

Strengthening Integrated Water Resource Management through institutional analysis: towards an analytical framework for projects and programmes

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Abstract

Despite the broad consensus of support for the concept of IWRM, many IWRM projects, especially those in Developing and Transition (D&T) countries, have been criticised recently for failing to address adequately the prevailing political and institutional circumstances at local, regional, national and transnational scales. There is an acceptance that water problems are not merely 'natural' or 'technical' but are rather a problem of 'governance'. It is increasingly recognized that IWRM project managers need practical support on the ground to help them tune their interventions to fit the institutional and political contexts of implementation. This paper lays the foundations for an analytical framework for assessing the institutional contexts of IWRM projects in D&T countries. To achieve this and in the process move beyond the 'toolbox' approach, this paper argues that a more thorough appreciation of the inherent politics of water and the shortcomings of current practices of IWRM is required. A literature review identifies the key institutional challenges and politics of IWRM in D&T countries, emphasising the disjuncture between global norms, policies and practices of IWRM and local contexts of implementation. Building from this the paper concludes by noting key components for an institutional analysis that might encourage a context-specific, politics-sensitive form of IWRM.

Keywords: IWRM, institutions, analysis

“There remains a powerful disjuncture between the globally-derived and disseminated ideals of IWRM as formulated by a privileged cohort of experts and interested state/non-state actors and the realities of water management at the very local level of the resource itself...we cannot help but conclude that the ideal of IWRM, hammered out at global level, has been parachuted into and rests lightly upon a complex local setting with nested social practices not easily given to amendment or displacement” (Swatuk 2008, 887).

1. Introduction

IWRM has been the subject of increasing and wide ranging criticism in recent years. Indeed there is a sense in the literature that IWRM as a concept and set of practices is, if far from devoid of any value, then in need of fundamental reform. In Developing and Transition (D&T) countries criticisms of the ways in which IWRM has been implemented are usually more intense due to the fact that implementing IWRM entails the introduction of often alien, always complex institutional structures, management logics and practices. Further IWRM projects are often prone to the faults perceived of development in general: the imposition of models emanating from developed countries contexts, short-termism and a lack of resources.

As indicated by the quotation above, this paper highlights the emerging argument that a sensitivity to the institutional and political dimensions of water management is fundamental to achieving any measure of success in implementing IWRM. This should, in turn, lead to a realism and pragmatism in the pursuit of the goals of ‘integration’ and an appreciation of the contingencies and complexities of water management. For these reasons, it is argued there is a need for further research on how IWRM projects can better tailored to context-specific institutional and political conditions.

This paper lays the foundations for an analytical framework for assessing the institutional contexts of IWRM projects in Developing and Transition (D&T) countries. To achieve this and in the process move beyond the ‘toolbox’ approach, it is argued that a more thorough appreciation of the inherently political quality of water governance and the shortcomings of current practices of IWRM is required. The paper reviews the literature on the institutional dimensions and politics of Integrated Water Resource Management (IWRM) with particular reference to experiences in D&T Countries. The aim is to highlight the key issues identified by researchers, discuss the challenges these represent to the implementation of IWRM projects and consider ways of reforming IWRM. From this review, the paper concludes by sketching some ideas for an analytical framework. Reflecting upon both tools and frameworks utilised by practitioners in the field and approaches to institutional analysis prominent with social sciences, the paper argues for a rigorous and continuous analysis of the institutional opportunities and constraints of implementation contexts. In particular, there is a need to better incorporate discourse and the ‘politics of water’ (Mollinga 2008).

The paper will: outline the background to IWRM and define it as a concept and discourse (Section 2); discuss the general institutional and political challenges of IWRM (Section 3); address the specific challenges to rolling-out IWRM in D&T Countries (Section 4); summarise proposals for reforming IWRM to overcome political/ institutional challenges as found in the literature (Section 5); and conclude by discussing ideas for an analytical framework to be developed in the future (Section 6).

2. (Defining) IWRM as Concept and Discourse: background and emergence

Emergence of IWRM

According to the most commonly used definition, IWRM is a “process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems” (Global Water Partnership 2000). In practice it is understood to refer to three inter-related management processes centred on the river basin: the joint, multi-scalar/ multi-level management of surface and groundwater; the cross-sectoral integration of water use and the use of one other resource: or, more generally, an integrated approach to the use of a range of resources (Huppert 2005).

Although integrated approaches to land and water management were apparent earlier in the 20th century (Biswas 2004, 249), IWRM emerged as a coherent discourse, concept and set of practices between the late 1970s and the late 1990s. During this period it evolved from being “an expression of frustration on the part of water planners and managers to become the dominant language in which the challenge of global water governance is framed” (Conca 2006: 125). It emerged from the perception amongst water professionals that many of the ever-growing water problems were the result of the highly fragmented nature of water management itself: a lack of coordination between governmental/administrative ministries; the failure to consider the downstream effects of actions in upper catchments; inattention to water quality issues; the failure to consider the linkages between ground water use and surface water use; the absence of integrated approach to land and water management; and a disregard for the ecological and social effects of water management (Molle 2008, 132).

IWRM was presented as the panacea for these problems at international conferences (notably Mar del Plata in 1977, New Delhi (1990) and Dublin (1992) and was institutionalised at the international level through the establishment of the World Water Council and the Global Water Partnership (GWP) in 1996. It is very much a product of the times, inter-related to and shaped by the 1990s global discourse and policy agenda of “market environmentalism” (Bakker 2004). For example, the Dublin Conference declared that water had economic as well as societal and ecological values. While this was an official endorsement of the role of the private sector (and privatisation, liberalisation and commercialisation as policy measures) in tackling global water problems, IWRM, to its supporters at least, promised a means of resolving the potential for conflicts between these different values. It can be seen as a water sector-specific reflection of the broader political discourse of sustainable development: of the feasibility of achieving positive-sum outcomes from the inter-relationships between environmental, societal and economic objectives. As the GWP states, IWRM is a process that “promotes co-ordinated development and management of water, land and related resources, in order to maximise economic and social welfare in an equitable manner without compromising the sustainability of vital systems” (GWP, 2000: 22). In theory, then, IWRM provides a platform to improve ecological conditions through integrating land and water management, to promote equity through increasing access to water and to increase efficiency in water use (Butterworth *et al.* 2010: 69).

As commentators have pointed out the obvious attraction of IWRM lies in its apparent commonsense, its “intuitive reasonableness” (Conca 2006: 126-7): its faith in consensus-building through communication and participation (Saravanan *et al.* 2009) and emphasis on problem-solving informed by technical and scientific knowledge (Molle 2008, 133). It appears, on the face of it at least, to offer something for everyone. Business opportunities to the private sector, the prospect of greater efficiency for water supply companies, the hope of a healthier, securer life to water users, the prospect of a sustainable environment to environmentalists and the solution to policy problems for governments and international organisations. Finally, of course, it offers a framework for water managers to manage these conflicting interests and objectives. Given this it is not hard to understand why IWRM has become the global paradigm of water management, a key development objective in D&T Countries, promoted by governments across the world, international institutions such as the UN, NGOS, the private sector / water businesses and many academics.

A meaningless buzzword? Backlash: reasserting the ‘political’ in water management

From this brief overview, it is evident that IWRM is highly ambitious, emerging from a desire to overhaul water management in the face of a perceived crisis. Further, it presents water management in relatively unproblematic, apolitical terms. Despite, or as a result of these grand promises, IWRM as a concept and discourse has been increasingly questioned by academics and professionals alike. The main thrust of criticisms is that the rhetoric of IWRM (centred on integration, consensus and scientific knowledge) brushes over the diverse range of actors, knowledges and interests in water resource management and the likelihood of conflicts to emerge between them. In other words, it works to conceal the inherently political quality of water management (Mollinga 2008). The conflicts and power relations innate to water managements are obscured from view in what Molle (2008) describes as the “Nirvana Concept” of IWRM. By this Molle means that IWRM embodies an ideal image of water management (a nirvana) which, due to its ‘intuitive reasonableness’, is difficult to be against even if the chances of achieving it are low (Molle 2008, 132-3). IWRM’s potency lies not in the realities it produces but in its promise, the far-off objectives, to the extent that “the mere possibility of achieving them and the sense of ‘progress’ attached to any shift in their direction suffice to make them an attractive and useful focal point” (Molle 2008, 132). Indeed, this may explain why IWRM continues, albeit less convincingly, to exert such a hold on global water management despite growing evidence of the difficulty of implementing IWRM, particularly in D&T Countries (as later sections reveal in more detail).

This appeal to a nirvana has had important discursive effects in global water management. IWRM is “an attractive yet woolly consensual concept” (Molle 2008, 132), which works to obscure the inherently political character of resource management (Allan 2003). Appeals to economic, environmental and equity objectives and promises of securing some kind of consensus overlook the need for compromises between actors on the ground and the fact that such compromises may be hard to achieve between actors who are often inherently antagonistic (Molle 2008, 133). The main charge against IWRM here is that it is rooted in an overly-idealistic faith in the potential of discussions between reasoning actors to produce consensus (Saravanan 2009).

In reality, actors simply may never be willing to make the compromises necessary to bring about consensus or to facilitate the smooth implementation of new institutions and practices. Actors may never even be empowered to make genuine decisions within the context of IWRM projects: appeals to consensus run the danger of concealing long-standing power asymmetries, which when push comes to shove, will exert themselves (Molle 2008, 133). In other words, there is an inherent risk that people continue to do what they always did but receive more funds and acceptance from national and international actors to do so (Biswas 2004). Striking examples of this tendency are the problems which emerged in the implementation of IWRM reforms in Zimbabwe and South Africa where, although IWRM provided “a consensual starting point in a context of racial discrimination”, long-standing political tensions and inequities never disappeared (Molle 2008, 133). As such cases reveal, IWRM can provide a hitherto absent legitimacy for inequitable institutional arrangements and practices. Processes of ‘consensus-building’ can be manipulated by more powerful actors to justify actions which bear little resemblance to the stated objectives of IWRM. Indeed, some have argued that the main problem with IWRM is the very fact that it does not denote a detailed set of practices. It is rather a set of platitudes: too general and grandiose to generate common understanding and adherence to a shared set of management practices (Biswas 2004). Or simply a “buzzword” (Jonch-Clausen and Fugl 2001) used by virtually everyone but meaning something entirely different to each of them.

A second strand to this criticism is that dominant understandings of IWRM promote the view that water problems can be resolved through “good science, rational and neutral problem-solving” (Molle *et al.* 2008, 4). This appeal to scientific and apparently neutral expertise in the IWRM paradigm also works to obscure the political nature of water relations. It can legitimise a technocratic vision of water problems and result in the promotion of technocratic solutions to what are often inherently political or institutional problems. IWRM, like any other concept in policy-making, is not neutral or merely scientific. As Molle (2008, 132) states, its emergence and implementation has been bound-up in “complex webs of interests, ideologies, and power” which have shaped the options that have been pursued, rejected or ignored and the range of actors which have been empowered or marginalised.

The overarching criticism is, then, that the promotion, institutionalisation and implementation of IWRM have worked to depoliticise global water management. The IWRM discourse of an impartial, apolitical approach to resource management is, of course, fundamentally political. It has resulted in the promotion of one vision of resource management based upon a range of partial assumptions about, for example: the – economic - value of water, the role of science/ scientific knowledge, the potential for and merits of consensus, and the transferability of institutional, technological and management practices from the Global North to the Global South. Such was the extent of this depoliticisation that IWRM had become a ‘sanctioned discourse’ at the end of the 1990s/ early 2000s (Allan 2003), at least within the formal institutions of global water management.

Growing frustration was, however, apparent within the broader water policy-making community around this time. The Second World Water Forum (The Hague, 2000) revealed contests over some of the fundamental assumptions of water governance and IWRM. Debates on, amongst other things, privatisation and liberalisation, water rights and dams, drew out deep-seated political differences over: notions of public-private, market vs. non-market instruments, scientific vs. local knowledge, economic good vs. basic right, local community engagement vs. state agreements (Moss 2010). Such conflicts highlight the intransigent ‘politics of water’ (Mollinga 2008): the differences, in morals, beliefs and ideologies, which shape even the most - apparently - technical decisions in the water sector.

The continuing relevance/ utility of IWRM

Despite this criticism, IWRM is still generally seen, even by some of its strongest critics, as a useful departure point and forum for the discussion of water governance. Such an outlook rests on the view that IWRM still provides opportunities for developing new forms of water management. In large part this may be because there has, in response to the above criticisms, been a discernible shift in official

circles to accept that water issues are not merely technical or institutional but also political in character. This was accepted by the United Nations Commission on Sustainable Development (CSD), in a statement which also acknowledged the inherent challenges of overcoming conflicts between stakeholders rather than merely mentioning the need for participation (UN 2008 in Chene 2009, 3).

Such developments have allowed politics to re-enter the formal discourses on global water management. To some critics of IWRM (Butterworth *et al.* 2010; Molle *et al.* 2008, 4; Saravanan *et al.* 2010; Mollinga 2008) IWRM, despite its many flaws has ultimately provided a means of achieving a greater sensitivity to the politics of water. It has arguably increased the “space for explicit discussion on ‘the political’ in water resources management” (Molle *et al.* 2008, 4). It has been described as an “important conceptual vocabulary” (Conca 2005, 5) or “boundary concept” (Mollinga 2006, 2008, 5) for the negotiation of new meanings of water resources management. In this sense the lack of specifics, the lack of shared understandings, the essentially vague conceptual basis of IWRM as problematic as they are, also provide opportunities for opening up the discourse on water management. Different groups of actors have learnt how to “mobilise IWRM and other mainstream concepts to promote their agendas and contest the status quo” (Molle *et al.* 2008, 4). The overall message from these constructive critics is that, IWRM has, at least, shifted the discursive parameters of global water governance away from the solely technocratic, social engineering (Mollinga *et al.* 2008) approaches to water management, even if it has not quite escaped its reaches.

3. Implementing IWRM: Institutional and political challenges of IWRM (in D&T / European Countries):

The complexity of water management and the challenge of IWRM

Water management, beyond being inherently political, should also be seen as innately complex. Solving water problems depends on a diverse range of factors: the institutional arrangements of water management, the socio-political context which frames planning, development and management processes and practices, the character and effectiveness of legal frameworks, levels of funding, the social and environmental contextual conditions, access to technology, local/ regional, national and international perceptions, forms of governance and governance ‘issues’ (e.g. transparency, corruption, etc.), educational and development levels, and the quality of research on water problems (Biswas 2004, 248). IWRM, the adoption of an integrated approach, can be seen as a response to the complex “mosaic” nature of the problem (Lankford *et al.* 2007, 1). However, the very adoption of an all-encompassing approach (the goal of achieving integration) must be seen as both highly ambitious and very challenging to those involved in implementing it.

It is also important to emphasise the size of the challenge IWRM presents and the degree to which, despite the apparent clarity of general objectives, IWRM has been understood and implemented in different forms. One of the most prominent and harshest critics of IWRM, Biswas (2004), has argued that not only is there no common understanding of IWRM (a way of implementing integrated approaches to water management) the means to operationalise it have yet to emerge:

“it has not been possible to identify a water management process that can be planned and implemented in such a way that it becomes inherently integrated however this may be defined, right from its initial planning stage and then to implementation and operational phases” (Biswas 2004, 250).

In Biswas’s opinion, the nirvana concept of IWRM, remains just that: a set of grand, far-off objectives and principles, which, in terms of actual water management are unachievable and even unhelpful. Nonetheless, IWRM, in “an idealized form” (Lankford *et al.* 2007, 1), has been and continues to be promoted. Those charged with implementing it are confronted with a large number of complex tasks to perform, many of them simultaneously. In their review of IWRM, Saravanan *et al.* (2009, 78) observed three foci in reform programmes:

1. The enabling environment: policies, legislative frameworks and financing,
2. Institutional roles: institutional structures and institutional capacity building,
3. Management instruments following the Global Water Partnership (GWP) Tool Box

Before considering the experiences of implementing these policy packages and tools, it is necessary to consider more generally the challenge they pose, especially in D&T countries. IWRM has its roots

and has been developed in Developed Countries (Ref.). In general terms, though always with exceptions (see Monsees 2011), the 'fit' between IWRM and existing water management structures and practices is easier to achieve in developed countries. IWRM should be seen as a highly political venture in D&T countries, where principles of IWRM, river basin management for instance, are usually alien. Here IWRM proposes, in theory at least, the implementation of a new institutional system for managing water, which, in turn, entails fundamental shifts in decision-making power in often finely balanced socio-political contexts (Swatuk 2005).

The Politics of IWRM in D&T Countries

While resistance to reforms and the persistence of power relations can characterise IWRM implementation in all contexts, a crucial difference between D&T Countries and Developed countries is that IWRM is a component of development projects and discourses. Consequently IWRM projects are framed within the particular politics this brings with it e.g. transnational vs. local actors, global-norms vs. local norms, etc. (Swatuk 2005, 874). Swatuk goes on to make a more general point that IWRM projects should be seen as creating new contexts of action, in which new sets of relations and new sets of concerns need to be negotiated by actors. Again, the message is that IWRM has to be understood in political as well as technical terms and usually even more so in D&T Countries where it entails or at least promises/ threatens major upheaval and disturbance to the social and political context. IWRM is, after all, ultimately about water control (Mollinga 2008). The aim is to:

“fundamentally reconstitute how resource access, allocation and use decisions are made. This is a profoundly political act which challenges the very bases of power in many of these societies. Resistance is to be expected” (Swatuk 2005, 878).

IWRM projects in D&T Countries are not, however, only framed by development politics but by the forms of politics fundamental to water governance or what Mollinga (2008) classifies as the 'politics of water': attempts at implementing IWRM may thus open up new spaces of political action but they are also characterised by pre-existing politics. Indeed, they can be seen to provide a new environment for these forms of politics. First, the “everyday politics of water resource management”: the contestation of day-to-day water use and management; the usually small-scale politics of, for example, negotiating access to groundwater sources in a local community (Mollinga 2008; 11). Second, the “politics of water policy in the context of sovereign states”: the contestation of policy-making processes at the nation-state or regional level (Mollinga 2008; 11). Third, “inter-state hydro-politics”: the water conflicts and negotiations between states over, for example, water allocation and distribution (Mollinga 2008; 11). Finally, the “global politics of water”: the institutions, policies and regulations which have emerged since the 1990s e.g. World Water Forum, the privatisation movement and the World Commission on Dams (Mollinga 2008; 12).

Ultimately IWRM projects can be beset by institutional and political challenges which are at once generic and intrinsically specific to the context of implementation. They might be exposed to and need to address all or only some of the types of politics listed above. Political challenges could be a mix of the everyday, the global and the inter-state and could therefore be populated by different sets of actors, address different sets of issues and occur within different sets of institutional arrangements (Mollinga 2008, 12). IWRM creates its own politics, re-shaping or indeed creating new contexts of action. It has a discursive as well as an institutional dimension, in which power struggles shape the creation of new water practices. “IWRM constitutes both a discursive site and multilateral landscape where various forms of power — political, social, cultural — are exercised in the production of new social practices” (Swatuk 2005, 874).

Institutional Challenges of implementing IWRM

After around 20 years of efforts to implement IWRM around the world, general assessments of its success in tackling water resource problems have become increasingly critical (Biswas 2004; Butterworth *et al.* 2010; Molle 2008; Saravanan *et al.* 2009). Biswas (2004) has gone as far as stating that IWRM has led to no real improvements. Even international institutions who have been the biggest promoters of IWRM, such as the World Bank have accepted that its benefits have been negligible (Blomquist *et al.* 2005) or that its implementation has, at best, been partial (GWP 2005 survey 2006). As Butterworth *et al.* (2010, 70) state “IWRM reforms and implementation have been costly and time-consuming while the benefits are yet to be seen.”

While it is important to state that criticism of the impacts of IWRM reforms have not been uniform (for a more positive assessment see e.g. Jonch - Clausen 2004), a growing consensus is apparent on the generic problems of implementation and institutions continue which promote IWRM, such as the GWP, have increasingly refined their proposals (reflected in the GWP's management support system, Toolbox). These can be seen to be: institutional fit and interplay and related problems of scale (integration in existing structures and coordination of efforts); equity, participation and accountability; and a general lack of sensitivity to historical/ social/ political context.

Achieving institutional coordination and integration (Fit and Interplay)

Achieving integration in water resource management typically entails considerable upheaval in existing institutional arrangements, particularly in D&T Countries (as the next section will detail). IWRM aims for the integration of management at the river basin level. It embodies the objectives of 'governance', a move away from top-down hierarchical decision-making to decentralised, participatory decision-making. More specifically, achieving the objective of integration faces two key institutional challenges: a) the need for greater coordination between different sectors of resource management to implement policies, b) the need to coordinate across different levels of government/ institutional settings. A third challenge arises from the accepted institutional reform designed to facilitate an integrated approach at river basin level and the creation of a new institution, the River Basin Authority (RBAs).

Implementing IWRM entails the creation of a political/ formal institutional environment in which a holistic approach to policy-making concerning water and related resources can be created. For such an approach to be achieved, implies the coordination of a range of institutions involved not just in the water sector, but also in other related sectors e.g. water, environment, forestry, rural development ministries, and so on. This provides a major obstacle to integration because policy-making and institutional interests can vary across these different sectors and often result in contradictory policies on the ground (Saravanan *et al.* 2009, 78). As Moss (2003a) has noted, the integration of land use and water resource management is, in general, blighted by problems of both 'fit' and 'interplay'. Although there is general agreement that the river basin should provide the 'blueprint' for IWRM, there are, at any one time, institutions from a range of sectors and a variety of government scales/ levels involved in water resource management, from State governmental to village heads in the developing country context (Saravanan *et al.* 2009, 78). Problems of institutional 'fit' arise not simply because of competing and contradictory policies and interests, but because of a discrepancy between institutional and governance arrangements responsible for water and land-use issues and the ecological systems they deal with politico-administrative territories do not always match the river basin. These spatial problems of fit can also, however, be accompanied by functional and temporal problems. Institution's policy-making capacity and foci may not always reflect the complexity of ecosystems (Horlemann & Dombrowsky 2010).

The standard approach to these problems of fit within IWRM has been the establishment of a river basin authority (RBA). The aim is to ensure a river basin level focus, through creating an institution reflecting its spatial and functional scope and offering a forum for integrating policy and management. In most contexts, however, RBAs are an alien concept, requiring fundamental shifts in thinking as well as institutional arrangements. In terms of the institutional dimension, establishing an RBA requires new laws and policies, as well as major adjustments to existing institutional arrangements. It is a large undertaking one that can lead to the emergence of new problems of institutional coordination or 'interplay': 'vertical interplay', coordination between different levels of government (i.e. multi-level interactions) or 'horizontal interplay', between institutions at the same level, operating in different sectors. As IWRM seeks to replace sectoral approaches and hierarchical decision-making processes with governance-style arrangements, it leads almost inevitably to these problems of fit and interplay.

Adding further complexity to water politics is the varying time and spatial scales of issues, conflicts and negotiations. Certain local issues such as securing access to groundwater sources may be solvable within the lifetime of a project, while inter-state conflicts or the role of foreign private sector companies may have a discernable influence on IWRM/ water management projects but the contests over them are more likely to outlive them. Issues of scale add further complexity to water management, with actors working across administrative domains and hydrological levels to promote their interests. This fluid 're-scaling' (Swyngedouw 2004) of competences and discussion of issues pose particular challenges for coordinating the institutions of water management as studies of water resource management in the Mekong region have revealed (Dore and Lebel 2010).

Establishing RBAs and other institutions under IWRM can lead to new institutional problems, particularly in D & T Countries, where they have been established as a 'standard' package, with little attention paid to existing institutions and practices of water resource management. RBAs and other standard measures of water management are alien to many contexts, which, furthermore, lack the capacity to effectively implement them. Butterworth *et al.* (2010, 70) state, furthermore, that the establishment of effective, legitimate RBAs, especially in D&T Countries is a long-term process, one not aided by the feeling that they are often "externally imposed or adapted to please donors" (a trait not so apparent in European contexts).

Establishing RBAs in this form, regardless of the existing institutions of water resource management, often leads to increased institutional complexity, competition and institutional fragmentation (Saravanan *et al.* 2009, 78). Such problems are extenuated by a lack of both finance and information regarding how RBAs and other institutions should actually be established and how they should be integrated with existing institutions (Saravanan *et al.* 2009, 79). There is also a fairly standard set of IWRM management instruments aimed, largely at the local level. Water pricing, conflict resolution forums and monitoring and evaluation methods are primarily designed to assist community institutions to make decisions at the river basin level. Again, however, such instruments can be entirely inappropriate to the context of implementation especially in D&T countries e.g. debate over water pricing in Mongolia, instrument seen as "political suicide" (Horlemann & Dombrowsky 2010, 15). As with the establishment of RBAs, the problem is that the success of implementing such instruments depends on the establishment of an institutional context appropriate to making decisions at the river basin level. A final additional problem is that IWRM initiatives tend to focus on the local level, assuming – falsely – that the regional and state levels have the capacity to implement integrated policies (Saravanan *et al.* 2009, 79).

Participation, accountability and equity

Ensuring the full participation of, and the achievement of equitable outcomes for, all relevant stakeholders is a fundamental objective of IWRM. However, the failure to achieve this and a general lack of concern for the poor and marginalised is one of the main criticisms levelled at IWRM. Butterworth *et al.* (2010, 72) state that IWRM was never a "people-centred" concept, having emerged from practitioners' ecological concerns over the then dominant utilitarian use of water supply and discharge. A charged levelled at many IWRM projects is that, while they pay lip-service to participation and equity, technocratic concerns still tend to lead implementation processes. Although the failure to focus on ensuring genuine participation and equitable outcomes may often be the result of a lack of political will or interest, it can often be attributed to institutional challenges. There is an assumption, rooted perhaps in the optimistic discourse of IWRM that stakeholders can, first, be easily identified and, second, be easily integrated in new institutional structures (Saravanan *et al.* 2009, 79). In reality there are a huge number of potential stakeholders in water resource management and they are not always identified in conventional approaches employed by governments, which tend to focus on obvious groups such as landed communities and residents of watersheds and fail to appreciate the multiple roles and interests actors have (Saravanan *et al.* 2009, 79). Flawed approaches to participation are the result, on the one hand, of policy-makers and managers underlying distrust of local communities' capacities, and, on the other, the 'ethno-romantic' tendency amongst NGOs that local communities share common values about water management (Neef 2009). The risks of such approaches are that they legitimise existing water resource management and the power and rights inequalities therein. They result in the marginalisation of the poor from the benefits from IWRM reforms and/ or overly-simplify the diversity of needs and interests of local actors (Saravanan *et al.* 2009, 79). In D&T Countries, IWRM projects are often linked to increasing social equity, particularly the poor and women though the reality suggests that the most projects, in reinforcing existing inequalities, have tended to favour wealthy actors and groups (Saravanan *et al.* 2009, 81).

General lack of sensitivity to historical/ social/ political context (esp. in D&T countries)

Underpinning these institutional challenges is the more general problem that IWRM projects are often insensitive/ or unaware of historic-socio-political contexts. The roots of this depoliticising tendency lie in the discourse of IWRM. As Butterworth *et al.* (2010, 74) state politics "is the predominant process determining how water (among other) resources is shared between potential uses, and the balance between environmental, economic and social values of water". Investing in institutional capacity building and establishing stakeholder meetings will not in themselves lead to consensual decision-making. It must, as stated, be accepted that the political differences may never be overcome. Furthermore, it is necessary to accept it is politics and the socio-historical contexts from which they

emerge which shape knowledge, beliefs (differences in belief) and ultimately water-related practices (Saravanan *et al.* 2009, 80).

Indeed, although political differences may, more often than not, be intractable, at least IWRM projects would benefit from addressing political realities of water management and, in the best case scenario, address and perhaps even find solutions to genuine problems. Such an approach may, even in cases where differences are not resolved, at least have the advantage of engaging actors in new institutional structures which do not replicate old, inbuilt inequalities. Engaging with the politics of water, might also help IWRM better address the issues relevant to people. It may therefore also bring with it the possibility of increasing equity, participation and accountability (Butterworth *et al.* (2010, 75).

4. IWRM in D&T Countries/ European Countries: specific institutional and political challenges identified in the literature

Rolling out IWRM in D&T Countries

IWRM has been implemented, with varying degrees of success, throughout D&T countries. As stated it has been promoted by international institutions such as the GWP, the World Water Council, the World Bank and the UN as well as national governments a key means of achieving development objectives of improving access to safe water supply and sanitation services and, more generally, alleviating poverty and improving peoples' lives. Generally, however, actual institutional reform remains limited (Mollinga *et al.* 2007, 700) and in most cases IWRM has been implemented in the form of externally-assisted projects and planning and scoping processes. Notable exceptions include Mexico and South Africa (Mollinga *et al.* 2007, 700). In the latter, IWRM is written into the country's constitution (1996) and a national legal and institutional framework incorporating many IWRM principles was established in 1998, though the actual translation of IWRM into on the ground practices has been problematic (Ballweber 2006, 74). Drawing on international support, Uganda and Burkina Faso have implemented multi-year IWRM planning processes, which have led to the creation of new national policies, strategies and laws for water resource management and development (Jønch-Clausen 2004, 9). Further key examples of IWRM include China's new water policies, Thailand and India's water reform processes and Brazil's wastewater reforms (Jønch-Clausen 2004, 9). IWRM projects in specific basins are, however, present in many other developing countries in Africa and Asia.

IWRM has also been promoted in transition country contexts of Central, Eastern and Southern Europe, including, for example, Bulgaria (Theesfeld 2003) and Central and Eastern Asian countries, such as Uzbekistan (Wegerich 2009). It should be noted that research on IWRM in transition countries is more limited, with most concentrating on links to farming and infrastructure management (Horlemann & Dombrowsky 2010, 4). As such, the following section concentrates on the

General Contextual conditions of D&T countries

There are, of course, usually fundamental differences between water management contexts in most D&T countries and developed countries (Hooper 2006, 3), all of which problematise the global implementation of a set of practices emerging from the developed countries context. Obviously the general availability of – human and financial - resources differs markedly between D&T countries and developed countries (as well as amongst them). In transition countries, the contextual conditions are likely to differ to those in developing countries as processes of rapid reform are often apparent. The introduction of a market economy and democratic structures, for instance, adds to the complexity of politico-institutional context and thus, in turn, any attempt at reform of water resource management e.g. apparent in Mongolia (see Horlemann & Dombrowsky 2010).

Whereas developed countries are characterised by temperate, humid climates, developing countries, D&T countries experience extreme weather, lower rainfall and higher temperatures. Water rights in developed countries are based on the riparian doctrine and prior appropriation and receive their water from service providers, while in developed countries rights are based on rainfall or ground water and receive their water from private or community storage tanks. As such water supply in developing countries is largely informal and thus more difficult to subject to water governance-type reforms implemented in developed countries. Environmental conditions are also different, with a focus on green water (water stored in the soil profile or lakes water stored in aquifers) in developing countries,

contrasting the focus on blue surface water (in rivers and lakes) in developed countries (Hooper 2006, 3).

Is IWRM appropriate to conditions in D&T countries?

Allan (2003) argues that the paradigm of IWRM jars with the needs and discursive contexts of water management in the Global South. Key components of IWRM are the river basin focus, demand management and the establishment of modern water rights, appropriate to most developed country contexts but much less suited to implementation in developing countries (Butterworth *et al.* 2010, 70). In Allan's (2003) opinion water management is, in general, still driven by the "hydraulic mission" of increasing supply and resource quantity through large projects such as building dams, etc. This jars with the IWRM paradigm, which aims to move beyond it. This classification is not always strictly true as Swatuk (2008, 883) stresses, IWRM unleashes complex politics, and leads to more subtle alliances between international and national actors. Nonetheless, Allan's argument highlights a crucial difference between many D&T countries and developed countries: that water shortages or insecure supply are major issues. IWRM policy packages are thus usually applied to water quality issues in developed countries, while in developing countries they are also used to address water quantity problems (Saravanan *et al.* 2009, 78).

Development politics and IWRM

IWRM in D&T countries is, as stated above, always framed within the development discourse, to lesser and greater extents depending on the context. As such it involves a wider range of actors, is attached to broader, additional objectives and encounters additional socio-political challenges. However, as Swatuk's (2008, 883) Botswana study suggests, implementing IWRM does not always fit with Allan's (2003) 'Northern outsider'- Southern insider' dichotomy. Though many state-level water policy-makers in developing countries are driven primarily by the objective of increasing supply (dam building, infrastructure expansion), with little concern for IWRM's environmental and equity concerns, Swatuk (2008, 883) observed they often formed partnerships with "high consumption" external donors, banks and engineering companies. Further partnerships of a contrasting nature were apparent at the river basin level, where external donors, outside the "government-business nexus" (e.g. NGOs), aligned with local actors in the pursuit of more holistic water management objectives. The overarching point to be made about IWRM and the development discourse is that it provides another political dimension to reforming water resource management. "Local actors, from landless peasant to NGO operator to national elite - are engaged in a continuous dialogue with national, regional and especially global actors, be they mercenary, missionary or fellow traveller" (Swatuk 2005, 874). Political divides and the coalitions of actors which emerge may not always be predictable but the presence of 'outsiders' adds to the complexity of implementing IWRM projects in D&T countries. Additionally, it must also be stated that the presence of often large amounts of foreign money has brought with it problems of corruption, from the village to the national government level.

Institutional Fit and Interplay

A problem also apparent globally, the problems of institutional fit and interplay are often more acute in D&T countries, where implementing IWRM requires a greater re-alignment of institutions and governance structures. There are, as in the case of Mongolia often no existing institutions operating at the river basin level and thus no real fit between institutional arrangements and ecosystems (Horlemann & Dombrowsky 2010). Further, attempts to address this problem of 'fit' through establishing RBAs often create new institutional and political problems. Greater complexity and problems of institutional coordination can arise as in the Save River Basin in Southern Africa, where the creation of an RBA was established on top of other existing institutions with different jurisdictional boundaries such as the Rural Development Council, the Provincial Government and the District Council (Tapela 2002 in Swatuk 2005, 875).

Lack of sensitivity to traditional, informal institutions

Here the general problem of imposing the IWRM model, shaped by developing country experiences and institutional contexts, is clear. As stated above water management in D&T countries is, in general terms, characterised by a greater prevalence of traditional, informal institutions and laws, particularly at the local, community level. Such arrangements do not fit with the standard package of IWRM e.g. national water policy, water law and regulatory framework, river basin approach, water as an economic good, participatory decision-making. Van Koppen *et al.* (2007) have shown that a failure to recognise and build upon existing community-based water laws and the structures and practices governing water practices has increased poverty in certain places. The failure to engage with these laws and institutional structures, whilst attempting to replace them with institutions inappropriate to developing country contexts (Shah and Van Koppen, 2006), actually represents a missed opportunity to improve

water resource management and alleviate poverty (Van Koppen *et al.* 2007). A number of other studies on Southern Africa support the view that traditional institutions, laws and management practices may provide a more realistic starting point for achieving democratic, equitable and efficient resources management than the ideals of IWRM (Sokile and van Koppen (2004), Sokile *et al.* (2003), Maganga *et al.* (2004) and Maganga in Swatuk 2005, 875).

Participation, equity and accountability

Mention of these issues highlights the general problems IWRM projects have had in achieving core objectives of participation, equity and accountability. Sometimes a lack of participation has resulted from a refusal of actors identified as stakeholders to become involved in projects (Kujinga, 2002). Latham (2002), Manzungu (2002) and Marimbe and Manzungu (2003) in Swatuk 2005, 875) and a lack of awareness amongst actors affected by IWRM projects (Ngana *et al.* (2003) in Swatuk 2005, 875). As well as failing to reach or persuade actors to join in, IWRM projects have also been guilty of trying to use 'participation', in whatever formal form it may have been implemented, to conceal hierarchical, undemocratic decision-making. In an IWRM project in Tanzania, for example, policies predetermined by central government in consultation with donors were given the veneer of legitimacy through the existence of participatory forums at the local level (Dungumaro and Madulu (2003) in Swatuk 2005, 875). Gender awareness has also been utilised in a similar way to overplay the benefits of projects or even to conceal the continuation of contrary practices (Tapela 2002 in Swatuk 2005, 875). As a consequence, IWRM projects have often failed to provide equitable benefits for actors, prolonging the marginalisation of the poor and women. At times government, as well as external donors, have been unwilling to devolve power to stakeholders and when they have, this has often resulted in reinforcing already powerful actors because stakeholder analyses have not been detailed enough. A further point to be stressed is that attempts to treat water as an economic good through the recovery of costs have added to the burden on poor users and have often resulted in civil unrest (see Swatuk 2005 for examples).

Lack of resources and rushed implementation

Underlying these problems has been a lack of human, financial and institutional resources to achieve effective implementation in specific contexts. Although in global terms huge resources have been invested in IWRM, given the great change IWRM entails in D&T countries, a substantial and long-term commitment of resources is required. Nonetheless, many projects have been characterised by a lack of resources. This criticism cannot be levelled only at external donors but also the governments of D&T countries, who, may be willing to devise new laws and establish new strategies but are much less willing to devote the resources necessary to make them effective (Swatuk 2005, 877). Furthermore, projects have often been implemented far too quickly, with little appreciation of the scale of change being sought. An effect of such a short-term approach (and desire for quick results) has led to both disarray and the reproduction of power relations in new institutions in the Save River Basin, for instance (Dube and Swatuk 2002 and Tapela 2002 in Swatuk 2005, 874).

5. Responses: proposals for reforming IWRM to overcome political/ institutional challenges (as found in the literature)

Given the wide-ranging problems IWRM has encountered, a number of commentators have called for fundamental reform to overcome "IWRM fatigue" (Mollinga 2010 – working paper). Although specific plans vary, the unifying theme of proposed reforms is the need for a more modest, context-specific form of IWRM, one which aims less for overall 'integration'.

Butterworth *et al.* (2010) have called for a shift to a "lighter" more "practical" IWRM, which is "context-adapted". They argue that the problems experienced by IWRM reveal the necessity of accepting realities in contexts of implementation, instead of imposing the ideals of the IWRM paradigm and policy packages. This practical approach, they argue, can be adopted at all levels of water resource management, while they concentrate their own, very concrete proposals on embedding IWRM in local level realities (Butterworth *et al.* 2010, 74). IWRM should be viewed as a philosophy rather than a package of reforms and it should be implemented in 'bits-and-pieces' according to the 'fit' with the local context. Local laws and traditional institutions should be the entry point for IWRM rather than the object of reforms and projects should aim to build links with local governments; to build IWRM from the bottom-up and utilise existing forms of participatory decision-making, even if this encourages sectorality rather than integration (Butterworth *et al.* 2010, 75). Ensuring the engagement of local communities is thus seen as more important than achieving overall integration. Projects should concentrate directly on services which matter to people and which can, at the same time, promote integration. In D&T countries such issues might include the small-scale, domestic uses of water, such

as drinking and other household uses, which are often overlooked in management strategies (Butterworth *et al.* 2010, 75).

It is also argued that a consciously “adaptive” (see e.g. Pahl-Wöstl 2007) approach is required to overcome notions that reforms can and should be linear and logical (Butterworth *et al.* 2010, 75). Rather than adopting a “God’s-eye view of water management, a lighter approach to IWRM focuses on the quality of the connections between the system’s constituting/constitutive elements” (Butterworth *et al.* 2010, 75). This entails moving from a top-down, rigid approach to implementation, in which ‘integration’ is pursued in its fullest form, to an approach which is opportunistic, reactive to the shifting possibilities of water management in specific-contexts.

It accepts that coordination cannot be planned in advance and that implementation processes create their problems and opportunities (Butterworth *et al.* 2010, 77). It does, in other words, accept the existing socio-political context and the politics of implementation which emerge during IWRM. The aim is to accept diversity and differences and to work with them. Swatuk (2005, 878) makes a similar point in arguing that practitioners and politicians must accept the political nature of IWRM, the fact that it often challenges deeply embedded practices and laws and, consequently, be reflexive in their approach to implementation. Mollinga *et al.* (2007) have called for a shift from social engineering approaches to a “strategic action” approach that departs from an acceptance of plurality of actors, institutions and objectives in water resource management. From such a perspective IWRM can be seen for what it is, more political than technical (Allan 2003). Such thinking does not denote a pessimism about IWRM, as expressed by Biswas (2004), for example, but rather a realism about its merits. As Sarananan *et al.* (2009) argue, an acceptance of the political, strategic nature of water resource management, and the identification of differences and conflicts, is the first step towards addressing them and facilitating dialogue and ultimately consensual forms of decision-making.

Butterworth *et al.* (2010) call for a light, practical IWRM, is echoed by Moriarty *et al.* (2010) and has many similarities to the proposal of Lankford *et al.* (2007) to move from ‘integrated’ to ‘expedient’ forms of water resource management. They argue that water management should not be driven by attempts to implement a long list of IWRM policies, or even the attempt to partially implement elements if they do not fit with the situation. Its efforts should be focused on devising context-specific interventions to address existing or foreseen problems (Lankford *et al.* 2007, 3). This, “interpretative, expedient process” is a challenge in itself as it requires adaptability and the capacity to generate new kinds of thinking about water management ‘on-the-go’ (Lankford *et al.* 2007, 3). It is a conscious step away from the global norms of IWRM (Swatuk 2005, 877) to a problem-orientated approach (Lankford *et al.* 2007, 3). It does not reject the general goal of integration but argues for a shift away from articulating IWRM principles and applying policy packages based upon them, to focusing “relentlessly on ‘problems’ on the ground” (Lankford *et al.* 2007, 3).

6. Future research towards a context-specific form of IWRM

Throughout this review the underlying political nature of institutional challenges to IWRM has been emphasized. As the previous section discussed, there appears to be an emerging consensus in the literature that future IWRM projects need to accept the politics of water and the institutional challenges they prompt. To address these problems it has been argued that IWRM has to be adapted to contexts of implementation, sensitive to existing practices, institutions and laws. If this represents the emergence of a new agenda or even paradigm of IWRM, the specific ways in which it can be translated into new practices on the ground requires further work. It is increasingly recognized that IWRM project managers need practical support on the ground to help them tune their interventions to fit the socio-political and institutional contexts of implementation (Chene 2009; Saravanan *et al.* 2009). International water organizations have devised toolboxes (e.g. GWP) and academics decision-making support systems (e.g. Giupponi 2007) to help practitioners implement IWRM. Although such tools may alert IWRM practitioners to general institutional issues, they do not provide them with the means to apply these off-the-peg guidelines in specific contexts of implementation. Furthermore, the utilization of such means carries the potential risk of perpetuating standard, ‘one-size-fits-all’ approaches to IWRM.

Instead, it is necessary to devise new tools with which IWRM practitioners can implement ‘lighter’, ‘practical’ and ‘expedient’ forms of IWRM. If the key challenge is to accept and incorporate the political nature of water resource management into IWRM processes, it follows that practitioners require the tools to expose the different politics of water in any one place. Through doing so, they may be better equipped to deal with institutional problems. To reduce problems of institutional fit and interplay, IWRM

processes need to identify – across sectors and spatial levels - the range of complex arrangements and formal and informal processes through which water resources are managed. To ensure projects are place-specific, here is a need to identify the full range of formal and informal institutions involved in water resource management and, more broadly, a means of sensitizing projects to the general “socio-political context” of action which shapes knowledge, beliefs and presents barriers to effective communication between actors (Saravanan *et al.* 2009, 80) needs to be found. There is a need to develop tools to identify the full range of actors affected by decisions in river basins; to go beyond simplistic, pre-determined understandings of who stakeholders are. By going beyond a consideration of who has power to effect decisions to an understanding of who is affected by these decisions, more comprehensive participation and, in turn more equitable and accountable outcomes in IWRM might be achieved. Finally, there is also a need to develop means through which those implementing IWRM can be encouraged to work reflexively. Practitioners, especially in D&T countries, must consider the effects of their own work and the politics of IWRM on the contexts within which they are working.

7. Outlook: towards a framework for institutional analysis of IWRM contexts

So what form should a practicable framework for institutional analysis take? How should institutions be understood and analysed? How can current approaches be improved upon? Indeed why is there a need to move beyond such approaches? This final section briefly addresses these questions by outlining the authors’ preliminary ideas for an analytical framework and operative methodology to be used in the field by IWRM researchers.

The framework will depart from a social science understanding of institutions: they are not simply organisations but rather complex systems of rules that shape human action; they are both formal and informal. Institutional analysis will be defined as the process of analyzing “the design and performance of an institutional arrangement” (Imperial 1999, 453). Any analysis must take account of the complex, multi-dimensional character of institutional arrangements: the interdependencies between structure and agency (Giddens 1984), the interactions between different sorts of institutions, such as informal and formal institutions (North 1990) and the interplay between different institutional sectors and levels of governance (Jordan 2000). Key approaches to institutional analysis in environmental governance include: Institutional Analysis and Development (IAD) (Ostrom *et al.* 1994; Ostrom 2005), Institutions of Sustainability framework (IoS) (Hagedorn 2002; Beckmann and Padmanabhan 2009) and Institutions and Global Environmental Change (IDGEC) (Young 2002; Young 2005).

Within the literature on water governance, an analysis of institutions has long been identified as integral to the successful implementation of water policies and programmes (Ingram *et al.* 1984; Mitchell 1990). Of particular importance is the necessity to move beyond descriptive representations of organisational structures and policy frameworks when assessing institutions. Perhaps the most commonly used and adapted approach to water governance and IWRM in particular is the IAD framework (e.g. Imperial 1999; Saleth and Dinar 2004; Saravanan 2008). The NeWater project developed upon the work of Ostrom and others to produce their “Agent-based Models of Water Management Regimes” (Ebenhöh 2007), a framework centred on actors following their interests in an institutional environment providing incentives and disincentives. It is a highly detailed framework which takes the researcher deep into institutional contexts of water management. It does then have much of merit. However, the framework fails to adequately address the political dimensions of water governance, both in terms of formal structures and political ideas and discourses. These shortcomings have led Clement (2009) to ‘politicise’ the IAD approach. This is a conscious attempt to incorporate the political-economic context and discourses across the range of levels of governance and government in institutional analysis.

In line with the findings of the literature review above, an engagement with the political and discursive sites which constitute IWRM implementation contexts (Swatuk 2005) is crucial. In the development of our own analytical framework we will incorporate a concern for the various ‘politics of water’ (Mollinga 2008): analysis should reveal not simply the formal political structures and processes but hone in on the contestations of power and practices. The literature on “discursive institutionalism” (Schmidt 2007) will be utilised to think about discourses: the dynamic “system of meaning” in which institutions are formed, maintained, resisted and reformed. A concern for discourse entails a focus on actors’ communication and contestation of meanings, ideas and norms surrounding water & land use (management, etc). Both concerns (politics and discourse) will, in turn, push power to the forefront of the analysis.

The framework will synthesise a power and discourse centred analysis with an appreciation of the multi-dimensional nature of institutional contexts of IWRM. Mitchell (1990) identified seven dimensions to the analysis of institutions of water governance including historical and cultural characteristics and values, as well as financial and economic arrangements. In a similar vein, Moss (2003), building upon Göhler (1997), directs analysis towards six components of institutional arrangements: policy-making style, mechanisms of governance, political-administrative structure, market structure, organisational actors, rules of procedure and forms of institutional interaction. Moss's framework is, moreover, concerned with the analysis of institutional change, fit and interplay (with regards to the implementation of the WFD). With its appreciation of the spatial quality of integrated water management, it provides another basis for the development of our analytical framework.

Of course, a sophisticated synthesis of social science literatures on water institutions and institutionalisms does not necessarily make for practicable analytical framework for use in the field. As such the development of the framework will be informed by interviews and discussions with IWRM practitioners. Insights they provide on the institutional and political challenges of implementing IWRM, the difficulties of actually doing institutional analysis in IWRM projects will be incorporated in an operative methodology for using the framework. It is hoped that by developing the two together we will find the means to conduct the in-depth, nuanced analysis the complex institutional settings of IWRM require.

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