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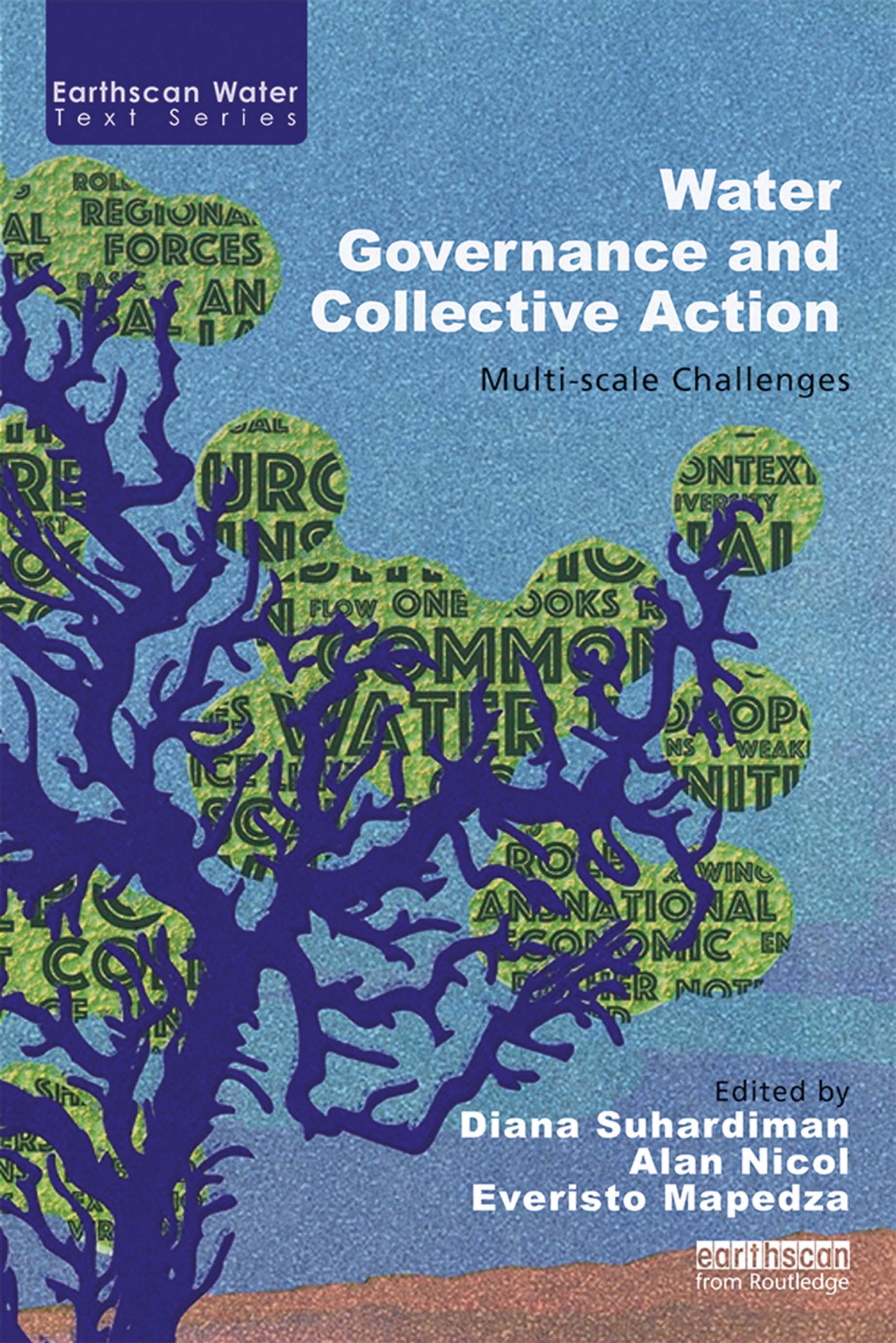
Earthscan Water
Text Series

Water Governance and Collective Action

Multi-scale Challenges



Edited by
Diana Suhardiman
Alan Nicol
Everisto Mapedza

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WATER GOVERNANCE AND COLLECTIVE ACTION

Collective Action is now recognized as central to addressing the water governance challenge of delivering sustainable development and global environmental benefits. This book examines concepts and practices of collective action that have emerged in recent decades globally. Building on a Foucauldian conception of power, it provides an overview of collective action challenges involved in the sustainable management and development of global freshwater resources through case studies from Africa, South and Southeast Asia and Latin America.

The case studies link community-based management of water resources with national decision-making landscapes, transboundary water governance, and global policy discussion on sustainable development, justice and water security. Power and politics are placed at the centre of collective action and water governance discourse, while addressing three core questions: How is collective action shaped by existing power structures and relationships at different scales? What are the kinds of tools and approaches that various actors can take and adopt towards more deliberative processes for collective action? And what are the anticipated outcomes for development processes, the environment and the global resource base of achieving collective action across scales?

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WATER GOVERNANCE AND COLLECTIVE ACTION

Multi-scale Challenges

Edited by Diana Suhardiman, Alan Nicol and Everisto Mapedza

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1

INTRODUCTION

Diana Suhardiman, Alan Nicol and Everisto Mapedza

Collective action is central to addressing the water governance challenge of delivering sustainable development and global environmental benefits. Embedded in existing power structures and relationships across scales, the practice of collective action is often hard to initiate and difficult to sustain. Achieving effective collective action requires balancing interests and focusing on common goals. Whether for local water interface, watershed management or international basin cooperation, collective action is a major global challenge.

Water is governed by different actors and institutions and has become a resource contested by competing interests and divergent paradigms (Pahl-Wostl, 2015; Norman et al., 2016). Molle et al. (2009) bring to light the diverse, and often antagonistic, ideologies and interests which contest the overall shaping of waterscapes. Using hydropower, irrigation, and livelihoods as the three pillars for understanding water governance discourse in the Mekong region, they highlight the role of the science–policy interface in the shaping of (future) waterscapes and their contestations. Taking a closer look at the irrigation context, Mosse (2003) explores the changing ecology, political significance, and cultural meanings of water, mainly focusing on tank irrigation systems in the coastal plains of South India. Referring to the notion of cultural meaning of water and viewing ethics as the intrinsic dimension of any water policy, program, or practice, Groenfeldt (2013) argues that understanding ethics in water policies is fundamental to understanding water resource management.

Commons scholars have also discussed and analysed collective action around water governance, pertaining mainly to irrigation (Ostrom, 1990; Lam, 1998; Meinzen-Dick et al., 2002) and forest management (Agrawal and Ostrom, 2001; Poteete and Ostrom, 2004). Focusing on how local communities shape and reshape different rules in water governance structure, processes, and outcome, they have contributed to a comprehensive understanding of local institutional arrangements and how these are shaped by

various factors, ranging from technological interventions and social relations to processes of agrarian transformation.

Building on these works, this book further unpacks power and politics in water governance. Putting the overall shaping of collective action at the centre, it looks at the role of external forces in shaping natural resource governance at the local level, and how they influence local communities' ability to manage their resources. Partially addressing the current gap in water governance discourse, it explains how various actors come together for collective action, their motivation, and how these are derived from existing power structures and power relationships.

It offers grounded conceptual understanding derived from rigorous comparative analysis and systematic compilation of case studies at different scales, through a wide range of thematic (irrigation, hydropower, aquatic agricultural system, gender, transboundary waters) and geographical selection of water governance challenges in Asia, Africa, and Latin America, and the different types of collective action that emerge in response to these challenges. We place power and politics at the centre of collective action and water governance discourse, while addressing three core questions:

1. How is collective action shaped by existing power structures and relationships at different scales?
2. What are the kinds of tools, methods, options, pathways, and possible approaches that various actors can take and adopt towards more deliberative processes for collective action?
3. What are the anticipated outcomes for development processes, the environment, and the global resource base of achieving collective action across scales?

The focus on collective action

Theoretical explanation of collective action in common pool resources management is rooted in two main schools of thoughts. The first (and most recent) draws on an institutional–economic analysis of local forms of cooperative action (both successful and unsuccessful) to derive generalizable principles for farmer-managed irrigation (Ostrom, 1990; Ostrom et al., 1992; Tang, 1992). As stated by Mosse (2006: 700): "Such a model might view cooperative institutions as the equilibrium outcome from competitive games shaped by the structure of individual incentives (costs and benefits)". Moreover, institutional economic analysis provides some answers to the question: under what conditions will people cooperate?

The second school emphasizes the force of tradition, social rights, value systems, and moral codes in generating and preserving cooperative resources management to ensure, among other things, minimum food security for community members. As stated by Mosse (1997: 469): "Cooperative solutions to common property use derive not so much from individual rationalism as from Scott's (1976) moral economy or from a moral conscience arising from the small community's need to cope with risk and its collective dependence on local resources."

Despite the deep-rooted contrasts, as the first school of thought views a person as a rational, self-interested individual and the second as a social being, both schools emphasize the autonomy and independence from state systems of local resource use arrangements. Moreover, they portray local community as synchronic and ahistorical and do not deal with change (Mosse, 2006). While these images of collective action institutions tend to separate natural resource management from other aspects of social life, they fit neatly with the idea of apolitical locality embedded in planning models.

Mosse (2006) has brought to light the weaknesses in the above theoretization and highlighted the following:

- community institutions should not be viewed in isolation from the wider political structure of region and state;
- resources are to be viewed as defined by changing ideas of property, rights, and entitlement; and
- the integration of power analysis in understanding collective action in common pool resources.

Building on these points, this book highlights the commons as a terrain of contestation. Common pool resources are not static. The way different resource systems are governed has direct implications for our understanding of the conceptual underpinning of the commons, how it evolves over time, and how such evolution is revealed in the overall process of rule-shaping and institutional emergence. In particular, it looks at forces of globalization and how they have weakened the role of local communities in natural resource governance, while also linking these with global responses to the commodification of nature, often manifested in transnational environmental movements. For example, positioning local communities' resistance and coping strategies as an integral part of the transnational environmental movement, it questions the very rationale behind hydropower development and raises the question of how benefits and burdens from hydropower development can be shared more equally and fairly. Moreover, it argues that while many developing country governments' policies on land concession are driven by their attempts to promote economic growth, such policies do not always correspond with poverty reduction and local communities' wellbeing. In contrast, when large-scale land concession results in land grabbing, this affects local communities' ability to sustain their livelihoods from farming.

Putting power and politics at the centre of water governance analysis

We argue that centring power and politics in natural resource governance is crucial for understanding the overall shaping of the commons, as local communities have become inherently linked with the overall processes of commodification and globalization. From a scholarly perspective, this highlights the need to further the

conceptual underpinning of the commons, looking at how interlinkages between the commons and various external actors have resulted in the changing institutional arrangements and new characterization of common pool resources. This book highlights the need for broadening current understandings of community and its connections and disconnections with the wider governance structure and processes across scales. For this, we link the notion of collective action as developed by Ostrom (1990) in her Institutional Analysis Development framework with the framing of water governance as a hydrosocial cycle (Swyngedouw, 2009).

Originating from political ecology, the framing of water as a hydrosocial cycle centres on the processes of socio-political construction of nature. It looks at the political and ecological production of a time- and place-specific socio nature as a manifestation of existing power structures, past and current power relationships, and an outcome of power struggles. The framing not only puts nature–society relationships at the centre of the analysis, but also highlights the contested nature of these relationships, often manifested in different forms of water struggles, which involve regimes of representation that aim to blend society and nature together through water truth and knowledge claims to define the order of things. Here, nature is viewed as a number of socio-political arenas with contested functions, values, and meanings as they define processes of inclusion and exclusion, development and marginalization, and the distribution of benefits and burdens that affects different groups in different ways. Building on the assumption that knowledge of nature is not neutral/universal, but that natural and social orders mutually contribute to each other as hybrids, and thus are the product of a certain socio-political-technological order, the hydrosocial cycle views water as a medium that conveys power and a source of collaboration and conflict.

The framing of water governance as a hydrosocial cycle has several advantages. First, it links local governance dynamics with multi-level institutional analysis across scales. Here, local communities' strategies to cope with water pollution caused by mining corporations are analysed in relation to private-sector interest in mining, how this limits a community's livelihood options, and how the translation from land concession to water grabbing is shaped by the dominant interest of national elites. Similarly, the overall process of resettlement due to hydropower development is analysed not only in terms of how local villagers shape and reshape their livelihood strategies following resettlement, but also in relation to how companies formulate, consult about, and implement resettlement action plans.

Second, it puts power relationships and power struggles at the centre of the analysis of water governance structures, processes, and outcomes. Local communities' strategies in resettlement processes are analysed not only in relation to their access to negotiation processes in resettlement action plans, but more importantly with respect to how this access is rooted in the existing power structure (e.g. village hierarchy) and shaped by power relationships (between villages and company staff) (Katus et al., 2016).

Third, it highlights the need to disaggregate local community to better understand the process of elite capture and identify potential entry points to tackle it, and

reveals how elite domination at the local level is often a product of a higher-level political constellation. From a policy perspective, framing water governance as a hydrosocial cycle will also enable us to identify potential entry points for change through better understanding of existing power structures and power relations.

Objectives

The book has two primary objectives. First, it aims to examine concepts and practices of collective action that have emerged globally in recent decades. Building on a Foucauldian conception of power – that power is everywhere – and through systematic compilation of case studies across Asia, Africa, and Latin America, the book illustrates and analyses how collective action is shaped by existing power structures and relationships at different scales and across different agro-ecological systems (e.g. irrigation, groundwater use, hydropower development, fisheries, mining).

Second, having identified the commons as critical arenas in which to counter the neoliberalization of nature, the book looks at possible pathways and approaches that various actors might adopt towards more deliberative processes for collective action.

Structure

The book contains 13 case studies of collective action and explores how these are shaped and reshaped by power structures and relationships. It incorporates a wide range of themes, ranging from local institutional arrangements in community-based fisheries and the shaping of farmers' strategies as an integral part of scalar politics to the role of identity shaping in collective action in the context of hydropower resettlement, which is taking place in different agro-ecological zones (e.g. fisheries, irrigation, hydropower), situated in various parts of Asia, Africa, and Latin America.

Chapter 2 frames the way we look at water governance and collective action in this book. Focusing on the need to reintroduce a new system of values that embody equity, diversity, and social justice, it puts the commons at the centre of current debates on sustainable development and identifies it as an integral part of the transnational environmental and rights movement. It argues that positioning the commons as an alternative means to counterbalance the dominant neoliberal development tendency to commoditize nature is crucial for achieving informed, inclusive, and accountable natural resources governance.

Chapter 3 shows how collective action problems are at the heart of the Nile Basin's development challenges. Since the early twentieth century, the nature of the "collective" in which action has been required has changed markedly, from a basin heavily dominated by colonial powers to one of independent nation states. Several attempts have been made to establish effective institutions to govern these users, addressing the need for cooperation and driven by the logic of maximization of benefits. However, the institutional process has been complex and the outcomes

fairly marginal to wider development. The author examines some of the collective action challenges posed and the essential place of politics and power discourse within the collective action process, and shows how ways forward have to bridge these imbalances at the level of collective action institutions; otherwise, institutional failure will become the norm.

Chapter 4 illustrates the actual shaping of multi-scalar water struggles in the Peruvian highlands, looking specifically at how four communities in the upstream of the Pampas watershed defend their water access, wetlands, and livelihood integrity through strategic alliances, manifested in various forms of collective action. The chapter brings to light the overall shaping of grassroots scalar politics, and thus how local communities create and mobilize alliances with national NGOs and transnational water justice networks, as alternative means to convey their voices and aspirations.

Chapter 5 looks at the overall shaping of collective action within the context of a transboundary security complex in the SADC region. Taking South Africa and Lesotho's water-for-energy swap as an archetypal example of transboundary water cooperation, it revisits the concept of hydro-hegemony and conflict–cooperation debates. It illustrates how one state's domination over others can be respectively changed or sustained by collective action or the lack thereof.

Chapter 6 analyses local governance dynamics and how these are interlinked with the ongoing hydropower construction boom in the Mekong Basin. Taking the Cheay Areng and Lower Sesan 2 dams in Cambodia as case studies, it reveals how hydropower dam development not only destroys local communities' ability to manage their surrounding natural resources, but also divides their affinity and identity in relation to the dam. While some local communities perceive dam development as detrimental to their livelihoods, others view it as beneficial.

Chapter 7 discusses and illustrates the origin and growth of health impact assessment in Thailand. Framed around the politics of knowledge and its relationship to collective action, it shows how the Khao Hinsorn community has deployed community health impact assessment as a means to engage in – and challenge – an expert-led assessment. Viewing community impact assessment as a process of community empowerment, it shows the close linkage between the overall process of knowledge production and the associated power relationships.

Chapter 8 illustrates the central positioning of collective action as a key pillar for enabling joint use and management of land and water for improved rural livelihoods in Malawi. It discusses and analyses the overall process of a gendered power contestation during the transformation of an informal irrigation scheme within the context of a matrilineal society and looks at the issue of power dynamics and how this plays out within irrigated agriculture through female and male membership of water user associations.

Chapter 9 links a peasant economy with the broader power structure. Taking irrigation as a case study, it argues that water governance in the Andean highlands cannot be understood in isolation from the broader power structures in which they are embedded. Positioning the Andean peasant economy and the irrigators'

communities within the ongoing tug of war between the spheres of "community" and "commodity," the chapter illustrates the role of community water control as the backbone of "community resistance" to externally normed management, privatization, and commoditization of water resources.

Chapter 10 highlights how rapid transformations in resource use in Cambodia's Tonle Sap Great Lake have significantly undermined local fisheries. Focusing on the ongoing reform processes and forms of collective action in fisheries resource access and management, it looks at how local power relationships shape and reshape access to natural resources and argues that the ability to foster collective action has become especially important because local communities' ability to respond to these challenges lies beyond what individual households can undertake.

Chapter 11 looks at the impact of gold mining on local communities' land and water rights in Cerro de San Pedro, Mexico. Exploring multi-actor networks that creatively engage in multi-scale action, it elaborates how conflict arose over common land and water resources, and how local communities cope with it. Most importantly, it shows that such conflict is not just about the right to access resources, but also concerns underlying injustice in local, national, and international rules and regulations. Using the land–water rights interface, it unpacks power relationships and political dynamics behind the legitimacy and authority shaping these rules.

Chapter 12 looks at how the functioning of a groundwater market results in the overall shaping of inter-class alliances, involving both small and large farmers and their collective efforts, through, for instance, the installation of tube wells and pumps groups. It shows how farmers' dependency relationships can serve as a foundation for collective action among the different stakeholders and how water-user groups could help increase farmers' bargaining power and change the existing incentive structure.

Chapter 13 looks at transboundary water governance in the Indus River Basin and how it is challenged by the current political deadlock, while also revealing key stakeholders' perspectives pertaining to transboundary water cooperation and the role of the Indus Water Treaty in shaping riparian relationships over time. Positioning basin-wide dialogue as a means to convey and discuss riparian countries' opinions and perspectives, it highlights the potential role of dialogue as a win–win proposition and starting point to foster riparian countries' engagement in transboundary water governance.

Chapter 14 discusses the role of collective media in providing spaces for dialogue in the Indus River Basin. Focusing on the notion of norms in international cooperation, and linking this with the role of state and non-state actors in transboundary water governance, it discusses the overall idea of collective action and its potential contribution to furthering current discussion amid the current political deadlock as part of reimagining South Asia.

Chapter 15 looks at the role of governance structure and mechanisms, as manifested in the current institutional arrangements in transboundary water governance in the Mekong and Nile basins. It highlights the important role of understanding

human agency in shaping these structures and mechanisms, as embodied in various forms of collective action, ranging from intergovernmental negotiation to regional-level advocacy and transnational movements.

Chapter 16 sums up key issues discussed in the preceding chapters, provides a synthesis of lessons learned, and posits a future research agenda on water governance and collective action.

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2

POWER AND POLITICS IN WATER GOVERNANCE

Revisiting the role of collective action in the commons

Diana Suhardiman, Louis Lebel, Alan Nicol and Theresa Wong

Introduction

Garrett Hardin's influential article "The tragedy of the commons" (Hardin, 1968) put institutions (or the apparent lack thereof) at the center of academic and policy debates on the management of common pool resources (Wade, 1987; Ostrom, 1990, 2000; Agrawal, 2001; Andersson and Ostrom, 2008). Ostrom et al. (1994: 3) define common pool resources as "natural or humanly constructed systems that generate a finite flow of benefits, in which: 1) exclusion of beneficiaries through physical and institutional means is especially costly; and 2) exploitation by one user reduces resources availability for others." The latter characteristic is often referred to as "subtractability" or the "zero-sum principle."

Managing water as a common pool resource is predicated on the process of rule-shaping – that is, how various actors negotiate the rules on paper and in use, what Swyngedouw (2009) highlights as part of the socio-political construction of nature. Whether it is for irrigation, hydropower, fisheries, and/or watershed protection, water governance is shaped by myriad actors with diverse interests, strategies, and access to resources. In the context of irrigation, for example, water distribution rules reflect negotiations between tail-end and head-end farmers, between farmers and the irrigation agency, and inter-village arrangements. Such negotiations highlight the close interlinkages between water distribution practices and the overall shaping of collective action. Here, farmers' access to irrigation water is secured through the collective (Beccar et al., 2002), embedded in socio-technical inter-dependencies of canal networks, village hierarchies, and the wider agrarian context.

Drawing on Ostrom's design principles, commons scholars have focused on various factors that shape local communities' ability to manage natural resources. These range from social norms to trust and social networks, which shape the different types of institutional rules and processes of institutional change (Ostrom and

Basurto, 2011). Recent literature has also looked at the issue of scale in commons studies (Ostrom et al., 1999; Araral, 2014), bringing to light how local communities' ability to sustain collective action will be significantly reduced when they deal with resources that are very difficult to manage at the village scale (Costanza et al., 1998), or when the management of the resources is threatened by exogenous factors, such as market forces, land concessions, and other forms of state intervention (Dietz et al., 2003).

Forces of globalization, embedded in regional economic integration, national governments' strategies promoting economic growth, and a strong emphasis on large-scale infrastructure development, have changed communities' access to natural resources, and the basic characteristics of the commons. The commodification of common pool resources across scales has not only contributed to the weakening of common property rights and collective action in natural resource governance, but also changed the overall process of rule-making as regards access to water, land, and the environment at large. For example, hydropower development has not only disrupted local communities' access to communal forests and fisheries resources, but also limited their space for mobility within the once interconnected riverine ecosystem (Molle et al., 2009a; Baird et al., 2015; Katus et al., 2016), and changed the basic characteristics of the river as a common pool resource.

Although hydropower development[1] does not in principle "subtract" the amount of water from a river – as a hydropower dam would take a certain amount of water from the river and release it back to that river after using it for power generation – this does not mean that it has zero impact. On the contrary, studies conducted by various scholars (e.g. Esselman and Opperman, 2010) have shown how frequent and unseasonal water release from hydropower dams (Lu et al., 2014) can have severe impacts on riverine ecosystems and people's livelihoods far downstream. Here, the subtractability principle becomes more complicated, and could not be viewed from the perspective of water availability/scarcity alone. While hydropower dam operation rules are defined mainly to meet peak electricity demand, the overarching impacts of hydropower dams for local community living along the river highlight the need to broaden the framework for collective action, involving hydropower companies and the state electricity generation authority.

More generally, global land deals have imposed a new system of "rights" (the state owns all the land) and forced local communities from their land (Peluso and Lund, 2011), leaving them with very few alternatives, if any, to maintain their access to manage the land (Suhardiman et al., 2015a), with direct implications for water resources management. This is most apparent when large-scale land acquisition for plantations and other forms of large-scale agriculture force local communities from their land (Li, 2015), driving them to dependency on natural resource extraction, and causing severe water pollution problems, as in the case of artisanal mining (Perreault et al., 2015). While artisanal mining does not necessarily compete with large-scale mining companies, its widespread application could significantly increase environmental and health threats to local and downstream communities when chemicals released from the mining activities pollute nearby water sources.

Some of the most effective institutional responses to the commodification of global common pool resources have emerged in the form of international environmental NGO networks and multi-scale socio-political alliances. These networks and alliances link local communities' resistance with international NGO campaigns, placing them as an integral part of transnational environmental movements. Ranging from transnational agrarian movements such as La Via Campesina (Borras, 2010), to regional alliance networks comprising international NGOs, local communities, and civil society groups (Zawahri and Hensengerth, 2012), to context-specific multi-scalar alliances (Bebbington et al., 2010; Boelens et al., 2010), these networks and alliances could act as an alternative decision-making mechanism for global action, while conveying local communities' voices across scales.

In his call for "institutional diversity," Berkes (2007) highlights the need for better understanding of the institutional linkages between scales (local, national, regional, global) and the need to manage common pool resources at multiple levels.[2] Current research on the commons has looked at the process of rule-shaping in regards to access to water, land, and the environment at large; how this is manifested in collective action (Agrawal, 2001); and how it evolves over time (Wilson et al., 2016). Building on these studies, we highlight the need for alternative multi-scalar governance structures and mechanisms as a form of institutional emergence, to link local communities' governing role and ability with other relevant actors and institutions across scales (private sector, civil society groups, transnational movements) as the first step to addressing global challenges in natural resource governance.

Placing the commons in the center of the current debates on sustainable development is crucial for identifying potential entry points for collective action towards more equal and just natural resource governance across scales. Rapid economic development that serves the interests of policy elites does not only separate communities from the commons (Green and Baird, 2016), but also creates governance traps for local communities (Feeny et al., 1990; Ribot, 2009). For example, when hydropower development limits local villagers' access to rivers and forces them to fish further and further away from their community, this strategy not only increases households' burdens (higher costs, longer distances, competition with other fishers), but also contributes to problems of overfishing elsewhere.

Linking the overall shaping of collective action with the forces of globalization and the commodification of nature (Castree, 2003), we look more explicitly at the roles of political and economic drivers that shape the process of rule-making across scales. Building on earlier analysis of how institutional dynamics predetermines the actual management outcomes of various types of common pool resources (Cleaver, 2015), we argue that informed, inclusive, and accountable natural resource governance can be achieved through positioning the commons as a means to tackle and counter the dominant neoliberal development tendency to commoditize nature. Unpacking power and politics in water governance is crucial for understanding current challenges faced by the "new commons" or common pool resources that require multi-scalar governance structures and mechanisms for their sustainable management.

Building on the earlier definition (Ostrom et al., 1994) and focusing on how globalization processes have transformed the commons, we redefine common pool resources as natural or humanly constructed systems that generate a finite flow of benefits, in which:

1. the exclusion of beneficiaries can be done at a reasonable cost (through the use of power over others); and
2. exploitation by one user might not necessarily reduce resource availability, but could result in severe environmental degradation, negatively affecting people's livelihoods and exacerbating current practices of injustice.

In the next section, we highlight how forces of globalization have transformed the commons and the implications of this for our understanding of collective action.

Critical institutionalism and institutional bricolage

The way the commons are currently managed has direct socio-economic and political implications across scales. For example, fires triggered by the clearing of land for palm oil and pulp and paper plantations in Indonesia that resulted in transboundary haze over Singapore and Malaysia show the regional and global impacts of corporate control of common pool resources such as land and water (Varkkey, 2013). This requires commons scholars to link institutional analysis of common pool resources with how decisions on natural resource governance are negotiated across scales, and thus link their work with growing contemporary issues in global natural resource governance, especially those pertaining to land and water grabs that have left many people dispossessed (Edelman et al., 2015). This highlights the need to put equity and social justice issues at the center of analysis of the commons (Obeng-Odoom, 2016).

We highlight the importance of critical institutionalism as one of the main building blocks for setting up a future research agenda in which equity and social justice play key analytical roles towards understanding the commons. Critical institutionalism looks at institutions as embodiments of social process, intertwined in multi-scalar complexity and uncertainty of human actions in their relationship with others and the surrounding environment. Or, as stated by Cleaver (2015: 1):

> Critical institutionalism … explores how institutions dynamically mediate relationships between people, natural resources and society. It focuses on the complexity of institutions entwined in everyday social life, their historical formation, the interplay between formal and informal, and the power relations that animate them.

Critical institutionalism furthers Ostrom's Institutional Analysis Development framework for collective action in several ways. First, it explains how (institutional) change

occurs "at the messy middle" (Peters et al., 2012) by linking local-level institutional dynamics with other forces shaping natural resource governance across scales, and how they in turn shape local institutions' abilities in terms of scope and degree of influence (Leach et al., 1997). This is most apparent from the concept of institutional bricolage, which explains how actors "assemble and reshape institutional arrangements, drawing on whatever materials and resources are available, regardless of their original purpose" (Cleaver, 2015: 4). Thus, rather than focusing on the idea of how to craft the "right" institutions, the practice of "bricolage" shows how institutional shaping can be less purposeful, partial, and ad hoc.

Second, critical institutionalism incorporates the notion of equal rights and social justice as integral to the institutional shaping of natural resource governance. Rather than implying that institutional arrangements for sustainable common pool resources management will always result in win–win solutions, it emphasizes the possible unequal outcomes of institutional change (Andersson and Agrawal, 2011; Jones, 2015). It also recognizes the need to understand institutional dynamics shaping the governance outcome as constitutive of conflict. Partly addressing Mosse's critique of commons scholarship (Mosse, 2006), which includes the need to link community-level institutions with the wider political structure, and the integration of power analysis in understanding institutional dynamics in common pool resources management, critical institutionalism also puts historical trajectories at the center of its analysis of institutional dynamics.

Building on the notion of equal rights and social justice, we employ a framing of power that goes beyond its definition as a hegemonic force (Cleaver, 2015) and structural impediment for collective action. Viewing power as heterogeneous and multidimensional (Bourdieu, 1991; Lukes, 2005), we adopt a Foucauldian understanding of power that is everywhere (Foucault, 1991). We argue that power cannot be absolutely hegemonic because it involves people, their social systems, and the ideas they hold about themselves and each other. Here, power can gain momentum through social relations, which produces ideas and beliefs that become commonplace. Or, as Gaventa (2003: 1) states: "power is diffuse rather than concentrated, embodied and enacted rather than possessed, discursive rather than purely coercive, and constitutes agents rather than being deployed by them." We view power as something that is highly dynamic, constantly moving as it is shaped and reshaped by powerful and less powerful actors through their myriad connections across space and scale. Examples include the role of media collectives in shaping transboundary water governance discourse in the Indus Basin, differential perceptions of Cambodian dam development among local communities, and the local communities' alliance with a transnational NGO movement in contesting corporate decisions in water infrastructure development in the Andes.

While power structures and power relations pose challenges for managing the commons, they could also serve as potential entry points for change (Scott, 1985; Sneddon and Fox, 2007). An example of the latter is the way farmers and some segments of rural elites build inter-class alliances to ensure more equal water distribution for irrigation in Indonesia (Suhardiman, 2017), demonstrating not only

how less powerful actors could indirectly challenge the existing power structure and relationships, but also how strategic alliances can be built to achieve common goals. Similarly, the way the Mekong River Commission (MRC) has managed to open discussions for the planned mainstream dams through its Strategic Environmental Assessment shows how an intergovernmental body can play an important role in supporting transnational environmental movements (Zawahri and Hensengerth, 2012; Suhardiman et al., 2015b). By identifying potential entry points for change through the better understanding of processes of "bricolage" at various scales (beyond the community level), we highlight the need for more comprehensive analyses of the wider political structures and power relations.

In the next section we unpack the notion of power and politics in water governance, and position the commons as a novel arena to reclaim the meaning of difference (Young, 1990) in the current development discourse, which is dominated by neoliberal development orthodoxy and the commoditization of nature. Building on Lukes' three dimensions of power (Lukes, 2005) and recognizing the inseparable connection between institutional and power dynamics, we highlight the role of the commons in opening up political space towards more deliberative decision-making processes.

Power and politics in water governance

Water governance scholars have brought to light the importance of politics, power structure, and relationships in shaping common pool resources, primarily in the context of irrigation system management (Wittfogel, 1967; Wade, 1982; Mollinga and Bolding, 2004; Molle et al., 2009b) and hydropower development (Molle et al., 2009a; Katus et al., 2016). Focusing on power asymmetry and how this is shaped by inter-state relationships at the transboundary level, international relations scholars have come up with the concept of hydro-hegemony as a framework to analyse transboundary water governance (Zeitoun and Allan, 2008; Warner and Zawahri, 2012). Lebel et al. (2011) have also analysed the role of power relationships in the context of climate risks pertaining to flood disaster management.

Building on these works, we link current scholarship on water governance with the shaping of collective action, and how it influences water governance structure, processes, and outcomes across scales (Norman et al., 2015). For example, while international relations scholars analyse inter-state power relations mainly within the context of power asymmetry and one state's domination over others (hegemony and counter-hegemony; see Cascao, 2008), we look at how collective action or lack thereof can change such domination, as in the case of transnational environmental movements, or sustain it. Similarly, while irrigation scholars analyse power mainly from the perspective of powerful (e.g. irrigation engineers, local politicians, rural elites) and less powerful actors (e.g. tail-end farmers), in this book we look at how collective action is rooted in the wider socio-economic and political constellation, shaped and reshaped by scalar politics involving strategic alliances with politicians, government agencies, and international NGOs, among others.

Viewing water as a medium that conveys power and as a source of collaboration and conflict (Boelens, 2014; Swyngedouw, 2015), we look at water governance as a manifestation of existing power structures and relationships, and for this reason as an outcome of power struggles. Drawing on the concept of the hydro-social cycle (Swyngedouw, 2009) and viewing scales not as something given (Lebel et al., 2005), we put nature–society relationships at the center of water governance analysis. Viewing the boundaries between nature and society as products of the human mind and social conventions, this book looks at how power dynamics influence the overall shaping of collective action as embedded in processes of inclusion and exclusion, development and marginalization, and the distribution of benefits and burdens that affects different groups in different ways across scales.

Building on Lukes' three dimensions of power (Lukes, 2005), this book looks at:

1. how actors and institutions define and exercise their influence over others through various means, such as financial, technical, and socio-political resources (instrumental power);
2. the role of socio-economic and political context within which decisions and actions are embedded (structural power); and
3. actors' ability to shape social norms, values, and identities in favor of their interests (ideational power), and discuss these in relation to the notion of institutional emergence across scales.

It also looks at socio-economic and political networks across scales (Brisbois and Loe, 2016); how these are shaped through formal and informal institutional practices; and how they are derived from and/or contribute to collective action.

Putting political space at the center of water governance analysis, this book looks at how such space is created, sustained, and reproduced, "for whom, and with what social justice outcomes" (Gaventa, 2004: 31). Here, we define political space as any space where plurality, conflict, and power can be visible and contestable as such. Or, as Dikec (2005: 172) states: "space becomes political in that it becomes the polemical place where a wrong can be addressed and equality can be demonstrated." Thus, local communities' strategies in resettlement processes should be analysed not only in relation to their ability to influence resettlement outcomes, but also with regards to how they shape the consultation processes to negotiate their demands and represent their needs, while also taking into account their relationships and position within the existing power structure. Similarly, the role of transnational environmental movements in water governance should be analysed not only in terms of its effectiveness to change certain development decisions, but also in relation to its ability to connect and create spaces for political engagement (Pesqueira and Glasbergen, 2013).

Linking spaces for engagement with the pursuit of justice

The transformation of the commons requires commons scholars to position their work with growing contemporary issues in global natural resource governance,

unpacks power and politics, and incorporates the notion of equity and social justice in the overall analysis of collective action. Putting collective action at the center of global natural resource governance, this chapter urges the reintroduction of a new system of values (justice, diversity, equity) beyond economic growth, which will require new ways of governance centered on the need for transparency, accountability, inclusiveness, and fairness (Fraser, 1998; Sen, 2009; Schlosberg, 2013). Infrastructure development changes water flows and access to land. It disintegrates local communities' ability in natural resource governance, changes the existing power structure and relationships, and shapes and reshapes "the new constellation of winners and losers" (Joy et al., 2014: 955). Or, as Hefner (1990: 2) states: "economic change is never just a matter of technological diffusion, market rationalization or capitalist penetration. Deep down, it is also a matter of community, morality, and power."

Focusing on power, politics, and inequity in the conceptual underpinning of the commons, this book urges the need for a better understanding of the institutional interlinkages between local, national, regional, and global commons, embodied in the different types of institutions (formal organizations, informal networks, grassroots, intergovernmental), including processes of bricolage across scales, and how they can contribute towards sustainable and just development. It also underlines the need to recognize the role of local communities as actors capable of representing their rights and entitlements in the overall decision-making process through agenda-setting power (Mosse, 2010). Moreover, it brings to light the important role of social movements as collective pathways, an institutional means to address unjust practices and empower poor and marginalized groups. For example, when discussing the emergence of alter-globalization movements (Bakker, 2007; Eizenberg, 2011), the authors urge both scholars and activists to join forces in their quest to position collective action (Carrozza and Fantini, 2016) as one of the institutional foundations to counterbalance the negative impacts of economic development, especially in regards to the weakening of local communities' ability to govern the commons. Sustainable and just development cannot be fully achieved without the inclusion of the poor and marginalized, in particular their views and perceptions on natural resource management and how this affects their livelihood options.

Notes

1 Especially as regards run-of-river hydropower dams but also including hydropower dams with water storage.
2 See also Obeng-Odoom (2016) on the notion of internal and external threats to the commons.

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3

COLLECTIVE ACTION AND POLITICAL DYNAMICS

Nile cooperation and Ethiopia's Grand Renaissance Dam

Alan Nicol[1]

Introduction: the wider challenge of collective action

The Nile Basin has been at the centre of shifting political structures and spheres of influence for centuries. Since the latter half of the twentieth century, the river has come under unprecedented pressure for control in order to meet rapidly growing societal and economic demand. The pace of development within countries sharing different portions of the basin yet with widely differing dependency on the river's resources has left a variegated landscape of 'stakes' in governance of the whole basin. Increasingly, however, as climate change adds uncertainty to future hydrological systemic behaviour (Wagena et al., 2016; World Bank, 2015), interest has increased in multilateral cooperation and using collective action between states to manage and develop the basin's resources.

This represents an approach to collective action (Olson, 1965) that resonates with the work of Elinor Ostrom (1990) and others, who argue that shared commons, such as major river basins, can be managed in a cooperative manner, sharing commonly generated benefits and avoiding the so-called 'tragedy of the commons', where individual actions lead to resource depletion and degradation. Recent efforts at cooperation in the Nile Basin reflect this idea of common management and development of a shared resource at multilateral scale, and also, to some extent, support wider notions of collective management as performing a regional public good function (see Nicol et al., 2001), which builds on the idea of public goods (Kaul et al., 1999) as non-excludable and non-rival in consumption and providing a means to other goods such as greater regional peace and security. In the case of the Nile, these are often referred to as benefits 'because of the river' and benefits 'beyond the river' (Sadoff and Grey, 2002).

The intent of this chapter is to contribute to our understanding of how the complexity of power relations and politics challenges collective action efforts in the Nile Basin by examining those efforts since the 1990s.

The Nile: background of diversity

What constitutes the 'collective' in the Nile Basin has not been constant over time. There have been numerous changes in the nature of the states, their affiliations to superpowers, and even the number of state entities that constitute the collective over the last half century. The current eleven countries sharing the basin represent a range of geographical, cultural, political and socio-economic ties to basin resources. The populations of Nile countries range from over 90 million in each of Egypt and Ethiopia to just under 7 million in Eritrea and just over 10 million in Burundi. Moreover, the economic and social relevance of the water, land and environmental resources of the basin varies widely. Uganda lies almost wholly within, while the Democratic Republic of the Congo has less than 1 per cent of its area in the basin; and while Ethiopia is an 'exporter' of some 80 per cent of all the water received in Egypt, it receives virtually none itself as a 'water tower' state. Nile riparians also exhibit a range of political institutions, from unitary centralized systems to different interpretations of federalism. The economic balance within the Nile also tilts heavily towards downstream states and, in particular, Egypt, whose economy almost equates to the aggregate total of the ten other countries (NBI, 2012).

The nature of this 'collective body' of states has changed over time. Africa's newest state (South Sudan) was established as recently as 2010. In the early twentieth century, however, much of the Nile Basin was heavily influenced by an external power – the British Empire controlled a belt of countries from Kenya and Uganda to Sudan and Egypt. In his book *The Nile Basin: National Determinants of Collective Action*, John Waterbury (2002) captures well how the power dynamics have changed throughout the colonial, post-colonial and Cold War periods, and how national, regional and global political agendas come into play. Downstream states – and the wider development community – quickly took take advantage of the so-called 'new world order' of the 1990s to establish technical discussions on cooperation under the banner of the Nile 2002 Conferences, inaugurated in Aswan in 1993 (Brunnee and Toope, 2002). Held each successive year, these informal conferences enabled the emergence of collective action under the Nile River Basin Action Plan between all those countries that share the basin.

Central to the challenge of establishing wider collective action in the basin, in spite of the willingness expressed, were pre-existing 'rules of the game', as reflected in agreements signed in 1929 and 1959 (see Agreement, 1929; Agreement, 1959). Upstream states argue that these treaties were signed during the period of colonial rule, so they are invalid under the terms of the Nyerere Doctrine.[2] The 1959 agreement facilitated construction of the High Aswan Dam, which enabled Egypt to capture and store more than an entire annual Nile flood, most of it within its borders. As a provider (at the time) of 50 per cent of Egypt's energy supply, the dam became a symbol of state-led development, Egypt's 'mastery of the Nile' and its political strength. Meanwhile, upstream states came to view it as emblematic of Egyptian hegemony and, in response, the United States began a comprehensive study of potential dam sites on the Blue Nile in Ethiopia (United States Bureau of

Reclamation, 1964). Though none of these projects came to fruition, the so-called 'Border Dam' eventually formed the basis for the GERD, which we discuss in detail below.

For Sudan, the midstream riparian with significant potential for agricultural development, the 1959 agreement guaranteed 18.5 bcm (billion cubic metres)/year (against Egypt's 55.5 bcm), but until recently the country had been unable to utilize most of this water allocation. This has rapidly changed due to recent and ongoing hydropower and large-scale irrigation investments in the country, in particular in the strategic Blue Nile sub-basin (Cascão and Nicol, 2016b). The GERD will also enhance Sudan's irrigation potential. Egypt, by contrast, has fully utilized its allocation under the 1959 agreement; indeed, over time its utilization has exceeded its quota with a 'water loan' (El-Zain, 2007: 14) amounting to almost 4 bcm/year due to Sudan's stated utilization of around 14.6 bcm. The 1959 agreement also established a Permanent Joint Technical Commission (PTJC) between Egypt and Sudan, which oversaw provisions of the agreement and represented the most important elements of the dyadic relationship between the two downstream riparian states (Waterbury, 2002). Current political dynamics indicate that this dyad is being challenged as Sudan becomes bolder in its national plans to increase withdrawals of Nile water, and at the same time aligns more closely with Ethiopia and other upstream countries under multilateral cooperation agreements.

Applying the Ostrom principles

If we apply some of Ostrom's work (Ostrom, 1990; Ostrom et al, 1993, 1994) on the challenge of collective action and common-pool resources, we can understand more clearly some of the dynamics and changes that are taking place. Ostrom placed particular emphasis on overcoming the 'free-rider' problem. She argued for sustainable institutions based on principles of cooperation and co-organization, a central tenet of the Nile Basin Initiative (NBI) in 1999. Looking at the similarities and differences, we can reflect on both Ostrom's 'principles' for collective management and the current situation in the Nile:

1. Clear boundaries: clear demarcation of boundaries that identify members of the user group as well as the actual physical boundaries of the common property resource. In the Nile these are the nation states that to a greater or lesser extent are situated within the hydrological boundaries of the Nile Basin: in brief, a population of some 200 million people actually living within these boundaries out of 370 million in total for all eleven riparian states (NBI, 2012). These boundaries changed with the secession of Eritrea from Ethiopia in 1993, and the independence of South Sudan in 2010. In both cases, the latter more so, the change in the number of members had important political consequences for the wider cooperation process and the nature of collective action solutions (Salman, 2011).
2. Match rules and conditions: congruence between appropriation and provision rules and local conditions. This is complex, but significant, because the nature

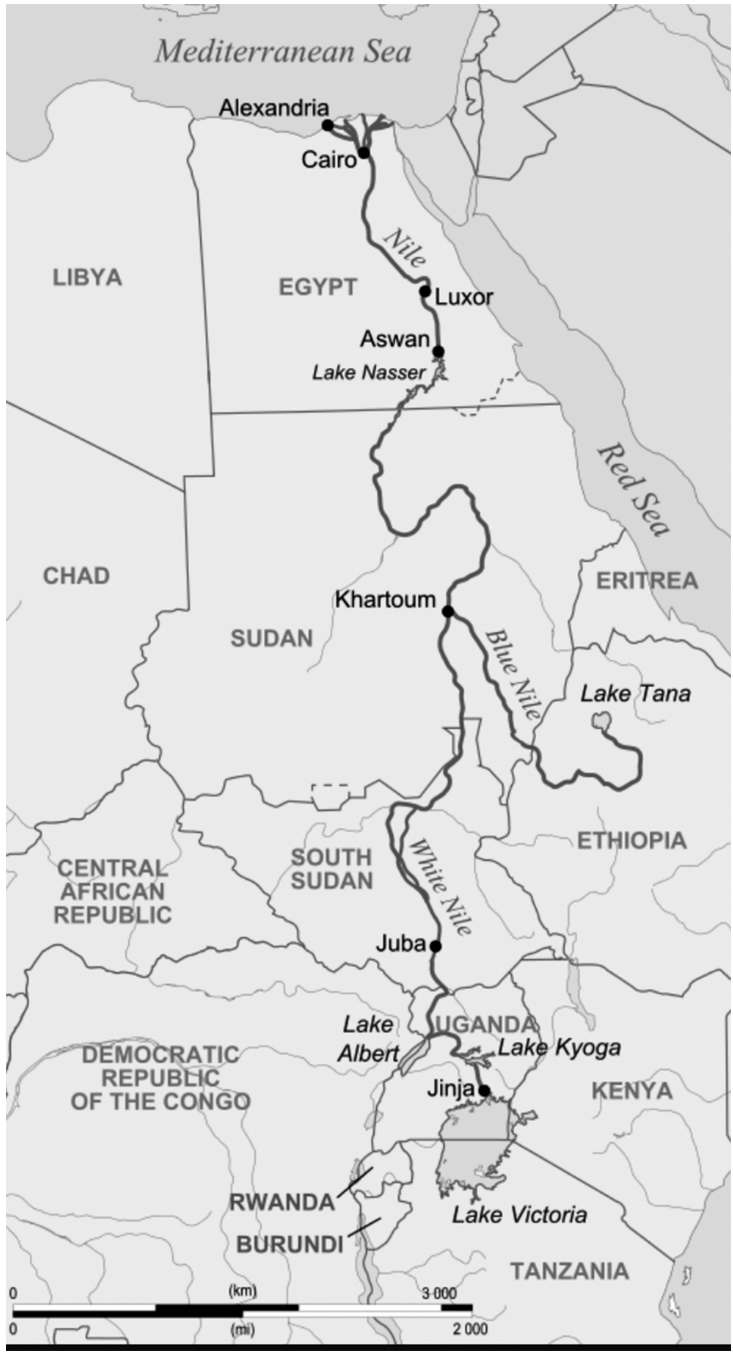

FIGURE 3.1 Map of the Nile Basin
Source: Wikimedia Commons

of the 'rules' and their interpretation are central to the challenge of reaching agreement on how to manage the basin collectively. Rules set in treaties signed during colonial rule (the 1929 and 1959 Nile Waters agreements) form the basis of Egypt and Sudan's claims on the Nile, but not those of upstream states (Brunnee and Toope, 2002). Collective action processes sought to sidestep this challenge by establishing a new set of rules (through the Nile Cooperative Framework Agreement, negotiated between 1997 and 2007), but, in effect, the two 'rulebooks' have failed to coexist effectively. The set of 'local conditions' that prevailed, particularly in upstream states, challenged the nature of the downstream adhered-to rules, particularly given upstream population growth and demands for water for energy and food production.

3. Participation in rule modification: making arrangements for collective choice that allow participation by all affected individuals in deciding on rules for appropriation and provision. The forms of cooperation that have emerged since the 1990s have allowed participation by all riparian countries, but willingness to participate has been challenged by disagreement on the 'rules', as reflected in the process of adoption of the Nile Cooperative Framework Agreement (CFA) since the formal end of negotiations in 2007 (discussed below).
4. Rule-making rights are respected externally: appropriators or those accountable to them are responsible for monitoring compliance with collective decisions. In this case, states and non-state actors withdrawing Nile resources would be expected to be responsible for undertaking actions that are in compliance with the 'collective'. What is interesting here is that there has been a certain degree of deliberate 'non-compliance' with a collective/joint approach, wherein it is possible to observe concomitant large-scale investment projects being undertaken unilaterally (in both downstream and upstream countries) in tandem with efforts to identify regional cooperative investment projects (Cascão, 2009; Nicol and Cascão, 2011). The GERD process (2011–2017) is an example of a change in the nature of the collective to incorporate 'non-compliance', but in this case a form of 'nested collective action' between the three Eastern Nile states, in which we observe new norms of cooperation established at the trilateral level but with impacts for the whole Nile Basin (Cascão and Nicol, 2016a).
5. System-level monitoring of behaviour: develop a system, carried out by community members, for monitoring members' behaviour, recognizing their own rights to organize institutions. In this case, the right to associate bilaterally, trilaterally or multilaterally is not hindered under the 'rules' of cooperation established under the Nile Basin Initiative, and the bilateral, trilateral and multilateral cooperation are not mutually exclusive. That parallel processes of cooperation exist at different levels appears to be accepted by all countries.
6. Graduated sanctions: sanctions are graduated to reflect the severity, frequency and context of violation. The NBI has a Foundation Act[3] which implicitly states that countries are cooperating in good faith and through the transitional mechanism are aiming to establish a permanent commission. Further, Article 34 of the CFA establishes a conflict/dispute mechanism:

> Settlement of disputes: In the event of a dispute between two or more Nile Basin States concerning the interpretation or application of the present Framework, the States concerned shall, in the absence of an applicable agreement between them, seek a settlement of the dispute by peaceful means in accordance with the following provisions …

7. Low-cost dispute resolution: availability of low-cost and readily accessible conflict-resolution mechanisms to mediate conflicts. In this case, there are existing governance bodies currently in charge of the transboundary cooperation process, established in 1999 – technical advisory committees (e.g. Nile-TAC), councils of ministers (Nile-COM) and other mechanisms through which negotiated solutions to technical and political conflicts may be achieved.
8. Tiered responsibility for governance: the establishment of 'nested enterprises' – that is, sets of rules established within a hierarchy of appropriator institutions must be established for common-pool resources that are within larger systems and political jurisdictions. In this case, when the Nile Basin Initiative was established the principle of subsidiarity was embedded in the establishment of two 'nested tiers' – the Eastern Nile Subsidiary Action Programme and the Nile Equatorial Lakes Subsidiary Action Programme (as two separate governance institutions, besides the NBI Secretariat). These are discussed in more detail below.

From this brief assessment of the Ostrom criteria with respect to the Nile Basin, clearly some conditions for effective collective action in the basin have been incorporated into cooperation structures (both legal and institutional frameworks). But underlying these structures and processes are a number of historical and long-lasting asymmetric power relations that continue to unpick capacity for effective inter-state collective action at the whole-basin scale. These challenges and the nature of the complex power relations involved are addressed in the remainder of this chapter through the lens of the trilateral process surrounding construction and management of the Grand Ethiopian Renaissance Dam (GERD).

The Nile: turbulent waters and the nature of the 'collective'

From dyad to diffusion of power

Hegemonic control by Egypt and Sudan began to break down in the 1990s at the same time as the 1997 UN Water Convention (UN Convention on the Law of the Non-navigational Uses of International Watercourses) enshrined the notion of equitable sharing of both resources and benefits in shared river courses.[4] This supported the efforts of bilateral and multilateral donors to establish high-level negotiations on a new institutional and legal framework agreement for the Nile in 1997 and to launch the Nile Basin Initiative in February 1999.

The NBI's development represented strong acknowledgement by the international community that growing demands on resources had to be addressed at a collective level. The NBI established a secretariat in Uganda and two subsidiary action programmes (SAPs) in the Eastern Nile (based in Addis Ababa) and the Nile Equatorial Lakes region (in Kigali). The SAPs have been responsible for the identification of joint projects on such issues as energy, agriculture and the environment, representing important application of the principle of 'subsidiarity'. They have been able to create an enabling environment within which to build agreements at project level and identify (through feasibility studies and preparation) future cooperative investment projects at sub-basin levels (NBI, 1999). Combined with SAPs, a Shared Vision Programme (SVP) supported cooperation through promoting collaborative action, exchange of experience, and trust and capacity-building intended to build a strong foundation for regional cooperation, of which the main goal was the creation of an enabling environment for investments and action on the ground (NBI, 1999).

Later in the process, as an outcome of the SVP, the NBI would be entrusted with three core functions: water resources management; water resources development; and promotion of basin cooperation (NBI, 2014). In brief, the NBI came to embody the approach of basin-wide collective action. Even if the institution still lacks a permanent status (pending the adoption of the CFA and establishment of a permanent commission), it has contributed widely to an understanding of the need to manage and develop the Nile's water resources jointly, against 'unilateralism' and more piecemeal approaches that carry high costs and risks for riparian countries and the river system itself.

Nevertheless, unilateral project development continued outside of these various institutional umbrellas, including the Toshka Diversion in Egypt in the late 1990s, the Merowe Dam in Sudan and the Tekezze Dam in Ethiopia in the late 2000s. Part of the reason for this was the involvement of new third-party actors, including Chinese investors, who supported the construction of both Merowe and Tekezze (Cascão, 2009). This new financial landscape, with non-traditional external partners gaining precedence over 'traditional' (largely Western) partners, as well as countries gaining their own financial capacity, contributed greatly to new infrastructure development processes. Newly exploited oil wealth in Sudan – at least until South Sudan's independence – enabled the Sudanese government to pursue an investment programme in energy production in the 2000s. Meanwhile, in Egypt, domestic financing of the Toshka project sought to encourage large-scale expansion of irrigation in the southern 'new' valley to reduce pressure on the Old Valley lands, but represented more of a political gesture than an economic success story (Collins, 2006; Warner, 2012). Ethiopia also continued construction of the Tekezze Dam, with Chinese support. Then, in April 2011, it announced plans to begin construction of GERD, and stated its intention to rely solely on national financing from both government budgets and individual 'bonds' bought by the Ethiopian public. This project has since become the largest, and certainly the most controversial, example of unilateral development in the Nile Basin.

Below we examine the background to the challenges facing collective action to achieve regional investment and move beyond the unilateral projects which, to this point, have dominated actual development on the Nile since the emergence of the NBI.

New rules, new political impasse

By 2010 the NBI had celebrated its tenth anniversary and the so-called 'D3 Project', financed by donors to establish a legal–institutional basis for cooperation (a precondition among upstream riparians, in particular Ethiopia, for the establishment of the NBI), had been long in negotiation (see Arsano and Tamrat, 2005). The CFA outcome of the D3 Project was a new 'rules of the game', setting new legal and institutional mechanisms for future cooperation between states, and the necessary framework for the establishment of a permanent Nile River Commission (Agreement, 2010). By 2007, all of the countries involved in the negotiations had agreed to forty-four of the forty-five articles in the document. The exception was Article 14b. This was due to Egypt and Sudan's strong reservations about the implications of the new agreement for their bilateral 1959 Nile Waters Agreement (NWA). In 2010, the upstream riparians decided to annex Article 14b (to be resolved by the Nile River Basin Commission within six months of its establishment) and press on with signing the remaining negotiated articles under the so-called 'Entebbe Agreement'. According to Article 43, six instruments of ratification or accession would be sufficient for the CFA to enter into force (Agreement, 2010). By early 2017, only three countries had ratified the CFA (Ethiopia, Rwanda and Tanzania), while four others were in the process of ratification/accession (Kenya, Uganda, Burundi and South Sudan).

Egypt's objection to 'Water Security' (Article 14b) was based principally on a perceived threat to the 1959 agreement and the existing apportionment of the Nile water. The article states: 'the Nile Basin States therefore agree, in a spirit of cooperation, to work together to ensure that all states achieve and sustain water security and not to significantly affect the water security of any other Nile Basin State'. In the signed agreement, a codicil was added: 'Egypt and Sudan expressed their reservations to the ambiguous article, and considered that the last sentence of Art.14b should be replaced by the following wording: "(…) not to adversely affect the water security and current uses and rights of any other Nile Basin State"' (Agreement, 2010). All of Article 14b in its current form was annexed to the signed CFA but not included in the main body of the agreement.

As a reaction to the so-called 'Entebbe Agreement', which represented agreement among seven states to sign the CFA, both Sudan and Egypt suspended their participation in all NBI activities and projects, though the former later reversed that decision and resumed full membership of both the NBI and ENTRO (Eastern Nile Technical Regional Office) in November 2012 (*Sudan Tribune*, 2012). The rules of collective action began to change substantially again in 2011,

when Ethiopia announced GERD, and even more so when the three Eastern Nile countries signed a new legal document titled the 'Declaration of Principles' in March 2015. This agreement binds the three countries to collaborate trilaterally on the new dam. It is examined in the next section.

The Grand Ethiopian Renaissance Dam: game-changer and new power-play

'Nested collective action' and political change

The failure to institutionalize 'full' collective action under the CFA and the splitting off by upstream states from the whole basin body of states in some senses echoed wider principles of subsidiarity embedded in the NBI's design. This response to the slow pace of change towards a new agreement and set of rules – combined with ongoing unilateral project development elsewhere – engendered the decision taken by Ethiopia to announce construction of the 'Millennium Dam', subsequently renamed the Grand Ethiopian Renaissance Dam.

Ethiopia had long insisted on its right to develop hydropower and fully anticipated that the Joint Multipurpose Project (JMP), studied under ENTRO/NBI, would lead to dam construction and capacity to utilize some of the country's vast (30,000 MW) hydropower potential. Agreed in 2003, the JMP aimed to identify and select a first set of investments and included an ENCOM-commissioned (Eastern Nile Council of Ministers) independent study on the 'Opportunities for Cooperative Water Resources Development on the Eastern Nile: Risks and Rewards' (Blackmore and Whittington, 2008).

This scoping study was an important landmark in collective action in the Nile Basin as it represented the first time such a significant study had been jointly commissioned. Political engagement and commitment among the three key countries underlined their high levels of expectation (Cascão and Nicol, 2016a, 2016b) and included:

1. planning and implementation based on regional decision-making processes;
2. regional confidence-building based on joint communication and consultation mechanisms;
3. a benefit–cost sharing formula between the riparians under a 'no-borders perspective'; and, ultimately,
4. that it would contribute to ensuring efficient and optimal use of the Nile waters through equitable and reasonable utilization (Eldaw and Fekade, 2009).

It was anticipated that the JMP was the transboundary project to unlock further linkages in terms of regional cooperation, trade and integration, and provide transformational socio-economic benefits to the region as a whole

(Eldaw and Fekade, 2009). However, because of numerous political obstacles to the project itself and challenges posed by signing and adopting the CFA, the JMP project came to an end before delivering any tangible results, let alone before Ethiopia achieved any of its hydropower ambitions.

A new 'trilateralism'

The emergence of this new trilateral arrangement (including a legal declaration of principles from the heads of state of the three Eastern Nile riparians) represented a new form of nested collective action within the basin. Egypt, weakened politically by internal turmoil, needed an agreement that could guarantee the GERD would not affect its national water security. Beginning in 2015, bilateral and trilateral talks eventually led to the 23 March 2015 Declaration of Principles for the GERD (DoP), signed in Khartoum. The DoP brought the three states together around an agreed set of principles on cooperative relations.

The ten principles include the 'traditional' international legal principles of 'no significant harm' and 'equitable and reasonable utilization' as well as stipulations on dam security, dam filling, operations policy and exchange of information (Agreement, 2015). The DoP was also strengthened by the Khartoum Accord, signed in December 2015 (Salman, 2016). This new 'regime' in the Eastern Nile Basin represents cooperation outside the formal institutional sphere of the NBI, but to some extent nested within the basin-wide cooperation context. The challenge now is whether these 'nested rules' reduce the incentive for key players – including Ethiopia – to complete the CFA (see Cascão and Nicol, 2016a, 2016b), and suggest that collective action at full-basin scale may become the victim of more achievable political realities at ground level in the form of bilateral and trilateral arrangements.

Conclusions

Our review of the collective action challenges in the Nile Basin assessed the nature of changes within the basin and then outlined the eight Ostrom principles of collective action and how they relate to Nile cooperation.

We have seen how efforts at collective action have been heavily influenced – and shaped – by power and political economic realities, including new dynamics and relationships, power resources and even new actors within this shifting landscape. A more fluid set of actors emerged in the 1990s, but early efforts to build on this situation and establish a common platform for cooperation and collective action have remained subject to historical realities and current political realities. It will take both power politics and principles of collective action to change the entrenched institutionalization of older power structures – most notably the 1959 biltaeral agreement between Egypt and Sudan. At the time of writing (early 2017), the Entebbe Agreement had yet to enter into force, although expectations were that this could happen in the medium term.

Changes in the configuration of state power and wider geopolitical environments within the basin enabled the NBI to emerge. It represented a form of collective action predicated on delivering agreed development objectives over a ten-year period and succeeded in changing the discourse on cooperation, but it has been quite marginal to actual developmental change at ground level. The NBI came close to fulfilling nearly all eight of the Ostrom principles for managing a common-pool resource, but the experience of the basin in the years since has been that political exigencies and the complexity of the power structures (and change) within the basin override collective action capacity to deliver substantial benefits at the full-basin scale. Basin-scale realities of power lead states to fall back on their own individual claims over resources and positions on basin development through bilateral and trilateral 'nested' cooperation. This is not necessarily a failure of collective action, but rather a balancing of collective action and national political–economic realities.

Notes

1 With additional input from Dr Ana Cascão.
2 This doctrine holds that agreements signed between entities in colonial times have to be renegotiated after independence.
3 See http://extwprlegs1.fao.org/docs/pdf/uga80648.pdf.
4 See http://legal.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf.

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4

GRASSROOTS SCALAR POLITICS IN THE PERUVIAN ANDES

Mobilizing allies to defend community waters in the Upper Pampas watershed

Andres Verzijl, Jaime Hoogesteger and Rutgerd Boelens

Introduction

Water is and has always been the "life stream" of rural livelihoods in Andean communities. Access to water has for centuries been guaranteed through various forms of collective action and autonomous governance structures (Boelens, 2015). Until now, collective action has assured individual water access and is mostly based on local, inter- and intra-community water rights systems that shape, and are shaped by, water flows and infrastructure, local water-related practices, authorities and territory, and particular world views on how societies relate to water and nature (see Beccar et al., 2002; Hoogesteger et al., 2016).

These communities do not operate in isolation from broader social and political environments and processes. Since long before the Inca Empire, Andean community organizations have connected to and formed alliances with different water governance actors, legal systems and human and supranatural authorities. The relationships of communities with external actors and forces, such as the officials and ordinances of the Spanish Crown, the "Indian Reductions" (community remodelling) policies and later the municipalities and government officials and agencies of the sovereign nation states have always played a role in the shaping of communities (see Stern, 1992). In turn, communities also play an important role in shaping the outcomes of water governance interventions through their interrelations with "outside" actors and forces such as powerful private actors (landlords, agro-export companies and extractive industries), growing cities, social and environmental movements, or transnational human rights networks.

The increased claims and demands of external actors on water sources within their territories have made communities ever more aware of the fact that if they are to keep their waters and related environments, they must defend these through community collaboration but also, and ever more importantly, by mobilizing allies

and creating and maintaining networks with external actors that operate at different spatial scales. This is often the most promising, if not the only, way for Andean communities to overcome their spatial constraints to agency and exert influence to defend their stakes at differently scaled sites and institutions (Boelens, 2008; Hoogesteger, 2013).

Based on these notions, in this chapter we describe and analyse how the four pastoralist communities of Ccarhuancho, Santa Inés, Pilpichaca and Choclococha, situated in the headwaters of the Pampas watershed (Peru), defend their waters, wetlands and livelihood integrity, and gain voice in decision-making in different water governance arenas by strategically mobilizing collective action within their communities and by creating alliances with differently scaled actors. In our analysis we draw on the perspective of *grassroots scalar politics* (see Hoogesteger and Verzijl, 2015). It departs from the notion that geographical scale, understood as a socio-spatial construct or enactment, can be used – and is insightful – to understand "the processes that shape and constitute social practices at different levels of analysis" (Marston, 2000: 220). Within the debates on scale, a focus on grassroots scalar politics proposes to concentrate on strategic collective action by which civil society groups, communities, NGOs and advocacy groups advance their interests through engagements and alliances with other differently scaled and situated actors and networks (Bebbington et al., 2010; Boelens et al., 2010). This notion assumes that actors pursue their interests through:

a mobilizing and maintaining networks and alliances with actors at different spatial scales;
b consolidating interaction, influence and political control at different sites; and
c the discursive and material bending of existing scalar realities (see Hoogesteger and Verzijl, 2015).

Through these scalar practices, Andean communities increase their capacity to secure their waters and related territorial resources and livelihoods, vis-à-vis the projects of influential adversarial actors. Scalar practices enable communities to access institutional, financial and political support and power at various interrelated scales (i.e. regional, national and international; wetlands, headwaters and basins; or NGOs, stakeholder platform and transnational water justice movements). Mobilizing allies and creating alliances that have the potential to help communities defend and advance their claims forms the key to these scalar strategies through which water governance outcomes are shaped.

Where waters are at stake: divergent claims in the Upper Pampas

The headwaters of the Pampas River are part of a plateau in the central Andean highlands of the Huancavelica Region, located more than 4,000 metres above sea level (see Figure 4.1). This environment consists of lakes, bogs and pastureland. The biggest lake in the area, one that holds a spiritual connection for many families in Huancavelica, is called Choclococha. For centuries, semi-nomadic pastoralists

and camelid herds have roamed and shaped this area, relying on the extension and maintenance of wetlands (ecosystems of saturated peat material) or *bofedales*. These are particularly important in the drier months of the year – May to November – when rainfall is scarce and seepage and snowmelt provide a gradual water influx. The *bofedales* are the basis of subsistence for 1,500 families in the Upper Pampas who rely on the meat and wool of about 200,000 alpacas and sheep for their livelihoods (see Postigo et al., 2008). Land and water are held in common and elaborate wetland irrigation practices exist to maintain and increase the *bofedales*. This is done by diverting water to new terrain and letting it infiltrate, turning dry peat into lush wetland over time. Practices include making canals, tinkering with water flows, digging infiltration ditches and small ponds, and experimenting with new technology, in addition to improving vegetation composition (Verzijl and Guerrero, 2013).

In July 2006, a legal decree was issued – DS 039-AG-2006 – which threatened the livelihoods, water flows, wetlands and territorial integrity of the Huancavelica communities of Ccarhuancho, Choclococha, Santa Inés and Pilpichaca. The decree allocated 50 million cubic metres (MCM) of water per year from this area to augment the existing coastal irrigation in the Ica Region through an interbasin transfer (see Figure 4.1). This transfer, for which powerful actors, including agribusinesses, Ica water users' associations and regional and national government agencies had strongly lobbied for years, was an important part of an Ica-based hydraulic multipurpose project called "Proyecto Especial Tambo-Ccaracocha" (PETACC). To collect the allocated water of the Upper Pampas, all springs and runoff water in this area would be collected through a 73-kilometre interceptor drain – *el canal-colector Incahuasi*. Once constructed, this canal would transfer these waters to Lake Choclococha. Here the collected water would be stored, behind a large dam, before being directed to the Ica plains through the existing Choclococha derivation canal.

In Ica, most water is used for commercial irrigation. Over the last two decades it has become the country's economically most important agro-export region, with several large, transnational companies turning the desert into sites of modern agriculture (Hepworth et al., 2010). To secure and expand their lucrative operations and the overall economic development of the Ica Region, for years this politically well-connected sector has sought new sources to augment the water supply in the valley. In that regard, the Incahuasi project was, and continues to be, promoted in national and regional election campaigns. To fulfil such a campaign promise, and in the wake of DS 039-AG-2006, US$30 million were allocated by the national government to the Incahuasi project in 2007.

For the communities, *el canal-colector Incahuasi* was not the first large-scale project transferring water to Ica's irrigation sector: the dam and the Choclococha derivation canal were constructed in the 1950s. This infrastructure submerged one community and cut through grazing lands and herding routes of many others. Over the years, the canal has claimed the lives of hundreds of alpacas and dozens of people in the Upper Pampas who fell into the freezing water. It further negatively

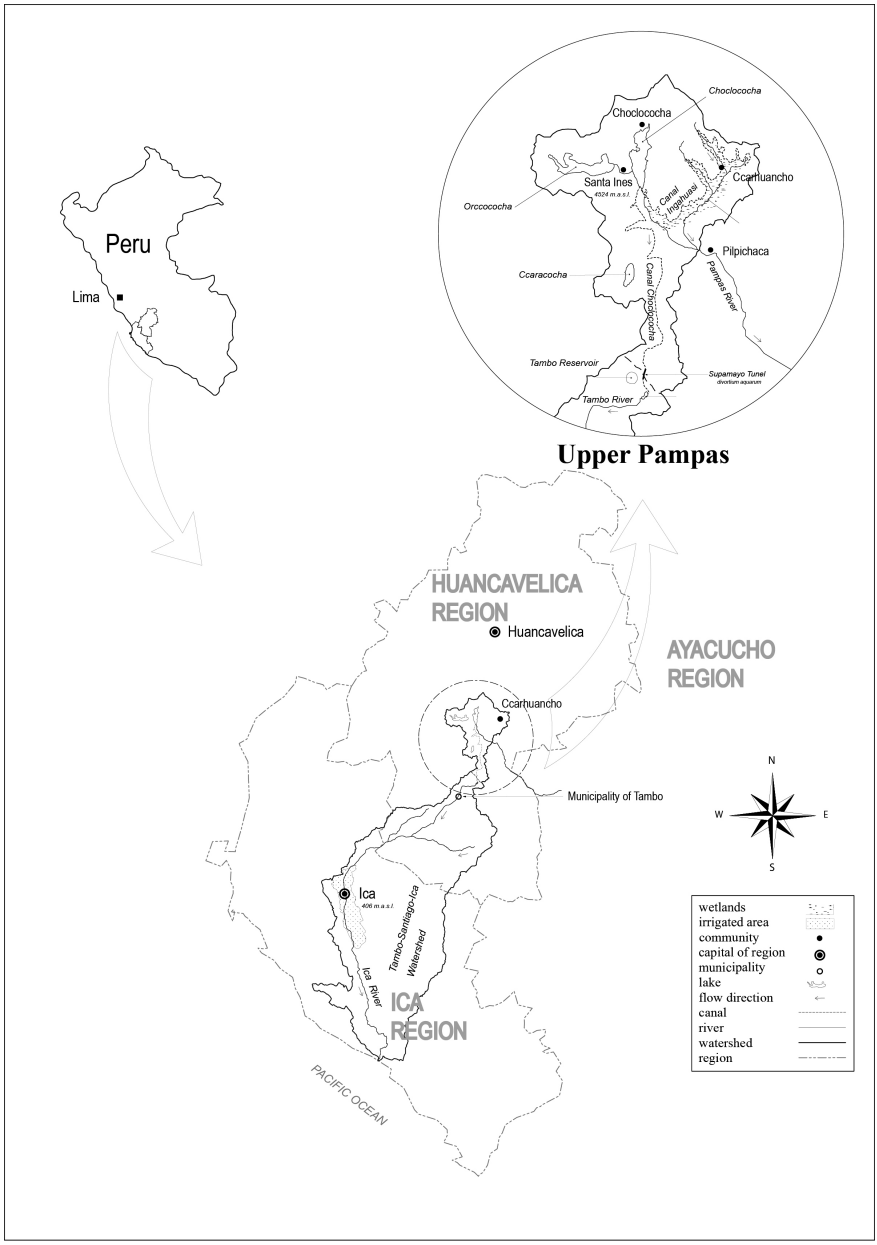

FIGURE 4.1 The Ica–Upper Pampas watershed
Source: Authors' elaboration

affected the water streams that sustained many *bofedales* and restrained the ability of the communities to move their herds through their territories. The construction of the Incahuasi canal would have similar negative effects in addition to the degradation, if not destruction, of hundreds of additional hectares of vital wetlands (Verzijl and Guerrero, 2013).

Contentious collective action for the defence of water and wetlands

After learning of DS 039-AG-2006, community members of Ccarhuancho started to mobilize allies to defend their waters and wetlands. On 15 September 2006, about 500 people from the four communities affected by PETACC gathered to protest on the village square of Ccarhuancho, where they received a delegation of the regional government of Huancavelica[1] and NGOs, most of which were associates of MEGAH (Mesa Técnica de Gestión del Agua de Huancavelica). This was a multi-stakeholder platform set up around the same time to defend the rights of water users of the Huancavelica Region. It enjoyed strong public and regional government support, in great part based on perceived structural injustices and inequalities of the Andean areas vis-à-vis the coastal zone (Ica). At this public gathering, MEGAH adopted the communities' struggle against PETACC as an important case. Being the frontrunner of early mobilizations, the community of Ccarhuancho became a full-fledged member of MEGAH, with their leaders representing the four communities. This secured allies for their local struggle among regional government and NGOs with different scalar reaches.[2] MEGAH members included representatives of the Offices of Agriculture, Health, and Natural Resources and Environment of the Huancavelica regional government, the Water Authority (ATDR) of Huancavelica as well as decentralized offices of national programmes like PRONAMACHS (the National Watershed Management Programme). It also included national and international development NGOs.

In October 2006, MEGAH organized a regional water forum in the capital city of Huancavelica, leading to the creation of new alliances with national water experts and human rights activists. At this forum several invited candidates in the upcoming regional government elections promised to prioritize the water issues of Huancavelica if elected. The elections were won by Federico Salas, who had played a controversial role during Fujimori's dictatorial regime. This caused tensions with certain NGO representatives of MEGAH and eventually led the Salas administration to create a second water platform after withdrawing its representatives from MEGAH. Though MEGAH continued to operate independently, its influence declined as a result.

To maintain alliances with and secure the support of the new regional government of Huancavelica, the communities mobilized their members to attend several political rallies that were co-organized with Salas between February and June 2007 against the water transfers to Ica. These rallies, which were attended by thousands of people, aimed to address the unjust division of water between the Huancavelica and Ica regions and later present this interregional dispute in front of national

ministries and agencies. More protests were organized in the communities located near the dam and sluice of Lake Choclococha. Different from the territorial integrity and water access claims of the four communities in Upper Pampas, the central component of Regional President Salas' political case was that the region of Huancavelica ought to be compensated for the water that flows from Huancavelica to Ica. His argument was that millions of dollars were invested in hydraulic works for Ica, while not a single drop or dollar was left for Huancavelica.

The rallies led to the involvement of the Prime Minister in the mediation of the conflict between the two regional presidents. This resulted in an agreement that, in exchange for its waters and the consent to construct the Incahuasi canal, Salas would get US$30 million for development projects in Huancavelica (equal to the cost of constructing the Incahuasi). This settlement – along with other issues that caused public dissent in Huancavelica – resulted in a popular mass mobilization and street protests in Huancavelica's capital. The deal between Ica and Huancavelica was eventually cancelled. In parallel, and through contacts from MEGAH, the leaders of Ccarhuancho travelled to Lima to present and discus, their case and the illegitimacy of the water reservation for Ica with congress members.

Transnational actors and the Latin American Water Tribunal

In another course of action, Ccarhuancho and the other affected communities consulted with the human rights activists and NGO legal advisers they had met at MEGAH. With their help, the Ccarhuancho leaders worked on presenting their case at the Latin American Water Tribunal (TLA). In preparation for the case, Ccarhuancho reclaimed its indigenous identity to appeal to ILO 169 and incorporated internationally recognized wetlands protection treaties (RAMSAR) and other environmental impacts in its defence arguments (see Hoogesteger and Verzijl, 2015). The financial support to get the Ccarhuancho representatives to the TLA hearing in Mexico and then disseminate the results in Peru was arranged through a national NGO and a Netherlands-funded international water education programme.[3]

On 8 October 2007, in the city of Guadalajara, Mexico, the TLA ruled in favour of Ccarhuancho and the other communities of the Upper Pampas, demanding that construction of the Incahuasi canal must be halted and DS 039-AG-2006 (and others) revised. It further recommended compensation and retribution for past damage, as well as the realization of an environmental impact assessment, in collaboration with the communities of Ccarhuancho, Choclococha, Pilpichaca and Santa Inés. The accused parties were notified, but absent.

After this triumph, a press conference was organized in the Peruvian capital Lima. The aim was to make the verdict of the international court public for the national media, the authorities and the wider citizenry. Those in attendance included transnational actors such as NGOs and solidarity networks but also PETACC and representatives of Ica agro-export interests. Although the TLA verdict was not binding, its impact was considerable. It gave legitimation to the

communities' struggles, which had resulted in previous community leaders facing criminal charges. It also forced PETACC to consider the headwater communities properly in environmental impact assessments (EIAs) and generated considerable international and national attention. The TLA's ruling cemented the position of the communities in the inter-regional conflict, making it harder for the national government to support the demands of Ica stakeholders to push for the Incahuasi canal. However, despite several dialogues and attempts to establish a report in the following year, no EIA was drafted (Guerrero et al., forthcoming).

Water laws and watershed boundaries

The current water law (enacted in 2009) stipulates that watershed committees have to be installed at watershed level, with the participation of local and regional governmental actors and water user groups. In cases of inter-regional conflict, such as between the Upper Pampas and Ica, each region first has to form a "pre-commission," and these then negotiate about the watershed committee's agenda and positions. In connection with this law, the World Bank and the Inter-American Development Bank funded the Modernization of Water Resources Management Project (PMGRH) to strengthen the institutional capacity of the water sector. One of its pilot projects was the Ica watershed, including the area of the interbasin transfer from the Upper Pampas (Guerrero et al., forthcoming). For this, US$8 million were allocated, on the condition that a watershed committee would be created. In 2010, the National Water Authority (ANA), PMGRH and PETACC started negotiations to reach an agreement between Ica, Huancavelica and the communities of the Upper Pampas, but without success. Part of the conflict revolved around the watershed committee's boundaries. Lake Choclococha is the origin of the Pampas River, from where water is diverted to the Ica watershed (see Figure 4.1). The Ica Irrigation District boundaries marked this area (together with a small margin on either side of the Choclococha derivation canal) as belonging to it. The Ccarhuancho River is a tributary of the Pampas River and technically part of the Ayacucho Irrigation District that administers these waters. However, since the Incahuasi project, Ica interests and stakeholders, as well as ANA officials, have envisioned this area to be part of the Ica Irrigation District.

A lot of effort was put into persuading actors from Huancavelica to participate in the Ica watershed committee. Yet, the communities insisted on first resolving the issue of community water rights and decision-making power over (future) hydraulic works (Guerrero et al., forthcoming). Difficult negotiations followed, in which the communities and the Huancavelica regional government insisted on the hydrological watershed boundaries, in which their territories form part of the Pampas watershed.

A fragile dialogue was shattered in 2011 when, shortly after newly elected regional presidents were inaugurated, an emergency decree – DU 001–11 – was issued by the national government. The Incahuasi canal and related infrastructure were declared projects of national interest, which meant that normal legal

processes, such as an approved EIA, could be sidestepped, allowing work to begin immediately. The new regional president of Huancavelica maintained the position that he was not against the projects, but would consent to them only if there was no opposition from the communities. In turn, the communities protested and mobilized, not just against Ica actors, but against their own regional government, whom they urged not to give in.

The emergency decree coincided with a sense of urgency among those funding the PMGRH Modernization Project, for which the signatures of both regional presidents were needed. However, since the president of Huancavelica would not sign without the communities' consent, Incahuasi was again halted and removed from the list of projects of national interest by mid-2011. This led ANA and other involved stakeholders to reconsider their desired watershed boundaries, which included the area of the basin transfer in the Upper Pampas, and focus on the Ica watershed scale. It was believed this would make formation of a watershed committee easier, but it was viewed by many pro-Ica actors, including PETACC, as a loss of control. Then Huancavelica and community representatives insisted that the Pampas Watershed Committee would be set up in parallel to the Ica Watershed Committee. Both ANA and the PMGRH Modernization Project initially agreed to this. Furthermore, through their position in relation to infrastructure and their established negotiating skills, the communities managed to secure a special seat on the future Ica Watershed Committee. They succeeded in gaining this concession after arguing that their practices and the existing infrastructure shape and influence each other.

Strategic bending of the watershed boundaries to, on the one hand, gain voice in the Ica Watershed Committee while, on the other hand, keeping Ica interests at bay through assisting in the formation of the Pampas Watershed Committee has been formidable. At the same time, however, the formation of the Pampas Watershed Committee has stalled because representatives of other regions (Ayacucho and Apurimac) could not be mobilized. This has legal consequences for the Incahuasi canal in light of the fact that the 2009 water law stipulates that new large hydraulic projects can be developed or planned in a watershed only after a functioning watershed committee has approved of the plans.

Sustainability of a dialogue platform

Despite the existing legal and institutional hurdles, during the electoral campaign for regional governments in 2014, Incahuasi was again put on the public agenda by candidates in Ica who claimed to have reached agreements with the communities in the Upper Pampas. Meanwhile, other candidates announced plans for the realization of Incahuasi through public–private partnerships (Guerrero et al., forthcoming). The national government supported Ica actors' proposals to increase water availability and even went so far as to allocate them funds from the central treasury. In Huancavelica and the Pampas headwaters, the national government would invest in pasture management and alpaca breeding, but not in projects that

allocated water to the communities. The Minister of Agriculture emerged as a strong Ica ally when pledging to remove any obstacle or administrative constraint against infrastructure investment (Guerrero et al., forthcoming). Once again, the communities mobilized to refute false claims that they had agreed to the infrastructure projects. To this end, media outlets in Ica were approached, while graffiti on walls and streets in Upper Pampas signalled the activists' discontent. At the same time, they sought new courses of action and new allies as well as old ones.

In June 2014, community representatives met the high commissioner of the National Office for Dialogue and Sustainability (ONDS). The ONDS is the highest authority in Peru on controversial issues and social conflict resolution. Its main aims are "to promote spaces for dialogue … for citizen participation and consolidation" (ONDS, 2014: 48) and "foster agreements and consensus between the State, private sector and society" (ONDS, 2014: 74). During an intermission of the June meeting, the situation in the Pampas headwaters was briefly explained to the commissioner by Huancavelica stakeholders. He acknowledged the need to secure social justice for the Huancavelica communities and promised to put them on the ONDS agenda. When the meeting recommenced, he mentioned that the state owed a historical debt to Huancavelica that had to be honoured.

The creation of the "Bi-regional Dialogue and Development Platform Ica–Huancavelica" (MDDB) was announced in March 2015. Before the first roundtable dialogue, a number of preparatory meetings were held in both regions. In the capital of Huancavelica, the ONDS moderator showed the community representatives a video of the president of Ica renouncing the Incahuasi canal on national television, specifically because of "the environmental value of the wetlands." According to the ONDS official, this statement virtually marked the end of the conflict. However, those who were present declared that the cancellation of the Incahuasi project was just part of their agenda. Other, more immediate points also had to be addressed, such as the co-administration, by both regions, of PETACC (or whichever entity would be tasked with operating the infrastructure) and recognition of community water use and allocation of water rights.

In a final preparatory meeting, held in August 2015, delegations of both Huancavelica and Ica presented their agendas for the MDDB. The meeting was chaired by the ONDS and participants included representatives of ANA, various branches of the Huancavelica and Ica regional governments, PETACC, the affected communities, the Ica water users' associations and others. In total, thirteen agenda points were tabled, nine by Huancavelica and four by Ica. The latter's main point concerned the formation of the Ica Watershed Committee.

In October 2015, the first roundtable meeting was held. The media presented it as a historic meeting between the two regions to determine a shared water future. There was careful optimism among the actors involved that a watershed committee might be formed, PETACC might be replaced with a bi-regional project and other goals might be addressed. However, water reallocation and the construction of infrastructure were still stumbling blocks.

In parallel to the communities' numerous efforts to mobilize allies and upscale their struggle by connecting to a multiplicity of scaled actors and spaces, they engaged locally to defend their water and wetlands. Several communities have issued written *oficios* (formal documents) prohibiting PETACC from trespassing on their territory and denying its engineers access, pending the resolution of controversies like DS 039-AG-2006. In September 2006, an unmarked car was spotted on a road in Ccarhuancho. Community members intercepted it and demanded that the two strangers explain their intentions as well as the survey documents and maps that they found in the car. The locals then confiscated identity cards and the survey documents, which were handed in to the provincial court, where the trespassers were denounced.

There have been many similar incidents over the years, especially in times of crisis. The communities exert tight control over who enters their territory and on more than one occasion they have stopped, questioned and even threatened suspected intruders. In January 2015, when the conflict with "new" Ica politicians was escalating, the communities again denied entry to PETACC personnel charged with managing the Choclococha reservoir and canal. This strong local territorial control has become a powerful tool for these communities vis-à-vis PETACC and related Ica-based interests. To date, it has made it impossible for engineers to carry out the topographical surveys that would be needed before construction of the Incahuasi canal could begin.

As of November 2016, a decade after the first public hearing in Ccarhuancho, negotiations about the dismantling of PETACC and the launch of a new bi-regional hydraulic project were just beginning.

Discussions and conclusion

This chapter shows how Andean communities, in defence of their waters, successfully engage in grassroots scalar politics to create and cultivate alliances and associations with national NGOs, regional governments, transnational actors such as the TLA and broader water education and solidarity networks. It is due to these alliances, which are both based on and depart from the local collective action of communities in the Upper Pampas, that the Incahuasi project has, over the years, been blocked repeatedly. This has been achieved through the creation of political leverage and embedded in inter- and intra-community associations and collaboration. Though communities are often diverse and even antagonistic, it is crucial that internal cohesion is both established and maintained when external threats imperil the resources and livelihoods of the community members.

In this case, cohesion is tied to pastoralist identities and practices and the defence of these and the resources that sustain them. This collective struggle mobilizes community members for protests, rallies and action that establishes local control over who enters community territory. At the same time the collective is the support base that financially, strategically and emotionally backs those community representatives that engage in networking and alliance-building activities that enable local communities to upscale their struggles and gain political agency in regional and national water governance arenas.

The lens of grassroots scalar politics offers an entry point to improve our understanding of the communities' dynamic multi-scalar associations and their strategic deployment of scale – such as regional, watershed level or the particular ecological zone of *bofedales*. For this they mobilize differently scaled political interests and powers, institutions and legal systems (regional, national, international, water, environmental and human rights) as well as identities (regionally rooted, indigenous, *campesino*, pastoralist, water professional) (see Bebbington et al., 2010; Boelens et al., 2010). An important line of inquiry that remains open in improving our understanding of how communities create such alliances is analysing the crucial role that community representatives play in the process of advancing grassroots scalar politics (see Hoogesteger, 2012).

What this case highlights is the crucial role that networking and alliances play as a means for local actors to upscale their struggles through grassroots scalar politics. It shows that although collective action at the community and supra-community levels is essential, increasingly multi-stakeholder and multi-scalar forms of collective action and collaboration are needed to create the necessary political leverage to defend local interests and stakes. These are rooted in community practices but also connected to broader scales such as tribunals in Mexico, government ministries in Lima, and the water education programmes of solidarity networks and environmental NGOs. The resulting alliances are increasingly important in shaping water governance processes and its outcomes at different scales. Communities that fail to engage in grassroots scalar politics are at great risk of becoming invisible at broader scales and in consequence losing their access to water and related livelihoods to more powerful actors (Perreault, 2013, 2014; Zwarteveen and Boelens, 2014).

The community struggles analysed here show that the interests, waters, territories and livelihoods of rural communities can be protected and maintained through collaboration that successfully engages with different multi-scaled actors as part of a broader process that leads to more just water governance processes and outcomes.

Notes

1 In Peru, the governmental administration is divided into regions that have considerable political autonomy and clout.
2 It is worth noting that the regional government and NGO actors were not present in the 1950s, when the first infrastructural projects were realized. The communities did protest, but they found it difficult to build networks and maintain allies.
3 The programme was a precursor of the Alianza Justicia Hidrica, a broad solidarity network that unites international development organizations and universities with national water advocacy groups, grassroots initiatives and community leaders in the Andes who aim to further water and environmental justice (see www.justiciahidrica.org).

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5

HYDRO-HEGEMONY OR WATER SECURITY COMMUNITY?

Collective action, cooperation and conflict in the SADC transboundary security complex

Richard Meissner and Jeroen Warner

Introduction

After the Berlin Wall came down, the fragile Cold War equilibrium frayed. Dire Malthusian warnings of green wars, especially over water, in areas with high population pressures dominated the 1990s transboundary water literature. After Wolf (1995) showed that violent water conflict is extremely rare and cooperation the norm, attention started to shift to water cooperation and how to achieve it.

In an anarchical global environment, the conflict potential of shared water resources has made rivers subject to high politics (i.e. security). While researchers and diplomats consider regional treaties as cooperation indicators (Wolf 1995), unequal treaties can also be sources of conflict (Warner and Zeitoun 2008). International regimes may institutionalize asymmetric power relations (Kistin 2011), and consequently constitute enmity instead of equity.

According to Zeitoun and Warner (2006), the absence of war does not mean the absence of conflict or the presence of peace. Signing a treaty, or some form of cooperation over transboundary water, does not mean an end to conflict. Cooperation is not necessarily voluntary, while path dependency might also restrict the scope for resistance and change to existing interaction modes (Putnam 1993). While regime analysis deals with lengthening the 'shadow of the future' to create stable expectations, Sebastian (2008) has noted the importance of the 'shadow of the past'. Current state boundaries, cooperation habits, conflicts and frustrations over water in The Southern African Development Community (SADC) date back to colonial times. The 'frontline states' established SADC's predecessor, the Southern African Development Cooperation Conference (SADCC). They did so in response to apartheid South Africa's active regional destabilization policies. The shadow of the colonial and apartheid past, however, created and justified segregation of access and production which, to a degree, persist and are reproduced today.

In this chapter, we investigate the Lesotho Highlands Water Project (LHWP) as a hydro-security complex (HSC) to see if water regimes constitute regional integration, a contested view in the literature (e.g. Warner and Zeitoun 2008). Turton (2008) analysed the dynamics of water conflict and cooperation through this lens, labelling relations within such a complex 'securitized' or 'desecuritized' – conflictive or non-conflictive. Going beyond this Manichaean dichotomy, security analysts have posited a still crude continuum from anarchy, via mature anarchy, to integration (e.g. Busuttil et al. 1994). In a state of anarchy, riparians do not visibly take each other's actions and interests into account – all basically do as they please with no central checks and balances to govern unruly behaviour. Even so, as riparian economies develop, they inevitably engage with each other and need to make some deals to align expectations (Williams 2003). They can become more attentive to each other's plans and interests, leading to more contact, but not necessarily to cooperative interaction at first. The 'securitized' status of a river means that a state sees the river as a vital security interest, and resists sharing its sovereignty. States not only consider water and water infrastructure as security referents (vulnerable to attack), but also as power resources where riparians use infrastructure (plans) to gain diplomatically. States can view upstream interventions as both beneficial and harmful to downstream riparians while an upstream dam can regulate floods, but also take water away from the downstream riparian. As unilateral action simply becomes uneconomic, interdependence, however asymmetrical, calls for some kind of coordination. An agreement may evolve, with still jealously guarded autonomy and sovereignty: 'mature anarchy' (e.g. Buzan 1991). A 'water security community' is the nadir of river cooperation.

Meissner's (1998) cooperation continuum runs from unwritten rules, agreements, protocols, commissions, regimes and functional organizations through to a water union (Jacobs 2009). For Meissner (1998), a water union is the harmonization of riparians' domestic water policies as well as international law, technical cooperation, and political processes over shared water resources. Riparians agree to all international legal principles, with the principle of equal and fair utilization the norm. Mirumachi and Allan's (2007) cooperation continuum similarly runs from non-engagement via the promise of technical cooperation (similar to Meissner's cooperation continuum) and treaty formation to joint risk-taking (implicit to a water union). While promising, these cooperation continuums are not yet as solidly established as Neumann's (1999) conflict continuum, which is based on ever stronger 'speech acts' creating social realities. Meissner's (1998) 'water union' is analogous to social speech acts such as declaring 'allegiance', 'friend/partnership', and 'marriage' (a union in itself). We will take this up in our analysis, using multiple lenses of International Relations (IR) theory.

The River Senqu case

In IR's realist tradition, a hegemon brings stability of expectations and enables the formation of a cooperation regime. In so doing, the hegemon 'provides' public

goods such as security and development, often unilaterally. South Africa is the unquestioned political and economic leader in its region, initiating river management treaties with its neighbours. However, does South Africa also bring stability and cohesion? Its government, it appears, certainly likes to think so. This is typical of hegemonic powers. Hegemons, Prys (2010) notes, tend to display a sense of responsibility, entitlement or exceptionalism, perceiving themselves as 'above the law' because they are 'chosen' to establish order; they have a sense of mission. In the past South Africa has displayed hegemonic aspirations by representing its water interest as the regional interest (Turton 2005). Hegemonic powers, however, may also be 'in denial', acting apologetically about their pre-eminent position and emphasizing 'partnership'. The apologetic variety makes sense for South Africa after the end of the Cold War. After apartheid's abolition in the early 1990s, SADC invited South Africa to become a member. Despite being a latecomer, South Africa immediately established itself as a leader, taking regional initiatives for joint development even after securing its own water access. The next section will investigate a concrete Southern African example, the LHWP, to see how South Africa sought to create a 'regime' under its aegis.

Relations in the Orange–Senqu River Basin: towards a water union?

On 24 October 2016, Lesotho and South Africa commemorated the thirtieth anniversary of the signing of the Lesotho Highlands Water Treaty (LHWT); a good reason to reflect on the two states' relations before the agreement.

In 1950, Sir Bellenden, Director of Public Works, chose engineer Ninham Shand to determine the viability of exporting Lesotho's (then Basutoland's) water to South Africa. Six years later, Shand published a plan, the Oxbow Scheme, to harness the Senqu River's upper reaches and transport the water to South Africa's Orange Free State goldmines.

The mutual benefit intended was for water-rich but underdeveloped Lesotho to sell to a water- and energy-scarce neighbour (Smit 1967). In the early 1960s, South African water planners already knew about Vaal River water shortage forecasts for the year 2000 and were looking for alternative water sources. Nevertheless, potential 'political stumbling blocks' needed consideration, including South Africa's insistence on Basutoland's incorporation into its territory and its apartheid policy. Another variable was South Africa's willingness to buy water and electricity. Initially, South Africa itself rejected the plan, but a drought during 1966–1967 generated renewed interest (Eksteen 1972; Van Robbroeck 1986; Van Vuuren 2012).

In March 1967, Shand and partners presented a preliminary feasibility study to the Lesotho government. Discussions of the proposals with the South African authorities resulted in substantial changes to the project's design (Van Robbroeck 1986). In the following decades, political issues, particularly apartheid, exerted a significant influence on the interaction between Lesotho and South Africa. Before Lesotho's independence (1966), the question of South Africa's apartheid policy was already a thorn in Lesotho's side. The then Minister of Economic Development,

Charles Molapo, stated just after independence that Lesotho feared South Africa would impose its apartheid policy and that if South Africa should buy water and electricity from the Oxbow Scheme, this would drastically change Lesotho's economy (Eksteen 1972).

After Lesotho's independence, however, Premier Jonathan announced that the Oxbow Scheme was high on his country's development list. Subsequently, Lesotho and South Africa negotiated, and on 23 February 1968, Jonathan announced an 'agreement in principle'. Both countries hailed this as the beginning of a positive long-term relationship (Smit 1967; Eksteen 1972). Yet the negotiations failed to produce a full agreement; and construction did not start immediately. There were still underlying tensions in South Africa, informed by its limited risk appetite. South Africa was implementing the Tugela–Vaal Scheme and did not want to be dependent on water and electricity from an 'unreliable state' (Barber and Barratt 1990).

In 1972, the two countries terminated negotiations because they could not agree on the level of royalties for the water delivered. South Africa offered a *tantième* of 1.25c/m^3; whereas Lesotho wanted an 8 per cent return on invested capital. South Africa saw this as unreasonable because Lesotho did not supply equity, relying on World Bank loans to be serviced by South Africa (Van Robbroeck, 1986). South Africa could increase the capacity of Tugela–Vaal at a much lower capital cost due to extension provisions made in the first phase (i.e. the Sterkfontein Dam) that would meet the water demands of Vaal River consumers until 1992 (Van Robbroeck 1986; Meissner 2004). Nonetheless, future political relations would still greatly influence the LHWP; more so than engineering challenges.

During the mid-1970s, relations between South Africa and Lesotho worsened. In 1975, South Africa classified Lesotho as 'an extremist state'. The two countries did reopen negotiations on the LHWP, but then Lesotho suspended the talks again when the South African government brutally suppressed the 1976 Soweto uprising. The international community condemned the government's actions, leading to South Africa's further isolation. Between 1976 and 1978, the project came to a virtual halt, with South Africa unwilling to pay the full price of the water produced and Lesotho shunning South Africa for its violent behaviour towards its own citizens. South Africa wanted a 50 per cent discount on the water, but Iran, then a potential funder, convinced it to pay the asking price and the dispute ended (Van Robbroeck 1986; Barber and Barratt 1990; Meissner 1998). In this we see a mixture of diplomacy, technical negotiations, domestic political upheaval linked to South Africa's international relations and image, the water price, and Iran's 'good intentions' producing a complex panoply of speech acts, cooperation, enmity and disagreement in relation to the project.

In 1978, the Planning Division of South Africa's Department of Water Affairs (DWA) produced an internal report, recommending that South Africa see the Upper Orange as a water source for the Vaal. Both states agreed to revive the LHWP, although they still disagreed on some issues. A larger-scale development project was now feasible, after South Africa considered the exponential growth in water demand in the decades that had passed since the Oxbow Scheme idea.

Analysts pointed to the project's economic interdependence potential for both countries (Van Robbroeck 1986; Meissner 2004).

The DWA appointed consulting engineers to conduct desktop studies. Afterwards, South Africa reopened discussions with Lesotho and the two countries agreed on a joint preliminary feasibility investigation. Each country needed to appoint its own consultants, directed by a Joint Technical Committee (JTC). The JTC held its first meeting in 1978, one of the first indications of solid regime formation, more than two decades after the project had originally surfaced. Conflict had not disappeared altogether, though.

Lesotho insisted on two conditions: that all layouts must include hydroelectric power development in Lesotho; and that there should be no storage dams on the Caledon River (Van Robbroeck 1986). It is not too far-fetched to argue that Lesotho saw an opportunity to increase its influence (political leverage) over South Africa through a civil engineering scheme. These conditions had an important impact on the study's outcome. In 1979, the JTC produced a report recommending a final feasibility study. Each country had to shoulder half of the study's cost (Van Robbroeck 1986). Yet, it would be 1986 before the JTC finalized the study due to the two states' ongoing conflictual relations, which continued to hinder cooperation.

The 1986 feasibility study

It took Lesotho considerable time to secure the study's funding. Funding conditions imposed by the European Development Fund prevented appointment of joint consultants. Both governments devised a complicated arrangement for the study's coordination and supervision (Van Robbroeck 1986). Irrespective of the arrangement, and in the midst of a militarized situation between Lesotho and South Africa, the consulting engineers cooperated amicably; intergovernmental meetings were necessary for important policy decisions only.

Mobilization of the study teams started in August 1983. They conducted the study in two stages (Van Robbroeck 1986). In the first they identified the layout, which was then studied in more detail during the second stage. The first stage's purpose was to confirm the absence of insurmountable socio-environmental and legal barriers, and establish that there would be sufficient benefits from the project. In April 1986 the study teams published their final report (Van Robbroeck 1986). This concluded that the main impact would be the loss of some 4,000 hectares of arable land and 18,700 hectares of grazing land in Lesotho, and the resettlement of about 1,365 people. However, extra employment, new and improved infrastructure, fisheries and tourism, as well as the distribution of the water sales' extra income, would offset these negative impacts (Van Robbroeck 1986). In short, the feasibility study teams predicted that the economic benefits would outweigh the economic and social costs. They did not investigate the political situation and civilian or interest group opposition towards the project (Meissner 2004).

On institutional arrangements, the report recommended that each country should establish a parastatal authority, responsible for all the works within its own territory: the Lesotho Highlands Development Authority (LHDA) and Trans Caledon Tunnel Authority (TCTA). Because the Vaal River water users would pay most of the costs, the teams deemed it necessary to establish a joint monitoring agency, with certain approval powers. Each country was to have equal representation on the Lesotho Highlands Water Commission (LHWC) (Van Robbroeck 1986). The consultants also prepared a draft treaty which stipulated that the benefits of the project would be divided 56 to 44 per cent in Lesotho's favour. Nevertheless, organizing the treaty's institutional arrangements was not always easy, due to the political situation prior to its signing in October 1986.

Macro-conflict and micro-cooperation

Inter-state conflict reached an apex in December 1982, after South Africa launched an attack against the ANC in Lesotho. The following year, Lesotho threatened to withhold water from the project if South African military involvement continued. It also threatened to suspend cooperation on the project (Sullivan 1989). The seriousness of this situation indicated the nature and extent of inter-state macro-conflict. It was, furthermore, the height of South Africa's regional fight against a 'total onslaught' from supposedly communist countries and communist-backed organizations subverting the South African state (Vale 1991). Lesotho linked the project to high (military) security and actively played the water project card in a bid to twist its hegemonic neighbour's arm.

Lesotho demanded inclusion of a clause in the agreement wherein it could shut off the water supply should a political dispute arise. It argued that since it would deliver water, it should also be able to control the source. However, it gave some reassurance that it would inform South Africa of any impending cut-off. Unimpressed, South Africa demanded an uninterrupted flow, and issued the threat that, should Lesotho not abide by a future agreement, this would legitimize further military intervention (*Daily News* 1983).

South Africa was unable to obtain the desired uninterrupted-flow guarantee and negotiations ceased (*Star* 1986). Both South Africa and Lesotho, thus, tried to use the LHWP for political gain: Lesotho to safeguard its territorial integrity and sovereignty; and South Africa to ensure that it would receive an uninterrupted water supply. Lesotho's control of the source of the water put it in an advantageous position to influence South Africa's behaviour.

During 1984, the situation remained tense, despite (micro-)technical cooperation, due to South Africa's unhappiness over ANC members residing in Lesotho, the presence of embassies from Eastern Bloc countries and Lesotho's criticism of apartheid, and Lesotho's suspicion that South Africa was offering assistance to the Lesotho National Liberation Army (LNLA). South Africa demanded that Lesotho enter into a military security agreement, but Lesotho declined (Barber and Barratt 1990). In response, South Africa threatened to withdraw from the LHWP unless

the security situation improved. Lesotho argued that the project had nothing to do with security (*Rand Daily Mail* 1984).

The LHWP became an important diplomatic tool for South Africa to obtain concessions from Lesotho and improve its external security position. South Africa avoided a position whereby its economic heartland would be vulnerable to an 'enemy's' decisions (Leistner 1984), jeopardizing its economic security.

On 21 September 1984, negotiations between Lesotho and South Africa resumed in Cape Town. After the meeting, the parties relaunched the LHWP feasibility study, South African engineers having withdrawn from it earlier that year. The security dispute was still high on South Africa's agenda, however. It still insisted that it would not sign the treaty without an integrated security arrangement and that Lesotho must get rid of 'political problems' like the ANC. South Africa still felt that it could not trust Lesotho with the project's physical protection, so sabotage remained a distinct possibility (Meissner 2004; *Rand Daily Mail* 1984). At a South African National Party (NP) congress, Prime Minister P.W. Botha therefore stated that it was difficult for South Africa to begin the LHWP because of Lesotho's insensitivity towards South Africa's security needs (Leistner 1984). There was particular concern about the opening of the Cuban Embassy in Maseru and the Jonathan government's continuing support for the ANC. In late 1985, South Africa imposed an economic blockade on Lesotho (Tsikoane 1990), which had a serious impact on Lesotho's domestic politics.

On 16 January 1986, Major General Justin Lekhanya staged a *coup d'état*, toppling the Jonathan government. Political experts argued that South Africa was the main instigator of the coup, especially following evidence that South African officials met with Lekhanya on the very next day (Baynham and Mills 1987). The coup was a watershed in the two countries' relations, specifically with respect to the LHWP. It 'removed' Jonathan's 'unfriendly' government and replaced it with a more compliant one. Lesotho expatriated ANC members and suspended diplomatic ties with communist countries. With the political 'problem' resolved, the two countries could implement the project as part of South Africa's ongoing hydraulic plan. The improved political environment cleared the way for the feasibility study's publication, and culminated in the signing of the LHWP Treaty on 24 October 1986 (Thabane 2000). The latter can be viewed as South Africa's reward to Lesotho for complying with its wishes (Sullivan 1989).

From 1986 onwards, relations continued to improve. In 1992 South Africa and Lesotho exchanged diplomats, and in March 1993 voters replaced Lesotho's military government with a civilian one. Prime Minister Vincent Mokhele stated that the LHWP would play an important role in Lesotho's politics and economy (*Beeld* 1993). Even though the ANC had opposed the LHWP as an instrument of domination during the apartheid era, ongoing political reform and the ANC's election as the ruling party in South Africa strengthened relations (*Business Day* 1998).

On 22 January 1998, Phase 1A of the project was launched (TCTA and LHDA 2001). But then security issues intervened once more. In September 1998, South Africa and Botswana, under SADC's auspices, launched Operation Boleas to quell a

military rebellion in Lesotho. SADC's involvement – and especially South Africa's – was ostensibly to stabilize an unstable state and save a democratically elected government from a military coup. Even so, some have argued that Operation Boleas' sole purpose was to safeguard an uninterrupted flow of water to South Africa (e.g. Davidsen 2006; *The Economist* 1998). In essence, the intervention altered Lesotho's authority structures, changed the balance of domestic forces and neutralized the army's destabilizing influence. In 2013, the two countries signed an agreement to implement Phase 2.

Regime formation and regional cohesion

At first glance, the LHWP seems an excellent example of the water–food–energy 'nexus' (Hoff 2011) increasing cohesion between countries in a hydro-security complex. Short of water, South Africa struck a deal with neighbouring Lesotho to access the resource, while Lesotho gained much-needed energy for domestic use and potential export to power-hungry South Africa. Even so, it took three decades to arrive at this arrangement.

There is not a linear cause-and-effect chessboard dynamic at play, as Mirumachi and Allan (2007) point out. Their TWINS (Transboundary Waters Interaction NexuS) approach considers conflict and cooperation not as mutually exclusive but as two axes, enabling simultaneous conflict and cooperation. We encountered such instances in our Senqu case study, especially in the decade 1976–1986. On the conflict axis, we saw the whole spectrum from depoliticization to 'violization', including an incursion, though falling short of a declaration of war. On the cooperation axis, we encountered the whole spectrum from problem-tackling via joint technical committees to risk-taking. None of these, however, led to integration (a water union). Our analysis is similar to the way in which Mirumachi and Allan (2007) sketch the trajectory between South Africa and Lesotho (see Figure 5.1), aside from South Africa's repeated 'violisation' of Lesotho's affairs, which is not identified by these authors.

Regional integration is not necessarily a condition for water cooperation (Warner 2016); to the contrary, political divisions in the region also contributed to South Africa's motivation to pursue bilateral water agreements with its neighbours. South Africa used carrots and sticks, linking water with non-water issues, to facilitate these water agreements (Kistin 2011).

From a utilitarian nexus perspective, the relationship between Lesotho and South Africa may seem symbiotic if asymmetrical, in light of the 'basket of benefits' produced (Wolf and Newton 2010). The deal increased the region's water and energy security and contributed to a degree of collective regional stability shortening the 'shadow of the future'. From a neo-institutional perspective, then, the joint benefits outweigh the costs; from a realpolitik perspective, this asymmetry was productive as it got things done. Indeed, under an IR spotlight, it would appear to IR scholars that the LHWP exhibits South Africa's 'realist and neo-institutionalist moments', and that these theories would be the appropriate lenses through which to analyse the LHWP's inter-state relations.

While the LHWP Treaty shows how states can overcome collective action problems and arrive at a resilient solution in practice, Gordon (2008) notes different lenses are possible, labelling the project 'unequal and inequitable'. It was not a democratically, freely negotiated treaty, it ignored environmental, political and social side-effects, and its distributive benefits were heavily slanted to South Africa. Furthermore, Lesotho's migrant farmers had little interest in hydroelectricity, showing a domestic (human) and international security disconnect. In that sense, there was not much 'collectivity' about the action.

Water, covering parts of Lesotho's territory, is no longer under Lesotho's exclusive control. Whether it likes it not, Lesotho now shares part of its territorial sovereignty with South Africa. Lesotho always had the geographical upstream advantage over South Africa, but not the political and economic 'upstream' influence. We, therefore, see a 'mature anarchical' condition in place. Keketso's (2003) assessment – a 'mixed blessing' – may support a more nuanced conclusion. South African's hegemony over Lesotho is firmly in place, but, as Haugaard and Lentner (2006) have noted, hegemony can be asymmetrical yet considered sufficiently mutually beneficial. The arrangement has brought some collective goods to the hegemonized actor (Lesotho), albeit clearly unequally distributed.

The LHWP is a good example of the adaptivist or benefit-sharing discourse's manifestation and the untidy interlaced conflict and cooperation. South Africa clearly brought its political and economic power to bear to make the project happen,

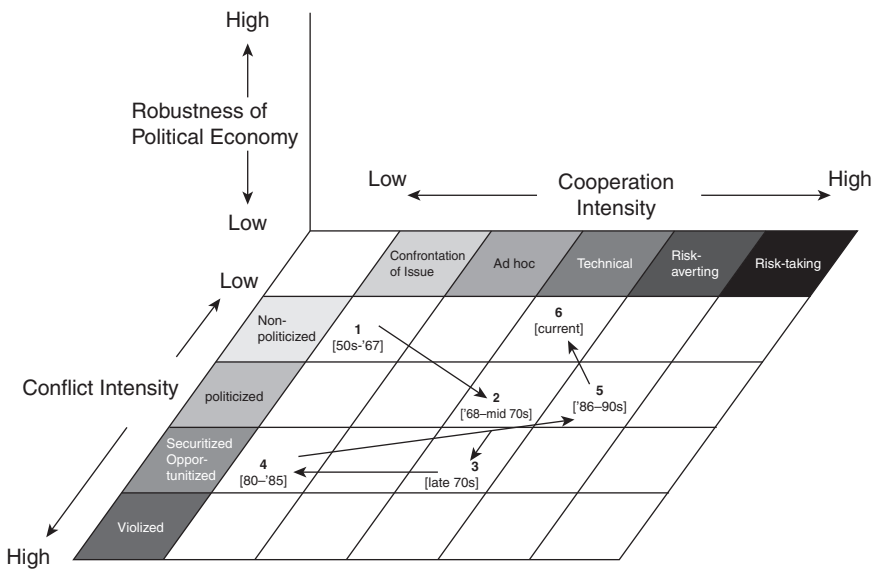

FIGURE 5.1 TWINS analysis of South Africa and Lesotho's transboundary water interactions

Source: Mirumachi and Allan 2007

sometimes through outright dominance, sometimes through more subtle forms of hegemony. Hegemonic power is a judicious mix of soft and hard power; a hegemonic power therefore does not need to be aggressive for scholars to label it a hegemon, especially when considering its ideological outlook on regional politics and security arrangements.

We cannot make hard and fast conclusions about the LHWP's regional integration capabilities. Looking at a project such as the LHWP through various lenses brings to light underappreciated elements (Warner 2012). A critical perspective highlights the contestable nature of 'hegemonic stability', 'joint benefits' and 'collective action', promising a rocky road to further integration.

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6

PLACE ATTACHMENT AND COMMUNITY RESISTANCE

Evidence from the Cheay Areng and Lower Sesan 2 dams in Cambodia

Oliver Hensengerth

Introduction

Hydropower in Cambodia is an important means for achieving the government's electrification target of connecting 70 per cent of the population to the grid by 2030, reducing electricity costs, and preventing frequent outages. Much of Cambodia's hydropower potential is as yet unexploited and lies in poor rural areas, which are often inhabited by ethnic minorities. Many of these are increasingly resistant to the government's hydropower plans, finding help for their fight from international and domestic NGOs, media outlets, and domestic activists.

Resistance by ethnic minorities and indigenous groups brings to the foreground issues of identity and competing visions of development. This chapter explores these issues, drawing on Swyngedouw's concept of hydro-social scales and the literature on place attachment. The case studies are the conflicts around the planned Cheay Areng dam in Koh Kong Province and the almost completed Lower Sesan 2 dam in Stung Treng Province.

The chapter not only illustrates how hydropower dam development disintegrates a local community's ability to manage their surrounding natural resources, but also highlights how attitudes towards dams and the emergence of resistance are connected to people's identity in relation to place. This is not to say that communities are homogeneous. Indeed, some community members may agree with the necessity of a hydropower dam and largely support the developmental aims, while others vigorously oppose it. The chapter explores how resistance and identity may be linked and therefore are important aspects to consider for governments when planning dams, particularly in areas with ethnic and indigenous communities. It analyses such dynamics by looking at processes and agents of resistance. This resistance can manifest in various ways, ranging from petitions and peaceful demonstrations to, at times, violence.

River basins as competing hydro-social scales

River basins are human-made waterscapes reflecting specific political, social, and natural relationships at certain points in time (Swyngedouw, 2009, 2014; Molle et al., 2009). These waterscapes are contested as they are populated by a range of actors within and across different geographical scales who use water for different purposes. This produces overlapping hydro-social scales consisting of competing networks of interest (Swyngedouw, 2007).

The construction of hydropower dams is an example of such competing networks as they include national and local governments, multinational corporations and transnationally operating financiers, transnational and domestic NGOs, and local communities. The introduction of such a wide range of actors restructures existing socio-ecological relationships and actor networks into new hierarchies, often to the detriment of local communities, affecting their economic, social, and spiritual relationship with the natural environment (Rigg, 2006; Swyngedouw, 2014; Duarte-Abadía et al., 2015).

Areas of hydropower production are therefore laden with meaning for actors with diverse interests. For some, particularly for national and local governments envisaging economic development, but also for companies looking for new investment opportunities, they are areas for investment to exploit abundant natural resources and to drag a rural population out of (perceived) isolation and poverty. For many of the communities living in these areas, however, and particularly for indigenous ethnic communities, such areas often embody specific livelihood-cum-religious practices, which are deeply connected to the specific place. This place, it can be argued, is likewise created and imagined.

Such places where resources lie seemingly unproductive and unmobilized have been termed 'resource frontiers' (Lagerqvist, 2013). These are places 'shaped by flows of capital and contingent socio-economic conditions' (Woodworth, 2017: 133; see also Nuttall, 2012). In the course of development interventions, they also see considerable changes in property rights and livelihood practices (Barney, 2009: 146).

Place attachment and hydropower dams

Following Tuan's seminal study (Tuan, 1974), place attachment has been discussed in diverse and often contested ways. On a fundamental level, place attachment denotes an emotional bond, which attaches groups or individuals to places (Low and Altman, 1992). Proshansky et al. (1983: 61–62) argued that place identity goes beyond emotional attachments as the term denotes a cognitive structure. Low (1992), meanwhile, argued that place attachment goes beyond emotional and cognitive experiences and includes cultural beliefs and practices.

A large body of literature has investigated the relationship between people's place attachment and environmental attitudes (Devine-Wright and Howes, 2010; Fernando and Cooley, 2016). Exploring the relationship between place attachment

and local protective environmental action, Devine-Wright (2009) argued that place attachment can generate local resistance against place-disruptive projects. This is so because individuals go through stages of psychological responses, including becoming aware of the project, interpreting the implications for the place, evaluating whether the change will be positive or negative, coping by considering responses, and finally acting.[1] Whether action will take place in the end, however, depends on a variety of factors, including – but not limited to – the belief in personal political efficacy or the presence of cohesive, stable social networks.

Vorkinn and Riese (2001) found that strong place attachment could produce negative attitudes towards proposed hydropower projects. Similarly, Bonaiuto et al. (1996, cited in Carrus et al. 2005: 241) showed how local identification prevents negative attitudes towards the environmental conditions of a place where such negative attitudes are held by outsiders. However, a group of insiders might be positively positioned towards a transformative project, also based on their attachment to the place (Twigger-Ross et al., 2003).

The literature on place attachment has therefore problematized the concept of community. For instance, Manzo (2005) pointed out that identity and feelings of belonging to a place are connected to gender, race, ethnicity, and class. Indeed, in urban areas the same neighbourhood can have diverse meanings for different social groups (Loukaitou-Sideris, 1995). Attachment intensity to a specific place thus varies between different groups of people (Wynveen et al., 2011).

Looking specifically at religion and ritual, Mazumdar and Mazumdar (1993) analysed how ritual can connect people to places. Exploring place attachment in the Niobrara National Scenic River in Nebraska, Davenport and Anderson (2005) discovered a 'web of river meanings' as different people and groups have different forms of attachment to the river, which can also change over time.

For hydropower, meanings of rivers and spiritual and emotional wellbeing join where dam-induced resettlement threatens local populations who hold specific religious beliefs. Problems are not necessarily clear cut, however. Whether or not the dam presents a positive development is often viewed differently within and between communities, conditioning responses to the project (Siciliano et al., 2015). The following cases explore the role of religious and other cultural practices in relation to the surrounding natural environment as well as on communities' perceptions of their identity and power relationships with dam proponents.

The Cheay Areng dam

If built, the 108-megawatt Cheay Areng dam would be located in the Areng Valley, a biodiversity-rich area in the protected Cardamom Mountains. The area is mostly inhabited by ethnic Chong, but also Khmer. The dam would displace 1,500 people, most of them Chong, who are rotational farmers, fishers, and gatherers of forest products. The project is currently suspended, pending further government decisions.

The project was first taken on in 2006 by China Southern Power Grid, who tasked Cambodia's Sawac to conduct an environmental impact assessment (EIA), completed in 2008. As international criticism mounted, China Southern Power Grid withdrew from the project, offering no explanation. In 2010 China Guodian took over but then withdrew, citing problems with the project's financial viability. In January 2014, Sinohydro acquired the concession (Quinlan and Phak, 2013; Pye, 2014a; Yeophantong, 2014).

Following Sinohydro's engagement, the planning process gained pace, but so did community resistance. On 28 January 2014, Sinohydro signed a contract with construction company Cambodia Lancangjiang. In February 2014, the Ministry of Energy and Mines authorized drilling and geological surveys for a feasibility study. Following this, representatives from Sinohydro and the Ministry of Energy and Mines and officials from Thma Baing District visited the site to prepare the construction of an access road to bring in heavy machinery (Chhay and Pye, 2014).

Sinohydro then tasked Sawac with the EIA and SBK Research and Development with the resettlement plan. In March 2014, the provincial government informed commune authorities that Sawac would conduct the EIA in the area. In the same month, SBK Research and Development submitted the resettlement plan for governmental review, following asset surveys that had begun in December 2013. Khnhel Bora, SBK's director, Pich Siyun, director of the Koh Kong provincial branch of the Ministry of Energy and Mines, and Tou Savuth, governor of Thma Baing District, all stressed that consultations with local communities had been conducted as part of the resettlement plan (Chhay and Pye, 2014; International Rivers, 2015: 21, 27–28).

Dynamics of community resistance

Community resistance to the dam was persistent and strong, although the resistance mostly emerged from the Chong community. This was supported by a network of dissident monks organized in the Independent Monks Network for Social Justice, the Cambodian Youth Network, and domestic and international NGOs (Phak and Woodside, 2014; Yeophantong, 2014; Khuon, 2014a).

While protests intensified after Sinohydro's engagement, the project had attracted criticism earlier. In February 2012, opposition politician Son Chhay wrote to Prime Minister Hun Sen to voice concerns about the environmental impacts. In reply, Hun Sen stated that the dam would go ahead and that Sawac's 2008 EIA study had outlined mitigation of all environmental impacts. Further, all 263 families that would lose their land would be compensated fairly (*Phnom Penh Post*, 2012).

In 2013, the Chong community began to reach out to a wider audience by launching a petition on change.org.[2] In the same year, a group of dissident monks from the Independent Monks Network and led by But Buntenh travelled from Phnom Penh to the dam site to conduct tree ordination ceremonies, watched closely by armed police (Quinlan and Phak, 2013; Phak and Pye, 2014a).

Following Sinohydro's takeover, resistance became more robust. When spotting Sinohydro personnel trying to enter the dam area in March 2014, around 150

Chong villagers – with Ven Vorn of Chumnap Village, Thmor Baing District, one of the protest leaders – worked in rotating shifts of thirty to forty people over the following three days to block Sinohydro from moving heavy machinery into the dam site to conduct the feasibility study. During the weekend of 15–16 March 2014, Sinohydro personnel who had been surrounded by villagers in a Sinohydro office at the dam site had to be escorted from the area by military police. Following the incident, the government asked Sinohydro and Sawac to stay out of the dam area until the situation had calmed down (Phak and Pye, 2014a, 2014b).

The community managed to maintain the roadblock until September 2014, when soldiers removed it and replaced it with an army outpost (Peter and Khuon, 2015). This, however, did not reduce the resistance. In December 2014, when Sawac representatives attempted to enter the dam site, villagers blocked their access (Pye, 2014b). Confirming the determination of the Chong community, Vana Savoeurn, a villager participating in the blockade, said when the blockade began: 'We will use tractors, motorbikes and fell … trees on the road to block them' (Pye and Phak, 2014).

In response to the resistance, the army created a new thirty-soldier platoon in Thma Baing District in June 2014, one day before a compensation meeting was to take place between villagers and the government's dam working group, which consisted of local and national energy officials and Sinohydro representatives. Compensation proposals included 'new homes for each family on 1,000-square-meter plots, giving them five hectares of farmland each', but the families rejected the proposals on the grounds that they would result in the flooding of ancestral lands, sacred forests, and burial sites (Khuon, 2014b). In October 2014, SBK stated that the resettlement study was not yet complete as a new relocation site needed to be identified (Pye and Cuddy, 2014).

In February 2015, Hun Sen announced that the current government would not continue with plans for the Cheay Areng dam and that any decision about its eventual construction would be postponed until after the next national elections, due to be held in 2018 (Khan, 2015).

Spiritual and cultural issues

The key point of contention from the perspective of the Chong has been their connection to the surrounding natural environment, which provides them with traditional livelihoods and spiritual wellbeing. Indeed, the rejection of the above compensation proposals occurred at least partly due to a neglect of these issues.

Interviewed by the *Phnom Penh Post*, a young Chong community member named Lucky spoke about the Chong's '"connection to their homeland" and the good quality of life' as the forests and the river provide plenty of food. Yung Pun, a fifty-seven-year-old Chong community member, explained why she did not want to move:

> We'll lose our animals, forest … the house … The new site that the government is moving people to is very difficult to live in. It's a damp forest and has lots of mean wildlife like tigers and elephants, and has no rice fields.

In addition, Yung Pun pointed out that the new site lacked schools, did not have access to water or fish, and was far from sources of income (Quinlan and Phak, 2013).

Ven Vorn said that Chong villagers had not been consulted or even officially told about the dam. He argued: 'We can't accept to relocate to the new place, because we might get only land to build a house, but not cultivatable land and especially because this is our ancestors' spirit place' (Chhay and Pye, 2014). Altars to the spirit forest are prayed to every year for a good harvest in the coming season, or if a relative falls sick, or if an animal is lost. Has Porn, another Chong community member, said: 'If the spirit forest floods, it will be like my own body is drowned.' Hun Sen, however, argued that there would be no impact on Chong culture and that villagers could find work on the construction site and later work as guides as the area would be developed into an ecotourism destination. In response, Hoeng Pov, a member of the Mother Nature organization, argued, 'It's like they have the money and want to pay us to destroy our homes … The government can give us jobs, but it can't pay us for our culture and our forests' (Peter and Khuon, 2015).

The Lower Sesan 2 dam

The 400-megawatt Lower Sesan 2 dam was approved by the Council of Ministers in November 2012, following completion of an EIA by Key Consultants Cambodia in October 2008 and a feasibility study by Power Engineering Consulting Joint Stock Company No. 1 (PECC1). Clearance of the reservoir area began in March 2013. The resettlement and compensation plan was published in January 2014 and construction began the following month. Production of electricity is scheduled for 2017.

Originally the dam was a joint venture between Electricity of Vietnam's (EVN) subsidiary EVN International Joint Stock Company and Cambodia's Royal Group (Khouth et al., 2013). Following the withdrawal of EVN as main partner, the project developer became Hydropower Lower Sesan 2, a joint venture between Royal Group and Hydrolancang, who together own a 90 per cent stake in the dam. EVN International Joint Stock Company owns the remaining 10 per cent (Royal Government of Cambodia, 2013).

Lower Sesan 2 is located near the confluence of the Sesan and Srepok rivers, part of the 3S river system. Lower Sesan 2 is projected to have a major detrimental impact on the Tonle Sap, the Mekong Delta, and downstream food security as it will lead to a 9.3 per cent drop in fish stocks across the basin (Ziv et al., 2012).

According to the EIA, the dam will lead to the resettlement of 4,785 villagers into six resettlement sites (Mekong Watch and 3S Rivers Protection Network, 2013). The inhabitants are indigenous and ethnic minorities with livelihoods including farming, fishing, livestock herding, and collecting non-timber forest products. The environmental management plan provides for compensation of US $127 million for lost assets, including rice fields, trees, gardens, houses, and fisheries, and stipulates the provision of land for relocation (Grimsditch, 2012: 30). This, however, has turned out to be insufficient.

Dynamics of community resistance

As part of the EIA process, Key Consultants held public consultations in February 2008 with those people who would be most affected by the project. Of those attending, 85 per cent disagreed with the project and were especially dissatisfied with the compensation and relocation provisions (Grimsditch, 2012: 33; Baird, 2009).

The compensation policy for Lower Sesan 2 changed several times. The original policy was announced by EVN in 2011 (Ham et al., 2013: 52). An improved policy was published by the Cambodian government in 2013, setting out better economic terms and asking people to self-select their resettlement locations (Royal Government of Cambodia, 2013; Ham et al., 2013: 52, 55). Still lacking, however, was consideration of the cultural impacts.

The improved offer split Kbal Romeas, one of the villages to be flooded and home to the Pu Nong indigenous community, into three groups: one group accepted it; a second said they would accept it pending a new EIA and after they received the promised compensation; and a third rejected it outright (Cambodian Centre for Human Rights, 2015: 2).

Then, in July 2015, residents of other villages who had previously accepted relocation changed their minds. In a letter to Hydropower Lower Sesan 2 they requested sufficient time to store food in advance of moving, pointing to problems with the fertility of the new land. The new houses were not well constructed and inadequate to keep cattle, villagers were asked to move in the middle of the farming season, and the relocation of the spirit forests, where the ancestral burial grounds are located, was still not resolved (May, 2015). In response, representatives from Hydropower Lower Sesan 2, Ith Prang from the Ministry of Energy and Mines, and the deputy governor of Stung Treng, Doung Pov, pledged to relocate the graves properly, provide 20 kilograms of rice per person per year (although it was not reported for how many years), assume responsibility for the maintenance of the houses for four years (this pledge was made specifically by Hydropower Lower Sesan 2), and not use force against the villagers.

Spiritual and cultural issues

The situation in the village of Kbal Romeas illustrates the cultural issues involved in the dispute. Part of the dispute in Srekor Commune revolved around the fact that compensation documents made no mention of ancestral burial grounds that would be flooded (Kuch, 2014). The community's relationships with their ancestors and guardian spirits of villages, rivers, and forests 'form a key part of the community's cultural identity and sense of wellbeing. The local forests contain important sites where local people pray to these spirits, invoking their help in maintaining the spiritual and physical health of the community' (Cambodian Centre for Human Rights, 2015: 1–2; Moul and Sovathana, 2012: 5) and in producing good harvests (Ham et al., 2013: 55).

Economic, social, environmental, and spiritual aspects of life are thus intertwined as a basis for wellbeing and play an important role in establishing customary law and social norms (White, 1996: 335–336, 350–358, cited in Chhim, 2005: 21). For example, ancestral burial grounds

> are extremely important spiritual sites. The families of the dead frequently pay their respects to the dead in order to attract good luck, and make offerings of food, and burn incense for them … It is believed that the ancestors will be angry and curse them with sickness or other problems if they fail to conduct these rituals.
>
> *(Ham et al., 2013: 55)*

To resolve the issues of the burial sites, village elders suggested abandoning the sites or moving them to a new location. In both cases, however,

> spiritual and traditional rituals will have to be performed, and so do the moves of other spirits … Moreover, in seeking out a new place to live, local people must first ask the spirit of the land guardian (*neakta*) for permission by praying and through rituals.
>
> *(Ham et al., 2013: 55)*

Traditional beliefs also form part of the inventory of local resistance. In March 2015, villagers from the Lao and Pu Nong ethnicities paid tribute to the local deity *neakta krahom kor*, guardian spirit of the river, then asked it to protect them from harm and 'curse the officials and investors behind the dam' (Aun, 2015). The villagers set up effigies – representing Minister for Mines and Energy Suy Sem, company owner Chip Mong, and officials from Hydrolancang and local authorities – stabbed them with needles then burned them. This provoked a reaction from Doung Pov, who argued that the ceremony had violated the rights of the investors (Aun, 2015).

Conclusion

The cases in this chapter show that traditional compensation and resettlement packages – which typically target assets that can be expressed in monetary terms – have limitations when cultural aspects are involved. The Cheay Areng and Lower Sesan 2 dams present several problems for Cambodia's dam planning. At the core of it are problems of identity. The dam areas are home to ethnic and indigenous communities, many of whom view them not only as their ancestral homelands but also as areas of spiritual meaning and wellbeing. Life is therefore deeply connected to a spiritual environment that faces serious disruption.

The cases of Cheay Areng and Lower Sesan 2 show that place attachment and the recognition of livelihoods and wellbeing are important factors in dam planning. Ignoring them runs the risk of significant resistance to projects. Spiritual and

cultural factors are also difficult to assuage via traditional compensation mechanisms and therefore require specific attention if dams are to be built and if they are to benefit not only populations in urban centres but also, importantly, local communities that are at risk of losing their livelihoods and cultures.

Notes

1 See Brown and Perkins (1992) for a similar framework.
2 See www.change.org/p/his-excellency-prime-minister-hun-sen-stop-the-construction-of-the-stung-cheay-areng-dam.

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7

POLITICS OF KNOWLEDGE AND COLLECTIVE ACTION IN HEALTH IMPACT ASSESSMENT IN THAILAND

The experience of the Khao Hinsorn community

Carl Middleton, Somporn Pengkam and Areeya Tivasuradej

Introduction

Impact assessment tools for water governance are arenas of contested knowledge production (Dore et al. 2012). Over the past decade, the effectiveness of impact assessment tools in enabling inclusive, sustainable, and equitable decision-making in water governance has been intensively studied. The politics of expert knowledge versus situational knowledge (commonly named "local knowledge") has been extensively considered, including the discourses it produces and the power relations in play (Contreras 2007). How knowledge is claimed as legitimate or not has been widely discussed, including how knowledge interacts with policy decision-making through formal (legislated) and informal processes (Daniel 2013).

In the Mekong region, impact assessment tools are increasingly utilized, in particular Environmental Impact Assessments (EIAs), for which every country has now legislated, and to a lesser extent Cumulative Impact Assessments (CIAs) and Strategic Environmental Assessments (SEAs). These tools are commonly associated with the production of expert knowledge, with varying – but still largely limited – degrees of public participation and information sharing (Baird and Frankel 2015). When impact assessments are conducted for large infrastructure, such as hydropower dams, special economic zones, and coal-fired power stations, they often become the focus of contestation about the predicted magnitude and distribution of costs and benefits. This contestation can be introduced by design when public participation is meaningfully incorporated. When it is not, the impact assessment can itself become a source of controversy (Daniel 2013).

While expert knowledge in impact assessment is often revealed to privilege the agendas of those in positions of power (Wells-Dang et al., 2016), in Thailand *Tai Baan* research ("villagers' research") has emerged as an influential form of situational knowledge production and community empowerment, often catalyzed by

civil society groups (Scurrah 2013). One form of *Tai Baan* is as a "counter-hegemonic" response to expert knowledge, organized to resist particular state- or private-sector-led projects. Here, in a highly politicized context, situational knowledge often reflects the advocacy agenda that it is tied to, and the experts of project proponents often seek to downplay its legitimacy as "unscientific" (Scurrah 2013). Within less politicized contexts, however, *Tai Baan* has been undertaken as a research initiative towards sustainable resource governance, where situational knowledge engages *with* local government institutions (Scurrah 2013). Furthermore, as shown by Sangkamanee (2013), how the community renders itself "legible" through *Tai Baan*-produced knowledge to engage the state is itself a dynamic and tactical process in securing state support for desired projects.

In Thailand, uniquely for the Mekong region, Health Impact Assessment (HIA) has gained significant traction. A commonly cited definition of HIA emerged from the Gothenburg Conference in 1999: "a combination of procedures, methods and tools by which a policy, program or project may be judged as to its potential effects on the health of a population and the distribution of effects within the population" (Kemm, 2013: 4). Emerging from widespread support for "healthy public policy" in Thailand since 2000, HIA was legislated into the country's 2007 National Constitution and the National Health Act of 2007 (Sukkumnoed 2013). Thailand is recognized as a global leader in HIA, especially among lower-middle-income countries (Byambaa et al. 2014). There are four approaches to HIA in Thailand (see next section), of which two are most commonly practiced: Environment Health Impact Assessments (EHIAs) and Community Health Impact Assessment (CHIAs). EHIA practitioners view HIA largely as an extension of EIA, with procedures now detailed in Thailand's legislation (Chandanachulaka 2013). The process is expert-led, which emphasizes scientific knowledge production, in particular on health impacts due to changes in the physical and biological environment. Public consultation is given a reasonably significant role, yet psychological, social, and spiritual factors of health (which are often raised by consulted communities) remain downplayed as insufficiently "scientific" (Sukkumnoed 2013). The second approach, CHIA, is community-led, with support from the National Health Commission Office (NHCO) and civil society groups. While not compulsory, a CHIA can be requested under the National Health Act. The CHIA knowledge production process emphasizes the importance of community learning about the impacts of planned projects and policies on community health, and so it may be viewed as an empowerment process. Within the water governance literature, HIA has been little, if at all, studied.

This chapter illustrates how the Khao Hinsorn community has deployed CHIA as a means to engage in – and challenge – an expert-led EHIA that backed the construction of a coal-fired power station. Through the CHIA, the community successfully revealed analytical shortcomings in the EHIA, and in the process broadened the definition of legitimate knowledge considered within formal state-led decision-making processes. We therefore argue that CHIA has emerged as an important and strategic collective action response in Thailand, which has

contributed towards social learning and community empowerment, and thus enabled the contestation of unequal power relations within knowledge production, with implications for social justice outcomes. Conceptually, we frame our chapter around the politics of knowledge and its relationship to collective action through the various forms of HIA implemented in Thailand.

The rise of HIA in Thailand

Impact assessment, in the form of EIA, was first introduced into Thailand in 1975 with the National Environmental Quality Act, and the establishment of the National Environment Board (NEB). In 1992, with the Enhancement and Conservation of National Environmental Quality Act (NEQ), the requirements for EIA became more comprehensive, including establishing EIA Expert Review Committees appointed by the NEB. Under the NEQ, the range of projects requiring an EIA increased from 10 to 22 (it presently stands at 34). While public participation in EIAs is not specifically required under the NEQ, only a few years later Thailand's 1997 National Constitution affirmed a wider range of community rights including on public participation and information disclosure, reflecting increasing demands for political reform (see Unger and Siroros 2011). While EIA legislation and practice continue to evolve, EIA remains expert-led, with limited opportunities for substantive public participation (Chompunth 2012; Baird and Frankel 2015). Throughout the development process of EIA legal frameworks, health is dealt with in only a limited way, mainly in terms of occupational health (Chandanachulaka 2013).

The origins and evolution of HIA in Thailand have been detailed elsewhere (see Sukkumnoed 2013; Chandanachulaka 2013). HIA emerged in Thailand around 2000 due to a growing interest in "healthy public policy" during a period of national health system reform. This country-wide discussion, which built on the expectations of the 1997 Thailand Constitution, emphasized various community rights, including the right to health, the right to participate, and the right to access information. Following broad-based public consultation, and despite delays due to political conflict, on 4 January 2007 the National Legislative Assembly approved the National Health Act (Sukkumnoed 2013). The Act recognizes people's right to live in a healthy environment, and states in Section 11:

> An individual or a group of people has the right to request an assessment and participate in the assessment of health impact resulting from a public policy.
>
> An individual or a group of people shall have the right to acquire information, explanation and underlying reasons from [a] state agency prior to a permission or performance of a programme or activity which may affect his or her health or the health of a community, and shall have the right to express his or her opinion on such a matter.

Subsequently, in August 2007, a new National Constitution was passed by referendum and also incorporated a requirement for HIA in Section 67, paragraph 2. In

total, four forms of HIA were proposed under the terms of the National Constitution and the National Health Act (see Table 7.1). Below, we focus on EHIA and CHIA, the two forms of HIA that have been most commonly implemented in Thailand.

Due to the political conflict in Thailand since the mid-2000s, the government did not immediately act to legislate Section 67 of the National Constitution. Therefore, in June 2009, representatives of a community affected by the Map Tha Phut industrial zone in Rayong Province sued the government in the Administrative Court. The case suspended US$10 billion of planned investment from Japan until Section 67 was enforced. In response, the government organized several committees that establish the rules and procedures of HIA, which were approved in October 2009, with further details on public scoping and public review agreed in December 2009 (Sukkumnoed 2013).

Thus, a legal basis and procedure for EHIA was established, with eleven project/activity types identified as requiring a compulsory EHIA (Chandanachulaka 2013). Responsibility for the EHIA is divided between the Office of Natural Resources and Environmental Policy and Planning (ONEP), which creates an Expert Review Committee to review the EHIA, and the National HIA Commission,[1] which is responsible for the EHIA systems and procedures. As each EHIA is prepared by a consultant who is hired and funded by project proponents, critics see similar shortcomings to EIAs in that EHIAs are expert-led, with inherent conflicts of interest. Furthermore, while public consultation occurs at the EHIA's "public scoping" and "public review" stages, experience to date has demonstrated the need to improve the accountability of the process, including the provision of input to the Expert Review Committee (Sukkumnoed 2013).

Regarding CHIA, communities can request a CHIA under Section 11 of the National Health Act. Thailand's first CHIA workshop to develop its guidelines, organized by the NHCO, was held in April 2008. Subsequently, the NHCO and supporting civil society groups worked with an expanding network of communities affected by industrial, mining, and biomass and coal-fired power-plant projects to pilot and develop CHIA (Pengkam et al. 2017). Among practitioners, including the NHCO and civil society groups, CHIA is understood as a "social learning" process for community development and empowerment that enables collective action. Key tools in CHIA include community mapping, which illustrates connections between natural resources and the community, and community timelines of significant events and changes. The process also entails understanding a proposed project (including its rationale, ownership, funding, and potential impacts), understanding relevant laws and procedures, assessing impacts using collected data, and ultimately engaging in decision-making.

While CHIA data collection is principally a community-led process, there is expert input, for example on the details of the project and legal implications, so it is best understood as a co-production of knowledge approach (Van Kerkhoff and Lebel 2015). The CHIA is a mutual learning process between the community and

experts that aims to integrate their respective knowledge. In contrast to EHIA, where community involvement is in the form of "public consultation," in CHIA the communities themselves are the researchers.

An important debate related to HIA in Thailand and globally concerns the definition of "health," which ranges from the mere absence of illness to a more holistic notion of physical, mental, and social wellbeing. The definition chosen has implications for the scope and focus of an HIA. While defining health in terms of illness enables focus, understanding it as wellbeing reveals its relationship with wider societal policy choices, including on key societal systems such as energy, transportation, industry, and food, which in turn have implications for mega-project construction.

Recently, this debate played out in Thailand's National Health Promotion Foundation, an autonomous government agency established in 2001 that has leaned towards equating health with wellbeing and has supported participatory processes towards this end. In Thailand's post-2014 *coup d'état* political landscape, the military government has sought to restrict the foundation's mission to narrower interpretations of health, in the process restricting civil society's voice within debates about plans for large development projects (*Bangkok Post* 2016). More broadly, Thailand's 2007 Constitution was repealed by the military government in May 2014, and within the interim constitution in place at the time of writing, it is clear that community rights, including those relating to participation, access to information, and control over natural resources, have been weakened, which has implications for the future practice of CHIA. This is notable, given that the

TABLE 7.1 Typology of HIA in Thailand

Type of HIA	*Lead preparing HIA*	*Approach / purpose*
EHIA	Consultant firm; reviewed by Expert Review Committee convened by Office of Natural Resources and Environmental Policy and Planning (ONEP)	Mandated under Section 67 of 2007 Thai Constitution. "Environment health" approach, with two stages incorporating public participation.
Policy/planning level HIA	Responsible government agency, supported by National Health Commission Office (NHCO)	Decision-support HIA to inform policy and planning of government agencies on health. "Social view of health" approach.
HIA requested by public	NHCO and petitioner	Public concerned about the implications of a policy may request an HIA. Produced study is considered by relevant regulator. "Social view of health" approach.
CHIA	NHCO and community	Community-led process, with support from NHCO and civil society groups. "Social view of health" approach.

Source: Authors' compilation

military government has a stated policy to accelerate investment in large infrastructure in the interests of economic growth (Reuters 2016).

The politics of knowledge in HIA in the Khao Hinsorn community

In this section, we discuss how EHIA and CHIA have been deployed towards a proposed coal-fired power station in the Khao Hinsorn community. We provide a brief background on the community and the significance of water resources there, and outline how plans for the coal-fired power station materialized. We then discuss the process by which EHIA and CHIA were undertaken, and how the CHIA catalyzed community-led collective action in collaboration with the NHCO. We discuss how the findings of the EHIA and CHIA differed, and how a politics of knowledge ensued when the CHIA revealed deficits in the EHIA, such that it failed its expert review.

Agriculture, industry, and water in the Khao Hinsorn Subdistrict

The Khao Hinsorn Subdistrict is located in Phanom Sarakham District, Chachoengsao Province, in eastern Thailand. It is Thailand's second-largest mushroom-growing community, is also renowned for its mango production for domestic consumption and export, and is home to an expanding organic farming community, with some farmers accredited for export to the European Union. Other non-organic production includes rice, rubber, cassava, pineapple, and vegetables. The Khao Hinsorn Royal Development Learning Center for self-sufficient and sustainable farming is also located within the subdistrict. Next to Khao Hinsorn's residential and farming area is the 304 Industrial Park 2, established in 2001 under Thailand's Eastern Area Development Policy. The industries present include electronic parts manufacture, a paper mill, and the lumber industry.

Khao Hinsorn Subdistrict is located within the Klong Thalad sub-basin, which is the largest tributary of eastern Thailand's most significant river, the Bangpakong. The Klong Thalad sub-basin is 2,930 square kilometers in size and a plain in topography (Department of Water Resources 2007, cited in NHCO 2012). There are two significant water reservoirs nearby: the See-Yad canal reservoir; and the Rabom canal reservoir. With a combined storage capacity of 450 million cubic meters, they account for 60 percent of the area's natural water supply (NHCO 2012). Water flows westwards from these reservoirs along the See-Yad canal and Rabom canal, which converge to form the Thalad canal near the industrial estate before flowing into the Bangpakong River. Aside from maintaining local ecosystems, the water is used for general consumption, irrigation, and industry. The canals are also sources of local food, including wild bamboo shoots, water plants, and fish. As discussed below, even under existing conditions of use, seasonal water shortages are common.

Plans emerge for a coal-fired power station

In December 2007, the National Power Supply Public Company Limited (NPS), a private company owned by the Double A Power Group, won a bid under Thailand's 2007 Power Development Plan (PDP) to build a 600-megawatt coal-fired power plant within the industrial park. ONEP had approved the project's EIA in 2006, without the knowledge of the Khao Hinsorn community. When the plan was made public, Thai energy activists, seeking to transition the country away from coal, disseminated information on the impacts of coal-fired electricity production among the community (TAI 2014). The Healthy Public Policy Foundation, meanwhile, questioned whether a new power station was necessary. Public interest lawyers from the NGO Environmental Litigation and Advocacy for the Wants (EnLAW) also informed the community of its rights and the legal instruments available to them.

After discussions with the civil society groups, the community was concerned about the project's potential impacts, including on agriculture, health, and water resources. From 2008, community members organized various collective actions, including: putting up signs opposing the project; submitting petition letters to the authorities; filing a lawsuit at the Administrative Court to suspend the project; organizing direct-action protests; and even petitioning the King of Thailand (NHCO 2012). They also sought to influence the power-station licensing procedure by submitting their concerns to the PDP 2007 public review process. Despite these visibly political activities, the Khao Hinsorn community has publicly stated that they do not position themselves as "activists." Their stated intention has been to inform the decision-making, as they believe that decisions should be evidence-based and recognize existing local interests.

While the project's EIA was approved under Section 67 of Thailand's 2007 Constitution, it was apparent that an EHIA was also required before the Energy Regulatory Commission could issue a power-station license. Therefore, in 2007, NPS hired the private company Air Safe, who, in conjunction with consultant academics, were instructed to prepare an EHIA.

Initiating a CHIA

Concerned about the project's previous EIA process, and recognizing the expert-led nature of the EHIA, in October 2010 representatives of the Khao Hinsorn community asked Thailand's NHCO to conduct a CHIA under Section 11 of the National Health Act. Following a screening process, the request was approved in December 2010 (NHCO 2012). The two-year process to prepare the CHIA began with an introduction to the coal-fired power-station approval process, applicable laws, and relevant agencies by the HIA Coordinating Unit, which worked with representatives of the community to help them understand how they could participate in the decision-making. The EIA report was also discussed to understand the impacts of the proposed project. At first trust-building was required, as some community groups suspected the information was actually being gathered for

the EHIA. At this stage, community representatives identified health risks from air and water pollution, depletion of water resources, threats to security posed by incoming workers, and road accidents caused by coal transportation as their main concerns, which then defined the scope of the CHIA study.

Subsequently, a focus group consisting of representatives from eight potentially affected villages created hand-drawn maps that helped to illustrate the connections between the villages, natural resources, agriculture, and the use of water resources. From the communities' perspective, the map produced by the project's EIA team was inadequate because it "did not show farms, residence, temples, schools and lives" (NHCO 2012: 5). As the mapping process unfolded, a growing number of community members expressed a desire to be involved.

The map made it evident that water use from the coal-fired power station would impact not only on the adjacent Thalad canal but also on the connected Bangpakong River, downstream. Farmers' previous experience with the impacts of seawater intrusion on their crops when water flows were reduced in the Bangpakong River gave them insight into the potential impacts of the coal-fired power station on water resources and agriculture. The CHIA team drew on Royal Irrigation Department (RID) data to calculate the proportion of water use between users, and compiled past news reports documenting water scarcity and salt-water intrusion. Newspaper reports of local hospitals having to import fresh water to clean surgical equipment and for kidney cleansing when local water supplies became too saline were also collated. Following the production of the map, a community timeline was created, focus groups organized, and surveys undertaken to collate qualitative and quantitative information on organic agriculture, mango and mushroom production, and available water resources, among other issues.

Differences emerge

Differences between the CHIA findings and the EIA report's conclusions began to emerge. While the EIA concluded that there would be "low impacts" on the agricultural sector, the CHIA team found that the air particulate levels detailed in the EIA report exceeded certified standard values for organic produce. In addition, as more information was gathered about the industrial park, it was realized that the location of existing "burnt" mango trees, which had flowers but failed to bear fruit, correlated with the pathway of air pollution carried by the prevailing wind from the industrial estate. A map was produced illustrating the location of the burnt trees and the prevailing wind direction to demonstrate the relationship. Suspicion fell on a 47-megawatt biomass–coal-fired power plant and a coal-based iron smelter in the industrial zone.

The CHIA team presented their preliminary report for "public review" on August 21, 2011 in Chachoengsao Province. Government officials and academics were invited to comment on the findings. Significantly, the RID joined the public hearing and validated the CHIA's calculation that there would be insufficient water to maintain existing uses if the coal-fired power station were to extract 11 million

cubic meters of water as planned, with downstream impacts on the ecology of the Bangpakong River and salt-water intrusion in Prachinburi Province. The CHIA also identified that coordination between water users was weak, and recommended that an improved mechanism should be established.

Based on recommendations received during the public review, a more comprehensive report, titled *Food–Coal, the Crossroad of Agricultural Land Development of Phanom Sarakham–Sanam Chai Khet*, was produced and presented for expert review on June 19, 2012 at the National Health Office building in Bangkok. Relevant government agencies, including the HIA Committee, the Department of Industrial Works, and the Energy Regulatory Commission, together with researchers from the Healthy Public Policy Foundation, civil society groups, and the media attended the meeting. The community presented the CHIA's methodology, findings, and conclusions. It estimated that over 1000 Rai of farmland and more than 100 families would be affected. The CHIA report argued that the Khao Hinsorn Sub-district is a significant agricultural area and embodies an important portion of the Klong Thalad watershed, so it is unsuitable for a coal-fired power station. The government agencies at the meeting recognized the validity of the CHIA process, and provided recommendations to make the CHIA report more comprehensive.

Another significant outcome of the CHIA was that the community included a systematic historical overview of the area in its assessment. The area originally had abundant forest, which was logged under Thailand's past forest concession policies and converted to plantations, ultimately leaving the land degraded. The Khao Hinsorn Royal Development Learning Center and local NGOs have supported the recovery of farming, including promoting organic farming. Meanwhile, the partial industrialization of the area has produced heavy-metal water pollution, contaminating shallow wells. These insights were an incentive to prepare a future development plan for the area as part of the CHIA.

At the next meeting of the National Health Commission, on July 20, 2012, it passed a resolution on the CHIA: to forward the report to relevant agencies, including ONEP, "for consideration and decision-making," and instructed the NHCO to coordinate with local government agencies, local authorities, academia, and local communities "to develop a mechanism for solving the existing problems and structure a framework for future development relevant to area potentials" (NHCO 2012: 10).

Outcomes

When the expert-produced EHIA report commissioned by NPS was submitted to the NHC and passed on to ONEP, the latter's Expert Review Committee had already read the CHIA report as supplementary material and had visited the proposed project site. Their assessment of the EHIA report was that it did not sufficiently assess seasonal water scarcity, and that it failed to consider the fact that even though the predicted water and air pollution from the coal-fired power station met Thailand's minimum legal standards, it fell below an acceptable standard for organic farming. As a result, the EHIA report was not approved.

NPS, however, revised and resubmitted the EHIA report in October 2013. This time, although NPS recognized the presence of organic farming in the area, it did not carefully assess the project's potential impacts upon it, especially in relation to the export certification requirements. The Khao Hinsorn community, now well organized, submitted a 9,000-signature petition against the revised EHIA to ONEP. The latter's Expert Review Committee again rejected the EHIA report. Subsequently, a third EHIA report was submitted and rejected in January 2016, and a fourth was submitted in February 2017 (with the outcome still pending at the time of writing). However, as the project is private-sector led and has been incorporated into the PDP on the basis of the earlier bidding process, the government does not have the authority to cancel it. Therefore, NPS can continue to resubmit EHIA reports indefinitely.

Conclusion: politics of knowledge and collective action in HIA

In Thailand, HIA in its various forms is a new and significant impact assessment tool. EHIA and CHIA engender different structures of power relations regarding the production of expert versus situational knowledge and its recognition. EHIA has adhered closer to the formula of existing EIA procedures, in terms of being expert-led, funded by project proponents, and "consulting" the public. Meanwhile, CHIA has emphasized community-led collective action research processes to co-produce knowledge with state and civil society experts.

At Khao Hinsorn, the CHIA produced knowledge that revealed significant deficiencies in the EHIA, and ultimately resulted in ONEP's Expert Review Committee rejecting a number of EHIA reports. In this case, environment and water governance was improved by the CHIA process, which ensured that all relevant facts for assessing health impacts were recognized, and all relevant actors/interests were represented.

Khao Hinsorn is just one among a growing number of successful CHIA studies in Thailand that have either questioned planned projects or helped to address the impacts of existing projects (such as at Klity Lang Village, which has been affected by historical lead mining; see Pengkam et al. 2017). Several CHIA-type studies are now underway in Myanmar, building on Thailand's experience, although these are mainly conducted with civil society groups rather than government agencies.

As emphasized by Suhardiman et al. (2015; see also Cashmore et al. 2010), knowledge production in impact assessment entails power struggles over framing problems, explaining causality, proposing solutions, and defining social justice. This chapter furthers understanding of the politics of knowledge and collective action, in particular literature on Southeast Asia, by exploring new configurations of community–state–private-sector knowledge production within impact assessment (Dore et al. 2012; Daniel 2013; Sangkamanee 2013; Scurrah 2013). In contrast to *Tai Baan* research, CHIA is recognized by the state, as it is legislated by the National Health Act (2007), produced in collaboration with the NHCO, and officially presented to the NHC, who in turn can recommend that the report

should be acted upon. This conveys a certain legitimacy to the situational knowledge incorporated in the report, combined and contextualized as it is with expert knowledge. Thus, the rigid divide between state expert, civil society expert, and situational knowledge is partially dissolved, in contrast to the "counter-hegemonic" strategy of some forms of *Tai Baan* knowledge production, which challenges the state through advocacy (Scurrah 2013). Indeed, CHIA in the case of Khao Hinsorn is a state–civil society–community collective action that positions itself to critique (as necessary) the privately financed expert knowledge production of the EHIA, while at the same time proposing alternative visions for state–community collective action towards development (see Walker 2009; Sangkamanee 2013). Hence, CHIA is an arena within which situational knowledge and its recommendations are conveyed into formal, national-level state policy processes, and subsequently a means by which the community can negotiate its interests, including with respect to future local development initiatives.

Note

1 The National Health Commission (NHC) established the National HIA Commission to manage overall HIA development in Thailand

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8

AGRICULTURAL WATER MANAGEMENT IN MATRILINEAL SOCIETIES IN MALAWI

Land ownership and implications for collective action

Everisto Mapedza, Emelder M. Tagutanazvo, Barbara van Koppen and Christopher Manyamba

Introduction

Collective action is a central pillar for enabling effective joint use and management of land and water for improved rural livelihoods in Malawi. This chapter analyses how the passing of land inheritance in a matrilineal society could manifest in collective action centred on the shaping of Water User Associations (WUAs) as a new arena for a gendered power contestation. Contextualized in an irrigation scheme, which initially began as informal irrigation but was later transformed into a formal irrigation scheme as it expanded within the matrilineal society of the Ntcheu District of Malawi, the chapter looks at the issue of power dynamics and how it plays out within irrigated agriculture. One of the major findings is that while landownership might be perceived as an important step for accumulating power within matrilineal societies, it does not automatically translate into more power within the WUA arena due to underlying structural or cultural barriers, which make it more difficult for women to engage within the public sphere. While the findings indicate that it is possible to have access to land resources without having meaningful control over the produce from irrigated agriculture or meaningful engagement in WUAs, it also shows how the mere introduction of irrigation which enables winter cropping introduces new gendered power dynamics. A better understanding of such gender dynamics will inform collective action within irrigated agriculture.

Land and water resources management has often been perceived through the lens of the tragedy of the commons (Hardin, 1968; Quiggin, 1993). While Hardin's arguments have often been used to justify the need for state intervention to 'save' natural resources from the hands of destructive users, another strand of scholars have felt that his scholarship conveniently lumps common property resources together with open access resources in his 'tragedy of the commons'

thesis (Ostrom, 1990, 1992, 1993, 1999, 2009; Stern et al., 2002; Bromley and Cernia, 1989; Bromley 1991; Berkes and Farvar, 1989, Jodha, 1992; Runge, 1992; Murphree, 1991, 1994; Wily, 2000; Meinzen-Dick, 2014; Chikozho and Mapedza, forthcoming). This chapter looks at how collective action plays out within the Malawi landscape of Ntcheu District. The authors argue that while it is important to understand collective action, it is also important to ground such an understanding within the gendered lens, especially in the context of a matrilineal context where it is often assumed that women have more leverage due to the matri-local (*chikamwini*) nature of marriages in the Ntcheu area.

One of the key thrusts of the commons scholarship has been to discredit Hardin's thesis. However, in that scholarship endeavour, gender, and how it is a key factor in the engagement of collective action, has largely lagged behind (Meinzen-Dick et al., 2000; Pandolfelli et al., 2008; Zwarteveen, 1997, 1998; Zwarteveen and Meinzen-Dick, 2001; Shah et al., 2002). This chapter looks at how gender was a major factor in determining the engagement of women in the WUA, despite women nominally owning land within the matrilineal setting of Malawi. Ownership has to be viewed within the context of the bundle of rights that other people have over the same property (Fortmann, 1995).

Study area

The study focuses on the Kaziputa irrigation scheme, located in Kandeu, Ntcheu District, in the south-central region of Malawi, within the confines of the Chinyanja Triangle, which borders Mozambique to the west, Dedza District to the north, Neno District to the south, Balaka District to the southeast, and Mangochi District to the northeast (see Figure 8.1). The 8.53-hectare irrigation scheme began in 2005. It operates mainly as a self-funded community-owned project, currently comprising 75 irrigators whose principal source of livelihood is agriculture, specializing mainly in cereal production, particularly maize. Due to climate variability, rain-fed agriculture is increasingly facing major challenges. Each of the smallholder farmers, on average, cultivate less than 0.1 hectares of land. Ntcheu District covers 3,424 square kilometres of land and holds a total of 474,464 people, of whom 226,567 are male while 247,897 are female. The Ntcheu area has also seen a large proportion of men leaving to work in the South African mines since as far back as the 1920s, under a bilateral labour contract between Malawi and South Africa (International Organization for Migration, 2015). The area in which the scheme is located is considered the least irrigated in Southern Africa, despite its aridness, which is compounded by the prevalence of slightly above-average temperatures, which mostly range from a minimum of 13 degrees Celsius to a maximum of 31 degrees Celsius. Rainfall is very unreliable, but can be up to 1200 millimetres per year. The scheme draws its water uphill from the Livulezi River, via a gravity-fed system that utilizes canals as water channelling mechanisms to the irrigated plots.

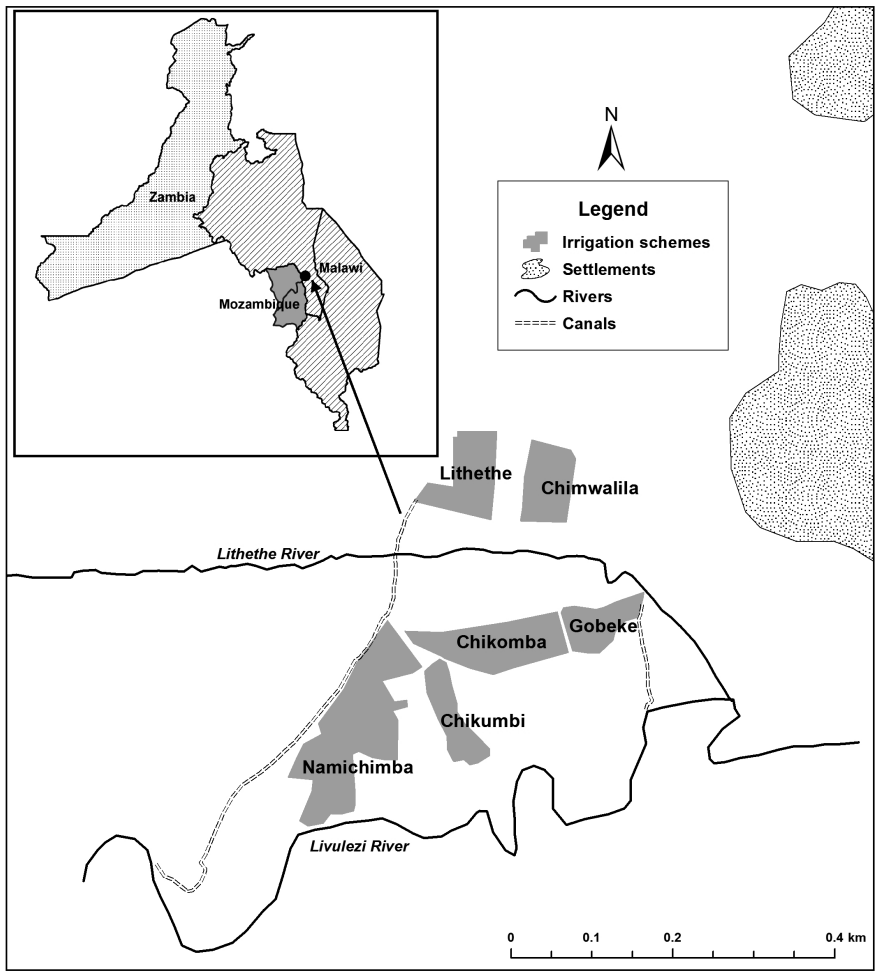

FIGURE 8.1 Map of the Kaziputa irrigation scheme, Kandeu, Ntcheu District
Source: Luxon Nhamo, IWMI Pretoria Office, South Africa

Situating gender within landownership in Ntcheu

Ntcheu District is a largely matrilineal society where landownership is passed through the female line, from mothers to daughters. It is also largely matri-local, meaning that when a man and woman get married, the husband has to move to the wife's homestead to begin their family there. In most rural settings, agriculture is the main source of livelihoods. This means that agricultural production will be on the wife's land, which will have passed to her from her mother. Within matri-lineal and matri-local societies, husbands own hardly any land. The village head reported, 'Ownership depends more on women. Men don't have much power. We can leave and go to stay somewhere else' (interview, 23 July 2014). In the

TABLE 8.1 Marital status of head of household

	Irrigating		*Non-irrigating*		*Total*	
	Number	%	Number	%	Number	%
Married	59	44.0	42	31.3	101	75.4
Divorced	7	5.2	8	6.0	15	11.2
Widowed	8	6.0	10	7.5	18	13.4
Total	74	55.2	60	44.8	134	100.0

Source: Authors' field work

event of divorce, the husband will leave his children and wife and will usually take only a few assets with him. In the study area, divorced men usually took only a bicycle and a blanket, leaving all other assets with their ex-wives and children. This narrative portrays wives as being more powerful than and having leverage over their husbands. Although this may lead to expectations that divorce rates would be high (as women can easily chase away their husbands and retain their assets), this is not the case in reality. Table 8.1 shows the marital status of the case study households. Divorce rates stood at only 5.2 percent for households involved in irrigation and only 6 per cent for non-irrigators.

Our research found that in matrilineal societies, relationships between husbands and wives are extremely nuanced and, we argue, display differential power dynamics between women and men in a number of ways. While, traditionally, the land is transferred to the women, husbands have joint decision-making when it comes to issues of labour, inputs, marketing and control of the benefits from irrigated agriculture (see also Kabeer, 1991). Agrawal (1994) points out that it is not just the ownership of property that determines someone's relative power, but the degree of control over that property.

First, landownership is vested in the woman and passes from mother to daughter. However, when it comes to decisions on the utilization, leasing or disposal of land, women are not the major decision-makers. In Ntcheu, uncles are central in decisions on how land is disposed of, not husbands, who have no control over landownership and its transfer. While nominally the land is vested in the woman's name, the control and major decisions pertaining to that land are made and effected by her uncles. Table 8.2 shows landownership and control of income based on our survey.

Second, labour provision is a key means for husbands to justify their presence and role in agricultural production in matrilineal lands. In the study area, it was often pointed out that husbands who could not provide labour would often be asked by their wives' uncles why they were not producing enough food to support their families. However, husbands do provide a great deal of labour, especially in Ntcheu, where land preparation is all done by hand, without the use of draught animals, and this gives them leverage in control of the benefits from irrigation. The fact that men are considered important in providing labour enables them to negotiate their relationships with their wives. Zwarteveen (1997) notes that, in Burkina Faso,

TABLE 8.2 Landownership and control of income earned

Control of income earned		*Irrigating*		*Non-irrigating*		*All respondents*	
		Number	*%*	*Number*	*%*	*Number*	*%*
Family owned	Male	–	–	41	17.8	41	17.8
	Female	–	–	27	11.7	27	11.7
	Both	–	–	41	17.8	41	17.8
Rented	Male	22	9.6	4	1.7	26	11.3
	Female	43	18.7	11	4.8	54	23.5
	Both	38	16.5	3	1.3	41	17.8
Total		103	44.8	127	55.2	230	100.0

Source: Authors' field work

intra-household access to and control of labour is one of the key factors for addressing the agricultural productivity challenge. Although wives are the landowners, men who provide the labour make key decisions on crop choice. Elsewhere, Sokile and van Koppen (2004) note that in Tanzania husbands are under a lot of pressure to provide labour as women can easily divorce unproductive husbands and replace them with more productive alternatives. Men can be divorced for being 'useless', for drinking too much or for being unable to provide for their families (interview, 20 July 2014). In our male focus group discussions, it was pointed out that men are sometimes kicked out after many years of hard work, and this can act as a disincentive to put in their best effort. Some men also indicated that they were reluctant to invest in 'good' houses, as these would be lost in the event of divorce. In Ntcheu, the procedure for divorce was said to be straightforward, as long as the wife's uncles endorsed her decision. 'The wife would simply give a light, and now they are using torches from China, to show you the way back to your parents' home, since it would have been a while since you were there and you might have forgotten the way back to their house.'

Collective action in irrigated agriculture

Although land is nominally in the woman's name, irrigated agriculture offers an opportunity for men to engage in agriculture in their own names. Once land has been converted into irrigated land, its value is enhanced and men can lease it in their own names as the irrigation is collectively managed. This creates an opportunity for men who do not normally inherit land to gain access to land whose value has been increased.

The irrigation scheme began in 2005, comprising just six women and six men. By the time of our field research in 2014 and 2015, there were 53 female and 22 male irrigators. Leasing of land for irrigated agriculture entails having the ability to pay the rental lease value and to provide labour. Labour is required in two ways. First, there is a need to cultivate on the irrigated plot during the dry season, after harvesting of the rain-fed crops has been completed. Second, irrigated agriculture takes

place only during the dry season, after which the irrigators must prepare the land for the landowner, who cultivates the land in the wet season.

Water users' association

Having a voice over institutions that manage common property resources, such as irrigation systems, is very important (Agrawal, 1994). The irrigation in Kandeu is organized by the One Apex Kaziputa Water Users' Association (WUA), which is divided into five lower-level associations (clubs): namely, Lithethe, Chimwalira, Gobeke, Namichimba and Chikumbi. At the time of our research, the Apex Kaziputa WUA was led by men (chairman and vice-chairman), and comprised a total of five men and five women. Thus, men held the most influential positions. The secretary and her deputy were both female, as was the treasurer. The irrigators stressed that positions such as treasurer were usually reserved for women, as they were perceived as more prudent than men, and so more likely to safeguard the WUA's funds. While discussing the fact that men held the most powerful positions in the WUA even though women were the majority water users and had equal representation on the scheme's management platform, gender power differentials started to emerge. Although women traditionally owned the land in Ntcheu, it was perceived that roles such as chair of the WUA entailed a lot of travelling. Zwarteveen and Meinzen-Dick (2001) argue it is important to understand that women's effective engagement in WUAs is influenced by social constructs of their roles, which include domestic chores and taking care of children, which limit their ability to assume more influential positions. Nonetheless, it is important that women participate in the decision-making process on irrigation in order to benefit from irrigated agriculture.

Table 8.3 looks at the WUA and how both men and women perceived its effectiveness, their participation in elections and their labour contributions. Both men and women had a positive view of the WUA, participated in elections and

TABLE 8.3 Water users' association

		Male		*Female*		*Total*	
		Number	*%*	*Number*	*%*	*Number*	*%*
Irrigation management committee (IMC) effective?	Yes	18	26.1	47	68.1	65	94.2
	No	1	1.4	3	4.3	4	5.8
Participate in IMC elections?	Yes	18	26.1	43	62.3	61	88.4
	No	1	1.4	7	10.1	8	11.6
Contribute to labour for maintenance of irrigation infrastructure?	Yes	19	27.5	48	69.6	67	97.1
	No	–	–	2	2.9	2	2.9

Source: Authors' field work

contributed labour. The WUA's by-laws, which were written in the local Chewa language, made it mandatory for all irrigators to provide labour unless they had an acceptable excuse. Those who violated the by-laws faced stipulated penalties, with expulsion the sanction for the worst offences or repeat offenders. The uniform application of these by-laws strained the gender roles, especially women's domestic chore demands. During our field trip to Ntcheu in October 2015, groups of irrigators were taking turns to pump water from a pool upstream so that they could irrigate their fields. Women mentioned that this requirement was having a negative impact on their children. The threat that they would not be able to irrigate if they did not take their turn on the treadle pump forced them to remain upstream, sometimes overnight. This was the beginning of an El Niño-induced drought which affected Southern Africa in 2015/2016, soon after a below-average 2014/2015 wet season. It is important to note, as Zwarteveen and Meinzen-Dick (2001) argue, that discrimination sometimes emerges through formal and informal rules or even in everyday practices that do not accommodate the requirements of female irrigators.

Marketing of irrigated produce

Access to and control of the benefits from irrigation are largely through controlling the benefits from the marketed irrigated produce. Ntcheu irrigators need to travel several kilometres across a mountain range to sell their produce at a large market. Since there is no direct transport to this main market, this entails setting off soon after midnight in order to be at the market very early in the morning, sell the produce and have time to travel back to Kaziputa. Women who were irrigators in their own right admitted that the trip was exhausting so they usually asked their husbands to go in their place, even though they knew the husbands would not bring back all the money from selling the produce. 'Women bring all the money from the market but men don't bring all the money. Women till the soil, don't see the money. The husband "tastes" the money first' (female focus group, 20 July 2014). Even though some of the market returns were diverted by men for use elsewhere, women perceived the amount of effort required to cross the mountain range as outweighing the money they lost. They also mentioned that they had to perform domestic chores and prepare their children for school, so it would be very difficult for them to go to market themselves. One of the key challenges in Ntcheu is the issue of men's excessive alcohol consumption, and some of this is funded by the money they make at market.

Interestingly, even the village head who had previously indicated that men had no power over the land highlighted that, when it came to selling produce at the market, the activity was done jointly (*simunye*): 'It's like we are hunting and we are putting everything in one basket' (interview, 23 July 2014). Table 8.4 shows both male and female attendance at market, and the estimated distance to each of the markets.

TABLE 8.4 Attendance at produce markets and distances

Where do you sell your produce?		*Distance (km)*	*Irrigating*		*Non-irrigating*		*All respondents*	
			Number	*%*	*Number*	*%*	*Number*	*%*
Male	Kandeu (locally)	4	6	14.6	9	22.0	15	36.6
	Lizulu	12	1	2.4	3	7.3	4	9.8
	Mlangeni	10	2	4.9	1	2.4	3	7.3
	Ntcheu boma	35	13	31.7	6	14.6	19	46.3
Total			22	53.7	19	46.3	41	100.0
Female	Kandeu (locally)	4	28	29.5	20	21.1	48	50.5
	Lizulu	12	1	1.1	1	1.1	2	2.1
	Mlangeni	10	4	4.2	5	5.3	9	9.5
	Ntcheu boma	35	19	20.0	17	17.9	36	37.9
Total			96		81		177	100.00

Source: Authors' field work

Access to irrigation extension

Gendered power dynamics also play out in terms of access to agricultural extension information. For women farmers to be able to participate effectively in farming activities they need to be able to access agricultural extension. In Kaziputa, the irrigation scheme falls under the Kandeu Extension Planning Area (EPA). This is the lowest-level unit covered by extension officers, consisting of a number of villages which combine to form the EPA, which is akin to a ward. In the Kandeu EPA, all of the extension officers were male. While gender was becoming increasingly important in the extension reports, most of the extension staff did not receive training on gender to appreciate why gender matters in agricultural extension. Some of the staff who participated in our research admitted that they were frequently asked to disaggregate data by gender, but most of them did not understand why doing so would make a difference. Extension information was usually conveyed to the head of the household, even if the land was owned by a woman. Table 8.5 provides results on agricultural extension based on our questionnaire.

Access to inputs for irrigated agriculture

One of the key concerns among irrigators was that while it was important to have access to water for irrigated agriculture, having land and water alone was necessary

TABLE 8.5 Access to an agricultural extension worker

Access to an agricultural extension worker	*Irrigating (n=75)*		*Non irrigating (n=62)*		*All respondents (n=137)*	
	Number	*%*	*Number*	*%*	*Number*	*%*
Male	19	25.3	10	16.1	29	21.2
Female	49	65.3	13	21.0	62	45.3
All – yes	68	90.7	23	37.1	91	66.4
All – no	7	9.3	39	62.9	46	33.6

Source: Authors' field work

but not sufficient for increased productivity. Agricultural inputs such as improved seed, chemicals and fertilizers were also needed to increase output on the irrigated land. In instances were some of the irrigators were women, they indicated that they relied on their husbands for the requisite inputs to be able to produce something substantial from irrigated agriculture. Access to credit, though limited, seemed to be more accessible to men than women. The government-subsidized fertilizer programme also favoured those who had more access to cash. NGOs such as CARE were promoting saving schemes (such as Banka Inkonde) to help farmers access capital, which could be used for agricultural inputs.

Table 8.6 shows the average cost of inputs bought by men and women. The average costs of transport are also included. Despite the land belonging to the women, men bought nearly double the amount of inputs as women. This has important implications since ownership of land might not necessarily translate into ownership and control of inputs and therefore crop choice. This is why in gender analysis it is important but not sufficient to know under whose name an asset is registered. Hence delving into access and control dimensions will enable a better understanding of the costs and benefits accruing to both men and women.

Table 8.7 shows perceptions of the role of women in agriculture. The findings show that 30 per cent of the irrigating respondents felt that women contributed more than men to agriculture. What is intriguing here is that the majority of the irrigators were women, so some of them did not feel they were contributing more than the men. Gender disaggregated analysis shows that 12 per cent of the men felt

TABLE 8.6 Cost of inputs

Past 12 months		*Mean (Mkw)*	*Mean (US$)*
Average cost of input	Male	53,676.4	135.21
	Female	29,285.7	73.77
Average transport costs	Male	2,795.3	7.04
	Female	3,500.6	8.82

Source: Authors' field work

TABLE 8.7 Perceptions of women's contribution to agriculture

Women's control over agricultural inputs		*Male*		*Female*		*Total*	
		Number	*%*	*Number*	*%*	*Number*	*%*
Irrigating (n=75)	More than men	9	12.0	23	30.7	32	42.7
	Less than men	6	8.0	13	17.3	19	25.3
	Equal	7	9.3	17	22.7	24	32.0
Non-irrigating (n=55)	More than men	4	6.5	17	27.4	21	38.2
	Less than men	5	8.1	11	17.7	16	29.1
	Equal	7	11.3	11	17.7	18	32.7

Source: Authors' field work

that women did more than they did, while 30.7 per cent of the female irrigators felt that they did more than the men.

Access to credit

Credit was obtained mostly from local financial groups (such as Banki Nkhonde), followed by Opportunity Bank, and lastly from neighbours. Potential sources of credit are: ARISE, Banki Nkhonde (local microfinance group), Limbe Leaf (for tobacco growers), Malawi Rural Development Fund (MARDEF), Opportunity Bank, National Smallholder Farmers' Association of Malawi (NASFAM) and, surprisingly, the Safe Motherhood non-governmental organization. Table 8.8 shows who obtained credit. Although men formed a smaller percentage of the irrigating farmers, they still managed to access more credit than women. This disparity was despite the efforts of non-governmental organizations which have been attempting to create a level playing field for credit by encouraging lending to women. In a number of instances where loans were advanced to women, men would decide on how to use the funds once the loans had been disbursed to the women, leaving the latter with the loan risk.

TABLE 8.8 Who obtained credit?

Who obtained credit?	*Irrigating*		*Non-irrigating*		*Total*	
	Number	*%*	*Number*	*%*	*Number*	*%*
Male	19	41.3	18	58.1	37	48.1
Female	27	58.7	13	41.9	40	51.9
All	46	100.0	31	100.0	77	100.0

Source: Authors' field work

TABLE 8.9 Group membership

	Membership	*Irrigating*		*Non-irrigating*	
		Number	*%*	*Number*	*%*
Religious group	Male	11	14.7	16	25.8
	Female	64	85.3	46	74.2
Farmers' organization	Male	5	6.7	1	1.6
	Female	12	16.0	4	6.5
Women's organization	Male	2	2.7	6	9.7
	Female	6	8.0	1	1.6
Savings club	Male	6	8.0	3	4.8
	Female	43	57.3	17	27.4
Irrigation committee	Male	13	17.3	0	–
	Female	38	50.7	0	–

Source: Authors' field work

TABLE 8.10 Barriers to agricultural production for irrigators

	Male	*Female*	*Total*
Lack of fertilizer	21	48	69
Poor access to markets	14	28	42
Poor soils	6	22	28
Lack of capital	11	12	23
Land shortage	4	22	26
Lack of farming equipment	4	9	13
Other	2	0	2
Pests	1	5	6
Low rainfall	0	5	5
Lack of labour	0	2	2

Source: Authors' field work

Social capital

Membership of collective organizations also reflects social capital, which can be mobilized in other arenas, such as irrigated agriculture. It is interesting to note that some men were members of women's organizations, and of savings clubs that NGOs promoted specifically for women, as shown in Table 8.9.

Table 8.10 shows the barriers to agricultural production for both men and women. While the top three barriers were common among men and women, it is interesting that 'poor soils' ranked far higher among women. Further discussions showed that this is usually related to lack of inputs to address that challenge.

Although women are the owners of the land, it is interesting that land shortage is one of their key barriers to increased agricultural production.

Discussions and conclusion

Tenure is not absolute – it is fluid, created, challenged, modified, negotiated and reconfigured – hence the importance of what Fortmann (1995) refers to as 'tenurial niches' (see also Fortmann and Bruce, 1988). No one has absolute ownership of property, hence the notion of tenurial niches. While it is important for women in Ntcheu to have the land passed on to them from their mothers, that on its own will not translate into meaningful control of the benefits accruing from the land. Land values tended to be valorized through use for irrigation. Once the commercial value of the land rises, more men become interested in irrigated agriculture. While land is a key asset in the irrigation schemes of Kaziputa, it is also important for the landowner to have access to the WUA in order to influence its decisions, to derive the best value from the market, to gain access to irrigation extension, agricultural inputs and credit, to have social capital and to have access to and control over the benefits coming from irrigated agriculture. It is by meaningfully deriving benefits from the land they own that nominal title ownership will yield benefits for the women that tend to be more beneficial to the household (Johnson et al., 2016).

Collective action within irrigated agriculture is meant to jointly resolve collective challenges, such as water allocation, land use and in some instances joint marketing efforts. In Malawi's Ntcheu District, it has often been assumed that the matrilineal and matri-local (*Chikamwini*) nature of the society enhances and empowers women in irrigation and agriculture more generally. Our study indicates that while landownership is an important step, on its own it is not adequate to be used as an empowerment indicator for women in Ntcheu. Although women are the landowners, their participation in the WUA is similar to that found in patriarchal areas, where men take leadership positions, such as chair and vice-chair, while women are assigned the lesser roles of secretary and treasurer. Also, although there were more female than male members of the WUA, there were equal numbers in the association's committee.

The research therefore encourages a more critical review of collective action for agricultural water management in order to ensure that gender power asymmetries are taken into account in collective action decisions so that women are not left behind in collective decision-making for increased agricultural productivity. As commons researchers, we need to avoid the binary of male and female ownership and start looking at the gradient from female to male. This will enable us to address the multiple stories and competing narratives.

There is a need to address issues of access and distributional equity – who gets what? This calls for going beyond the neat bureaucracy to look at the social, economic, political and gendered dimensions of land tenure in the context of collective action. There is also a need to monitor the gendered dynamics, processes and

sub-processes of the tenurial niches within the Kandeu area, as Fortmann (1995) argues with respect to the forestry sector. Such an analysis is most likely going to further scholarship on the 'paradox of landownership' which is not translating into control of benefits for the women of the Ntcheu area of Malawi. The paradox could be explained by the underlying structural or cultural barriers which limit women's engagement in the public sphere and the demand for women to continue to do household chores, which gives men more freedom to engage beyond the household. Agricultural extension also still sees men as the 'farmers', thereby undermining the role of women, despite their access to and ownership of the land.

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9

COLLECTIVE ACTION, COMMUNITY AND THE PEASANT ECONOMY IN ANDEAN HIGHLAND WATER CONTROL

Rutgerd Boelens and Jaime Hoogesteger

Introduction

For many Andean communities, irrigation systems form the basis for accessing water for agricultural production and, as such, they are an important axis around which collective action is mobilized (Bolin, 1990; Hoogesteger, 2013b; Verzijl and Guerrero Quispe, 2013). In the Andean context, with unpredictable climates, unstable geophysical conditions, and changing irrigation policies, more than almost any other economic activity, irrigation is grounded in collective action that is based on *mutual dependence and intensive cooperation* among users. In the Andes, besides privately managed irrigation systems owned by landlords and agribusiness companies, two forms of irrigation development and water use systems prevail, which in broad terms can be divided into state led and community based. State-led irrigation development has been characterized by its large scale, high cost, market-oriented and top-down management approach since at least the 1960s. On the other hand, community-managed irrigation systems tend to be small scale, constructed with local resources and know-how, managed through collective action from the bottom up and often with a very diverse production rationale. These two forms of irrigation management have grown closer to each other in the last three decades as on the one side collective action has come to play a more important role in formerly state-managed irrigation systems and, on the other, the state has become more active in funding the modernization of community-managed irrigation systems.

In the 1990s in Peru and Ecuador irrigation management tasks were turned over to newly created Water Users' Associations (WUAs) in most formerly state-managed irrigation systems. This reduced state financing of irrigation operation and maintenance, often in an irresponsible manner (neoliberal 'dumping of irrigation systems'; see Cremers et al., 2005). It made many WUAs struggle for the survival of their systems, and at the same time they became reliant on different forms of collective action.

Many of these modes of inter-community collaboration had to be developed anew or transformed from other spheres of social life in and around the WUAs.

To better understand how and why user-controlled irrigation management has been able to sustain irrigation systems (even large and technically complex systems such as formerly state-managed systems) based on the mobilization of collective action, we first explore the close interrelationships that exist between peasant livelihood strategies, the recreation of community, and irrigation management. After this we explore how irrigation management is part and parcel of Andean peasant economies. Then we discuss how policies that are built on market mechanisms to sustain WUAs have a very different meaning once they land in local Andean irrigation systems. In the conclusion we argue that by better understanding the close relationships between community, peasant economy, and irrigation management, we can also better understand how and why collective action is so central in Andean user-based irrigation management, despite efforts to introduce market mechanisms in this sector.

User-based irrigation management and community in the Andes

Being a fundamental pillar of many local communities' livelihood systems, control over their own waters and related governance systems are of utmost importance for sustaining collective action. Yet, in face of the legal norms of state-based governance systems, it is a constant challenge to sustain and defend their autonomy and place-specific organizational forms. Unlike government-managed irrigation, where (formally) state authorities establish and enforce rules and specialized managers and technicians (often at various levels) carry out most management tasks, in farmer-managed systems the roles of water authority, water manager, and water user are integrated. As indicated by an Ecuadorian farmer and water manager of the Chambo–Guano irrigation system: 'the state agency used to have over 40 water guards responsible for delivering water to us, … now that we are managing the system we only have three water guards, the remainder of the work [irrigation tasks] we do ourselves, through our own organization' (personal communication, 2013).

Members, as co-owners of the system, commonly co-decide about its management. Self-mobilization and direct action on the basis of social control, collective monitoring, and collectively elected, rotating leadership characterize the ability of all members to be involved in water control affairs. This is usually regulated by the existing water rights frameworks. Yet, aside from rights and duties, a series of operational rules is also necessary, with an organization that will take charge of implementing and enforcing the norms (see Uphoff, 1986). These norms usually establish the following tasks (Boelens, 2015; Boelens and Hoogendam 2002):

- Regulation and authorization: discussion, formulation, dissemination, and acceptance of constitutional rules, such as water rights, including procedures, obligations and penalties.

- Operational water management: e.g. implementation of water rights and regulations, through activities such as scheduling, distribution, and surveillance of water shifts; operation of hydraulic works; and oversight of infrastructure maintenance.
- Internal organization: e.g. definition of objectives, collective decision-making, activities coordination and planning, monitoring of implementation, conflict resolution, and ensuring members' participation.
- (Re)constructing infrastructure: design, construction, repair, and modification of hydraulic works and the irrigation network.
- Mobilizing and administering both members' and external resources: e.g. financial means, material resources, agricultural products, labor, and information.
- Alliance-building and networking: to elicit technical assistance; to represent the collective system and its individual users; and to defend users' collective interests.
- Ritual tasks, according to the system's embeddedness in the metaphysical domain: activities related to maintaining and reproducing reciprocal relationships with deities.

Despite heterogeneity, in most of these systems water users and water authorities are often one and the same as roles and responsibilities circulate among the group of users. Therefore they share a similar social and cultural background.[1] Organization, aside from being a (political–strategic) *end*, constitutes a *process* and a *means* for water users' collectives to sustain their autonomy and effective governance in water use systems. In Ecuador in the 1990s, after being confronted with a reckless neoliberal state-withdrawal project, water users in many formerly state-managed irrigation systems stood up for their rights to negotiate the conditions for taking over irrigation management tasks from state agencies (Hoogesteger, 2013a). This resulted in user organizations bending the Ecuadorian irrigation management transfer program, through which 35 out of 73 agency-managed irrigation systems were transferred to newly created WUAs (Cremers et al., 2005). Additionally, although not 'formally' transferred, inside many systems that remained 'agency-managed WUAs' water users' communities developed forms of co-management with the state agencies (which maintained control over the main canals).

In all of these transferred systems the WUAs were constituted (as established by law) as water-centered organizations that operate apart from the community organizations (see Verzijl and Dominguez, 2015 for a case in Peru). Nonetheless, informality and flexibility of organizational patterns often make the boundaries between the lowest organizational units of the WUA and community organizations blurry and vague. The root cause is the dynamic embeddedness of irrigation management in community life and livelihoods (see Boelens, 2015).

In systems that have had to conform to national law to get subsidies and/or because these were formerly state managed, there are special organizations, roles, and procedures for irrigation matters, whereas in others, usually small systems that

have had little state interference, irrigation matters are included as one element among other community issues. For instance, in Guanguilquí–Porotog in Cangahua (northern Ecuadorian highlands) communities have established a Community Assembly (where users and non-users jointly decide on community issues) as the lowest management unit of an irrigation system that brings together tens of communities and some large landlords who, at higher inter-community and multi-actor levels, come together in an overarching WUA (Hoogesteger, 2013b).

In most Andean (inter-)community systems, even in cases where at the lowest organizational level there is separation between water-related and non-water-related institutions, in practice this division is often permeable, with close interrelationships between the two. For example, in the community of Tomepampa (Cotahuasi, Peru) two types of collective work have been established: community work (to which everyone must contribute equally) and work of the Irrigators Committee (in which water users contribute labor according to their irrigated land area); but when it comes to cleaning the bullring and the streets or repairing the school, every water user has to be present. If not, they have to contribute more labor during the next collective work session of the Irrigation Committee (Panzani, 2003). In the Gompuene system (Chimborazo, Ecuador) a family disobeying the collective decision-making of the General Assembly in whatever field of community interaction may face direct consequences and penalties in the irrigation sphere (Boelens and Doornbos, 2001). Making irrigation governance part and parcel of the overall community discussions and arrangements tends to strengthen communal bonds and interactions. The division between community and Irrigation Committee meetings and arrangements is often seen as problematic, as expressed by a user in the Pillaro irrigation system (Tungurahua, Ecuador):

> I think it would be better if the community organization and the water organization would be together. Now each one calls separately for assemblies. One for issues concerning water; the other for other issues. I think these should work together. We used to do all in the community organization … and that kept us united. Now divisions have been created because of two different assemblies.
>
> *(Cited in Hoogesteger, 2015: 406)*

Yet just as often there are various entities within a community that interrelate closely, and each community member commonly belongs to several of these entities simultaneously. This guarantees that there are always multiple and intense interactions between the irrigation and community spheres.

Because of the obligatory reciprocity required to operate and sustain the system, and because of the common ownership of the system in which the rights of each user are 'created', 'recreated', and 'embedded' (for an international overview, see Boelens and Vos, 2014), users identify with the system and relate to each other. This is at the heart of collective action in water control and, jointly with the historical struggle for water, collective defense of community authority, and

development of the community's own rules and customs, it reinforces these context-specific hydraulic identities (see Boelens 2014, 2015). Because of this 'community embeddedness' of water tasks, informality, and institutional flexibility, aside from structural elements, an organization requires a series of cognitive elements, which are the ideas and beliefs about the need to cooperate mutually and follow the organization's rules (Boelens and Hoogendam, 2002; see also Chambers, 1980; Coward and Levine, 1987; Uphoff, 2000).

The lack of such community and supra-community cohesion that enables water users to mobilize collective action and (supra-)community resources flexibly for the operation and maintenance of irrigation systems lays at the heart of the state agencies' failure to manage Andean irrigation systems satisfactorily 'from the outside'. This became painfully clear from the 1980s onwards when state expenditure in the sector was severely curtailed in both Peru and Ecuador (Boelens et al., 2015; Hoogesteger and Verzijl, 2015). This fact is commonly neglected by technocratic water development projects that advocate for market mechanisms or just 'functionalist' irrigation organizations and rules as the key to successful irrigation management (Boelens and Seemann, 2014; Zeitoun et al., 2016). What these interventions fail to acknowledge is that in the eyes of local water users' collectives, irrigation management is an intrinsic part of community activities and as such intermingles with other spheres of community life, such as the construction and maintenance of the soccer field, the church, the main road, the school, other collective facilities, and cultural festivities. Irrigation is not only anchored in these wider activities that maintain the collective of the community but also deeply ingrained in the peasant economy, as we explore further below.

The peasant economy and irrigation management

In contrast to agency management or market-driven governance, which for communities comes from the 'outside', as explored above, in user-managed systems irrigation governance comes from 'within' the community and the collective. In turn, the collective, the community, and irrigation management are further embedded in the economic unit of the peasant family and thus the peasant economy (see Bebbington et al., 2010; Golte and de la Cadena, 1983; Mayer, 2002; van der Ploeg, 2008; Zoomers, 2010). Though, with its own logic and through different mechanisms, life in the rural Andes is inserted in the global economy through webs of exchange. For instance, the relatively constant and secure price of dairy in the international market (as well as locally) has triggered many peasant families in Ecuador to opt for producing fodder crops and dairy cattle on their irrigated plots (Hoogesteger and Solis, 2009). Likewise, the decision to produce onions, potatoes, tomatoes, flowers, or other cash crops is always directly related to the market prices that may be achieved for these products. In turn, these decisions determine how often, when, and how much irrigation water is available and will be needed (see Mena-Vásconez et al., 2016).

The Andean peasant economy is neither autarchic nor self-sufficient, but interwoven in the commoditized/mercantile and community/non-mercantile spheres of

production, reproduction, and consumption. Therefore, peasant families commonly spend part of their resources and time in the production of market-oriented products (milk, flowers, onions, strawberries, broccoli, fruits) and another part on products for self-consumption (home garden, milk, corn, potatoes, fruits), with the two often interchangeable depending on market prices and family needs. This leads to great heterogeneity in the production strategies of the peasantry. As such, irrigation systems in the Ecuadorian and Peruvian Andes often have a great variety of crops and production systems, all of which have their own water requirements. This demands great flexibility and adaptive capacity from the irrigation system management. Yet, as peasant users are also the managers of the system, any essential changes in water scheduling are usually negotiated in community and, where possible, accommodated. For instance, in the Pisque system water delivery was accommodated to enable farmers to engage in the production of roses even though the community recognized that it would be unable to meet water demand if a large number of users switched to the production of roses (see Mena-Vásconez et al., 2016).

For many families, production on their irrigated plots is not about maximizing monetary income but rather about ensuring stability in the long run. In other words, peasants – and most of all peasant women – try to bring together the need for household and community *reproduction* with the *transformation* of those social relationships that threaten this reproduction. Reproduction and subsistence rhythms of households, communities, and their irrigation systems (and inter-community production systems) are directly intertwined; and labor relationships, kinship ties, social favors, friendship relations, and community obligations (manifested in the exchange of goods, ceremonies, gifts, and so on) perform an important role in and give meaning to complex reproduction networks. For instance, in the Guanguilquí–Porotog irrigation system some communities' vegetable production is coordinated with the needs of local schools, which offer locally grown produce to the children at mealtimes. Likewise, throughout Andean Ecuador and Peru, families contribute their produce and labor to ensure there is enough food for everyone during community ceremonies and parties.

In this respect, peasants see their household as a production unit that is strongly related (but certainly not equal) to their home and consumption unit. This means that resources and production have not only an exchange value but also a very important use value. In times of crisis (low prices, low rewards for labor), the peasant family increases its labor efforts instead of decreasing them. Peasants also try to find a balance between production for self-consumption and for the market. Therefore, most households produce a large variety of products that combine animal husbandry (sheep, cows, guinea pigs, rabbits, poultry) and fodder, cereal, vegetable, and fruit production according to what the climatological and soil conditions allow. The frequently made distinction between 'domestic' and 'productive activities' generally blurs (as does that between 'female domains' and 'male domains'), since they combine and overlap, making the boundaries very fluid or even non-existent. Most of the activities that are labeled 'productive' are equally reproductive and domestic.

With respect to income generation or the allocation of family time and work, the role of agriculture is not even always primordial. Peasants seek employment in a variety of productive activities since it is impossible to guarantee survival within subsistence agriculture when engaging in only a few activities of marginal output. Diversification is sought both within farming itself (e.g. agriculture, animal husbandry, forestry, market and domestic consumption, irrigated and non-irrigated crops, crops in several ecological altitudinal zones, associated crops, paid labor in the hacienda's irrigation system and non-paid labor in the community's system) and in non-farming activities (marketing, handicrafts, temporary migration, and so on). Furthermore, diversification relates to space and time: household activities are not necessarily carried out in the same space (this is, the peasant holding), nor at the same time (because of the strategic distribution over the course of the agricultural season and its migration periods). For instance, in Ecuador and Peru seasonal out-migration of workers from the Andes to the coast (for work in the agro-export industry), the Amazon region's oil industry, or the larger cities is common.

In Andean communities and irrigation systems, families apply several reciprocal social relationships of labor exchange which provide the workforce and other scarce resources needed for production and reproduction at both family and group levels, without having to buy them in the market. Each one of these relationships, such as the *ayni*, the *maquimañachi*, the *minga*, the *faena*, and *trabajar en compañía* ('work together'), has different aspects and names throughout the Ecuadorian and Peruvian highlands. But they are all relationships that, to a certain point, can counter social differentiation and, above all, make available the necessary resources to the less well-off, without denying the fact that this reciprocity is sometimes asymmetric (something that is especially evident in irrigation systems). Therefore, labor relationships play an important role in structuring informal organizations, networks, and practices in communities and irrigation systems. Thus, defining water rights, and establishing the best means to realize them, is central to shaping 'collective contractual reciprocity' (Boelens, 2015) in Andean user communities.

Integrating market mechanisms and collective action in irrigation management

In spite of capitalist market penetration in Andean rural communities, non-mercantile sphere exchanges and interactions have resisted – and will resist in the future – substitution by purely commoditized relationships. A principal reason for this is that neither peasant families and communities nor their irrigation systems will be able to reproduce themselves within exclusively mercantile relationships, and they are well aware of this fact. The consciousness that 'community', 'reciprocity', and 'collective action' form a central axis for the adequate defense and effective use of the community's productive resources, both collective and individual, has kept certain market spheres at bay (Boelens et al., 2014). Generally, peasant households perceive that non-commodity relationships ensure long-term reproduction and

offer a protective framework against the vicious circle of poverty, debt, and exploitation.[2]

In the irrigation domain, alongside the transference of irrigation responsibilities to WUAs in the 1990s, great effort was put into the introduction of market mechanisms to ensure the financial sustainability of those WUAs (Hoogesteger, 2015). The World Bank-financed Irrigation Management Transfer programs set full-cost recovery and financial solvency of WUAs as important pillars that would guarantee the sustainability of the irrigation systems' operation and maintenance (World Bank, 2001; Hendriks et al., 2003). In Ecuador and Peru many of the newly created WUAs were equipped with, for that time, sophisticated administrative systems, and irrigation fees were established to cover all expected administration, operating, and maintenance costs (Vos, 2002). Nonetheless, in most irrigation systems water fees were never fully collected and many assemblies and directive boards of the new WUAs quickly lowered the fees to the bare minimum. For instance, in the Chambo–Guano irrigation system in Chimborazo, which covers around 5,700 hectares and over 10,000 water users, the annual budget of the WUA was $10,000 in 2011. This was barely enough to cover the salaries of the administrative staff and the water guards, and the guards' field transport expenses. Yet, when needed, the WUA has an enormous capacity to mobilize its eighty-two constituent water assemblies and their members for collective action aimed at ensuring the sustainability of the irrigation system (see Hoogesteger and Verzijl, 2015). Also within the constituent assemblies collective action forms the basis for ensuring water delivery.

One of the main problems identified by many community members of irrigation systems who have witnessed external interventions to 'improve' irrigation management is that, in their efforts to promote and ensure 'rational' financial sustainability, both the communities and their forms of collective action (community relations) have been replaced with market-based relations in which paying the irrigation fee – rather than participating in community affairs – becomes central. This creates conflicts with community reciprocity notions in which collective action and 'functional solidarity' are central. In these relations monetary contributions are neither fixed nor periodic, but usually established by the General Assembly to cover specific and well-identified costs. Therefore, tensions arise. As one community leader from the Pillaro irrigation system in Tungurahua, Ecuador, put it: 'In the last years we have had several conflicts … the Water Assemblies have separated themselves from the community structures … and the new directives have applied a lot of monetary sanctions and that creates conflicts' (personal interview with Jaime Hoogesteger, February 2008). For the same reason, positions in the directive boards of the WUAs and water committees of communities are voluntary functions. Having little to no budget also works as a mechanism to get people to participate on the boards not because of economic self-interest but because of conviction and commitment. And although there have certainly been cases of power misuse, mismanagement, and personal financial gain in WUAs, the financial losses associated with such activities are often low.

Rather than leaning on irrigation fees, market mechanisms, and outside commercial 'technical know-how', most communities and WUAs rely on local knowledge, labor, and collective action to sustain their irrigation systems. Maintenance and rehabilitation of the irrigation system are done where possible through collective work. Even when external technical support is sought to solve more complicated infrastructural problems, the unskilled labor is usually provided through community-based (and unpaid) collective work teams.

This does not mean that all operating and maintenance tasks can be performed with local skills, labor, and resources alone. Large-scale maintenance is often required in most of the Andes' irrigation schemes as there is a constant threat of landslides that have the potential to wipe away whole chunks of infrastructure in the steep and often rather unstable terrain. However, to repair such damage, most WUAs have developed a two-pronged strategy that relies, first, on collective work and the incidental collection of targeted maintenance fees; and, second, on the mobilization of their networks to secure external funding for essential repairs. For instance, the Guanguilquí irrigation system garnered support from the municipality of Cayambe to pay for the reconstruction of its main canal; in Chimborazo, the Licto irrigation system received support from the provincial government to replace a large siphon that had reached the end of its usable life; the Chambo–Guano irrigation system received support from the National Irrigation Institute to line its main canal; and several smaller systems have elicited support from non-governmental organizations and the National Irrigation Institute to line their systems, install sprinkler irrigation, and construct night storage reservoirs.

As such, market mechanisms that aim to guarantee a financially healthy WUA may be seen in a very different light. For local users, it is not fees and money that make their system work; it is the people and the collective that stand at the core of an efficient irrigation system. And although at some points in time fees and monetary contributions can form an important aspect of the collective efforts that are needed to sustain irrigation, these are usually kept to a minimum. Moreover, financial and labor contributions are often exchangeable on the basis of users' ability to contribute one or the other. For instance, in the Pillaro irrigation system (Tungurahua, Ecuador), and other systems, farmers can buy themselves out of some of their collective work responsibilities when they are unable to fulfill them because of temporal migration or other reasons. Similarly, widows, pregnant women, and single mothers are often excused hard physical work, and alternative contributions are often devised for those who cannot afford to pay the standard WUA fees. This brings us back to the fact that irrigation management, along with the maintenance of the peasant economy and the recreation of community, is organized by the users with flexibility, creativity, and collective force and intelligence rather than hard money, tight rules, fixed fees, strict adherence to financial guidelines, and external 'expert' knowledge.

Conclusions

In this chapter we have analyzed the relations between community, peasant economies, and irrigation management based on examples of irrigation systems in

Ecuador and Peru and have shown that collective action is intrinsically related to and glues together these three spheres. The close interrelations among the three spheres makes them mutually dependent and in many cases robust. Therefore, irrigation management cannot be seen as separate from the other spheres of rural life, as is often done in projects and interventions in the irrigation domain. This provides evidence of a very different rationale for the management of irrigation systems than the ones that are advanced by, for instance, the World Bank and many national governments – which range from public–private partnership projects to top-down laws or market-based water rights frameworks. The irrigation management transfer programs in Ecuador and Peru were very much concerned with narrow-mindedly establishing WUAs as financially autonomous and healthy institutions that would guarantee cost recovery for the operation, administration, and maintenance tasks of formerly state-managed irrigation systems (Hendriks et al., 2003; Vos, 2002). Nevertheless, many of the installed WUAs now operate under a very different rationale that rests heavily on and is engrained in the logic of collective action and working on the irrigation system from within.

The fact that current irrigation development often means 'more market' is not necessarily problematic. It is not a question of either embracing or rejecting this market. As stated above, in contemporary Andean society, peasants also *require* aspects of the mercantile sphere to be able to obtain the resources that are needed for reproduction. Therefore, strategic questions relate to:

- strengthening *endogenous control* over decision-making on the issues of why, where, how, and when to relate to the market;
- ensuring access to markets in a collective, equitable, organized manner; and
- finding the required balance in the interaction between commodity and non-commodity spheres, considering that the latter underlies reproduction of both the collectivity and its parts, and access to the market without losing the capacity for self-management (see Boelens et al., 2014).

This reality calls for a rethinking of water governance notions that rely heavily on markets or government interventions and draws attention to the importance of devising strategies that strengthen the ties on which Andean irrigation systems have survived for centuries, albeit at new scales and within the present-day context.

Notes

1 This does not necessarily mean that these water users/leaders have the same class or ethnic background, or gender. Such differences may be obstacles to strong user organizations, but it is also crucial to recognize the *organizing potential of heterogeneity*. Heterogeneity can reinforce the forms of cooperation based on interdependence and complementation of capacities and resources.

2 For example, in times of economic crisis, it is common for many communities to retreat partially and strategically from the market and return to non-monetary exchanges as a defense

against both market exploitation and hyper-devaluation and insecurity of monetary means. Mayer (2002), for instance, refers to the 1994 study of Javier Escobal, which shows that, after Peru's appalling Structural Adjustment Program in the 1990s, the least monetized peasants were relatively far better off than farmers who fully integrated into the market system.

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10

COLLECTIVE ACTION AND GOVERNANCE CHALLENGES IN TONLE SAP LAKE, CAMBODIA

Sanjiv de Silva, Kim Miratori, Ram C. Bastakoti and Blake D. Ratner

Introduction

Almost twenty years since the end of its civil war, Cambodia appears to be on a path of rapid economic development. It cut the national poverty rate by more than two-thirds from 53 per cent in 2004 to 13.5 per cent in 2014 (Asian Development Bank 2016), and surpassed the Millennium Development Goal poverty target. Nevertheless, since approximately 90 per cent of Cambodia's poor still live in rural areas (Sobrado et al. 2013), natural resources play an important role in securing livelihoods for the rural poor. Moreover, these poverty reduction gains remain vulnerable given that those living on less than $2.30 per day (classified as 'near-poor') continue to be highly exposed to even the smallest shocks to their livelihoods (Ly et al. 2016). This includes the major transformations in freshwater fisheries. At risk are the households that are likely to be classified as poor or near-poor, since the economic viability of small-scale fishing is under pressure from increased competition, illegal fishing and loss of flooded forests needed for spawning that collectively result in declining catch per unit of effort (Ratner et al. 2014).

Diepart (2015) observes that natural resource management remains loosely regulated due to complex and indistinct rights of resource access, and highly embedded and influential networks of power, patronage and influence. Observers (Diepart and Dupuis 2013; Asian Development Bank 2012; Ear 2009) highlight the influence in decision-making of patronage systems, running both vertically and horizontally. Despite elections and other political and institutional reforms (Ear 2009), there is an underlying struggle for control over productive resources between elite groups and ordinary citizens, often resulting in inequitable and unsustainable resource use and the marginalization of the poor (Ratner et al. 2014). Given the multi-sectoral and multi-scale nature of these pressures, local resource users' strategies to address these challenges need to be combined with effective models of organization to foster collective action.

This chapter examines various forms of collective action in fisheries resource access and management that have emerged in recent years and links these with the wider context of ongoing reform processes. Three critical questions are asked:

- To what extent and through which modalities have collective action efforts succeeded in shifting the local relationships of power that shape access to natural resources?
- In the event of success, which opportunities have been presented to local natural resource users to enhance their livelihoods?
- How do less successful examples deepen our understanding of the difficulty of overcoming existing power asymmetries?

To this end, we consider experiences with community fisheries (CFs) charged with promoting sustainable management of local fisheries resources. This highlights why collective action remains challenging despite significant policy and legislative reforms in support of CFs. Two examples of more successful collective action, also within the fisheries sector, are then examined. The first is of cross-scale action to expand local fishers' access rights, and the second documents stakeholder cooperation for managing local fish refuges in rice-field systems.

Context: culture, political and social upheaval and reform towards democratic governance

Authoritarianism is deeply rooted in Cambodia's historical governance experience, which is structured around fiefdoms, with their leaders enjoying power over both people and resources (Asian Development Bank 2012). Collective institutions around resource management were historically uncommon (Diepart and Dupuis 2013). During the Khmer Rouge period (1975–1979), in addition to forced collectivization, the foundation of access rights to resources was systematically dismantled by abolishing all property rights and written evidence thereof (Weingart and Kirk 2008). Also undermined were traditional social ties, such as mutual help, religious institutions and family ties, which damaged the mutual trust necessary for cooperation in common property resources (Joffre and Sheriff 2011). It is only since the period of UN-sponsored elections (1993) that reformers have pursued the goal of decentralized democratic governance.

Central to post-conflict reform is the Decentralization and Deconcentration (D&D) programme, launched almost twenty years ago. By creating a linked administrative system at provincial, district and commune levels around the principles of representatives, transparency and accountability, and transferring administrative and decision-making authority to these sub-national entities, D&D seeks participatory local democracy, effective and timely delivery of public services, and social and economic development and poverty reduction (Royal Government of Cambodia 2005). The elected commune councils that replaced the state-appointed commune chiefs (Ninh and Henke 2005) are a key example of the institutional

reforms that are intended to realize these goals. The expectation of people's active involvement with this structure in local decision-making offers new spaces for collective resource governance (Diepart and Thol 2009).

At the same time, Cambodia's proximity to the larger economies of Vietnam and China means regional dynamics significantly influence resource governance in the country. Keskinen et al. (2007) note China's growing economic cooperation with Cambodia is having a significant influence on the pursuit of major infrastructure projects, such as large-scale irrigation and hydropower dams, as development drivers. Suhardiman et al. (2011) analyse the deficiencies in transparency and accountability concerning hydropower development in Cambodia, including the scant institutional attention and procedural space given to capturing and valuing diverse perspectives around local ecological and livelihood impacts. Allocation of land concessions to powerful domestic and foreign economic interests is another driver of large-scale change in local stakeholders' access to natural resources: 40 per cent of Cambodia's land area was under concessions by 2010 (Borin et al. 2015).

Other spaces for collective natural resources governance: community fisheries

Before 2001, Cambodia's fisheries were characterized by the significant role of large-scale fishing concessions, whereby concession operators enjoyed the sole right to exploit the fisheries within the area over a specified period, to the exclusion of local communities. The cancellation of 56 per cent of concessions in 2001, and a royal decree and sub-decree in 2005 establishing the basis for community fisheries, marked a significant policy shift to community-managed fishing. The remaining fishing lots were cancelled in 2012 (Ratner et al. 2014), making CFs, alongside fish sanctuaries and protected areas, the primary mechanism linking fisheries resource stewardship with poverty alleviation. Each CF works with the Fisheries Administration (FiA) to demarcate the area under its purview, and to establish a committee and rules for managing this area through collective efforts of the membership.

These initiatives, together with the development of commune councils, also aimed to give communities' resource access and management rights stronger recognition within provincial planning processes (Diepart and Thol 2009). Significant advances have occurred in formulating the policy framework, rules and institutions to support community-based fisheries management, and local communities' access to freshwater fisheries has increased significantly. Yet, the results with CFs thus far have not matched expectations (Vuthy and Kong, 2015). Fisheries-dependent communities still have some of the highest levels of poverty in Cambodia (FAO 2011), while pressures on fishery resources continue (Ratner et al. forthcoming). The challenges are numerous, and closely reflect many of the political, socio-economic and resource characteristics that hamper effective collective governance. CFs struggle especially to support the small-scale fishers who represent the majority of fishing households. Declining fish catches and complex local power structures that disadvantage small-scale fishers' access to fisheries (Oeur et al. 2014)

combine to make small-scale fishing unprofitable for many. This is contrary to the assumption advanced by some proponents that CFs would convince fishers to become environmental stewards (Keskinen et al. 2007). Ratner (2006) notes that the cancellation of fishing concessions in fact opened the door to new fishers, with a sharp rise in the use of illegal gear, a problem that remains widespread (Joffre and de Silva 2015), exacerbating the pressure on fishery ecosystems.

CF organizations have little way to generate revenue in order to meet the costs of management and enforcement. Consequently, the costs of resource protection are incurred by communities, while in most areas they have little prospect for deriving sustained financial benefits from the resource. Moreover, focusing primarily on local contexts, CFs have also struggled to advocate for their interests with government agencies within a changing development landscape. Key trends include resource commodification, demographic change (Diepart and Thol 2009; Oeur et al. 2014) and inter-sectoral conflict, such as agricultural expansion and pollution at the cost of flooded forests and increasingly poor water quality (Ratner et al. forthcoming). CFs' single-sector, local-level focus contrasts with the cross-sectoral and multi-user approaches needed to address the pressures that are exerted on fisheries resources (Diepart 2015). Many also lack experience and capacity to organize effectively to address these trends, and they are hindered by internal inequalities and the often diverse and conflicting interests of their members.

Navigating the governance challenge: lessons from two cases of collective action assisted by action research

The above discussion illustrates some of the obstacles to successful collective action to enhance livelihoods in fishing communities. It emphasizes the mismatch between localized, community-oriented resource management institutions and the multi-sector and multi-scale pressures on resources. Nevertheless, the following two examples of collective action suggest that a systematic approach within specific and well-understood contexts can yield positive results even in this challenging environment. The first example is of collective action across scales that succeeded in expanding the area accessible to local fishers, while the second focuses on collective management of rice-field fisheries (RFFs). Both cases involved significant external assistance.

Collective action across scales to expand fishing access rights[1]

An action research project initiated in 2009 by WorldFish, the FiA, the Coalition of Cambodian Fishers (CCF) and the Cambodia Development Resource Institute (CDRI) worked to support the capacity of groups around Tonle Sap Lake to advance sustainable livelihoods. The strategy centred on building the collective capacity of a grassroots network of fishing communities to articulate vulnerabilities in fisheries livelihoods, and negotiate in line with the common interests of fishing communities in the Tonle Sap Lake region. The process adopted for strategy

implementation involved deliberative processes of empowerment, mobilization and networking, using the Appreciation–Influence–Control approach to stakeholder engagement. It appreciates the cultural, societal and political context, and explicitly recognizes power asymmetries to identify and act upon constraints and opportunities. Participatory learning and action and participatory action research principles were used to promote joint assessment, action and learning among stakeholders who included local fishers, fish traders, CF members, police officers, commune council members, fisheries officers, environment officers, military police and district officials. To make explicit the underlying contextual factors, these groups were first engaged in assessing the character and roots of resource conflicts in the lake, and identifying the most relevant stakeholders affecting the resilience of local livelihoods. The process gained legitimacy from the way these were identified collectively, rather than introduced by one group or by external experts. Framing discussions at the scale of the lake encouraged actors to consider a broader set of institutional relationships and ecological interdependencies.

A provincial meeting followed each local dialogue, where local representatives presented outcomes and further explored solutions with provincial agencies, NGOs, provincial police, sector department heads and other senior government staff. Concession operators proved difficult to engage. These dialogues built up to a national dialogue held at FiA headquarters, chaired by the FiA Director General with associated government agencies in attendance. This continued the dialogue over solutions identified at sub-national levels.

The following year, Fishing Lot 1 in Kampong Thom Province was terminated, with access rights accorded to local fishers. This was the first fishing concession to be cancelled since the reforms of 2001 as earlier requests by the communities to cancel it had failed. Part of the shift in context is likely attributable to upcoming elections, which increased attention to community advocacy. Another difference was the coalition of partners operating at different scales, and the deliberative and inclusive approach to creating opportunities for local people to raise these issues at provincial and national levels. These also helped elicit support from authorities and built real momentum. For example, in a local dialogue, a cantonment fishery official unexpectedly confirmed the raised concerns. Through this bottom-up and inclusive approach, the coalition and the local fishers built support even within the FiA's ranks. It was therefore no longer just the voices of local fishers, and this generated momentum for a new petition to the National Assembly, endorsed by the local authorities. This was supported by CCF and by the Fisheries Action Coalition Team (FACT), another key fisheries network. The Advocacy and Policy Institute (API) in Phnom Penh arranged meetings with parliamentary groups, prepared community members for these meetings, and followed up with officers of the National Assembly and the Senate.

In this example, a coalition of actors was able to provide linkages across scales after recognizing that community fishery groups around Tonle Sap Lake face problems that cannot be solved at the local scale. Central to coalition building was the deliberative dialogue process focused on identifying common ground on which

consensus could be built. Working across scales also helped minimize the dominance of vested interests and power asymmetries at any one scale. This at least temporarily shifted the power dynamics that are typical of interactions among these stakeholders, supporting new partnerships and patterns of interaction. For example, CF members were able to move from merely raising problems with officials to collectively working through potential solutions that took into account the perspectives of the police, fisheries officers, and commune and district officials. Likewise, FiA officers were encouraged to move from simply explaining and enforcing the law to addressing the root causes of problems. Also critical was the collaboration between a grassroots network and a national line agency. This built trust among stakeholders working at different scales and helped accrue social capital to create a sense of shared purpose.

Building local institutions for community management of rice-field fisheries[2]

The Rice Field Fisheries Enhancement Project (2012–2016), led by WorldFish, implemented in collaboration with the FiA, and financed by USAID, tested a methodology for building capabilities and institutions that can contribute to achieving the government's fisheries policy, which calls for each commune in the country, including the Tonle Sap and Mekong floodplain watershed, to develop a community fish refuge (CFR) to enhance RFF production (Ministry of Agriculture, Forestry and Fisheries 2011). Rice-field fisheries refer to the capture of wild fish and other aquatic animals from flooded rice-field agro-ecosystems and their supporting infrastructure (canals, channels, streams and other bodies of water). They are important sources of income and animal protein. For example, in the project's forty target communities located within the Tonle Sap watershed and Tonle Sap floodplain, RFFs accounted for an average of 38 per cent of a household's annual fish catch (derived from Miratori and Brooks 2015). Although over 100 CFRs have been developed in Cambodia since the late 1990s (Joffre and Sheriff 2011), a more systematic approach to CFR development and management is now expected. The fish productivity of RFFs hinges on maintaining a CFR – a designated conservation area that connects to the rice fields.

The project was seen as a pilot phase, and by its completion in 2016 significant results had been achieved in terms of improved RFF productivity and contributions to household well-being, along with community capabilities to manage these production systems sustainably. Resource-use conflicts were reduced at all sites through better coordination between all CFR water users – including rice and vegetable farmers, fishers, cattle owners and households accessing potable water – on optimal water use for all users. In other words, limits to the exploitation of this common property resource were both established and implemented.

Underwriting these results was a systematic approach to building technical capacities and actor networks that explicitly recognized the importance of managing diverse interests and asymmetries in influence and capabilities. The central

organizational feature was an elected CFR committee mandated to define the CFR boundaries, develop by-laws and CFR management action plans, hold regular meetings, and manage fish pathways and other components of RFF systems with support from local people, local authorities and the FiA.

The CFR committee was conceptualized around five indicators of good governance: appropriate institutional structure; inclusive planning and implementation; effective resource mobilization; networking with external stakeholders; and equitable representation. To generate these characteristics the project followed four interlinked developmental stages.[3] Stage 1 ensured NGO implementing partners gained a sound understanding of RFF management and the central role of CFRs through formal training followed by field application and coaching. Stage 2 built a shared vision of RFF management through CFRs among RFF users, and official institutions at village, commune and provincial scales. Project aims were introduced through two half-day consultation meetings attended by commune councillors, village chiefs, community stakeholders and civil society organizations. Ideas were shared, objectives presented, success stories told and visions for future actions explored.

In Stage 3, RFF management planning was facilitated through two half-day capacity-development sessions for CFR committee members and key stakeholders. By explicitly discussing the different needs of RFF users, misunderstandings were minimized and collaboration of resource user groups facilitated to improve integration of community-level land and water management. Each workshop involved five steps that helped CFR committee members and other stakeholders develop, implement and monitor a six-month action plan to improve their RFF ecosystem. The first step introduced the CFR and RFF system concepts. Step two helped participants develop a realistic vision for improving their RFF over the next three years. Step three strategized how communities could move from existing RFF scenarios to their collective vision for RFF management through problem tree analysis, whereby root causes preventing communities from achieving their vision were recognized and actionable solutions identified. This led on to step four, where stakeholder analysis identified stakeholders in the village with the interest and resources to support the implementation of priority actions. These became six-month action plans in step five, based on a visioning map and a monitoring tool.

The fourth stage of this process involved backstopping to plan implementation through follow-up meetings. Action plans were reviewed and strengthened, and important networks built with other institutions at local and provincial scales. A stakeholder workshop facilitated review of and reflection on key successes and challenges; role-plays by skilled facilitators that clarified the characteristics of good governance and management; participatory assessment of the current status of the five characteristics of good governance; field visits; and drafting of the next six-month plan, which incorporated necessary adjustments. Plan implementation was similarly supported, although more emphasis was placed on improving governance and identifying opportunities for integrating elements of the plan into the Commune Investment Plan to ensure the action plan was integrated into mainstream

development planning processes that could finance continued operation once external support had ended.

Underlying this seemingly smooth process was a strategy to manage risks posed by the pluralistic power bases, such as the village chief, commune council, district and provincial governors and FiA Director. While engaging these individuals from the outset was not in itself novel, it was effective because it went beyond merely informing them of project activities. They were invited to participate in village and provincial dialogues, and asked to perform specific tasks to create a sense of belonging to a collective effort. For example, they were asked to open the dialogues by explaining the objectives, planned activities and expected outcomes of the project to the other participants. This immersion of influential actors in the analysis and planning process provided space for open dialogue among all relevant stakeholders, during which information was shared, feedback provided, and mechanisms for supporting effective RFFs explored and implemented. In addition to this engagement of powerful local and provincial actors, the signing of a collaboration agreement between WorldFish and the FiA which allowed the former and local partner NGOs to implement the project helped generate support for the project's objectives among the sub-national power structure, including the Fisheries Cantonment, the Provincial Governor and commune councils.

However, in some instances, even the above strategies failed to gain support from key actors. At one site, the council chief rejected CFR's action plan, fearing that it would impose too great a burden on the council's resources. In a bid to change his perspective, he was invited to participate in the first reflection workshop with CFR committees from Kampong Thom and Siem Riep provinces, which the Deputy Governor of Kampong Thom also attended. This was followed by exchange visits between the two committees, during which the council chief was able to observe RFF management practices and listen to reports of results identified by stakeholders. He was then able to visualize how a successful CFR had gone through a systematic process and won the support of the Provincial Governor. This was a turning point after which he agreed to support the action plan. Six months later, this CFR received an award from the Deputy Governor of Siem Reap at the next reflection workshop, held in Siem Reap Province. The council chief was also singled out for praise, which cemented his continued support.

This example illustrates that initial difficulties in obtaining support from powerful actors sometimes arise not due to vested interests but for legitimate and addressable reasons, such as concerns over a lack of experience in fundraising to support the CFR. The project's efforts to understand the root causes of this important actor's hesitancy, and facilitation of his participation in the dialogues and exchange visits, served to inform him of the diverse sources of funding that were actually available. Seeing the manner in which the provincial authorities responded to successful CFRs provided further incentive for him to change his attitude towards the CFR in his commune. Not only has he subsequently raised significant funds for CFR activities, but he has also invited the CFR committee to commune council meetings as a source of development support.

Miratori and Brooks (2015) report that the improved management of RFFs has reduced illegal fishing and increased fish catch for local households. Stakeholder reflection workshops also brought out a number of benefits ascribed to the collective approach to RFF management. These include improved coordination with local authorities and the Fisheries Administration Cantonment, which in turn facilitated CFR committee action plans to be embedded in Commune Investment Plans – a major pathway for funding community-level development. Engagement of a wider stakeholder group was seen to improve the quality of the action plans and their overall integration into land and water use and management. Action plans developed through the CFR committee are considered to be realistic, and enjoy greater legitimacy because of the transparency in the planning process. Identifying and bringing together key actors is also believed to have opened multiple avenues for funding CFR activities through temples, the Fisheries Administration Cantonment, NGOs, private companies and other local entities. Continued transparency within CFR committees through regular meetings and systematic documentation of CFR finances appear to induce high levels of participation in CFR meetings. People have also been more willing to contribute funds during fundraising events organized by the CFR committee and local authorities. Approximately US$14,720 was raised by CFR committees for maintenance projects between August 2013 and September 2014. Working collectively through a CFR committee was also seen to generate innovation and self-help in generating funding for CFR activities. Examples include the use of income from vegetables grown by the CFR on embankments, and the sale of soil generated when refuges were deepened.

Conclusions

Cambodia's institutions of decentralized democratic governance have introduced significant changes in decision-making over natural resources but still face daunting challenges. While the country embraces a market economy developmental model, the majority of its population continues to depend on natural resources that are under increasing stress. Access to and control of these resources constitute a key arena of contestation and conflict between mainly small-scale resource users and political and economic elites. How these conflicts are mediated will be central to whether Cambodia can consolidate its impressive recent achievements in poverty reduction to achieve more equitable development.

The influential conception of development driven by large-scale infrastructure investment and commodification of common-pool resources reflects the tension between this neoliberal model for economic growth and the need for growth to become more inclusive of the poor that forms a central thesis of this book. The difficulties experienced in making community fisheries viable vehicles for poverty reduction while supporting sustainable management highlight the negative feedback loop between resource degradation and livelihood opportunities. The struggle faced by CFs of mainly poor individual resource users to stem illegal fishing and flooded forest clearing resonates with the call to place multi-scale and multi-actor

approaches at the centre of collective action initiatives (Berkes 2007). Given that governance in Cambodia is pervasively pluralistic through competing sets of rules and norms (Adler et al. 2008), the scope and coverage of collective action must be broadened to incorporate key stakeholders across scales (communities, rural elites, sub-national and national government agencies, NGOs, CBOs, international agencies) if CFs and similar approaches for inclusive growth and sustainable resource management are to work effectively.

Lessons on how this might be realized are offered in the two cases of successful collective action. Both highlight the importance of approach and implementing process. The approaches placed the explicit recognition of power relations and understanding of and respect for heterogeneous interests at the centre. This reflects the need, recognized in critical institutionalism, to place social conflicts as an integral part of approaches that seek to influence governance outcomes, and the importance of focusing analyses on how local-level institutions can be linked to the wider political structure. The two examples in this chapter achieved this by embracing deliberative, inclusive and phased implementation processes that facilitated moving from understanding diversity within and across scales to identifying common ground where mutually acceptable solutions were negotiated. Arguably the most important feature of these approaches is that they reoriented the 'us versus them' perspective that often characterizes relations between civil society and state actors to one of a partnership working towards a shared goal. Moreover, the phased approach and willingness to understand individual actors from the perspective of their responsibilities and capabilities helped depoliticize challenges and address root causes where key authority figures appeared to be unsupportive, at least initially.

The case studies suggest that real opportunities to improve resource governance at all scales appear to exist if the right action research approaches are adopted. However, both success stories also reveal the critical importance of the role played by the research community together with local and international NGOs in supporting the process of collective action by helping to foster strategic alliances within and across scales. This suggests that such partnerships are likely to remain crucial for future collective action initiatives in Cambodia.

Notes

1 Based on Ratner et al. (2014).
2 Derived from Miratori and Brooks (2015).
3 See Miratori and Brooks (2015) for details.

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11

GOLDMINING, DISPOSSESSING THE COMMONS AND MULTI-SCALAR RESPONSES

The case of Cerro de San Pedro, Mexico[1]

Didi Stoltenborg and Rutgerd Boelens

Introduction

In 1996, Minera San Xavier (MSX), a Mexican tributary of the Canadian mining company Newgold Inc., announced it wanted to start a large open-pit gold and silver mine in the municipality of Cerro de San Pedro, in the state of San Luis Potosí. The mining site occupies 373 hectares of *ejido*[2] community land. This was highly controversial as the scale and type of the mining operation would impose a heavy burden on the available land and water and generate many adverse social and environmental impacts. Resistance was fierce, and several opposition groups united to form the *Frente Amplio Opositor* (Broad Opposition Front; BOF). Despite the opposition, however, MSX started operations in 2007. To date, its presence is still disputed.

Even though mining is a highly profitable business for some privileged actors, the downsides of mining activity for the majority and the environment are becoming more and more clear. Environmental degradation, illegal land acquisition, water contamination, corruption, violence, resistance and conflict are commonly associated with mining development (e.g. Perreault, 2014). Likewise, in Cerro de San Pedro, campesino communities are dramatically affected by the mine's activities (see Figure 11.1), and the livelihood strategies of mine-adjacent communities are endangered through, among other issues, decreased access to and control over land and water. As in most large-scale mining projects, the economic benefits promised by government and mining companies in the form of, for example, temporary employment are outweighed by the losses suffered (van de Sandt, 2009). And, as elsewhere, these negative effects give rise to deep societal conflicts (e.g. Zwarteveen and Boelens, 2014).

This chapter elaborates how conflict arose over common land and water resources between the inhabitants of Cerro de San Pedro and MSX, causing severe environmental impacts and affecting local communities at large. We argue that this

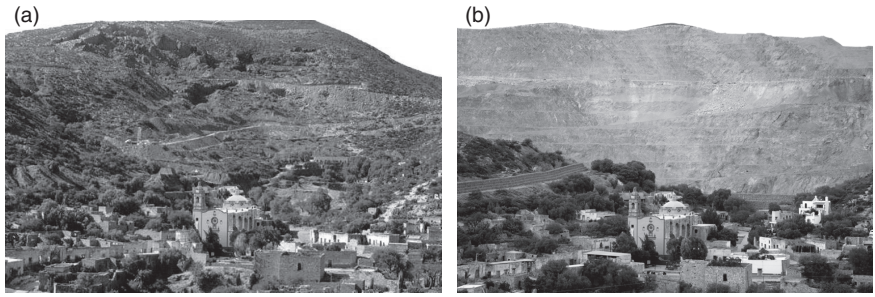

FIGURE 11.1 (a) Cerro de San Pedro in 2007, just before mining operations began; (b) the situation in 2013 – the open-pit mine, which is just 200 metres from the village centre, has destroyed the land and the waterscape, generating dispossession and significant conflict
Sources: (a) BOF (2013); (b) photograph by Jesse Samaniego Leyva, 2013

'natural resources conflict' is not just about the right to access resources, but also about underlying injustices in local, national and international rules and regulations and about the legitimacy and authority to shape these rules, and the implications of this for social justice. It describes not only how the role and characteristics of the commons were changed by external forces (mining, in this case), but also how local communities fight back through resistance and social mobilization. It explains how these communities redefine and reshape their level of engagement in the management of the commons, and how they create multi-actor and multi-scalar opposition networks strategized to defend the commons by interlinking the local with the national and global.

The background: Mexico, a protectionist state takes a neoliberal path

After the revolution of 1910, Mexico created a protectionist state in which land and water rights were non-commodities (i.e. they could not be bought, sold or transferred to third parties). After years of unequal division of land and water under the *hacienda* system, the Mexican government expropriated large landowners and reallocated most of the land to former day-labourers. These labourers formed farmer groups that often, to date, collectively manage the resources: so-called *ejidos* or the social property sector. Under the *ejido* system, the main part of the allocated land is often managed collectively while a small part of it can be cultivated for private purposes (Assies and Duhau, 2009). Under the law of *ejido* tenure, land was a non-negotiable resource. It could not be transferred to third parties, land rights could not expire, and nor could they be seized through an injunction (Herman, 2010). Water rights were linked to agricultural property rights under *ejidal* law, so they could not be sold, rented out, used on other lands or used for other purposes than stated in the grant.

After 1992 the legislation on land and water rights changed. Following a severe economic crisis in the 1980s, the World Bank, the International Monetary Fund and the Inter-American Development Bank demanded the adoption of neoliberal policies if the country wanted access to money-lending possibilities. The main aim of restructuring the economy was to open the Mexican market for foreign investment. The social property sector and its regulatory framework of the time did not allow for private ownership as *ejidos* could not legally be privatized. This collided with the aim for increased foreign investment in Mexico as land/water could not be converted into private and transferable commodities. Among others, the Agricultural Law, the Mining Law and the Foreign Investment Law were profoundly changed. In opening up the mining sector to foreign companies, the Mining Law was amplified, for instance with an amendment to Article 6 that enabled land to be alienated through 'temporary occupancy'. This provision allowed mining operations to occupy land, and prioritized mining above any other form of land use. The temporary occupancy permits are granted by Mexico's Ministry of Economics.

The 1992 market-based revisions paved the way for the North American Free Trade Agreement (NAFTA), which Mexico joined in 1994. Through NAFTA, foreign direct investment was greatly stimulated. For Canadian/US mining companies it became very profitable to invest in Mexico due to the relatively low tax rates, low labour costs and less severe social and environmental regulations. It was shortly after the signing of NAFTA that MSX announced its interest in mining for minerals in Cerro de San Pedro.

NAFTA has received criticism that environmental standards are easy to circumnavigate, due to the so-called investor–state mechanism that the agreement encompasses. NAFTA aims to have investors of different countries treated equally and protected from expropriation by all levels of the (host) government. The agreement's Chapter Eleven gives an investor the right to challenge the government on the grounds of failure to comply with NAFTA in an international court, superseding national law. At the design stage, this mechanism was meant to protect foreign companies against arbitrary and unreasonable government actions. However, it has several deeply problematic aspects. First, in the event of a dispute, foreign companies can go directly to the international arbitration process and entirely bypass the domestic courts. Second, as launching this procedure is relatively cheap and easy it is an attractive option for foreign companies that wish to protect themselves against restrictions imposed by new environmental laws or social security policies, which could have a negative impact on their businesses (Mann and von Moltke, 1999). Third, the option of appealing to the international court is available only to companies operating under NAFTA, and not, for example, to communities or other non-business stakeholders who fear injustice, unequal competition or socio-environmental costs.

Effect of mining activity on common land and water resources

Cerro de San Pedro has a long mining history. Yet, unlike the traditional tunnel-based mining operations, the current open-pit mining practices have had a

tremendous impact on the land and the waterscape. The Hill of Saint Peter has been completely excavated (63 hectares); to its sides, two new hills have emerged out of waste material (145 hectares); and a newly constructed hill two kilometres to the south comprises the lixiviation area (120 hectares) (Reyna Jiménez, 2009). The 'new' hills have altered the natural drainage pattern, blocking a dam and a river in the village. Great amounts of dust cause severe pollution (Gordoa, 2011), and farmers in the area complain that this causes crop failure (personal communications, October 2013).

Opposition against the project started soon after MSX's announcement in 1996. The different opinions within the village drove a wedge between the residents, and a fully fledged conflict started in Cerro de San Pedro. Opponents of the project still talk about cases of severe intimidation, aggression and violence against them, inflicted by both MSX employees and pro-MSX villagers. Economic interests in the realization of the mining project were enormous, and the national government also put significant pressure on the local authorities to issue the required permits. When the mayor of Cerro de San Pedro was murdered after openly opposing the mining project (Vargas-Hernández, 2006), the town's next generation of officials, who had initially announced that they would not ratify the municipal permits, changed their minds. They were put under great pressure by MSX, the state and even the (former) national president (Vicente Fox). Many felt that they had no choice since their lives were at risk (Stoltenborg and Boelens, 2016).

There are multiple reasons for the conflict:

1. Land rights were falsely obtained by MSX and a large litigation process followed.
2. The government granted MSX large water concessions, which was sure to cause conflict in an area where water is a scarce resource.
3. Several existing governmental decrees and land use plans were overruled or ignored, altering the land use in favour of MSX.
4. Cyanide, one of the main compounds used in the extraction process, is extremely toxic and widely present in the area.
5. Local village society, culture and eco-tourism developments have been dramatically impacted by the minescape.
6. Life-threatening intimidation of villagers became common practice.

Below we explain in more detail the causes and consequences of Mexico's legal system for the common land and water resources in Cerro de San Pedro.

Land rights

After the arrival of MSX in Cerro de San Pedro, the process of land acquisition began and MSX tried to arrange a lease contract for the land with the village *ejido*. Mexican law holds that the land surface belongs to the land title-holders,

in this case the *ejidatarios*, but the subsoil remains the property of the government. This meant that for MSX to obtain access to the land both a mining concession for the subsoil from the Mexican government and a rental agreement with the *ejidatarios* were required (Herman, 2010). Obtaining the mining concession from the government was not a problem. However, since the majority of land title-holders had left Cerro de San Pedro after 1948, MSX instead persuaded a number of neighbours to sign a lease contract. But these people did not own the land and therefore could not legally lease it to MSX. In March 2000 a court duly ruled that the people who had signed the lease had no right to do so. However, this decision led to a long legal battle during which various courts abjured responsibility and referred the case to other courts, which enabled MSX to continue its operations. Several BOF members felt that the Mexican government was happy to allow the legal impasse to rumble on as this gave MSX an opportunity to continue to operate in the area. Herman (2010: 85) quotes BOF lawyer 'Esteban', who stated: 'the legal processes are so poorly managed and the regulations are so vague that there are lots of ambiguities around the Agrarian Registry … So the *ejidatarios* are not only litigating against the mine, they are also litigating so that the courts recognize their rights.' Despite the lack of a legal permit to access the land, MSX continued its construction activities between 1996 and 2004. Eventually, in 2005, the Mexican Ministry of the Economy granted the company a temporary occupancy permit, overturning a government ruling on the illegality of the land lease contract that had finally been reached the previous year.

The inconsistencies between the Agricultural Law and the Mining Law were eagerly exploited by MSX and government supporters. Mexico's Mining Law considers mining a top priority that benefits the whole society. This means that any kind of exploration, exploitation and beneficiation of minerals should 'get preference over any other types of land use', including agriculture and housing (GAES Consultancy, 2007). However, Article 75 of Mexico's Agrarian Law states: 'in cases where lands have been proven to be of use to the *ejido* population, the common land uses in which the *ejido* or *ejidatarios* participate may be prioritized' (Herman, 2010: 84). To ensure that MSX could override all other forms of land use, Article 6 of the Mining Law was strategically deployed, enabling land to be alienated through 'temporary occupation' (Herman, 2010). Yet the Agricultural Law does not recognize this temporary occupation instrument. Moreover, as was mentioned earlier, according to the Mexican Constitution, land given to *ejidos* cannot be transferred to third parties or seized through an injunction. Nevertheless, these fundamental rights have been ignored in Cerro de San Pedro. The threat of having their common land expropriated in the name of 'public interest' is ever present for villagers who resist MSX's operations. The temporal occupancy ruling meant that if smallholders did not agree with the lease contract, they risked losing everything, without compensation. So, *de facto*, Cerro de San Pedro's farmers were forced to accept the unfair lease contracts (Clark, 2003; Ochoa, 2006).

Water rights

The city of San Luis Potosí and Cerro de San Pedro are located in the hydrological watershed of the Valle de San Luis Potosí. This stretches over approximately 1,900 square kilometres and supplies about 90 per cent of the San Luis Potosí population (more than 1 million people) with drinking water. The Valle de San Luis Potosí aquifer is therefore a crucially important water commons, but it is overexploited. As a way of mitigating this overexploitation the government installed a *zona de veda* in the area. A *veda* is a policy instrument, designed to prevent uncontrolled and unlimited water extraction from the deep aquifer, with the aim of obtaining a sustainable equilibrium between human activities and the environment. Since 1961 the mining area in Cerro de San Pedro has been subject to a *veda*.

The neoliberal policies that have converted water rights from a non-commodity into a tradable asset have generated considerable conflict, not least because they have helped MSX to operate in San Luis Potosí. These changes allowed the purchase and sale of 'out-of-use water permits' and the proliferation of well perforations within the *veda* zone (considered under the new laws as a 'relocation' of the old well), despite the clear objective of *reducing* exploitation of the aquifer. By making use of this regulation, MSX obtained twelve concessions totalling 1.3 million cubic metres annually (Newgold Inc., 2009; Santacruz de Leon, 2008).

Opponents of the project state that tradable water rights put extra pressure on the overexploited aquifer and have now endangered future water provision for the San Luis Potosí residents. Moreover, opponents claim that the granting of 1.3 million cubic metres of a 'scarce resource' for mining purposes shows that the so-called 'scarcity' is not an environmental condition, but rather the result of priorities that the government assigns to certain uses. They argue that the government decides that water is 'abundant' for some uses (i.e. commercial ones), whereas water is 'scarce' for others (i.e. livelihood and health security) (Peña and Herrera, 2008). 'Scarcity' in this sense is a social construction and political phenomenon rather than a natural state of the environment.

Trespassing on the *veda* was not the only way of manipulating water access and control rights in the Valle de San Luis Potosí. Another decree, issued in 1993, designates the municipality of Cerro de San Pedro as a *zona de preservación de la vida silvestre* (zone for the preservation of wildlife). This decree was issued a few years before MSX announced its interest in exploiting the gold and silver reserves of the area (BOF, 2013). State Congress assigned the area a protected status due to its ecological function and importance for watersheds. This implied that in 75 per cent of the municipality of Cerro de San Pedro:

- no changes were to be made in the subsoil for a period of twenty years;
- the area was not suited for industrial activity with high water consumption; and
- it had an important function for wildlife preservation (Gordoa, 2011; Vargas-Hernández, 2006).

However, in 2005 the Federal Fiscal and Administrative Justice Tribunal declared that mining can be considered a 'primary activity', rather than an 'industrial activity', so it is not subject to the decree (Herman, 2010).

International legislation

International legislation has also made its mark on developments in Cerro de San Pedro. This raises the question of which legislative framework (national or international) has precedence. While the issuing of permits remained locked in a domestic legal battle and no clear decisions were forthcoming, MSX opted to take another route in the hope of obtaining them. On joining NAFTA, Mexico had agreed to the 'equal treatment' principle on which the treaty is based (Mann and von Moltke, 1999). Chapter Eleven of NAFTA allows a foreign company to file a complaint with the NAFTA Commission against a host government if it feels that the government is obstructing the economic development of its business. On more than one occasion, this instrument has been used against governments that have revoked permits on environmental grounds, and some of these cases have resulted in heavy penalties for the host government. For instance, in 2001, NAFTA imposed a $16.5-million penalty on the state of San Luis Potosí for obstructing the development of a chemical waste transfer station in the city of San Luis Potosí. Just five years later, in October 2006, MSX threatened to invoke Chapter Eleven if the Mexican government refused to let it move forward with its Cerro de San Pedro project. Although there is no proof that this threat had a direct impact on any government decisions, it demonstrates that large international companies are prepared to use such instruments to influence decision-making, and as such have a say in ensuring that economic interests prevail over environmental concerns.

The UN's former Principal Water Lawyer Miguel Solanes explained how NAFTA helped MSX proceed with its Cerro de San Pedro project:

> Only investors have legitimacy to request the intervention of investment arbitration courts, and to initiate suits and legal actions. They create the arbitration market, which depends on investors for their existence – the risk of capture and bias is strong. Since they are based on international agreements, investment courts trump national jurisdiction. In addition, other fora such as human rights courts lack the enforcement powers of the decisions of arbitration courts.
>
> *(Personal communication, 20 December 2014)*

Hence, NAFTA gave MSX a very powerful position vis-à-vis the national and local governmental authorities in Mexico. Local communities have no authority to object to NAFTA resolutions, even though they often face the greatest consequences of those resolutions. Denying local inhabitants and communities the right to file a complaint with NAFTA repudiates their legal status and stake in the conflict (see Solanes and Jouravlev, 2007). As in Cerro de San Pedro, this can

create enormous power differentials between the local inhabitants and the foreign company (Ochoa, 2006). Miguel Solanes continued:

> International investment agreements and their arbitration courts have made a travesty of local interests and power devolution. An arbitration court, at international level, beyond local and national judges, ends up adjudicating on conflicts between public local interests and global companies and investors. The international investment court performs not only beyond local reach, but also outside the limits of public interest at local level. Its mandate is to protect investors' interests, disregarding local problems.
>
> *(Personal communication, 20 December 2014)*

Opposition to the destruction of the common land and water rights

A number of protest groups have been formed in opposition to the mining project in Cerro de San Pedro. Opposition to MSX began in 1996, after the company announced it wanted to dig an open-pit mine in Cerro de San Pedro. Initially, the opposition consisted of a number of small resistance groups, such as the National Union of Agricultural Workers (*Unión Nacional de Trabajadores Agrícolas*) and the Blue Collective (*Colectivo Azul*). However, in 2003, most of these groups acknowledged that one large, well-organized front was necessary, so they amalgamated into the Broad Opposition Front (BOF), which continues to put the local case against the mine to this day. The BOF's objective is clear: 'The only objective we have is to make MSX leave Cerro de San Pedro. The company is operating illegally and we will not stop until MSX is forced to abandon the site' (personal communication from BOF member Eduardo da Silva, November 2013). The group attempts to protect Cerro de San Pedro's environment, local livelihoods and culture by employing a number of strategies, and as such it has created a multi-level and multi-actor network in opposition to MSX. On the local level, this entails disseminating information about the ongoing litigation process to local newspapers, using social media, organizing anti-MSX rallies and so on. In addition, BOF offers information and practical help to anti-mining groups in other parts of Mexico. Another important strategy is forging alliances with local, national and international environmental organizations and universities, such as Pro Ecológico San Luis, Greenpeace México, the Canadian religious organization KAIROS and Amnesty International. BOF has also objected to MSX's mining activities in several national and international courts, where it has achieved a number of notable successes. Nevertheless, at the time of writing (late 2016), MSX was still operating in Cerro de San Pedro as the lengthy and complex litigation process had not yet reached a conclusion (see Stoltenborg and Boelens, 2016).

Mining conflicts, such as those in Cerro de San Pedro, the rest of Latin America and elsewhere, generally share one common feature: the mining companies' positions of power are reinforced by large state backing and forceful international

investment agreements, which results in profoundly unequal negotiating positions for the affected communities. For the latter to obtain fairer access to litigation, the mining companies should be forced back to the negotiating table and government institutions should be obliged to perform their key role as public service entities. If they are to have any chance of success, the local communities must forge *multi-actor* alliances that work on *multi-scalar* levels (see Chapter 4, this volume) in order to create civil society networks that are internally complementary while also connecting local, national and global actors. For example, by linking local village initiatives, women's groups, journalists and newspapers with provincial indigenous and peasant federations, national ombudsman and civil rights offices, international research centres and environmental and human rights NGOs, access to research, information dissemination and international arbitrage can become more balanced, and biased discourses can be challenged. Getches (2010), among others, describes important opportunities for these multi-actor networks to use international norms and laws that can counterbalance powerful NAFTA-type agreements. Thus, besides more localized resource struggles, marginalized mining-affected communities may find important support by diversifying their allies and upscaling their action network. Actors at interlinked-scale levels can seek to bend discriminatory rules or apply (inter)national protective regulations, and can try to balance skewed decision-making powers. Such multi-actor network strategies may also contribute to building an alternative discursive framework that is able to challenge the 'official' regimes of representation and may generate broader support for socially and environmentally friendly alternatives.

At present, the BOF is working on proposals for a new Mining Law, based on more equitable and ecologically sound management of land and water resources. Persuading the Mexican government to accept this will require forceful lobbying skills, a large network of influential partners and a well-balanced discourse. The above-mentioned local–national–global alliance that BOF is forging provides access to new strategic–political opportunities, not only in Cerro de San Pedro but also in other mining arenas in Mexico. In the Cerro de San Pedro case, where extraction is approaching the final stages, the main focus now is to try to reduce the damage done to the environment. Demanding ethically and ecologically responsible mining practices and waste cleaning, and enabling alternative local livelihood opportunities, such as ecological and cultural tourism, might provide the villagers with improved future job opportunities while also reducing the environmental impact.

Conclusions

As is often seen in water governance disputes, the mining conflict that we have described in this chapter goes beyond the obvious struggle over accessing or defending land and water resources. In Cerro de San Pedro, an exemplary struggle has been fought over material land and water resources, with underlying struggles over the disregard of rules and rights, and disputes over the legitimate authority to

make those rules, which in the end seek to distribute resources in particular ways (see Boelens, 2015). The discourses that have been developed to sustain or challenge these distributive patterns, rules and decision-making structures are not just weapons in this struggle. They also seek, in accordance with each party's interests and worldview, to depoliticize and naturalize MSX's minescape or, alternatively, show its profound contradictions as well as its politically motivated mining truth, and arrange for 'alternative truths'.

As the Cerro de San Pedro case illustrates, transformations in land and water commons can result from complex interplays between different actors, in which court systems, officials and governments at various levels play double and deeply troubling roles, and where multinationals cleverly exploit loopholes in the law and deploy their economic and discursive power. In addition, international agreements, such as NAFTA, can have a profound unethical impact on the litigation process, sidelining social and environmental rights. In Cerro de San Pedro, the only real victims of this interplay are the *ejidatarios*, who lost their alternative income-generating activities and access rights to land and water, and who, once MSX leaves the area, may be left in a polluted, distorted environment with few job opportunities. On the other hand, the mine's profound impact may be diminished and perhaps even reversed in the future. Through multi-actor networks that creatively engage in multi-scalar action, mining-affected population groups together with a variety of mutually complementary advocacy and policy actors have worked hard to balance the two sides' negotiating power and force MSX to clean up the mining residue and facilitate alternative local livelihood opportunities. In this way, environmental justice struggles frame, deploy and entwine diverse scales and engage a plurality of complementary actors. They link the local and global commons.

Notes

1 This chapter is partly based on our article for *Water International* (see Stoltenborg and Boelens, 2016).
2 In the Mexican governmental system, an *ejido* is an area of communally owned land used for agricultural purposes. In this system, designated parcels are farmed individually, whereas communal holdings are collectively managed.

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12

KEY CONSTRAINTS AND COLLECTIVE ACTION CHALLENGES FOR GROUNDWATER GOVERNANCE IN THE EASTERN GANGETIC PLAINS

Ram C. Bastakoti, Fraser Sugden, Manita Raut and Surendra Shrestha

Introduction

Globally, irrigated agriculture is the main user of groundwater. An estimate has suggested that groundwater contributes about 38 per cent of total irrigation in the world (Siebert et al., 2010). Groundwater irrigation is increasing both in absolute terms and in percentage of total irrigation (Wada et al., 2014). In most parts of South Asia, groundwater irrigation expanded rapidly after the start of the Green Revolution in the 1970s (Scott and Sharma, 2009). Groundwater is the key irrigation source mainly for winter season crops, besides being used for supplemental irrigation of monsoon season crops. Groundwater is accessed through either shallow tubewells (STW) or deep tubewells (DTW). Particularly in the Indus–Ganges Basin (IGB), which feeds over a billion people and provides direct livelihoods for hundreds of millions of farmers with greater socio-economic heterogeneity (Sharma et al., 2010), groundwater represents the largest source of irrigation. The IGB includes some of the highest-yielding aquifers in the world (Mukherjee et al., 2015) and comprises 25 per cent of global groundwater withdrawals (MacDonald et al., 2016). The western and eastern parts of the IGB show a contrasting situation regarding the use of groundwater for irrigation. Groundwater is overexploited in the western IGB plains and underutilized in the east (Scott and Sharma, 2009; MacDonald et al., 2016).

This chapter focuses on the eastern lowlands of the IGB, commonly referred to as the Eastern Gangetic Plains (EGPs), covering Nepal, Bihar and West Bengal. In the EGPs, groundwater is the most critical common pool resource because the livelihoods of at least three-fourths of the rural population depend on groundwater as their main source of irrigation, particularly at a time of increasingly erratic monsoons. The EGPs are facing the challenge of increasing food production to cater to the demands of an ever-growing population (Aggarwal et al., 2004). In

most parts of the EGPs, the current extent of groundwater irrigation is far below full potential.

Against this background, this chapter attempts to unravel key constraints and opportunities for socially sustainable groundwater use, then looks at the ways in which farmers (both small and large) shape the informal groundwater market and the outcome of collective action among stakeholders. Both secondary and primary sources were consulted. National/state policy documents, published scientific literature and reports from relevant agencies constitute the secondary sources. Primary information was gathered through a survey of farmers conducted in the Saptari District of Nepal, the Madhubani District of Bihar and the Cooch Behar and Alipur Duar districts of West Bengal.

Policies and institutional framework for groundwater management

Understanding the issues surrounding groundwater governance is a precondition for developing policy recommendations for both national and transboundary groundwater governance. Theesfeld (2010) emphasizes that in order to conceptualize the institutional aspects of groundwater governance, the synthesis of resource system characteristics and the experience with policy instruments are critical. Three types of policy instruments could be relevant to groundwater governance: regulatory, economic and voluntary/advisory. These instruments are ideal types and no policy option relies purely on one type alone (Stone, 2002).

Groundwater is crucial to the economy of the EGPs region, given its major contribution to the local agriculture. As a result, governments in the EGPs region

TABLE 12.1 Groundwater policies and institutional framework at the state/national level

Features	*Nepal*	*Bihar*	*West Bengal*
Key policies	Groundwater Act, Irrigation Policy, Water Resources Strategy, National Water Plan, Nepal Agricultural Perspective Plan	India National Water Policy, Bihar State Water Policy, Bihar Irrigation Act, Bihar Irrigation Water Management Rules	India National Water Policy, West Bengal State Water Policy, West Bengal Groundwater Act, Minor Irrigation Policy
Main focus	Assessment and utilization of groundwater potential Subsidies in STW installation and pump – mainly in group Permission for STW installation	Assessment of groundwater potential Efficient management of groundwater and control depletion Subsidies for STW installation	Assessment of groundwater potential focusing on quality and economic viability Subsidies for STW/DTW installation to be provided in group
Organizational structure	National, regional and district levels	National, state and district levels	National, state and district levels

Source: Authors' compilation

(Nepal and India – mainly Bihar and West Bengal) have formulated a range of policies at the state/national level that address key issues of groundwater irrigation management by providing a guiding framework. Table 12.1 summarizes key policies that address issues related to groundwater, the focus of such policies and the type of organizational structure.

In the EGPs region, policy and legal frameworks have progressed from a focus on water development (up to the 1970s) towards water management in recent decades in which water governance has become prominent (Sharma et al., 2010). India introduced a series of measures in the late 1990s and early 2000s that addressed the water sector. The federal structure of India has the provision that issues relating to water resources are addressed by the concerned state, even though the federal government provides guidance and model frameworks, such as the National Water Policy. At the federal level, there was gradual movement towards regulation of groundwater use after the formulation of the National Water Policy in 1987. Then the Groundwater Bill of 1992 introduced permits for and registration of new and existing wells, as well as the regulation of commercial well digging and the creation of a National Groundwater Authority. Subsequent revisions in 1996 and 2005 introduced additional criteria while evaluating applications for new wells and issuing permits to construct them. The 2005 bill placed more emphasis on enhancing the supply side through groundwater recharge systems. The federal government has also favoured a policy framework to stimulate groundwater utilization in the EGPs through public tubewell development (Sikka, 2002). Specifically, government programmes such as the Million Wells Scheme, which was launched in 1988/9, have sought to promote groundwater development, targeting poor and marginal farmers.

Nepal has realized the importance of groundwater irrigation from the very beginning of its periodic plans (1950s). The Eighth Development Plan (1992–1996) put increased emphasis on irrigation development. Guided by the objectives of the Eighth Plan, the government promulgated a new Irrigation Policy in 1992 (with subsequent revisions thereafter) that included provision of a subsidy for STW installation. This policy supported investment in irrigation infrastructure through capital subsidies, which for groundwater development ranged from 40 per cent for an individual, private STW to 85 per cent for a community DTW. Even though the ambitious target of the Agricultural Perspective Plan of 1995 to irrigate half of the total irrigable land with groundwater in the Terai region was not met because of insufficient budget allocation, the number of STWs increased rapidly (Kansakar, 2011). After 1999, the government of Nepal removed direct capital subsidies for STW installation. This triggered the private financing of tubewells. Rural power supply expansion and the wider availability of cheaper pumps, such as Chinese electric pumps, made STW usage more accessible and affordable for small farmers (Kansakar, 2011). Furthermore, since the 2000s, a number of STW programmes have been initiated by the government to provide 100 per cent subsidies for tubewells in areas of the Terai not served by canal irrigation. However, these are only provided to groups of farmers who form a water users' association for a

2.67-hectare command area (see Sugden, 2014). Nepal's subsequent development plans also put emphasis on harnessing the groundwater potential of rain-fed areas of the Terai region. Recently, the government drafted a Groundwater Bill which was at the final stage of parliamentary approval at the time of writing.

The focus of policies has been on a range of regulatory, economic and voluntary measures. Subsidies for STW installation and pumps have comprised the key policy instrument to facilitate groundwater expansion in the EGPs region. At the same time, given the significance of groundwater in the EGPs, one of the key policy focuses has been the assessment of groundwater potential.

Groundwater access and governance challenges

The literature reveals considerable variation in access to groundwater in different parts of South Asia. For example, Scott and Sharma (2009) reported that the EGPs present an energy–groundwater paradox as the region is rich in water sources, but inadequate electricity supply has led to increased reliance on diesel power. Such reliance on a single power source has been a major limiting factor in development of groundwater (Scott and Sharma, 2009). Other studies have documented land tenure characteristics, energy-related constraints and institutional barriers as major obstacles to groundwater development in the Terai region of Nepal and other parts of the EGPs (Bhandari and Pandey, 2006; Prathapar et al., 2014; Sugden, 2014; Sugden et al., 2014; Okwany et al., 2015).

Groundwater irrigation is primarily characterized by small, decentralized private irrigation involving a large group of smallholder farmers (de Fraiture and Giordano, 2014) who face several challenges. Groundwater requires capital investment to both dig the tubewell and purchase a pump, and it is dependent on the farmer owning the land where they plan to install the tubewell. Skewed land tenure, farmers' limited access to markets and inadequate power are key constraints that limit the expansion of groundwater irrigation in the EGPs (Bhandari and Pandey, 2006; Sugden, 2014). Other commentators have mentioned overreliance on diesel for groundwater pumping and the associated cost as major constraints (Pant, 2004; Mukherji, 2006; Shah et al., 2006, 2009). It is apparent from those studies that one of the governance challenges for groundwater irrigation is related to energy, implying that energy management plays a key role in groundwater governance.

Another crucial aspect associated with groundwater use is the differential access to groundwater among different categories of farmers. Such differential access particularly could have a negative impact on the marginalization of small farmers (Amichi et al., 2012; Srinivasan and Kulkarni, 2014). Similarly, rental markets for tubewells and pump sets, which in many cases are the only way marginal farmers can access groundwater, are by no means governed by the invisible hand of the market (Bhandari and Pandey, 2006; Wilson 2002). In this context, inciting a debate about equity could be a first and fundamental step toward advancing more inclusive groundwater governance that crucially engages marginalized farmers (Hoogesteger and Wester, 2015).

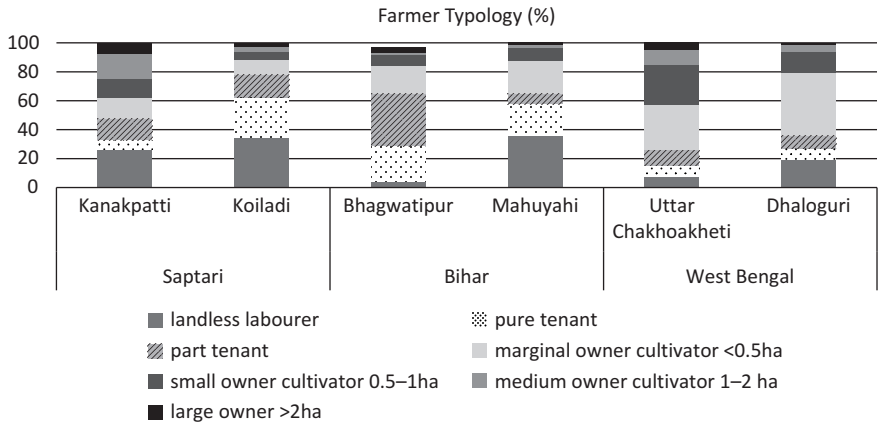

FIGURE 12.1 Farmers' categories based on landholding characteristics in the study districts of the EGPs

In order to understand the details of groundwater access and associated constraints at the local level we conducted a survey covering six villages in Nepal, Bihar and West Bengal. In Nepal, we visited the villages of Kanakpatti and Koiladi in the Saptari District; in Bihar the villages of Bhagwatipur and Mahuyahi in the Madhubani District; and in West Bengal the village of Dhaloguri in the Cooch Behar District and the village of Uttar Chakhoakheti in the Alipur Duar District. The socio-economic survey showed that a large gap exists in terms of access to land (see Figure 12.1). A large proportion of farmers are landless labourers, pure tenants or smallholder part tenants, with some variations across the locations. In Dhaloguri and Uttar Chakhoakheti in West Bengal, there are a greater proportion of small and marginal owner cultivators, and few tenants, due to the history of land reform in the state. By contrast, landlordism persists in the four villages in Nepal and Bihar, and these sites have a high proportion of landless tenants or part tenants who work primarily as sharecroppers. There is also a large pool of landless labourers, who move in and out of tenancy depending on the need of the household.

Focus group discussions (FGDs) conducted in all of the study villages revealed that groundwater was the main source of irrigation, although some villages reported the existence of canal irrigation, too. FGD participants reported installation of a number of STWs in their villages, mostly installed and managed privately and owned mainly by medium to large farmers. The survey also showed that STW and pump ownership were skewed toward large farmers (Figure 12.2). Pure tenants are rarely able to access their own tubewells. Only a tiny percentage of them owned tubewells, and these were likely to be next to their homesteads. Landlords are often not prepared to bear the costs of fixed investments on rented land. Furthermore, few tenants have formal documents, making any investment in a tubewell or other infrastructure risky. By contrast, ownership of tubewells among part tenants is relatively high, given that they have the security of some owned land. It is important to note,

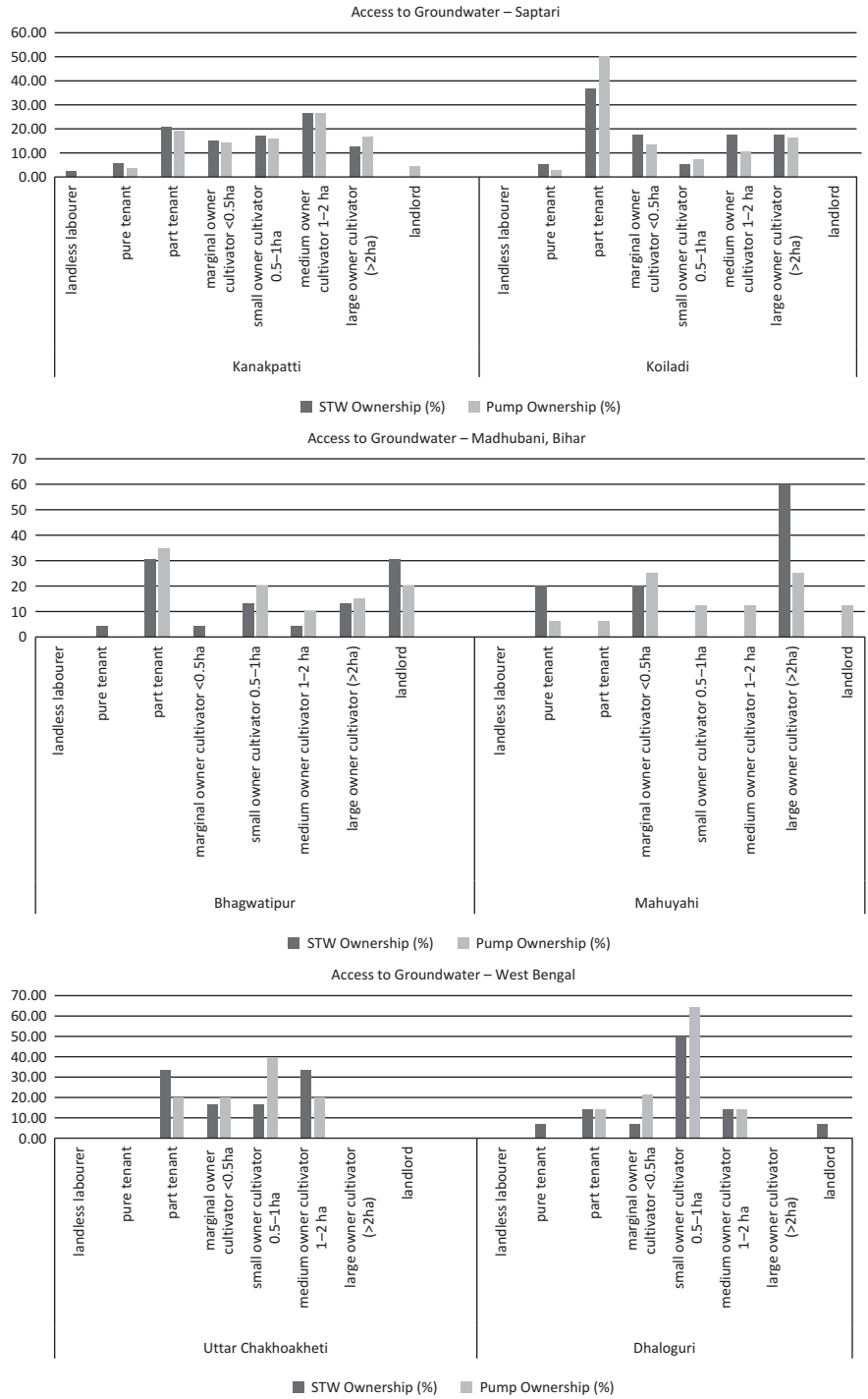

FIGURE 12.2 Access to groundwater: STW and pump ownership in the study districts of the EGPs

however, that ownership of pump sets is more important for irrigation than ownership of tubewells. Pump sets are expensive, and the survey revealed that ownership is negligible among tenants and mostly below 10 per cent among part tenants and marginal owner cultivators in Bhagwatipur, Mahuyahi and Koiladi. Only in Kanakpatti are there higher levels of ownership. In contrast, the majority of large owner cultivators and many medium owner cultivators own their own pumps. Some landlords rent out pumps, while others do not own any as they are not engaged in direct cultivation.

During the FGDs farmers reported land tenancy as one of the key obstacles to groundwater irrigation. Since a majority of farmers are tenants, this prevents them from planning any STW installation. Even if they were interested in installing an STW, most tenant farmers have insufficient capacity to invest in one. Additionally, a lack of land entitlement and land tenancy certificate prevents them from accessing government-run STW schemes, such as the Groundwater Resource Development Board and District Agriculture Office in Nepal (Kansakar, 2011). Indeed, most small and marginal farmers were unaware of such schemes, while those who knew about them found the application procedure difficult (ADB, 2012). They also reported that land fragmentation constrains STW installation. Further, the high operational cost of groundwater pumping – mainly the price of diesel – and the unreliable electricity supply limit access to groundwater.

For marginal farmers, a lack of access to credit for pump rental is another constraint. This can hamper both planting and irrigation. In some cases, male migration to neighbouring states and even abroad has brought women to the forefront of pump operation and negotiation with water lords – the large farmers who sell the water. While there has been a shift of women's roles towards traditionally male-oriented irrigation activities, accessing STWs when needed was highlighted as a challenge (Sugden et al., 2014). Moreover, repair and maintenance of pumps and having to irrigate fields at night are other constraints, particularly for women farmers.

Water markets are a key aspect of groundwater irrigation. They emerged in the 1990s when diesel pump operators were able to offer competitive services due to the relatively low cost of diesel, which allowed them to make a profit in areas where electricity was unavailable. Several studies have shown that local groundwater markets are beneficial for poor and marginal farmers, including sharecroppers in the EGPs region, as they enhance productivity by providing access to groundwater (Fujita and Hossain, 1995; Shah and Ballabh, 1997; Pant, 2005; Mukherji, 2007). However, other authors (e.g. Wilson, 2002) have argued that the markets are monopolistic and lead to greater inequality.

Our survey and FGDs conducted in the study villages reveal that marginal and tenant farmers mainly rely on groundwater markets to access groundwater irrigation. In such cases, they rent a pump set and tubewell from a wealthier farmer. In general, the price is based on hourly use of the pump and/or STW. The rate per hour varied across the villages as well as depending on the season. In addition, the pumping charge varied according to the capacity of the pump. Even though these informal groundwater markets increase access, the pump rental charge can vary.

However, the variation in pump rental charge is not related to each farmer's category. In addition, farmers may be unable to access water when they need it. The STW/pump owner dictates the price, so a kind of monopoly exists among a limited number of large farmers and landlords (Sugden, 2014).

Collective action for groundwater governance

The cases discussed in the previous section highlight that land tenancy is one of the key obstacles to groundwater irrigation. Marginal and tenant farmers have limited capacity to install STWs, while landlords are unwilling to spend money on fixed investments on rented land. Moreover, marginal farmers cannot afford to purchase pump sets. As a result, they have to rely on informal groundwater markets, which means they often have to pay high rental fees. Finally, the lack of access to credit for pump rental increases the farmers' difficulties.

These problems of accessing groundwater indicate that marginal and tenant farmers need to find better ways of working collectively. Past studies have highlighted the importance of collective action in groundwater management (Meinzen-Dick et al., 2016), which communities undertake through drafting a range of rules (Ostrom, 1990, 1992). Community-based groundwater management requires working through complex rural dynamics at various levels (Reddy et al., 2014; Shah, 2009).

In order to get organized for a common cause, previous experience of facilitating collective action can be crucial (Aarnoudse et al., 2012; Bouarfa and Kuper, 2012; Rica et al., 2012). Examples show that local communities have responded to issues relating to groundwater management by implementing local rules that have reduced conflict and provided more reliable and equitable access to water (Taher et al., 2012), where participation at different levels is key (Kulkarni et al., 2015).

The villages in our study revealed some experience of organizing their own groundwater management, such as an STW Management Committee, which facilitated groundwater use. Institutional development was inadequate to facilitate groundwater access: they had insufficient social capital, such as dedicated leadership, and a lack of explicit rules/norms to guide the groundwater access. However, involvement in local institutions had provided them with some exposure to various aspects of collective action that are required for good groundwater governance, such as water allocation mechanisms, operation and maintenance, and benefit sharing to ensure equity. Nevertheless, the hegemony of powerful farmers over access to the pumps could create conflict, resulting in group dissolution.

There are, however, more radical forms of collective action which can bring farmers together to increase their access to irrigation. These involve addressing some of the root causes that impede access to groundwater: namely, inequitable distribution of land, lack of capital and tenure insecurity. In the study villages, some groups of tenants united to lease land collectively, while groups of small owner cultivators were encouraged to consolidate their plots voluntarily, which enabled them to cultivate and irrigate a contiguous area. This form of collective action has helped to address the constraints associated with land tenancy, as such farmers share

tubewells and pump sets. By cultivating a large, contiguous field, irrigation becomes more feasible and efficient, and costs can be shared across the group. Moreover, as all of the land is cultivated collectively, conflict over irrigation water ceases to be an issue due to joint installation of tubewells and shared ownership of pumps.

In an alternative model, farmers retain their own plots but draft rules and regulations relating to sharing a diesel/electric pump and an STW. These rules, which focus on water allocation, operation and maintenance of the STW and pump, facilitate equal contributions and benefit sharing. By creating balance in access to the water and capital contributions among all the members of the scheme, they eliminate exploitation and the farmers' reliance on informal groundwater markets. The members no longer have to pay high fees to rent an STW and a pump, and they can sell surplus water to neighbouring farmers, generating a fund which is used to maintain the system and for other agricultural inputs.

The increasing availability of electric, diesel and solar-powered pumps has ensured there are no delays in field irrigation among these groups. For example, in the event of a power cut, farmers can switch to a diesel pump. Furthermore, monthly savings allow for the creation of a group fund, which is used to advance small loans, purchase diesel, or pay an electricity bill when a member of the group does not have access to the necessary cash. Consequently, the chances of irrigation delays are greatly reduced.

Women from migrant households have perceived some benefits from these collective arrangements. In some groups, while the women are busy with internal household chores, fellow group members operate the pumps. The women then carry out other agricultural activities in return. Interestingly, though, the women in some groups have started operating the pumps themselves. For repair and maintenance of the system, they have established a mechanism to carry out such tasks. The group has assigned one specific member as pump operator, who takes care of the operation as well as the repair and maintenance of the pump. Some groups have drafted written rules whereas others have simply agreed them verbally.

Additionally, engagement in groups has increased access to and created linkages with regional agricultural and irrigation departments. For instance, farmers from the Saptari District of Nepal have formally registered as a group with the District Agricultural Development Office. This has helped them to access and share information on water and agricultural input-related schemes. Their collective efforts have resulted in uninterrupted access to groundwater at affordable prices, eliminating their dependence on the groundwater market. Each farmer is charged a modest rental fee which merely covers the operating costs and maintenance of the irrigation equipment. Furthermore, if they ever need to rent from large farmers, they do so collectively, which has increased their bargaining power. Overall, this has helped to address the imperfect informal groundwater markets that once prevailed in the village.

Conclusion and implications

Groundwater availability is not an issue in the Eastern Gangetic Plains, but its use for irrigation in an energy-efficient manner is critical. Findings show that governments in Nepal, Bihar and West Bengal have prioritized harnessing the groundwater potential of the EGPs, yet have enjoyed limited success mainly due to problems associated with groundwater pumping and the presence of informal groundwater markets.

One of the key features of groundwater governance is the presence of a pump rental market, an informal groundwater market. Due to a lack of land and investment capacity, small farmers depend on large farmers. The informal rental market provides smallholders with access to groundwater, but both the price and timely availability have been problematic. Poor social capital and low levels of collective action among farmers, especially in relation to landlords, still pose challenges.

Our research found that groundwater management improves when smallholders organize into collectives and install their own tubewells and pumps. Furthermore, once farmers organize into groups, their bargaining power increases, which leads to improvements in the functioning of the groundwater market and plays a role in changing the existing incentive structure. Overall, smallholders' access to groundwater would be enhanced by the introduction of a more formal pump rental market, for which reliable and cheap energy supply would be crucial. Policies that facilitate collective operation of marginal farmers could help to achieve this.

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13

STAKEHOLDER PERSPECTIVES ON TRANSBOUNDARY WATER COOPERATION IN THE INDUS RIVER BASIN

Muhammad Azeem Ali Shah and Saikia Panchali

Introduction

The issue of cooperative security in the South Asia region has rapidly gained prominence against the background of common challenges that have surfaced in the region, such as climate change, terrorism, economic interests and the common structure of democracy in the countries of the region. However, efforts to increase regional cooperation, dialogue and negotiation are often hindered due to mistrust, mutual suspicion and power inequalities. This is evident in the case of bilateral engagement between India and Pakistan over the sharing of the Indus River Basin.

India and Pakistan share the Indus River Basin on the basis of an agreement known as the Indus Water Treaty (IWT). This treaty has survived two wars – in 1965 and 1971 – and can be considered a classic example of cooperation, but further dialogue has not taken place due to ongoing political tension and lack of trust between the two countries. Power and economic inequalities have made the countries extremely cautious in their attitudes towards sharing the Indus (Wolf and Newton, 2008; Dinar et al., 2007). Wolf and Newton (2008) highlight that the shifting political boundaries between India and Pakistan turned an intra-national water conflict into an international one, exacerbating the existing tensions relating to population displacement and unresolved territorial issues over Kashmir.

One of the major causes of tension over the IWT has been the ever-increasing demand for water due to high population growth. There is now enormous pressure on the federal governments of India and Pakistan from their respective states/provinces to meet this demand. While the treaty provides comprehensive provisions[1] for the development of infrastructure on the eastern and western rivers, such developments are always contested by the political representatives of states from both countries. For instance, the disputed state of Jammu and Kashmir (J&K) argues that it has the right to develop infrastructure on the rivers that flow through

its territory to meet its water and electricity demands. It feels the IWT does not accommodate these rights and that they were ignored in the drafting of the treaty. On the other hand, Pakistan believes that the rivers that flow through Indian Kashmir belong to Pakistan, and this is acknowledged in Article III of the treaty.

The discourse on water sharing between India and Pakistan is intrinsically related to the overall political climate between the two countries. Routine talks at the level of Indus water commissioners take place when the relationship is relatively cordial. However, when tensions rise – due to terrorism, the Kashmir conflict or trade disputes – negotiations under the treaty are suspended. The discourse that develops as a result of political tension negatively affects the interpretation of the treaty on both sides of the border. This results in a lack of cooperation, accusations and allegations, which increase the mistrust.

The primary research undertaken for this study involved interviews with stakeholders from India and Pakistan. For the purposes of the study, we identified two broad categories of stakeholders: government and non-government. The government stakeholders included representatives from Indus water commissions and ministries such as Water and Power, Planning and Development, Environment, Forestry, Food Security and Climate Change, among others. From the non-government side, we interviewed representatives of NGOs and INGOs, think-tanks and academics who play key roles in policy and provide advice to the respective governments. It is interesting to note that the major stakeholders in the water sector in India and Pakistan believe that the dialogue process should never stop, as they view it as the only means to resolve all the disputes. There is general consensus that face-to-face contact and forums allow divergent perspectives to be shared, and that this encourages collective action in resolving the outstanding disputes. There is also a shared belief that the young, progressive populations of the two countries will not countenance war as a means of resolving outstanding issues between India and Pakistan.

Below, we present a brief history of the negotiations that led to the IWT. We then discuss the institutional arrangements for the implementation of the IWT and post-IWT infrastructure development in the Indus Basin. Finally, we explore the Indian and Pakistani water stakeholders' perspectives on the IWT and chart the way forward.

Historical overview of the Indus River Basin

The history of water sharing in the Indus Basin dates back to before partition of the sub-continent. The construction of a network of perennial canals by the British transformed the economy of Punjab and Sindh. Since these perennial canals and their branches and distributaries were spread over barren land with a population base that was inadequate for large-scale cultivation, these areas had to be 'colonized' by outsiders. Land that was not under cultivation was deemed as 'Crown (or State) Waste Land', which enabled the British to utilize or dispose of these lands as they wished. This gave the British Empire immense power to reward politically

significant individuals and specific sectors of society. The beneficiaries of agricultural colonization during British rule remained the inheritors of power in the independent states. In 1901 the British passed the Punjab Alienation of Lands Act, which prohibited the passing of land from agricultural to non-agricultural castes. This meant that only the agricultural castes were eligible for the granting of canal-irrigated land, a critical decision that completely excluded the lower (service) castes from acquiring landholding status. This shows that the establishment of canal colonies was a political process, and the British ensured that those who were awarded grants and landownership paid back in terms of land revenue and military recruitment (Ali, 2003).

In the process of establishing the canal colonies, the British initiated huge infrastructure development projects, including the Thal, Haveli, Bhakra Dam and Sutlej Valley canals in the province of Punjab and the Sukkur Barrage in the province of Sindh. The latter province, which is lower riparian, felt threatened by the irrigation projects in Punjab (Malik, 2011). This led to disputes at the interstate level, most notably among Sindh, Punjab, Bahawalpur and Bikaner (Michel, 1967). In response, several committees and commissions were appointed to search for a resolution. A brief overview of these commissions and committees is provided below.

- Tripartite Agreement (1921): This was an agreement that was signed by Punjab, Bahawalpur and Bikaner in 1921 for sharing the water of the Sutlej and Beas rivers. The agreement proposed equitable apportionment of water among the three states with recognition of existing use and claims of riparian owners.
- Indus Discharge Committee (1921): This committee was set up in response to a dispute between Sindh and Punjab over access to the water of the Indus and its tributaries. It proposed a comprehensive network of gauges to monitor discharge at all important points on the Indus and its tributaries. The provincial governments were tasked with installing these gauges and were instructed to cooperate with each other in the exchange of flow data.
- Sutlej Valley Project (SVP) Inquiry Committee (1932): After the development of Sutlej Valley canals it was noted that the river flow had fallen, particularly during the early Kharif season. The committee was constituted to investigate this issue. It recommended exclusion of some areas in Bahawalpur State, construction of new feeder canals and adjustments to the command areas of certain canals (Federal Planning Cell, 1990).
- Anderson Committee (1935): This eight-member committee was constituted primarily to resolve the interstate issues that had arisen as a result of construction of the Sutlej Valley canals and the Sukkur Barrage. It submitted its report in 1937. This proposed an increase in supplies for Thal and Haveli projects.
- Rau Commission (1945): After the passage of the Government of India Act 1935, the development of river water infrastructure became a state subject. Punjab was tasked with developing the riparian infrastructure for the rivers

that flowed through its territory. Similarly, Sindh would develop its own infrastructure in relation to the Indus for the promotion of irrigation and agriculture. However, any aggrieved province could complain to the Governor General if they were unhappy about the activities of other provinces. Sindh lodged a complaint against Punjab with respect to increased withdrawals from the Indus and its tributaries, and the Government of India constituted a commission in September 1941 to investigate the issue. It was tasked specifically with investigating the effect on downstream flows in the province of Sindh due to increased withdrawals in the province of Punjab. It submitted its report in July 1942. The commission confirmed the adverse effects of Punjab's increased withdrawals on Sindh's inundation canals and proposed the construction of the Guddu and Kotri barrages. It also proposed compensation for Sindh in the event of increased withdrawals from Punjab (Malik, 2011). These, along with other recommendations, were not accepted by either Punjab or Sindh. In a bid to resolve the issue, engineers from Punjab and Sindh entered into long negotiations and reached an agreement in September 1945, known as the Sindh–Punjab Agreement. This resolved the apportionment of water between the two provinces.

The above discussion relates mainly to interstate conflicts in the sub-continent over water sharing on the Indus and its tributaries. However, the situation became rather more complex after partition and the formation of two new, independent countries – India and Pakistan – in 1947. At that moment, a river that had been a source of interstate conflict suddenly became a transboundary river basin between two nation-states. Below, we present a brief overview of the developments that took place after partitition and the eventual signing of a treaty on water sharing in 1960.

Transboundary water sharing after partition

The new international border between India and Pakistan created a situation whereby head works on the Ravi and Sutlej rivers fell in the territory of India, while the major command areas of these rivers were in Pakistan (Gulhati, 1973). Initially, temporary agreements between East and West Punjab maintained the flow of water in the main channels after partition. However, India stopped the supply of water on 1 April 1948, after the expiration of the temporary arrangement the previous day (Wescoat et al., 2000). This sparked anxiety on the Pakistani side, and Prime Minister Liaquat Ali Khan approached his counterpart in India – Jawaharlal Nehru – in a bid to find an immediate solution (Shivananda, 1961). Nehru raised the issue with the government of East Punjab and asked them to resolve the issue with Pakistani West Punjab. The negotiations led to the Inter-Dominion (Delhi) Agreement, which was signed on 4 May 1948. The two Punjab provinces agreed to respect each other's share of water from the Sutlej River and vowed to continue to interact on water distribution bilaterally.

However, this Inter-Dominion Agreement was scarcely a permanent solution, and tension over the distribution of water between the two countries continued to escalate. Pakistan asked India to submit the matter to the International Court of Justice (ICJ), but India refused, as it believed a purely legal assessment of the matter would find in Pakistan's favour (Hirsch, 1956). Instead, the World Bank offered its good offices in September 1951 in a further bid to resolve the dispute, and both India and Pakistan accepted the invitation (Bindschedler, 1981). The Bank made it clear that it would search for a technical rather than a political solution, and after gathering data from both countries it presented its plan in February 1954. This proposed dividing the Indus Basin between the two countries. The eastern rivers (Ravi, Beas and Sutlej) – which accounted for almost 20 per cent of the basin's water – would be given to India, while the western rivers (Indus, Chenab and Jhelum) – 80 per cent of the basin's water – would be given to Pakistan. A large investment in infrastructure would be necessary to divide the water fairly, and the Bank suggested that this should be carried out by whichever side would benefit from such development. Pakistan rejected the proposal as it did not have the finances to build the infrastructure and it was unhappy about surrendering the water of the eastern rivers to India (Lilienthal, 1966). Nevertheless, the World Bank continued to negotiate with Pakistan, and in 1956 an agreement was reached over the latter's demands for storage facilities on the western rivers.

Between 1954 to 1960, the sharing of water between India and Pakistan was governed by a series of ad hoc arrangements. However, after a military coup in Pakistan in 1958, the country's new leader, Field Marshal Ayub Khan, unconditionally accepted the World Bank's 1954 and 1956 proposals, and work began on drafting the IWT. India, Pakistan and the World Bank signed the treaty on 19 September 1960 in Karachi. It was ratified by both governments in the following January. As per the World Bank's original proposal, Pakistan received an 80 per cent share of Indus water through the western rivers, while India received 20 per cent through the eastern rivers. The World Bank and other donors agreed to finance the construction of storage facilities on the western rivers, and link canals to transfer water from the western to the eastern rivers.

Transboundary institutional arrangement for the Indus Basin

The Permanent Indus Commission (PIC) was constituted under the terms of the IWT, and a permanent post of Commissioner for Indus Waters was created in both India and Pakistan. In India, the Indus Commissioner works under the auspices of the Ministry of Water Resources (MoWR), Government of India. He or she heads the Indus Wing and has overall responsibility for implementation of the IWT (MoWR, 2003). There are two divisional heads under the Indus Commissioner: Senior Joint Commissioner-I, who looks into eastern rivers matters; and Senior Joint Commissioner-II, who deals with matters relating to the IWT. The Senior Joint Commissioner-II's division manages and supervises meetings of the PIC and implements the treaty's provisions, such as data collection and sharing of daily

gauge and discharge data, irrigated crop area statistics for the western rivers, and flood warning notifications to Pakistan from 1 July to 10 October on the Chenab, Jammu Tawi, Ravi and Sutlej rivers, as requested each year by the Pakistani Commissioner. This division is also responsible for approving any national and state projects in the Indus Basin in accordance with the provisions of the treaty.

At the MoWR, a regional river wing named the Indus Basin Organization (IBO) has been established under the ministry's technical division, the Central Water Commission (CWC).[2] The IBO, which is located in Chandigarh (Punjab), manages and monitors hydrological and hydro-meteorological data and flood forecasting at the state level in Himachal Pradesh and J&K, and conducts research surveys, investigations into water resource development projects and appraisals of medium-scale irrigation projects across the basin states of Haryana, Punjab, J&K and Himachal Pradesh.

In Pakistan, the Office of Indus Water Commissioner comes under the auspices of the Ministry of Water and Power, which is based in Lahore. The Pakistani Indus Water Commissioner heads the office, with support from deputy and assistant commissioners and legal experts. The Commissioner seeks advice on water developments from relevant ministries as well as the Water and Power Development Authority (WAPDA) and irrigation departments on the Indian side of the Indus. The key role of the Commissioner is to ensure the proper implementation of the IWT.

Pakistani and Indian stakeholders' views on the Indus Water Treaty

As part of our research into the Indus Water Treaty and cooperation between India and Pakistan, we conducted key stakeholder interviews using a structured questionnaire in order to compare the two countries' views on the IWT. Key themes that were captured as a result of these interviews are presented below.

Pakistani views

Our interviews reveal that there has been an overall consensus among all the stakeholders that the IWT has worked well over the past fifty-seven years. Despite two major wars, it has continued in its original form and the issues emerging with the passage of time have been resolved within the framework of the treaty. Water professionals, particularly in the government, believe that there is no need to renegotiate the treaty and make any changes to it. They believe it is an excellent document, which resolves all of the issues in the Indus Basin due to its technical robustness.

When asked about issues relating to climate change that have surfaced in the last couple of decades, the water professionals believed that we need to address these issues as the sub-continent is one of the most affected regions. On the question of how they might be addressed, there are varied opinions. Some believe that matters pertaining to climate change should be incorporated within the treaty, but the

majority believe that further research is needed. One respondent stated: 'Once there is a reasonable body of knowledge available on climate change impacts in the Indus Basin, we can then tackle it separately, not necessarily amending the treaty' (interview with government official, January 2017).

The majority of government officials were worried about the environmental flows in the eastern rivers, which are seriously impacting the basin's ecosystem. However, they also believe that since the treaty gives India exclusive control over the eastern rivers, Pakistan should manage the ecology through water diversions that were developed post-IWT and should not demand any amendments to the treaty. As a goodwill gesture, and in the spirit of promoting cooperation between the two countries, they believe that India should release a reasonable amount of water during the monsoon season to restore the ecology in the eastern watersheds. The academics and civil society representatives we interviewed suggested that this is a very important issue and so should form part of the agenda in any bilateral discussions between the two water commissioners.

On the issue of groundwater mining, there is general concern that a disproportionate amount of groundwater extraction is taking place on the Indian side of the border and that this may affect the groundwater gradient, which could have negative consequences for Pakistan. However, the water professionals were of the view that more monitoring of the groundwater aquifer, particularly in the border areas with India, was necessary prior to tabling the issue for discussion between the water commissioners. As the IWT relates solely to surface water, opinion was divided over whether the treaty should be renegotiated to incorporate matters pertaining to groundwater or whether these should be kept separate. However, there was consensus that the pressure on this underground resource will increase in the future due to population increase, so there is a need to devise a comprehensive policy to safeguard it.

Regarding cooperation between the two countries over the Indus River Basin, the Pakistani respondents highlighted general mistrust and a communication gap, particularly in the formal channels of negotiation between the two water commissioners. The treaty permits both countries to ask for river flow data at any spatial and temporal resolution. However, the respondents criticized the Indian side's general laxity in responding to such demands. The supposedly regular meetings between the water commissioners were also frequently postponed due to the political climate between the two countries. Although the treaty should be independent of other issues between India and Pakistan, it is often linked with other tensions, which causes unnecessary delays in resolving matters pertaining to the Indus. Indeed, the Pakistani respondents suggested that their Indian counterparts' delaying tactics often forced them to raise issues that could have been resolved bilaterally to neutral experts or the International Court of Arbitration.

Notwithstanding all of these issues, however, there was a firm acknowledgement that the dialogue process should continue. All of the Pakistani stakeholders we interviewed believed that such dialogue helps to bring the two sides closer together and fosters cooperation. They also stressed the importance of involving people from all walks of life in the dialogue process.

Indian views

We conducted a series of interviews with Indian officials, including representatives of the Central Water Commission, the Central Groundwater Management Board, state government Departments of Water, Energy, Forestry, the Environment and so on, academics and civil society organizations. The predominant theme that emerged in these interviews was the political deadlock that is hindering cooperation between India and Pakistan on issues relating to the Indus River Basin. In India water is a state subject, and there are more issues between states on water sharing and hydropower development than at the transboundary level. Hence, officials from the states of Punjab, Haryana and J&K are more concerned about their state-specific issues, rather than promoting regional cooperation on the Indus Basin. For instance, there is only one dam on the Ravi and a balancing reservoir planned in Shahpur Kandi. Disagreements and a lack of coordination between Punjab and J&K have led to a major impasse over this irrigation project. It was proposed more than a decade ago as a major (168 MW) hydroelectric project in Punjab, with the site located at the interstate border of J&K, Himachal Pradesh and Punjab. However, construction of the dam ceased in 2014 due to the ongoing interstate dispute between the Punjab and J&K governments. Although the project will facilitate irrigation and power generation in Punjab and J&K, and therefore benefit the residents of both states, they have been unable to reach agreement on how it should proceed. The dispute centres on J&K's claim that Punjab violated a 1979 agreement between the two states by constructing the dam without first securing J&K's consent. Moreover, tension increased in 2004, when Punjab passed the Punjab Termination of Agreements Act, which annulled all agreements relating to sharing the waters of the Ravi and Beas rivers.

We asked the Indian officials a similar set of questions to facilitate comparison with the responses from their Pakistani counterparts. With regards to the issue of climate change and its absence from the treaty, the Indian government officials argued that this was not a cause for concern when the treaty was signed, and it is still an emerging issue now, so further research is needed. They suggested that the existing research is fragmentary, and little work has been carried out on the impact of climate change in the Indus River Basin, so it would be unwise to raise the subject with the water commissioners before comprehensive studies had been undertaken. Moreover, they felt there was no need to renegotiate the treaty in order to incorporate the possible impacts of climate change on the basin; rather, efforts should be made to conduct joint studies and promote cooperation on the issue, as endorsed in Articles VI and VII of the treaty.

The issue of groundwater mining in India is becoming increasingly serious. Punjab, which is considered India's bread basket, is already overexploiting its groundwater reserves. The cropping pattern in the state is predominantly paddy/rice cultivation. These crops are water intensive, but farmers are encouraged to cultivate them due to huge and increasing demand from the rest of the country. According to the Central Groundwater Management Board, this will lead to exhaustion of the state's groundwater reserves in the next ten to twenty years.

Farmers will then be forced to change their cropping pattern. The government officials seemed to be unaware of the potential impact of groundwater mining at the transboundary level, and merely pointed out that this matter is not regulated under the terms of the treaty. There is also a lack of evidence and data relating to whether there has been any change in the gradient due to groundwater mining on the Indian side of the border. However, the officials agreed that research into this subject would be beneficial, as it would help to inform the state government's decisions on groundwater extraction.

Finally, the Indian respondents felt that both state and national governments in India have actively pursued power generation and irrigation developments on the eastern side of the river system, particularly on the Beas and Sutlej rivers. The basin states of J&K and Himachal Pradesh are both endowed with huge hydropower potential – 20,000 MW and 25,000 MW, respectively. However, the Jammu and Kashmir State Power Development Corporation website[3] suggests that only 19.80 per cent of the state's potential has been exploited so far. One of the main eastern rivers, the Ravi, as well as one of its tributaries, the Ujh, and the Jhelum River in the west are especially underutilized. The Ujh passes entirely through J&K with just a small barrage, which makes it challenging to maximize its potential. By contrast, on the western river systems, India has made considerable progress on the Chenab.

Dialogue as a medium to foster cooperation in the Indus Basin

As far as IWT is concerned, the governments of Pakistan and India believe that it has served them quite well for more than half a century. There have been tensions over water sharing, but these have mainly been due to political instability. The most recent example was the fiery political rhetoric that emerged as a result of an attack on an Indian base in the Indian-held Kashmir region, which raised questions over the future of the IWT. Not for the first time, some Indian politicians even threatened to abrogate the treaty and stop water entering Pakistani territory. However, both nations are aware that the treaty was negotiated with the help of the World Bank, and it still has a role to play in diffusing tension. Sensing the severity of the situation, the Bank intervened and asked the two governments to resume dialogue between the water commissioners. Less than six months later, a delegation headed by the Indian Indus Water Commissioner agreed to visit Pakistan in March 2017.

The stakeholders on both sides of the border believe that a comprehensive dialogue process between the two countries is absolutely essential. They feel that this dialogue should take place at various levels, starting with the research and academic communities, then moving up to discussions between technocrats and, ultimately, politicians. Such dialogue invariably helps to diffuse tension and fosters cooperation as it promotes understanding of the opposite side's opinions and perspectives.

In order to harness the basin's hydropower potential, and to mitigate challenges and disasters, there is a need for cooperation and coordination among not only

India and Pakistan but also China and Afghanistan. India's scientific community stresses the need for more scientific data and assessments as a starting point for initiating discussions on transboundary water management in the Indus Basin. The lack of data complicates hydrological assessment and modelling work, which makes it difficult to know the current state of the basin, the challenges it faces, and how these may be addressed. The scientists highlighted that there is sufficient information on topographical terrain, soil type and land use, but a serious shortage of meteorological and hydrological data (including flow data). This is mostly due to India and Pakistan's continuing reluctance to share flow data with each other. The ongoing political tension between the two countries impedes knowledge sharing among the stakeholders, which in turn impacts on transboundary collaboration. Hence, there is a vicious circle of political deadlock over transboundary cooperation and collaboration and an absence of institutional mechanisms for data sharing, poor knowledge sharing at the basin level and an absence of basin-wide scientific assessment leading to inability to identify key gaps and potential solutions in both technical and political terms at the basin level, which finally leads to reinforcement of the political deadlock. Data sharing is a prerequisite for opening up discussions, identifying key gaps and formulating solutions, so political support for it is essential. Water is a state subject in India, so the country's state governments are of paramount importance here, as they dominate the allocation of river water. Nonetheless, NGOs and academics can also play vital roles in improving contact between the two sides and generating a knowledge base that may be used by the decision-makers to help them make more informed decisions regarding the future of the Indus Basin.

Notes

1 Articles II, III and IV of Indus Water Treaty: 'Provisions Regarding Eastern and Western Rivers'.
2 CWC looks into water resources matters in the country under the auspices of the Ministry of Water Resources, Government of India. The chairman of this division is actively involved in the interactions between the two commissioners.
3 See http://jkspdc.nic.in (accessed 20 May 2017).

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14

REIMAGINING SOUTH ASIA

Hopes for an Indus Basin network

Medha Bisht

Introduction

The structure of the decision-making processes in water governance is witnessing a challenging phase, due to the shifting nature of the 'new' issues and 'new actors' in world politics. While these 'new issues', which come under the umbrella framework of non-traditional security (energy, water, climate change), can no longer can be addressed in a centralised/hierarchical/ authoritative manner, there are multiple actors – both formal (institutionalised non-governmental actors) and informal (collectives and social movements) – which are emerging at different levels. The prolific rise and increasing visibility of these actors have not only challenged the understanding of governance, security, power and sovereignty, amongst others, but have also stimulated an academic response to the study of diplomacy and the significant role that social forces and communicative action can play in the international political landscape.

Today, a growing body of literature inclines towards expanding the scope of diplomacy beyond the state-centric perspective. Brian Hocking, for instance, has drawn attention to a distinct communication pattern, which characterises contemporary socialisation between state and non-state actors. He terms this a 'diffuse network model', which contrasts to 'the traditional, hierarchical model of diplomacy that stresses the centrality of intergovernmental relations' (Hocking, 2006: 18). While Hocking feels this diffuse network model is symbolic of an evolving new culture which can be described as multi-stakeholder diplomacy (MSD), Keck and Sikkink (1999) define this evolving form of socialisation through the vocabulary of networks, defined as 'communicative structures'. These communicative structures are often employed by transnational advocacy networks to influence discourses, procedures and policies. More importantly, networks, for Keck and Sikkink, are important because they are effectively employed by transnational

advocacy groups as political spaces in which differently situated actors negotiate the political, social and cultural meaning of their joint enterprise.

Can the Indus Basin be imagined in the form of a network of actors, who, although differently situated, nevertheless can form an intersubjective understanding on issues? Unlike existing works of Giordano and Wolf, who direct attention to the 'international community' as actors in forwarding a progressive agenda (Sneddon and Fox, 2006: 182; Giordano and Wolf, 2003), this chapter looks at networks as more nimble and decentralised relationships that can facilitate multi-level governance through indirect participation. The role played by networks can be significant because they can help reconcile the territorial yet relational notion associated with transboundary rivers. The chapter thus aims to reconcile a top–bottom with a bottom-up approach by taking note of how stakeholder engagements in multiple domestic spaces can transform the discussion around ecological issues relevant to the Indus Basin countries. How formation of places can lead to the evolution of a regional political space is also examined.

Networks, media and stakeholders

Networks are generally defined as 'forms of organisations characterised by voluntary, reciprocal and horizontal patterns of communication and exchange' (Keck and Sikkink, 1999: 91). According to Walter Powell, they are lighter on their feet when compared to a hierarchical mode of functioning and are 'particularly apt for circumstances in which there is need for efficient, reliable information' (Walter Powell 1990, cited in Keck and Sikkink, 1999: 91). In the case of Indus Basin countries, can a conglomerate of media network become an important agent through which information can be mobilised and effectively diffused to separate political spaces? More importantly, can this play a role in shaping the perspectives of multiple stakeholders who are responsible for making important policy decisions and those who are impacted by them?

Keeping these emerging nuances in mind, the present chapter imagines the Indus Basin region in terms of networks of stakeholders who are situated in distinct political places. Networks are not restricted to media houses, but also include a collective of institutions, which can illuminate multiple stakes in water sector from different disciplinary lenses. How media houses can be informed by a collective of stakeholders such as universities, think-tanks, international non-governmental organisations and non-governmental organisations is a question that the chapter aims to examine. Stakeholders include government and community representatives who influence decisions and are impacted by them. 'Diagnosis', 'discursive empowerment' and 'strategic synergy' (as defined below) are three steps through which networks can facilitate stakeholder engagements. In order to facilitate this approach, diagnosis, discursive empowerment and strategic synergy have been chosen to broaden and deepen the ecological discourse. The significance of networks and stakeholder engagements is highlighted so that ways and approaches can be facilitated to establish an interaction between rivers, states and non-state actors.

This approach can be useful in reimagining the Indus Basin through a case of networks rather than existing negotiated agreements which generally dictate the contours of hydro-diplomacy and structure riparian interaction (Sneddon and Fox, 2006: 183).

Stakeholder engagement, networks and political change

The most common understanding of stakeholder engagements is that it describes processes that aim to bring together multiple stakeholder representatives on a common platform of communication, decision-making and decision-finding on a particular issue. In other words, it is a search for new partnerships that could make the process of decision-making more participatory. For instance, Minu Hemmati (2002: 2) defines stakeholders as those who have an interest in a particular decision, either as individuals or representatives of a group. This includes people who influence a decision and those who are affected by it. Nevertheless, there is still uncertainty about what constitutes a stakeholder, and questions are raised pertaining to official, formal status and informal, unofficial status. Susskind et al. (2003) have defined stakeholder dialogues as those that seek to represent the concerns and voices of key stakeholders, with the understanding that resource constraints, uncertainty about the scope of the policy arena and other real-life limitations may prevent either the identification or the participation of less obvious stakeholders. According to these authors, though the general understanding of 'multi-stakeholder' involves two or more representatives, in political terms multi-stakeholder processes can be successful only when efforts are made to ensure the involvement (at different levels) of *all* key stakeholders (Susskind et al., 2003: 235–266). This is an important point, as stakeholder engagements can be most successful when they happen in a diffused manner, are inclusive and stakeholders are involved in the decisions which can potentially impact upon them. It is for this reason that issues that are discussed by multiple stakeholders are restricted to a specific sector, and networks play an important role in generating discourse and discussion amongst stakeholders.

While stakeholder involvement is a necessary precondition for inclusive decision-making, it does require an effective catalyst to mobilise the key actors. Can networks act as an effective mobilising agent – an agent which can successfully play the role of a communicative actor in building shared understanding through stakeholder engagements around issues which impact the Indus Basin?

A few similarities emerge between networks and stakeholder engagement. First, stakeholder engagements are diffuse in nature, as are networks. This helps in facilitating the process of decentralisation. Second, both may be described as communicative structures, where actors are bound to each other through a common discourse related to (in this case) the water sector. This helps in generating common frameworks through which messages can be communicated. Third, both are issue specific or focus on specific sectors around which the stakeholders or interested actors have common concerns. This helps in binding together actors in specific places at multiple levels, such as local, national and international.

Networks – diagnosis, discursive empowerment and strategic synergy

Drawing on the key assumption that political change can be made possible through the power of networks and stakeholder engagements, three steps becomes important: diagnosis, discursive empowerment and strategic synergy.

The answer to designing appropriate networks perhaps lies in the process through which a basin is diagnosed. Given that there are differences between the Upper and Lower Indus Basin – different climatic variations, needs of riparian countries, water use patterns and demographic pressures – media networks need to understand, communicate, diagnose and frame issues accordingly. However, for this a shared perspective on distinct indicators that defines specific basin zones as distinct ecosystems is required. Joint studies and umbrella networks which have branches in different countries can be the most effective entry point for building the knowledge bank for understanding the basin. The ecological community of media networks thus needs to be a decentralised network that offers a multiple diagnosis and disseminates information on specific indicators from and to different political spaces. This is important given its potential to shape the discourse at multiple levels and highlight the scalar issues related to water governance.

The second important factor in this regard is discursive empowerment. This can be defined as a process of framing issues to have maximum impact on specific policy networks. Framing helps in shaping our cognitive outlook and draws attention to certain referent objects, which are often hidden from policy discourses. It is important that Indus Basin ecology and communities are identified as referent objects so that geopolitical identities of the basin can be superseded and views from below can be strengthened and costs of non-cooperation highlighted. The role of media as strategic communicative actors that can play a significant role in cultivating a network of stakeholders is important in this regard. The networks here are thus differentially placed actors within specific political spaces, who are relevant in strengthening discourses which impact the people inhabiting riparian regions. These discourses are primarily related to the socio-economic challenges which people witness.

The third important factor is the strategic synergy that is required at the regional level by these networks. This is an important factor in reimagining the Indus Basin. The new imagination can be taken forward by engaging with differentially located actors through stakeholder platforms at the national level. Views of multiple stakeholders can be important in highlighting issues that impact the people of the basin countries. This will strengthen discourses that are relatively underdeveloped, given the current domination of mainstream discourses shaped by competing narratives around the Indus Basin. If one casts a look at media reporting on the Indus Basin, it appears fragmented, and the geopolitical undertones dominate. The reasons for this could be the distinct political culture of South Asian countries, the relative importance of statist structures and the trust deficit which exists between riparian neighbours, which in turn also impact on shared transboundary initiatives

between various organisations. Understanding domestic voices can facilitate cognitive understanding in terms of designing outreach of media to a network of stakeholders. Can this strategic synergy lead to a discursive empowerment of issues that are currently underdeveloped in the water discourse?

While these specific steps draw attention to the potential role that networks could play in different political spaces, a number of background preconditions are necessary for these networks to become relevant to South Asia. The first two of these preconditions are: the media needs to act as an umbrella network centred on a specific issue, such as water; and there must be synergy among media networks across borders. So, while a network umbrella at the regional level plays a centralising role, it also has a web of decentralised nodes in distinct political spaces. The third and final precondition is that media reporting needs to focus on similar indicators and specific basin zones in order to highlight shared sensitivities of the basin or sub-basin.

A primer on the Indus Basin and the importance of indicators

In recent years, influenced by changing geopolitical, social, economic and environmental conditions, such as population growth and the impact of climate change, the Indus Basin has suffered increasing stress and it is losing its capacity to support the future water needs of both India and Pakistan. If one looks at the existing literature, in addition to surface water issues, groundwater extraction is a matter of grave concern. Pakistan and India share a continuous water aquifer that cannot be clearly demarcated between the two countries. Therefore, over-extraction of groundwater by one state or the other causes water stress in both. At present, both Indian and Pakistani Punjab are extracting large amounts of water, and as a consequence the aquifer's quality and quantity have been affected. Besides, surface water flowing from upper riparian regions in China and Afghanistan is a concern for both India and Pakistan (especially given the potential for storage dams, which would alter the quantity of water and raise ecological concerns) due to the lack of a broad framework to guide riparian states on water issues.

The Indus Basin, though largely shared by India and Pakistan, also includes Afghanistan and China as distinct stakeholders. It needs to be noted that while China has a minor stake in the basin, its position as an upper riparian is most overbearing. This is especially so given the country's massive investments in Pakistan, particularly in hydropower projects, and the siltation which is inflicted on the lower riparians due to mining and deforestation activities on the Tibetan Plateau (Kondapalli, 2017). If one examines the geography of the Indus Basin, India can be viewed as a middle riparian. However, this geopolitical distinction does not lead to much progress, as it perpetuates status-quoism between riparian neighbours perpetuating state-centric discourses. While geopolitical identities of the basin countries are drawn sharply, there are some common socio-economic and ecological issues that the Indus Basin communities witness. In this context, there are some common indicators that can help us make sense

of the concerns that the Indus's communities jointly face. These indicators can also facilitate the diagnosis, discursive empowerment and strategic synergy of the basin countries.

Hydrology

The Indus Basin comprises the main stem of the Indus River, its five major left-bank tributaries (the Jhelum, Chenab, Beas, Sutlej and Ravi) and three right-bank tributaries (the Shyok, Gilgit and Kabul). If one casts a look at snow-melt patterns and precipitation rates, the climate is not uniform over the basin. It varies from sub-tropical arid and semi-arid to temperate sub-humid on the plains of Sindh and Punjab, to alpine in the mountainous highlands of the north. Annual precipitation ranges between 100 and 500 millimetres in the lowlands to a maximum of 2,000 millimetres on mountain slopes, and snowfall at higher altitudes (above 2,500 metres) accounts for most of the river runoff (FAO, 2011). These variations are important in understanding hydrology because they unravel the differentiated impact that the Indus and its tributaries have on specific regions and riparian communities.

The Indus Basin is largely divided into the Upper Indus and the Lower Indus. While the Upper Basin is mainly dominated by rugged, high mountains, including the cold desert regions of Tibet and Ladakh, the Lower Basin is dominated by the alluvial plains of Punjab and Sindh (Pakistan). While the Upper Indus Basin refers to India and the Lower Indus Basin to Pakistan, it needs to be noted that issues of the western rivers are very different from issues of the eastern rivers. For instance, there is variation in the Upper and Lower basins in terms of both glacial melt and precipitation patterns. It is for this reason that floods are a major challenge for Pakistan and waterlogging a major problem for India. Since the issues of the Lower Indus plains are different (with rivers like the Ravi and Beas not so dependent on glacial runoff), it is important that the sub-basins are studied separately in order to offer specific suggestions for understanding the Indus Basin as a whole and the problems encountered by riparian neighbours who are part of each sub-basin in particular. Irrigation needs, cropping patterns, differentiated use of groundwater and surface water are some factors that can help illuminate the sub-basin approach in a zonal manner.

Hydrology can become an effective entry point for taking diagnosis forward, primarily because of the scalar approach inherent in hydrological analysis. The hydrological understanding is important because it has the potential to inform the ecological understanding of the river in terms of the larger ecosystem in which it is situated (Sneddon and Fox, 2006: 183). It further distances itself from the territorial trap, where a river gets a distinct national identity when it flows through different countries.

Thus, given the difference in topography, river morphologies, demographic peculiarities and impact of climate change, it is important to divide the Indus Basin into specific zones that could be based on individual rivers, given the specific issues

they witness/experience. For instance, in the Lower Indus Basin, groundwater exploitation has emerged as a major problem for both India and Pakistan. According to one report, observations from the NASA Gravity Recovery and Climate Experiment (GRACE) satellites and simulated soil–water variations from a data-integrating hydrological modelling system show that groundwater is depleting (Romshoo, 2012: 45). And more recent GRACE research has revealed that the Indus Basin aquifer of northwestern India and Pakistan is the second-most over-stressed aquifer in the world. In terms of water extraction from aquifers, India ranks first and Pakistan fourth in the world (The Third Pole.net, 2015).

Meanwhile, when it comes to the Upper Indus Basin, hydropower generation emerges as a serious challenge. Afghanistan has a total of four major dams in the Indus Basin. India has recently completed the long-postponed construction of the Salma Dam in the western part of Afghanistan and there are reports that it plans to help Afghanistan build twelve more dams on the Kabul River. As far as China is concerned, construction of a small hydroelectric station on the Sutlej River in the Tibet Autonomous Region was reported in June 2006, and by 2010 it had completed a medium-scale dam on the Indus, close to Demchok, Ladakh. Meanwhile, Pakistan has constructed multiple small dams and barrages and three major hydropower dams – Tarbela, Mangla and Ghazi Barotha. It is also proceeding with two major hydroelectric projects – the Neelam–Jhelum Hydroelectric Project and the Diamer Hydroelectric Project – with Chinese assistance. Finally, India has commissioned six large dams – Bhakranangal, Pandoh, Pong, Salal, Baglihar and Ranjitsagar. There is conflict between various riparian neighbours on technical details, during which water security has emerged as a major challenge for rationalising political choices. Significantly, at the bilateral level between India and Pakistan, disputes tend to revolve around hydropower projects. As a consequence, other aspects (for instance, water quality) that could illuminate the Indus Basin in distinct ways remain largely obfuscated.

Socio-economic challenges

A focus on socio-economic challenges in the Indus Basin is significant because it draws attention from key nodal conflicting points that occupy the riparian countries. Discursive empowerment can be the key process which has the potential to illuminate socio-economic challenges which the riparian countries encounter. For instance, when it comes to socio-economic challenges, the states of Indian and Pakistani Punjab experience health issues related to water governance and water quality. Both India and Pakistan rely more on groundwater than surface water, yet the negotiated agreements between the two countries focus on surface water while groundwater accords are relatively absent at the bilateral level. In Pakistan, current use of canal water has decreased from 7.9 million to 6.9 million hectares, while groundwater extraction has risen from 2.7 million to 3.4 million hectares. Indus Basin groundwater quality also varies from freshwater to saline, depending on the point of recharge source and origin and movement of water in a particular aquifer

(Qureshi et al., 2010). Similarly, it has been noted that there is a preference for groundwater over surface water in India, given that both rice and wheat crops are susceptible to high evapotranspiration rates (Vashisht, 2008). High cropping intensity coupled with the high evapotranspiration rates of these commonly sown crops has resulted in deterioration of water resources in Indian Punjab. There are also significant health risks. While in Pakistan these risks stem from industrial effluents joining the eastern tributaries, in India they stem from the increased use of pesticides since the Green Revolution.

The socio-economic challenges are further complicated by the demographic characteristics of the Indus Basin. According to one study, Afghanistan's and Pakistan's shares of the basin's population are sure to increase in the future. This is already visible in the two countries as fertility rates for 2010 to 2015 show Afghanistan at 5.13 and Pakistan at 3.72, both well ahead of India at 2.48 and China at 1.55 (United Nations Department of Economic and Social Affairs cited in Adeel and Wirsing, 2017). While these factors suggest the competitive undertones of these basin countries which will manifest in the near future, one discourse has drawn attention to fractal conflicts. Surveying multiple water conflicts in South Asia, Ayub Qutub et al. (2004) have suggested that water conflicts may be fractal in nature (that is, they have recurring similar characteristics across geographical scales), with the most important manifestation at the local scale (cited in Mustafa, 2007: 490). This observation is useful in reifying some of the developments in the Indian and Pakistani states of Punjab, where issues of water and land rights are interconnected and often privilege the upper strata of farmers rather than the marginalised and the landless. The 'discursive social structures' which Qutub et al. argue could exist across spatial scales is an important factor that could be employed by networks to highlight issues related to human security and insecurity. Socio-economic challenges in many ways are also entry points to discursive empowerment around issues which focus on water security in terms of accessibility and affordability rather than mere availability. Such issues become important in the context of South Asian countries in particular, primarily because of the class/caste, feudal structures which are embedded in the cultural/structural contexts of these countries. Networks can play an important role by both reaching out to stakeholders and informing them of the common issues which riparian communities experience in this regard. This can be an important step towards depoliticising transboundary rivers and can lead to the discursive empowerment of issues which are often obscured in transboundary water diplomacy.

Legal frameworks

Legal frameworks are important because they guide institutions and policies. However, the degree to which legal frameworks resonate with the needs of the people and the changing contexts is something which needs to be explored. In the South Asian context, international water law frameworks have played a marginal role. While there is a bilateral treaty between India and Pakistan, there is presently

no legal regional framework for co-riparian cooperation between the four countries. Consequently, there is a lack of communication and trust among the co-riparians. In the last four decades, demographic pressures, internal demands by Kashmiris for their rights on the western rivers, concerns about climate change and fluctuating precipitation patterns, issues relating to water quality rather than quantity, and excessive exploitation of groundwater rather than surface water have all contributed to exacerbating the challenges of water security and water governance in the Indus Basin. Yet the legal frameworks at both bilateral and national levels have not kept pace with the changing ecological climate and socio-economic challenges which the basin is facing. At the domestic level, both India and Pakistan have their own water laws, which are shaped by the two countries' distinct political cultures, inter-state/inter-provincial rifts and hydrological history.

If one casts a look at the international water law framework, there is an existing body of non-binding instruments as well as international policy consensus on the shape that domestic water law should take (Cullet, 2009: 25). Some of relevant existing frameworks, in addition to the Dublin Statement, MDGs and Plan of Implementation (WSSD), are the 1997 UN Convention on the Law of the Non-navigational Uses of International Watercourses (adopted by UNGA on 21 May 1997 and entered into force on 17 August 2014); the 2008 UN International Law Commission Draft Articles on the Law of Transboundary Aquifers; and the 2011 UNGA Resolution on the Law of Transboundary Aquifers (UN Doc A/Res/66/104). However, these international principles have limited impact on the domestic policy context of the riparian countries in the Indus Basin, primarily because the water laws are too detailed, underdeveloped or in some cases even non-existent (for instance, there are no laws relating to groundwater in Pakistan).

Can a strategic synergy be established between Indus riparians and networks in this regard? Reporting by media networks on some of the common concerns of these countries should help to expose the lack of a common framework at the national level and the disconnections between some frameworks on water management practices in the field. The archaic laws in India and Pakistan – most of which are colonial – are important pointers in this regard. The broadening of legal discourse to questions relating to water quality, pollution control, water accessibility and the right to clean drinking water (sanitation) are some factors that may engage stakeholders in an inclusive/critical manner and also lead to the discursive empowerment of relevant issues.

Thus, while divergent interests exist on these indicators, it needs to be noted that water security and human security are at stake when it comes to managing the common resources of the region. Engaging stakeholders through networks which are linked to each other at the regional level could be an entry point for cognitive – if not identity – transformation. Strategic synergy can be established by highlighting the concerns of riparian communities and whether a normative framework can help to ease some of the concerns which do not currently find a place on the restrictive agenda of hydropolitics. However, a key node in the transformative exercise would be the two major riparian stakeholders – India and Pakistan.

Evidence from the neighbouring states of Indian and Pakistani Punjab suggests that there are more similarities than differences when it comes to ineffective water management practices, institutional incapacity and awareness amongst stakeholders.

While some of these suggestions might appear appealing at a theoretical level, some past cases, particularly the Anti-Personnel Landmine Treaty and the World Commission on Dams, reveal that umbrella networks can work effectively in a decentralised fashion if coordination and collaboration amongst actors are addressed. In this regard, networks must play a leading role and media as a communicative actor must cultivate partnerships with academic institutions, policy institutes, governmental stakeholders and formal and informal institutions working on ecological issues. Joint partnerships among universities, think-tanks and international and non-governmental actors must study transboundary rivers. Non-state actors can play a particularly important role in this context, given that political relations amongst the Indus Basin countries are constrained and the states often act as gatekeepers. Such an approach can help to cast an ecological community for the Indus Basin, which will not only facilitate certain discourses related to the water sector but also lead to a discursive change towards the narrative of the Indus Basin over the long term. Thus, a web of collectives bound through networks is an important entry point for networks to materialise. Collaboration between universities in South Asia along with regional media networks, policy institutes, community and government representatives is one of the fundamental starting points for such stakeholder engagements.

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15

STRUCTURE, AGENCY, AND CHALLENGES FOR INCLUSIVE WATER GOVERNANCE AT BASIN SCALE

Comparing the Nile with the Mekong

Everisto Mapedza, Diana Suhardiman and Alan Nicol

Introduction

Understanding of transboundary waters and their unique management characteristics, including the nested institutional set-up across scales as an entry point for collective action, is crucial for inclusive water governance at the basin scale (Suhardiman et al., 2011, 2015). Transboundary water governance is often perceived as a set of institutions (structure), which will be the axis upon which the riparian countries are supposed to rotate. Here, structure is understood as the formal institutions (rules, regulations, frameworks) which are perceived as necessary for shaping and reshaping social behaviour (Bourdieu, 1984, 1990; Giddens, 1976, 1979, 1984; Sewell, 1992) across scales. According to Kirchberg (2007), social theory views human beings as *homo sociologicus* and highlights the central role of society in providing structure for behaviour through rules and regulations. Giddens (1984), on the other hand, argues that change occurs because of reproduction and reinterpretation of structure by agency (see also Long, 2001; Sen, 1999; Kabeer, 1999; Hays, 1994; Sewell, 1992). Viewing human beings as being *homo oeconomicus*, Giddens shows how individuals could pursue their individual interests as opposed to being governed by structures (rules, institutions). In line with this approach, Scott (2001: 49, cited in Marx, 2011) defines institutions as "multifaceted, durable social structures, made up of symbolic elements, social activities and material resources."

The essential nature and importance of human agency have been discussed in social and political science (Scott and Kerkvliet, 1986) as well as in policy studies (Elwert and Bierschenk, 1988). Various scholars have focused on:

1. intentionality, forethought, self reactiveness and self-reflectiveness (Bandura, 2001);
2. identities or sets of meanings people hold for themselves (Burke, 2004); and

3. the role of social structure (Sewell, 1992; Hays, 1994) in shaping agents' decisions.

Also crucial in shaping agents' decisions is the conversion of the primary goods the person holds into an ability to achieve defined goals (Sen, 1999). In transboundary water governance, this highlights the need to position riparian states as players in international theories (Wendt, 2004), and thus moves beyond viewing member states as united actors. Or, as Wendt (2004: 289) states: "To say that states are 'actors' is to attribute to them properties we associate first with human beings – rationality, identities, interests, beliefs."

This chapter looks at structure, agency, and the challenges of inclusive governance at basin level, which is important not only from the point of view of understanding powerful and less powerful actors' strategies and how these shape riparian states' decisions, but also to further current discussions on how collective action across scales can serve as a counter-force to reduce power asymmetry in transboundary water governance. In reference to the concept of hydro-hegemony (Zeitoun and Warner, 2006) and building on Hays' "sociological understanding of agency [which] recognizes it as embracing social choices that occur within structurally defined limits among structurally provided alternatives" (Hays, 1994: 65), it looks at how the institutional architectures and agents' behaviour and strategies are interlinked. Taking the Nile (Nile Basin Initiative) and the Mekong (Mekong River Commission) as our case studies, it shows how such interactions impact on the evolution of water governance structure and processes. Comparing decision-making structures and procedures as regards the planned hydropower dams in both basins, we illustrate how the Mekong River Commission's initiative to commission a Strategic Environmental Assessment for the twelve planned mainstream dams has shifted the decision-making process from the national to the regional sphere, and has also helped to open up alternative decision-making pathways. Linking this initiative with dams development in the Nile Basin and the role of the Nile Basin Initiative brings to light potential ways forward to address current challenges in transboundary water cooperation towards more inclusive and accountable water governance.

Current institutional architecture

Agreements on water sharing in the Nile Basin date back to the early part of the twentieth century, when Egypt and Sudan were under British control. The most significant agreement – the 1959 Nile Waters Agreement (NWA) – between these two states allocated all Nile waters as measured at Aswan as follows: 55.5 bcm to Egypt, 18.5 bcm to Sudan, and 10 bcm assumed lost to evaporation after the creation of the Lake Nasser/Nubia reservoir behind the High Aswan Dam. Ethiopia was not included in this agreement (FAO, 2008; Cascao and Nicol, 2016; Tafesse, 2001).

In February 1999, the Nile Basin Initiative (NBI) established the most comprehensive cooperation mechanism to date for the basin, headed by a Council of

TABLE 15.1 Shared Vision Programme projects and project management unit locations

Project name	*Location*
Nile Transboundary Environmental Action	Sudan
Water Resources Planning and Management	Ethiopia
Confidence Building and Stakeholder Involvement	Uganda (NBI Secretariat)
Nile Basin Regional Power Trade	Tanzania
Efficient Water Use for Agricultural Production	Kenya
Applied Training	Egypt
Socioeconomic Development and Benefit Sharing	Uganda

Source: NBI, 2001

Ministers of Water Affairs of the Nile Basin States (Nile-COM). The NBI's purpose was (and remains) to develop the river in a cooperative manner, share substantial socioeconomic benefits, and promote regional peace and security (NBI, 2001). The NBI started with a participatory process of dialogue among the riparian countries that resulted in agreement on a shared vision – to achieve sustainable socioeconomic development through the equitable utilization of, and benefit from, the common Nile Basin water resources – and a Strategic Action Programme to translate this vision into concrete activities and projects (World Bank, 2005).

Under this umbrella, the NBI embarked on the Shared Vision Programme (SVP), the mission of which was the creation of a coordination mechanism and an enabling environment to realize the shared vision through action on the ground (NBI, 2001; see Table 15.1). In June 2001, an International Cooperation Consortium on the Nile (ICCON) meeting took place in Geneva, Switzerland, to solicit financial support for the NBI from potential donors. In the forum, project proposal documents were presented to generate funding for shared vision projects. The outcome of the meeting was the establishment of the Nile Basin Trust Fund (NBTF) to finance the SVP and a Strategic Action Programme of investment, with support from the World Bank, the Global Environment Facility (GEF), the European Union (EU) Water Initiative, the African Development Bank (AfDB), and bilateral donors. The seven SVP projects were interconnected and established a foundation for regional cooperation (NBI, 2001).

A Cooperative Framework Agreement (CFA) for the Nile was finalized by Nile-COM on 26 June 2007. Adopted in Kinshasa and signed by six Nile Basin states, the CFA established the legal and institutional framework for the creation of a permanent Nile Commission. However, to become a binding international agreement for all Nile countries, and lead to the establishment of a permanent Nile River Basin Commission, the CFA requires ratification by two-thirds of the Nile countries (there are ten full members of the NBI and one observer – Eritrea). The major sticking point remains Article 14b on water security. Upstream countries, such as Ethiopia, which uses about 1 per cent of the Nile's water, are thinking

in terms of equitable utilization, whereas downstream countries, such as Egypt, are viewing the same issue in terms of "no appreciable harm" to existing downstream water usage (Waterbury and Whittington, 1998).

The institutional developments and cooperation efforts in the Mekong Basin started with the establishment of the Committee for the Coordination of Investigations of the Lower Mekong Basin – the Mekong Committee (MC; 1957–1978), comprising Cambodia, Laos, Thailand, and Vietnam. Cambodia withdrew from the MC amid political turmoil in the country, which led to the formation of the Interim Mekong Committee (IMC) in 1978. This continued until 1995, when Cambodia rejoined the other three countries to form the Mekong River Commission.

According to the Mekong River Commission, the riparian states want a "shared vision of an economically prosperous, socially equitable, and environmentally sound Mekong River Basin" (Wolf, 2011). The Commission is mandated with the Mekong River Basin Development and Strategic Development plans to "promote, support, cooperate and coordinate the development of the full potential of sustainable benefits to all riparian States and the prevention of wasteful use of the MRB waters, with emphasis and preference on joint and/or basin-wide development projects and basin programs" (Mekong River Commission, 1995: Article 2).

This does not mean, however, that the Commission's rules will determine the outcomes within the Mekong. The individual states still have their own agency, which is further complicated by interests from development partners who support the Mekong River Commission, resulting in what they call a "scalar disconnect" as you move from national interests to regional interests. Suhardiman et al. (2011) further point out that the political processes and power dynamics involved in state and interstate decision making are often overlooked or oversimplified and the complex decision-making processes in transboundary water governance tend to be reduced to mere technical or managerial issues. The power dynamics and

TABLE 15.2 Key aspects of institutional architecture of the Mekong and Nile River Basin

	Mekong River Basin	*Nile River Basin*
Year of establishment	1995 – Mekong River Commission	1999 – Nile Basin Initiative
	Signed by four of the five countries in the Lower Mekong Basin, with the exception being China	Nile Basin Cooperative Framework signed by Ethiopia, Kenya, Rwanda, Tanzania and Uganda; Burundi signed later
Number of countries	Four	Eleven (including Eritrea, an observer)
Status of ratification	Ratified by four countries	Ratified by three countries

Source: Authors' compilation

contestation must be viewed as pitting different nation states against each other, and indeed contests have emerged even within the individual states, where interests such as hydropower will not necessarily correlate to the interests of Environment and/or Fisheries ministries.

Table 15.2 summarizes the key aspects of the institutional architecture of the Nile and Mekong river basins.

Dam development

The river basin organizations were established with the aim of increasing cooperation in order to reap benefits from water and of water (Sadoff and Grey, 2005). However, in both the Nile and the Mekong, dam development for both hydropower and agricultural use not only drives the basins' development trajectories but also remains contested by various key stakeholders.

In 2011, Ethiopian Prime Minister Meles Zenawi announced plans for the 6,000 MW Grand Ethiopian Renaissance Dam (GERD). Ethiopia couched the project as an example of benefit sharing, as the power generated would be sold to downstream countries as part of existing or new bilateral and regional power pool initiatives, which began prior to NBI. GERD symbolizes a far wider, more substantial strategic shift in power between riparian countries in the Nile (Cascao and Nicol, 2016; Institute of Development Studies, 2013). Egypt has indicated on many occasions that GERD is linked to Egypt's water security, which is an integral part of the country's national security. According to Ethiopia, however, equitable utilization should be about redressing past agreements, including the 1959 NWA. At both upstream and downstream extremes, agency is being deployed to advance the interests of respective countries.

Other hydroelectric dam projects include the Karuma Falls in Uganda, which is financed by China, and two dams with a capacity of 410 MW, to be located at Burundi's border with Rwanda and the Democratic Republic of the Congo (Institute of Development Studies, 2013).

In the Mekong, dam development in both the mainstream and the tributaries continues to be contested by various actors, including civil society groups, international NGOs and environmental ministries. Mekong hydropower is developing rapidly, rooted in growing regional demand for electricity following rapid industrialization, export-led economic growth, and expanding domestic consumer markets, and facilitated by the emerging importance of private-sector financing (Middleton et al., 2009). At present, there were 36 dams in operation in the Lower Mekong Basin, and a further 110 were planned, under licensing, or under construction through private–public partnerships (Mekong River Commission, 2009). Twelve of these planned dams are on the mainstream. According to the Asian Development Bank's regional power trade plan, these mainstream dams will ensure regional energy security, increase export earnings for the poorest Mekong countries, and reduce dependency on price-volatile imported fossil fuels. More specifically, the plan is expected to increase Laos' export revenue from hydropower, enable Cambodia to

develop its power sector, and help Thailand and Vietnam diversify their energy sources to meet their energy demands up to 2025 (Asian Development Bank, 2009).

Hydropower development in general, and on the Mekong mainstream in particular, has been met with resistance from NGOs, environmental groups, and others who are concerned about the potential negative impacts of the dams on both the Mekong River ecosystem and people's livelihoods (Molle et al., 2009). The Mekong is home to one of the largest freshwater fisheries in the world and comprises a rich range of interconnected ecosystems (Baran, 2005; Kummu and Sarkkula, 2008). If built, the twelve mainstream dams are likely to hinder or block (regional) fish migration, compound the current decline in capture fisheries resources, damage the ecosystems, and disrupt the livelihoods of millions of people living along the river (Baran et al., 2006).

In addition to the planned dams in the Lower Mekong Basin, China has completed its fourth large dam in the Upper Mekong Basin, with four more mainstream dams under construction or planned for completion before 2025 (Mekong River Commission, 2010). While China's dam developments have implications for its downstream neighbouring countries, as mentioned earlier, China is not a member of the Mekong River Commission. Unlike in the Nile Basin – where the other riparian countries saw the fall of Mubarak in Egypt as an opportunity to contest historical water imbalances established under colonial treaties and the 1959 deal – in the Mekong China is increasing its power and influence through its own hydropower developments and by financing dam development in the Lower Mekong Basin countries. With the formation of Lancang–Mekong Cooperation Mechanism and its Asia Infrastructure Investment Bank in early 2016, China continues to expand its power both regionally and through bilateral relationship (Suhardiman et al., 2017), and thus indirectly reduces the Mekong River Commission's decision-making power and role in transboundary water governance.

Structure, agency, and the political economy of collective action

The collective action approach is supposed to transform transboundary water governance from a zero-sum scenario (ZSS) to positive-sum outcomes (PSOs), where all stakeholders benefit from cooperation, cascading from the local to the transboundary levels (Mapedza and Tafesse, 2011). In practice, however, existing power asymmetries and individual state interests result in each state actor aiming to gain as many benefits as possible, regardless of how these might negatively impact others.

In both the Nile and the Mekong, non-state actors and development partners play important roles in initiating different forms of collective action, beyond the state actors' formal agreements. For example, the World Bank was instrumental in managing the bilateral funding of the Nile Basin Initiative, although most of the initial funding has now been reduced. Donors involved in the NBI proposed the benefit-sharing mechanism, which was meant to secure benefits beyond the

physical water quantities and share benefits from and because of water (Sadoff and Grey, 2002) and enable the riparian countries to share diverse benefits derived from water rather than physical water per se (Mapedza and Tafesse, 2011). In the Nile River Basin, upstream countries such as Ethiopia argued that the concept of benefit sharing provided strong logic for the construction of projects such as GERD, as this would generate benefits beyond Ethiopia's borders by allowing it to sell electricity to neighbouring countries in the context of the development of a regional power pool. By building dams in the highlands of Ethiopia, where lower mean annual temperatures mean less evaporative loss, water could be saved for the rest of the system. Moreover, the upstream dams, it was argued, would help reduce flooding in downstream countries, such as Sudan (Blackmore and Whittington, 2008; NBI, 2001). Egypt, on the other hand, has appropriated "benefit sharing" to mean that upstream states should use upstream rainfall and rain-fed farming approaches more efficiently, and thereby reduce the pressure on demand for the Nile's streamflow (Klaphake, 2006; Mapedza and Tafesse, 2011; Waterbury, 2002).

Non-state actors and civil society within the Mekong play important roles in contesting the overall logic of hydropower dam building vis-à-vis its negative impacts to people's livelihoods, which has resulted in an ongoing power struggle. While all the riparian countries use their agency to promote their "national interests" – manifested in the central positioning of hydropower development as a means to maximize economic growth and reduce poverty, and the consequent sidelining of Environmental Impact Assessments (EIAs) (Campbell et al., 2015) – other actors within and beyond the government bureaucratic structure contest this framing. This power struggle is most apparent in the overall shaping of the Mekong River Commission's Strategic Environmental Assessment (SEA) for the twelve planned hydropower dams on the Mekong's mainstream (Suhardiman et al., 2015). While the formal institutional structure has played an important role in establishing the assessment's scientific and political merit, the SEA's ability to shift the decision-making process surrounding the planned dams from top-down, formal, statutory, sectoral-ministry-focused decision-making authority to a "soft-space" with fuzzier governance boundaries is rooted in the SEA team's alliances with prominent NGOs and wider civil society groups who have long campaigned for sustainable development in the Mekong. Relying on the existing informal networks involving international donors, international NGOs, civil society groups, academics, and environmental ministries, the SEA has become an institutional means to open up the discussion concerning the dams.

Discussions and conclusion

This chapter has drawn together threads on structure, agency, and inclusive transboundary collective action. As Giddens' (1976) structuration theory explains, structures are institutionalized routines to increase accountability. In the case of both the Nile and Mekong river basins, the individual states reflect on the institutions through interpreting and choice of reaction. For instance, Ethiopia has

evolved arguments on benefit sharing to argue strongly for upstream dams as essential and more efficient for the generation of hydropower than comparable dams at lower altitudes within the basin due to the greater evaporation downstream and lower head. These strong engineering and scientific bases have helped shape the country's narrative on benefits and shape structures (agency). Within the Mekong, the Mekong River Commission's SEA serves as an institutional counter-force to national governments' focus on hydropower development. Highlighting both the benefits and impacts of the proposed hydropower dams in the Lower Mekong Basin, the SEA provides a scientifically based assessment to contest the dominant "national interests" arguments.

In both river basins, one of the key concerns has been stakeholder participation and engagement. How do collective actions at transboundary level incorporate the interests of smallholder farmers and other local stakeholders within the river basins? Transboundary collective actions, which are at a higher scale, run the risk of neglecting the interests of lower-tier structures. By the time concerns reach the transboundary level, the power dynamics have reshaped the content of trans-boundary governance and, in most cases, diluted lower-scale input (Sneddon and Fox, 2007).

In the Nile, different understandings of the term "equitable utilization" within the eastern Nile sub-basin have challenged cooperation efforts. However, in 2015, Ethiopia, Sudan, and Egypt managed to sign a trilateral agreement on GERD in which they formally codified international water law principles (and access to energy generated by the dam). Nevertheless, challenges now relate to filling the dam's reservoir, with issues of water security likely to arise for Egypt depending on which "filling scenarios" are followed. Most serious for Egypt is failing to secure its longstanding physical water allocation under its existing agreement with Sudan. Discussions about what constitute "benefits" and "costs" are no longer the preserve for the riparian countries alone. Non-riparian states, funding agencies, and non-state actors are now adding more complexity to the already complex basin discussions (Sneddon and Fox, 2008), defining new interests in the basin, and complicating existing rules of the game and understandings about effective cooperation.

One of the key lessons learned from the Mekong River Commission is that the presence of regional institutions alone does not guarantee effective cooperation towards sustainable development. Rather, it is the shaping of strategic alliances involving different actors (e.g. government ministries, local authorities, international donors, NGO networks, and civil society groups) across scales that makes a real difference. Furthering our analysis of the Nile, the case of the Mekong River Commission's SEA also shows how the notion of representativeness in trans-boundary water governance can be partially addressed through the shaping of informal networks and the formation of strategic alliances. While this process of network-and-alliance-shaping is driven by benefits and impacts from the proposed hydropower dam projects (Sneddon and Fox, 2008), we argue that such networks and alliances can also be considered as institutional foundations for collective action and as means to contest the dominant focus on hydropower development.

Most importantly, it highlights the need for better understanding of the political economy of large river basins, and how this is shaped by various actors and institutions through rules creation and reproduction across scales, as well as through the shaping of strategic alliances between state and non-state actors. It also highlights the importance of institutional rules and mechanisms for transboundary water governance. Yet, looking at the institutions and rules of transboundary water governance is insufficient if we are to understand the processes behind the appropriation (or misappropriation) of those rules, the rationale behind them, and how they may hinder or yield to collective action across national borders.

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POWER, ALLIANCES, AND PATHWAYS TOWARDS DELIBERATIVE AND JUST WATER GOVERNANCE

Diana Suhardiman, Alan Nicol and Everisto Mapedza

Introduction

Water as a common pool resource is managed and governed by myriad actors, working either in parallel or in connection with each other through different sets of rules and institutional arrangements. The chapters in this book have highlighted the complex nature of water governance and featured the commons as a terrain for contestation, while unpacking the role of power and politics in shaping water governance and collective action across scales. Embedded in the wider power structure and power relationship, institutional arrangements governing the commons are highly dynamic and constantly evolving.

Forces of globalization embodied in a strong tendency towards regional economic integration and national governments' strategies to promote economic development have linked local-level, community-based natural resource management with global capital flows, often manifested in land and water grabs, marginalization of local communities, and massive environmental degradation. Global responses to the commodification of nature have also placed local communities' role in governing the commons within the context of transnational environmental and rights movements (Boelens et al., 2010; Borras, 2010), centring on communities' resistance to large-scale land acquisition, mining concessions, and hydropower dam development. While such movements could act as alternative means to promote more inclusive, deliberative, and just decision-making processes in water governance in particular, and in natural resource governance in general, concerted multi-scale collective action is needed to move from ad hoc approaches to a more systematic way to tackle a wide range of governance challenges.

Through illustrative case studies from various countries in Asia, Africa, and Latin America, the book has brought to light various forms of collective action. It has shown how collective action has occurred as part of institutional emergence in various

agro-ecological spheres, ranging from irrigation, fisheries, mining, and hydropower to large commercial agriculture, while also shedding light on cases where collective action has been hindered by political deadlock, as in the Indus River Basin, or limited by hegemonic power relationships, as in the Orange–Sengu River Basin.

With the aim of furthering the current debates on water governance and collective action, the chapters in this book have highlight three key themes:

1. the role of power structure and power relationships in shaping the commons;
2. the shaping of collective action through strategic alliances; and
3. alternative pathways towards more deliberative and just water governance.

Power structures and power relationships shaping the commons

Collective action emerges hand in hand with the processes of socio-political construction of nature, contextualized in various forms of contestation, occurring at the interface of water, land, energy, and the environment. As management of common pool resources at the local level has become closely entangled with development and investment decisions made at global, regional, and national levels, analysis of the commons cannot be done in isolation from the wider power structure and power relationships in which they are embedded. As illustrated in the case of goldmining in Mexico and hydropower dam development in Cambodia, decisions about land concessions for mining and dam construction are made by powerful actors, including government officials, politicians, private developers, and international agencies, following different rationales and objectives, and not always incorporating local communities' livelihood options and development aspirations. Relying on national policy and legal frameworks as entry points of political leverage, development decisions are often presented under the auspices of a government's overall strategy to promote rapid economic growth, increase government revenue, support industrialization, and so on. Such decisions affect the commons and local communities' ability to govern their surrounding natural resources sustainably and create potential governance traps. They also predetermine processes of inclusion and exclusion, and how development benefits and risks are distributed and shared.

Understanding the highly complex institutional landscape and the interlinkages within it is crucial to link commons study with political economy analysis across scales. This includes better understanding of the role of foreign direct investment as governments' economic engine and how this shapes resource governance agreements pertaining to land concession and hydropower development. As Contreras (2007: 234) states: "The power to control not only territories and spaces but also states of mind and the production of knowledge rests on a complex terrain of institutions." Understanding how development decisions are made, based on what rationale and representing whose interests, and the implications for natural resource governance is crucial in the identification of potential entry points for policy and institutional change.

While powerful actors are making decisions on how the commons should (not) be managed, less powerful actors, including local communities, NGOs, government agencies, and civil society groups are making their cases and ensuring their voices are heard through power struggles manifested in various forms of collective action. The way in which local communities have resisted the pressure for commercial agriculture in the Upper Pampas watershed, Peru, shows how collective action is linked to the overall shaping of scalar politics, linking grassroots forces with transnational environmental and rights movements. At the community level, resistance was initiated and driven by community members' ability to set aside their differences in order to deal with external threats from the proposed development plan. Here, community cohesion embedded in inter- and intra-community collaboration forms the foundation for widespread community resistance. Local power structures and power relationships also shape local communities' perceptions of risks and benefits, and to a certain extent their identities, as illustrated in how local communities view the Cheay Areng and Lower Sesan 2 dam developments and how such views manifest in the communities' strategies to resist the dam development and sustain their livelihoods.

The way in which local communities formed alliances with government agencies, national NGOs, and water justice and environmental movement networks across the different case studies illustrates how collective action can be linked to transnational movements. Local communities' ability to hold public gatherings to mobilize support to defend their livelihoods, and later legally contest and halt development plans, cannot be viewed in isolation from their political connections with wider networks of NGOs and government actors who form part of their political support networks. While community resistance has become one of the key factors driving transnational movements, the linkages also ensure that such movements are grounded in everyday reality and the challenges faced by local actors. This highlights the close connection between the positioning of the commons as an alternative means to counterbalance neoliberal development processes and the need to better understand the overall process of social movements and how they can support the struggles of the commons.

Moving from "local" water governance spheres to transboundary waters, the importance of power structures and relationships in shaping water governance decisions is embedded in riparian states' political and development agendas, interstate relationships, and the roles of intergovernmental bodies, international agencies, and non-state actors, including international NGOs and the media. We observe that the scale perspective also matters in defining the forms of collective action that emerge. For example, in the context of the Mekong region, collective action is shaped and reshaped as part of interactions between state and non-state actors, as these unfold within and beyond the institutional set-up of the Mekong River Commission as an intergovernmental body responsible for sustainable development of the river (Suhardiman et al., 2015). The importance of a formal, legal institutional set-up as a possible entry point for collective action is also apparent from the water–energy swap agreement between South Africa and Lesotho. While this

highlights potential entry points to promote policy and institutional change, it also reveals the need to link transboundary water governance analysis with political responses from below (Borras and Franco, 2013) and how these responses are shaped and reshaped by various actors' development views, strategies, and access to resources across scales. Most importantly, it brings to light the issue of representativeness in transboundary water governance, and raises the question as to whether decisions made by riparian state governments need to be justified in terms of the rights of local communities.

Power structures and power relationships shape and reshape water governance and collective action through various means and manifestations, ranging from how development and investment decisions are made politically to how such decisions are legitimized by existing government policies and legal frameworks, how they are mirrored in institutional interlinkages, and how they shape the institutional dynamics and the overall process of institutional emergence across scales. Deriving from the Foucaldian notion of power that is everywhere, the chapters in this book illustrate how powerful and less powerful actors can act as agents for policy and institutional change. This is most apparent in the different power struggles across scales, centring on local communities' determination to tackle any form of external threat and exert political pressure on large infrastructure development plans that would harm their livelihoods.

Collective action and the shaping of strategic alliances

Powerful and less powerful actors shape the actual management of the commons by various means, ranging from community mobilization and community empowerment (as in the case of community health impact assessments in Thailand), to policy negotiation across scales to strengthen community fisheries in Cambodia, to creating spaces for dialogue through media collectives in the Indus River Basin. They shape the management outcomes of the commons, as revealed in the various forms of collective action, whether it is grassroots driven, state- and non-state-based, or part of transnational environmental and rights movements, while relying on their strategic alliances. Understanding the different types of strategic alliance, how they emerge as a result of power struggles and the contestation of the commons, and how they evolve and change over time is central to increasing our understanding of the processes of institutional emergence and collective action. The chapters in this book illustrate three types of strategic alliance and their importance in motivating actors for collective action:

1. alliances based on grassroots scalar politics;
2. inter-class alliances; and
3. alliances derived from agents' formal and informal networks.

Alliances based on grassroots scalar politics are most apparent when local communities resist large infrastructure development plans through local mobilization,

while also relying on their political connections to resist across scales and ensure they receive relevant information for policy negotiation. Through their connections with local and national NGOs, regional and national environmental and rights movements, and certain segments of the government bureaucracy, local communities can extend the scope and coverage of their resistance and increase their overall profile in national and international policy negotiation processes and discussion forums. Understanding the overall institutional landscape and institutional interlinkages across scales is crucial to linking local communities' resistance with wider institutional networks, both formal and informal. Linking power analysis with institutional analysis increases understanding of how institutional decisions are often driven by power relationships, and how power relationships can be created, sustained, and reproduced institutionally, through both formal and informal networks. While grassroots scalar politics occurs across a variety of agro-ecological systems, institutional emergence for collective action is also linked to systems' characteristics and the degree of collective action needed to ensure their functioning. This is most apparent in the way farmers in the Andean highlands have ensured their irrigation water supply through the collective, as mountainous irrigation systems predetermine not only the overall water distribution rules but also the way local farmers have to work together and rely on one another with regard to their water-taking activities.

While inter-class alliances occur in response to the wider processes of agrarian transformation, they also serve as important driving forces for collective action. The way local farmers and fisheries communities in Tonle Sap, Cambodia, have formed community fish refuges as a means to cope with entrenched power disparities within the community shows how collective action can occur when powerful and less powerful actors tackle the problem of resource competition together through deliberative processes. Understanding key decisive factors driving various actors' strategies to form inter-class alliances is important in the identification of potential entry points for policy and institutional change and position collective action as a means to promote more open decision-making processes at the grassroots level. Linking study of the commons with the wider processes of agrarian transformation not only contributes to better understanding of how collective action is shaped and reshaped by everyday class politics (Suhardiman, 2017), but also highlights how inter-class alliances can be positioned as entry points for more equal and just water governance.

The third type of alliance is illustrated by the way the Mekong River Commission Secretariat (MRCS) carried out a strategic environmental assessment (SEA) for the planned twelve hydropower dams on the Mekong River and positioned this as an institutional means to open up discussions about the dams, while also relying on its informal networks with international donors, international NGOs, civil society groups, academics, and environmental ministries (Suhardiman et al., 2015). The way the MRCS commissioned the SEA gave the assessment a certain amount of political weight. While the formal institutional structure played an important role in establishing the assessment's scientific and political merit, the

SEA's ability to shift the decision-making process surrounding the planned mainstream dams from top-down, formal, statutory, sectoral-ministry-focused decision-making authority to a "soft space" with fuzzier governance boundaries was rooted in the MRCS SEA team's alliances with prominent NGOs and wider civil society groups who were campaigning for sustainable development on the Mekong.

Decisive factors for the shaping of strategic alliances include:

1. identification of common risks, challenges, and goals;
2. mutual dependency and the need to join forces; and
3. the presence of formal and informal networks for collective action.

As we have seen throughout this book's chapters, local communities set aside their differences when they identify common risks and challenges, either in the form of external threats, as in the case of goldmining or hydropower, or within the wider context of agrarian transformation, as in the case of groundwater markets or local community fish refuges. Mutual dependency relationships also play an important role in the overall shaping of inter-class alliances, and their positioning as entry points for collective action, while formal and informal networks influence actors' strategies to promote collective action with respect to transboundary waters. The ways in which strategic alliances form and evolve over time shape collective action, or the lack thereof.

Pathways towards deliberative and just water governance

The ways in which local communities and the commons have been affected by processes of commodification of nature highlight the need to introduce a new system of values in economic development and globalization discourse pertaining to justice, diversity, and equity (Fraser, 1998; Sen, 2009). For example, in the context of hydropower development, this would mean incorporating local communities' and local authorities' development needs and aspirations into the overall process of decision-making to achieve more equitable benefit sharing. Discussions on benefit-sharing mechanisms should not revolve solely around how revenue from hydropower development is redistributed; they should also position hydropower as a means to generate equitable access to electricity for local communities, beyond the current focus on electricity production for export. Similarly, while current debates on economic development and regional economic integration tend to position large infrastructure projects as developing countries' means to promote economic growth and reduce poverty, this needs to be tied to local communities' livelihood strategies and options.

Drawing on Young's critique of distributive models of justice (Young, 1990), and focusing on the connection between water governance and collective action as political responses from below, the chapters in this book illustrate how economic development can be used to justify powerful actors' domination and to a certain extent oppression of the poor and other marginalized groups. Powerful actors

attempt to legitimize their domination by presenting large-scale infrastructure projects as integral aspects of economic development, without taking into account the views of the poor and marginalized (Sen, 1999). Such domination can be challenged only by collective action that demands structural change across scales.

Placing the commons as a counter-force against the neoliberalization of nature, the chapters in this book discuss alternative pathways and possible approaches towards deliberative and just water governance. Identification of common grounds in the context of risks, challenges, and alternative ways forward can serve as a first step to supporting the emergence of collective action, not only in terms of ad hoc and pragmatic on-site solutions but towards the shaping of concerted efforts to tackle multi-scale challenges in natural resource governance in general and water governance in particular. While it seems easier to identify and combat shared problems at the local level, various cases of transboundary water governance have shown that collective action can also occur through the merging of common perspectives and worldviews which support the need to strive for more informed, inclusive, and accountable water governance.

The shaping of collective action as a form of institutional emergence can be derived from crafting a common identity and belief system (Sabatier and Hunter, 1988) at the local, national, regional, and global levels. While actors and institutions can define and exercise their influence over others through various forms of instrumental power (such as bureaucratic position, financial means, or decision-making authority) embedded in wider power structures and relationships, other decisive factors that shape actors' ability to take, motivation for, and decisions about collective action relate to the positioning of ideas, norms, values, and identities (Lukes, 2005). The formation of a media collective as a potential means to resolve the current political deadlock in transboundary water governance in the Indus River Basin shows how ideas and norms have the power to influence discussions with regard to transboundary water governance rules and procedures. Understanding multi-scale institutional interlinkages is crucial for the shaping of collective action in water governance.

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