earlier technical approaches. IWRM, for example, despite the emphasis placed on participation by its proponents, is most frequently pictured as a managerial approach. Its definition emphasizes the three desired ‘E’s (efficiency, equity and environmental sustainability). It implies that all three can be achieved concomitantly if, as the word ‘maximize’ suggests, problem-solving can be informed by neutral and rational approaches, good science and expert knowledge that reflect all three dimensions, rather than being informed by only one of them. River Basin Organizations, for example, are said to be "increasingly promoted as a scientific/rational means of administration for water" (UNDESA and GWP, 2006). A striking example of an enduring expert-based approach is provided by the recent Asian Water Development Outlook published by the Asian Development Bank (2007) and summarized by Biswas and Seetharam (2007) who state:

> In-depth analyses prepared for the Outlook [2007] indicate that the Asian countries are not facing a water crisis because of physical scarcities of the resource, but because of poor management. With the knowledge, technology and experience that are now available within the Asian region as a whole, the water problems of all the Asian countries can be solved. Given adequate capacity development, intensified political will, and appropriate investments, *one can be cautiously optimistic of Asia’s water future* (my emphasis).

Another example is provided by the World Bank background paper for the Mexico World Water Forum, *Water, Growth and Development.* Emphasis is placed on water ‘security’ and the report develops the argument that national development is impossible without

comprehensive development of water infrastructure. Past mistakes 'will be avoided' by parallel 'sequenced' investments in capacity building and by 'strengthening institutions', resulting in 'responsible growth' (Grey and Sadoff 2006). Accordingly, the solution lies in the money and the expertise that development banks and other institutional actors are ready to provide.

Further evidence of the adherence to expert-driven approaches is provided by the popularity of approaches based on the implementation of 'best practices' and models, defined as recipes supposedly sanctioned by international experience, which can be picked up where and when similar situations arise. In other words, IWRM approaches draw more on a concept of instrumental rationality than on the politics of resource management (Miller and Hirsch 2003; Merrey et al. 2007, Molle et al. 2007). In the background, proper 'policies and institutions' must be in place and the governments must be able to exercise 'their responsibilities of good water governance', while 'ensuring empowerment of the poor' (Jonch-Clausen 2004, UNDESA and GWP 2006).

Summing up, the political dimension of the development of river basins is consistently overlooked. The adjective 'political' seems to be a dirty word that comes with ideas of corruption or malpractice, social conflicts or upheavals and party politics. But it also refers to the sound and fair provision of public goods to society. The naked truth, however, is that little improvement if possible without a rebalancing of decision-making power and empowerment of the community at large.

In this article I have shown that the nature of the hydrologic cycle and the complexity of societies constantly combine to create and rework new spatial distributions of the costs, benefits and risks associated with water in its broadest sense. This spatial distribution is inherently social and political, and is shaped by the distribution of power within society. It is also defined by the connectivity of aquatic ecosystems and how these are affected by human interventions. The analysis of a basin trajectory must answer the question. "How did we get there?" The technical or institutional options proposed must be analyzed in terms of their distributive impact and of their link to the ideas, interests and institutional configuration that characterize and define the individual and collective actors concerned.

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