



## Distilling or Diluting? Negotiating the Water Research-Policy Interface

### Frances Cleaver

Bradford Centre for International Development, University of Bradford, UK; [f.d.cleaver@bradford.ac.uk](mailto:f.d.cleaver@bradford.ac.uk)

### Tom Franks

Bradford Centre for International Development, University of Bradford, UK; [t.r.franks@bradford.ac.uk](mailto:t.r.franks@bradford.ac.uk)

**ABSTRACT:** This article examines some of the tensions in the generation of knowledge about water governance and poverty, and the translation of this knowledge into policy and practice. It draws on the experience of the authors in developing a framework for understanding water governance and poverty, their work on a project in Tanzania and their attempts to engage with policy makers. The authors propose that the negotiation of knowledge is a political process shaped both by power relationships and (often implicit) normative values. Such negotiation may be impeded by the contrasting positions of academics as uncertainty creators and policy makers seeking uncertainty reduction. The authors critique instrumental approaches to the generation of knowledge and policy based on the amalgamation of perceived 'success stories' and 'good practice'. They favour instead approaches that attempt to understand water governance arrangements and outcomes for the poor within wider frameworks of negotiations over the allocation of societal resources. This implies the need to rethink the research – policy relationship and to build reflexive knowledge generation into the research-policy interface.

**KEYWORDS:** Water governance, success stories, research-policy interface

### INTRODUCTION: MAKING SENSE OF WATER KNOWLEDGE

*Water governance works out through dynamic political processes of power and negotiation, particularly at the interface between service providers and users. General principles must be balanced with context-specific initiatives and there is a particular need to work at the messy middle between policy-making and local level practices.*

Bradford Water Research Group (2006)

*Debunk the language, simplify the ideas. No nuances, no problems, just solutions.*

Senior international water policy maker commenting on how to present policy to partner governments at DFID consultation meeting, 24 May 2007.

This paper addresses the relationship between research and policy making for water governance. The two perspectives presented above suggest that this may be an unhappy marriage; our intention here is to analyse some of the causes of tension and consider how they could be ameliorated. Rather than seeing the problem merely as one of 'translation', we identify some more fundamental differences relating to ideas about the nature and respective roles of research and policy. In particular we examine the difficulties in reconciling the role of social science researchers as *uncertainty creators* (unsettling

established categories, questioning conventional wisdoms) and the imperative for policy makers to be *uncertainty reducers*.

Our focus here is on the challenges of conducting and disseminating research to inform policy. Following Burawoy's (2005) classification of types of knowledge produced in sociology (discussed in detail in Mollinga's editorial) we reflect on the tensions of conducting both 'instrumental' and 'reflexive' research and of negotiating the use of such research in water 'knowledge communities'. As academics who also undertake consultancy work in development we position ourselves as having professional identities *both* as creators *and* reducers of uncertainty. We take this opportunity to illuminate and reflect upon the various processes of knowledge generation and dissemination involved.

In this paper we use three illustrative examples, drawn from our own experience, of generating and negotiating knowledge about water governance with other professionals. These are: (1) an attempt to balance narrowly instrumental perspectives by devising a conceptual framework embedding specific arrangements for water governance in wider societal processes; (2) our (different) experiences of involvement in the Sustainable Management of Usangu Wetlands and its Catchment (SMUWC) project in Tanzania; and (3) experience of disseminating research findings on Water Governance and Poverty to policy makers. Each of these examples of our work involved generating specific types of knowledge and engaging with policy makers and water professionals at different levels. Here we outline the challenges to establishing a workable research/policy interface for each of these cases and draw out some more generalised points about the need to create more reflexive knowledge communities in water.

For reasons of logic and presentation, the examples do not necessarily appear here in chronological order; this account does not therefore present a linear evolution of our thinking on water governance. The SMUWC project in Tanzania (Tom Franks was Project Manager and Frances Cleaver undertook a research project on Rural Livelihoods) took place between 1999 and 2001. In addition to the specific outputs of this project (SMUWC, 2001), there are a large number of studies and academic papers on Usangu which both pre- and post-date it (Walsh, 2006; Lankford et al., 2004 refer to a range of these).

The conceptual framework for Water Governance and Poverty which we discuss here was informed by the empirical work of the SMUWC project, research presented at the ESRC Seminar Series Water Governance: Challenging the Consensus (2004-6, summarised in ID21, 2007) and from literature and Reflective Practitioner Case Studies collected for a research review Water Governance and Poverty: What Works for the Poor? (Cleaver et al., 2005; [www.splash.bradford.ac.uk/home](http://www.splash.bradford.ac.uk/home)).

Following initial research and the development of our understanding, we used the framework and associated insights into water governance to inform policy-making processes, particularly through the UK's Department for International Development (DFID). The opportunities for engaging with policy makers and practitioners occurred through dialogue with governance and water advisors at DFID and with their Chief Scientific Advisor, briefing the Secretary of State and submitting evidence to the Parliamentary Inquiry (International Development Committee, 2007). Additionally, the authors contributed to the reformulation of DFID's policy on water, specifically to the preparatory thinking about 'governance' and 'water resource management', and to shaping the future direction of DFID's research strategy on water.<sup>1</sup> Our experience of dialogue between academics and policy makers has been mixed and it is the challenge of making sense of knowledge about water governance and poverty that concerns us here.

In thinking about the research-policy interface, we consider both the nature of knowledge and the differing features of knowledge generators and users. Burawoy (2005) classifies knowledge production as dividing into four approaches arranged along two axes. One axis refers to whether the aim is to produce instrumental or reflexive knowledge and the other to whether the audience is academic or extra-academic. He characterises much policy knowledge as instrumental. "Policy knowledge is knowledge in the service of problems identified by clients" characterised by its concrete and pragmatic nature (Burawoy, 2006). By contrast 'critical knowledge' is produced by, and for, academics involving

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<sup>1</sup> At the time of writing the final draft of this paper (May 2008), DFID's new water policy was not yet published.

the "examination of the assumptions, often the value assumptions, of research programmes, opening them up for discussion and debate..." (Burawoy, 2006). We draw on Burawoy's thinking to identify the challenges involved in greater engagement between instrumental and reflexive approaches, the difficulties that *both* researchers and policy makers face in undertaking critical examination of the values underlying research *and* the uses to which it is put.

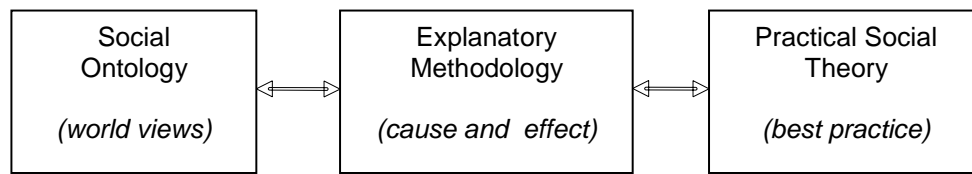
In writing of epistemic communities, Haas (1992) characterises policy makers as 'uncertainty reducers' who, in conditions of uncertainty, draw on networks of knowledge professionals to articulate cause-effect relationships, frame issues and propose policies. Such interlocking networks may become self-referential and self-reinforcing, creating mainstream 'consensus' views on the right direction for policy. Our experience is that the contribution of research to policy making does not necessarily reduce uncertainty (as suggested by Haas) but may increase it. This arises partly from different role perceptions and priorities of academics and policy makers. A study of civil servants in industrialised countries (Aberbach et al., 1981 cited by Haas, 1992) showed that the majority of them considered themselves technicians (implementing practical solutions to problems), rather than brokers between competing ideas/solutions. In contrast, researchers (particularly in social science) might consider their role as to unsettle established categories, to question the taken-for-granted relations of cause and effect, to problematise and scrutinise assumed or implied principles (Corbridge, 1995). The distinction between these approaches becomes blurred when, for example, academics are commissioned to inform policy. The contrast between uncertainty reduction and uncertainty creation is echoed in the distinctive features of Burawoy's instrumental and reflexive knowledge generation matrix outlined above. Before proceeding to explain our attempts to incorporate both reflexive and instrumental approaches in our conceptual framework for understanding water governance and poverty, we draw on social theory and examples to illustrate some of the hazards of instrumentalism disconnected from reflexivity.

#### FROM SOCIAL ONTOLOGIES TO SUCCESS STORIES

*In a consultation meeting on water resource management, aimed at informing DFID's new water policy, a senior water advisor suggested that policy would be pragmatically shaped by experience of what has worked in the past. He called for those present to share their experience of 'success stories' in water resource management, to identify 'points of illumination' to elucidate policy direction.*

#### Instrumentalism and social theory

An overarching difficulty facing researchers engaging with the policy domain is that this is strongly characterised by a narrowly instrumental approach to knowledge and understanding. Margaret Archer (1998) provides a critique of such approaches which detach practical explanations of events and outcomes from wider understandings of the nature of the world and the structures and processes which mediate these. In common with other social theorists, she positions her thinking between the poles of a 'rearguard positivism' which elevates instrumentalism (empirical experience used to guide engagement with social problems) and a post-modernism dislocated from 'facts' as well as social engagement (regarding discourse, reason and truth as all relative). She identifies that one of the important features of this middle position is that the constituent elements of social theorising are threefold comprising:



(Adapted from Archer, 1998)

For Archer each element is indispensable to generating understandings of the social world and each shapes the others. However, she suggests that instrumentalism (a common approach in policy-related research) uncouples the last element (the category of practical social theory) from the first two. Policy approaches to knowledge in the project of 'development' are largely instrumentalist; social ontologies (assumptions about the nature of the world) are unacknowledged or taken for granted; explanatory methodologies become a collection of indices which have demonstrated workability (through their predictive utility- an apparent capacity to attribute effects to causes) and practical social theory becomes an amalgamation of assorted and often contradictory 'best practices' or 'success stories'. For Archer this approach of practical utility "necessarily generates theoretical inconsistency, for there is no guarantor of mutual coherence among the multiple rules of thumb. Theoretical fragmentation then follows; that is, the multiplication of incompatible concepts retained because of their workability" (Archer, 1998).

For critical realists the world has ontological depth: events arise from the workings of mechanisms which derive from the structures of objects, and they take place within geo-historical contexts. Because of the variability and changeability of the contexts of social life, different mechanisms can produce different outcomes (according to context); there may then be an absence of regular associations between causes and effects. Outcomes cannot simply be 'read off' from particular structures (Sayer 1984). We have drawn on such critical realist approaches in devising our framework (considered in more detail below) because we think that much writing about water governance and water resources management has focused on advocating particular mechanisms, with too little attention to the formation and location of these and the consequent variability of effects.

Debates over policy indeed often retain mutually incompatible concepts because of their individual workability. The inherent contradictions in the outcomes are then glossed over in efforts to garner the maximum possible support for the policy-making process. Whilst policy makers may be legitimately interested in 'what works' and see theory as irrelevant we argue rather that conceptualisation is vital to understandings of *how* and *why* certain outcomes are obtained. Coherent conceptualisation helps us model relationships, and to develop understandings, which transcend particular contexts, *and* examine how processes work out in a particular time and place. Thus approaches which 'decouple' success stories from explanatory frameworks also disengage discrete contextualised experiences from any means of understanding their broader relevance.

In a paper reflecting on the shortcomings of understandings of environmental governance Fischer et al. (2007) highlight the role of normative principles in guiding interventions, but also point out that these principles are often unclear in policy statements. They highlight how contradictions can occur between implicit ideals and concrete goals or between multiple goals. Thus, policy in the water sector emphasises the need for cost recovery for sustainability, whilst at the same time highlighting the importance of gender, equity and support for the poor, when it is precisely these groups who are least able to cope with the burdens of cost recovery. National water policies often propose investments in the irrigation sector, along with the retention of environmental flows such as water for wetlands, when both these are consumptive uses, and support for one is likely to be at the expense of the other. Thus, in the SMUWC example, the Tanzanian government proposed to restore year-round flows in the river Ruaha, whilst simultaneously advocating increased use of dry- season flows for irrigation. It was precisely the dry-season contributions that were important for the overall flows in the river. Within the irrigation sector itself, there are continuing and inherent tensions between concepts of efficiency,

which (in theory at least) may be improved through the provision of gated structures at headworks, and equity, which is usually improved if head-end irrigators have less control at headworks.

The importance of ontologies or worldviews in shaping policy models of governance and associated actions is illustrated in Moretto's (2007) article on urban water governance. This argues that differing underlying views of society shape the different models of urban water governance promoted by the World Bank and UN-Habitat. Whilst both avowedly aim to facilitate equitable and efficient access to urban water services through support to small-scale providers, their diverging ontological assumptions about the role of market choices or community ownership, competition and cooperation, economic and social performance shape the forms of their interventions. For example the World Bank policy emphasises the importance of supporting private independent providers whilst UN-Habitat rather emphasises support to communities in managing and regulating water supply arrangements.

### **Best practices and success stories**

The shortcomings of instrumental approaches can be seen in the emphasis on 'best practice' and 'success stories' for water governance, and associated assumptions that these can be replicated and scaled up in different contexts. Here we consider two problems inherent to this approach: (1) the assumption that 'success' is readily definable, (2) the dislocation of outcomes and mechanisms from the conditions which produce them.

Firstly, the call to learn from 'success stories' is based on the assumption that success in development interventions can be defined. But, as Moser and Sollis (1991) demonstrated, for a slum upgrading/environmental health project in Ecuador, the notion that planned interventions succeed or fail or that such outcomes are the intentional results of intervention, is questionable. In their case, whilst the success of the project in securing community-based environmental health management was limited (a 'failure' to the donor agency), local leaders perceived it to be a success as it had increased their advocacy and leadership capacities. Practitioners' reflections on the processes of trying to facilitate pro-poor water governance well illustrate the patchy and incremental nature of 'success', the need for constant reiteration and adjustment of effort to deliver beneficial outcomes in terms of equity and access as well as management efficiency (Cleaver et al., 2005). Tukai (2005), detailing a community-based water project in Tanzania, shows how apparent success in achieving community management of the supply and in increasing women's participation did not equate to greater equity of access or decision-making power for women. Multiple definitions of success, held by different stakeholders, are often recognised in principle but too little incorporated into the setting of targets and indicators in development practice.

Secondly, current water policy, avowedly pro-poor, advocates a focus on various practices and interventions for increasing *access* to water for the poor and their increased *representation* in decision making. However, these approaches can be criticised for their focus on limited mechanisms for inclusion of poor people (and the assumption of an easy relationship with beneficial outcomes), rather than for attention to interrelated patterns of constraint. Recent research suggests that chronic poverty is characterised by both depth and duration; that poor people are systematically disadvantaged in interlinked ways over long periods of time (generations) and in particular locations. Increasingly, critics argue that 'pro-poor' interventions are particularly hard to achieve within taken-for-granted assumptions of market-based economic growth. A focus on mechanisms for increased participation and representation, without interrogating the conditions (resources/structures) which shape them might well further marginalise rather than empower the poor (Green, 2006; Harriss-White, 2006; Harriss, 2006). Reflective practitioner accounts of attempts to secure pro-poor water governance emphasise the need to look beyond simple measures to improve water access. For example, in their accounts of establishing Water User Schools in Nepal emphasise the constant reflexivity and readjustment of interventions needed to support the involvement of poor people in local decision making. They also emphasise the different supporting actions and processes across a range of scales if local processes

promoting inclusion are to be sustained – including, for example, the role of champions of change at local national and international levels, multidisciplinary studies to understand the place of water in people's livelihoods, the decentralising and strengthening of financial management, reform of irrigation agencies and strong political support.

These emerging insights into the nature of poverty and disadvantage suggest both that disconnected collections of 'best practice' are likely to be insufficient to generate transformations in the gross inequities shaping water access, *and* that addressing the complexity of water and social relations requires both strategic direction *and* incremental reflexive practice. Policy making tends towards incrementalism; 'doing more and doing it better' is favoured over 'doing it differently'. But neither a focus on increased supply and access nor more participation of the marginalised alone are likely to transform the situation of the chronically poor. Rather, there are arguments for linking these processes to redistributive policies, livelihood security, and basic service and social welfare provision. Such redistributive and welfare policies can provide the platform from which political voice and empowerment and demands for socially inclusive measures can be built (Cleaver, 2005; Hickey and Mohan, 2004; WaterAid, 2007). The framework which we propose frames particular mechanisms and outcomes (including 'success stories') within wider structures and distribution of resources – aiming to understand how and why particular outcomes are produced in different circumstances.

### **UNDERSTANDING WATER GOVERNANCE AND POVERTY: A FRAMEWORK**

The framework for examining water governance and poverty discussed here was designed to engage with the prevailing policy consensus on the need for good water governance. The role of the framework was twofold: to address perceived gaps in academic thinking about water governance and to provide a tool for synthesising insights from research, examining the micro-processes of water control and access.<sup>2</sup> The evolution of this framework, therefore, represents our attempts to both expand categories and unsettle the certainties of conventional wisdom about water governance *and* to draw some sort of 'map' for understanding how policy and development interventions 'travel' to produce particular outcomes in time and place.

#### **Gaps in conceptualising water governance: Understanding water governance**

Policy making in the water sector is keenly concerned with the contribution of improved water governance to the achievement of the Millennium Development Goals (MDGs), with the aim of contributing to both poverty eradication and environmental sustainability. The need for good water governance has become generally accepted in international policy fora (most recently, the Fourth World Water Forum in Mexico in 2006), and principles of good governance are frequently elaborated in situation analyses and policy documents. So, for example, the UN states criteria for effective water governance as including participation, transparency, equity, effectiveness and efficiency, rule of law, accountability, coherency, responsiveness, integration, ethical considerations (UN, 2006).

Despite the increasing emphasis on its importance, theoretical analysis and debate about the underlying concepts of water governance are sidelined in policy discussions in favour of the constant reiteration of normative principles of governance. Such reiterations usually focus on the *political* (governance articulated through multi-party democracy) and *administrative* dimensions of governance rather than on its *systemic* manifestation in political and social relations more generally.<sup>3</sup> Rogers and Hall (2003), in their work for the Global Water Partnership, attempt an overall definition of water governance as "the range of political, social and economic systems that are in place to develop and manage water resources, and the delivery of water services) at different levels of society". Modifying

<sup>2</sup> Inevitably the development of the framework was patchier, more incremental and iterative than presented in this account. For us it is still an evolving tool for thinking about water governance interactions.

<sup>3</sup> The tripartite classification of political, administrative and systemic aspects of governance is from Leftwich, 1994.

such definitions by drawing on concepts from social theory we see water governance as "the system of actors, resources, mechanisms and processes which mediate society's access to water" (Franks and Cleaver, 2007).

In approaching the framework we were conscious of wanting to include five aspects, missing or only sketchily outlined in other analyses of water governance.<sup>4</sup> *Firstly*, whilst Rogers and Hall suggest that governance is wider than government, we were keen to extend this approach to an understanding of how the underlying 'rules' and structures of society help to shape water allocation, who shapes such patterns of distribution and to what effect? This would require a framework capable of reflecting social ontologies or worldviews; the non-formal institutions and rules, embedded societal norms, values and representations (as well as their formal manifestations), and the negotiations around these. *Secondly*, we perceived that much water-policy-making was concerned with articulating principles at the national and international levels, but we wanted to illuminate how such macro-level policies 'travel' to the meso- and micro-levels (and how micro-level events and outcomes feed back into wider patterns of allocation. *Thirdly*, moving on from Rogers and Hall (who conceptualise governance in rather static terms as "a range of... systems *in place*") we wanted a framework that could reflect the dynamic and processual nature of water governance – seeing water governance effected through varying combinations of negotiation, decision making and practices. *Fourthly*, influenced by social theory we aimed to reflect the variations in how differently placed people are able to exercise agency in water governance both consciously and unconsciously through willed actions and routine practices. *Fifthly*, we were concerned with addressing the paucity of convincing accounts of cause and effect relationships between 'good' governance and 'good' outcomes for poor people (Cleaver et al., 2005).

Our attempt to devise a model could therefore be understood as one of broadening the terms of a narrowly instrumental debate on how to achieve 'good' water governance to include reflection on the ways in which society is organised. Additionally, we aimed to sharpen the focus on *how* and *why* particular arrangements for governance produce differential outcomes of poor people.

### The anatomy of a framework

So, with rather ambitious aims of trying to capture both the complex nature of societal processes *and* to specify how outcomes for the poor are produced, we used these criteria to begin to build a framework for analysing water governance. We drew on a range of thinkers with social theory providing the conceptual starting point. The overall three-part structure of our framework owes a debt to critical realist thinking (Sayer, 1984; Archer, 1998), which presents variations on the themes of relationships between structures, mechanisms and events. Similarly, Kabeer (2000) uses a tripartite framework comprising resources (preconditions), agency (process) and achievements (outcomes) to elaborate the relationships which inhere to processes of gendered empowerment. From Giddens (1984), we borrowed the concept of allocative and authoritative resources – the material and non-material properties from which the human governance of water is constructed. Long (1992) provided initial ideas about the varying 'room for manoeuvre' which individuals (actors or agents) have in negotiating social structures. Such concepts also inform much 'post-institutionalist thinking', from which we have drawn insights about the 'messiness' of local institutional arrangements and the construction of institutions through processes of *bricolage* (Mehta et al., 2001; Benjaminsen and Lund, 2002).

In attempts to illuminate the multiple ways in which people access and use water, the plurality of actors, arrangements and uses involved in water management, we referred to understandings of livelihoods (Ellis, 2000) and to literature on water resources management and policy (Molden, 2007). Recent works on chronic poverty (CPRC, 2004; Hickey and Bracking, 2005; Green, 2006) prompted us to

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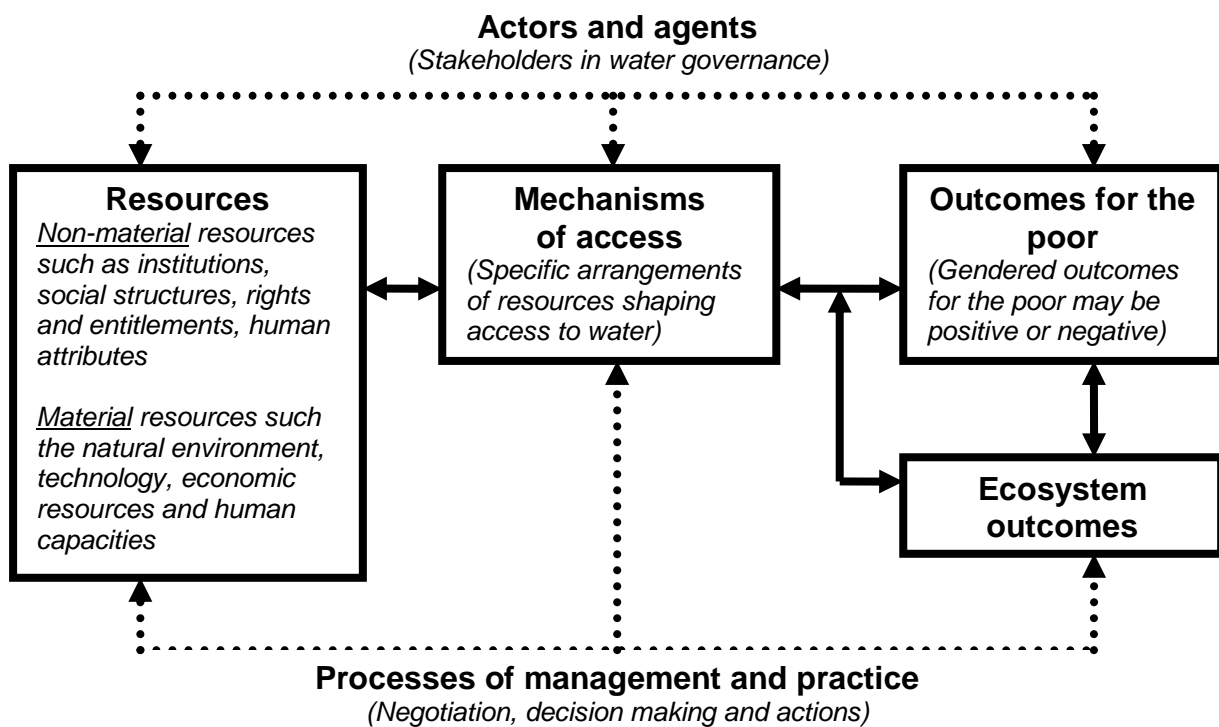
<sup>4</sup> We are aware of voluminous literature on the nature of governance more generally, but critical analysis of *water governance* is only just emerging. Batterbury and Fernando (2006) suggest that this gap applies more broadly to natural resource governance necessitating the development of accounts of how relations of eco-governmentality emerge.

think about the multi-dimensional ways in which access to water by the 'always poor' is constrained, and how deeply poverty is embedded in social relations.

Later, and in response to criticism that our framework ill-reflected power relations we drew on work on governmentality (Dean, 1999; Agrawal, 2005) to incorporate Foucauldian ideas of power as multi-locational, normalised in networks of everyday life, regulating social practices and relationships. Such perspectives were particularly useful in illuminating the ways in which rule is exercised at different levels, and in considering the extent to which agendas of the state inscribe the fora for water governance.

The framework which we developed (figure 1 below) places specific arrangements or mechanisms for water governance (the common focus for development interventions) in dynamic relationship with both the wider resources of society and with varying outcomes for differently placed people.<sup>5</sup>

Figure 1. A framework for analysing water governance and poverty.



*Resources* (the materials from which human interaction and social structures are constructed), are drawn upon in differing ways by *actors* (individuals, groups, the state) to construct the mechanisms of water governance. Such construction may be undertaken deliberately or unconsciously through custom, practice, the daily taken-for-granted negotiation of access through social relations. *Mechanisms* are particular context-specific arrangements for accessing water. The mechanisms of access to water shape *outcomes* in varying ways *for the poor* and for ecosystems, the long-term changes and trends in their condition and context. Mechanisms are arrangements in which differing degrees of organisation are implied. At each interface in the framework, *actors* are recursively implicated (being shaped by and shaping resources, mechanisms and outcomes). Mechanisms are fashioned from resources by actors 'managing' and 'practising' *processes* of water governance. Similarly, the outcomes of such mechanisms

<sup>5</sup> For a more detailed elaboration of the framework and a worked example of application to a water governance situation see Franks and Cleaver, 2007.



are shaped by context-specific processes of management and practice. Power imbues the framework; actors have differing degrees of command over allocative and authoritative resources (including command over other actors). Mechanisms may shape access in ways which reproduce or challenge existing power relations and the outcomes produced may reinforce, generate or diminish inequalities.

To summarise, our framework was an attempt to understand the complexity of local arrangements for accessing water within the wider context of allocation of resources in society. Adopting this point of view, water governance is, in its widest sense, an articulation of social relations and hence inherently political. Our perspective on water governance recognises that (1) normative views of the world shape governance models, (2) that these are translated into arrangements through constant negotiation and renegotiation, and (3) that in thinking about 'good' water governance we have to consider how this links to equity of outcomes. We have used this framework as a way of organising our own ideas and those of others, and of feeding critical insights into policy and practice.

The reception of this framework by different audiences has been mixed. We presented it to advisors in DFID as a way of framing and organising the empirical data collected for the commissioned project 'Water Governance and Poverty: What Works for the Poor', but this elicited little engagement except the lone comment that the framework was 'too complicated'. The most interested reactions to the framework have come primarily from practitioners wanting to know whether and how it could be used as a field tool for diagnosing specific problems in water governance and identifying points of intervention. We devised the framework primarily as a guide to reflexive understanding, but it is quite possible that it will be adapted and deployed by others for more instrumental purposes.

## RESEARCH FOR KNOWLEDGE, POLICY AND PRACTICE

*At the start-up meeting for the 2.5 year Sustainable Management of the Usangu Wetlands Project (SMUWC) in Usangu, SW Tanzania, the Mbarali District Commissioner said "No more studies: we want action". In this he was reflecting a view commonly held by 'practical' people, that research and investigation has little relevance to what does (or should) happen in 'real' life.*

Some commentators perceive a fundamental mismatch between the needs of policy (and practice) and the requirements of good quality research. For Collingridge and Reeve (1986) the dysfunctionality of the research/policy relationship derives from adherence to two unsustainable myths. First, the rationality myth supposes that policy decisions must be informed by significant data collection which reduces uncertainty (evidence-based policy). Second, the 'power of science myth' holds that the research community has the ability to provide such data at times and in forms useful to policy makers. Collingridge and Reeve propose instead that policy decisions, being political, can readily be made with scanty initial information; mistakes are unavoidable (even with vast quantities of information) therefore, it makes sense to favour choices which are flexible and to implement decision-making systems which allow for the early detection of errors and modification of policy.

Within the catch-all term 'research' is included a range of academic activities with different anticipated end uses. Let us consider in more detail the likely differences in research for different purposes; generating knowledge, informing policy or guiding practice (table 1). The distinction between these is often unclear (even to those taking part) and gives rise to potential tensions between academics and policy makers as to the essential utility of particular research activities.

Research for knowledge is concerned with increasing our understanding of the world in which we live without necessarily having an immediately practical or useful application. In its purest form, this is described as 'blue skies' thinking, knowledge for its own sake because we prefer to know more rather than less, because knowledge is (generally) a more comfortable state than ignorance. Water sector research is rarely purely 'for knowledge' as most researchers consider that their work has some definable utility, albeit in forms and timescales incompatible with the exigencies of current policy

making. Also, water research is increasingly funded from the policy domain. Research to inform policy has a more direct and instrumental value, in providing evidence that supports policy making by demonstrating that the intended outcomes will follow policy implementation. Such research is often undertaken by campaigning or advocacy groups. Research to guide practice is more functional still, aimed at generating location-specific data which inform specific and practical actions. Research at this level is often described as a study, as in the quotation at the head of this section, though it shares many of the attributes of more formal research.

Table 1. Research for knowledge, policy and practice

	Research for		
	Knowledge	Policy	Practice
Scope	Defined by researchers	Defined by policy makers	Defined by users
Focus	Improved understanding of the world around us	Evidence of outcomes	Guidance for interventions
Timescale	Long-term, indeterminate	Medium-term, continuing	Short-term, bounded
Type of data and presentation of results	Intensive or extensive empirical research with findings generalised to theoretical propositions and to raising further questions. Uncertainty accommodated	Generalised, focus on 'success stories', 'best practices' with lessons for 'scaling up' and 'scaling out'. Certainty of linkages (inputs and outputs) required.	Specific and localised, often presented as tools or checklists.
Audience	Academics, intellectuals	Policy makers, politicians	Practitioners

In keeping with their different aims, these three forms of research tend to have different audiences. Research to generate knowledge is primarily aimed at academics and intellectuals, written and presented accordingly, and often described pejoratively by policy makers and practitioners as 'abstract' or 'theoretical'. Research for policy is aimed at 'busy' policy makers and has to engage with dominant policy language and concepts, often presented in bullet points or other extremely simplified formats. This paper argues that this extreme simplification is necessary but problematic, obscuring many of the nuances and complexities which characterise the real world. Problems also arise in the understanding of the nature of research as well as in its presentation. Research into practice has as its audience the world of practitioners and doers, who often value the resource of comprehensive data sets and detailed understanding of the local and context-specific situation, but nevertheless require concrete guides to action.

We take as an example of the multiple dimensions of research the scientific and technical work that accompanied the Usangu study (SMUWC, 2001; Lankford et al., 2004; Walsh, 2006). The purpose of this work was to increase understanding of why the Usangu wetland was shrinking and why the flows in the Ruaha river downstream were decreasing. The study itself was a major undertaking, lasting over 3 years and costing around \$5million. Following usual donor practice, the objectives and outcomes of the study were very tightly defined in a logical framework, with the aim of supporting the evolution of local management frameworks through the application of the outputs of the study. Rather unusually, however, a significant portion of the budget (just under 10%) was allocated for 'research', unspecified at the time of inception, intended for use as the project team thought appropriate to support the

overall objectives of the work. In the event, this part of the budget was used to increase understanding of the livelihoods of the people living near the wetland, and also for scientific investigations of the water body itself. In both cases these activities could be seen as 'research for knowledge', the findings being of general relevance to the overall study but not directly supporting its objectives.

The second aspect of the work was research for policy, specifically to guide local policy makers on establishing a framework for sustainable management of the wetland. A considerable amount of criticism was made against the scope of the study, the way it was conducted, and the difficulties it had in engaging with local stakeholders. It was indeed a major undertaking, with staffing and resources massively greater than those available for the district government where it was located. As Lankford et al. (2004) show, the outcomes of the work were indeed greater knowledge and understanding of the multiple causes of these changes. Nevertheless the research team had great difficulty in communicating these ideas to the stakeholders in the basin and were never able to get them fully accepted. This was partly because the research challenged dominant views of reduced flows caused by overstocking and overgrazing perpetuated by pastoralists and demonstrated the strong effect of abstraction for dry season irrigation on reducing river flows. Dominant views proved difficult to shift because they could draw on the authoritative resource of quasi-scientific reasoning, reinforced by political and power relations. Overall, it reinforced the idea that good science by itself does not necessarily make good policy, although it did also go to show that, hitherto, bad science had supported bad policy. An incorrect understanding of the relationships between vegetation cover and water use had led the local authorities to develop inappropriate policies related to pastoralism. It is also worth noting that the study was seen as having a role in national policy making for wetlands, but the study team was reluctant to become involved in this. The vast amount of information that they gathered about Usangu only served to emphasise the importance of local knowledge and context in setting policy and they felt unable to deal at the level of abstraction required for national policy making.

The Usangu study also included a certain amount of research for practice. It was always envisaged that management policy for the wetland would be made through local government bodies, down to the level of the village government. A major component of the work during the first year was therefore to understand how these local government bodies worked and, in particular, to identify gaps in their processes and procedures which would act as a constraint on their engagement with the issues of the wetland. A team was set up to carry out a systematic survey of the villages in the basin and to derive from that a set of topics and approaches which could be used consistently in a programme of village government training. This training was then implemented over the next two years, with comparatively little further study to ensure that the lessons learned and outcomes remained appropriate and relevant to the issues being faced.

Overall, the work in Usangu provides a good example of a major study directed at the application of research for knowledge, policy making and practice. In all three aspects it was only partly successful, though it did undoubtedly result in a much greater knowledge and understanding of the causes and complexities of the situation, at least for some stakeholders. It was perhaps least successful in its main objective, the application of research for policy making, because it was not able to engage successfully with the dominant policy makers in the district. It also convincingly demonstrated, at least to the physical and social scientists involved, the need for continuing research both to achieve deeper understandings of the systems and linkages and to account for changes over time. The need for the long-term perspective in research is not, however, popular with policy makers and politicians.

It is worth noting that even amongst academics involved (from different disciplinary perspectives) there remain differing accounts of the knowledge generation process and the remaining gaps in knowledge and solutions to them. For example, despite the huge amounts of data generated by the project, Lankford et al. argue for *more*, in the form of detailed large-scale, long-term interdisciplinary research, centred on hydrological studies and irrigation, preferably associated with action-research initiatives to increase likely uptake of results. By contrast, Walsh (2006), avowedly unable to strictly disentangle his roles as academic and development practitioner in Usangu, gives an account of how the

politics of knowledge production (and insufficient reflexivity) about Usangu results in the reproduction, over time, of ignorance of the major fault lines of social inequality.

The existence of a clear divide between research and policy communities and the assumption of a linear model of research-policy influence has been questioned by researchers who suggest instead "a two-way process between research and policy, shaped by multiple relations and reservoirs of knowledge" (Young and Court, 2004). This echoes Burawoy's conceptualisation of 'public knowledge' as reflexive and instrumental, involving dialogue between academics and policy makers around questions of societal goals and the means of achieving those goals. The approach of Young and Court develops a more sophisticated instrumentalism. They suggest the need for researchers to develop better understandings of the political contexts within which policy makers work and the kinds of evidence credible to them, to better influence key stakeholders and networks in policy-knowledge formation. However, we can draw on Burawoy's thinking to identify the need for *both* researchers and policy makers to undertake critical examination of the assumptions and the values which underlie the research that we undertake. It is to the relationship between 'science' and 'power' in knowledge production, and the challenges of maintaining reflexivity that we now turn.

## KNOWLEDGE AND POWER

*At a consultation meeting to discuss the theme of governance in DFID's new water policy, contributions from participants were required to fit into the 'framework' of governance (comprising a set of normative principles: 'capability', 'accountability' and 'responsibility') published in the 2006 White Paper. The nature of the framework and its relevance to water governance was not for discussion as this was the accepted way of conceptualising governance within DFID. This approach was partially justified in terms of increasing the chances of other more powerful departments within DFID taking water seriously. However, it posed a challenge to the incorporation of contributions of the various external participants. For example, insights offered about increasing access to water from perspectives prioritising human rights, poverty and conflict did not easily fit within the pre-determined categories of capability, accountability and responsibility.*

## Policy models and epistemic communities

Interaction based on research-policy dialogue assumes a project in which common understandings (in this case of water governance) will be achieved. However, it is clear that the power dimensions of who defines the subject matter of governance and who sets the parameters of the subjects to be included are critical. Haas (1992) considers the role of epistemic communities in shaping policy decisions. He defines an epistemic community as a network of professionals with a shared set of causal and principled (analytical and normative) beliefs, a consensual knowledge base and a common policy enterprise (common interests). The role of such networks is critical when policy makers face conditions of uncertainty. Policy makers as 'uncertainty reducers' may call on networks of knowledge-based experts to articulate the cause and effect relationships of complex problems, frame the issues for collective debate, and propose specific policies and salient points for negotiation. Such a framing of the terms of collective debate may be self-reinforcing, in the sense that the boundaries assumed or defined shape subsequent negotiations, thereby bringing about preferred outcomes to the exclusion of all others (Haas, 1992). As Haas points out, the drawing of science into policy making does not *reduce* the political nature of policy choices which, being concerned with who gets what in society, and at what cost, are highly political in their allocative consequences.

Molle (2007) well illustrates the ways in which certain policy models and particular narratives of cause and effect become dominant. He suggests why the 'vision' of Integrated Water Resources

Management (IWRM) has become so ubiquitously adopted in policy and some of the problems of this dominant model. It is an attractive and woolly consensual concept, obscures the political nature of natural resource management in favour of technical/managerial fixes and is easily hijacked by powerful groups for their own agendas. Narratives and storylines, like policies, are self-validating as they tend to *produce* evidence. The snowballing effect, the embedding of particular models in interlinked epistemic communities, the resources attached to dominant concepts/policies, and the organisational (self-) disciplining of professionals, all contribute to the evolution of hegemonic policy models (Molle, 2007). The impetus to retain dominant concepts in policy and *not* to subject them to too much critical scrutiny was well illustrated in discussions about reformulating DFID's water policy. Some debate was expended on the desirability of retaining 'woolly consensual' terms like IWRM. For senior managers, such concepts may have significant authoritative weight; thus a senior official of the Global Water Partnership (GWP) commented:

In GWP we recognize the term has been overused, however it would be foolish to ignore something agreed at so many high level summits, where there is a very strong momentum in many countries with support from many donors. (...) The support provided by donors on IWRM has had a major impact on refocusing thinking on the non-structural aspects of IWRM and also to help cohesion across sectors and policies as well as bringing in the voice of stakeholders.

In a similar way, the concept of water governance emerged from ideas of IWRM, 'managing water wisely' and the World Water Vision of the Second World Water Forum to become accepted currency amongst water professionals. In the early stages, little effort was made to define what 'water governance' meant. It sounded like a good idea, and nobody would argue against it, so it was rapidly taken up by different groups to represent their particular interest. For example, the first World Water Development Report (United Nations, 2003) included public-private partnerships in the chapter on good governance, whilst for others water governance became a synonym for water management.

It was partly in response to this vague agreement on generalities that we set up the seminar series 'Water Governance: Challenging the Consensus', in order to unpick the concept and test whether there was a central idea on which all could agree. The experience of the seminar series illustrated that the epistemic community around water governance was not so consensual, dominant discourses were strongly challenged from the viewpoint of different disciplines and even the existence of an international consensus of water governance was disputed.<sup>6</sup> Differences between the academic discourse and the focus of policy emerged; for example, a dominant element of policy on water governance (based on unspoken neo-liberal assumptions) is the focus on overcoming corruption whereas this was not a major concern of most of the papers contributed to the seminar series. In first drafts of DFID's new water policy, anti-corruption measures and strengthening the role of private providers were strongly emphasised whereas several academics and practitioner (NGO) commentators felt that this underemphasised the existing role and necessary strengthening of public sector provision.

Such a juxtaposition of dominant concepts and dissenting voices posed a serious challenge to us in disseminating the outcomes of water governance research to policy makers (as will be seen below). It was clear that the dissemination of research results had to engage with dominant policy discourses, to use the currency of favoured terms and concepts (however woolly and unsatisfactory) in order to be heard by policy makers. But we were also keen to create space for questioning and dissenting views; to balance necessary instrumentalism with some reflexivity about the underlying assumptions and values of knowledge about water governance.

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<sup>6</sup> Papers from the seminar series can be found at [www.splash.bradford.ac.uk/projects](http://www.splash.bradford.ac.uk/projects)

## Knowledge and uncertainty

In negotiating knowledge for development, the roles of uncertainty creators (academic social scientists) and uncertainty reducers (policy makers) may be in tension. In our own work on water governance and poverty, in order to increase the chances of funding and to make the work of more interest to the development agency we adopted the title 'Water governance and poverty: *What works for the poor?*', in retrospect an ill-advised sub-title. Despite soliciting reflective case studies of experience from practitioners, reviewing substantial bodies of literature and analysing insights from papers presented at the seminar series and our own research, we were unable to produce easy answers to the question 'What works for the poor?' Indeed we entitled our final section of the report 'What we don't know: directions for future research', realising that we needed better studies of relationships across the spectrum of water governance. This led us to produce a framework enabling us to place instances of 'what works' in the context of wider societal resources, mediating mechanisms and the variability of socially situated agency and process.

For us, this research raised the question as to whether there is a need for an intermediate process of 'translating' knowledge into policy/practical alternatives that could then be debated as political options (rather than the over-simplistic uncovering of 'best-practices', which can unquestioningly be adopted). A project undertaken in Kenya, Pakistan and Zimbabwe sought to improve the dissemination of DFID-funded research.<sup>7</sup> Working with partner university departments in each of the three countries, constraints to uptake of research were reviewed, and potential subject matter for increased dissemination identified in relation to local needs. Appropriate forms of dissemination were identified and teaching/training material prepared, tested and evaluated prior to wider dissemination to other universities and training institutions. Although it showed a promising approach to putting research into use, the efforts were primarily directed towards a very specific group of potential users, academics and young researchers in universities, and little opportunity was taken to reflect more widely on the issues and constraints of putting research into use.

In the debate about DFID's new water policy, several water professionals raised concerns that there was too much focus on the content of the policy, too little on processes of translation, creating adaptive learning environments and building 'knowledge communities' around policy. Whilst the focus was on devising policy to 'speak' to national governments and DFID's country offices, there was a concern amongst professionals about how the policy was to 'trickle down' to operational levels; what actions and interventions would help to create both the expertise and the culture in relevant organisations to further this?

## RECONCILING LEGIBILITY AND COMPLEXITY

*At a meeting with DFID advisors a researcher was asked to report on emerging findings from the review study 'Water Governance and Poverty: What Works for the Poor?' Halfway through a brief outline of six key thematic points the presentation was halted by the Chief Scientific Officer. He claimed that six points were too many and too complex – that it was the excessive complexity of issues that had hitherto prevented prioritisation of water in DFID policy, and approaches based on complexity that had failed to produce results. The researcher responded by arguing that policy making and practice could only be effective if it engaged with the complexity of people-water interactions. The debate was left unresolved.*

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<sup>7</sup> [www.itad.com/newweb/comdev/knowman.aspx#](http://www.itad.com/newweb/comdev/knowman.aspx#)

### **Abstraction, simplification and prioritisation**

Both the construction of frameworks and the writing of policy require processes of abstraction, simplification and prioritisation. Such processes are particularly important for policy makers, in order to render the complexities of the social relations around water legible, to make it possible to formulate generic rather than site-specific policy. The lens through which state actors view water governance tends towards prescriptions for codification, formalisation, and clarification of complex webs of relationships, in accordance with Scott's analysis of state perspectives on complexity (Scott, 1998).

Necessary simplification of policy direction can give rise to tension at the interface with research. Policy models often differ from research-generated models in that they are informed by a normative vision – a hypothetical presumption about an idealised state of affairs, often the photo-negative of perceived existing inadequacies (thus the vision of working towards *integrated* water resource management to replace fragmented and unsustainable current forms, Molle 2007).

Mowles (2007, 2008), further critiquing 'visioning' processes for formulating policy and practice, suggests that such processes create idealised models of the future, the realisation of which would require radical and qualitative discontinuities with the past. He argues that such visioning processes are based on naive and unrealistic views of how change comes about and increasingly informed by systems theory. Mowles characterises systems theories as ideas that organisations or societies are wholes with boundaries, and that wholesale change is possible by making changes to the way the parts interact with the whole, based on assumptions of predictability and control. Though useful in spheres where they assist in the modelling of known cause and effect (such as engineering) he argues that they are less useful in accounting for change, complexity and the unpredictability of human interactions. Contributing to the growing literature critical of the dominant discourse of managerialism in development, he suggests instead an approach based on the recognition of complexity and the need for reflexivity, for seeing strategy-making as the continuous and skilful improvisation with others and the repeated re-exploration of the consequences of that improvisation.

### **Scale, level and focus of understanding**

In formulating frameworks for analysing governance we are necessarily concerned with addressing processes occurring at macro, meso and micro levels, in different spaces, over time (as well illustrated in Agrawal's 2005 study of environmentality). This poses certain conceptual challenges to academics in theorising across scales whilst at the same time proposing tools of analysis of processes and outcomes which can be grounded in place (Batterbury and Fernando, 2006). Focusing on the spaces within which governance takes place is challenging as they are likely to be multiple, manifesting with varying frequency, not necessarily directly attributable and changing over time. As Batterbury and Fernando point out, changes in governance arrangements through willed interventions have multiple effects including the altering of power relations, possibly including the power of some to subvert 'good' governance.

In Usangu, Tanzania, where the wetland management project focused on the river basin as the unit of analysis, it became clear that river-basin boundaries poorly reflected people's social relationships and migration patterns) their economic/trading networks and political affiliations. Although analysis of the causes of environmental change took place within the parameters of the river-basin boundaries, effecting change in attitudes to such change proved most effective at other levels – through dialogue at national level for example (Lankford et al., 2004). Additionally, certain stakeholders, such as the politically marginalised pastoralists, sought support for their rights outside the basin at national and regional (East African) levels (SMUWC, 2001). Thus an appropriate level of analysis of water access and management may not coincide with the most effective level for communication, advocacy and brokerage.

Space and location are implied in implicit policy assumptions about the 'trickle-down' effects of good governance. According to this ubiquitous assumption, the adoption of principles of 'good' governance

(such as capability, transparency, accountability) at national level trickles down (possibly through the generation of 'best' practices) to secure 'good' outcomes for people. In our framework we have tried to provide a way of conceptualising governance across scales, of identifying how processes of governance are produced and reproduced at different levels of society. Whilst originally conceived as an aid to understanding water governance interrelationships at the meso and micro levels, there is no reason why our framework should not be applied to a macro level analysis too.

The common elision in policy of the concepts of *government* and *governance* in policy (Batterbury and Fernando, 2006) is no accident. Governments see themselves as prime facilitators, the main actors in securing 'good' governance and development agencies such as DFID are statist organisations. As we have seen in a previous section, seeing like a state involves a certain tunnel vision when it comes to the complexity of social relationships. This is no surprise when we examine the mechanisms at the disposal of governments in devising and implementing policy; mainly dialogue with national governments and through established organisational structures. At one of the consultation meetings for DFID's new water policy, one civil servant suggested the need for 'local policy committees' to critically examine policy and translate it into contextualised plans for local action. After some discussion it gradually emerged that for the civil servant 'local' did not mean village, ward, district or even regional level but committees operating at recipient *country* level. A 'local policy committee' therefore was conceived as a forum for translating London-generated policy into a nationally acceptable shape. By contrast, most of the water professionals in the room were concerned with water governance processes at more immediate (subnational) levels where they interacted directly with people's livelihoods.

### **Communicating ideas: Lists, matrices and frameworks**

The tensions between instrumentalism and reflexivity discussed earlier in this paper are reproduced in the communication of ideas across the research – policy interface. Our experience is that researchers and policy makers favour different types of presentation, and find unfamiliar forms of concept presentation difficult to engage with.

Our work on the Water Governance and Poverty project in 2005 led us to frame a number of questions relating to the way people interact with water and the need for further research and understanding in key areas (Cleaver and Franks, 2005). In subsequent discussion with the funding agency, it became clear that an output phrased in terms of questions was unsatisfactory. We therefore subsequently refined these ideas into three issues for senior policy officials, highlighting the main areas which we considered important foci for policy making. In making the outcome of this programme of work more widely available for dissemination through the Insights series of briefing papers (ID21, 2007), we were encouraged to identify guidance points for practitioners (and to abandon discussion of issues like the 'politics of water' which could not easily be distilled into bullet points for action).

Researchers, policy makers and practitioners use a variety of means to communicate ideas, arguably one of the most important being face-to-face communication (Young and Court, 2004). Here we consider a variety of written means of conveying ideas which involve various degrees of simplification and complexity. At the most basic level, lists are used to guide thinking, particularly for 'busy' policy makers, and these are often presented in the form of bullet points. Thus, the outcome of our water governance work was summarised for the UK's Secretary of State for Development in the form of three bullet-pointed paragraphs on a single side of paper. When the same research was presented in a six-page briefing paper for the ID21 Insights series of the University of Sussex (ID21, 2007), great emphasis was put on summarising topics in bullet points because ID21 surveys show that policy makers and practitioners like to receive the information in this way.

Lists can also be presented in the form of checklists, as items to be noted off if desired outcomes are to result. A number of checklists are in common use in the water sector, of which perhaps the most notable are Ostrom's 'design principles'. These emerged from Ostrom's work in the late nineteen eighties on self-governing institutions for irrigation management (Ostrom, 1991). As they were



presented in a convenient and easily accessible format of 10 principles, they were readily assimilated by practitioners looking for guidelines for institutional design, and continue to be quoted to the present day. For example, a recent edition of a farm bulletin for irrigators in the UK re-quotes them as 'abstractor group design principles' (Leathes, 2007). The Ostrom design principles give an excellent example of a practical social theory providing a convenient way for practitioners to take up an approach, without having to assimilate the underlying concepts. It is, however, worth noting that Ostrom derived the design principles through a rigorous set of theories which are communicated in different ways, for example through frameworks, as discussed below.

An alternative to the simple list or checklist approach is the 'toolbox'; an example of the checklist approach can be found in the Global Water Partnership's 'Toolbox for Integrated Water Resources Management'.<sup>8</sup> This comprises a list of pragmatic approaches to IWRM, covering such matters as policies, legislative frameworks, financing and incentive structures and so on, but without trying to highlight linkages or relationships between them. The very notion of a 'toolbox' suggests that the 'tools' can be scanned and then individual tools utilised to address specific issues or problems.

It is clear from the frequency with which bullet points and lists are used in water policy making and practice that they provide a popular and accessible mechanism for communicating ideas. However, the simplicity which makes them accessible is also a weakness, since they do not require the users to make the linkages and relationships between the different concepts. An additional level of complexity which goes some way to do this is provided by presenting ideas in tables or matrices, in which the cells present a range of situations, which may be linked or contrasted with one another. For example, the recent initiative by DFID to update their water resources policy took as one of its starting points a table of governance attributes such as state capability, accountability and responsiveness (the row heads) against governance arenas such as basic services and water governance (the column heads) and tried to define an action point in each cell of the table.

Tables and matrices extend the communication of ideas beyond bullet points and lists, and bring with them the need to consider alternatives and contrasts. However, frameworks are the favoured approach for communicating complex ideas and interrelationships. Water governance is a fertile ground for such frameworks and several good examples exist which show interesting similarities in approach and understanding. For example, the recent report of the Comprehensive Assessment for Water Management in Agriculture (Molden, 2007) sets out a framework, which underlies the way the report is structured and helps the reader to locate the range of topics covered to a consistent mental map. This framework highlights the links between drivers of change, the resource base and outcomes and impacts, with overarching linkages to goals. Maria Saleth (2006) presents a more detailed framework for the context and pathways of the impacts of water resources on the Millennium Development Goals, showing how drivers such as demographic and climatic change act on water resources through the various water sectors (irrigation, water and sanitation, ecological effects) to produce outcomes in terms of the millennium development goals.

These frameworks have in common the representation of linkages between states and processes in a system. They help users to investigate cause and effect, to understand how changes in one part of a system may have implications elsewhere, and to see how the resulting outcomes may vary. In contrast to the presentation of checklists and bullet points, frameworks represent an attempt to define an explanatory methodology (Archer, 1998) which illuminates the underlying linkages and relationships.

Fischer et al. (2007) engage with critiques of policy frameworks as systems of representation that are self-referential, shaping actors' views of implementation and evaluations and thus leading to the production of 'evidence' which fulfils expectations of the model (Mosse, 2004). Whilst acknowledging the danger, Fischer et al. argue that without explicit frameworks, norms and implicit ideas about relationships remain opaque and therefore less amenable to reflective criticism. They argue for well-judged use of frameworks for analysing governance, accompanied by critical self-reflection and checks

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<sup>8</sup> This can be found at [www.gwptoolbox.org](http://www.gwptoolbox.org)

of the political discourses and development interventions that shape their translation into interventions. Maria Saleth (2006) suggests that the challenges of using frameworks include judicious choice of context, level of analysis and focus.

The dearth of such reflectiveness and the lack of conceptual vigour employed is lamented by these authors who see reflexivity and critical dialogue as hampered by the boundaries between scientific disciplines and regional and sectoral specialisations.

## CONCLUSIONS – TOWARDS CRITICAL KNOWLEDGE COMMUNITIES

Writing this paper has led us to a reconsideration of the respective expertise of policy makers and researchers and the need for greater critical consideration of the ways in which knowledge of water governance is formulated, communicated and translated into action. There are a number of implications of developing stronger critical 'knowledge communities' relating to water and bringing researchers and policy makers into meaningful dialogue. Longer timescales may be required for generating joint understandings. Acceptance of experimentation and learning approaches could facilitate productive reflexivity. Recognition of the value of theorisation in explaining why and how particular certain water governance arrangement works could also help in the development of more coherent strategies and integrated interventions.

Our experience suggests no direct and automatic link between the dissemination of research findings and impact upon policy makers. Perhaps it would be useful to identify multiple stages of generating and negotiating the uptake of knowledge around water governance. These stages could include (here grossly compressed and *not necessarily in linear order*) (1) generation of understanding (research), (2) definition of policy options/alternatives, (3) policy choice, and (4) evaluation of policies in the light of (new) understandings generated through research.

Despite the challenges that we have experienced in negotiating the research-policy interface over water governance, we remain of the opinion that our framework provides a useful way of analysing and comparing arrangements for water governance that steers a way between extreme localism and universalising positivism.

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