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IWRM discourses, institutional Holy Grail and water justice in Nepal.
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IWRM Discourses, Institutional Holy Grail and Water Justice in Nepal

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ABSTRACT: Integrated Water Resources Management (IWRM) still stands today as one of the most influential governance models in the water sector. Whereas previous analyses of IWRM have focused on the effectiveness of the institutional models it embodies and on policy implementation gaps, we examine the meanings that IWRM discourses have given to water management issues and how these meanings have in turn supported certain policy choices, institutions and practices. We use discourse analysis to study IWRM discourses in Nepal, where IWRM was introduced as the guiding policy principle for water management more than a decade ago, but not yet operationalised. We argue that IWRM discourses have operated a discursive closure in policy debates, thereby limiting the range of policy and institutional choices perceived as politically possible. In particular, we found that the promotion of IWRM as an institutional holy grail has obscured critical issues of social (in)justice related to water resources development by promoting an apolitical and techno-managerial vision of water development, largely centralised and relying on expert knowledge. We defend the need to move away from institutional panaceas and towards deliberative processes that allow alternative voices, discourses and knowledge.

KEYWORDS: IWRM, institutions, discourses, social justice, Nepal

INTRODUCTION

Contemporary global water discourses have framed water security issues as a 'crisis of governance' (UNESCO, 2006: 1) and international agencies have increasingly promoted institutional models that support 'good governance' in developing countries. As it is assumed that the right institutions will lead to the right outcomes, the goal of good water governance has resulted in an endless quest for the 'institutional Holy Grail'. We use the term of 'institutional Holy Grail' as a metaphor for an ideal institutional model, which is, theoretically, believed to be able to fix all problems but is, practically, out of reach. In the water sector, this quest is most evident in the emergence of the concept of integrated water resources management (IWRM). The concept has been equated with good water governance (Allan and Rieu-Clarke, 2010; Lautze et al., 2011) and recognised by many countries around the world as a paradigm for establishing good water governance (ADB, 2007). Even if the pertinence of IWRM as a universal model for water governance has been increasingly questioned, it remains one of the most influential governance models in water policy circles (Allouche, 2016).

IWRM embodies a set of institutional models: coordination, integration, decentralisation, river-basin planning and participation, all of which are deemed central to achieve IWRM (Gallego-Ayala, 2013). Dominant and mainstream global water discourses defend that the adoption of these models will lead to economically efficient, equitable and sustainable water management (GWP, 2000). An increasing number of scholars have questioned their conceptual underpinning, universal character and practical applicability, observing that implementation gaps have been the norm rather than the exception (Biswas, 2008; Saravanan et al., 2009; Muller, 2010; Butterworth et al., 2010). While we agree with this observation, we take in this paper a different stance to analyse IWRM institutional models, beyond its implementation gaps. Our concern is not so much about whether these models are effective *per se*, but rather how IWRM has shaped water management discourses and how these discourses in turn supported certain policy choices, institutions and practices. Thereby, we are interested in the non-implementation of IWRM models when those are inscribed in policies as much as in their implementation.

Nepal offers a particularly interesting case study in this regard. As many other developing countries, Nepal inscribed IWRM as the guiding paradigm for water resources in its management in its national policy documents more than a decade ago. After more than a decade of donor-driven attempts to operationalise this paradigm on the ground, none of the IWRM institutional models advocated in national water policies have been implemented in practice. Yet, IWRM discourses are still very vivid and continue to frame and influence debates around water planning and management in the country, as visible from the draft National Water Resources Policy (GoN, in preparation). We use discourse analysis to explore the meanings and values that are embedded in IWRM discourses in Nepal and how these have legitimised certain policy choices, institutions and practices.

POWER IN IWRM ANALYSES

Compared to other forms of policy analyses, a distinctive feature of discourse analysis lies in its conceptualisation of power. Overall, power in earlier analyses of IWRM models and their implementation has been weakly theorised, at best, and most often absent. We distinguish three types of conceptualisation and role given to power in analyses of IWRM models – we argue that revealing the differences in how power has been conceptualised in IWRM studies is important for engaging in a constructive debate that goes beyond polarised arguments on the pros and cons of IWRM and the reasons for its so-called successes and failures.

(1) *The social engineering perspective*: The social engineering perspective constitutes, by far, the dominant approach in studies of the implementation of IWRM models. It posits that the lack of operationalisation of IWRM lies in external institutional and political factors (Grigg, 2008, 2014; Watson, 2014) and in inadequate human and financial capacity (Dorm-Adzobu and Ampomah, 2014; Jaspers, 2003). In this view, the IWRM institutional models are valid, but their operationalisation is hindered by institutional and political barriers which scientists and planners cannot influence (Grigg, 2014), e.g. the institutional fragmentation of the water sector or the lack of mechanisms to ensure compliance to the rules (Dorm-Adzobu and Ampomah, 2014). As Roger and Hall (2003: 30) put it: "much more work remains to be done to establish effective water governance regimes that will enable IWRM to be applied". Social engineers acknowledge that institutional reforms are political processes, but refer to power mostly in terms of procedural and juridical power or in terms of party politics, e.g. politicians' lack of political will. Power is conceived in a pluralist view, whereby forms of power are overt and observable in decision-making. This one-dimensional view of power (Lukes, 2005) does not consider how power distribution among organisations, social groups and other structures shape policy agendas and support the (non-)implementation of prescribed institutional reforms. This view calls for the refinement of existing institutional models and for their implementation to follow neatly defined

institutional toolboxes, which ultimately pay little attention to power (e.g. GWPs IWRM toolbox ([CapNet, Global Water Partnership and UNDP, 2005])).

(2) *The political theory perspective*: The political theory perspective differs from the social engineering perspective in several ways. First, political theorists have unpacked IWRM institutional models and questioned their practical applicability and relevance to address complex water management issues (Blomquist and Schlager, 2005; Biswas, 2008; Saravanan et al., 2009; Giordano and Shah, 2014). In particular, they have critically assessed the effectiveness and fairness of planning according to hydrological boundaries or participation (Swatuk, 2005; Warner et al., 2008; Saravan et al., 2009; Hering and Ingold, 2012; Giordano and Shah, 2014). Political theorists also consider the overt form of power. For instance, when they observe that institutional integration implies the concentration of regulatory power over all water issues in river basin organisations, recentralising rather than decentralising takes place (Biswas, 2004; Lankford and Hepworth, 2010). In addition, they also consider a second dimension of power as per the seminal work of Lukes (2005) – the power of non-decision-making (Bachrach and Baratz, 1962). The latter includes covert forms of power that enables those in positions of power and authority to mobilise institutions in a way that meets their interests. Scholars drawing on political theory have particularly highlighted how power differentials drive the representation and participation of the poor, voiceless and marginalised, and their influence on decision-making within the implementation of IWRM policies (Swatuk, 2005; Schoeman et al., 2014). To address these issues, scholars propose institutional alternatives to IWRM models, such as polycentric arrangements (Blomquist and Schlager, 2005; Lankford and Hepworth, 2010).

(3) *The interpretative policy analysis perspective*: Both the social engineering and political theory perspectives tend to frame water problems as 'real' or 'true' without acknowledging that their representation is socially constructed and reflect certain worldviews and beliefs. The interpretative policy analysis perspective adopts a different epistemological stance by questioning what conventional policy analysts take for granted: the language-in-use and knowledge base of policy-making (Feindt and Oels, 2005). The study of discourses is central to their analysis. In an interpretative approach, discourses exercise power through their production and existence by giving legitimacy to certain institutions and social groups and by excluding particular worldviews and actors. Although there are different conceptualisations of power, in this view, power is not vested in individuals or structures, but embedded into multiple forms of language and social practices (Foucault, 1975). It contrasts with the forms of power that are attached to and exercised by specific actors and structures, as considered in other perspectives.

Scholars drawing on an interpretative approach have stressed the tendency of mainstream global IWRM discourses to ignore the political and axiological questions that choices over water management entail. For instance, IWRM discourses advocate for a management system based on river basin organisations, full stakeholder participation and the use of economic instruments (Muller, 2010). These goals and outcomes are based on certain values and worldviews on nature-society interactions, but these values are not explicitly acknowledged. In this respect, some scholars have challenged the perceived capitalist and neoliberal values that IWRM discourses convey and notably the idea that water is an economic good or a commodity which needs to be managed through market-based principles (Orlove and Caton, 2010). Furthermore, IWRM discourses have a nirvana character as they describe an unattainable ideal which desirability cannot be contested by anyone (Molle, 2008). Such discourses in turn legitimate certain institutions and reinforce or undermine certain power structures. For instance, nirvana concepts in the water sector have contributed to depoliticising debates and thus have comforted existing power structures and orthodox agendas because of their highly consensual nature (Molle, 2008).

FRAMEWORK AND METHODS

Discourse analysis offers a useful vantage point for environmental policy analysis because the study of discourses allows revealing the social construction of environmental problems and the role of language in politics (Hajer and Versteeg, 2005). There are several strands and schools of thought in discourse analysis, e.g. discursive institutionalism (Schmidt, 2008) or critical discourse analysis (CDA) (Fairclough and Wodak, 1997; Wodak and Meyer, 2010), which focuses on how discourses reproduce patterns of dominance and inequalities (van Dijk, 1993). We draw on discourse analysis in the tradition of Hajer (1995) and Fischer (2003), whereby discourses are not merely seen as text or as a communicative exchange but as closely connected to practices. In this view, discourses are defined as "an ensemble of ideas, concepts and categories through which meaning is given to social and physical phenomena, and which is produced and reproduced through an identifiable set of practices" (Hajer and Versteeg 2005: 175). By examining how discourses, policy actions and practices are connected to each other, this Foucauldian approach allows for the understanding of how discourses shape policy choices and social change and vice versa.

The research took place in Kathmandu between August 2014 and January 2015 and included two roundtable meetings as well as a series of interviews with key stakeholders. The first roundtable meeting was to get an overview of different perspectives – and possibly, different discourse coalitions and stakeholders' positioning among these coalitions. We reviewed policy documents to identify dominant story-lines and then conducted semi-structured interviews with 18 representatives from central level public agencies in the water sector, multilateral development organisations funding IWRM-related programmes in Nepal, international and national non-governmental organisations (INGOs) implementing IWRM-labelled projects and researchers. All informants were invited to the second roundtable meeting, where the second author shared her observations on the IWRM institutional reforms from the analysis of interviews, followed by a discussion around what could be the most relevant institutional arrangements for water governance in Nepal.

For our analysis, in addition to the transcript of the audio-recording of the two roundtable meetings and detailed notes taken during the interviews, we relied on secondary data (policy documents, technical reports of international development project on water resources management and online material) that was more indicative of the wider policy setting and which we did not influence, notably through a selection process. We coded all the data using a grounded approach. We used three analytical lenses to analyse our data. First, we explored the rhetorical means used to justify particular policy options. We examined in particular which arguments were used to justify the inclusion of IWRM principles in national water policies and what the rationale that supported the promotion of IWRM institutional models was. Second, we identified storylines. A storyline is "a generative sort of narrative that allows actors to draw upon various discursive categories to give meaning to specific physical or social phenomena" (Hajer, 1995: 56). Storylines are important discursive devices as they assert causality and assign roles to different actors while excluding others. In this respect, we identified storylines related to the water management challenges in Nepal – their causes, effects and the policy means through which they could be addressed. We also identified the ideal visions of water management and the means envisioned to achieve this vision. Third, we analysed how IWRM discourses have legitimised certain institutions and valued certain types of knowledge over others. This involved examining who is included and who is not included in IWRM discourses, who is given a voice and who is seen as legitimate to participate in water management and decision-making processes.

WATER PLANNING AND MANAGEMENT IN NEPAL

Nepal is a country endowed with some of the most abundant water resources in the world. This abundance has been embodied in the symbolic and often-quoted number of 6000 rivers and streams flowing through the country. Nepal has indeed a high total mean annual runoff (224 billion cubic

meters) and per capita availability of 9000 m³. However, the hydrology of Nepal is primarily monsoon-driven with about 85% of rainfall falling during the June to September months. The temporal variability of rainfall and runoff is hence very high and Nepal yearly faces both excess water during the monsoon season and severe water shortages during the dry season (the months of March to June), which has been attributed to insufficient storage capacity. A pervasive storyline in the water sector is that Nepal holds a large potential of unharnessed water resources that needs to be developed for economic growth and poverty alleviation through the development of large hydropower and irrigation infrastructures. This is the rationale for the National Water Plan (NWP), a major policy landmark in the water sector, in which its authors remark that water resource development can "catapult the socioeconomic status of the people of the country" (HMGN, 2005: 7).¹

Large-scale infrastructure development in the water (and other) sector(s) started in the mid-1950s, largely driven by massive and uncoordinated foreign-aid investments (Onta and Tamang, 2013). These investments have failed to deliver on their promises and this failure has become another central tenet of national discourses: "water resources development has been slow and so far unable to contribute much towards the alleviation of poverty among the masses" (HMGN, 2005: 7). In the irrigation sector, the developed infrastructure has not met targets of volumes of water supply despite high capital costs (Regmi, 2007). As a whole, large-scale 'modern' agency-managed irrigation systems (AMIS) have been performing less well than farmer-managed irrigation systems (FMIS) in terms of agricultural productivity (Ostrom, 1994; Lam, 1998; Ostrom et al., 2011). In the hydropower sector, everyone deplores the slow development of large-scale infrastructure. Despite substantial capital investment, the current total installed capacity reaches only 766 MW (WECS and NEA, 2015) out of the 42,000 to 45,000 MW estimated technically feasible potential. In the water-supply and sanitation sector, the ambitious Melamchi Water Supply Project, initiated in 1998 and aimed at easing the chronic water shortages and sanitation concerns in the Kathmandu Valley, was put on hold until recently for almost 20 years.

However, there is another facet of water resources development in Nepal that has not been so visible in national water discourses, yet very salient on the ground: the tension between the means to achieve national economic growth and social justice. By social justice, we mean (1) the fair distribution of benefits, burdens and risks associated with water resources development, (2) the recognition of diverse needs and values, and (3) their just representation in policy-making arenas, as proposed by Sen (2009). This tension has been prominent in contemporary processes and events related to the development of large-scale water infrastructure in Nepal (Gyawali, 2013). This development has been characterised by high costs (NWP/JVS, 2003) and have raised issues of allocation of costs and benefits, weak accountability to the general public and poor representation of marginalised and disadvantaged groups in project design (Onta and Tamang, 2013).

In the irrigation sector specifically, AMIS have been characterised by a "dominance-dependence relationship between irrigation officials and farmers" (Benjamin et al., 1994: 105) and their design and operation have often disregarded existing local water rights and other customary institutions for water management (von Benda-Beckmann et al., 1997). Several studies have shown that AMIS have distributed water less equitably than FMIS (Ostrom and Gardner, 1993; Benjamin et al., 1994; Bhatta et al., 2006). In the hydropower sector, there are critical issues around the distribution of the benefits that such projects will generate – on the one hand, between Nepal and India (Rothberg and Swain, 2007) and, on the other, within the country. Most politicians have favoured the development of large-scale and export-oriented projects in the name of national economic development (Dixit and Gyawali, 2010), a decision which has been very unpopular given the acute domestic electricity shortage that the country faces. Large-scale hydropower projects have met considerable social resistance, with strong demands for more inclusive planning processes (procedural justice) and a more equitable share of its

¹ The Government of Nepal was called at that time His Majesty's Government of Nepal (HMGN).

benefits (distributive justice) (Dixit and Gyawali, 2010). Lastly, the Melamchi Water Supply Project also became highly controversial because of its engagement of private-sector participation, adherence to full cost recovery through water fees, its high social, economic and environmental costs and rather opaque bidding processes (Bhattarai et al., 2005). The opposition of water rights activists and local affected communities resulted in a complaint filed against the Asian Development Bank (ADB) (Domènech et al., 2013).

It is important to note that these forms of social activism and movements in Nepal have not been driven by an anti-development or anti-infrastructure rationale. The lack of infrastructure and facilities was identified in national discourses as the main culprit of poor access to irrigation during the dry season and increasing frequency of high load shedding.² Water-rights activists and communities have therefore not so much challenged whether infrastructure is needed, but have rather addressed how it should be developed, notably which rationale and ethical values should guide such development and which processes should guide decision-making (Gyawali, 2013). Water justice is at the core of these concerns, where local people have increasingly made claims on issues related to distribution and to recognition, in a waterscape characterised by entrenched social inequalities related to access to resources and to powerful positions linked to class, caste, ethnicity and gender.

NATIONAL DISCOURSES: HARNESSING WATER FLOWS

It is in this context – massive foreign aid investments, dashed hopes regarding infrastructure development and rise of social movements and justice concerns – that the government inscribed IWRM in the two major and most recent policy documents on water, the national Water Resources Strategy (WRS) (HMGN, 2002) and the National Water Plan (NWP) (HMGN, 2005). The drafting processes of the WRS and NWP were financially supported by funding agencies³ and led by the Water and Energy Commission Secretariat (WECS), a government agency created in 1981 as the secretariat of the Water and Energy Commission (WEC). WEC was established in January 1976 by the government "with the objective of developing the water and energy resources in an integrated and accelerated manner" (WECS, 2004). During this time, there was a visible will to put in place the institutional models of river-basin planning and intra-sectoral coordination in Nepal.

Since early 2000s, considerable investment, largely from foreign development assistance, has been allocated for these models to be set up, e.g. training government officials, establishing a central database system and technical river basin offices, experimenting institutional arrangements for river basin management, conducting stakeholder consultations to develop a river basin plan, implementing local forms of IWRM, etc. However neither river basin planning nor intra-sectoral coordination has been achieved and/or operationalised (see Suhardiman et al., 2015).

In Nepal, national policy-makers have framed IWRM as a principle and tool to guide the planning of water resources development and management. In the NWP, IWRM was introduced in the sub-section 'Planning Context'. The emphasis on planning was also evident during our interviews, e.g. "IWRM implementation in Nepal should be focused on planning the proposed infrastructure development" (interview senior official Department of Irrigation, September 2014). It is equally visible in past and current donor-funded projects referring to IWRM in Nepal: for eight out of 14 projects, an explicit objective is to develop local/river basin plans or to support planning (Appendix A). As per the guiding principles that are to support planning, our interviews indicate that water professionals in Nepal

² Recent changes in the leadership of the Nepal Electricity Authority has however evidenced that weak governance and lack of integrity have also played a significant role in loadshedding.

³ Namely, United Nations Development Programme (UNDP), the Canadian international Development Agency (CIDA) and the World Bank.

associate IWRM with the 3 'Es' (economic efficiency, social equity and environmental sustainability) as per international discourses. In practice, planning of water resources has been largely geared towards efficient and optimal use of resources for increased agricultural and energy production. As acknowledged by a participant from the roundtable discussion: "I think that in the case of Nepal, economic efficiency has been achieved in some places, but sustainability and social equity are very far to be achieved" (government officer, August 2014). The current framing reflects an apolitical vision of water management, e.g. "there is a need to harness this precious resource [water] wisely and sustainably for availing maximum benefit" (Anonymous, 2013), in the sense that water is represented as a physical resource which will be used to generate benefits, not acknowledging the potential trade-offs and political choices to harnessing water flows. Current framings also lack a subject, thereby avoiding discussing who will harness water flows and who will avail the benefits. This apolitical vision of water management, whereby "rivers became mere flows of water for the high-modernist state" (Baghel and Nüsser, 2010: 238), is also visible in the storylines that describe the means to achieve IWRM. Such storylines revolve around two main institutional models: 1) procedural approach through basin-wide water planning management and 2) organisational approach through the establishment of a central body to regulate and ensure intra-sectoral coordination.

The storyline related to basin-wide planning in Nepal is very similar to that in IWRM global discourses. The justification is the need to use water resources sustainably "Considering the technical aspects and nature of water flow, river-basin-approach needs to be adopted for sustainable development of water resources" (Anonymous, 2012). River-basin planning is also meant to "optimise water use benefits and minimise conflicts" (WECS, 2014). The term 'conflicts' here refers mainly to technical and economic conflicts among water uses and sectors, e.g. between the development of one infrastructure and the performance or economic benefit of another infrastructure. The existence or risks of social conflicts fuelled by forms of water injustice is absent from national debates on river-basin planning and management, at least formally. In this view, river-basin planning is to be informed by macro-scale information gathering as the sole source of knowledge and becomes an expert's exercise, which can be handed over to a consultant (see for instance, GoN, 2014). This was evident in the type of knowledge supported by IWRM programmes, in the form of basin-wide and central database systems gathering predominantly biophysical, quantitative information. The prevalence and higher legitimacy of expert knowledge was also acknowledged by one of our roundtable participants: "As the implementation of IWRM is technical, those engaged in its implementation primarily hold expert knowledge and lack know-how" (government officer, August 2014). Such a mismatch of scale between the knowledge used for decision making and the local knowledge of water users, is an important issue to consider for grassroots representation and the livelihood benefits of natural-resources projects (Ahlborg and Nightingale, 2012).

In contrast to the case of basin-wide planning, the second storyline on coordination lacks a clear rationale. Coordination is presented in national policy documents as a principle necessary to achieve IWRM. For instance, WECS' mandate is to "coordinate relevant line ministries and departments to implement the concept of integrated water resources management" (WECS, 2014). During our interviews, coordination was framed similarly as intra-sectoral coordination among government agencies at the central or district level and as a managerial tool to achieve effective planning: "The government now feels resource scarcity is increasing and to use water resources more prudently we need coordinated planning, so it would generate more benefits" (interview consultant to DOI, September 2014). The concept of coordination is a managerial term that operates a discursive closure in terms of who has the power/legitimacy to coordinate – issues that are directly relevant to procedural justice. As one informant remarked, the notion of 'coordination' attached to IWRM implies a top-down approach under a single coordinating agency.

IWRM is a very 'Eurocentric' concept. Otherwise, if it was Japanese or Chinese, it would have taken another name, for instance 'harmonious water management'. 'Integrated' implies that someone will make different

parties work together, whereas 'harmonious' means they just work together. This is why it has not worked. (Interview, former Minister of Water Resources, Oct. 2014)

In national IWRM discourses, coordination applies to those who already hold power to make decisions (formal government agencies) and only concerns the projects that are important to national economic growth. The coordination storyline has rendered invisible the myriad of individuals and social groups that also have a stake in water management like farmers, small-scale fishermen, riverside residents, and all those whose livelihoods are affected by water governance and infrastructure development.

A striking example is the watering down of the recognition and rights given to FMIS between the Irrigation Policy, 2060 (GoN, 2003) and the revised policy, 2070 (GoN, 2013). First, the new policy does not support the transfer of large and major irrigation systems to farmers (Sections 2.6.3. and 2.6.4.). Furthermore, it also removed the entitlements of farmers to raise fees for irrigation services, fix the rate of the fees and keep a share of the fees raised (as specified in the Policy, 2060, Section 2.7 and Annex 2). As IWRM was explicitly introduced in the 2003 policy version and became a strong component of national water policy discourses after that, we suspect that IWRM discourses supported the reduced recognition of FMIS while increasing the power of central-level agencies, in this case the Department of Irrigation, under the pretext of promoting more effective, efficient and sustainable water resources development and management.

It has excluded discussions on who and what is entitled to 'be coordinated' – only coordination between economic sectors or large-scale projects is considered. How such projects might affect local livelihoods is largely absent from associated storylines. For instance, the impact of hydropower projects on the main source of livelihood of downstream fishermen communities (Sharma et al., 2007) has not been considered in these debates.

INSTITUTIONAL MODELS: LOST IN TRANSLATION

Despite several attempts funded by foreign aid, the Government of Nepal has not yet operationalised river basin planning and management as per IWRM models. On-going World Bank- and ADB-funded programmes that claim to apply the concept of 'river basin planning' resemble traditional master plans in the sense that they are top-down exercises led by a few experts. In a workshop on river basin planning co-organised by the World Bank and WECS, there was a clear gap between the rhetoric advocated by the World Bank and the reality on the ground. One of the World Bank's DC-based staff members started his presentation by stating that basin planning is a political exercise, whereby one should follow a logical step-wise process, including 'stakeholder consultation'. The WECS representative who was present at the workshop clearly articulated that in the master plan, the WB will be funding an 'engineering plan' and will include very limited consultation because of uncertainties related to water resource ownership and to the delineation of state boundaries in the current context of political transition. WECS defended the depoliticisation of water planning as a necessary strategy to 'get things done'. It is, however, clear that such depoliticisation fits the interests of the nation state, as indicated by another senior official: "These plans (...) are technical plans to identify projects. (...) Once they are done, the government will decide on the projects depending on domestic requirements and potential for export" (interview, senior official, Ministry of Energy, Jan. 2015). Obviously, the choice of projects is a political and social choice, but under river- basin planning, it is framed as a technical choice that has to meet national economic interests.

The form of intersectoral coordination promoted by IWRM discourses has not translated in practice. As of today, there are eight sectoral ministries and even more line departments with activities related to water use. All informants deplored the lack of coordination among public agencies, as well as among the funding agencies working on water issues. In the NWP, the central agency designated to assume a coordination role is WECS, intended to "work as a coordinator in the formulation of all multi-purpose,

mega and medium scale projects in the water resources sector" (WECS, 2004). Such a role is in line with the focus on large-scale projects and national economic growth noticed earlier. However, WECS has never had the power to coordinate ministries, which have little interest in being coordinated.

The only *ad hoc* cases of coordination that we observed were the support of the development of projects deemed important for national economic growth. For example, one informant reported one instance of coordination in 2014 between the Ministry of Energy and the Ministry of Irrigation when negotiating important bilateral agreements with India for the upper Karnali project power development agreement. The rationale for coordination was to defend Nepal's strategic interests because "we are all Nepali from the government" (interview, senior official MoE, Sept. 2014). In a more systematic manner, a special committee was created under the National Planning Commission to address the conflicts between hydropower development and the extension of the road network. This committee was to ensure that the road construction would not affect hydropower development in the region or cause any economic loss.

The concept of 'stakeholder consultation', more broadly coined as 'participation', is a central component of global IWRM discourses. In theory, public participation in IWRM supports procedural justice by involving a representative group of users in decision-making (Emami et al., 2015). The ability of participants to voice their views during the planning process is in turn to improve their perceptions of fairness and justice. In practice, however, public participation does not guarantee that participants will perceive the consultation process as fair (Maguire and Lind, 2003). In the case of IWRM, Blomquist and Schlager (2005: 106) observe: "even with procedural guarantees of public participation, regional watershed planning can become in effect 'top-down planning'". They also note that the participation of grassroots organisations in watershed planning might do little to serve the interests of the most powerless water users when these organisations are not downwardly accountable and not able to fairly address the differences of interests among users (ibid). In Nepal, this is most apparent from the problem of elite capture, when the actual functioning of government-induced local/farmer organisations are driven by the interests of the elites, not necessarily connected with the development needs of farmers.

Despite these procedural concerns, dominant IWRM discourses, globally and in Nepal, have concealed the political nature of participation. A key issue related to procedural justice that has been largely overlooked in national IWRM discourses is that of legitimate representation. Nepal is characterised by an 'unequal public sphere' which make issues of recognition and representation critical (Williams and Mawdsley, 2006). Some donors have called NGOs to represent farmers' interests in IWRM project fora (interviews). There is a plethora of NGOs in Nepal as these have literally mushroomed during the last two decades. However, a large majority of them neither represent farmers nor defend their interests in local or national decision-making arenas. Their role is limited to delivering services within development programmes (Hachhethu, 2006) and, as elsewhere, many of these NGOs are more accountable to funding agencies than to local communities. Currently, there are very few strong federations or civil society organisations that represent farmers in the national political scene, like the Federation of Community Forestry (FECOFUN).⁴ The NWP places water user associations (WUAs) as the key grassroots organisation in an IWRM institutional setting (HMGN, 2005). In Nepal, WUAs form a tool of participation in water resources management that is popular among development banks and is strongly associated with the concept of IWRM (workshop roundtable and interviews). Although WUAs can take a variety of forms, the way they are implemented by government agencies

⁴ FECOFUN is the largest civil society organisation in Nepal, representing more than 15,000 forest user groups and 8.5 million people. The activities of Community Forestry User Groups are regulated by the Community Forestry Act. Federations in the water sector like the National Federation of Irrigation Water Users' Association Nepal (NFIWUAN) and Federation of Drinking Water and Sanitation Users Nepal (FEDWASUN) are less representative and much less influential.

and INGOs in Nepal and elsewhere tend to follow the same institutional model, and often ignore customary water rights and institutions (Clement et al., 2012). Customary rights and institutions are not necessarily perceived to be just by water users but the top-down imposition of an institutional blueprint tends to (re)produce contested spaces in terms of representation and inclusion. Other forms of influence might be more successful in representing the interests of marginalised people and supporting procedural justice (Kemerink et al., 2013), notably organisations that fulfil multiple purposes and roles and are sufficiently flexible for local actors to re-appropriate them and re-shape them to their needs (Merrey and Cook, 2012; Verzijl and Dominguez, 2015).

Programmes seeking to operationalise river basin planning at the local level tend to frame participation as a paternalistic and apolitical process. For instance, the Nepal Water Partnership (NWP)/Jalsrot Vikas Sanstha (JVS), a national organisation supported by GWP to promote IWRM in Nepal, claims that the Local Water Parliaments they developed are successful because they "not only made people aware of basin level management, but motivated them to develop plans, strategies and set priorities" (GWP South Asia, 2012). According to a WECS representative, the role of the catchment groups created by the Koshi River Basin Management (KRBM) programme is "to plan and to execute" (public communication in a workshop). The Helvetas team who implements Water User Master Plans (WUMPs), a form of local planning conducted under the WARM-P programme (Appendix A), explicitly acknowledges the need to address power relations and social inclusion in the planning process. Such plans might bring livelihood benefits for the targeted communities and give a chance to some to be involved in local planning activities. However, as the scaling up and out of such plans has been hindered by the institutional vacuum left by almost 20 years of a lack of local elections, their linkages with national-level planning are yet to be seen. In this context, it is therefore unclear to what extent such a process and forum can provide effective channels for citizens to inform and question the planning and design of large projects that are to contribute to national economic growth (Suhardiman et al., 2015).

OVERCOMING DISCURSIVE AND INSTITUTIONAL CLOSURE FOR WATER JUSTICE

In 2003 during the IWRM policy process, the Nepal Water Partnership/JVS listed 'distributive justice' as one of the major issues to address for IWRM implementation in Nepal (NWP/JVS, 2003). Our analysis indicates that, inversely, IWRM discourses and institutional models have reduced the ability of Nepali policy-makers and water users to address important water justice issues, because of the discursive and institutional closure they operated. First, the conceptualisation of water has been narrowed to being represented water as merely a natural resource, abstracted from its multifaceted relations with society, through its ecological, cultural and political dimensions (Linton, 2010). In river-basin planning, water is conceptualised as a macro-scale resource which has flows that are to be regulated according to hydrological processes and physical structures. Planning becomes a purely technical-economic exercise, leading the way to ignore the political and social implications of water resources development (Budds, 2009). Institutions are geared towards achieving efficient and optimal use of water for national economic growth. Whether such efficient use might reduce ecological integrity and threaten local livelihoods in a way that disproportionately affects local residents, marginalised communities and non-human beings are not considered in national water discourses that promote IWRM. There is, therefore, no institutional mechanism to address these issues, which relate to both social and environmental justice.

Second, the way the principle of coordination under a central agency has been framed in national water discourses reinforces the authority of government ministries and departments to make decisions and the legitimacy of expert knowledge. Discourses have side-lined issues of recognition and procedural justice, i.e. whose knowledge, interests and experience are legitimate, and who is entitled to influence decisions. They have rendered invisible the non-economic uses and values of water and reduced the legitimacy and institutional capacity of ordinary citizens to influence planning or take actions for or

against specific policy choices. They have a stake according to one standardised model, water user associations – which do not represent the diversity of interests and experiences of those affected by national policy choices. For instance, these associations do not represent fishermen, neither the users who rely on water for cultural and religious uses, nor those whose livelihoods depend on the natural beauty and ecological health of rivers.

Even after a decade of unsuccessful attempts at operationalising IWRM in Nepal, the inaction of which has mostly benefited the most powerful sectoral ministries and, in particular, the Ministry of Energy, that can plan independently as per their sole interest (Suhardiman et al., 2015), water national discourses have not opened up towards institutional models that fall outside of the realm of IWRM. Such institutional alternatives to IWRM include ad-hoc forms of institutional bricolage (Cleaver, 2002) and polycentric arrangements incorporating local communities' various aspirations and needs. Similarly, national water discourses have not opened up space to include hybrid forms of knowledge. All major policy documents and donor-funded programmes advocate for IWRM without ever questioning its relevance because the sanctioned discourses promote IWRM as the only pathway to sustainable water resources management and IWRM institutional models as the best models available. Similarly, a majority of informants and all participants to the second round-table meeting identified IWRM as the best tool for water resources governance and management in Nepal. When asked which institutional set-up would be most relevant to Nepal, each working group proposed a central-level agency with the power and authority to implement IWRM, which would be policing Ministries. Only one participant opened up debates towards alternative institutional arrangements. During the first round-table the participant offered: "[a]s IWRM in theory is about integrated planning and development, my question is whether these principles and policies are still valid? Or do you need to look at other principles also?" (Government officer, August 2014). However, this question was ignored by other participants, who continued debating on how IWRM could be best implemented in Nepal.

The blunt record of IWRM implementation has ironically only reinforced the quest for an institutional Holy Grail, driven by the belief that IWRM has not been operationalised because of inadequate institutions. The institutions needed for achieving IWRM – basin planning and coordination by a central-level agency – were perceived by a majority of informants as the very same blockages that have hindered progress towards its operationalisation: mismatch between administrative and hydrological boundaries and lack of coordination because of a weak central-level agency. Most informants, regardless of their affiliation, emphasised the discrepancy between the type of institutions required by IWRM and the current institutions in Nepal as the main reason for its non-implementation. One government official stated that "the existing organisational structure is not accommodative for IWRM" (interview, government official, Sept. 2014), referring to the sectoralisation and lack of coordination among government agencies. Or for river-basin planning, one interviewee observed: "IWRM cannot be implemented because its implementation is impossible within the existing governance structure. Our development process is not based on watershed boundaries" (interview, INGO, Sept. 2014). The operationalisation of IWRM resembles the chicken-and-egg dilemma: it is not possible to implement IWRM institutional models in Nepal because current institutions do not conform to IWRM institutional models. According to this rhetoric, the seemingly absurd solution is to still try to refine current institutions to reach IWRM.

Both mainstream and critical institutionalism warn against the pitfalls of devising institutional panaceas that are either over-specific or over-general and instead recommend that actors tailor institutions to fit the national and local situation (Ostrom and Cox, 2010; Cleaver and de Koning, 2015). Although the linkages between institutional panaceas and justice have not been systematically well established, a few studies have shown how the implementation of institutional panaceas can be detrimental to achieving social and environmental justice. First, institutions that are not embedded in the social and cultural fabric have fewer chances at being perceived as legitimate and fair by a wide range of actors (Cleaver and de Koning, 2015). This has been visible in Nepal in the failed attempts to

upscale local approaches to IWRM, even to the district or meso-watershed level (Suhardiman et al., 2015), and in the resistance of the grass roots to water privatisation in the case of the Melamchi Water Supply project (Domènech et al., 2013). Second, there is mounting evidence that top-down imposition of institutional models tends to favour institutions that are aligned with the interests of the most powerful stakeholders.⁵ This has been observed in the case of the top-down creation of water user associations (Kemerink et al., 2013; Rusca et al., 2015), state-led land titling (Easterly, 2008) and decentralisation of natural resources management (Ribot et al., 2008). Facilitating institutional bricolage has emerged as a promising alternative to top-down prescriptive forms of river-basin management (Merrey and Cook, 2012; Sehring, 2009). There has been some resistance to such alternatives based on arguments about institutional inefficiency and functional overlaps. Institutional bricolage therefore requires sufficient governance void to develop (Cleaver and de Koning, 2015) – and, we argue, sufficient discursive space as well to counter such arguments.

CONCLUSION

Our analysis might appear critical of IWRM, but the critique is not so much of IWRM institutional models *per se* but rather of the hegemonic nature of the discourses promoting such institutional blueprint models. While we do recognise the importance of river-basin planning coordination and participation for water resources management in Nepal, it is the way such models are framed and debated, in relation to the uncritical promotion of IWRM as the best model of water governance, which we find problematic. In Nepal, IWRM discourses have legitimised institutions supporting certain development pathways which prioritise efficient use of water resources to achieve national economic growth at the expense of other objectives, principles and values. It has supported a centralised policy process disconnected from local realities that relies exclusively on macro-scale knowledge and privileges hydrological and economic expertise. We found that such discursive closure not only reduces the effectiveness of institutions but also hinders the institutional ability to address forms of water injustices. Recent research on IWRM implementation in South Africa reached a similar conclusion, where the focus on IWRM institutional reforms led to a neglect and even worsening of the blatant injustices that were at the core of the country's water challenges (van Koppen and Schreiner, 2014). The discursive closure operated by the quest for the institutional Holy Grail prevents the possibility to developing counter-narratives and institutional alternatives, sidelining the need to reintroduce a new system of values in economic development and globalisation discourse pertaining to justice, diversity and equity (Fraser, 1998; Sen, 2009).

Although political theorists have already warned against the pitfalls of institutional panaceas (Ostrom and Cox, 2010), discourse analysis allows for the deepening of the diagnosis by revealing that such pitfalls are not solely related to a lack of institutional fit, since panaceas are either over-specific or too general to fit the social-ecological system considered. Discourse analysis highlights the fact that institutional panaceas operate a discursive closure in a way that supports apolitical visions of water management, excludes certain actors and views, and supports existing power distribution. Discourse analysis does not necessarily aim at providing specific policy recommendations. It can, however, have transformative effects on researchers engaging in discourses with policy-makers throughout their analysis (Scollon, 2010). We defend the need for debates where "policy-making becomes a site of cultural politics, leading people to reflect on who they are and what they want" (Hajer and Versteeg, 2005). We found that in the case of Nepal, IWRM discourses have excluded the multiplicity of perceptions and visions of justice in water resources planning and development. Our recommendations are, therefore, not geared towards proposing new panaceas or models as alternatives to IWRM.

⁵ There are also exceptions, see Hoogesteger, 2015.

Rather, we propose to engage in deliberative and reflexive dialogues on water governance. Starting from real-world issues and problems we suggest providing sufficient discursive space for under-represented social groups and individuals to engage across multiple scales. This will be especially pertinent as the country of Nepal is going through a political transition towards a federal system and has just reorganised local elections. A greater diversity of views, values and meanings can support institutional bricolage that is perceived to be fair, socially embedded and culturally acceptable. This is not to propose a naïve and apolitical form of 'participation' or 'stakeholder consultation' that ignores overt, covert or hegemonic forms of power. Rather, such dialogues need to be based on the acknowledgement of the political nature of water management and of the authority that certain types of knowledge – expert, scientific, technical – have over others. In practical terms, this means acknowledging and incorporating the views and values held by marginalised groups (e.g. incorporating gender and ethnicity) into the overall development debates on infrastructure development in Nepal, beyond the need to promote the country's economic development alone. For example, in the context of hydropower development, this can be done through recognising development needs and aspirations of local communities and the different states. Here, not only do benefits from the proposed infrastructure development need to be shared more equitably; their costs also need to be weighed in relation to the livelihood strategies and options of local communities (Suhardiman et al., 2015).

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REFERENCES

- ADB (Asian Development Bank). 2007. Integrated Water Resources Management. Water for All. Water Briefs. Manila.
- Ahlborg, H. and Nightingale, A.J. 2012. Mismatch between scales of knowledge in Nepalese forestry: Epistemology, power, and policy implications. *Ecology and Society* 17(4): 16.
- Allan, A. and Rieu-Clarke, A. 2010. Good governance and IWRM – A legal perspective. *Irrigation & Drainage Systems* 24(3-4): 239-248.
- Allouche, J. 2016. The birth and spread of IWRM – A case study of global policy diffusion and translation. *Water Alternatives* 9(3): 412-433.
- Anonymous. 2012. River basin approach better (Bishwa Prakash Pandit, Secretary of WECS). *New Spotlight* 5: (17); March 17 2012 (Chaitra 03, 2068)2012.
- Anonymous. 2013. Water needs harnessing – Interview with WECS Secretary (Bishwa Prakash Pandit). *New Spotlight* 6 (19); March 22 2013 (Chaitra 09, 2069)2013.
- Bachrach, P. and Baratz, M.S. 1962. Two faces of power. *The American Political Science Review* 56(4): 947-952.
- Baghel, R. and Nüsser, M. 2010. Discussing large dams in Asia after the World Commission on Dams: Is a political ecology approach the way forward? *Water Alternatives* 3(2): 231-248.
- Benjamin, P.; Lam, W.F.; Ostrom, E. and Shivakoti, G. (Eds). 1994. *Institutions, incentives and irrigation in Nepal*. Burlington, VT: Associates in Rural Development
- Bhatta, K.P.; Ishida, A.; Taniguchi, K. and Sharma, R. 2006. Performance of agency-managed and farmer-managed irrigation systems: A comparative case study at Chitwan, Nepal. *Irrigation and Drainage Systems* 20(2): 177-191.
- Bhattarai, M.; Pant, D. and Molden, D. 2005. Socio-economics and hydrological impacts of Melamchi intersectoral and interbasin water transfer project, Nepal. *Water Policy* 7(2): 163-180.

- Biswas, A.K. 2004. Integrated water resources management: A reassessment. *Water International* 29(2): 248-256.
- Biswas. 2008. Integrated Water Resources Management: Is it working? *International Journal of Water Resources Development* 24(1): 5-22.
- Blomquist, W. and Schlager, E. 2005. Political pitfalls of integrated watershed management. *Society and Natural Resources* 18(2): 101-117.
- Budds, J. 2009. Contested H₂O: Science, policy and politics in water resources management in Chile. *Geoforum* 40(3): 418-430.
- CapNet; Global Water Partnership and UNDP. 2005. Integrated Water Resource Management plans. Training manual and operational guide. www.gwp.org/globalassets/global/toolbox/references/iwrm-plans-training-manual-cap-netgwpundp-2005-english.pdf (Accessed 28/08/2017)
- Cleaver, F. 2002. Reinventing institutions: Bricolage and the social embeddedness of natural resource management. *The European Journal of Development Research* 14(2): 11-30.
- Cleaver, F. and de Koning, J. 2015. Furthering critical institutionalism. *International Journal of the Commons* 9(1).
- Clement, F.; Basnet, G. and Bharati, L. 2012. Rethinking Development Models and Irrigation Projects in Nepal. *Hydro Nepal: Journal of Water, Energy and Environment* Special issue.
- Dixit, A. and Gyawali, D. 2010. Nepal's constructive dialogue on dams and development. *Water Alternatives* 3(2): 106-123.
- Domènech, L.; March, H. and Saurí, D. 2013. Contesting large-scale water supply projects at both ends of the pipe in Kathmandu and Melamchi valleys, Nepal. *Geoforum* 47(0): 22-31.
- Dorm-Adzobu, C. and Ampomah, B.Y. 2014. Legislative and institutional reforms for water resources management in Ghana. *International Journal of Water Resources Development* 30(3): 559-571.
- Easterly, W. 2008. Institutions: Top down or bottom up? *American Economic Review: Papers & Proceedings 2008* 98(2): 95-99.
- Emami, P.; Xu, W.; Bjornlund, H. and Johnston, T. 2015. A framework for assessing the procedural justice in integrated resource planning processes. *Sustainable Development and Planning* 7: 119-130.
- Fairclough, N. and Vodak, R. 1997. Critical discourse analysis. In van Dijk, T.A. (Ed). *Discourse studies: A multidisciplinary introduction*, pp. 258-284. London: Sage.
- Feindt, P.H. and Oels, A. 2005. Does discourse matter? Discourse analysis in environmental policy making. *Journal of Environmental Policy and Planning* 7(3): 161-173.
- Fischer, F. 2003. *Reframing public policy. Discursive politics and deliberative practices*. Oxford: Oxford University Press.
- Foucault, M. 1975. *Surveiller et punir. Naissance de la prison*. Paris: Gallimard.
- Fraser, N. 1998. *Social justice in the age of identity politics: Redistribution, recognition, participation*. WZB Discussion Paper No. FS/98-108.
- Gallego-Ayala, J. 2013. Trends in integrated water resources management research: A literature review. *Water Policy* 15(4): 628-647.
- Giordano, M. and Shah, T. 2014. From IWRM back to integrated water resources management. *International Journal of Water Resources Development* 30(3): 364-376.
- GoN (Government of Nepal) – Department of Irrigation. 2003. Irrigation Policy 2060. Kathmandu
- GoN (Government of Nepal) – Department of Irrigation. 2013. Irrigation Policy 2070. Kathmandu
- GoN (Government of Nepal) – Water and Energy Commission Secretariat. 2014. Terms of Reference for the Consulting Firms for Implementation of Component-C Under Irrigation and Water Resources Management Project (IWRMP) Preparation of basin plan for Karnali, Gandaki, Babai and West Rapti Basin. Contract Identification No.: IWRMP/WECS/QCBS-4.
- GoN (Government of Nepal) – WECS. in preparation. Draft National Water Resource Policy. Kathmandu.
- Grigg, N.S. 2008. Integrated Water Resources Management: Balancing views and improving practice. *Water International* 33(3): 279-292.

- Grigg, N.S. 2014. Integrated Water Resource Management: Unified process or debate forum? *International Journal of Water Resources Development* 30(3): 409-422.
- GWP (Global Water Partnership). 2000. Integrated Water Resources Management. In *Technical Advisory Committee Background Paper No 4*. Stockholm: Global Water Partnership,.
- GWP South Asia. 2012. Newslines. Nepal's local water parliament. Kathmandu.
- Gyawali, D. 2013. Reflecting on the chasm between water punditry and water politics. *Water Alternatives* 6(2): 177-194.
- Hachhethu, K. 2006. Civil society and political participation. In Baral, L.R. (Ed), *Nepal: Quest for participatory democracy*, Chapter 5. New Delhi: Adroit.
- Hajer, M. J. 1995. *The politics of environmental discourse: Ecological modernization and the policy process*. Oxford, UK: Oxford University Press.
- Hajer, M.J. and Versteeg, W. 2005. A decade of discourse analysis of environmental politics: Achievements, challenges, perspectives. *Journal of Environmental Policy and Planning* 7(3): 175-1884.
- Hering, J.G. and Ingold, K.M. 2012. Water resources management: What should be integrated? *Science* 336: 1234-1235.
- HMGN (His Majesty's Government of Nepal). 2005. National Water Plan – Nepal. Kathmandu: Water and Energy Commission Secretariat (WECS).
- HMGN (His Majesty's Government of Nepal). 2002. *Water Resources Strategy. Executive summary*. Kathmandu: Water and Energy Commission Secretariat (WECS).
- HMGN. 2005. *National Water Plan – Nepal*. Kathmandu: Water and Energy Commission Secretariat (WECS).
- Hoogesteger, J. 2012. Democratizing water governance from the grassroots: The development of Interjuntas-Chimborazo in the Ecuadorian Andes. *Human Organization* 71(1): 76-86.
- Jaspers, F.G.W. 2003. Institutional arrangements for integrated river basin management. *Water Policy* 5(1): 77-90.
- Kemerink, J.S.; Méndez, L.E.; Ahlers, R.; Wester, P. and van der Zaag, P. 2013. The question of inclusion and representation in rural South Africa: Challenging the concept of water user associations as a vehicle for transformation. *Water Policy* 15(2): 243-257.
- Lam, W.F. 1998. *Governing irrigation systems in Nepal. Institutions, infrastructure, and collective action*. Oakland, CA: ICS Press.
- Lankford, B. and Hepworth, N. 2010. The cathedral and the bazaar: Monocentric and polycentric river basin management. *Water Alternatives* 3(1): 82-101.
- Lautze, J.; de Silva, S.; Giordano, M. and Sanford, L. 2011. Putting the cart before the horse: Water governance and IWRM. *Natural Resources Forum* 35(1): 1-8.
- Linton, J. 2010. *What is water? The history of a modern abstraction*. UBC Press.
- Lukes, S. 2005. *Power: A radical view*. Basingstoke: Palgrave Macmillan.
- Maguire, L.A. and Lind, E.A. 2003. Public participation in environmental decisions: Stakeholders, authorities and procedural justice. *International Journal of Global Environmental Issues* 3(2): 133-148.
- Merrey, D.J. and Cook, S. 2012. Fostering institutional creativity at multiple levels: Towards facilitated institutional bricolage. *Water Alternatives* 5(1): 1-19.
- Molle, F. 2008. Nirvana concepts, narratives and policy models: Insight from the water sector. *Water Alternatives* 1(1): 131-156.
- Muller, M. 2010. Fit for purpose: Taking integrated water resource management back to basics. *Irrigation & Drainage Systems* 24(3-4): 161-175.
- NWP/JVS (Nepal Water Partnership/Jalashrot Vikash Sanstha). 2003. Nepal: review of national status in the development of IWRM institutional instruments and facilitation role of country water partnership. Kathmandu: Nepal Water Partnership/Jalashrot Vikash Sanstha,.
- Onta, P. and Tamang, S. 2013. Nepal. In Guneratne, A. and Weiss, A.M. (Eds), *Pathways to power: The domestic politics of South Asia*, pp. 283-344. Lanham, Maryland: Rowman & Littlefield.

- Orlove, B. and Caton, S.C. 2010. Water sustainability: Anthropological approaches and prospects. *Annual Review of Anthropology* 39: 401-415.
- Ostrom, E. 1994. *Neither market nor state: Governance of common pool resources in the twenty first century*. Washington, DC: International Food Policy Research Institute (IFPRI).
- Ostrom, E. and Cox, M. 2010. Moving beyond panaceas: A multitiered diagnostic approach for social-ecological analysis. *Environmental Conservation* 37(4): 451-463.
- Ostrom, E. and Gardner, R. 1993. Coping with asymmetries in the commons: Selfgoverning irrigation systems can work. *Journal of Economic Perspectives* 7(4): 93-112.
- Ostrom, E.; Lam, W.F.; Pradhan, P. and Shivakoti, G. 2011. *Improving irrigation in Asia: Sustainable performance of an innovative intervention in Nepal*. Cheltenham: Edward Elgar Publishing.
- Regmi, A.R. 2007. Water security and farmer managed irrigation systems of Nepal. In Rothberg, F. and Swain, A. (Eds), *Natural resources security in South Asia: Nepal's water*, pp. 67-110. Stockholm: Institute for Security and Development Policy.
- Ribot, J.C.; Chhatre, A. and Lankina, T. 2008. Introduction: Institutional choice and recognition in the formation and consolidation of local democracy. *Conservation and Society* 6(1): 1-11.
- Roger, P. and Hall, A.W. 2003. Effective water governance. In *TEC Background Papers*. Stockholm: Global Water Partnership.
- Rothberg, F. and Swain, A. (Eds). 2007. *Natural resources security in South Asia: Nepal's water*. Stockholm: Institute for Security and Development Policy.
- Rusca, M.; Schwartz, K.; Hadzovic, L. and Ahlers, R. 2015. Adapting generic models through bricolage: Elite capture of water users associations in peri-urban Lilongwe. *European Journal of Development Research* 27(5): 777-792.
- Saravanan, V.S.; McDonald, G.T. and Mollinga, P.P. 2009. Critical review of Integrated Water Resources Management: Moving beyond polarised discourse. *Natural Resources Forum* 33(1): 76-86.
- Schmidt, V. 2008. Discursive institutionalism: The explanatory power of ideas and discourse. *Annual Review of Political Science* 11: 303-326.
- Schoeman, J.; Allan, C. and Finlayson, C.M. 2014. A new paradigm for water? A comparative review of integrated, adaptive and ecosystem-based water management in the Anthropocene. *International Journal of Water Resources Development* 30(3): 377-390.
- Scollon, R. 2010. *Analyzing public discourse. Discourse analysis in the making of public policy*. New York: Routledge.
- Sehring, J. 2009. Path dependencies and institutional bricolage in post-Soviet water governance. *Water Alternatives* 2(1): 61-81.
- Sen, A.K. 2009. *The idea of justice*. Allen Lane & Harvard University Press.
- Sharma, S.; Banjade, S. and Bhandari, R. 2007. Impact of Khimti – I hydropower project in Nepal on the ecological status of river and fishermen's livelihood. In *International Conference on Small Hydropower*. Sri Lanka.
- Suhardiman, D.; Clement, F. and Bharati, L. 2015. Integrated water resources management in Nepal: Key stakeholders' perceptions and lessons learned. *International Journal of Water Resources Development* 31(2): 284-300.
- Swatuk, L.A. 2005. Political challenges to implementing IWRM in Southern Africa. *Physics and Chemistry of the Earth* 30: 872-880.
- UNESCO (United Nations Educational, Scientific and Cultural Organisation). 2006. Water, a shared responsibility. In *The United Nations World Water Report 2*. Paris and New York: UNESCO and Berghahn Books.
- van Dijk, T.A. 1993. Principles of critical discourse analysis. *Discourse & Society* 4(2): 249-283.
- van Koppen, B. and Schreiner, B. 2014. Moving beyond integrated water resource management: Developmental water management in South Africa. *International Journal of Water Resources Development* 30(3): 543-558.
- Verzija, A. and Dominguez, C. 2015. The powers of water-user associations: On multiplicity, fluidity, and durability in the Peruvian Andes. *International Journal of the Commons* 9(1): 107-128.

- von Benda-Beckmann, K.; Spiertz, H.J.L. and von Benda-Beckmann, F. 1997. Disputing water rights: Scarcity of water in Nepal hill irrigation. In Brans, E.H.P.; de Haan, E.J.; Nolkaemper, A. and Rinzema, J. (Eds), *The scarcity of water*, pp. 224-242. London-Den Haag-Boston: Kluwer International.
- Warner, J.; Wester, P. and Bolding, A. 2008. Going with the flow: River basins as the natural units for water management? *Water Policy* 10(2): 121-138.
- Watson, N. 2014. IWRM in England: Bridging the gap between top-down and bottom-up implementation. *International Journal of Water Resources Development* 30(3): 445-459.
- WECS (Water and Energy Commission Secretariat). 2004. Nepal: Country Paper national water sector apex body. In *Regional Meeting of National Water Sector Apex Bodies*. Hanoi, Viet Nam.
- WECS. 2014. Terms of reference for the consulting firms for implementation of component-c under Irrigation and Water Resources Management Project (IWRMP). Preparation of basin plan for Karnali, Gandaki, Babai and West Rapti Basin. Contract Identification No.: IWRMP/WECS/QCBS-4.
- WECS and NEA (Nepal Electricity Authority). 2015. Environmental and Social Management Framework (ESMF) for Power Sector Reform and Sustainable Hydropower Development Project (PSRSHDP). Kathmandu.
- Williams, G. and Mawdsley, E. 2006. Postcolonial environmental justice: Government and governance in India. *Geoforum* 37(5): 660-670.
- Wodak, R. and Meyer, M. (Eds). 2010. *Methods of critical discourse analysis*. Second Edition. London: SAGE.

APPENDIX A

List of donor-funded projects explicitly related to IWRM in Nepal.

| Period | Title | Funding agency | Lead or implementing agency | Component/objectives related to IWRM | Geographical scope |
|-----------------------------------|---|-----------------|-----------------------------|--|--|
| 1985 | Koshi River Basin Master Plan | JICA | | Develop a river-basin master plan | Koshi Basin |
| 1999-2002 | Four detailed case studies | Ford Foundation | IWMI and WECS | Exploratory study to collect field-level information on IWRM | Indrawati Basin |
| 2000-2002 | 'Developing Effective Water Management Institutions' RETA 5812 | ADB | IWMI | Participatory action research – basin-level water management study with water accounting and institutional analysis as main components | East Rapti Basin |
| 2001-2017 (5 th phase) | WARM-P | Helvetas/DFID | Helvetas and DWSS | Implement Water User Master Plan (WUMP), an approach to holistic, participatory and inclusive planning for IWRM at the VDC level | Currently in Dailekh, Jajarkot, Kalikot and Achham districts |
| 2003-2008 | 'Resource Management for Sustainable Livelihood' | CPWF | IWMI | Participatory action research to identify mechanisms for the evolution of institutions for INRM at basin level | Begnas Basin |
| 2006-2019 | Rural Village Water Resources Management Project (RVWRMP) | Finnish Embassy | DOLIDAR | Institutionalise district-level capacity for integrated water resources planning; implement WUMPs | Far and Mid-Western Nepal |

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|-----------|--|------------|---------------------------|--|---|
| 2007-2015 | Koshi River Basin Management | WWF | WECS | Pilot the IWRM principles stated in the National Water Plan – creation of Integrated Resource Management Committees (IRMCs) at the sub-watershed level | Koshi Basin, Dudh Koshi and Indrawati subbasins |
| 2009-2011 | Local Water Parliaments | GWP Nepal | JVS | Pilot the concept of Local Water Parliament, a stakeholder body that formulates and implements local IWRM development plans | Ilam District |
| 2008-2013 | Irrigation and Water Resources Management Project (IWRMP) | World Bank | WECS | <ul style="list-style-type: none"> • Develop a Water Resource Information Centre and System, including a spatial knowledge base to support basin planning; • Support the formulation of Integrated Water Resources Policy; • Establish river-basin offices; and • Establish telemetry systems. | All Karnali and Narayani basins Babai and West Rapti Basins |
| 2012-2016 | Koshi Basin Programme | AusAID | ICIMOD | Develop a basin-wide database and integrated responses through improved cooperation and capacity building | Koshi Basin |
| 2013-2019 | Bagmati River Basin Improvement Project | ADB | HPCIDBC*, MoUD, DOI, WECS | Apply the concept and principles of IWRM, notably by establishing systems and capacity for integrated and participatory river-basin management | Bagmati Basin |
| 2014-2017 | Water Resources Project Preparatory Facility | ADB | DOI, DWIDP | Update the national Irrigation Master Plan, conduct feasibility studies for high-priority water resources projects; enhance the capacity of the DOI and DWIDP | All river basins |
| 2014-2018 | IWRMP (4 th phase) | World Bank | WECS | Prepare four river-basin plans to develop an integrated water resource development planning system | Karnali, Gandaki, Babai, West Rapti basins |
| 2014-2016 | Integrated approaches to planning and developing hydropower and diversion projects | ADB | | Develop a strategy which identifies practical approaches to move towards integrated and holistic planning of water resources at the scale of the basin/subbasin | Dudh Koshi subbasin |

* High Powered Committee for Integrated Development of Bagmati Civilization.

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