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Water, Politics and Development: Framing a Political Sociology of Water Resources Management

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EDITORIAL PREAMBLE: The first issue of *Water Alternatives* presents a set of papers that investigates the inherently political nature of water resources management. A *Water, Politics and Development* initiative was started at ZEF (Center for Development Research, Bonn, Germany) in 2004/2005 in the context of a national-level discussion on the role of social science in global (environmental) change research. In April 2005 a roundtable workshop with this title was held at ZEF, sponsored by the DFG (Deutsche Forschungsgemeinschaft/German Research Foundation) and supported by the NKGCF (Nationales Komitee für Global Change Forschung/German National Committee on Global Change Research), aiming to design a research programme in the German context. In 2006 it was decided to design a publication project on a broader, European and international basis. The Irrigation and Water Engineering Group at Wageningen University, the Netherlands joined as a co-organiser and co-sponsor. The collection of papers published in this issue of *Water Alternatives* is one of the products of the publication project. As part of the initiative a session on *Water, Politics and Development* was organised at the Stockholm World Water Week in August 2007, where most of the papers in this collection were presented and discussed. Through this publication, the *Water, Politics and Development* initiative links up with other initiatives simultaneously ongoing, for instance the 'Water governance – challenging the consensus' project of the Bradford Centre for International Development at Bradford University, UK. At this point in time, the initiative has formulated its thrust as 'framing a political sociology of water resources management'. This, no doubt, is an ambitious project, methodologically, theoretically as well as practically. Through the compilation of this collection we have started to explore whether and how such an endeavour might make sense. The participants in the initiative think it does, are quite excited about it, and are committed to pursue it further. To succeed the project has to be a collective project, of a much larger community than the present contributors. All readers are invited to comment on sense, purpose and content of this endeavour to profile and strengthen critical and public sociologies of water resources management.

KEYWORDS: Water control, politics, development, political sociology, public sociology, social power, governance

INTRODUCTION

The 'politics of water' is an expanding area of scholarship and research, an expansion related obviously to the increasing concern about a pending 'global water crisis'. This concern is now a major component of global and national development agendas (see f.i. HDR, 2006; Molden, 2007). Freshwater resources management¹ by definition is a context-specific phenomenon, given that it concretely happens through

¹The papers in this issue focus on freshwater management, and do not address issues related to the management of the oceans for instance. 'Management' in this formulation is used in the broadest sense possible – as a generic term including water use, allocation, distribution, governance, regulation, policy, etc. However, at other points it is also used in a narrower sense, distinguishing it from governance for instance. This double use is unfortunate but difficult to avoid. For use as a generic

managing river basins, aquifers, landscapes and ecosystems. However, the 'problemsheds' and 'issue networks' of water resources management may stretch well beyond the physical boundaries of these units, and span the globe and history.² The study of the politics of water is therefore a rather dispersed field of research, organised in strongly regionally and sector-wise defined clusters, apart from being disciplinarily divided. The expanding amount of work on the political dimensions of water resources management, however, allows a degree of systematising and abstraction. We discern and delineate an emerging field of research that we have labelled the 'political sociology of water resources management'. This paper discusses these two ideas: that of political inherence, and that of a political sociology of water resources management.

INHERENTLY POLITICAL WATER RESOURCES MANAGEMENT

In a dictionary definition, politics is "the art and science of directing and administering states and other political units" (*The New Collins Concise English Dictionary* 1982). State governance is the substance of politics in this perspective. Politics is, however, a much broader term. In the same *lemma* in the dictionary quoted, politics is also defined as "the complex or aggregate of relationships of men [sic!] in society, especially those relationships involving authority or power", "any activity concerned with the acquisition of power" and "manoeuvres or factors leading up to or influencing (something)". Politics is a dimension or quality of many social processes, i.e. all social processes in which interests of individuals or groups are mediated. This is, of course, conceptually well established in the social science literature, but needs to be incorporated into the analysis of water resources management issues more systematically than it has been so far.³

This broad understanding of 'politics' informs the main proposition of this paper: water resources management is inherently political. However, taking mainstream water policy discourse as a point of reference, it is clear that the idea that water resources management is an inherently political process, is not a commonly held perspective but has to be established. Ten years ago politics and the political were anathema in most water policy circles.⁴ The social engineering paradigm reigned largely unquestioned (Mollinga et al., 2007).⁵ The rise of the theme of (good) governance brought politics into the mainstream water resources development discourse through the backdoor. When talking governance, good or bad, and associated ideas like accountability, transparency and legitimacy, it is difficult not to acknowledge that such processes and relations have political dimensions and continue to defend the

term to encompass all activities and arrangements directly and indirectly related to the human use of water, 'management' remains the best candidate, because it is the most widely and diversely used category.

² On problemsheds and issue networks, see Mollinga et al. (2007).

³ A much quoted treatment of social power is Lukes (2005). On 'politics' see Lasswell (1936), Leftwich (1984), and many others. Several of the papers in this issue address conceptual issues related to the notions of power and politics explicitly. I have taken a dictionary definition to avoid associating with a particular school of thought in political science. More provocatively, when a 1982 dictionary definition gives a broad and complex understanding of the concept of politics, it is surprising how persistently, in science, the concept used to be primarily associated with formal, official state politics (cf. Kerkvliet, 1990 on this).

⁴ This statement derives from participation in policy related discussions on water management since the early 1990s. However, in past years the politics word seems to have acquired some acceptability. On 25 February 2004 a double session on 'Driving the Political Economy of Reform' took place as part of the World Bank Water Week, the yearly gathering of World Bank staff and partners in Washington, DC. On 26 and 27 February 2004 the World Water Council (WWC) launched a 'Water and Politics' initiative, though apparently not with much follow up. In the corporate sector, the RWE Thames Water company emphasizes the importance of water politics on its website. The Stockholm World Water Week has given increasing attention to water politics in recent years. Cf. Merrey et al. (2007) for further discussion.

⁵ "The term *social engineering* is used here in a narrow sense to refer to linear models for changing societies or organizations, where blueprints are used to replicate a structure in a new context, that may have worked elsewhere. Application of this model to achieve social change – if x then y follows – is based on a misunderstanding of the complex, nondeterministic, and stochastic nature of social organizations. Social engineering as used here does not imply pessimism about the possibility of facilitating and guiding social change, but cautions against oversimple prescriptions" (Merrey et al., 2007).

position that 'politics' should be removed from water resources management. The latter has been, and perhaps still is, the dominant inclination of water professionals.

In the global water discourse, 2000-2002 seems to have been the period of 'closure' that established governance as a core theme. Three major events took place in that period at which the global water resources community debated the nature of the 'water crisis'. These were the 2nd World Water Forum in The Hague in 2000, the Bonn Freshwater Conference in 2001 and the Johannesburg Summit on Sustainable Development in 2002. The Executive Summary of the World Water Vision report prepared for the 2nd World Water Forum uses the word 'governance' only twice. It concludes by stating that "there is a water crisis, but it is a crisis of management. We have threatened our water resources with bad institutions, bad governance, bad incentives, and bad allocations of resources" (Cosgrove and Rijsberman, 2000).⁶ In subsequent discussion this formulation got revised and shortened to a single sentence. Much quoted is the phrase "The world water crisis is a crisis of governance – not one of scarcity" from the *No Water No Future* speech at the Johannesburg Summit by the Prince of Orange of The Netherlands. Since then 'governance' features prominently on the global water resources agenda.

Jenkins (2001) argues that 'governance' as used in the mainstream international development discourse of the international development funding agencies tends to become a 'technical' issue. It, as it were, depoliticises the understanding of politics. Contributions like those of Ferguson (1994) and Harriss (2001) have argued that there may be compelling reasons for governments and other actors to depoliticise debates on development, reasons located in the way instrumental reason, which actively claims to exclude 'politics', assists in reproducing state power and legitimacy, as well as the reproduction of development assistance programmes (also see Scott, 1997).

While agreeing with much of Jenkins' criticism of the global (good) governance agenda, and with the observation that depoliticisation may be an attractive governance strategy, the addition of 'governance' to the water resources policy vocabulary may be considered a step forward. It follows the acceptance of 'management' as a central concept in the 1970s, which was a significant improvement upon the concept of 'operation' (of water infrastructure) that preceded it. Increased use of the term governance signifies a less exclusively sector focused understanding of water resources management, that is, recognition of its embeddedness in broader socio-political structures, in parallel to the increased recognition of water resources management's ecological dimensions following environmental critiques. The report of the Comprehensive Assessment of Water Management in Agriculture (Molden, 2007) attempts to incorporate, at the global level, the socio-political and ecological embeddedness perspectives into the understanding of water management in the largest freshwater using sub-sector – agriculture. Water governance in this context refers, among other things, to the allocation of rights (rights to water and technology, decision-making rights) and resources (water itself, but also maintenance and investment funds for instance), and thus creates more space for considering issues like 'interest groups' and 'social power' than the notion of management tended to do.⁷

⁶ In the five chapters that form the main text of the report, 'governance' appears only thrice. Once in the context of transboundary water management (p.53), once while referring to corporate governance (p.62), and once in the context of attracting investment, which requires "good water governance – strong regulations, sound policies, and up-to-date laws". In the *Ministerial Declaration of The Hague on Water Security in the 21st Century*, the political outcome of the 2nd World Water Forum, the word governance appears once where the challenges for achieving water security are listed. One of these is "Governing water wisely: to ensure good governance, so that the involvement of the public and the interests of all stakeholders are included in the management of water resources". In the challenge 'Meeting basic needs' it is stated that that is important also "to empower people, especially women, through a participatory process of water management". In outlining how the challenges are to be met the concept of IWRM (Integrated Water Resources Management) appears prominently. "[IWRM] depends on collaboration and partnerships at all levels, from individual citizens to international organisations, based on a political commitment to, and wider societal awareness of, the need for water security and the sustainable management of water resources. To achieve [IWRM], there is a need for coherent national and, where appropriate, regional and international policies to overcome fragmentation, and for transparent and accountable institutions at all levels".

⁷ There are other discursive trajectories leading to acknowledgement of the social relations of power. The most notable one is the participation discourse, which often started from populist and instrumentalist perspectives but has produced the notion of

From a situation of *denial* and exclusion of 'politics' from the mainstream water resources discourse, the discussion seems to be moving towards consideration of the *kind* of politics that is found in, or desirable for, water resources management. What remains to be seen is whether or not explicit discussion of the social relations of power in water resources management will be a recurrent theme in such discussions. It is not unlikely that instrumental and apparently non-political understandings of governance will continue to dominate the mainstream global water resources discourse, while critical investigations of the political dimension will find less resonance. However, the Human Development Report 2006 on water, which pays explicit attention to social power and politics, shows that this discursive terrain is now actively contested (HDR, 2006; for a review see Mollinga, 2007).

Arguing the case

The proposition that water resources management is an inherently political process is based on the idea that *water control* is at the heart of water resources management and should be conceived as a process of *politically contested resource use*. In this formulation water control is the subject matter of water resources management. It is something that humans have done since time immemorial (see f.i. Scarborough, 2003). Any human intervention in the hydrological cycle that intentionally affects the time and/or spatial characteristics of water availability and/or its qualities, is a form of water control.⁸

Water control has three dimensions: a technical/physical, an organisational/managerial, and a socio-economic and regulatory. These generic categories refer to, respectively, the manipulation of the physical flow and quality of water, the guiding of the human behaviour that is part of water use, and the socio-economic, legal, administrative and other structures in which water management is embedded and that constitute conditions and constraints for management and regulation (cf. Bolding et al., 1995 and Mollinga, 2003 for detailed discussion of the water control concept).⁹

Contestation is also a generic category. It is used here to refer to a range of interaction patterns in water management, including negotiation and struggle, and also less explicit and longer term disputations and controversies. The idea is to convey that there tends to be something at stake in water resources management, and that the different individuals or groups involved have different interests. This is not meant as a theoretical statement, but as an empirical one. The approach aims to analyse those situations where water resources management is an issue. The justification of this focus lies in the fact that societal issues around water management are proliferating (Joy et al., 2008). Therefore an approach focussing on contestation seems warranted. The addition of the adjective political to contestation is meant to highlight that there is a political aspect to contestation and thus to water control.¹⁰ As soon as the political would be regarded as a self-evident property of water control, it would become unnecessary to give it special emphasis.

'empowerment' as a much more political term than 'involvement of stakeholders' (cf. Scoones and Thompson, 1994). 'Participation' has been a central theme in water policy discussions since the 1970s.

⁸ Use of the term 'control' in this manner has been found problematic by some. In critical perspectives 'control' tends to be a 'bad thing', associated with the excessive and arrogant desire of mastery over nature by humankind, or is associated with despotic or otherwise undesirable control of human beings (cf. Blackbourn's (2006) brilliant analysis of the role of water and landscape in the making of modern Germany, titled 'The conquest of nature'). As an actual description of what humans do with water, terms like water guidance, direction or regulation would be better, as intervention in the hydrological cycle is basically that (cf. Benton, 1989). However, all three terms are awkward and confusing as general categories, and I therefore stick to water control till a better term becomes available.

⁹ From the perspective of critical realism water control is a 'concrete concept' (Sayer, 1984), combining several abstractions in a single concept to capture the multidimensionality of the object. In the social study of science and technology such concepts have been named 'boundary concepts'. These are concepts that are intelligible in different domains or disciplines and thus facilitate interdisciplinary analysis (see Star and Griesemer, 1989; Löwy, 1992; Mollinga, forthcoming).

¹⁰ This does not intend to suggest that water control can be *reduced* to its political nature, that is, that water control is *only* political or that its political aspect *determines* all other aspects. How and how strongly the mediation of actors' interests and the social relations of power shape the different properties and dimensions of water control processes is an empirical question, though the starting assumption is that it is always present and often important.

TOWARDS A POLITICAL SOCIOLOGY OF WATER RESOURCES MANAGEMENT

'Political sociology of water resources management' is, to my knowledge, not yet a term that is claimed by, or institutionalised for, a research field, study programme, journal title, or other academic pursuit.¹¹ However, it captures well and concisely an emerging type of scholarship on water resources. Water resources management, understood as politically contested water control, is the subject matter of this field of study. 'Sociology' is understood in this formulation in the broadest sense of the study of social behaviour and interaction and of social structure, without wishing to demarcate it as a specific social science discipline from other disciplines. It thus basically refers to the social embeddedness of water resources management, and to water resources management as a practice in which structure and agency 'meet' to reproduce and transform society,¹² including the way human beings deal with water resources. Different forms of embeddedness can be specified, but two major ones are that of context (water resources management in relation to other structures and practices) and of history (water resources management comes from somewhere along a certain trajectory).¹³ The 'political' in the formulation refers to the contested nature of water resources management. This perspective states that in a comprehensive analysis of water resources management the social relations of power that are part of it need to be explicitly addressed. The use of 'resource' in the depiction of the object, water resources management, conveys the sense that the management of water and the related creation of water infrastructure may be a significant factor or force in societal development, in relation to state formation, colonisation, economic growth, or other aspects of development (cf. Wittfogel, 1957; Stone, 1984; Worster, 1985; Bray, 1986; Reisner, 1993; Scarborough, 2003; Blackbourn, 2006). As a natural resource it is also a resource in societal processes, actively deployed and regulated, shaping people's lives and livelihoods, and the development of cultures and political economies. A political sociology of water resources management would thus be closely associated with the field of development sociology (Barnett, 1988; Kiely, 1995; Goetze, 2002; Long, 2001; McMichael, 2004).

The notion of a 'political sociology of water resources management' can bring under one roof a vast kaleidoscope of context specific analyses. In this section the colours of that kaleidoscope are first briefly sketched by mapping out four domains of water politics investigation (everyday politics, politics of state policy, hydropolitics and global water politics), and their interlinkages as a fifth domain – a topology of water politics. The second part of the sketch is a description of the standpoint and method of the field. I discuss a number of features that the standpoint and method might have by characterising the political sociology of water resources management as having to be a critical sociology, a practical sociology, a comparative sociology and an interdisciplinary sociology.

¹¹ 'Political sociology' is, of course, a well established discipline, mainly occupied with national level politics and politics, that is, with the state-society interface (see f.i. Orum, 2001).

¹² The broader social theory reference here is to work like that of Bourdieu (1977), Giddens (1984), Bhaskar (1989), and Archer (1995). For addition of a 'material' element to sociology, see discussion further below.

¹³ The context in which water resources management practices are embedded can be subdivided in three generically described components (Mollinga, 2003): the ecology and physical environment, the ensemble of economic relations, and the institutional arrangements of state and civil society. An 'embedded' study of contested water resources management would thus simultaneously have to be a political ecology, a political economy and a political sociology. Some would feel excluded even with these three terms as political geography, political anthropology, political science, etc. have also contributed to the study of contested water resources management. No non-awkward term is available to encompass all these. 'Hydropolitics' would be a good candidate, but is already in use as referring to a specific domain of the politics of water (see below); inter/transdisciplinary water resources studies another, but it misses the reference to contestation, and is rather non-distinct. While the contributors to the *Water, Politics and Development* initiative mainly focus on embeddedness of water control practices in the institutional arrangements of state and civil society, and given the emphasis on contestation and on practice, process and structure/agency questions that is proposed, the 'political sociology' label is appropriate. Integrating the proposed approach with political economy and political ecology perspectives is a next step to be taken – including some creativeness in labelling.

A topology of water politics

In Mollinga and Bhat (forthcoming) and Mollinga (2008) the politics of water as a field of research is mapped by discerning four domains¹⁴ and their linkages as a fifth domain. The four domains are the everyday politics of water, the politics of water policy in the context of sovereign states, inter-state hydrogeopolitics, and the global politics of water. These domains can be distinguished because they have different space and time scales, are populated by different configurations of main actors, have different types of issues as their subject matter, involve different modes of contestation and take place within different sets of institutional arrangements. The linkages between domains refer to travelling of policy ideas and water contestations across domains.

The everyday politics of water resources management

Everyday politics is a phrase coined by Kerkvliet (1990). Regarding water it refers to contestation of day-to-day water use and management. In many cases everyday politics is a relatively small scale phenomenon, including, for instance, how access to local groundwater markets is negotiated between community members, how maintenance obligations connected to water rights are enforced in a farmer-managed irrigation system, and many other examples. However, the management of a big reservoir distributing stored water to canals and areas hundreds of kilometers away from the dam is also 'local' in the sense of being a concrete, situated water use and management practice, with an everyday politics associated with it. This can, for instance, be focused on the negotiation of gate settings and discharge monitoring, determining how much is released to whom at what time.

The politics of water policy in the context of sovereign states

Politics of policy is a phrase coined by Grindle (1977, and subsequent work). It refers to the contested nature of policy processes. In the water resources domain I use it to refer to policy processes at the level of sovereign states, or states within a federation. The concept is a critique of linear views of policy formulation and implementation (Hill, 1997), and aims to "demythologise planned intervention" (Long and van der Ploeg, 1989). The idea is that water policies, like other policies, are negotiated and re-negotiated in all phases or stages and at all levels, and are often transformed on their way from formulation to implementation, if not made only in the implementation process (Rap, 2007). The political contestation of water policies takes place within state apparatuses, but also in the interaction of state institutions with the groups directly and indirectly affected by the policies, and in the context of development assistance strongly or weakly by international development agencies.

Inter-state hydrogeopolitics

Hydrogeopolitics is a phrase that has been coined in the literature on international water conflicts, notably those in the Middle East (cf. Waterbury, 1979; Ohlsson, 1995). It refers primarily to conflicts and negotiation processes between sovereign states on water allocation and distribution, particularly in relation to transboundary rivers or aquifers. Turton and Henwood (2002) propose to broaden the term to encompass all water politics, but I prefer to use it in its original meaning, including inter-state water conflicts in federal political setups. Hydrogeopolitics is the part of water politics that has been well researched and documented, perhaps because it is a very public phenomenon, with sometimes high stakes and geopolitical relevance, and because it is an interesting case for international relations studies (Zeitoun and Warner, 2006).

¹⁴ The first formulation of these domains can be found in Mollinga (2001). The units identified can be named as (territorial/jurisdictional) levels, (action) arenas, semi-autonomous fields, domains of interaction etc. depending on one's purpose and focus of analysis. I settled for the general term 'domain of interaction'.

The global politics of water

Rather than being a phrase coined for long-existing practices, the global politics of water refers to a relatively new phenomenon: the recently, in the 1990s, invigorated international level of water discourse, policy and tentative regulation. The global politics of water contains several processes. These include the institutions and organisations set up in the wake of the 1992 Dublin and Rio international conferences on water, environment and development, notably the World Water Forums, the World Water Council (WWC) and the Global Water Partnership (GWP). The GWP has become the international social carrier of the IWRM (Integrated Water Resources Management) concept. The WWC has played an important role in the recent advocacy for more investment in water infrastructure. Another component of the global water politics is the World Commission on Dams process, triggered by large political controversies around the social and environmental effects of large dam building. A third component is the process related to the World Trade Organisation negotiations regarding water, notably around the issue of the privatisation of water and water service provision. A fourth relates to global advocacy for access to water as a human right.

Linkages

Some of the most interesting and important questions in water resources management involve the interlinkages between or across domains. The 'linkages' domain looks at how policy issues and water contestations travel across the different domains, to analyse under what circumstances these are generated, and how they are translated in the journey across the domains. Documenting the journeying of policy ideas through these domains can nicely illustrate the relationships between these levels and how it is that policy ideas are generated, transformed, and possibly re-generated throughout that journey in the face of economic, social, and political realities.

For instance, the support provided by multilateral development funding agencies for local restructuring of water and power sectors has had mixed outcomes. 'Global politics' domain ideas like water privatisation and water and energy sector restructuring through donor support, have been very differentially translated in the policies of developing and transitional countries (Hall and Lobina, 2003; Hall et al., 2004, Hall et al., 2005). Such journeying can also take place in a 'bottom-up' manner, as illustrated by the World Commission on Dams process. High levels of contestation among water user communities at the 'everyday' domain to state policies supporting dam construction led to the eventual development of a 'global' process to question policy assumptions. The World Commission on Dams was an outcome of this process, and the report it developed in response has sought out and iteratively aggregated the input of user communities for future policy development, which are now being used at different national and local levels.

Standpoint and method

The five domains presented above map out the broad and diverse terrain of concrete water politics. What approaches and methods are suited to research these? Obviously, there are many, and no grand synthesis is attempted here. The standpoint and method aimed at is characterised by four prefixes to sociology: critical & public, interdisciplinary, practical, and comparative.

A critical and public sociology

The diversity of approaches to water resources management analysis can be usefully mapped using Michael Burawoy's general classification of the division of labour in sociology. Burawoy sets up a classification of four sociologies along two axes. The first axis is whether the approach aims at instrumental or reflexive knowledge; the second axis what its audience is: academic or extra-academic. This produces the four-box matrix of table 1.

Table 1. The division of sociological labour

	Academic audience	Extra-academic audience
Instrumental knowledge	<i>Professional sociology</i>	<i>Policy sociology</i>
Knowledge	Theoretical/empirical	Concrete
Truth	Correspondence	Pragmatic
Legitimacy	Scientific norms	Effectiveness
Accountability	Peers	Clients/Patrons
Pathology	Self-referentiality	Servility
Politics	Professional self-interest	Policy intervention
Reflexive knowledge	<i>Critical Sociology</i>	<i>Public Sociology</i>
Knowledge	Foundational	Communicative
Truth	Normative	Consensus
Legitimacy	Moral vision	Relevance
Accountability	Critical intellectuals	Designated publics
Pathology	Dogmatism	Faddishness
Politics	Internal debate	Public dialogue

Source: Burawoy (2005a); also in Burawoy (2005b)

Burawoy (2006) describes the four boxes as follows.

Policy knowledge is knowledge in the service of problems defined by clients. This is first and foremost an instrumental relation in which expertise is rendered in exchange for material or symbolic rewards. It depends upon pre-existing scientific knowledge. This professional knowledge involves the expansion of research programs that are based on certain assumptions, questions, methodologies and theories that advance through solving external anomalies or resolving internal contradictions. It is instrumental knowledge because puzzle-solving takes for granted the defining parameters of the research program. Critical knowledge is precisely the examination of the assumptions, often the value assumptions, of research programs, opening them up for discussion and debate within the community of scholars. This is reflexive knowledge in that it involves dialogue about the value relevance of the scientific projects we pursue. Finally, public knowledge is also reflexive – dialogue between the scientist or scholar and publics beyond the academy, dialogue around questions of societal goals but also, as a subsidiary moment, the means for achieving those goals.

Water research driven by practical and policy concerns supporting the 'mainstream' water resources management discourse, mostly falls into Burawoy's categories of professional and, particularly, policy sociology (see the papers of Molle and of Cleaver and Franks in this issue for vivid illustration). 'Policy sociology' type studies of water are intervention oriented, focusing on effectively resolving concrete practical problems, and are often commissioned/contracted research projects, or is research funded by policy making and implementing organisations (like the European Commission, World Bank and UN organisations, and national development cooperation ministries for instance). The strong association of water resources management research with water policy formulation and implementation is an important reason for the virtual absence of 'the political' in such analysis. This comes about through a combination of several factors. The first is a pragmatic, problem solving orientation of researchers and research funders, aiming to 'fix things' and 'get on with the work'. The second factor is the scientific schools (paradigms) to which researchers belong, which may or may not incorporate 'the political' in their frameworks of analysis. The third factor is complacency and self-censorship by researchers and

research organisations on the principle 'do not bite the hand that feeds you' and the need to maintain research access to countries (for brief reference to concrete experiences with this, see Mollinga and Bolding, 2004, and Wall and Mollinga, 2008). Telling in this respect is for instance that the seminal paper by Wade (1982) on the system of administrative and political corruption in an irrigation bureaucracy has generated virtually no subsequent research. The pathology of servility occurs when the research(ers) bend to the priorities and perspectives of their patrons, and when (self-)censorship goes beyond reasonable ethical principles related to the protection of sources and the modesty of a visiting researcher in a foreign domain.

Framing a field called the 'political sociology of water resources management' organised around the contested nature of water resources management, is giving a name to the critical and public sociologies of water resources management. The reflexivity of the lower row of Burawoy's matrix refers to approaches that self-consciously investigate the (normative/value) standpoints from which water resources knowledge is produced. Reflexivity problematises the politics of knowledge rather than adopting a simple neutrality or objectivity standpoint.¹⁵ Such approaches would also self-consciously relate research to societal 'causes', associating with specific projects of social transformation. Their pathology is directly related to this. Such research can become ideological or sectarian, and revert to what has been called in an apt phrase 'strategic essentialism' (Baviskar, 2003). 'Strategic essentialism' refers to the process in which research associated with social movements and social causes takes the simplified ('essential') categories needed in political advocacy and struggles to provide satisfactory analytical concepts. One example is the use of dichotomous frameworks modelled on a bad guys/good guys pattern (modern/traditional; global/local; western/non-western; etc), which may be useful in political practice, but rarely hold up as a tool for analysis (cf. Mollinga, 2004).

Care is required, however, in associating different approaches to research with different views of and approaches to development and social transformation, and assuming 'natural linkages' with particular political constituencies. The relationship between politics and method is more complex. Burawoy suggests a big divide between instrumental and reflexive knowledge, associating the first with the state and the private sector, and the latter with civil society.¹⁶ But reflexivity is, of course, not foreign to professional and policy sociologies, and neither is instrumentalism foreign to critical and public sociologies.

The discipline of development studies is a case in point. Though it emerged from a societal critique of underdevelopment in the 1960s, it has developed managerial as well as critical variants in the mean time, covering the whole spectrum of the matrix,¹⁷ though the reflexive dimension and its association

¹⁵ See Haraway's (1991) argument that to be able to approach objectivity one has to be explicit about one's standpoint. Her perspective neither denies the possibility of biases in scientific theory, or the personal dimension of that, nor does it succumb to a singularly relativist or social constructivist position. It asks us to continue to investigate how knowledge is always 'situated knowledge'.

¹⁶ Burawoy tends towards such simplifications for instance when he, somewhat contradicting the within-discipline diversity mapped by the table, states that "the social sciences should be distinguished by their configuration of value stances, or what we might call their standpoint. Economics takes as its standpoint the market and its expansion, political science takes as its standpoint the state and political order, while sociology takes the standpoint of civil society and the resilience of the social. Cultural anthropology and human geography are potential allies in the defense of civil society" (Burawoy 2006). Even when disciplines have their origins in certain social processes associated with certain social classes and/or interests and/or world views, in all these a diversity of approaches and standpoints has developed over time, though some currents are definitely dominant and others marginal. This is exactly what Burawoy argues further down in the same text, but 'strategic essentialism' apparently slipped into the quoted passage.

¹⁷ Thomas (2000) has captured this nicely in the three meanings of 'development' he identifies in development studies: "(i) as a *vision, description or measure of the state of being of a desirable society*; (ii) as an *historical process of social change* in which societies are transformed over long periods; (iii) as consisting of *deliberate efforts aimed at improvement* on the part of various agencies, including governments, all kinds of organizations and social movements" (emphases in original) The first of these meanings is relevant to all four of Burawoy's sociology boxes, the point being that which vision or set of desirables is implicitly or explicitly projected varies hugely, along the full political spectrum in each box. The second meaning is primarily of concern to those located in Burawoy's left column of professional and critical academic sociologists. Those in the right column are

with approaches to development aiming at structural societal transformation has remained strong.¹⁸ At the very least the matrix problematises the relationship between research, the development perspective advanced by that research, and the actors associated with it, or more generally, the relationship between knowledge and power. From such a perspective, strengthening the hand of critical and public sociologies of water resources management amounts to an effort to level the discursive playing field in which the future of water resources management and the resolution of the 'global water crisis' is analytically and ideologically negotiated.¹⁹

An important aspect of the levelling of the discursive playing field is acknowledging and claiming/giving space for knowledge developed in other locales than the recognised institutes of science. The public sociologies developed outside the abodes of formal science usually emerge around water related conflicts and controversies. Some NGOs have well established research and publication programmes, like for instance CSE, the Centre for Science and Environment based in New Delhi, India. The controversies around large dams, and the anti-globalisation campaigns related to water have also produced large numbers of publications analysing the present state of water resources management (see for instance International Rivers Network, 2006; Mishra, 2002). The paper by Sneddon and Fox in this issue mentions that NGOs in the Mekong basin have decided to do their own investigations into certain issues, not wishing to rely on 'official' knowledge. Public sociologies of water exist in many more or less institutionalised and consolidated forms, at different scale levels. They can also take programmatic form. For instance Ajaya Dixit, Imtiaz Ahmed and Ashis Nandy in 1997 published *Water, power, and people. A South Asian manifesto on the politics and knowledge of water*, which can be read as a political statement as well as a research programme.²⁰

An interdisciplinary sociology

The object called 'water resources management' is a heterogeneous object. Its composite elements include water, technical artefacts, people, institutions and social relations of different kinds, a physical landscape, and more. Thought of as a system it is a complex system, with specific time and space characteristics that influence the social interaction that is part of it (due to the seasonality and recurring, cyclic nature of management practices, and the bulky and fluid nature of water). The analysis of such a hybrid object requires an interdisciplinary approach, otherwise its complexity cannot be captured.

However, most sociological approaches to water resources management exclusively focus on its social, behavioural dimensions. The case for incorporating the material dimensions of social life into sociological analysis has been made forcefully by the social constructivist approach to the study of technology, which shows how shaping technology and building society are two dimensions of a single process (Bijker and Law, 1992). On this perspective Latour (1992) writes as follows.

To balance our accounts of society, we simply have to turn our exclusive attention away from humans and look also at nonhumans. Here they are, the hidden and despised social masses who make up our morality. They knock at the door of sociology, requesting a place in the accounts of society as stubbornly as the human masses did in the nineteenth century. What our ancestors, the founders of sociology, did a century

usually strongly forward looking, without a strong interest in historical trajectories. The third meaning is concentrated as a concern in Burawoy's right column, with the policy and public sociologists. The professional and critical academic sociologists are usually hesitant to engage in intervention processes. Many professional academic sociologists would argue that it is important to maintain a separation between 'science' and 'politics' from a certain objectivity perspective. Many critical sociologists may be allergic to development intervention programmes and activities given their disciplining character, as is argued in post-development theories.

¹⁸ A similar observation can be made about environmental studies and gender studies, equally grown out of or on the wave of social movements (cf. Klein, 1996, who associates this kind of historical grounding in a 'social question' with a propensity to interdisciplinary approaches).

¹⁹ In discussions on 'public sociology' it has been emphasised that the four sociologies need each other, living in a state of 'antagonistic interdependence', if only to avoid the potential pathologies of each (see Burawoy et al., 2004).

²⁰ Together with two similar documents, the *Manifesto* is downloadable from www.saciwaters.org.

ago to house the human masses in the fabric of social theory, we should do now to find a place in a new social theory for the nonhuman masses that beg us for understanding.

For the study of the heterogeneity of water resources management we thus need a sociology that understands its object – society – as both material and social, and includes the analysis of the intimate relationship between these two dimensions. Such interdisciplinary approaches to water resources management do exist (see for instance Bolding et al., 1995; Bijker, 2002; Ravesteijn, 2002; Shah, 2003; Bolding, 2004; Ertsen, 2005; Wester, 2008; Boelens, 2008), but such contributions are relatively scarce and marginal in the social study of water.

A practical sociology

Water resources management studies have been, and will continue to be closely associated with water policy reforms and development intervention as initiated and undertaken by a range of actors: multilateral and national development (funding) agencies, government agencies at different levels, NGOs, companies, religious and other social movements, and different kinds of community groups and organisations. Water resources management practices will equally continue to generate a large number of conflicts and other contestations, with strong civil society involvement, leading to the emergence of different public sociologies of water resources management. Strong research-practice interaction will, thus, continue to characterise the field – by design and by default. It is proposed to make the 'boundary work' at this interface into a central programmatic challenge (Cash et al., 2003; Mollinga, forthcoming). Such boundary work has three components, which need to be 'done' as well as researched.

- a) Developing 'boundary concepts' for bridging the gap between different perspectives and facilitating clearer communication. For analytical purposes, concepts like water control, ecosystem services, risk and vulnerability, efficiency, and value and valuation would be examples; for policy discourse concepts like integrated water resources management, water security, and water and human development would be examples.
- b) Designing 'boundary objects' for decision-making and concrete action implementation (either in the form of different kinds of models, a variety of assessment frameworks, or process methodologies for participatory planning and decision making).
- c) Crafting institutional and organisational 'boundary settings' helpful for productive boundary work (Moll and Zander, 2006; Pohl and Hirsch Hadorn, 2007). This includes a diverse set of elements of the 'politics of knowledge': improving incentive structures for critical and interdisciplinary research in academia; creating and enlarging policy spaces for the type of (research) work envisaged; addressing the mechanisms of (self-)censorship referred to above; capacity building of water professionals; enhancing public access to information, including free and open access journals; building an epistemic community, etc.

A comparative sociology

The bulk of the research on actually existing water resources management investigates regionally and sector specific issues, to a large extent based on the practical and policy priorities of regional and sector specific research agendas. To make synergetic use of the richness of these strongly regionalised water studies, strengthening comparative analysis of water resources management in industrialised, developing and transition countries is proposed as a central methodological strategy.

Adopting a comparative approach to research has at least two advantages. Regionalisation of scientific practice can mean that contextual biases in analytical frameworks go unacknowledged. For policy analysis frameworks this has been suggested by Grindle (1999). She argues that most policy analysis frameworks carry several biases by reflecting a 'society centred' policy process. As a result, they are not able to cope very well with 'state centred' policy processes that exist, for instance, in

authoritarian regimes. A bias in society centred frameworks is strong assumptions about societal groups actively contesting government policy and thus being involved in policy formulation. Grindle shows that developing countries may be characterised by state-centred policy processes, where such active public engagement is absent, or much less profiled. This means that frameworks of analysis need to be historically and geographically specific.

Secondly, comparative analysis is a route to steer between the extreme local/case specificity of ethnographic approaches and the universalism of positivism, and can help to address the question of knowledge accumulation in the social sciences (cf. Mahoney and Rueschemeyer, 2003; Mahoney, 2003). The central aspect of knowledge accumulation is advance in the insight into causal processes at work in the research object (Mahoney, 2003). Advanced insight into causal processes makes it possible to make sense of ever accumulating descriptive findings. It is also the point of reflection for advances in methodology in a field of research, and of the meta-theories.²¹ New methodologies advance fastest when they are used in substantive research, and substantive research provides the 'reality check' on meta-theoretical debate.²² For Mahoney and Rueschemeyer (2003) comparative historical research "is defined by a concern with causal analysis, an emphasis on processes over time, and the use of systematic and contextualised comparison".²³ Comparing their focus with other approaches they argue that,

[f]rom the perspective of the comparative historical tradition, the universalizing programs of the past and present – ranging from structural functionalism and systems theory in the 1960s and 1970s to certain strands of game theory in the 1980 and 1990s – have tended to generate ahistorical concepts and propositions that are often too general to be usefully applied in explanation. In viewing cases and processes at a less abstract level, by contrast, comparative historical analysts are frequently able to derive lessons from past experiences that speak to the concerns of the present. Even though their insights remain grounded in the histories examined and cannot be transposed literally to other contexts, comparative historical studies can yield more meaningful advice concerning contemporary choices and possibilities than studies that aim for universal truths but cannot grasp critical historical details (Mahoney and Rueschemeyer, 2003).

The added value of the *comparative* dimension is that the systematic and contextualised comparison of (typically a small number of) cases allows for a very intensive dialogue between theory and evidence (Mahoney and Rueschemeyer, 2003). What is suggested is comparative analysis of specific structures and mechanisms (also called theoretical generalisation), through detailed analysis of the processes they help to generate, and avoid the positivist pitfall of generalisation at the level of events.²⁴ In this issue, Sneddon and Fox compare NGO activity in two river basins, the Mekong and the Zambezi basin, from a transnational and ecological democracy perspective. Neef compares the dynamics of the 'participatory imperative' of contemporary water policy in Germany and Thailand.

If the standpoint and method sketched above through four pre-fixes to 'sociology' would have to be given a single descriptor or label, 'transdisciplinary water studies' would be a possibility. When

²¹ "The overarching assumptions and orientations that can be used to formulate empirical puzzles and testable hypotheses, and that help analysts frame more specific research questions" (Mahoney, 2003).

²² At least in principle, over time, and with effort. Sometimes meta-theoretical constructs or paradigms are very resilient, even in the face of evident (to those adhering to other paradigms) falsification. Nevertheless, the history of science seems to suggest that such hurdles can and mostly are overcome, not 'simply' because of the availability of 'countervailing evidence' but in a much more complex process. The paradigmatic position in this statement is that of critical realism (which maintains the possibility of 'reality checks', while being aware of the epistemological complications attached) – a relativist position would be in strong disagreement with it.

²³ This perspective neatly fits Archer's critical realist 'morphogenetic approach', which also puts a strong emphasis on studying processes over time, and shares the causal analysis focus (see footnote 24).

²⁴ In instrumental water resources studies the positivist pitfall of generalising at the level of events translates into a strong emphasis on the identification of 'best practices', 'lessons learnt, and 'models'. This is discussed and critiqued in the paper by Molle in this issue. Also see the article by Cleaver and Franks.

transdisciplinary research is understood as (i) interdisciplinary research with interest groups involved in all phases of knowledge generation ('democratised science'), (ii) combining an orientation towards concretely addressing complex societal problems with a reflexive and self-consciously normative perspective, and (iii) avoiding case/problem myopia by comparative contextualisation and learning, the four components above are all incorporated.

CONCLUSION

This paper has tried to frame a 'political sociology of water resources management' by defining the following three elements.

- a) Water resources management is the general description of the object of this field of studies; the multidimensionality of the object is conceptually captured in the boundary concept of 'water control', which is understood as 'politically contested resource use'.
- b) A topology of the field was developed by distinguishing five domains of political contestation: the everyday politics of water, the politics of water policy, hydropolitics, global water politics and a fifth consisting of the linkages and odysseys of water policies and controversies across the first four domains.
- c) The field's standpoint and method was outlined by describing it as a critical and public, interdisciplinary, practical, and comparative sociology of water resources management.

After all this, it may be, critically and reflectively, asked "what is the added value of this exercise of trying to bring the diversity of politically oriented water studies under one roof? Is it not a constraining rather than a strengthening exercise?" Part of the answer to this question has already been given. The objective is to 'strengthen the hand' of critical and public water sociologies. This is both a practical and an intellectual endeavour – as suggested by the outline of the four components of the standpoint and method.

In addition, the suggestion is that a political sociology of water resources management as sketched in this paper has a contribution to make to social and development theory more generally. For instance, at the level of formal social theory, the specific characteristics of water resources management are linked to the time/space characteristics of the social interaction it involves, providing interesting entry points for theoretical research on structure/agency dynamics.²⁵

At the level of substantive social theory water resources management research has specific contributions to make to a wide range of themes and topics. The embeddedness of water resources management practices implies that modes of water resources management are closely associated with concepts and trajectories of development, as existing in the form of patterns of accumulation (the dynamics of economic relations), modes of regulation (the dynamics of socio-political relations), and environmental trajectories (the dynamics of ecological systems). Swatuk's paper in this issue addresses all three dimensions in a political economy analysis of water resources development in Southern Africa, set in a historical perspective. What these trajectories are is partly shaped by the specific features of water resources management as an object and practice. Several papers in this issue exemplify that the theoretical flow is in two directions. The examples are mainly located in the domain of socio-political

²⁵ One of many examples of the importance of the time/space characteristics of water resources management is the occurrence of water distribution conflicts in canal irrigation systems. For a South Indian case Mollinga (2003) describes the distinct periods of the year when major distribution struggles occur, related to canal opening and closure dates (in their turn related to rainfall and river discharge patterns) and the overlapping of cropping seasons (related to crop scheduling following from climatic parameters). It is in these periods that the social relations of distribution are contested and potentially re-negotiated, and the fact that these are discrete periods separated in time, and that they are recurrent (occur every year in stronger or weaker form) shapes the way the contestation takes place. Water resources management seems to be a case where Archer's morphogenetic approach to social transformation applies very well (Archer, 1995).

relations: theories of (transnational) democracy (Sneddon and Fox), of (policy) discourse (Molle), and of gender relations/masculinity (Zwarteveen).

The pages of *Water Alternatives* will show how far this intellectual and political project can be pushed.

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