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Transboundary water security: Reviewing the importance of national regulatory and accountability capacities in international transboundary river basins

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[a]Introduction

While the use of the term 'water security' is diffuse across disciplines and contexts (Cook and Bakker, 2012), it is increasingly acknowledged that water security cannot be examined from the water sector alone (WEF, 2011; Zeitoun, 2011). Water issues are tied with problems of food production and land development. Increasing global population and, importantly, changing lifestyles place demands on water resources use through consumption of both food and energy. Climate change also has implications on water availability and use with mitigation and adaptation measures reviewing practices within the water sector. In addition, the broad notion of water security is deeply associated with concepts such as poverty reduction, sustainable development and human security. As represented by the Millennium Development Goals, global agendas have long emphasized the crucial link between water and poverty (Mount and Bielak, 2011). The Ministerial Declaration of the 2nd World Water Forum in 2000 emphasized that water security contributes to sustainable development. Water security has been defined in the context of conflict prevention based on geopolitical concerns over water availability and its implications to human security (GTZ, 2010). Water use and management through agricultural, climate, energy policies and practices operate at local,

national, international and global scales. These policies and practices are also influenced by global and international agendas on development and geopolitics. This general description of water security provides some broad contours of the relationship between sectors and scales, and between related concepts.

In order to provide some more detail on the assumptions and implications of water security, this chapter focuses specifically on the international scale using the lens of transboundary river basins. The chapter builds upon analysis of domestic factors, such as political instability, playing a role in water security at the international level (Mirumachi, 2008). By exploring how national and international scales are interconnected, the chapter argues that transboundary water security reflects the national capacities of basin states to allocate, reallocate and regulate water resources between different water users and stakeholders. Here, transboundary water security is characterized by the collective capacity to harmonize multi-sectoral policies within an international transboundary river basin. It is argued that the process to build up collective capacity and to identify ways in which policy is made compatible across sectors is fundamentally political. This process reflects stakeholders' views on the relationship between society and nature, on notions of threats and risks by and to water resources, and on concerns for equity in resource allocation and cost burdens. A focus on the active role of non-state actors and on the state-bound authority of river basin organizations helps explain the scales of regulatory frameworks and measures of environmental accountability necessary.

The chapter first examines characteristics of transboundary water security in section two. The concept of water security poses questions about water allocation and re-allocation. Using a brief example of the Ganges river basin, section three analyses the role private sector actors are playing in the allocation and re-allocation of water resources. This example serves to show how decision-making for transboundary water security needs to consider activities of

both state and non-state actors. Section four conducts an initial examination of river basin organizations as a mechanism for transboundary water security, using the context of the lower Mekong river basin. Based on analysis from the two previous sections, in section five it is argued that there is a need for policy harmonization not just between basin states but also between sectors within the nation-state. The chapter concludes in section six by highlighting the importance of national capacities to achieve transboundary water security.

[a]Unpacking transboundary water security beyond inter-state cooperation

Much of the existing literature on water security in international transboundary river basins underscores the importance of inter-state cooperation. For example, in the policy literature, cooperative water resources management is the means to achieve water security according to the From Potential Conflict to Cooperation Potential programme of the United Nations Educational, Scientific and Cultural Organization. It is argued that institutions to govern shared waters should consider ‘effective transboundary water management’ and ‘preventive hydro-diplomacy’ (Cosgrove, 2002, p75). Effective transboundary water management is seen to facilitate efficient and equitable water allocation between states. Mechanisms for dispute resolution ease tension between states and foster cooperation (Cosgrove, 2002). Similarly, the report by the Royal Academy of Engineering on global water security pointed out how international treaties are the touchstone for ensuring water security between states sharing waters. The report argued the importance of establishing mechanisms for ‘international coordination’ that could guide national responses (The Royal Academy of Engineering, 2010: 19). In the academic literature, Tarlock and Wouters (2010) argued that the concept of ‘hydro-commons’ is useful to address global water security from a legal perspective. The idea of ‘hydro-commons’ disassociates water scarcity from inter-state competition and instead

encourages the peaceful management of shared waters using legal principles, such as equitable and reasonable utilization. Petersen-Perlman et al. (2012) pose water security as a negative concern for basin states and thus argues the importance of fostering cooperation. The existing literature treats water security as both something to achieve or avoid in transboundary river basins and the need of cooperation is associated with this concept.

Lacking supra-national authorities, cooperation is indeed need for the current practice of putting in place negotiated agreements between basin states. However, empirical studies have shown that cooperation does not necessarily guarantee improved water allocation. In the Aral Sea region where environmental degradation is a serious issue, inter-state cooperation is considered indispensable (e.g. Teasley and McKinney, 2011; Granit et al., 2012; Libert and Lipponen, 2012). In the Chu and Talas rivers shared by Kazakhstan and Kyrgyzstan, a landmark agreement on water use was signed in 2000. The Agreement between the Governments of the Republic of Kazakhstan and Kyrgyz Republic on the Use of Interstate Waterworks Facilities on the Chu and Talas Rivers defines the responsibilities of Kazakhstan to share costs of operating and maintaining dams and reservoirs in Kyrgyz territory, and of Kyrgyzstan to provide water its downstream counterpart. The Chu-Talas Rivers Commission is regarded as a 'success' based on the implementation of cost sharing and expansion of commission activities (Libert, 2011). However, Wegerich (2008) cautioned that such evaluations of success may be over-stated when looking at the specific details of water release, which advantage water resources control by Kyrgyzstan. The reality of inter-state relations is one of coexisting conflict and cooperation, rather than a uni-directional change from conflict to cooperation (Zeitoun and Mirumachi, 2008; Mirumachi, 2010). Cooperation on its own cannot be an accurate indicator of water security at the transboundary level.

The plural interpretation of the ‘best’ way to allocate and manage water is one reason why political interactions between basin states are one of coexisting conflict and cooperation. Many basins explicitly and implicitly use the principle of equitable and reasonable utilization from the 1997 United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses to guide the negotiation and establishment of shared river institutions (Salman, 2007). While an understanding of equitable and reasonable utilization is a step towards achieving water security in the basin, questions on reallocation of water from one state to another, from one region to another, and from one sector to another need to be considered as well. In the Jordan River basin, reallocating existing and new water sources according to per capita calculations have been proposed as a ‘positive-sum’, cooperative way of managing shared waters (Phillips et al., 2007, 2009). Desalination would be one way of creating new, additional water sources that would be shared between Israel, Palestine and Jordan (Phillips et al., 2007, 2009). However, the Israeli position views desalination as a national issue, not within the scope of shared natural resource issues. Consequently, should desalinated water be used to secure base flow of the aquifers and lakes in the region, costs to supply desalinated water need to be negotiated between states (Feitelson and Rosenthal, 2012). Progress on changing the status quo of water allocation has been slow and it shows the heavily politicized nature of shared waters in this region (Phillips, 2012). Importantly, while the Jordan River basin has long been viewed as a hotspot for water conflict, the contested nature of water allocation and reallocation is common to transboundary basins around the world. The Nile basin states were faced with similar dilemmas of reallocation when negotiating the Cooperative Framework Agreement. This agreement included concerns for ‘water security’ and had a specific article that could override existing water allocation measures put in during the colonial times. As basin states that could be most adversely

affected in terms of water quantity, Egyptian and Sudanese negotiators resisted the inclusion of this article (Mekonnen, 2010; Nicol and Cascão, 2011).

Reallocation of water for human needs to ecological needs of the water environment is also challenging. ‘Food water’ issues, or issues of water supply and management for food production (Allan, this volume; see also Allan, 2011), are increasingly being discussed beyond national scales of analysis and at the global scale as the role of global virtual water trade is acknowledged (Aldaya et al., 2010) and as new issues of ‘land-grabbing’ by foreign investors emerge (Allan et al., 2012). Non-food water issues or issues relating to water for industrial and individual uses (Allan, this volume; Allan, 2011) continue to be raised on global agendas, most notably in efforts to improve access to water and sanitation. If these demands of both food and non-food water are to be met, how would water for the natural environment be impacted? A good example to explore the issue of reallocating water between human and environmental needs is South Africa. South Africa established a unique water policy where water for the environment is accounted for. The National Water Act recognizes water for human basic needs and water for ecological reserves. The former is often described as ensuring ‘some water for all, forever’. The latter refers to the right to provide both sufficient quantity and quality of water for the environment. The legal recognition of these two basic rights makes this national act a progressive one in the region (UNDP, 2006).

While South Africa has, at least legally, embraced the idea of water for both society and nature, regional efforts are not as explicit on such thinking. The member states of the Southern African Development Community (SADC), including South Africa, have signed the Revised Protocol on Shared Watercourses in 2000. This regional initiative is significant because it embeds international legal principles of water utilization and development

following the 1997 UN Convention on the Law of the Non-Navigational Uses of International Watercourses. However, water for the environment is only mentioned in a general manner, in relation to sustainable development. Challenges of information sharing between states exist and differences in financial and human resources are not negligible (Raadgever et al., 2008; Heyns et al., 2008). Moreover, much of Sub-Saharan Africa is dominated by the notion of securing water through large-scale infrastructure to avert intra-state conflict and to alleviate poverty (Swatuk, 2012). '[A] difficult hydrology made more so by climate change, combined with watercourses shared by two or more states' drives this imperative and the main contention over allocation is between the agricultural, industrial and urban sectors (Swatuk, 2012, p88). Consequently, considering water for nature and ecosystems is not sufficient and the revised protocol within SADC is not being used to critically address transboundary water security.

Transboundary water security poses deeply political questions about allocation and reallocation of water. The implications extend to how existing socio-economic mechanisms and institutions related to water need to be re-addressed. The answers to these political questions are often guided by geopolitical and development concerns, which in turn reflect fundamental perspectives of society's relationship with water resources and nature. As such, the concept of transboundary water security entails more than international cooperation to sign agreements or to establish multilateral cooperative initiatives. The concept enables to revisit often anthropocentric assumptions on the relationship between society and nature, which have guided agreements, policies and management practices.

[a]Actors and scales in transboundary river basins

Much of the formal decision-making over international transboundary waters is done between state governments, especially as issues of water allocation may have implications on territoriality and sovereignty. Nonetheless, international financial institutions (IFIs), donor agencies, UN organizations and global water organizations also facilitate formal decision-making by supporting regional initiatives. Organizations like the Global Water Partnership are explicitly incorporating the concept of water security in their transboundary activities, advocating better transboundary cooperation as a way to achieve water security (GWP, 2009). Development aid agencies, like the German donor agency, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), have financially supported programmes and activities of major basins in the African continent such as the Nile, Niger and Orange-Senqu river basins, and cite the importance of conflict prevention for water security (GTZ, 2007, 2010). The relationship between national governments and IFIs, donor and UN agencies have been notable in the planning and development of large-scale infrastructure projects, facilitating large investments in iconic projects of the hydraulic mission—a phase of intensive water capture through infrastructure development to centrally manage and control river flows (Molle et al., 2009). While infrastructure development is still a key feature of the hydraulic mission phase, the actor landscape has become complex with the rise of non-state actors investing in transboundary water development projects. These changes highlight the linkage between the water and energy sectors, and between various spatial scales. A brief example from the Ganges river basin illustrates this point.

In South Asia, the shared Ganges waters have been the stage for both large and small-scale infrastructure development. Transboundary water development has been characterized by multipurpose dam projects. In particular, between Nepal and India, hydraulic infrastructure can provide flood protection against seasonal water variability but also take advantage of

such variability and provide water for irrigation and hydropower. A significant development in recent years is private sector investments in hydropower projects with the introduction of Independent Power Producers (IPPs). IPPs are business organizations that develop and distribute hydropower energy. These private sector actors have gained prominence as national energy reforms and privatization have occurred in South Asia, in particular India (Dubash and Rajan, 2003). In 2008, a consortium of IPPs led by the Indian infrastructure company, GMR signed a Memorandum of Understanding with the Nepali government to develop the Upper Karnali Hydroelectric Project, a run of the river hydropower project. Located on the Karnali River, one of the major Ganges tributaries flowing from Nepal to India, this project would have a minimum of 300 MW capacity to generate electricity. This has sparked interest amongst IPPs for further investment opportunities (IPPAN and CII, 2006). Faced with energy shortage in India, Indian IPPs are seeking new sites for investment, including foreign projects. It is said that Nepal has the capacity to develop 83,000 MW and even if economic viability were taken into account, 43,000MW would be possible. However, currently only a mere fraction has been developed with total capacity at around 500MW (ADB, 2007). From an Indian perspective, Nepal provides rich opportunities for business expansion (Kawale, 2009).

Backed by IPPs, the Upper Karnali Hydroelectric Project breaks the mould of state-led hydropower development. The governments of India and Nepal have executed river development projects based on bilateral agreements, with notable multi-purpose projects in the Kosi and Gandak tributaries of the Ganges River in place since the 1950s. The Kosi and Gandak agreements have set the template for project based bilateral agreements but there has been persistent contention over equitable benefit sharing (Dhungel, 2009). Compared to these agreements, projects supported by the IPPs do not involve diplomatic negotiations based on national interests. However, foreign investment in national waters has been a highly divisive

issue in Nepal. In 2011, the project office at the Upper Karnali Hydroelectric Project site was burned down, causing the Nepali government to order military presence close to the site (Gautam, 2011). While no connections to this particular incidence has been made, the Maoist political party, the Unified Communist Party of Nepal, have lambasted the project for selling out to Indian interests, arguing that resort to violent conflict may even be necessary to stop construction plans (Adhikari, 2011). This project shows that energy trade is subject to the domestic approval of water resources development. Because IPPs are private sector actors, they are not bound by precedents of water and benefit sharing in previous international agreements between basin states. Instead, these projects will be subject to environmental impact assessment and other environmental standards of the host nation. Cumulative benefits and threats from altered river flow and ecosystems need to be examined. National capacity will be challenged to anticipate impacts to transboundary water flows and to identify threats to changed water flow from domestic projects. Importantly, public acceptance needs to be gained. The emergence of IPPs and governance mechanisms for such projects can facilitate or hinder basin-wide considerations of water availability and allocation, linking national issues with transboundary water security.

[a]Mechanisms for Transboundary Water Security

The ways in which actors and governance mechanisms matter to achieving water security can also be explored through the following example of recent hydropower development in the Mekong River basin. Similar to the Ganges River example, private investors are increasingly interested in developing hydropower projects, both on the mainstream and tributaries of the river. In the upper basin, shared by Yunnan Province of China and Myanmar, there are eight mainstream projects planned, in construction or in operation. In the lower basin, shared by Laos, Thailand, Cambodia and Vietnam, there are up to 12 mainstream projects that are being

investigated. Interest in hydropower is significant in the lower basin for both large and small scale projects: over 130 projects are in operation, in construction or planned between the four states (Haas, 2010; Räsänen et al., 2012). One partial reason suggested for the increased attention to hydropower development involving the private sector is the reduction in public funds (NVE, 2010). The investment and construction of dams along the river show a very complex political economy made up of national governments, quasi-governmental utilities, international financial institutions and private investors (Matthews, 2012). Vested interests of these actors are interwoven through the planning, financing and operational norms and practices. The non-transparency of this complex web is often challenged by international and local NGOs demanding more information and deliberation on these dams. The campaign, Save the Mekong, is a good example of a coalition of civil society organizations formed to advocate the socio-economic and environmental concerns of dam development. The development of hydropower is not confined to government but is driven by a growing variety of actors with vested interests.

The lower basin states have planned the development of the river basin through multilateral river basin organizations. The current Mekong River Commission (MRC) is mandated to provide a platform for decision-making on principles of sustainable development under the Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin signed in 1995. In the last few years, the MRC has reinvigorated its role in the hydropower debate, establishing the Initiative on Sustainable Hydropower. The Initiative established preliminary guidelines on ‘good practice’ of hydropower development on the mainstream (MRC, 2009b). In addition, working with WWF and the Asian Development Bank, the Initiative developed a policy tool, the Rapid Basin-wide Hydropower Sustainability Assessment Tool, which would identify ‘hydropower sustainability risk and opportunity’

(MRC, 2010, p14). The MRC has taken up Strategic Environmental Assessment (SEA) as a way to ensure that mainstream dam development fits well with its Basin Development Plan. By conducting the SEA, benefits, costs, risks and opportunities are to be highlighted at a basin level (MRC, 2009a). From a policy framework perspective, the lower Mekong basin has invested in tools to assess basin-wide water security concerns.

However, the issue of hydropower development has pitted contrasting views on the benefits and adverse impacts of these proposed projects and dams under construction. The MRC has developed a macro-economic perspective of poverty reduction and development, thereby framing dam development as a viable option for economic development. In order to ensure maximum benefit from the dams at minimal adverse impact to socio-economic and environmental conditions, the above-mentioned initiatives and policy tools have been implemented. This perspective has been critiqued as a gross over-simplification of hydropower development as tradeoffs between economic development and the environment. Dam construction will have a negative impact on fish habitat and affect fish migration. This is not only an important biodiversity concern but also a livelihood problem as large rural populations living along the river rely on food and income from these fish (Dungan et al., 2010; Friend et al., 2010). The dam debate obscures the complex political economy of hydropower development and risks overlooking these rural communities (Kuenzer et al., 2012). The predominant hydropower discourse is criticized for valuing hydropower projects as ‘more important’ or ‘more valuable’ than ecosystems and rural livelihoods, and for dismissing alternative development options (Friend and Blake, 2009; Friend et al., 2010).

The critique of over-simplified development options is useful and necessary in discussing transboundary water development in the Mekong. The MRC provides a focal point to

improve transboundary water governance (Grumbine et al., 2012). However, analysis should also extend to the ways in which domestic rules govern private actors. Private investors in hydropower development in the Mekong will be subject to the domestic licensing competition and national legal requirements. Because the MRC is not a supra-national authority, it is up to the individual states to regulate these actors in accordance to domestic norms and protocols. In transboundary river basins, the river basin organization is likely to put forth regional economic development goals that all states can agree on, despite differences in national interests. The practice of achieving these goals relate to transboundary water security in that water is allocated and reallocated through an ever-complex set of actors.

River basin organizations will require consistent capacity to deal with surmounting tasks to identify and assess multiple water resource use by various stakeholders. This may not be easily achieved in developing regions as financial support by member states tend to be small and largely reliant on the support from international financial institutions and donor agencies. Moreover, such support may not be sufficient or sustainable. Empirically, an indicative survey of African transboundary river basins showed that such support has been patchy across basins and time, with preference to support large basins (GTZ, 2007). It should also be pointed out that limitations of river basin organizations notwithstanding, the current set up of transboundary water governance mechanisms often utilize these organizations and states drive the governance process. However, these international river basin organizations do not replace sovereign basin states. Consequently, transboundary accountability of environmental degradation and compensation for inadequate mitigation measures of dam building cannot be placed on the international river basin organization alone. These responsibilities need to be taken up at the national governmental level.

[a]Focus on national capacity to harmonize policy across sectors

To achieve water security, Appelgren and Klohn (1997) suggested that national policies should be harmonized across states within a basin, rather than to engage in lengthy and uncertain processes of establishing binding legal principles at the international level. This bottom-up approach underlines the importance of embedding transboundary water issues in the national agendas. Policy recommendations suggest implementing Integrated Water Resources Management (IWRM) at the transboundary level as a way to harmonization. It is argued that transboundary IWRM would facilitate the production and use of scientific knowledge for relevant and useful decision-making (Gooch et al. 2006). The multi-sectoral approach of IWRM has been cited as a strength to address fragmentation and overlap of institutional responsibilities (GWP, 2010). IWRM is increasingly being mentioned in the context of water security (GWP, 2010; Bogardi et al., 2012, see also Cook and Bakker, 2012) perhaps indicating the benefit of IWRM to establish ownership of efforts for water security.

However, experience in the Mekong river basin shows that practising transboundary IWRM is challenging with numerous line agencies of multiple governments dealing with water issues. Bureaucratic silos exist between various departments and ministries relating to water. Competition between bureaucracies for institutional survival also perpetuates particular modes of water resources management and impedes others (Molle et al., 2009). Crucially, there needs to be strong buy-in by these governments to use the river basin organization as a platform to advance transboundary IWRM (Mirumachi, 2012). It goes without saying that using IWRM as an approach for harmonizing policy is a political process. Integrated decisions about water allocation are not merely technical but also political (Allan, 2003). One of the key political questions implicit in IWRM is the balance between water resources management and socio-economic development (e.g. GWP, 2000, 2009). Harmonizing policy

across states will require negotiating different framings and interpretations of ‘resource efficiency’ and ‘equity’ that are principles guiding IWRM.

There is certainly scope for institutional development at the regional scale through programmes and policies of river basin organizations. However, when private investors potentially have the effect of changing water allocation and environmental management in transboundary rivers, national regulatory capacities are challenged. The implication of the changing actor landscape of transboundary water security is that policy harmonization between sectors within states, and not only between states, becomes all the more important. Put differently, it is up to the basin states to develop both national and basin-wide capacities to regulate river development and achieve water security. Thus, transboundary water security is not limited to an international regulatory or accountability concern: it involves national regulatory and accountability measures as well. This is not to say that basin-wide initiatives or river basin organizations should be abandoned all together. Rather, the limitations of existing state-led governance frameworks need to be pointed out. In addition, overlooking the improvement of individual, national regulatory capacities should be cautioned.

[a]Conclusion

The chapter set out to unpack the concept of transboundary water security. A close examination of water security in international transboundary river basins brought to the fore implications on national capacity to regulate, manage and govern waters. It was pointed out that large-scale infrastructure development is now not exclusive to state actors and an increasing number of private sector actors are financing and investing in hydropower projects. Because international river basin organizations are voluntary units comprised of sovereign nation-states, it was argued that national capacities to assess and regulate water use and

allocation become crucial. Of course, there is a large role that transboundary agreements and frameworks need to play to ensure equitable allocation and sustainable water use. Focus on national capacity, in addition to basin-wide capacity, deserves merit because it highlights how domestic policy changes may strengthen or weaken transboundary water security. If the whole is to be greater than the sum of its parts, then transboundary water security needs to consider both international and national capacity to harmonize policy between sectors.

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