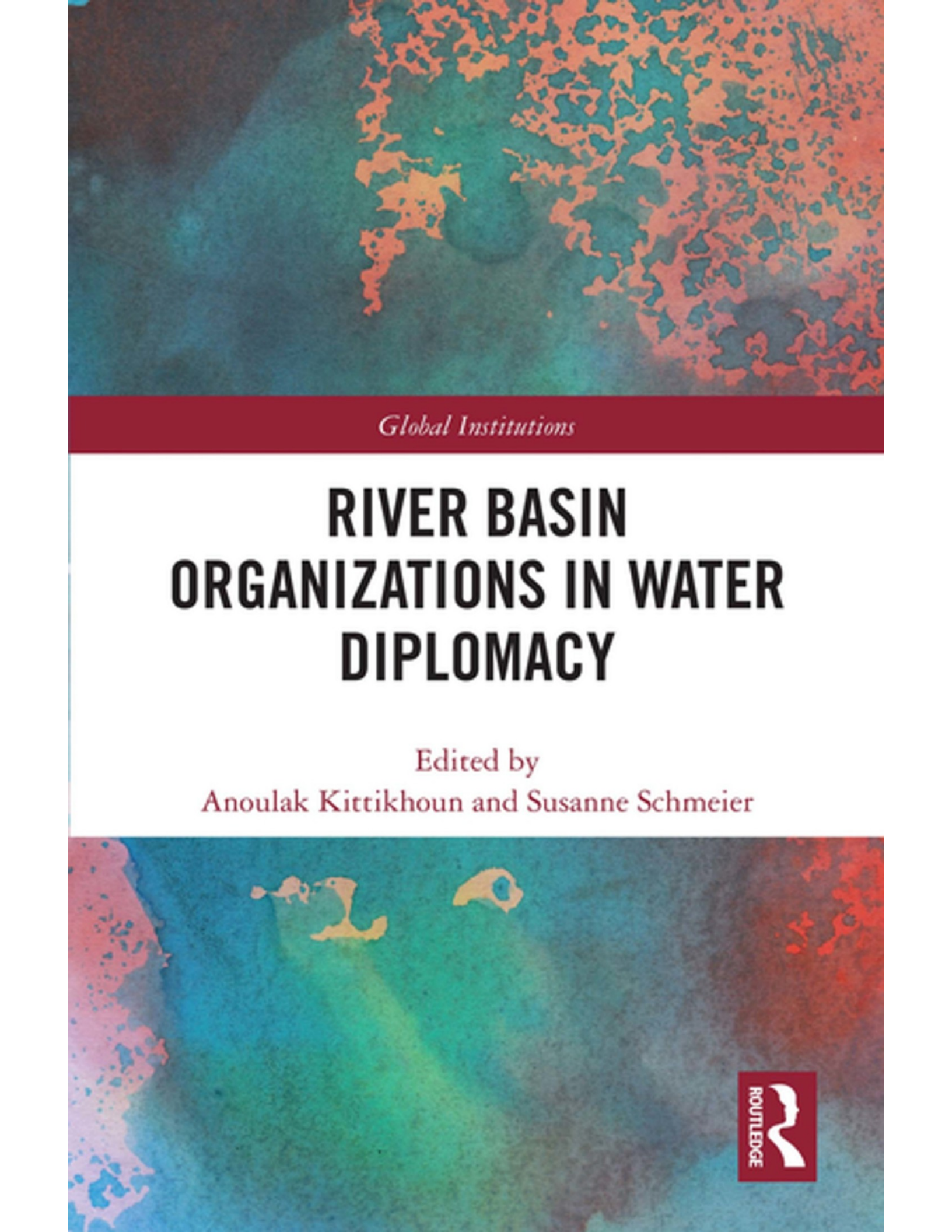




Global Institutions

RIVER BASIN ORGANIZATIONS IN WATER DIPLOMACY

Edited by
Anoulak Kittikhoun and Susanne Schmeier



River Basin Organizations in Water Diplomacy

Will tensions and disputes among states sharing international water courses and lakes turn into active conflicts? Addressing this question, the book shows that these concerns are more prominent due to the locations and underlying political dynamics of some of these large rivers and the strategic interests of major powers.

Written by a combination of leading practitioners and academics, this book shows that states are more prone to cooperate and manage their transboundary issues over the use of their common water resources through peaceful means, and the key institutions they employ are international river basin organizations (RBOs). Far from being mere technical institutions, RBOs are key mechanisms of water diplomacy with capacity and effectiveness varying on four key interrelated factors: their legal and institutional development, and the influence of their technical and strategic resources. The basins analyzed span all continents, from both developed and developing basins, including the Columbia, Great Lakes, Colorado, Senegal, Niger, Nile, Congo, Jordan, Helmand, Aral Sea, Mekong, Danube and Rhine.

Contributing to the academic discourse on transboundary water management and water conflict and cooperation, the book provides insights to policy-makers on which water diplomacy engagements can be successful, the strengths to build on and the pitfalls to avoid so that shared water resources are managed in a cooperative, sustainable and stable way.

Anoulak Kittikhoun is a political scientist, strategist and planner who has worked for a national government, a think tank, the United Nations, and a major river basin organization. As chief strategy and partnership officer of

the Mekong River Commission (MRC) Secretariat, he leads the organization's work on strategic planning and policy, international cooperation, communication and stakeholder engagement, monitoring and evaluation, and organizational development.

Susanne Schmeier is an expert on the legal and institutional dimensions of natural resources governance, with a particular focus on shared water resources. She works for IHE Delft – Institute for Water Education, where her work focuses on research, capacity development and advisory services relating to conflict and cooperation over shared natural resources, international environmental and water law and water governance. Prior to joining IHE Delft, she worked for various international organization and national governments. She has published extensively on shared water resources governance and in particular river basin organizations.

This book provides welcome insights into how river basin organizations from a range of political, cultural and physical settings have addressed sensitive development decisions. It goes beyond descriptions of institutional form and function to examine how RBOs have engaged in water diplomacy and the related difficulties, successes and limitations. We may agree or disagree with the perspectives presented, but this valuable contribution to the discussion on RBOs provides the framing and basis for us to draw our own conclusions.

—*Jeremy Bird, former Director General of the
International Water Management Institute.*

While competition over water resources is seldom a direct or single cause of armed conflict, tensions and disputes over water are real and have to be resolved. This book offers valuable insights into the importance of River Basin Organizations as a key element in this global picture and should stimulate further thinking about the needed innovations that will strengthen water cooperation as a globally important instrument of peace.

—*Danilo Turk, Chair of the Global High-Level
Panel on Water and Peace.*

Global Institutions

Edited by Thomas G. Weiss

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and Rorden Wilkinson

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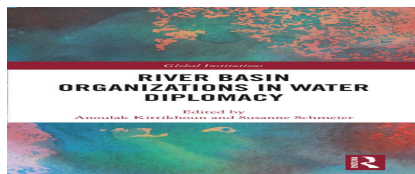
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River Basin Organizations in Water Diplomacy

**Edited by
Anoulak Kittikhoun and
Susanne Schmeier**



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Foreword

Danilo Türk

Water recognises no borders. It is therefore natural that transboundary water arrangements of different types were among the early forms of international cooperation. They were necessary to manage such basic uses of water as navigation, fishing and irrigation and later energy generation and environmental protection. Some water arrangements take the shape of river basin organizations (RBOs), characterised by a variety of legal and institutional arrangements as well as by technical and economic tasks. Although their political purpose is usually not explicitly stated, it is recognised that the river basin organisations contribute to political stability and peace among the riparian countries and serve as a useful conduit of communication in situations of tensions and disputes. The importance of their role is recognised both in the diplomatic practice and in the international jurisprudence.

However, much still needs to be done. Out of the 286 transboundary river (and lake) basins of the world, involving 148 states, only 84 of these basins have joint water management bodies. The river basin organisations represent the most developed part of this global picture. Clearly, more transboundary water arrangements, including more river basin organisations, are needed.

Two general features underline the importance of this need. First, the growing population. Humankind has to find ways to produce 50 per cent more food in the next 25 years, as well as to double energy production. These activities will require massive water resources, including from transboundary river basins, to meet the needs of the growing population and to maintain environmental conditions critical for the functioning of the life support systems.

Second, the current situation is made even more dramatic as a consequence of global warming and the resulting climate change. An overwhelming proportion of the physical impact of climate change is

transmitted through water. Higher temperatures and extreme weather conditions affect the temporal and spatial patterns of rainfall, snowmelt, river flows and groundwater and other water phenomena which are of vital importance to people. Water management is a matter of survival in an increasing number of areas around the world.

These phenomena call for an ever stronger water cooperation among states, and the river basin organizations play an ever more important role in this context. They offer important experience and practical lessons that can be used in the trans-boundary situations where river basin organizations have not yet been established. While no two situations are exactly the same, each of them can take advantage of experience gained in similar situations elsewhere.

Questions of quantity and quality of available water are among the sensitive questions of cooperation in the shared water basins. They require a political understanding on standards and procedures that make sharing of information adequate, complete, and timely. This requirement is better met if there exists a permanent legal framework and an institutional setting that allows permanent communication – both at the technical and at the decision making level, to ensure an adequate flow of information and enable taking of the required decisions. The continuous management in such a framework also facilitates decision making on larger projects needed for irrigation, energy generation, protection of environment, and others.

This book was prepared to analyse the experience in the existing variety of river basin organisations. There is no single model to follow. Each organisation and its design depend on the particular features of the river basin, on the issues of water management at stake, on the needs of the riparian countries, and on their political preferences. The difficulties involved in the process of the creation and management of the river basin organisations must not be underestimated. Often they are characterised by conflicting, yet legitimate, interests of the riparian countries, by inadequate data about the water resources in question, by the scarcity of the needed capital for water projects, and by weakness of political will needed to overcome the obstacles to the creation of a river basin organisation.

These difficulties have to be addressed by the riparian countries themselves. The assistance of the “third parties” can be welcome, but is generally not decisive. It is important that cooperation among the riparian countries takes a form of a permanent process that can mature and produce

results over time. The experience in Europe shows that some of major river basin organizations matured over long periods of time. On the other hand, some of the more recent organizations in other parts of the world have been established as a result of converging political and development needs of the riparian countries in the processes that matured more quickly. In this context, and bearing in mind the intensified pressure on water resources, it is particularly important to listen to the voices of the most affected populations, both in the lower and upper riparian countries. Ideally, representatives of the local populations should be represented in the process from an early stage, in particular when large-scale projects are contemplated.

Large-scale projects on trans-boundary rivers have traditionally been among the main reasons for the creation of river basin organisations. The need for projects for energy generation and irrigation, as well as for human consumption and for other uses of water, is growing and is likely to grow further in the future. In ideal circumstances such projects would be initiated through joint investment plans of the riparian countries, attempting to attract financial resources both from governments and traditional investors and from newly emerging investors such as pension funds that will increasingly need to invest in long-term projects that are environmentally and socially sound. To attract the investors and to identify the risks and find solutions it is useful to organise a series of “safe space discussions” that provide an early and informal insight and exchange of information and facilitate the preparation of the projects. Safe space meetings such as the ones organised by the Geneva Water Hub represent an innovation in the trans-boundary water cooperation. This and other innovative techniques should be encouraged.

River basin organizations are an instrument of water diplomacy – as the title of this book suggests. They facilitate intergovernmental cooperation and contribute to international stability and peace. The nexus of water and peace is subtle but real. Water is fundamental to life. While competition over water resources is seldom a direct or single cause of armed conflict, tensions and disputes over water are real and have to be resolved. River basin organizations have been tested in tense situations and have made meaningful contributions to the maintenance of peace. Moreover, some among them have emerged as a result of peace agreements with an aim to ensure post-conflict stability and cooperation. It is important to understand

that, in addition to their immediate technical functions, they have an indirect role in the wider framework of global cooperation and maintenance of international peace and security. In the future, this role is likely to grow. It is therefore necessary to develop a global framework of cooperation for the strengthening of international peace through water cooperation. The creation of a “Global Observatory for Water and Peace” has already been proposed elsewhere in the international discussions on water in the twenty-first century. This book offers valuable insights into the importance of River Basin Organizations as a key element in this global picture and should stimulate further thinking about the needed innovations that will strengthen water cooperation as a globally important instrument of peace.

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Abbreviations

AHLC	Ad Hoc Liaison Committee
ASBP	Aral Sea Basin Program
ASEAN	Association of Southeast Asian Nations
BECC	US-Mexico Border Environment Cooperation Commission
BGR	German Federal Institute for Geosciences and Natural Resources
BMZ	German Federal Ministry for Economic Cooperation and Development
BWO	Basin water management organization
BWT	Boundary Waters Treaty
CBD	Convention on Biological Diversity
CEMAC	Central African and Monetary Economic Community
CFA	Cooperative Framework Agreement
CGR	Collaborative Governance Regime
CICOS	<i>Commission Internationale</i> du Bassin Congo-Oubangui-Sangha (in French) or International Congo-Oubangui-Sangha Commission
CNR	Compagnie Nationale du Rhône (in French)
CRT	Columbia River Treaty
DRC	Democratic Republic of the Congo
DSS	Decision Support System
EC	Executive Committee
EIA	Environmental Impact Assessment
ENTRO	Eastern Nile Technical Regional Office
EPA	US Environmental Protection Agency

ESCWA	UN Economic and Social Commission for West Asia
EU	European Union
FAO	UN Food and Agriculture Organization
GERD	Grand Ethiopian Renaissance Dam
GETRACO	Gestion Transfrontalière de l'Eau dans le bassin du Congo (in French)
GIZ	Gesellschaft für Internationale Zusammenarbeit (in German) or German Development Agency
GLC	Great Lakes Commission
GLFC	Great Lakes Fishery Commission
GLWQA	Great Lakes Water Quality Agreement
HAVA	Helmand and Arghandab Valley Authority
HRB	Helmand River Basin
HRC	Helmand River Commission
IBC	US-Mexico International Boundary Commission
IBWC	US-Mexico International Boundary and Water Commission
ICJ	International Court of Justice
ICPDR	International Commission for the Protection of the Danube River
ICPR	International Commission for the Protection of the Rhine
ICSD	Interstate Commission for Sustainable Development
ICWC	Interstate Commission for Water Coordination
IFAS	International Fund for Saving the Aral Sea
IGAD	Intergovernmental Authority on Development
IJC	US-Canadian International Joint Commission
ILA	International Law Association
IRBO	International river basin organization
IRNA	Islamic Republic News Agency
IUCN	International Union for Conservation of Nature
IWRM	Integrated Water Resources Management
JC	Joint Committee of the MRC
JR	Jordan River
JWC	Israeli-Jordanian Joint Water Committee
l/c/d	Liters per capita per day

LMC	Lancang-Mekong Cooperation Mechanism
MCM	Million cubic meters
MESA	Monitoring for Environment and Security in Africa program
MoEP	Israeli Ministry of Environmental Protection
MRC	Mekong River Commission
MRCS	MRC Secretariat
MW	Megawatt
NADB	North American Development Bank
NAFTA	North American Free Trade Agreement
NBA	Niger Basin Authority
NBI	Nile Basin Initiative
NELSAP	Nile Equatorial Lakes Subsidiary Action Program
NGO	Nongovernmental organization
OECD	Organisation for Economic Co-operation and Development
OERS	Organization of the Senegal Riparian States
OMVS	Organisation pour la Mise en Valeur du Fleuve Sénégal (in French)
PADD	Action Plan for Sustainable Development in the Niger Basin
PDG	Preliminary Design Guidance for Proposed Mainstream Dams in the Lower Mekong Basin
PES	Payment for ecosystem services
PNPCA	Procedures for Notification, Prior Consultation and Agreement
PWA	Palestinian Water Authority
RBO	River Basin Organization
RSDSWC	Red Sea-Dead Sea Water Conveyance project
SADC	Southern African Development Community
SDC	Swiss Agency for Development and Cooperation
SIC	Scientific Information Center
SoB	State of the (Nile) Basin
SSR	Soviet Socialist Republic
UN	United Nations
UNDP	UN Development Programme

UNECE	UN Economic Commission for Europe
UNESCO	UN Educational, Scientific and Cultural Organization
UNWC	UN Watercourses Convention
USGS	US Geological Survey
WFD	EU Water Framework Directive
WMO	World Meteorological Organization

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economically prosperous, socially just, environmentally sound and peaceful river basins all over the world.

Anoulak Kittikhoun and Susanne Schmeier

Introduction

Do river basin organizations make a difference in water diplomacy and conflict management?

Anoulak Kittikhoun and Susanne Schmeier

Policy leaders, academics, international organizations, nongovernmental organizations, and the media have warned for some time that tensions and conflicts between states sharing international watercourses would be the new wars of the twenty-first century.¹ Newly emerging challenges—from population growth and climate change to infrastructure development and migration movements—increasingly put water resources and their riparian states and communities at risk, serving as threat multipliers for water conflicts. This concerns all levels: from local level communities with conflicts within and between them over the use of potentially scarce water resources to the transboundary level, where states compete over resources or disagree over the potential impacts of infrastructure projects one or two of them develop. The concerns are made more prominent due to the geopolitical locations and underlying dynamics of some of these large rivers and the strategic interests of great and regional powers—from Asia’s Mekong and Helmand to Africa’s Nile and the Middle East’s Jordan and Euphrates-Tigris rivers.

This book focuses on the transboundary level and the relations between states over shared water resources. With more than 300 shared rivers and lake basins around the world²—and many more still uncounted aquifers—covering over 45 percent of land on earth and more than 40 percent of the earth’s population living in these basins,³ these transboundary basins are of great importance for the world at large. They maintain ecosystems and their various functions, provide the drinking water for riparian populations, ensure the production of crops and electricity and thus food and energy

security, offer opportunities for economic development, and have historical as well as cultural values.

Yet, they also bear the risk of deteriorating neighborly relations between states and the political stability of entire regions. The intrusion of pollutants from household or industrial wastewater upstream in a river can negatively affect the opportunities for people, communities, and countries further downstream; the overexploitation of fish stocks in a shared lake can impact fishing communities and their livelihoods; and the construction of dams for storage or hydropower generation can alter river flows or obstruct migration routes for fish, leading to effects on other riparian states.

Examples from around the world abound. In the Aral Sea Basin, with over 50 million people, the construction of a hydropower dam in upstream Tajikistan has raised protests by downstream Uzbekistan and, more recently and in the context of a severe drought, Turkmenistan. In the Colorado Basin, with 40 million inhabitants, the abstraction of water in the United States, in order to meet growing demands of cities and farmers, has led to negative impacts in downstream Mexico and disagreements between both countries. The obstruction of fish migration routes by flood protection infrastructure in the Netherlands has raised severe criticism from upstream riparian states of the Rhine, a basin serving over 50 million people. In the Mekong, with 70 million people, dam building and operation by China, followed by Laos and Cambodia with their ambitious hydropower plans, have raised alarm bells from other riparians, external actors, and stakeholders over emerging impacts and possibly more severe ones in the future. And in the world's longest and most populous basin, the Nile, with more than 100 million people, long-standing disputes between upstream states and the most downstream power, Egypt, in relation to water use have threatened to spiral into conflict repeatedly.

In spite of these serious tensions, there is no historical evidence of states actually going to war over shared water resources. Instead, the vast majority of interactions in this area are cooperative in nature. And even those events that are of a conflictual nature tend to rank fairly low on the conflict intensity scale, indicating that states prefer to manage and solve their water conflicts in a cooperative manner instead of engaging in violent confrontation.⁴

Among the various factors identified as to why states opt for the peaceful and cooperative solution to their water disputes are the nature and the

characteristics of the issue at stake, assuming that some disagreements are easier to solve cooperatively than others⁵; the power dynamics between riparian states⁶; the overall regional political and cooperation framework⁷; and the role of external actors shaping (water-)relations in a region.⁸ Key among them all is also the role of institutional frameworks, especially in the context of research on river basin organizations (RBOs).⁹

Far from being merely technical organizations staffed by water engineers, RBOs, as international organizations tasked to manage designated basins on the basis of agreed-upon principles, norms, rules, and governance mechanisms,¹⁰ are key mechanisms of water diplomacy.¹¹ However, despite comprehensive research on conflict and cooperation in general and on the role RBOs can play in ensuring cooperation, the question of how exactly RBOs engage in preventing, mitigating, and resolving water conflicts—that is, in water diplomacy—remains largely unanswered. Some single or small-n case studies have begun to emerge,¹² but systematic comparison across a number of cases does not exist.

As a consequence, a number of more specific questions of relevance for both research and policy making remain: Under which conditions would RBOs be able to engage in water diplomacy? When and based on which mandate are RBOs able to engage in water diplomacy? Which governance mechanisms and instruments do they need in order to actively engage? Which tools and approaches do RBOs use? And what ultimately determines whether the engagement of RBOs in water diplomacy is effective in leading to the desired results of more cooperative development and management of shared water resources and the promotion of regional stability and peace?

This book attempts to shed light on these questions by focusing on the role, capacity, and effectiveness of RBOs in water diplomacy and conflict management in the broader context of cooperation over shared water resources. On the basis of a theoretical framework supporting the analysis of the different roles RBOs have played in addressing disagreements from different regions of the world, it aims at contributing to a better understanding of what determines the capacity of these organizations to engage in water diplomacy and how effective of an outcome they have been able to muster. It does so by combining the experiences, knowledge, and practices of both senior academics and well-known water diplomacy practitioners. This unique combination of academic work and advisory in

transboundary water resources and those directly involved in the day-to-day work in RBOs allows for theoretical and comparative understanding to be triangulated with first-hand empirical evidence.

Conceptualizing water diplomacy and the role of RBOs

We understand water diplomacy in the broader context of transboundary water resources management and water cooperation (see [Figure I.1](#)). Water diplomacy—with a focus on the use of diplomatic means in order to address existing or emerging disagreements and disputes over shared water resources¹³—is one dimension of the broader and multifaceted framework of interactions between states and other actors over their shared water resources. The traditional practice of transboundary *water resources management* aims to achieve water-specific outcomes (e.g., managing floods or conserving fishery resources) through mostly technical means, and transboundary *water cooperation* aims to manage and develop water resources in a cooperative manner that allows for harvesting the benefits of cooperation (e.g., jointly investing in infrastructure projects at most strategic locations) among sovereign states. Water diplomacy meanwhile focuses on peace and stability and thus on outcomes because of, for, and beyond water.¹⁴

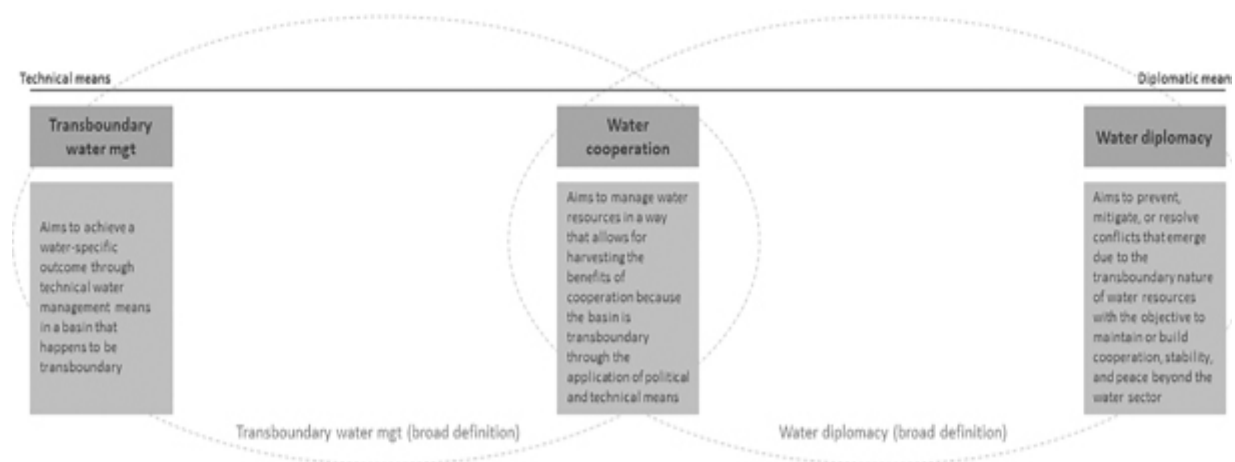


Figure I.1 The water diplomacy—water management—water cooperation nexus.

At the heart of water diplomacy is thus understanding and addressing complex water issues, challenges, and risks through negotiated solutions involving multiple stakeholders with differing positions and interests. While the primary objective of water diplomacy is water conflict prevention and management, it does not lose sight of the specific water management and ultimate water cooperation goals. The three realms of “water management,” “water cooperation,” and “water diplomacy” are thus not mutually exclusive and typically occur in the same basins, often at the same time. They are distinguished for conceptual and analytical purposes, highlighting the specific objectives, tools, and practices involved. Three points are key. First, to properly understand and offer possible solutions to complex water issues requires technical work that can provide responses to the many challenges of transboundary water resources. Second, to have solutions accepted and implemented that provide benefits generated from the transboundary water cooperation requires facilitation and negotiation among numerous actors, increasing the incentives for cooperation, and making conflict most costly. Finally, to do facilitation and negotiation among all the relevant political and diplomatic players requires all relevant processes and tools at the disposal of the actors involved.

Water diplomacy and RBOs

When considering the role of RBOs in water diplomacy, the context in which they operate matters significantly. Hydrological conditions, water availability, water use, and water needs, as well as the level of regional integration, socioeconomic conditions, and political dynamics, differ. In a basin as vast and water rich as the Congo, so far facing limited immediate pressure on water resources, the RBO’s role will largely be in sustainable management of resources with a view to preventing conflicts. In a basin such as the Nile, however, where water is scarce and development pressure is high, the role of an RBO is likely to be different, with a stronger focus on addressing immediate resource needs and related conflicts. In European basins or in basins shared between the United States and Canada, cooperation challenges relating to water quality require yet different approaches for resolving disagreements. Finally, socioeconomic development and regional political integration, mostly in Europe and North America and increasingly in Southeast Asia, also determine a good deal

about the capacity of RBOs to manage differences in the neighborhoods they oversee.

Accordingly, the type of disagreement or conflict and the way it is addressed (preventively or with a focus on resolution), and the engagement of RBOs in water diplomacy, as well as the tools to be applied, have to vary, adapted to the specific needs of the basin. Understanding the context in a basin is thus a prerequisite not only for understanding the role of RBOs in water diplomacy but also for taking informed decisions on how RBOs can and should fulfill this role. The various chapters of this book therefore always provide a comprehensive analysis of the context in which conflict and cooperation in the respective basins are situated, allowing for a differentiated understanding of the basins and the role RBOs play (or do not play) in conflict and cooperation.

Turning to RBOs' role in water diplomacy themselves, four factors are key: the *legal* mandate and *institutional* setup of RBOs,¹⁵ as well as the *technical* and *strategic* mechanisms they employ to manage disputes and usher in beneficial changes.¹⁶ When these correlate to a sufficiently high degree, RBOs have and can play effective roles in managing water-related differences, tensions, and disputes, and contribute to regional cooperation and peace. Those basins with less favorable combinations of these sets of factors experience troubles and tribulations in managing conflicts, ultimately affecting the overall regional cooperation context.

RBOs' legal and institutional characteristics

The legal framework, the mandate, the structure, and the institutional design of an RBO (that is, its fundamental setup) will determine whether and how it can engage in water diplomacy and with which tools and mechanisms at hand. One can differentiate between an RBO's underlying legal instruments (namely the international water treaty it is based on—or the lack thereof) as well as its mandate in terms of tasks it has been authorized to carry out by its member states, and its organizational structure, including different bodies (and the roles they fulfill). As the different case studies in this book show, basins and RBOs vary considerably across these dimensions of legal mandate and institutional setup, with some lacking any legally binding agreement as their basis and others being embedded in a comprehensive binding legal and institutional framework at the regional level. Some have

also undergone changes to their mandate or experienced a regular change in the setup, the location, and the staffing of their key organizational bodies. This can affect the RBO's ability to engage in water diplomacy (Table I.1).¹⁷

Table I.1 Water diplomacy contribution of RBOs' legal and institutional characteristics

<i>Characteristic</i>	<i>What</i>	<i>Why (contribution to water diplomacy)</i>
Legal mandate	Legally binding agreements through which states consent to be bound to water cooperation, and mandate the RBO to fulfill cooperation functions, including managing differences; subsequent legal and policy documents (rules of procedures, regulations, binding minutes of formal meetings, ministerial decisions, etc.)	Manifest member states' commitment to cooperation over shared water resources and to resolve any differences, tensions and conflicts in predetermined manner (and specific principles, norms, and rules for doing so); determine the legitimacy of RBOs
Institutional setup	Institutional setup/organizational bodies of an RBO (high-level policy meetings, technical working or expert groups, secretariats, etc.) and their roles and responsibilities; mechanisms for communication and coordinating between different states and agencies within and across states; mechanisms for engaging stakeholders	Provide mechanisms and fora for legitimate engagement on contested issues and joint decision-making; determine who within an RBO can engage at which level/through which activity, and how these engagements interact and are coordinated; relates to efficiency as well as effectiveness

Source: Kittikhoun and Schmeier

RBOs' technical and strategic mechanisms

RBOs' engagement in water diplomacy also refers to technical and strategic mechanisms. First, there is the more scientific and technical water resources management work that RBOs conduct that either indirectly contributes to conflict prevention, mitigation, and resolution (by strengthening the management of shared water resources) or that directly supports the negotiation and facilitation of solutions to problems and disputes. Second, there are more strategic activities that aim at addressing diverging interests, competition, or even conflicts over shared water resources. The extent to which RBOs focus on one or the other (or both) of these technical and strategic mechanisms also varies across the world's basins. The two are

often mutually reinforcing—the technical data gathering, modeling, and analysis can provide needed objective information for strategic work in basin planning, while strategic analyses, basin plans, and shared vision programs can provide direction for technical works (Table I.2).

Table I.2 Water diplomacy contribution of RBOs' technical and strategic mechanisms

<i>Mechanisms</i>	<i>What</i>	<i>Why (contribution to water diplomacy)</i>
Technical	Scientific and technical activities (e.g., data and information collection and sharing, monitoring and assessment, modeling, forecasting, state of basin reporting, etc.)	Provides a technical basis for managing shared water resources in an effective and efficient manner, thus indirectly contributing to preventing, mitigating, or resolving disputes over these resources; or provides objective and jointly agreed upon information and recommendations that directly support negotiation and facilitation of solutions
Strategic	Strategic activities relating to basin-wide plans, strategies or programs, with a particular focus on the transboundary nature of water resources (e.g., basin development and/or management plans, strategic water resources analyses, investment plans, etc.)	Directly contribute to addressing challenges related to diverging interests or competition over (potentially scarce or contested) resources through developing joint vision and joint plans of basin-wide projects and programs, highlighting benefits of cooperation, thus preventing, mitigating or resolving conflicts

Source: Kittikhoun and Schmeier

The combination of these different characteristics and mechanisms (and their existence in the first place) will determine—in the broader context of the basin and under the influence of various other determining factors—what role RBOs play in water diplomacy and whether and to which extent they do so effectively.

Case studies and key findings

The case studies represent a great variety of basins and their different hydrological, ecological, socioeconomic, political, and cultural features: North America (Great Lakes, Columbia, Colorado, and Rio Grande rivers), Europe (Danube and Rhine rivers), Central and West Asia (Aral Sea, Helmand river), Southeast Asia (Mekong river), Africa (Congo, Niger, Nile, and Senegal rivers), and the Middle East (Jordan river). They vary along with physical and hydrological conditions (from the arid and semi-arid Nile and Aral Sea to the water-abundant Mekong, Danube, and Rhine) and

socioeconomic development (from poor regions such as Central and West Africa to rapidly industrializing Southeast Asia and developed Europe and North America). And they vary in terms of the number and size/power of riparian states, such as the Danube with 19 riparian states (including Germany), the Nile with 11 (including Egypt), the Niger with 9 (including Nigeria), or the Mekong with 6 (including China), as well as basins shared by only 2 riparian states, such as the Helmand (between Iran and Afghanistan) or the Great Lakes shared water resources (between the United States and Canada).

The analyses show that a legal basis of cooperation is a crucial factor for ensuring riparian states' commitment to cooperation. It thus also plays an important role in conflict prevention and management. The example of the Nile indicates challenges that come with a lack of a legally binding framework, in spite of all progress made in cooperation along other avenues. Activities that foster cooperation along informal tracks, implemented by nongovernmental or scientific organizations (such as in the Jordan) or technical tracks remaining below the political level (again, in the Nile), are important but insufficient for ensuring long-term stability and reliability among riparian states. Basins with strong and well-established legal mechanisms for cooperation have proven to be particularly strong with regard to the escalation of disagreements. In the case of the Great Lakes, the complex web of legal arrangements at international, interprovincial, national, and subnational levels—in spite of all its complexity—ensures that emerging issues of contestation are quickly picked up in one of the cooperation mechanisms and dealt with before they escalate. Similarly, in the Danube and Rhine basins, the embeddedness of cooperation processes into the overall legal framework of the European Union, and the chance of noncompliance with its requirements being taken to court, ensures high levels of commitment to the prevention and resolution of conflicts.

Case studies from the Congo, Niger, and the Mekong have also highlighted the importance of subsequent developments in the legal (or the political/quasi-legal) basis of cooperation, allowing the respective riparian states to increase cooperation commitment over time. This includes the expansion of the issue-specific mandate of the RBO, such as the expansion of the mandate of the International Congo-Oubangui-Sangha Commission (CICOS), from navigation to water resources management in 2007. It also

includes the specification of water resources principles, norms, and rules, as in the case of the Niger Basin Water Charter in 2008; as well as the further refinement and elaboration of certain principles, norms, and rules in the general treaty into procedural rules for river management, as in the case of the Mekong River Commission's Procedures for Notification, Prior Consultation, and Agreement.

Second, the institutional setup of RBOs influences the role RBOs play in water diplomacy. Many RBOs around the world have a high-level political decision-making body in place that brings together representatives of their member states to address matters of joint interest and issues at stake in the basin with the aim of developing joint responses. Examples include the Comité des Ministres (Ministerial Committee) of CICOS and the Ministerial Council of the MRC, as well as the Conseil des Ministres (Council of Ministers) of the NBA. Some RBOs even have a periodic summit of heads of states or governments, including the MRC (Summit of Prime Ministers), Niger Basin Authority (Summit of Heads of State and Government), and International Fund for Saving the Aral Sea (Council of the Heads of States). Such organizational bodies constitute important fora in times of disagreement or dispute, as they ensure continuous communication between disagreeing parties in a confined and regulated environment. On the other hand, the nonexistence of formal basin-wide organizational bodies, such as in the Jordan, or the ill-functioning of such bodies, tend to present a major impediment to cooperation and become particularly problematic if such bodies fail to provide the water diplomacy fora riparian states would require in times of disagreement.

Within the organizational setup of RBOs, an effective secretariat has proven to be particularly critical. Secretariats (or other administrative bodies such as the Executive Committee of the International Fund for Saving the Aral Sea in the case of Central Asia) first and foremost, fulfill support and facilitating functions to their respective RBOs. This typically includes the organization and preparation of meetings of the RBO's governing bodies, the documentation of decision-making processes and their outcomes, the coordination (and in some case implementation) of data and information management and exchange, and related studies and analyses, as well as the management of the RBO's financial resources. Strong secretariats, led by impartial leaders and staffed by highly professional and competent staff, actively facilitate agreements on issues

and potential disputes. These services are an important prerequisite for ensuring that cooperation is maintained over time, and that joint activities (starting with the mere fact that member states meet on a regular basis) are being implemented. In most cases studied in this book, the secretariats of existing RBOs do fulfill these functions—albeit at varying degrees of efficiency, which tends to affect overall cooperation effectiveness.

Together, the legal and institutional characteristics of an RBO determine to a great extent what role it can play in water diplomacy. [Table I.3](#) highlights some examples.

Table I.3 Examples of RBOs' legal and institutional characteristics contributing to water diplomacy

<i>Characteristic</i>	<i>Examples</i>	<i>Contribution to water diplomacy</i>
Legal framework and mandate	- Embeddedness into the legal framework of Europe (1992 Helsinki Convention, 1992 Espoo Convention, EU WFD, other water-related EU directives, etc.) - Set of legal arrangements for Great Lakes (1909 Boundary Waters Treaty, 1955 Great Lakes Basin Compact, 1955 Convention on Great Lakes Fisheries, Great Lakes-St. Lawrence River Basin Water Resources Agreement, Great Lakes-St. Lawrence River Basin Water Resources Compact) - 1995 Mekong Agreement and Procedures	- Provision of predefined and binding comprehensive framework for dealing with potentially contested issues - Predefined provisions on management of shared water resources prevent the emergence of disagreements or mitigate them at very early stages and in participatory manner, allowing for their long-term resolution - A clear set of agreed principles, rules, and procedures in developing and managing the basin provides the basis for addressing disagreements and disputes through practice and adaptation
Institutional design and setup	- Ministerial-level decision-making platform in form of Ministerial Committee of CICOS - Strong role of Secretariat of the MRC - Engagement of NILE-Sec in technical and political track of cooperation	- Ensuring regular meetings between high-level policy makers that allow for addressing potentially contested issues early on and in a predefined manner - Provision of administrative and technical support as well as facilitation to member states and their mechanisms for addressing disagreements

<i>Characteristic Examples</i>	<i>Contribution to water diplomacy</i>
	- Continuous linkage of transboundary water management to water diplomacy (to extent possible)

Source: Kittikhoun and Schmeier.

With regard to the technical mechanisms RBOs apply for managing shared water resources, case studies indicate that these are indeed very important in indirectly and directly contributing to preventing, mitigating, or resolving conflicts. The trust member states and other actors put into the quality of technical work and the trustworthiness of the results has proven to be critical. For instance, the coordinated gathering and analysis of data on the state of the basin or on specific issues do build a joint understanding of the basin, as well as the urgency of action, among riparian states. This is often the starting point, or the only space allowed, for cooperation, as the example of the Jordan and the engagement of scientific institutions shows.

Similarly, albeit in a more advanced cooperation context, the Joint Danube Survey and similar activities in the river provide a means for states to achieve consensus over how data is gathered and analyzed, and ultimately over the data itself. The case study on Central Asia highlights disagreements over the state of the basin and its resources and thus the challenges that need to be addressed. Conversely, in the case of the Mekong, years of technical work (data gathering, development scenario building, and scientific assessments of potential impacts of large-scale water infrastructure projects) as well as independent technical reviews of and recommendations for specific mainstream dams during their very political prior consultation processes, helped engender common understanding about reasonable and equitable use and the agreement on measures for avoiding, minimizing, and mitigating transboundary costs.

And, finally, the strategic mechanisms RBOs have at hand to engage in water diplomacy through guiding water resources and basin development towards mutually acceptable and beneficial outcomes have proven to be of great importance. The example of the Strategic Water Resources Analysis of the Nile Basin Initiative (NBI) shows how—in spite of an overall context of persistent conflict—joint assessments and scenario exercises can raise awareness of the challenges the basin is facing. This has established the

urgency to address them, leading to further action in individual states and through some cooperative projects. Similarly, the Basin Development Planning process of the MRC constitutes an important means for assessing the riparian states' national development plans and projects in order to appreciate the benefits and costs of those plans, and the impacts to other states, in order to find a more optimal and sustainable path (Table I.4).

Table I.4 Examples of RBOs' technical and strategic mechanisms contributing to water diplomacy

<i>Mechanisms</i>	<i>Examples</i>	<i>Contribution to water diplomacy</i>
Technical mechanisms	- Joint research in the Jordan River Basin - State of the Basin Report for the Nile River Basin - Joint Danube Survey	- Gradually builds trust in data and in partners in the basin that can provide a basis for cooperation; improves knowledge of parties - Development of a jointly agreed upon understanding of the state of the basin has allowed countries to come together in spite of disagreements - Establishment of trust in data and in cooperation through jointly agreed upon data gathering and analysis, and thus understanding of key water management issues that need to be addressed cooperatively
Strategic mechanisms	- Nile Strategic Water Analysis - Danube River Basin Management Plan	- Assessing the availability of water resources against cumulative demands allows riparians to develop a joint understanding of the urgency of the issue and the fact that unilateral action is not a viable option - Developing a basin-wide plan that prioritizes measures to be taken by all riparian states ensures that river basin management is undertaken in a coordinated manner from the beginning on, avoiding/preventing later disputes

Source: Kittikhoun and Schmeier

Capacity and outcomes of RBOs in water diplomacy

In short, the determinants of whether the RBOs are *capable* of engaging in managing and resolving water disputes, and thus water diplomacy, can be put down to their level of *legal and institutional development* as well as the *influence of their technical and strategic mechanisms*—yielding four quadrants of a typology of RBOs' capacity and outcomes in water

diplomacy (see [Figure I.2](#)). The capacity and effectiveness of RBOs in water diplomacy contribute to, but do not necessarily equate to, effectiveness in good water management outcomes.

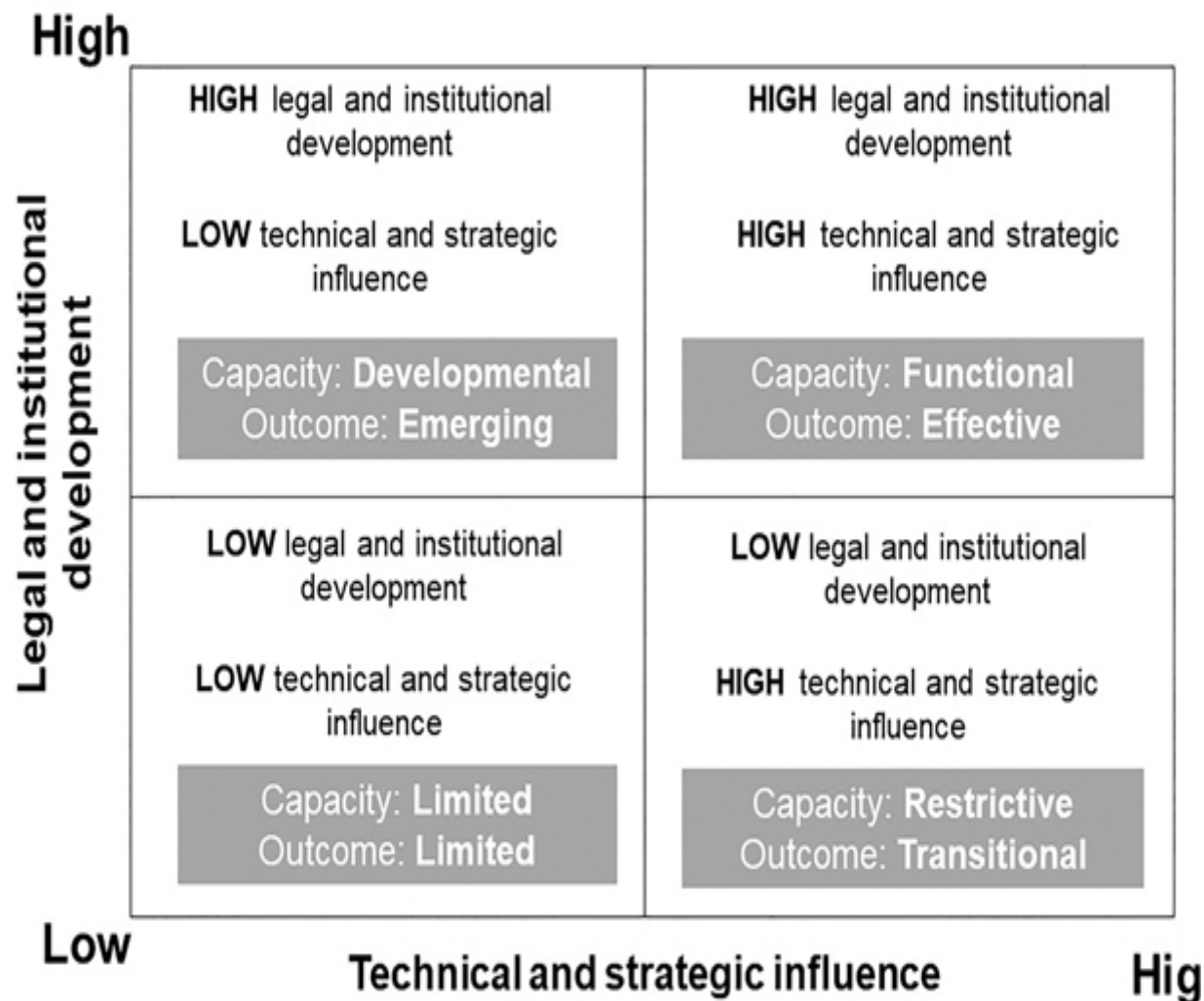


Figure I.2 Matrix of RBO capacity and outcome in water diplomacy.

From the case studies in this book, we can see where, for analytical purposes, different RBOs across the globe lie in the four quadrants. The categorization does not in any way make judgments about the efforts of RBOs or their partners in the difficult task of managing the water resources of the specific basins. Those efforts are and should be recognized. There are again many context-specific factors that shape how RBOs are able or unable to play a role in water diplomacy. Nevertheless, a comparative study

of this kind will only succeed in distilling policy and theoretical conclusions if a set of simple to comprehend and takeaway factors is proposed. Only then will strengths, weaknesses, and gaps be recognized, and further efforts devoted by all who care about the particular RBOs and the river basins at hand to keep the strengths, tackle the weaknesses, and close the gaps wherever possible.

Functional capacity and effective water diplomacy outcome

An RBO situated in the upper right quadrant in general exhibits high legal and institutional development, as well as high technical and strategic influence. Here, the capacity of the RBO is *functional*, even mature, and can bring effective outcomes in conflict management. When all these determinants are in place, the possibility for an RBO to yield an effective water diplomacy outcome is high, and key tensions and issues among riparian countries are being managed or resolved at an early stage. See [Box I.1](#) for details.

From the case studies in this book, the basins and their RBOs fitting this category appear in North American shared rivers (Columbia, Colorado, and Rio Grande); lakes between Canada and the United States; the Danube and Rhine; and—to a large extent—the Mekong and the Senegal.

For example, the Columbia River Treaty (CRT, 1961) has existed for nearly 60 years, creating a basket of benefits for the two neighboring countries and handling major disputes that have come up, including the current treaty renegotiation. This specific legal agreement is on top of an existing broad bi-national legal framework in the form of the 1909 Boundary Waters Treaty, which created the International Joint Commission (IJC). The benefit-sharing schemes put in place by the CRT were technically studied and strategically assessed by an institution created by the IJC, the International Columbia River Engineering Board—ensuring that the sharing of costs and benefits to the two riparians would be based on science.

Box I.1 HIGH legal and institutional development, and HIGH technical and strategic influence

Capacity—**Functional:**

- Clear legal mandates as RBOs for basin-wide river management;
- Clearly defined substantive and procedural rules for shared water resources;
- High-level political bodies/arenas for joint deliberations and decision making;
- Operational technical/expert working mechanisms;
- Strong secretariats/agencies serving the RBOs/joint institutions/agreements;
- Strategic processes for addressing key water management issues in basins; and\
- Technical capacity to develop or support approaches for addressing key issues.

Outcome—**Effective:**

- Key tensions and issues among riparian countries are being managed or resolved by the RBOs or joint institutions;
- Scientific and technical work are being used by the RBOs to support the facilitation and negotiation processes;
- Reference is made to basin-wide strategies, plans, and programs; and
- Good level of trust among the riparians (to work together and resolve issues or share benefits).

Source: Kittikhoun and Schmeier

In the Danube, there has been significant disagreement over the Bystroe Canal, a navigation project initiated by Ukraine in the early 2000s and opposed by Romania on environmental grounds. The International Commission for the Protection of the Danube River (ICPDR), supported by a sound legal mandate over the basin and Europe-wide conventions, proactively dealt with the case through various governance and technical meetings, conducting missions to the site, reviewing and analyzing the

environmental impacts of the project, preparing a sub-basin management plan, and holding informal dialogues with the concerned parties. The project that was carried out, eventually, largely complied with European legal and political requirements, with efforts of the ICPDR and others contributing to the reduction of tensions between both countries, as well as between Ukraine and the wider European community.

Limited functionality and limited effectiveness in water diplomacy

A space to move away from for a basin is the lower left quadrant: Low/Low. This is characterized by no or a low level of legal and institutional development governing the international watercourse, together with low and inadequate production and use of basin-wide technical and strategic works (see [Box I.2](#)).

Alas, evidence shows that this situation seems to characterize the Jordan River Basin, shared by Jordan, Palestine, and Israel, where acute water security is plagued by natural water scarcity, regional political instability, and military conflict, and where in spite of important works done by bilateral institutions (e.g., Joint Water Committees—one between Israel and Jordan, and another between Israel and Palestine) or nongovernmental organizations (e.g., EcoPeace) or external partners (e.g., the Ad Hoc Liaison Committee), the absence of a legitimate basin-wide RBO means improved transboundary water governance and regional water security remain elusive goals.

Box I.2 LOW legal and institutional development, and LOW technical and strategic influence

Capacity—**Limited functionality:**

- No (clearly defined) substantive and procedural rules for water resources;
- No clear legal mandates of RBOs for basin-wide river management;
- No or irregular meetings of political bodies/arenas;

- No or irregular technical/expert working mechanisms in operation;
- No or weak secretariats/agencies serving the RBOs/institutions/agreements; and
- No or limited joint strategic activities addressing key issues in the basin.

Outcome—Limited effectiveness:

- Key tensions and issues among riparian countries are not addressed effectively. Some nongovernmental platforms exist but lack political capital to address high water politics; and
- Some technical works are being done but by various groups and actors at national and regional levels. The effectiveness of these works is not applied across the basin or to key issues due to the lack of legitimate basin-wide RBOs or political arenas.

Source: Kittikhoun and Schmeier

Developmental capacity and emerging water diplomacy outcome

A few basins which are not placed in the best or worst possible worlds linger somewhere in between—either having RBOs that are developmental in capacity and only able to demonstrate emerging outcomes, or RBOs that are developed but severely limited in that they are unable yet to deliver any significant positive results. In the former case, where there is a medium to high level of legal and institutional development but low to medium level of technical and strategic influence, it is encouraging to note that the RBO would have clear legal mandates for basin-wide river management and regular convening of political bodies and expert working mechanisms, supported by neutral, albeit young or insufficiently resourced, secretariats and agencies. See [Box I.3](#) for details.

Three basins in the book seem to be on this trajectory: Congo, Niger, and Helmand. First, the 20-year-old Commission Internationale du Bassin Congo-Oubangui-Sangha is charged with developing and managing Africa's second longest river, as well as the world's second largest river by

volume. It was created in 1999 to focus on navigational issues, effectively became operational only from 2004, and then expanded its scope with a treaty amendment in 2007 to cover all water-related issues in the basin. While its legal and institutional mandates are established, the RBO's capacity to affect outcomes in water diplomacy is still developmental, limited by its sometimes disparate and piecemeal approach to technical work (driven by and implementing various donor-supported activities, from data collection, monitoring, and modeling to basin planning) and lacking common strategic direction. CICOS has found success in bringing together different countries and interests on waterborne transport, but diverging national interests have time and again blocked the development of joint approaches on broader issues. The Democratic Republic of the Congo, the dominant riparian, continues to prefer bilateral approaches over basin-wide regulations.

Box I.3 HIGH legal and institutional development, and LOW technical and strategic influence

Capacity—Developmental:

- Clear legal mandates of RBOs for basin-wide river management;
- De jure defined substantive and procedural principles and rules;
- Political bodies/arenas;
- Some technical/expert working mechanisms in operation; and
- Secretariats/agencies serving the RBOs/joint institutions/agreements exist but not as developed in capacity or resources.

Outcome—Emerging:

- Key tensions and issues among riparian countries are being touched upon by the RBOs or joint institutions, which have legal mandates to bring together the relevant parties. Issues are not yet resolved, and/or small results or outcomes are only emerging (albeit on track);

- Some technical works are being done but are not developed, integrated or used to support reduction of tensions, or optimization of basin-wide benefits; and
- Little or some strategic assessments or planning efforts exist but not developed, integrated, or providing agreed directions to all riparians beyond their national interests.

Source: Kittikhoun and Schmeier

Second, in the Niger, the riparians created extensive legal obligation frameworks starting with the 1964 agreement that established, first, the Niger River Commission, then the 1980 convention that changed to the name to Niger Basin Authority. More recently, the Water Charter, adopted in 2008, specifies obligations including for parties to exchange information and consult each other on planned projects, notify other states in the event projects may have “significant adverse effects,” and institute policing measures. This is akin to the Mekong Agreement and its five comprehensive procedures for river development and management, as well as the subsequently developed Transboundary Environmental Impact Assessment Guidelines and Joint Environment Monitoring program for mainstream dams. However, major tensions—such as those over the Fomi Dam or irrigation expansion in the delta—are not yet addressed by the RBO, with countries still proceeding to develop projects unilaterally.

Third, in the Helmand, a shared river between regional power Iran and a country seemingly in perpetual turmoil, Afghanistan, there actually exists a legal framework—the 1973 water sharing treaty—and an RBO in the form of the Helmand River Commission. Yet because of the harsh anarchic geopolitical setting, full of past and ongoing conflicts involving the great powers, the commission has had an extremely difficult life—for some 20 years in the 1980s and 1990s it was frozen into inactivity due to wars and civil strife. Even rudimentary RBO functions, such as common river monitoring, had been little undertaken by the Commission, let alone other more sophisticated technical and strategic works.

As a result, tensions remain high. Afghanistan, a late developer located upstream, has moved unilaterally in dam development and irrigation expansion (not least for opium cultivation) and is accused by Iran of

violating the treaty and threatening its existing downstream rights over water uses for farming, drinking, and the environment of its delta wetlands. All is not lost, however. Since 2004, the commission has convened 20 meetings, with the most recent in June 2019, calling for an expansion of water cooperation to better implement the treaty. Recent strategic activities such as higher-level negotiations between Iran and Afghanistan on a “Comprehensive Strategic Partnership,” principally related to security and water, are also promising to steer the commission toward better water diplomacy outcomes.

Restrictive capacity and transitional outcome in water diplomacy

Where legal and institutional development is low or at the most medium level, but the technical and strategic works are being carried out at a medium to high degree, basins are nevertheless restricted in their capacity to influence outcomes. Worse, they could be stuck in transition. Why? Contested or partial legal mandates for basin-wide river management mean that the RBOs or joint institutions in existence are not fully recognized by all riparians. High-level political bodies and arenas may be convened from time to time but not all riparians participate at the same level, if at all. Technical and expert working meetings and secretariats are operating but their existence and work are questioned in terms of legitimacy. In such an unpleasant situation, some tensions and issues among riparian countries are being touched upon by the RBOs while others are not addressed at all due to an unclear or not agreed mandate, and ultimately due to high politics. Scientific, technical works and strategic assessments are being conducted. At the end of the day, there is still an insufficient level of trust among the riparians, as shown in their selective participation in meetings of the RBOs. Any water diplomacy outcomes brokered by the RBOs are only transitional and could even descend backward to square one. See [Box I.4](#) for a list of characteristics for RBOs in this category.

Box I.4 LOW legal and institutional development, and HIGH technical and strategic influence

Capacity—**Restrictive:**

- Established RBOs or joint institutions but not fully recognized by all riparians;
- Contested or partial legal mandates for basin-wide river management;
- High-level political bodies/arenas;
- Operational technical/expert working mechanisms; and
- Secretariats/agencies serving the RBOs/joint institutions/agreements exist but have been questioned in terms of legitimacy.

Outcome—Transitional:

- Some tensions and issues among riparian countries are being touched upon by RBOs;
- Scientific and technical work are sometimes used by the RBOs to support the facilitation and negotiation processes;
- Reference is made to basin-wide strategies, plans, and programs;
- There is an insufficient level of trust among the riparians (to work together and resolve issues or share benefits); and
- Water diplomacy outcomes are only transitional and could slide backward.

Source: Kittikhoun and Schmeier

The basins that seem to exhibit these characteristics are the Nile and the Aral Sea. The legal and institutional frameworks set up so far are only partial, temporary, or not totally coherent in terms of an RBO, with the hope of something better in the future. For example, in the Nile Basin, tensions and conflicts are clear—downstream Egypt, the dominate riparian, “protected” by colonial era water-sharing agreements, and to some extent Sudan, have always been at odds with upstream countries such as Kenya, Uganda, Rwanda, Tanzania, and especially Ethiopia, which is building the giant Grand Ethiopia Renaissance Dam—the biggest in Africa. With the support of partners, the NBI has done numerous strategic and technical works, including the ever-popular “share vision” planning program,

strategic analysis, and investment agenda, a decision support system, and state of basin reporting. Some small victories are recorded, such as the Rusumo Falls Hydropower Project, which is jointly owned between Burundi, Rwanda, and Tanzania. However, the quasi-RBO is handicapped by constant challenges to its legitimacy—for instance, in 2010, five upstream countries went ahead and agreed on a new treaty that would replace the NBI without the endorsement of Egypt and Sudan, and, in 2016, Egypt did not endorse the NBI Strategic Analysis of water supply and demand to explore options for future developments.

Conclusion and outline of the book

The book is structured as follows. A first general chapter by Owen McIntyre delves deeper into the legal and institutional dimensions of RBOs. Then, case studies follow according to different regions, starting with North America in Chapters 2–4: Victoria Pebbles on the American-Canadian Great Lakes; María Elena Giner and Gabriel Eckstein on the American-Mexican shared rivers; and Aaron Wolf and Kim Ogren on the Columbia, again shared between the United States and Canada, illustrating the importance of process in doing water diplomacy.

Next, in [Chapter 5](#), Richard Paisley, Riley Denoon, and Marguerite de Chaisemartin transition us between North America and Africa by discussing benefit sharing as an antidote to conflicts, comparing the Columbia and Senegal basins. Then, Chapters 6–8 each discuss a different basin in Africa: respectively, Luca Ferrini presents the Niger; Ana Elisa Cascão, Wubalem Fekade, Malte Grossmann, and Abdulkarim Seid the Nile; and Tobias von Lossow the Congo. After one case in the Middle East with the Jordan by Samer Talazi and Natasha Westheimer ([Chapter 9](#)), we enter nearby West and Central Asia with the Helmand by Mohsen Nagheeby and Alistair Rieu-Clarke, and the Amudarya and Syrdaya in the Aral Sea Basin by Jenniver Sehring and Saghit Ibatullin ([Chapters 10 and 11](#)).

The case studies are rounded out by two chapters on the Mekong, one from the perspectives of those associated with the RBO, by Anoulak Kittikhoun and Denise Staubli; and another perspective by Lei Xie and Zha Daojiong from China, where the Mekong, called Lancang, originates; and a chapter on European rivers by Susanne Schmeier and Ivan Zavadsky (Chapters 12–14). A final chapter by David Grey and the two editors not

only brings these analyses back together but also tackles the next question of the role of RBOs in generating the benefits of cooperation.

Overall, the analyses show that whether RBOs are indeed successful in water diplomacy depends on four key factors—legal and institutional development, and technical and strategic resources—and is grounded in the context of the basin itself. These chapters also demonstrate that RBOs play a critical but underappreciated role throughout the world not only in transboundary water management but in water conflict management. They do so by serving as legitimate forums for discussing tensions and disputes, anchored by objective science in order to keep the discussion from turning nonsensical, and transcending national interests through developing and implementing basin-wide strategies, plans, and guidelines, and compelling states to act in the best interest of the shared river courses through legal and semi-legal obligations and procedures.

Notes

- 1 See, for instance, Office of the Director of National Intelligence (US government), “Global Water Security,” February 2012, https://www.dni.gov/files/documents/Newsroom/Press%20Releases/ICA_Global%20Water%20Security.pdf; CNA, “The Role of Water Stress and Instability in Conflict,” December 2017, https://www.cna.org/CNA_files/pdf/CRM-2017-U-016532-Final.pdf; United Nations Secretary-General Antonio Guterres, “Remarks to Security Council on the Maintenance of International Peace and Security: The Root Causes of Conflict—The Role of Natural Resources,” 16 October 2018, <https://www.un.org/sg/en/content/sg/speeches/2018-10-16/maintenance-international-peace-and-security-remarks-security-council>; Fiona Harvey, “Water Wars between Countries Could Be Just around the Corner, Davey Warns,” *Guardian*, 22 March 2012, <https://www.theguardian.com/environment/2012/mar/22/water-wars-countries-davey-warns>; James Fergusson, “The World Will Soon Be at War over Water,” *Newsweek*, 24 April 2015, <https://www.newsweek.com/2015/05/01/world-will-soon-be-war-over-water-324328.html>; Fabio Farinosi et al., “An Innovative Approach to the Assessment of Hydro-Political Risk: A Spatially Explicit, Data Driven Indicator of Hydro-Political Issues,” *Global Environmental Change* 52 (2018): 286–313, <https://ec.europa.eu/jrc/en/publication/innovative-approach-assessment-hydro-political-risk-spatially-explicit-data-driven-indicator-hydro>; and Netherlands Environmental Assessment Agency (PBL), “Linking Water Security Threats to Conflict,” The Hague, 7 August 2018, <https://www.pbl.nl/en/publications/linking-water-security-threats-to-conflict>.
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- 5 Molly Espey and Basman Towfique, "International Bilateral Water Treaty Formation," *Water Resources Research* 40, no. 4 (2004): 1–8; Shlomi Dinar, "Scarcity and Cooperation along International Rivers," *Global Environmental Politics* 9, no. 1 (2009): 109–135; and Jaroslav Tir and John Ackermann, "Politics of Formalized River Cooperation," *Journal of Peace Research* 46, no. 5 (2009): 623–640.
- 6 Frank Marty, *Managing International Rivers* (Bern: Peter Lang, 2001); Mark Zeitoun and Jeroen Warner, "Hydro-Hegemony—A Framework for Analysis of Trans-Boundary Water Conflicts," *Water Policy* 8, no. 5 (2006): 435–460; and Ana Cascão, "Changing Power Relations in the Nile River Basin," *Water Alternatives* 2, no. 2 (2009): 245–268.
- 7 Marco Verweji, *Transboundary Environmental Problems and Cultural Theory* (New York: Palgrave, 2009); Jorn Dosch and Oliver Hensengerth, "Sub-Regional Cooperation in Southeast Asia: The Mekong Basin," *European Journal of East Asian Studies* 4, no. 2 (2005): 263–285; and Ken Conca, Fengshi Wu, and Ciqi Mei, "Global Regime Formation or Complex Institution Building?" *International Studies Quarterly* 50, no. 2 (2006): 263–285.
- 8 Neda Zawahri, "Third Party Mediation in International River Disputes," *International Negotiation* 14, no. 2 (2009): 281–310.
- 9 Ramiro Berardo and Andrea Gerlak, "Conflict and Cooperation along International Rivers," *Global Environmental Politics* 12, no. 1 (2012): 101–120; Susanne Schmeier, *Governing International Watercourses: River Basin Organizations and the Sustainable Governance of Internationally Shared Rivers and Lakes* (London: Routledge, 2013); Anton Earle and Patricia Wouters, "Implementing Transboundary Water Cooperation through Effective Institutional Mechanisms," *The Journal of Water Law* 24 (2015): 101–114; Sabine Blumstein and Susanne Schmeier, "Disputes over International Watercourses," in *Management of Transboundary Water Resources under Scarcity: A Multidisciplinary Approach*, ed. Ariel Dinar and Yacov Tsur (New Jersey: World Scientific, 2017), 191–236; and Susanne Schmeier and Zaki Shubber, "Anchoring Water Diplomacy—The Legal Nature of International River Basin Organizations," *Journal of Hydrology* 567 (2018): 114–120.
- 10 Susanne Schmeier, Andrea Gerlak, and Sabine Blumstein, "Clearing the Muddy Waters of Shared Watercourses Governance," *International Environmental Agreements* 16 (2006): 597–619.
- 11 While there is so far no common definition of water diplomacy, we understand water diplomacy broadly as the "use of diplomatic instruments to existing or emerging disagreements and conflicts over shared water resources with the aim to solve or mitigate those for the sake of cooperation, regional stability, and peace." See Susanne Schmeier, "What Is Water Diplomacy and Why Should You Care?" Global Water Forum, 31 August 2018, <http://www.globalwaterforum.org/2018/08/31/what-is-water-diplomacy-and-why-should-you-care/>. On the lack of a common definition of water diplomacy, see Kata Molnar, Rosa Cuppari, Susanne Schmeier, and Siegfried Demuth, *Preventing Conflicts, Fostering Cooperation—The Many Roles of Water Diplomacy* (Koblenz: International Centre for Water Resources and Global Change/Stockholm International Water Institute, 2017).
- 12 Anoulak Kittikhoun and Denise Staubli, "Water Diplomacy and Conflict Management in the Mekong," *Journal of Hydrology* 567 (2018): 654–667; Tuula Honkonen and Annukka Lippinen, "Finland's Cooperation in Managing Transboundary Waters and the UNECE Principles for Effective Joint Bodies," *Journal of Hydrology* 567 (2018): 320–331; Anamika Barua, "Water Diplomacy as an Approach to Regional Cooperation in South Asia," *Journal of Hydrology* 567 (2018): 60–70; and Blumstein and Schmeier, "Disputes over International Watercourses."
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14 Ibid.; and Claudia W. Sadoff and David Grey, "Beyond the River," *Water Policy* 4 (2002): 389–403.

15 Schmeier and Shubber, "Anchoring Water Diplomacy."

16 Kittikhoun and Staubli, "Water Diplomacy and Conflict Management in the Mekong."

17 Schmeier and Shubber, "Anchoring Water Diplomacy."

1 The legal role and context of river basin organizations

Owen McIntyre

While international law relating to the management of international watercourses, and to the environmental protection of shared freshwater resources in particular, has undergone significant development and clarification in recent years, the institutional machinery that basin states need to achieve the requisite level of cooperation has been developing apace. It is now beyond debate that environmental considerations are of steadily growing significance in the application of international water law. It may be argued that the growing normative sophistication and ever more comprehensive scope of applicable environmental rules give added voice to environmental concerns when determining a reasonable and equitable regime for the utilization of an international watercourse.¹

One development concerns the widespread adoption of a “common management” approach, whereby the drainage basin is regarded as an integrated whole and is managed, to a greater or lesser extent, as an ecological and economic unit, with legitimate interests in the shared waters vested in the community of co-basin states. Such an approach is inevitably accompanied by the establishment of institutional machinery—for example, a river basin organization—to formulate and implement common policies for the management and development of the shared basin.² Long advocated by learned associations and diplomatic conferences, this has become necessary due to the complexity of modern water resources utilization and environmental protection obligations.

This chapter traces the history of state practice in establishing common management institutions, examines the legal character of any requirement to do so, and outlines the normative implications of this trend towards “denationalization” of international watercourses, particularly as regards

environmental governance. Such common management institutions tend to be charged with a wide variety of functions,³ but as environmental responsibilities are often expressly included in their founding instruments, they usually enjoy a clear mandate to act in the interests of environmental protection, as well as possessing the technical, legal, political, and administrative expertise to do so effectively.

Community of interest approach to international watercourses and common management institutions

The institutional structure and purposes of common management regimes vary significantly from basin to basin, with different economic problem structures likely to have implications for institutional design,⁴ and not all having as yet an express mandate regarding environmental protection. Common management is an approach to managing water problems rather than a normative principle of international law and has been widely endorsed by the international community.⁵ Recommendation 51 of the “Action Plan for the Human Environment” adopted at the 1972 Stockholm Conference called for the “creation of river basin commissions or other appropriate machinery for co-operation between interested States for water resources common to more than one jurisdiction” and sets down a number of basic principles by which such commissions should be guided.⁶ Chapter 18 of Agenda 21, adopted in Rio at the 1992 UN Conference on Environment and Development (UNCED), calls for “integrated water resources planning and development” and goes on to suggest the role of any institutional machinery established for such purpose.⁷ As early as 1979, a UN survey identified 90 common management institutions concerned with non-navigational uses of shared freshwater resources, distributed throughout every region of the world.⁸ More recent estimates suggest that “well over one hundred international river commissions have been established by states.”⁹

Community of interest

The idea that a community of interest exists in international watercourses, and the related idea that the interests of riparian states can be identified and

safeguarded on the basis of equity, is supported in international judicial deliberation. In the *River Oder* case, though concerned with rights of navigation, the Permanent Court of International Justice (PCIJ) referred to “principles governing international fluvial law in general” to conclude that

this community of interest in a navigable river becomes the basis of a common legal right, the essential features of which are the perfect equality of all riparian States in the use of the whole course of the river and the exclusion of any preferential privilege of any one riparian State in relation to the others.¹⁰

In the same passage, the PCIJ refers to “the possibility of fulfilling the requirements of justice and the considerations of utility,” anticipating a role for considerations of equity in giving effective protection to the rights of states.¹¹ In the *Gabčíkovo-Nagymaros* case, the International Court of Justice (ICJ) reproduced this passage from the *River Oder* judgment and stated that “modern development of international law has strengthened this principle for non-navigational uses of international watercourses as well.”¹² On this basis, Stephen McCaffrey suggests that “the concept of community of interest can function not only as a theoretical basis of the law of international watercourses, but also as a principle that informs concrete obligations of riparian states, such as that of equitable utilization.”¹³ Where a community of interest approach is adopted and implemented by means of common management institutions, “a state’s ‘interests’ in an international watercourse system would generally be defined by its present and prospective uses of the watercourse as well as its concern for the health of the watercourse ecosystem.”¹⁴

The concept of community of interest can be traced back to a 1792 French decree on the opening of the Scheldt River to navigation.¹⁵ This position was quickly adopted in a number of instruments concerned primarily with rights of navigation in international rivers.¹⁶ The Vienna Congress of 1815 led to the establishment of the Central Commission for Navigation on the Rhine—not only the first international river basin organization but also the first international organization in general.¹⁷ Ines Dombrowsky notes that “it was the interdependence created by the use of water that gave rise to the foundation of the first modern international

organization.”¹⁸ Some early agreements giving expression to the concept of community of interest were not restricted to navigational uses of water. Article 4 of the 1905 Treaty of Karlstad between Sweden and Norway provides that international lakes and watercourses “shall be considered as common.”¹⁹ In modern treaty practice, the original 1995 Southern African Development Community (SADC) Protocol on Shared Watercourse Systems called for member states to “respect and abide by the principles of community of interests in the equitable utilization of those systems and related resources,”²⁰ although the superseding 2000 Revised Protocol on Shared Watercourses²¹ contains no corresponding provision, but only the approach taken under the UN Watercourses Convention.²² Nevertheless, Southern Africa has witnessed renewed efforts to establish basin-wide cooperative institutions in accordance with the Revised SADC Protocol.²³ The 1992 agreement between Namibia and South Africa “on the Establishment of a Permanent Water Commission” provides that the commission’s objective is, *inter alia*, “to act as technical adviser to the Parties on matters relating to the development and utilization of *water resources of common interest to the Parties*.”²⁴ It is more usual, however, for modern treaties “to *treat* international watercourses as being of common interest than to *refer* to them expressly as common rivers or property.”²⁵

While the community of interest and associated common management approach are advocated, few would contend that they have evolved, or are likely soon to evolve, into a requirement of customary international law. While the notion of a community of interest in international watercourses “is the legal principle most appropriate for a fully developed legal community,” Bonaya Godana concedes that “the international community is far from being fully developed” and that “the idea has yet to develop into a principle of international law governing international water relations in the absence of treaties.”²⁶ Ibrahim Kaya concludes that, “[d]espite the dramatic increase in the scale of international cooperation regarding international watercourses...[t]here is not enough support for the theory of common management from customary international law.”²⁷ Lucius Caflisch considers the merits of “denationalizing” management of international watercourses but concludes that, “while it is clear that a condominium could be established by treaty, one cannot maintain that, by virtue of the rules of customary law, the whole of an international watercourse, including

its resources, forms a condominium.”²⁸ Looking at international agreements creating water management institutions, Dombrowsky notes that, “[f]rom a legal perspective, affected parties should be able to participate as appropriate, but a basin-approach is no strict requirement.”²⁹

Common management institutions

Common management regimes must, therefore, be voluntary arrangements, established by treaty between basin states. General international law will not impose a positive obligation compelling basin states to create such institutions. According to Cecil Olmstead, “international law limits only the state’s freedom of unilateral action but does not require joint utilization.”³⁰ The commentary to Article 64 of the International Law Association’s (ILA) 2004 Berlin Rules on Water Resources, which requires, “[w]hen necessary,” the establishment of “a basin-wide or joint agency or commission with authority to undertake the integrated management of waters of an international drainage basin,” nevertheless concedes that “customary international law does not specifically require [that] such institutions be established nor does it provide specific details for such mechanisms.”

Among the studies on international basin management organizations,³¹ one detailed review and comparative analysis of a representative selection of 12 bodies identify a total of 18 different categories of water uses or “issue areas” with which such organizations might be concerned. Their organizational structures vary depending, inter alia, on the range of issue areas, the powers and mandate of the institution, and the degree of integration and cooperation envisaged by the riparian states. Nevertheless, all these institutions appear, formally or effectively, to employ decision-making mechanisms requiring unanimous vote or consensus.³²

Though common management arrangements must be entered into by states voluntarily, the accumulated practice of states in participating in such arrangements might serve to bolster the normative status, in customary or general international law, of the various rules comprising the general duty to cooperate. This obligation is widely understood as consisting of a number of specific procedural obligations, such as the duty to notify, the duty to consult and/or negotiate in good faith, and the ongoing exchange of water-related information.³³ State practice in relation to common management

might inform the normative content of such rules by demonstrating that bona fide participation in common management institutions contributes to satisfaction of the obligations inherent therein.

The 1992 UNECE Water Convention³⁴ requires parties to “enter into bilateral or multilateral agreements or other arrangements” which “shall provide for the establishment of joint bodies” having a wide range of environmental tasks. Furthermore, common management must become an ever greater imperative as recognition of the physical unity of the drainage basin gains ground in international law through the ongoing elaboration of the “ecosystem approach” to the management of international watercourses.³⁵ Discussing “the need for eco-management” of international watercourses, Kaya concludes that “it seems necessary to establish a treaty regime with an active and continuing revisional element which can only be achieved by setting up a joint water institution with adequate powers and means in each basin.”³⁶

The 1997 UN Watercourses Convention expressly encourages watercourse states to enter into common management arrangements. The principle of “equitable participation” set out under Article 5(2) suggests the nature and scope of the role potentially to be played by joint mechanisms. The ILC commentary explains that Article 5(2) involves “not only the right to utilize an international watercourse, but also the duty to cooperate actively with other watercourse States in the protection and development of the watercourse”³⁷ and it is persuasively argued that the provision “not only requires co-ordination but also more significant forms of co-operation.”³⁸ These authors contend that a state’s failure to participate actively in the procedural requirements inherent in equitable participation “will make it difficult for that State to claim that its planned or actual use is...equitable under Article 5 of the Convention.” Therefore, any invitation to participate in a regional river basin organization ought to be considered carefully by riparian states. Regarding the general obligation of watercourse states under Article 8 to cooperate, Article 8(2) expressly proposes the use of joint mechanisms and commissions. This was not included in the 1994 ILC Draft Articles but inserted later, perhaps signaling growing acceptance of the common management approach and growing awareness of its merits.

Considering the kinds of information listed under Article 9(1), it is apparent that regular and effective exchange of such information, facilitated

by common management institutions, would play a significant role in determining an equitable regime for the use or development of an international watercourse elaborated under Articles 5 and 6 of the convention.

Common management institutions have an obvious role regarding the measures expected of watercourse states under Article 21(3)(a) in relation to the “prevention, reduction and control of pollution” including, among other things, “[s]etting joint water quality objectives and criteria.” Furthermore, Article 24(1) provides that “[w]atercourse States shall, at the request of any of them, enter into consultations concerning the management of an international watercourse, *which may include the establishment of a joint management mechanism*,” thereby suggesting the efficacy of using permanent common management institutions, especially for the purpose of developing the watercourse in an environmentally sustainable manner. Finally, at Article 33(1) the UN Watercourses Convention envisages a role for common management mechanisms in the settlement of disputes, providing that parties may “make use, as appropriate, of any joint watercourse institution that may have been established by them.”

Commentators agree that “the notion that all riparian states have a community of interests in an international watercourse reinforces the doctrine of limited territorial sovereignty [and thus, equitable utilization], rather than in any way contradicting that doctrine” and put forward advantages of such an approach.³⁹ For example, it “expresses more accurately the normative consequences of the physical fact that a watercourse is, after all, a unity” and that “it implies collective, or joint action” and “evokes shared governance.” Some express concern that, in the absence of common management arrangements, the traditional substantive rules of international watercourses law may be of limited avail in handling problems of water scarcity and quality.⁴⁰ Atilla Tanzi and Maurizio Arcari note that “the concept of optimal utilization of international watercourses to be pursued by riparian States *through the integrated management and development thereof* has gained widespread acceptance in legal literature and in the international governmental fora.”⁴¹ Acknowledging the increasing significance of environmental values, they also note that “realisation of sustainable use depends on the same co-operation and participation among riparian States in the joint and integrated management of the shared watercourse.” They conclude that procedural requirements

inherent to the obligation of states to cooperate can only be facilitated by means of established institutional machinery, where “procedural co-operation among riparians is carried out on a permanent, rather than on an occasional, basis.”

The effectiveness of common management machinery for the purpose of environmental management of international watercourses has long been obvious. Konrad von Moltke noted in 1988 that “it is inherent in the nature of the issues. Among the oldest institutions for the management of an environmental resource are those dealing with the allocation and use of water.”⁴² He cites early examples, including the Commission of the River Rhine established at the 1815 Congress of Vienna (but only made operational by the 1868 Treaty of Mannheim), the Danube Commission established in 1878, and the International Boundary and Water Commission established by the United States and Mexico in 1889. He cites a 1997 report by the Organisation for Economic Co-operation and Development (OECD) in which “a marked strengthening of international cooperation [through commissions] has been noted for solving problems of transfrontier pollution in international water basins,” with such commissions possessing scientific and technical expertise allowing them to provide impartial specialist advice.

International river commissions and environmental protection

Few would disagree that ecosystems protection enjoys increasing significance in international water law,⁴³ as reflected in the practice of many international commissions established to facilitate interstate cooperation in river basin planning and utilization. Such bodies vary greatly in terms of their composition and function, but almost all possess the requisite technical skills, resources, and mandate to promote environmental protection. The 1994 Meuse and Scheldt Agreements, for example, created an international commission to facilitate cooperation between the parties for the purpose of the environmental protection of the rivers.⁴⁴

Similarly, the 1994 Danube Convention establishes an international commission to cooperate in order to

at least maintain and improve the current environmental and water quality conditions of the Danube River and of the waters in its

catchment area and to prevent and reduce as far as possible adverse impacts and changes occurring or likely to be caused.⁴⁵

The Danube Commission has more specific functions, including, where appropriate, the establishment of emission limits applicable to individual industrial sectors, the prevention of the release of hazardous substances, and the definition of water quality objectives.⁴⁶ The International Joint Commission (IJC) between the United States and Canada is one of the longest established such bodies and has developed a comprehensive body of environmental practice regarding the use of shared freshwaters.⁴⁷ The IJC was established by the 1909 Boundary Waters Treaty to issue approvals regarding the use, obstruction, or diversion of shared boundary waters and investigate specific issues where requested.⁴⁸ The IJC has issued numerous landmark reports on environmental matters.⁴⁹

It is clear that measures intended to realize equitable and reasonable utilization of shared water resources, which is by definition legally indeterminate, can be greatly assisted by expert interstate institutional machinery. Discussing such “sophist principles” of international law, Thomas Franck observes that they “usually require an effective, credible, institutionalized, and legitimate interpreter of the rule’s meaning in various instances.”⁵⁰ This is particularly true of the environmental aspects of the principle, where the increasingly common practice of establishing international joint commissions creates technically competent intergovernmental bodies to identify and address environmental concerns, along with formal procedural mechanisms for their communication. Such bodies inevitably bring environmental considerations to the fore. The advent of the “eco-system approach,” discussed next, further encourages the establishment of permanent joint technical commissions, with far-reaching implications for international watercourse utilization and cooperation.

In recent years, many international instruments concerning international watercourses have moved beyond the traditional obligations to utilize an international watercourse in an equitable and reasonable manner and to prevent significant transboundary harm.⁵¹ They increasingly focus upon “purely” environmental obligations, including the requirement of a more ecosystem-oriented approach to such protection.⁵² This tendency has been greatly advanced by the 1997 UN Watercourses Convention. Reflecting

emerging scientific understanding, it expressly requires state parties to act to protect and preserve international watercourse ecosystems.⁵³

Though it is beyond the scope of this chapter to elaborate fully upon the “elusive, unstable and contested”⁵⁴ normative implications of the ecosystem approach as applied in international water law, some consensus is emerging regarding certain of its core elements.⁵⁵ These create such challenges for interstate procedural cooperation that institutional frameworks become all the more necessary. In order to better understand the nature of the procedural challenges, it is necessary to examine four of these elements in turn: environmental flows, ecosystem services, adaptive management, benefit-sharing arrangements.

Environmental flows

Central to an ecosystem approach to the protection of an international watercourse is the establishment of a regime of environmental flows, which “is increasingly accepted as essential for addressing issues of river health, sustainable development, and the sharing of benefits between users.”⁵⁶ The environmental flow concept is defined by the International Union for Conservation of Nature (IUCN) as “the water regime provided within a river, wetland or coastal zone to maintain ecosystems and their benefits where there are competing uses and where flows are regulated.” This provides “a flow regime that is adequate in terms of quantity, quality and timing for sustaining the health of the rivers and river systems,” having regard to social and economic factors.⁵⁷

While the issue of environmental flows is seldom addressed directly in international water instruments, its legal character must be understood as “part of a broader notion of taking an ecosystem approach,” where “the relevant international instruments are not only those directly dealing with water resources, but also those that have a primary focus on the protection of nature and ecosystems.”⁵⁸ A requirement to maintain minimum environmental flows, derived from established principles of international environmental law, received ground-breaking judicial support from a Permanent Court of Arbitration tribunal in the *Kishenganga Arbitration*, which concluded that “hydro-electric projects...must be planned, built and operated with environmental sustainability [and minimum environmental

flow in particular] in mind.”⁵⁹ The ICJ appears recently to have indirectly recognized the legal significance of maintaining flows for ecological purposes.⁶⁰

Studies support the emergence of a related legal obligation, noting “[t]he need to provide environmental flows in order to conserve ecological integrity of water basins is becoming more and more important.”⁶¹ As the legal nature of this obligation becomes clearer, through the practice of international courts, water convention secretariats,⁶² and national regulators,⁶³ the science is similarly advancing for “the quantification of the linkages between hydrological processes and components and various ecological variables.”⁶⁴ Beyond water conventions, multilateral environmental convention secretariats,⁶⁵ civil society organizations,⁶⁶ and academic researchers⁶⁷ have produced technical guidance on implementing environmental flow requirements. Commentators have identified certain “guiding elements” for environmental flow methodologies.⁶⁸

Ecosystem services

The overarching objective of an ecosystem approach, and thus of any regime for maintaining environmental flows, centers around the ecosystem services concept, which aims to promote understanding of the nature and value of socially beneficial services provided by natural ecosystems and to provide a methodology for their valuation and consideration within legal decision-making processes. The 2005 Millennium Ecosystem Assessment provides an essential typology of ecosystem services,⁶⁹ which can assist in transboundary water cooperation by providing watercourse states with a common understanding of the costs and benefits for each state of measures for the utilization and protection of shared watercourse ecosystems.

In this way, the ecosystem services concept can improve the prospects for agreement over benefit-sharing arrangements amongst watercourse states, potentially leading to both optimized utilization and more effective protection of shared watercourse ecosystems.⁷⁰ Accepted methodologies for valuing ecosystem services might also facilitate consideration of state responsibility for transboundary ecological harm.⁷¹ In either role, the ecosystem approach can function to facilitate the avoidance and resolution of interstate water disputes.

Despite a “lack of attention to ecosystem services within the context of transboundary freshwater ecosystems and law,” such methodologies are increasingly commonly employed in the practice of transboundary water cooperation.⁷² The Mekong River Commission, for example, has developed an approach to ecosystem management that involves “an assessment of the ecosystem components and/or an assessment of the ecosystem services that are derived from the interaction of those components in support of human well-being.”⁷³

Guidance on water resources management for the maintenance of ecosystem services has also been developed under the auspices of the Ramsar Convention⁷⁴ and the Convention on Biological Diversity (CBD).⁷⁵ The CBD “Strategic Plan for Biodiversity 2011–2020” confirms that a key purpose of biodiversity conservation is that of safeguarding ecosystem services essential for human well-being, and includes a number of targets relating to the ecosystem services provided by inland waters.⁷⁶ An emerging legal obligation to maintain ecosystem services is supported by recent statements of the UN special rapporteur on human rights and the environment framing the issue as a human right of access to ecosystem services.⁷⁷

Discussion of ecosystem services often includes consideration of the role of payment for ecosystem services (PES) and, though this concept is not extensively developed in international legal practice,⁷⁸ key actors in the field of transboundary water management provide some guidance on how such payment systems might work.⁷⁹ PES can inform interstate engagement over transboundary waters because “[t]his linkage between the upstream provision of services...and the downstream utilisation of services thus provided (often water-related) has now become widely recognised and can be seen to operate on very large, often transboundary scales.”⁸⁰ PES arrangements may be utilized as one element of integrated benefit-sharing arrangements, involving some sort of redistribution or compensation, to provide a potentially useful means of rebalancing competing state interests in a shared watercourse.⁸¹

Adaptive management

Adaptive management strategies that are “iterative and flexible, responsive to the constantly changing conditions of both complex ecosystem processes and available scientific knowledge,”⁸² are increasingly regarded as central to effective application of an ecosystem approach.⁸³ This is because it must cope with uncertainty regarding the functioning of complex dynamic socio-ecological systems, the value of ecosystems and their services, and the potential effects of policies and projects on the functioning of ecosystems.⁸⁴ Such uncertainty will be exacerbated, and adaptive strategies ever more necessary, due to the threat of climate variability.⁸⁵ Adaptive management seeks to ensure the “resilience” of an ecosystem⁸⁶ by adopting a systematic approach for adapting and improving natural resources management by learning from previous management interventions.⁸⁷

However, incorporation of adaptive measures into conventional legal frameworks is problematic, largely due to traditional prioritization of the stability of legal regimes over their flexibility, especially where such regimes facilitate investment in large-scale water infrastructure or avoid or resolve water resource disputes. Traditional legal frameworks for natural resources management are “based on historic conditions and linear patterns of change,” whereas “[t]he complex and uncertain dynamics of interconnected ecosystems and social systems...require that resource regulators and managers have a certain amount of discretion.”⁸⁸ It is clear, therefore, that robust joint institutions, enjoying adequate mandates and resources, are needed to implement adaptive management.⁸⁹

The procedural rules of international water law are most developed in respect of planned measures, where conventional instruments provide for interstate notification and, where necessary, for structured consultation and negotiation.⁹⁰ Understandably, the outcomes envisaged for procedural engagement regarding large-scale water utilization or infrastructure projects emphasize legal stability above all else. This is evident from judicial focus on the role in such engagement of environmental impact assessment (EIA), as a one-time, front-loaded process which assumes the possibility of predicting and mitigating adverse impacts in advance of commencement of a project.⁹¹ Legal arrangements reflecting an adaptive approach would accommodate uncertainty through flexible decision-making procedures that

permit “incremental and gradual changes that transition experimentally to new standards or arrangements, while monitoring, assessing and adjusting these changes and their effects.”⁹² Therefore, legal frameworks for transboundary cooperation must evolve to create suitably empowered and capacitated institutions such as river basin organizations (RBOs), employing highly sophisticated procedures for interstate engagement over shared water resources.

Though this will present significant challenges for the procedural and institutional arrangements currently prevailing, the requirement for adaptive governance is not without legal authority. Adaptive management is linked to the precautionary principle, as both seek to accommodate scientific uncertainty⁹³ and the former can be a means of implementing the latter,⁹⁴ which enjoys extensive support as customary law.⁹⁵ The ecosystem approach may already enjoy autonomous legal authority, at least in the field of international watercourses.⁹⁶ Consistent ICJ endorsement of a requirement for continuing environmental assessment in transboundary watercourse cases might amount to judicial recognition of the role of adaptive ecosystem-based management in certain situations of scientific uncertainty.⁹⁷

Though Rio Principle 10 proclaims a general principle of public participation,⁹⁸ which applies equally to the management of shared transboundary water resources,⁹⁹ and might reflect established customary international law,¹⁰⁰ few international water agreements expressly require the involvement of stakeholders or the public. In this respect, international water law appears out of step with developments in general international law. The focus of water agreements upon interstate engagement to the exclusion of public participation is epitomized by Part III of the UN Watercourses Convention. Similarly, Article 9 only provides for the regular exchange of data and information at the interstate level.

Though “arguably leading the charge on producing instruments which strengthen joint institutions and stakeholder participation,”¹⁰¹ the UNECE Water Convention (Article 16) only requires state parties to make information relating to the management of transboundary freshwater resources available to the public and says little about public participation. Some European basin agreements inspired by the UNECE Water Convention have tended to take a similarly restrictive approach as regards

public or stakeholder participation,¹⁰² whilst others have sought to be more inclusive.¹⁰³ There also exist a limited number of basin agreements from other regions, most notably in Africa, which expressly stipulate a requirement of public consultation.¹⁰⁴

However, where permanent institutional structures for transboundary water management are in place, many assist in facilitating structured stakeholder engagement, as “practice shows that effective institutional management has a degree of flexibility that allows for public input.”¹⁰⁵ Susanne Schmeier notes that “RBOs do not act in isolation in their respective river and lake basins,” but instead engage a range of external actors, including “NGOs, civil society groups, knowledge groups and research networks...as well as other regional institutions either directly dealing with water resources issues...or implicitly influencing river basin governance through their regional principles, norms, rules and activities.”¹⁰⁶ This is important for effective ecosystems protection, as “effective governance requires a bottom-up approach, and one that often sits more easily with non-governmental organisations, working at the interface between state and society.”¹⁰⁷

Despite a dearth of treaty practice expressly providing for public participation in respect of shared international waters, many treaty regimes either require¹⁰⁸ or promote¹⁰⁹ reliance upon frameworks for EIA of planned projects in order to engage the public. The ICJ describes the obligation to conduct EIA in respect of a project likely to impact an international watercourse as a “requirement under general international law,”¹¹⁰ thereby suggesting that its stipulation under an applicable treaty may not be required. While the court found that there is “no legal obligation to consult the affected populations arises for the Parties from the instruments invoked,”¹¹¹ it suggested that states should rely on their domestic EIA regimes in giving effect to their international obligation to conduct EIA, which would universally include public or stakeholder participation as a central element.¹¹² Of 12 principles identified by CBD COP 5 to guide implementation of the ecosystem approach, Principle 12 recommends the involvement of all sectors of society, while Principle 11 exhorts decision-makers to make use of all forms of information, including indigenous knowledge.¹¹³

If effective public or stakeholder participation is crucial for protection and preservation of watercourse ecosystems, and thus for achieving optimal and sustainable utilization of international watercourses, then the prevailing paradigm of procedural engagement in international water law, with its almost exclusive focus on interstate communication, is not fit for the purpose. While participatory rights are developing rapidly within the related fields of human rights law¹¹⁴ and environmental law,¹¹⁵ it is clear that implementation of the ecosystem approach will demand significant progressive advances in the procedural rules employed in international water law, and the corresponding development of the institutional structures required.

Benefit-sharing arrangements

Greater focus on ecosystems services, and related obligations regarding environmental flows, raises the prospect of extensive reliance upon benefit-sharing arrangements to optimize beneficial use of ever-scarcer water resources whilst maintaining ecosystem integrity.¹¹⁶ Such arrangements would typically involve some form of payments for benefits, or for costs associated with enhanced stewardship of a transboundary watercourse, normally undertaken by an upstream state.¹¹⁷ The ecosystem services concept provides a methodology for economic and social valuation of the benefits of watercourse ecosystems, including non-marketable benefits, and may thereby permit their integration into benefit-sharing arrangements.

The PES paradigm may play a key facilitating role where the benefit to the optimized, and in lieu of which compensation would be owed to another, is that of ecological integrity and/or the ecosystem services accruing from a functioning transboundary riverine ecosystem. Such methodologies for identification and valuation of benefits provided by international watercourse ecosystems, where widely accepted, can help to provide a common point of departure for negotiations over benefit-sharing.¹¹⁸

However, the difficult task of crafting complex benefit-sharing arrangements, as well as their effective implementation and management over time, will require a permanent regime of intense technical interstate engagement, which is beyond the capacity of currently established procedural rules and institutional structures. Examination of the

arrangements between the United States and Canada for the groundbreaking benefit-sharing agreement concerning the Colombia River¹¹⁹ suggests that, “due to the novelty of benefit-sharing as a cooperative paradigm and the inherent complexity of the considerations and calculations involved, a sophisticated legal and institutional framework for cooperation would be required for formulating related proposals.”¹²⁰

Comparing the relative success of different benefit-sharing regimes, commentators blame failure upon a lack of effective binding procedural requirements and competent institutional arrangements for water cooperation.¹²¹ Case-studies of benefit-sharing arrangements around the world emphasize the importance of structured engagement with all stakeholders and of the related institutionalization of transboundary water cooperation.¹²² Therefore, benefit-sharing arrangements focused on the preservation of watercourse ecosystems and maintenance of ecosystem services will require capacitated, permanent institutions capable of facilitating intense procedural engagement between watercourse states.

Conclusion

Although states cannot be bound to participate in institutional machinery such as RBOs for transboundary water cooperation, governments increasingly do so voluntarily. Such participation assists in establishing compliance with their legal obligation to cooperate in the management of the shared waters. Institutional arrangements can play a particularly significant role in the environmental protection of international watercourses. Though such bodies vary greatly in terms of their functions and organizational structure, most enjoy an express environmental mandate under their founding instruments, as well as a technically competent and resourced permanent staff.

An ecosystem approach to the management of international watercourses broadens the range of functions that will inevitably fall to such institutions, thereby increasing states’ reliance on joint commissions with trusted technical expertise and established cooperative procedures. It involves immensely complex scientific determinations about the likelihood and seriousness of possible ecological impacts, and an expectation that states will protect watercourse ecosystems while equitably balancing ecosystem

objectives against other factors relevant to equitable and reasonable utilization. Because of this, the ecosystem approach necessarily requires robust, intense, and adaptable interstate dialogue. Therefore, the ecosystem approach emphasizes the benefits offered by joint commissions, without which it seems unlikely that it could ever be effectively implemented.

Notes

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- 14 Ibid., 165.
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- 24 See (1993) 32 ILM 1147 (emphasis added).
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2 Water diplomacy and collaborative governance in the Great Lakes Basin

Victoria Pebbles

The North American Great Lakes shared by the United States and Canada contain 20 percent of the earth's fresh surface water.¹ These shared waters include Lakes Superior, Michigan, Huron, Erie, and Ontario as well as the channels that connect these lakes. The entire Great Lakes Basin—the watershed—covers an area of 76,405,000 hectares. About a third of that, 24,346,000 hectares, is water, and the other two thirds (approximately 52,059,000 hectares) is the surrounding land that drains into those waters.²

More than 41 million people rely on the Great Lakes for their drinking water.³ Great Lakes water is also used for industrial operations, agriculture, power generation, commercial shipping, recreational boating, and tourism. In addition, many US-based Native American tribes and Canadian First Nations use the Great Lakes and their tributaries.⁴ See [Figure 2.1](#) for a map of the basin.



Figure 2.1 Great Lakes Basin.

The North American Great Lakes face challenges experienced by other large aquatic ecosystems: pollution from urban and agricultural sources, emerging contaminants, decaying and inadequate water infrastructure, invasive species and attendant food web disruptions, and habitat destruction—all of which are exacerbated by climate change. Leading Great Lakes institutions concerned with water have relied on collaborative governance to engage in water diplomacy. This chapter examines four Great Lakes institutions and their use of collaborative governance to effectuate water diplomacy.

Institutional arrangements and water diplomacy

Two nations, eight US states, two Canadian provinces, hundreds of tribes and First Nations, and thousands of local units of government have some mandate or authority to manage portions of the shared waters and surrounding watershed—the most water-rich and most institutionally complex portion of the shared United States-Canada boundary across North America.⁵

Institutional arrangements for transboundary cooperation in the Great Lakes Basin

Four transboundary water management institutions—the International Joint Commission (IJC), the Great Lakes Commission (GLC), the Great Lakes Fishery Commission (GLFC), and the Conference of Great Lakes and St. Lawrence Governors and Premiers (the Conference)—operate as boundary organizations (institutions that straddle the shifting divide between science and politics).⁶ This chapter examines how water diplomacy occurs in the binational Great Lakes Basin and what role the different institutional arrangements play in this context.

Analysis of these institutions will draw upon the integrative framework for collaborative governance outlined in Kirk Emerson and Tina Nabatchi's *Collaborative Governance Regimes*, and explore how each entity engages in what can be considered “water diplomacy.”⁷ The Emerson-Nabatchi Collaborative Governance Regime (CGR) framework identifies three driving dynamics for CGRs: principled engagement, shared motivation, and capacity for joint action. The framework offers a deliberate lens through which to examine the *collaborative* elements of transboundary governance. A fundamental characteristic of CGRs is that they seek “to influence the surrounding set of conditions that create, aggravate, or sustain a problem.”⁸ CGRs are further defined as having: (1) a sponsor, initiator, or lead convener; (2) a collective purpose; (3) a particular geographic scale; (4) processes for participant selection or recruitment; and, (5) some level of consensus-based decision-making authority.⁹

Water diplomacy defined

Diplomacy is commonly understood as that part of international relations that involves conducting negotiations, forming alliances, discussing treaties, and reaching agreements. Early thought-leaders on the concept of water diplomacy observe that water diplomacy differs from “water cooperation” or “transboundary water management” due to the presence of higher level political/government engagement and that it occurs within the broader desired outcomes for enhanced peace and stability. In this view, cooperative or transboundary water management can be a means to achieve water diplomacy or vice versa.¹⁰ This definition is supported here, which also aligns with what has been labeled as “track 1.5 diplomacy” where official (government) and nongovernmental actors cooperate in conflict resolution, or conflict prevention.¹¹

Water diplomacy is defined in this chapter as “activities that reduce uncertainty, mitigate disagreement and prevent conflicts, build trust, and promote stability and cooperation with respect to water resources.” This more nuanced and fluid definition acknowledges that while peace may be implicit and omnipresent, water diplomacy does not require and is not defined by conflict, nor does it have to explicitly state peace as a goal. Rather, water diplomacy involves a series of actions that occur to reduce uncertainty, instability, and disagreement and that allow for more systematic, predictable, and agreed approaches and processes to carry out water management activities.

Context of water diplomacy in the Great Lakes Basin

The North American Great Lakes Basin is part of a region marked by historic peace and stability, yet persistent water resource challenges give rise to recurring uncertainty, instability, and disagreement. In the early 1900s, water-related tensions between the United States and Canada arose from a recognition that most of the boundary between the two countries was demarcated by waterways. In the 1950s, the opening of the St. Lawrence Seaway to the Atlantic Ocean and the collapse of the Great Lakes fishery were key areas of concern—and potential conflict.

Severely degraded water quality in the 1960s marked by infamous events such as the Cuyahoga River catching on fire and widespread eutrophication

in Lake Erie prompted binational negotiations that led to new binational agreements and institutions in the early 1970s. Repeated attempts (some successful) in the 1990s and 2000s to divert or transfer large amounts of water from one part of the Great Lakes to another or out of the Great Lakes Basin altogether are the most recent issues requiring diplomatic interventions. These areas of tension, and the diplomatic efforts in response to those tensions, align with track 1.5 diplomacy. In the Great Lakes context, water diplomacy occurs to enable better management of water quantity as well as water quality that supports related ecosystem services.

The majority of the rest of the chapter discusses the four water governance regimes in the Great Lakes Basin mentioned earlier, focusing on drivers and dynamics. The CGR integrative framework identifies four drivers: uncertainty, interdependence, consequential incentives, and initiating leadership (see [Figure 2.2](#)). The framework further characterizes collaboration dynamics to include principled engagement, shared motivation, and capacity for joint action (see [Figure 2.3](#)).¹²



Figure 2.2 CGR drivers.

Source: Victoria Pebbles, 2019; adapted from Emerson and Nibatchi, *Collaborative Governance Regimes*.



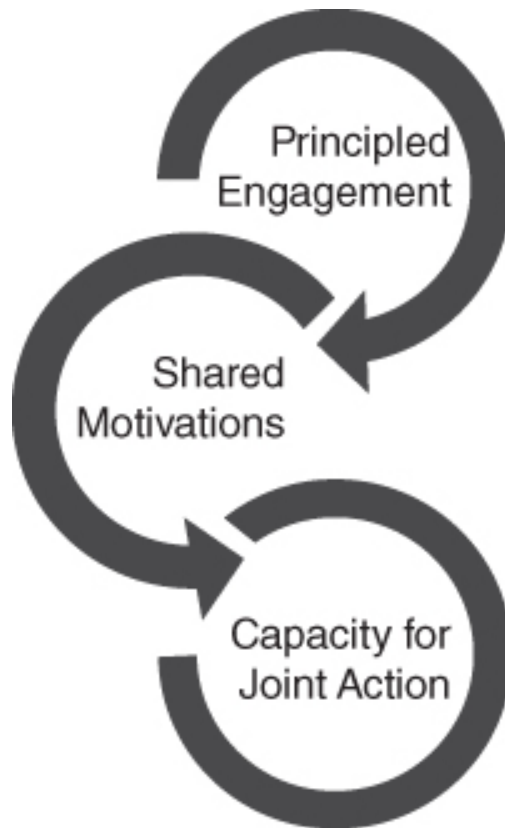


Figure 2.3 CGR dynamics.

Source: Victoria Pebbles, 2019; adapted Emerson and Nabatchi, *Collaborative Governance Regimes*.

International Joint Commission

The following section takes the analysis further and focuses in more detail at the IJC.

Drivers

The impetus for developing the Boundary Waters Treaty and creating the IJC in 1909 was straightforward—each country recognized that they are affected by the other’s actions in lake and river systems along the US-Canadian border. The treaty gave the IJC a clear water diplomacy mandate: to prevent and settle disputes over the boundary waters. The IJC also has an important role of approving and managing structures that affect water levels and flows. The organization’s role was greatly expanded with the signing of

the Great Lakes Water Quality Agreement (GLWQA)—a binational executive agreement—in 1972 (and amended several times since) which gave the IJC specific roles to oversee implementation of the GLWQA and to advise the US and Canadian governments in meeting the terms of the agreement. The IJC is a binational body comprised of and governed by six commissioners: three appointed by the president of the United States and three appointed by the prime minister of Canada. The secretariat, provided for in the agreement, consists of 13 people in the IJC's office in Windsor, Ontario. Additionally, the IJC has offices in Ottawa and Washington, DC, each with staff that provide secretariat support for the IJC's broader mandates under the Boundary Waters Treaty and who also assist with GLWQA duties as needed.

Remarkably, it was not an actual conflict, but the possibility of a conflict that led to the treaty and agreement. The establishment of the IJC arose from concerns about how one country's actions along the boundary water might impact the other, with foresight concerning potential cross-border impacts of water infrastructure—hence the creation of the IJC's Boards of Control for regulating water levels and flows. In the 1960s and 1970s, wicked problems related to water quality were the key areas of uncertainty—and potential conflict—that led to the GLWQA in 1972. This was also the year the United States passed a national Clean Water Act. (The parallel national Canada Water Act was passed in 1985.)

Interdependence of the two countries was explicitly recognized in both the Boundary Waters Treaty and the GLWQA and consequential incentives were embedded in both agreements. While the IJC's authorities under the treaty are undoubtedly a clear water diplomacy mandate, the organization's role under the GLWQA as watchdog and advisor to the governments, with no direct executive powers, established the requisite leadership to absorb much of the transactional costs of collaboration and facilitate collaborative problem-solving. It also offers a more interesting case study of the IJC as a CGR.

Dynamics

The Clean Water Act in the United States and the Canada Water Act are the enforceable policies used by each country to implement the GLWQA. Collaborative governance supporting water diplomacy comes into play in

how the IJC effectuates its mandate under the agreement—notably in the collaborative processes used by the various IJC boards in their oversight and advisory roles.

While decisions at the highest level are made by the appointed IJC government officials from the United States and Canada, virtually all the technical work, and the majority of the planning and practical thinking about how to address issues of uncertainty or instability, is done through the IJC's various boards and committees, many of which bring governmental and nongovernmental actors to the table to tackle specific issues. These boards and committees commonly engage in iterative multi-stakeholder processes to address a common objective (implementing a directive), which evolves into mutual understanding, trust, and ultimately the development of a shared motivation that is both individual and collective. These shared motivations take the form of reports and recommendations to the parties (the US and Canadian governments).

By way of example, the IJC's Water Quality Board is charged with assisting the organization in its assessment of the US and Canadian governments' progress in implementing the GLWQA, identifying emerging issues, and recommending approaches. In the 2012 renegotiation of the agreement, the makeup of this board was expanded to include greater nonstate participation: it includes 28 members from diverse sectors including federal, state, and provincial governments, First Nations, tribes, Métis, nongovernmental organizations, municipalities, agriculture, business, and the public.¹³ The multi-stakeholder participation enables joint action that embodies collaborative governance—that is, “to generate outcomes that the cooperating parties could not accomplish separately.”¹⁴ Reports, studies, and the recommended actions called for under the GLWQA are developed with the potential implementing parties at the table, which increases the potential capacity for joint action.

The 2012 renegotiation of the GLWQA also formalized a new binational partnership known as the Great Lakes Executive Committee. This committee is co-chaired by representatives of the United States and Canada but also includes representation from states, provinces, tribes and First Nations, municipal governments, watershed management agencies, and other public agencies. The committee coordinates implementation of GLWQA, primarily through subcommittees that address specific priorities established through Annexes to the agreement related to legacy

contamination, chemicals, nutrients, discharges from vessels, invasive species, habitat, groundwater, and climate change. The committee also reviews and reports on progress every three years. Since 2012, the Annex subcommittees have become important forums for collaborative governance. While a significant step forward by focusing on key challenges facing the lakes, leadership for the Great Lakes Executive Committee's subcommittees varies considerably. Those with stronger leadership are able to engage necessary stakeholders more effectively to develop more meaningful products that influence management and governance.

Great Lakes Commission

The GLC is an interstate agency comprised of the eight Great Lakes States—Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin—established by the Great Lakes Basin Compact (Basin Compact) of 1955.¹⁵ The Canadian provinces of Quebec and Ontario participate in the GLC as Associate Members—a status that has evolved over more than six decades. Approximately 30 staff provide secretariat support to the GLC at their offices in Ann Arbor, Michigan.

Drivers

A variety of conditions drove the Great Lakes States to bind themselves together via the Basin Compact. Key among them was the opening of the St. Lawrence Seaway connecting the Great Lakes to the Atlantic Ocean, thereby augmenting the region's role in commercial navigation and international trade. By the early 1950s, the Welland Canal—the first water infrastructure that allowed safe passage between Lake Erie and Lake Ontario, bypassing Niagara Falls—was proving insufficient for growing commercial navigation needs. Mounting desires on the Canadian side to have a waterway that could accommodate larger vessels culminated in a threat by the Canadian government to build a new seaway entirely within Canada.¹⁶ This ultimately led to an agreement between the two countries to build the binational St. Lawrence Seaway in 1954—a year before the Basin Compact came into effect.

Opening of the Seaway—with its attendant promises of increased maritime commerce along with uncertainties and fears that it might also

inadvertently pit states against states, or states against provinces to compete with one another—was a prime impetus for the Basin Compact. Negotiations leading up to agreement about the Seaway as a binational infrastructure project took the better part of half a century. Although there were tensions during parts of the negotiation period, once the two countries agreed, the Seaway construction period was a swift five years.¹⁷ Interestingly, invasive species coming into the Great Lakes from the ballast of overseas vessels was not formally noted among the fears associated with the Seaway but has become one of the most significant wicked water diplomacy challenges of the early twenty-first century.

While the worries about interstate competition or heavy-handed federal management of the Seaway on either side of the border might have been the main drivers, the architects of the Basin Compact envisioned a much broader array of potential areas of conflict that could benefit from a subnational institutional framework at the state-provincial level. An interstate compact affirmed that the states would have a say in the future of how the Great Lakes Basin was managed. Indeed, the Basin Compact conveyed broad powers and duties to the Great Lakes Commission to advise and convene the states to manage all issues related to Great Lakes water. Article I specifies the purposes of the compact: to promote integrated and comprehensive development, use, and conservation of resources, with the aim of deriving the maximum benefits for populations while maintaining a balance between users.

The acknowledgment of interdependency was explicit in the selected policy mechanism: an interstate compact.¹⁸ Such agreements require two levels of institutional approval: signing of the compact—the interstate agreement—itsself and subsequent passage of enabling legislation by each entity that is party to the compact: in this case the Great Lakes States. As with the IJC, the creation of an interstate agency was the “initiating leadership” driver that established the GLC as the forum for collaborative problem-solving. Consequential incentives are explicit in the Basin Compact, which ascribes a broad suite of water resource powers and duties ranging from collecting and reporting data to making recommendations, including recommending uniform laws and regulations on a variety of issues, including navigation, public works, shoreline erosion, flooding, fisheries management, and water diversions (see Articles VI and VII). To further cement the incentives proffered in the compact—that they would

have consequence—Article VII specifies that each of the party “is obligated to consider the Great Lakes Commission’s recommendations.”

While an interstate compact is a US legal construct, the authors of the Basin Compact clearly communicated their intent for the newly-created collaborative governance regime to be binational.¹⁹ However, when Congress granted its consent to the compact in 1968 (Public Law 90–419)—13 years after it was signed by the states—it softened the language relative to the binational nature of the Great Lakes Commission.²⁰ Between 1968 and 1999, the provinces participated formally in GLC activities as observers: they were not formally engaged in GLC strategic planning or other activities. Ontario and Quebec’s role on the GLC was ultimately formalized in 1999 via a “Declaration of Partnership,” which elevated their status to “Associate Members” and enabled the provinces to appoint representatives to the Great Lakes Commission “for the purpose of participating in meetings and activities as provided for in the Great Lakes Basin Compact.”²¹ The Declaration of Partnership can be safely described as a diplomatic agreement between the leadership of the US states and Canadian provinces.

Somewhat paradoxically, the GLC’s nonregulatory agency status has enabled it to evolve into an effective boundary organization and CGR that engages in water diplomacy. Its broad powers and duties enable the GLC to convene multiple interests, providing necessary leadership for developing shared motivations and delivering outcomes to address a wide number of wicked problems facing the Great Lakes. The specific issues that require water diplomacy change over time. Habitat protection, water quality, and aquatic invasive species are the among key issues where the GLC currently provides a leading collaborative governance and water diplomacy role. The conference also provides a supportive role to other institutions with issue-based mandates (e.g., GLFC for fishery issues, and the Compact Council and Regional Body for water withdrawals and diversions).

Collaborative dynamics practiced by the GLC illustrate how it leverages its broad duties and authorities to empower voluntary actions. These collaborative dynamics occur at two levels: formal collaboration among the commissioners; and collaboration among participants on various issue-based committees.

Article IV of the Basin Compact specifies the GLC makeup of three to five commissioners from each state as well as processes for decision-making. The GLC's bylaws provide more detail on GLC operations (e.g., leadership, officers, meetings, committees, rules of order).²² The Board of Directors is the executive and governing body of the GLC, headed by a chair and vice-chair, and the chairs of the Ontario and Québec delegations serve in an associate (nonvoting) capacity on the board.²³ In practice, the provinces are fully engaged in the debate and discussions about actions and priorities of the GLC and most of its decisions are made without formal voting.

Operational decisions of the board and the full commission are formally documented by staff and approved by the board or full commission as internal-facing minutes. Policy recommendations, which are also drafted by staff with commissioner input and approved by the board or full commission, typically take the form of public-facing resolutions that call for action by the US Congress or federal agencies, but sometimes also reflect back toward the GLC member jurisdictions.²⁴ These nonbinding policy resolutions are a key mechanism used to empower voluntary actions among the states and provinces.²⁵ The vast majority of GLC resolutions are adopted through a consensus-building process that results in the approval process being one of unanimous consent. Differences are debated and generally resolved prior to formal consideration of a resolution. Voting seldom occurs. In practice, the option to vote is used more as a backstop to encourage consensus-building than as a means to execute decisions.

Over time, formal committee processes laid out in the GLC bylaws have given way to more collaborative ones that better exemplify CGR dynamics. For example, Article V, Section I of the GLC bylaws states:

each committee, special committee, or task force shall consist of persons from each interested state and province, nominated by the Chair of the delegation and appointed by the Chair. Each state shall be entitled to one vote on each committee, special committee and task force.

While the GLC Board of Directors still provides initial approval to establish issue-based committees, since the early 2000s staff have primarily led a

process of principled engagement to enable participation by a broader group of interests with a stake in the issue at hand.

In addition to state and provincial representatives, these committees also generally include federal and local governmental representatives, environmental nonprofit organizations, industry representatives, academic institutions, subject-matter experts, consultants, and/or tribes and First Nations. Commissioners are asked to assist with recruitment, but staff lead the collaborative engagement process that brings stakeholders to the table and engages them iteratively to discover, define, deliberate, and determine group composition, rules of engagement, and outputs that drive joint action.

Great Lakes Fishery Commission

The GLFC was formed by the Convention on Great Lakes Fisheries between Canada and the United States, which was ratified in 1955. The convention outlines two major roles for the GLFC: to coordinate fisheries research and control invasive sea lamprey. The GLFC also has a third function, “to establish and maintain working arrangements” among the state, provincial, tribal, and federal management agencies.²⁶ Approximately 20 staff provide secretariat support to the GLFC at their offices in Ann Arbor, Michigan.

Drivers

GLFC was the outcome of diffuse fishery authority among and clashes between the United States and Canada as well as among states and provinces on how to address exacerbating fishery problems in the first half of the twentieth century. Earlier negotiations to establish a more formal and strict transboundary governance regime had failed. Prior to the establishment of the GLFC, “more than twenty-seven proposals to create a formal, overarching agreement or mechanism to facilitate transboundary [fisheries] governance” were considered.²⁷ What differentiated the convention from earlier attempts to establish a CGR—and ultimately help ensure its success—was the explicit awareness of the interdependency among key actors, notably at subnational level, and the need to create mechanisms for their cooperative engagement. States and provinces, not federal governments, have primacy in Great Lakes fishery governance.

Awareness that “fishery diplomacy” would have to be soft, rather than mandatory, manifested in a flexible directive for the GLFC to establish formal or informal “working arrangements” among state and provincial fishery agencies.²⁸ The convention formalized the consequential incentives and initiated and cemented leadership for binational fisheries management via the establishment of the GLFC, which is comprised of eight commissioners.

Dynamics

GLFC operations and decision-making procedures are formally outlined in the GLFC’s inaugural annual report of 1956.²⁹ Over time, however, the Joint Strategic Plan for Management of Great Lakes Fisheries (Joint Strategic Plan) has become the primary vehicle driving execution of the mandates and reflects the context of the GLFC as a nonregulatory binational entity that relies on collaborative and diplomatic tools and processes rather than strict legal and enforceable ones. Importantly, the Joint Strategic Plan transformed previously-existing lake committees established by GLFC in 1964 into “active progressive forums for collaboration.”³⁰ The plan heightened the “working arrangements” called for in the convention through a formal substructure, which has been considered its own transboundary governance regime.³¹ Through a CGR lens, this works. The Joint Strategic Plan creates principled engagement through iterative, yet formalized interactions that reinforce expectations that members on the various committees created under the plan will work together to collect and share information. Participation on committees overseeing fishery management in each individual Great Lake is limited to representatives from the states, provinces, and tribes which have explicit fisheries management authority. Other GLFC committees bring in federal agencies, academics, and outside experts, which could include environmental or other nonprofit organizations, but generally has not been the case. GLFC also has a committee of citizen advisors and various research boards; however, the civil society role is limited.

Principled engagement within GLFC has also been adaptive. While the convention rules stipulate that the GLFC can vote and how votes shall occur, implementation of the Joint Strategic Plan is done through consensus. A senior staff with the GLFC acknowledged:

Rule 8 [in the convention] is interesting, as the rules do allow for ‘voting’ to occur, but note it’s one vote per section, which really means there needs to be consensus, as there are an even number of sections. I have been at the GLFC for 24 years and I have seen only one vote during my time.³²

The Joint Strategic Plan specifies “[c]onsensus must be achieved when management will significantly influence the interests of more than one jurisdiction.”³³

The Joint Strategic Plan further directs members to decide on tasks that need to be done, who is to perform them, and calls upon the members to develop broad policies and specific implementation plans.³⁴ The substructure and rules of engagement established by the Joint Strategic Plan convey the shared motivation embedded in the convention and translate that into capacity for joint action through a Strategic Vision, developed by commissioners with staff input, which outlines GLFC broad priorities and is the launching pad for specific activities and outputs.

Specific activities are decided upon during twice-yearly meetings, but often emerge from individual committee work with staff input.³⁵ Formal adoption of work findings and other work products is made by GLFC commissioners, with staff input and formally recorded as part of GLFC meeting minutes.³⁶ In contrast to GLC, these decisions and actions are more typically documented as inward-facing directives to staff as opposed to outward facing “policy resolutions” to the US Congress or other parties.

The Conference (and the Great Lakes Regional Body and Compact Council)

The nonprofit Council of Great Lakes Governors was established in 1983 to encourage environmentally responsible economic development. The organization renamed itself in 2015 as the Conference of Great Lakes and St. Lawrence Governors and Premiers (the Conference). In the interim, a series of events led to the Conference becoming the secretariat for the binational Great Lakes-St. Lawrence River Basin Water Resources Agreement (Water Resources Agreement) and the binational Great Lakes-St. Lawrence River Basin Regional Body (Regional Body), as well as the

US interstate Great Lakes-St. Lawrence River Basin Water Resources Compact (Water Resources Compact) and the Great Lakes-St. Lawrence River Basin Water Resources Council (Compact Council).³⁷ These policies and institutions play a leading role in Great Lakes water diplomacy involving water withdrawals, diversions, and consumptive uses. The Conference is located in Chicago and has five staff.

Drivers

The Water Resources Agreement is a good-faith agreement among the Great Lakes States, Ontario and Québec, to be implemented in the two Canadian provinces through provincial laws, and in the eight US states through the Water Resources Compact, a legally-binding agreement.³⁸ The need for more sophisticated regional water use agreements grew out of multiple conflicts among the US states and Canadian provinces over intrabasin water transfers, water diversions, and consumptive uses, which created a perpetual state of uncertainty about how to manage existing and anticipated future requests.³⁹ A logical and defensible framework was needed to make Great Lakes water management decisions.⁴⁰ The reasons the Conference was selected over an existing interstate compact agency with a mandate to “plan for the welfare and development of the water resources of the Basin” and recommendations regarding “diversion of waters from and into the Basin”⁴¹ are not well documented and are beyond the scope of this chapter.

Looking at the evolution of the Conference from a CGR lens, one can observe that it most certainly grew out of wicked problems creating high levels of uncertainty (large scale water uses and diversions), and inherently based on the interdependence of the eight states and two provinces. Indeed, the anxiety about demands for increased Great Lakes water that led to the creation of the Water Resources Compact and Water Resources Agreement is undoubtedly the Great Lakes Basin’s single most significant example of consequential incentives driving binational collaboration.⁴² With respect to the compact and agreement, a key driver that likely cemented the role of the Conference as the leadership initiator was that the latter is comprised of the chief executives themselves—as opposed to their senior advisors or appointees. Regardless of the confounding history, the Conference’s role as secretariat for the compact and agreement positions it as an important

institution in Great Lakes water diplomacy, which is sometimes collaborative and sometimes not, as discussed in subsequent sections.

Dynamics

The Conference has no formal mandate; as such, it is an outlier among the other Great Lakes institutions examined here. Paradoxically, the Conference is identified through a memorandum of understanding as the secretariat for the Regional Body and Compact Council—the institutions that are officially charged with implementing the Water Resources Agreement and the Water Resources Compact respectively.⁴³ This secretariat role provides rich context for examining the organization's role in water diplomacy.

Both the Water Resources Compact and the Water Resources Agreement prohibit diversions of Great Lakes water out of the basin but provide exceptions for communities and counties that straddle the basin boundary if they meet a certain standard. Both the Regional Body and the Compact Council make determinations as to whether this standard has been met. Justifiably, the Regional Body, which executes a nonbinding good faith agreement, and the Compact Council, which executes a binding agreement among the US Great Lakes States, have different procedures governing their decision-making. There are many procedural differences between the two entities, but the key relevant difference for this discussion is that the Regional Body's determinations are nonbinding while the Compact Council's are binding. The nonbinding nature of the Regional Body compels deployment of consensus,⁴⁴ rendering it more fertile ground as a CGR.

By contrast, the Compact Council's bylaws specify that decisions are made by voting.⁴⁵ Moreover, those bylaws stipulate that "[t]he Executive Director shall develop the protocols for how to administer votes."⁴⁶ While attempts to engender consensus may occur in hallways and sidebar discussions, Compact Council decisions are made by vote. This is where the council ceases to meet a defining characteristic of CGR (consensus-based decision-making). The council's rulemaking procedures for implementing substantive provisions of the Water Resources Compact (e.g., requests for diversions or intrabasin water transfers) are also not collaborative in nature but rather mimic federal or US state rulemaking. Rules are proposed, there

are opportunities for public comment, but there is no collaborative process and the overlying governance regime is regulatory, not collaborative.⁴⁷

How does each of the institutions examined here line up with the CGR framework? Each operates at the binational Great Lakes Basin scale and while the details of their purposes vary (and overlap in some instances), each of them is ultimately policy-oriented—working on specific issues within a general policy domain.⁴⁸ However, differences in the use of consensus-based decision-making is perhaps the most defining characteristic of water diplomacy because it relies on building trust, promoting stability, and enhancing cooperation to prevent or mitigate conflicts—the diplomacy part of water diplomacy—as opposed to more authoritative forms of decision-making.

Great Lakes institutions as CGRs and agents for water diplomacy in the basin

Complex Great Lakes institutional arrangements formed out of fears of a crisis or in a near conflict mode but have evolved and adapted so that water diplomacy frequently occurs in collaborative management and conflict prevention, and not conflict mitigation or resolution. Moreover, these complex and relatively mature institutional arrangements have allowed Great Lakes institutions to develop unique technical niches of water diplomacy expertise.

The IJC's role in water diplomacy under the Boundary Waters Treaty is clear but cannot justifiably be characterized as a CGR. By contrast, its role in the GLWQA is much more collaborative. The IJC convenes numerous boards under the GLWQA, many of which involve multi-stakeholder groups. A Great Lakes Water Quality Board, a Great Lakes Science Advisory Board, a Health Professionals Advisory Board, and a binational Adaptive Management Committee have diverse participation from multiple stakeholders and generally employ collaborative processes that reflect the dynamics of a CGR—practices that were enhanced with the latest (2012) amendments to the GLWQA. These boards have both technical and semi-diplomatic roles and responsibilities. That is, they assemble relevant data and technical/scientific information along with contextual information to

make recommendations to the governments of the United States and Canada on a variety of issues affecting Great Lakes water quality.

The conference, as secretariat for the Regional Body and the Compact Council, has evolved as the legitimate entity for preventing and managing water conflict when it comes to requests for managing water withdrawals and diversions. This two-tiered sequential decision-making water diplomacy regime (Regional Body first) is relatively new and has only been put to the test a few times.⁴⁹ The structure and procedures of the Regional Body and Compact Council differ legally, which has implications for the extent to which each constitutes a CGR. Nonetheless, the complementary governance regime they provide collectively—one nonbinding with undertones of collaboration and consensus building, the other binding and regulatory—provides certainty and stability that enables effective water diplomacy when it comes to Great Lakes water diversions and intrabasin transfers.

The GLFC is the leading binational institution for reducing uncertainty and preventing and resolving disagreements and promoting cooperation with respect to binational fisheries management. Its formal role may be more fishery diplomacy than water diplomacy. A 2016 assessment of the GLFC's Joint Strategic Plan noted that issues of water quality and habitat have been viewed as ancillary and that its engagement in Great Lakes water quality agreement structures would enhance its ability to foster transboundary governance capacity.⁵⁰ By extension, engagement on these broader issues would also enhance the GLFC's role in water diplomacy. Since that assessment, it has expanded its activities to participate more in multi-stakeholder teams and forums, such as those convened by the IJC or GLC. The GLFC's institutional stability and leadership on fishery management coupled with growing engagement on broader water management issues render the organization a significant actor in the context of Great Lakes water diplomacy.

The GLC's role in water diplomacy has evolved more as a CGR than an executor of the Basin Compact. Due to its broad mandate and its nonregulatory duties, the GLC has, in many ways, had to build itself as a CGR to prove its value in a relatively crowded space of ecosystem management and water diplomacy. The GLC has done this in part by evolving to fill in many of the water diplomacy needs not being addressed by other institutions. Governmental and nongovernmental actors convene at

the call of the GLC (or ask the organization to convene them) because the problems are indeed wicked. They recognize that the GLC provides a stable, legitimate and credible institution where the US states, Canadian provinces, and other governmental actors, as well as nongovernmental actors can come together and use principled engagement processes to build consensus around Great Lakes water management issues. See [Figure 2.4](#) for details on relevant organizations.

BINATIONAL Institutions of the North American Great Lakes						
Scale	NATIONAL United States Canada		NATIONAL – AND – STATE/ PROVINCIAL	STATE/PROVINCIAL Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, Wisconsin (U.S. States) & Ontario and Québec (Canada)		STATE/ PROVINCIAL (U.S. ONLY)
Institution	International Joint Commission	Great Lakes Fishery Commission	Great Lakes Executive Committee	Great Lakes Commission	Great Lakes-St. Lawrence River Water Resources Regional Body	Great Lakes-St. Lawrence River Basin Water Resources Council
Legal Mandate	Boundary Waters Treaty (1909) Great Lakes Water Quality Agreement (1972)	Convention on Great Lakes Fisheries (1955)	Article 5 of the 2012 Great Lakes Water Quality Agreement	Great Lakes Basin Compact (1955)	Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (2005)	Great Lakes-St. Lawrence River Basin Water Resources Compact (2008)
Lead Issues	Water Quality Water Quantity	Fisheries	Legacy Contamination Chemicals Nutrients Vessel Discharges Aquatic Invasive Species Habitat Groundwater Climate Change	Invasive Species Habitat Conservation Water Quality Maritime Commerce	Water Quantity	Water Quantity
Also Works On	Invasive Species Habitat Conservation	Invasive Species		Water Quantity Water Infrastructure		

Figure 2.4 Binational institutions of the North American Great Lakes.

Source: Victoria Pebbles, 2019.

Conclusion

Individually and collectively, the IJC, GLFC, GLC, and the Conference (via the Regional Body and Compact Council) undertake activities that reduce uncertainty, prevent and mitigate disagreements, build trust, and promote stability and cooperation with respect to water resources. They can hence be regarded as important actors in water diplomacy.

The mandates and spheres of influence of Great Lakes-based institutions are more specific for some and broader for others. The GLFC and the Compact Council have more specific mandates regarding fisheries and water use, respectively. The IJC has explicit mandates related to water levels and reporting on progress under the GLWQA, which covers a broad array of issues. Similarly, the Basin Compact empowers the GLC to engage in water diplomacy on virtually the same broad array of water management issues as the IJC, but the actors that operate within the GLC are the states and provinces as opposed to the federal governments. The GLC also has the authority to address water diversions, but has not exercised this, which likely contributed to the formation of the Compact Council and Regional Body. By contrast, the GLC has used its authority related to invasive species by carving out a leadership role that complements that of GLFC. Because most of these institutions use collaborative multi-stakeholder engagement processes to address Great Lakes issues, the same individuals are engaged in different forums convened by the various binational institutions to address the same issue, raising the potential for duplication and redundancy. Nevertheless, while there is some overlap of authorities, which can lead to duplication of effort, the institutional arrangements also provide a healthy reinforcement or added capacity for more technical or specialized work.

For the most part, these arrangements have served the Great Lakes well. Even when one institution is the designated or known “lead” on an issue, it is common that other regional institutions are engaged, often involving processes that build trust and enhance stability and cooperation, preventing conflicts. While some committees have specific technical roles or mandates, it is common for issue-specific committees within each institution to have both technical and semi-diplomatic roles and responsibilities.

To actors in the basin, the institutional framework is complex but known. To those outside the basin or new to water governance in the basin

(including newly-elected officials), the system is unnecessarily complex and seemingly duplicative. While each institution and its associated governance regime had distinct drivers leading to its formation that largely made sense at the time they were formed, this institutional complexity has contributed to a growing sense of institutional fatigue, confusion over roles, and competition for leadership. Part of the fatigue stems from the fact that the very same senior agency officials often participate in the GLC, the GLFC, and/or the boards of the IJC. They may also be asked to serve on more than a dozen additional Great Lakes groups and initiatives not analyzed in this chapter. The familiarity among stakeholders contributes to trust-building, but it can also be a source of frustration and confusion.

The GLC's broad powers and duties that enable it to lead collaboratively have evolved and positioned it as a regional leader in operating multiple issue-based "collaboratives" to address pressing issues such as aquatic invasive species, harmful algal blooms, poor water quality, and habitat degradation. A key challenge for the GLC has been *which* problems to tackle under its broad authority and whether it can continue to leverage a collaborative governance approach amidst increasingly complex and sometimes competing, institutional arrangements.

Since 2012, the GLC, the GLFC, and the IJC have more regularly and more formally engaged with one another through an initiative called "tri-commission collaboration." Informal monthly conversations occur among senior staff. In addition, executives from each commission are engaged at least twice per year with each other and with the US Environmental Protection Agency and Environment and Climate Change Canada, which serve as co-chairs of the binational Great Lakes Executive Committee.⁵¹ This effort helps coordinate joint action on areas of mutual interest among the three commissions (GLC, GLFC, and IJC) and in the execution of their individual mandates to support GLWQA implementation.

Collaborative governance approaches have become increasingly the norm for most Great Lakes water diplomacy. The notable exception is for water withdrawals and diversions which trigger highly formal rules and procedures that are legally driven. The public and their elected representatives increasingly rely on—and possibly even expect—the CGR approach, especially when wicked problems (problems that cannot be solved by a single agent or actor) lack an existing governance framework. CGRs are inherently diplomatic because they rely on non-enforceable

engagement processes. Just as in traditional diplomacy, relationships are built on trust that must be built and proven, not mandated and enforced. The process is iterative, and the outcomes based on consensus-building, not rulemaking. On any given issue, such diplomatic approaches to enhance cooperation or prevent conflict may fail with no obvious backstop forcing parties to engage.

The legitimacy and credibility of Great Lakes institutions has no doubt contributed to their durability. The IJC has been around for more than 100 years (and more than 40 years overseeing the GLWQA), and the GLFC and GLC have endured for more than 60 years. This durability allows some efforts at water diplomacy to fail without compromising the CGR. Sometimes less diplomatic, and more combative or authoritative approaches (e.g., lawsuits) may be necessary to achieve desired outcomes for the Great Lakes. For the most part, however, collaborative diplomatic approaches are the norm and have proven to be the preferred approach for water management in the basin.

Notes

- 1 US Environmental Protection Agency, Facts and Figures about the Great Lakes, <https://www.epa.gov/greatlakes/facts-and-figures-about-great-lakes>.
- 2 Lee Botts and Bruce Krushelnicki, *The Great Lakes: An Environmental Atlas & Resource Book*, 3rd ed. (Ottawa: Canadian Government Publishing Centre, 1995).
- 3 Great Lakes Commission, *Great Lake Region Population Estimates*, Ann Arbor, Mich., 2015. Figures do not include the St. Lawrence River Basin, which would bring the total number of people who rely on the Great Lakes and St. Lawrence River for drinking water to approximately 48 million.
- 4 Botts and Krushelnicki, *The Great Lakes*.
- 5 Victoria Pebbles, "Incorporating Climate Change Adaptation into Transboundary Ecosystem Management in the Great Lakes Basin," in *Transboundary Water Governance: Adaptation to Climate Change*, ed. Juan-Carlos Sanchez and Joshua Roberts (Gland: IUCN, 2014): 197–216.
- 6 David Guston, "Boundary Organizations in Environmental Policy and Science: An Introduction," *Science Technology and Human Values* 26, no. 4 (2001): 399–408.
- 7 Kirk Emerson and Tina Nabatchi, *Collaborative Governance Regimes* (Washington, DC: Georgetown University Press, 2015).
- 8 Emerson and Nabatchi, *Collaborative Governance Regimes*, 40.
- 9 As described earlier, the Conference's role as a CGR is primarily, if not solely, in its role as secretariat for the Regional Body, which allows some consensus-based decision-making.
- 10 Kata Molnar, Rosa Cuppari, Susanne Schmeier, and Siegfried Demuth, "Preventing Conflicts, Fostering Cooperation—The Many Roles of Water Diplomacy," UNESCO's International Centre for Water Cooperation (Koblenz, Germany) and UNESCO's International Centre for

Water Resources and Global Change (Stockholm), 19 December 2017, http://www.waterandchange.org/wp-content/uploads/2018/02/PUB_Water-Diplomacy_Bericht.pdf.

- 11 Dan Snodderly, ed., *Peace Terms: Glossary of Terms for Conflict Management and Peacebuilding* (Washington, DC: Academy for International Conflict Management and Peacebuilding, United States Institute of Peace, 2011), 51, <https://www.usip.org/sites/default/files/files/peaceterms.pdf>.
- 12 Emerson and Nabatchi, *Collaborative Governance Regimes*, 42–49, 58–80.
- 13 International Joint Commission, <https://www.ijc.org/en>.
- 14 Emerson and Nabatchi, *Collaborative Governance Regimes*, 68.
- 15 The compact became effective and binding once it had been signed by, and enabling legislation had been enacted by, the legislature of any four of the Great Lakes States. Illinois, Indiana, Michigan, Minnesota, Pennsylvania, and Wisconsin ratified the Great Lakes Basin Compact in 1955, New York ratified it in 1960, and Ohio in 1963. The US Congress also ratified the compact in the latter year, giving it legal status on par with federal law.
- 16 *The Canadian Encyclopedia*, s.v. “St. Lawrence Seaway: Seaway Economics,” by Gordon C. Shaw and Viktor Kaczowski, last modified 10 November 2015, <https://www.thecanadianencyclopedia.ca/en/article/st-lawrence-seaway>.
- 17 The IJC’s decision-making authority related to the Seaway was limited, but IJC concurrence was triggered because the project would raise water levels upstream of the dam in a boundary water between the US and Canada. See Daniel MacFarlane, *Negotiating a River: Canada, the US and the Creation of the St. Lawrence Seaway* (Vancouver: UBC Press, 2014).
- 18 Interstate compacts are a US legal instrument that allows states to come together to develop and implement policies and to collaboratively govern absent direct federal or national intervention. Although the Great Lakes Basin Compact was ratified by the US Congress in 1963, raising its legal status to what legal scholars call “subfederal, suprastate,” the GLC itself operates under the rules and procedures established by the compact, which may be amended by the Great Lakes Commission.
- 19 Great Lakes Basin Compact, Article VI, Sections J, K, L, and M.
- 20 Article II, Section B of the Basin Compact states:

The Province of Ontario and the Province of Quebec, or either of them, may become states party to this compact by taking such action as their laws and the laws of the Government of Canada may prescribe for adherence thereto. For the purposes of this compact the word ‘state’ shall be construed to include a Province of Canada.

- 21 Great Lakes Commission, Declaration of Partnership, 1999, <http://www.glc.org/wp-content/uploads/2016/10/GreatLakesCommission-Declaration-of-Partnership.pdf>.
- 22 Great Lakes Commission, Bylaws, 1962 as amended, <http://www.glc.org/wp-content/uploads/GLC-Bylaws.pdf>.
- 23 Ibid., Article 3, Section 1.
- 24 Great Lakes Commission, Advocacy: Policy Resolutions, <https://www.glc.org/work/advocacy/resolutions/>.
- 25 The current institutional structure of the GLC does not provide for it to deliver formal policy resolutions to the Canadian Parliament.

- 26 Great Lakes Fishery Commission, www.glfc.org.
- 27 Ibid.
- 28 Botts and Krushelnicki, *The Great Lakes*, 4.
- 29 Great Lakes Fishery Commission, “Annual Report,” Ann Arbor, Michigan, 1956, Organization and Rules, 13–16, <http://www.glfc.org/pubs/annualreports/1956.pdf>.
- 30 Great Lakes Fisheries Commission, “A Joint Strategic Plan for Management of Great Lakes Fisheries,” Ann Arbor, Michigan, as revised 10 June 1997, <http://www.glfc.org/pubs/misc/jsp97.pdf>.
- 31 Marc Gaden, “Cross-Border Great Lakes Fishery Management: Achieving Transboundary Governance Capacity through a Non-Binding Agreement,” *International Journal of Water Governance* 4, no. 4 (2016): 1–20.
- 32 Marc Gaden, personal communication, 16 February 2019.
- 33 Great Lakes Fisheries Commission, “A Joint Strategic Plan for Management of Great Lakes Fisheries.” Italics in original.
- 34 Gaden, “Cross-Border Great Lakes Fishery Management,” 5.
- 35 Great Lakes Fishery Commission, “Strategic Vision of the Great Lakes Fishery Commission 2011–2020,” Ann Arbor, Michigan, December 2011, <http://www.glfc.org/pubs/misc/StrategicVision2011.pdf>.
- 36 Gaden, personal communication.
- 37 Great Lakes-St. Lawrence River Basin Water Resources Council, <https://www.glscompactcouncil.org>.
- 38 Ibid.
- 39 Peter Annin, *Great Lakes Water Wars* (Washington, DC: Island Press, 2018).
- 40 Ibid.
- 41 Great Lakes Basin Compact, Article I, Section 2, and Article VII, Section 8.
- 42 Other significant cross-boundary collaborations have occurred over this period, but they either have a more limited scope—such as the Great Lakes Restoration Initiative, which is highly collaborative but only exists in the US portion of the basin—or have less significant long-term implications for Great Lakes water diplomacy.
- 43 Great Lakes-St. Lawrence River Basin Compact Council, “Resolution #28: Adoption of Amended Memorandum of Understanding,” 6 December 2013, https://www.glscompactcouncil.org/media/f4yhhoee/gslrbwrc_resolution_28-adoption_of_amended_memorandum_of_understanding_12-6-13.pdf.
- 44 Great Lakes-St. Lawrence River Basin Compact Council, “Sequence of Events for Consideration of Proposals for Exceptions to the Prohibition of Diversions That Are Subject to Regional Review,” 6 December 2018, <https://www.glscompactcouncil.org/media/vftgt2pu/exception-sequence-of-events-12-6-18.pdf>.
- 45 Great Lakes-St. Lawrence River Basin Compact Council, “Resolution #28.”
- 46 Ibid., Article IV, Section 6.
- 47 Great Lakes-St. Lawrence River Basin Compact Council, “Great Lakes- St. Lawrence River Basin Water Resources Compact Rules of Practice and Procedure,” 6 December 2018, <https://www.glscompactcouncil.org/media/nfvjkrqn/compact-council-rules-12-6-18.pdf>.
- 48 Emerson and Nibatchi, *Collaborative Governance Regimes*, 30–34.
- 49 Annin, *Great Lakes Water Wars*.
- 50 Gaden, “Cross-Border Great Lakes Fishery Management.”
- 51 The binational Great Lakes Executive Committee was established under the 2012 GLWQA amendments to help coordinate implementation of the specific annexes of the agreement. In

contrast to the other institutions analyzed in this chapter, this executive committee does not exist as a stand-alone institution with its own office, budget, staff, etc., but is rather a coordination effort supported by staff within the US Environmental Protection Agency and Environment and Climate Change Canada.

3 Water diplomacy and shared resources along the United States-Mexico border

Maria Elena Giner and Gabriel E. Eckstein

The United States and Mexico are geographic neighbors with high economic asymmetry, but with intense shared history and deep social, cultural, economic, and security ties. Among these shared interests are 23 rivers and numerous aquifers along the 3,000 km border.¹ Of these, two are the primary focus of the two governments, the Colorado and Rio Grande rivers. These scarce resources in the region, which ranges from semiarid in the west to arid in the center and humid in the east, require cooperation to manage and have been responsible for shaping much of the 170+ year relationship.

In 2015, over 15.3 million people resided along the United States-Mexico border in ten states, which include 24 counties in the United States and 35 municipalities in Mexico.² Ninety percent of the residents on the border live in 15 sister cities linked through trade, employment, culture, and education, among others (see [Figure 3.1](#)).³ Movement of goods and people across the border is part of everyday life in this region. For example, in 2016, over 180 million persons crossed into the United States from Mexico through the 55 ports of entry in personal vehicles or as pedestrians for purposes of tourism, shopping, or day trips.⁴ Also, the highest concentration of US manufacturing associated with foreign direct investment exists along the United States-Mexico border and is one of the most important sources of employment for this region.⁵ The population in the border region has grown at a faster pace than that of the general population in both the United States and Mexico.⁶ The accelerated growth along the border has aggravated the need for water and other basic infrastructure in a region

where budgets allocated for such amenities are below required levels. As a result, human health and the environment in this region have been negatively impacted on both sides.

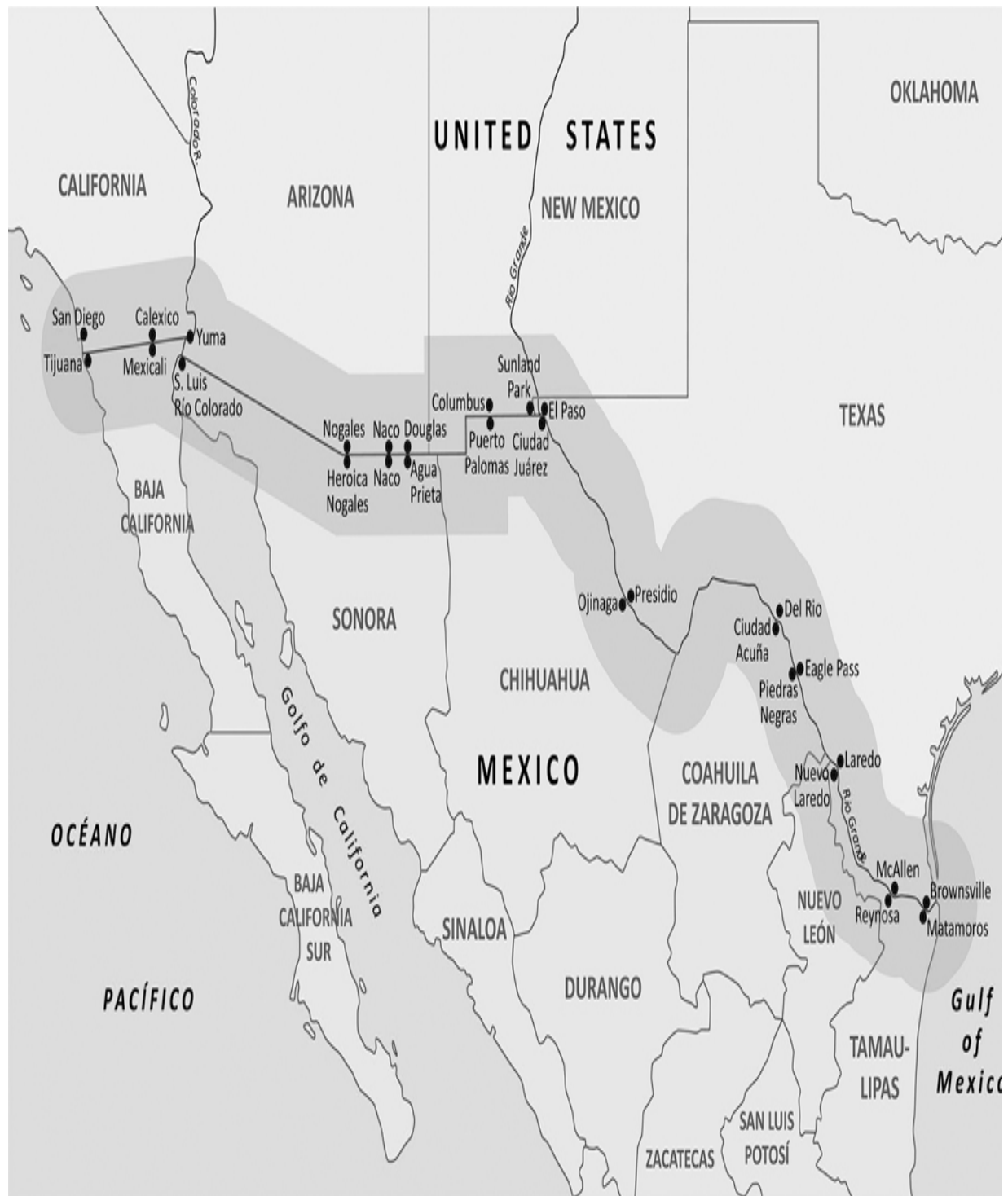


Figure 3.1 United States-Mexico border region.

Common water supplies, including the border's two major rivers, the Colorado and Rio Grande (see [Figure 3.2](#)), and numerous transboundary aquifers, have been negatively impacted by drought, overdraft, and pollution that have increased salinity levels and degraded water quality. About 97 percent of the basin of the Colorado River lies within the United States. Originating in the state of Colorado, the river's basin traverses Utah, Arizona, Nevada, and California before reaching Mexico.⁷ Approximately 40 million residents rely on Colorado and its tributaries for municipal use, of which 2 million are in Mexico.⁸ The Rio Grande River also originates in the state of Colorado and crosses New Mexico before forming the international boundary between Texas and Mexico. It is the fifth longest river in the United States and supplies water to more than six million residents in both countries.⁹ Since 1848, as populations and economic growth in the border region have continuously expanded, these two rivers have been the focus of cooperation between the United States and Mexico.





Figure 3.2 Colorado River and Rio Grande basins.

Today, the primary institutions involved in cooperation over water resources along the border include the International Boundary and Water Commission (IBWC) and the North American Development Bank (NADB).¹⁰ Scholarly literature consistently associates these two organizations with transboundary water issues and concurs on five basic premises: (1) much work has been accomplished along the border to address disputes and the discharge of wastewater into shared water bodies; (2) the North American Free Trade Agreement (NAFTA) injected much-needed attention on the need to address transboundary water pollution through wastewater infrastructure, as well as funding for such projects from the United States Environmental Protection Agency (EPA) and Mexico's National Water Commission (Conagua); (3) the IBWC and NADB are unique institutions with fairly robust systems for funding infrastructure and water governance respectively; (4) in the last 75 years, nearly every dispute related to transboundary water was resolved through cooperation;¹¹ and (5) more work on transboundary water issues is needed related to supply, pollution, and usage, especially as it pertains to drought and climate change.¹²

Each organization has contributed to different elements of cooperation over shared water resources and pollution prevention in the border region. The IBWC has managed water allocation and water pollution, and the NADB has developed and financed infrastructure projects for local communities to address water pollution. Collectively, these activities have contributed to the prevention, mitigation, and resolution of water conflicts throughout the United States-Mexico border through cooperation¹³ and supported dispute prevention ahead of the need for resolution.

Primary Mexico-United States treaties for transboundary waters

A series of treaties between the United States and Mexico serve as the basis for cooperation over shared water resources in the border region. See [Figure 3.3](#) for a timeline of these agreements.

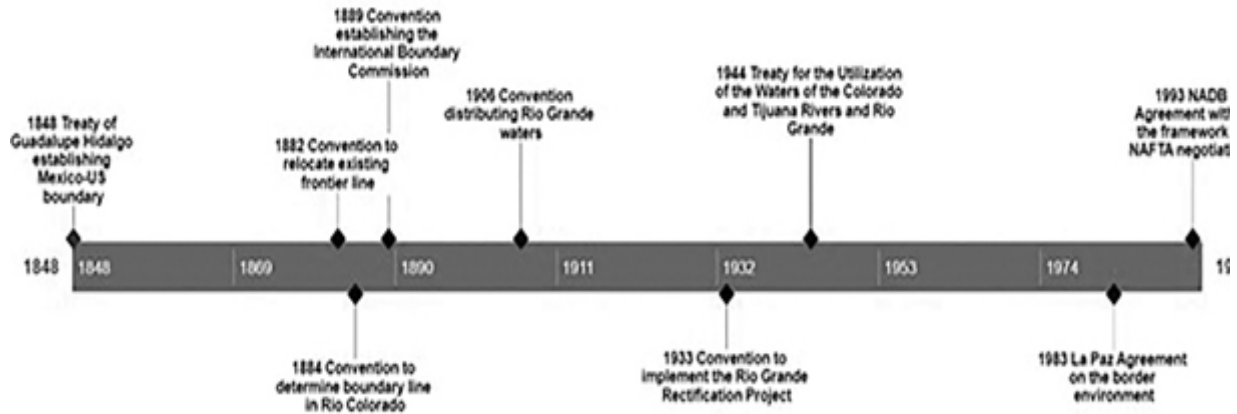


Figure 3.3 Timeline of relevant treaties identified by the authors.

The earliest treaty was signed shortly after the Mexican-American War: the 1848 Treaty of Peace, Friendship, Limits, and Settlements between the US and Mexico.¹⁴ This agreement established the physical boundaries between the two countries and designates the Colorado and Rio Grande rivers to become international basins. The agreement was followed by five lesser, but still significant conventions, through which the two countries cooperated on a range of issues: placement of boundary monuments; boundary disputes related to meandering rivers; establishment of the International Boundary Commission (IBC); allocation of water in a segment of the Rio Grande; and construction of the commission's first joint infrastructure project, the Rio Grande Rectification Project.

In 1944, the two countries entered a new treaty that continues to guide and influence water management and allocation decisions in the border region today. The Treaty for the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande (1944 Water Treaty) authorized the joint construction and operation of two dams along the lower basin of the Rio Grande, expansion of the IBC's jurisdiction to include water and, thereby, creation of the IBWC, and distribution of the waters of the major cross border watersheds: the Colorado River, Tijuana River, and Rio Grande.¹⁵ It also tasked the IBWC by addressing border sanitation issues with a transboundary impact.

In the Colorado River, under Article 10 of the 1944 Water Treaty, the United States is required to ensure Mexico receives 1,850,234,000 cubic meters of water annually. In the Rio Grande, the treaty recognizes the

bifurcation of the river as two separate basins and allocates only the waters of the lower basin amongst the two countries in specific terms. Under Article 1 of the 1906 Convention between the United States and Mexico “Equitable Distribution of the Waters of the Rio Grande,” the United States is required to deliver 74,008,800 cubic meters annually of water to Mexico from the upper basin. Article 4 of the 1944 Water Treaty allocates to Mexico two-thirds and to the United States one-third of the waters of six Mexican tributaries (Conchos, San Diego, San Rodrigo, Escondido, and Salado rivers, and the Las Vacas Arroyo), which collectively must amount to at least 431,721,000 cubic meters per year averaged over a five-year cycle.¹⁶ The 1944 Water Treaty also apportions to Mexico the entire flow of two Mexican tributaries, the San Juan and Alamo rivers, while the United States is allotted the entire flow of seven US tributaries: the Pecos and Devil’s rivers, the Alamito, Terlingua, San Felipe, and Pinto creeks, and Goodenough Spring. The remaining waters in the lower Rio Grande basin are shared equally under the treaty.¹⁷

A distinctive element of the 1944 Water Treaty is the linkage embedded into the agreement that includes the distribution of waters from two rivers in two geographically different regions along the border serving different basins. Itay Fischhendler et.al. argue that this arrangement has constrained the ability of the two nations to adapt management regimes in response to the unique environmental stresses of each river.¹⁸ Yet, Minutes 318, 319, and 323—which responded to reduced flows in the Colorado and environmental degradation in the Colorado delta, and created a mechanism for Mexico to store its water allocations within the US—suggest such concerns can be addressed through the IBWC’s unique minute system for interpreting and implementing the 1944 Water Treaty. Fischhendler et.al. also highlight that while Mexico receives water from, but does not contribute to, the Colorado River’s volume, the United States receives more water from the entire Rio Grande than it contributes to that river.¹⁹ To some extent, it appears that in developing the 1944 Water Treaty, the parties traded water from one watershed in exchange for water from another, an option that would not have been readily available had they negotiated separate agreements for each river.

While, on balance, this arrangement may appear fair to some and unfair to others, it was the product of more than 20 years of negotiations involving

issues beyond the mere allocation of water, including population pressures, sanitation, droughts and floods, economic development, and border security.²⁰ Such pressures may have contributed to the two nations expanding the scope of the treaty to the three rivers in order to have more options for negotiating their respective priorities. Moreover, there may be an advantage to having only one institution with responsibility for all three rivers as the delivery and use of water across borders often involves multiple diverse stakeholders with broadly different interests. If ever the treaty was opened for renegotiations, the consolidated approach could allow the two nations to fully consider all the diverse interests and priorities, as well as the implications for all of the encompassed river basins.²¹

More recently, the United States and Mexico entered into two additional agreements that expanded their transboundary interests beyond water, but have proven to be critically important for water management because of the actors brought into the conversation. On 14 August 1983, the United States and Mexico signed the Agreement on Cooperation for the Protection and Improvement of the Environment in the Border Area (La Paz Agreement), which serves as the basis for bilateral cooperation on environmental protection in the border zone, defined as 100 km north and south of the international line.²² The agreement stipulates obligations related to consultation, information sharing, review of environmental concerns, annual meetings, and formal reporting.²³ It also designates the respective federal environmental agencies as the coordinators, thereby tasking the EPA and Mexico's Secretariat of Environment and Natural Resources (SEMARNAT) with protecting human health and the environment and obligating them to monitor and measure pollution levels related to water and air. Moreover, it obligates them to consult with state and municipal governments, nongovernmental organizations, and others on cooperative measures.²⁴

Initially, the La Paz Agreement was used as a diplomatic instrument between the two governments through its respective environmental agencies to establish goals and objectives primarily related to water, air, and land issues. More recently, it has become a mechanism to provide joint funding. Binational initiatives include the Integrated Border Environmental Plan (1992–1994), Border XXI (1995–2000), Border 2012 (2001–2012), and Border 2020 (2013–2020).²⁵ The latter's goal of access to clean and

safe water includes objectives on increasing household water and sewer connections for the communities along the border, assisting utilities to build capacity, watershed protection through reduction of surface water contaminants, and sharing of water quality data for transboundary watersheds by both federal governments.²⁶ It also calls for additional investment in water resource management. Under the auspices of the La Paz Agreement, these programs serve as an institutional framework for cooperation between the two governments, raise awareness of environmental issues along the border, and provide a certain level of legitimacy that further strengthens engagement among the various government agencies, most notably the IBWC, which has authority over transboundary water issues.²⁷

Development of the goals and objectives of the La Paz Agreement is based on stakeholder engagement and a system of five taskforces geographically distributed along the border.²⁸ Taskforce members include representatives from state and local governments, tribal groups, academia, and nongovernmental organizations. This grassroots approach, managed binationally by EPA and SEMARNAT, follows a process of engagement through conferences with experts on water, air, and land issues, a yearly national conference, and various public comment opportunities. To some extent, this participatory approach has provided legitimacy to the goals and objectives set under the framework of the La Paz Agreement with each successive program building on the previous one.

During the early 1990s when NAFTA was being negotiated, environmentalists expressed their growing dissatisfaction with the results of the La Paz Agreement.²⁹ They had expected more attention and resources from the two federal governments and highlighted worsening environmental conditions in the border region where some of the poorest communities were located. During this time, many communities along the border did not have wastewater treatment, and pollution of transboundary rivers was an issue. Broadening support for NAFTA presented an opportunity to raise awareness of these conditions on the coattails of that agreement's authorization process, and to link the border's environmental health to trade.

As a result, the two countries were pressed by environmental stakeholder groups to sign an agreement within the framework of the negotiations of

NAFTA, known formally as the Agreement between the Government of the United States of America and the Government of the United Mexican States Concerning the Establishment of a Border Environment Cooperation Commission and a North American Development Bank (NADB Agreement).³⁰ It created the NADB, which diverged in structure and process from the IBWC and included water pollution, wastewater treatment, and other priorities within its mandate. Moreover, the NADB is truly a binational institution equally funded by both governments. Over the past 170 years, the implementation and evolution of these agreements along the United States-Mexico border have created a unique governance structure for cooperation.

The organizations

The IBWC, initially called the International Boundary Commission when it was created in 1889, changed to the current name under the 1944 Water Treaty in recognition of its expanded jurisdiction, which now included the waters traversing the border. This broader authority authorized the IBWC to engage in binational solutions for issues that arose during the application of United States-Mexico treaties regarding water-related boundary demarcation and rights to transboundary waters, as well as issues related to sanitation, water quality, and flood control in the frontier. The US Section has its principal offices in El Paso, Texas, while the Mexican Section operates across the border in Ciudad Juarez, Chihuahua. Both sections also have seven field offices spread out along the border. Each section receives funding and policy guidance from its respective diplomacy agency, the US Department of State and Mexico's Foreign Ministry.

All staff of the IBWC are federal employees of their respective country. The leadership team in each country includes a commissioner, who must be an engineer and is appointed directly by the president of the respective country, two principal engineers, a legal advisor, and a foreign affairs secretary.³¹ The management staff is composed primarily of technically oriented professionals and is proud of its reputation as an engineering agency that gives policy guidance based on science. This unique element of management is the basis of the IBWC's legitimacy, which has been called engineering diplomacy.³² While its original priority focused on maintaining

the international boundary, its authority has now grown to include water quantity and quality management, border sanitation, and emergency water supplies. Stephen Mumme suggests that

most important, the Commission has evolved as both a diplomatic and technical agency, with primary responsibilities for enforcing and interpreting the provisions of the international treaties with which it is entrusted, and anticipating and designing solutions to new problems within its jurisdiction.³³

The IBWC collectively owns and operates major infrastructure including flood control levees and five diversion dams, as well as two major reservoirs with power plant facilities located on the Rio Grande: Amistad and Falcon dams.³⁴ This infrastructure is used to manage water delivery for both countries from the Rio Grande and Colorado River and is needed to address portions of the mandate associated with water quality monitoring, transboundary water deliveries, and flood control. As part of its sanitation mandate, the IBWC also owns and operates three international wastewater treatment plants. These facilities were built to address untreated wastewater flows primarily originating from Mexico and flowing into the United States. However, the Nogales facility also treats wastewater from both Nogales, Arizona and Nogales, Sonora. Funding for the construction, operation, and maintenance of these facilities is provided by both countries. Over the last 30 years, no significant infrastructure facilities have been built in the border region, although the IBWC has rehabilitated a number of existing facilities.

The 1944 Water Treaty also allows the IBWC to document decisions involving the application of its mandate through *minutes*, binding instruments between the two governments.³⁵ These are agreements covering a range of cross-border issues that mostly address demarcation, operation, and maintenance of its infrastructure, water delivery related to drought and eco-systems, construction or rehabilitation of dams and other facilities, water quality issues such as salinity in water delivery, and water pollution and sanitation issues that cross the international boundary, such as stormwater and untreated wastewater. Minutes are developed between the two IBWC sections and validated by the respective foreign affairs units.³⁶ Once a minute is approved by both countries through the IBWC and confirmed by the two governments within a 30-day review period, minutes

are considered part of the treaty. As of July 2019, 324 minutes have been issued by the IBWC.³⁷

The IBWC focuses its efforts on engineering activities and solutions that may be proactive or reactive. Its actions are mostly technical, with limited stakeholder involvement and within the limits of its authority under the 1944 Water Treaty. Despite its long-standing operations, its location on the border and away from the capitals of the respective countries, some scholars have suggested that the IBWC is outmoded and needs to innovate, be less insular, and expand its public engagement efforts.³⁸ One has called the IBWC “a social artifact, imperfect at best, and captive to the vicissitudes of time.”³⁹ Stakeholders have also expressed disappointment with the progress made on environmental issues. Some have claimed that the IBWC’s narrow focus on water resources in the border region has led to the neglect of other critical concerns, including air quality and land conservation. While it may have been logical to expand its mandate, they believe that the IBWC’s lack of agility to respond to emerging issues, its heavy focus on engineered solutions, and poor stakeholder engagement have not favored this path. As a result, some have argued that the La Paz Agreement, which created the NADB, was adopted because of the IBWC’s deficiencies.⁴⁰

The NADB itself was created in 1993 with a strict mandate related to the development and implementation of environmental infrastructure. It works in coordination with state and federal agencies by assisting local communities to improve environmental conditions and advance the well-being of residents in both nations. Although the organization does not own any infrastructure, its programs provide technical assistance, grants, loans, and capacity building to utilities, municipalities, academia, and the private sector for infrastructure development and implementation. The NADB’s leadership team consists of a chief executive officer and chief operating officer of opposite nationalities, appointed by each government and confirmed by its Board of Directors (BOD). Unlike the IBWC, the NADB is an international organization with two contributing countries—the United States and Mexico. Its BOD consists of ten members, five from each country. Four are members of the public at large and six come from federal agencies. Its employees are of both Mexican and US nationalities, co-

located at its offices in San Antonio and Ciudad Juarez, and benefit from certain diplomatic immunities.

The NADB is capitalized in equal parts by the US Treasury and Mexico's Ministry of Finance. Its operations and programs are funded by the interest earned on its capital and funds from the US State Department and SEMARNAT. It also receives program funds from the EPA, to disburse as grants to local communities along the border, under the auspices of the Border 2012 and Border 2020 programs and the Border Infrastructure Fund (BIF). This has considerably improved water quality by eliminating the discharge of untreated sewage.

The NADB has been called the most consequential of the NAFTA-generated institutions because of its significant impact on the border environment since its creation, especially as its actions relate to transboundary water pollution.⁴¹ This was possible precisely because the NADB was provided with important government backing from multiple federal agencies. Since 1993, funding provided to the NADB from the EPA, the US Treasury, US State Department, and Mexico's Finance and Environment ministries has exceeded \$1 billion.⁴² The NADB has earned significant legitimacy with stakeholders in border states and cities, as well as within academia. It also has implemented successful projects in just about every major community along the border. As of August 2017, its accomplishments included the funding of 147 water and wastewater projects for various utilities, benefitting almost 13 million residents. The improvements in wastewater alone have a capacity to eliminate 462 million gallons per day of untreated or inadequately treated sewage.⁴³

Prior to the NADB's efforts, only 21 percent of Mexican residents along the border with the United States were connected to wastewater treatment facilities and typically discharged untreated sewage into shared waterbodies on the frontier. Today, nearly 90 percent of that population is connected to wastewater management facilities, significantly reducing an important source of pollution.⁴⁴ Similarly, on the US side, prior to 1993, there were over 400,000 residents in unincorporated communities known as *colonias* in Texas and New Mexico that did not have wastewater treatment services and that discharged their sewage into shared surface or groundwater bodies.⁴⁵

Yet despite its successes in implementing infrastructure projects, the NADB also has its challenges. It implements individual projects in response to requests submitted by municipalities.⁴⁶ As a result, broader watershed issues are not addressed comprehensively and are simply cobbled together through individual local efforts. Currently, there is no strategy in place at the NADB to address water management holistically, include groundwater, or consider issues related to drought or climate change.

Future challenges along the border

As is typical of most watersheds, especially those in arid climates, water is not always accessible in the quantity, quality, or location where it is needed. Over-allocation of available water resources, prolonged droughts, and pollution are common challenges. In the United States-Mexico border region, such challenges have sparked various disputes, most notably pertaining to three primary issues: delivery of water at specified times and volumes, water quality deficiencies mostly related to salinity and pollution, and conservation for the protection of the environment. To date, many of these disputes have been managed under the 1944 Water Treaty by the IBWC through the minute process, and for water pollution through the NADB funding programs. Two important conflicts have been resolved through IBWC cooperation: Mexico's water debt to the United States in the Rio Grande for the accounting cycle of 1997–2002; and pulse flow water deliveries in the lower portion of the Colorado River to begin restoration of the river's delta ecosystem in Mexico, which has been designated as a United Nations Biosphere Reserve.⁴⁷ Other more recent conflicts that have not been fully resolved include the lining of the All-American Canal in Arizona, which lowered groundwater levels across the border in Mexicali, and stormwater pollution flows from Tijuana, Baja California into San Diego, California during precipitation events.

However, as droughts and climate change continue to impact the availability of water resources, and growing communities continue to affect water quality, the challenges facing the border region will need ongoing attention. In addition, the region faces new concerns related to untreated wastewater from collapsing sewer lines in cities adjacent to the international boundary, inadequately operated wastewater treatment plants,

and contaminated stormwater from growing cities that primarily flow from Mexico into the United States. Unfortunately, neither country has given sufficient attention to the environmental impacts that these pollution concerns have had on estuaries, fisheries, and recreational areas.

The La Paz Agreement and NAFTA through the NADB Agreement have brought much attention to water issues along the border at the highest levels of government. Key agencies such as the EPA and SEMARNAT have also entered the water diplomacy arena previously dominated by the IBWC. This has introduced a different approach to decision-making and water-related project development given the EPA's public transparency and regular engagement process, which is in sharp contrast to the IBWC's insular history reinforced by the 1944 Water Treaty's omission of any required procedures for public participation or review of operations.⁴⁸ In addition, the public process associated with the La Paz Agreement and NADB Agreement has empowered local communities, states, nongovernmental organizations, and academia to demand more from the IBWC. This unwanted attention from the public has further strengthened the negative perception of an IBWC that is slow to respond to challenges and criticism, interprets its scope very narrowly, and heavily focuses its efforts on engineered solutions.⁴⁹

Although the NADB has also received the same pressures related to public engagement, unlike the IBWC it has specific requirements for engaging the public. These requirements were likely implemented because the organization was conceived as part of an environmental agenda and the EPA was directly involved in their creation. Furthermore, the EPA has provided the NADB with supplemental funds in the form of grants to address water and sanitation issues, which furthered the latter's achievements. Those funds were managed by the NADB and were used to leverage matching funds from Conagua and other state programs. These relationships and programs developed a diverse skill set within the NADB related to projects that include engineering, finance, and environmental awareness, as well as public engagement.

The IBWC and NADB have two areas in which their activities overlap. The first relates to water pollution where both organizations worked on the issues. However, while the IBWC has not constructed any major infrastructure in at least 30 years, the NADB regularly continues to conduct ribbon-cutting ceremonies for newly funded infrastructure. Not surprisingly,

these efforts have given the NADB a role in water diplomacy as well. The second area of overlap is the limited geographical region in which both organizations work, which has facilitated a more localized approach. As compared to other federal or development agencies, whose locations are in Washington, DC and Mexico City, the IBWC and NADB's leadership and staff live in or near border communities and are exposed to the region's daily challenges. This provides local communities with quick, direct, and low-cost access to the institutions, and sensitizes staff to local needs.

Nonetheless, the differences between the IBWC and NADB are important. The IBWC functions as two separate but integrated federal agencies with independent sections representing their respective governments. As an institution, the IBWC has had a long history of activity, an established process of operations, a heavy engineering focus, no funding for community infrastructure, and a reputation for being isolated and limited in the interpretation of its own authority. The established purpose, process, and rules that created the agency have remained relatively consistent over its 130 years, and its mandate has been interpreted rather narrowly. As a result, the IBWC could find it difficult to adjust its operations in response to new challenges. Nevertheless, the organization has a strong and stable foundation grounded in long-standing treaties, full federal backing, and assets that it owns and operates.

In contrast, the NADB is an international organization with much less federal oversight, a shorter history, established public engagement processes, multi-skilled binational staff, and available funding for infrastructure. However, its limited mandate and project-specific focus constrains its ability to create policy level and holistic solutions related to water supply and quality.

Despite the IBWC's stability and NADB's flexibility, neither provides an ideal model of operation. For example, it is unclear whether either entity has the mandate to address the more than 30 aquifers that traverse the border. With the exception of pumping restrictions on the Yuma Aquifer under Minute 242, none of the aquifers have any management, allocation, or conservation mechanisms. Ironically, groundwater is a major regional concern because subsurface depletion can affect surface flows in adjacent rivers, pollution can negatively impact groundwater quality, and drought can affect both rivers and groundwater. In a similar vein, neither the IBWC nor NADB have the capacity to develop the scientific analyses needed to

ascertain how the border region will be affected by climate change. In general, cooperation remains unsystematic and ad hoc and lacks a broader vision for the management of the shared water resources between the two nations.⁵⁰

Conclusion

This chapter has shown that the existing river basin organization (RBO) framework is insufficient to address challenges in the basins and has overlaps and important gaps. Cooperation has been achieved through the minute process of the IBWC but has been limited to the narrow scope of the Colorado, Rio Grande, and Tijuana rivers. Other mechanisms used to address border water issues include various binational federal efforts, such as the La Paz Agreement and NADB Agreement. Both instruments have been used to remedy the gaps unaddressed by the IBWC, most importantly providing a mechanism for public engagement on water management issues at the state and local levels. However, their success has been limited to the extent that they have only created a patchwork of local project agreements rather than a comprehensive mechanism.

To add to this patchwork, a binational groundwater assessment program was initiated as a basis for information exchange through the US Geological Survey and Conagua.⁵¹ While coordinating with the IBWC, it is not clear if any single institution will serve as an RBO. The institutional requirements and legal regimes in each country are quite distinct and would require multi-level and multi-jurisdiction agreements to create such an RBO.

Natural resources are limited, and freshwater is diminishing in availability and quality along the United States-Mexico border. The vitality of communities along the border depends on these rivers and groundwater resources. Although the two countries have experienced challenges and disputes since their creation, over the past 170 years a treaty-based institutional framework for surface water has provided the governance mechanisms needed to promote cooperation over conflict.⁵² Both the NADB and IBWC have been successful in applying their respective mandates because they were institutionally located along the border, their leadership was required to be technocrats rather than bureaucrats or diplomats, and they were structured to facilitate trust between the two

countries. The IBWC has also been successful because of its singular structure as a binational federal agency with two sections, each responding to and advocating for its respective country. Moreover, each section was given authority to enter into agreements through the very unique minute system by which the agreements are crafted on the border and then sent to the respective capitals for approval/rejection. In addition, the structure of the NADB as a single international organization with both Mexican and American nationals co-located and governed by a binational board has engendered trust from states and local communities as a neutral party. Combined with its history of achievement and management of significant funds, the NADB has gained considerable recognition and respect among the border states and local communities in a relatively short time.

Yet, more needs to be done for both surface and subsurface water resources, and the challenges that they face from drought and climate change. In particular, the lack of meaningful cooperation over the region's shared aquifers with a clear authority eventually could become a source of dispute between the two countries. In addition, currently there is no strategy in place to address water management holistically or to consider issues related to drought or climate change.

At the moment, there seems to be little appetite to expand the purview of the IBWC or NADB and put one of these in charge of a strategy for comprehensive water management, much less with the authority to manage all water resources on the border. While expanding the IBWC's authority may seem like the most obvious solution, the NADB's efforts in recent years have diverted attention and considerable funding away from the IBWC. As a result, gaps in management and cooperation are likely to continue in the border region and for its residents, especially as water becomes scarcer and demand continues to grow.

Notes

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- 2 EPA and SEMARNAT, "State of the Border Region Indicators Interim Report 2016," Border 2020: US-Mexico Environmental Program, 2016, 5, https://www.epa.gov/sites/production/files/2017-01/documents/state_of_the_border_region_2016_122216.pdf.

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- 8 US Department of Interior Bureau of Reclamation, "Reclamation: Managing Water in the West—Colorado River Basin Water Supply and Demand Study," Executive Summary, 2012, 3, https://www.usbr.gov/watersmart/bsp/docs/finalreport/ColoradoRiver/CRBS_Executive_Summary_FINAL.pdf.
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- 10 In December 2017, the NADB merged with its sister agency the Border Environment Cooperation Commission (BECC) in order to eliminate overlap, streamline operations, and improve impacts on the residents of the United States-Mexico border. Before the merger, both organizations worked in tandem to assist communities in developing and implementing environmental infrastructure along the frontier. Although there is substantial literature on the BECC, its functions are now executed by the NADB. Therefore, any reference in this paper to BECC will be incorporated as the NADB.
- 11 Fernandez, "Transboundary Water Management along the U.S. Mexico Border," 161–166; Robert C. Bonner and Andres Rozental, "Managing the United States-Mexico Border: Cooperative Solutions to Common Challenges," Full Report of the Binational Task Force on the United States-Mexico Border, 2009, 11, <https://www.wilsoncenter.org/sites/default/files/PCIP%20Comexi%20Full%20Report-%20english%20version.pdf>.
- 12 Jorge Alejandro Silva-Rodríguez de San Miguel, "Water Management on the Mexico-US Border: A Review of the Literature," *Management of Environmental Quality: An International Journal* 29, no. 2 (2018): 289–304.
- 13 Ibid.
- 14 US Section of the IBWC, "Treaties between the U.S. and Mexico," https://www.ibwc.gov/Treaties_Minutes/treaties.html.
- 15 Ibid.
- 16 Carter, Mulligan, and Ribando Seelke, "U.S.-Mexican Water Sharing."
- 17 Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande (Treaty between the United States of America and the Mexico), 1944, 9–10.
- 18 Itay Fischhendler, Eran Feitelson, and David Eaton, "The Short-Term and Long-Term Ramifications of Linkages Involving Natural Resources: The US-Mexico Transboundary Water Case," *Environment and Planning C: Government and Policy* 22, no. 5 (2004): 633–634.
- 19 Ibid., 642–644.

- 20 See generally Kirsten Anderson, “A History and Interpretation of the Water Treaty of 1944,” *Natural Resources Journal* 2, no. 4 (1972): 600–614.
- 21 Fischhendler, Feitelson, and Eaton, “The Short-Term and Long-Term Ramifications of Linkages”: 647.
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- 23 Stephen Mumme and Kimberley Collins, “The La Paz Agreement 30 Years On,” *Journal of Environment and Development* 23, no. 3 (2014): 304.
- 24 Ibid., 305.
- 25 Ibid., 308.
- 26 EPA, “U.S.-Mexico Border 2020 Program,” <https://www.epa.gov/border2020>.
- 27 Mumme and Collins, “The La Paz Agreement 30 Years On,” 311.
- 28 EPA, “Border 2020 Organizational Structure,” <https://www.epa.gov/border2020/organization>.
- 29 Mumme and Collins, “The La Paz Agreement 30 Years On,” 316.
- 30 The agreement was amended twice for the purpose of increasing the efficiency and effectiveness of the BECC and NADB. The first was in 2002 where the Boards of Directors were merged into one, and the area of jurisdiction increased in Mexico from 100 to 300 km. The second was in 2015 when the BECC and NADB merged into one institution.
- 31 Carter, Mulligan, and Ribando Seelke, “U.S.-Mexican Water Sharing,” 5–6.
- 32 Stephen Mumme, “Engineering Diplomacy: The Evolving Role of the International Boundary and Water Commission in U.S.-Mexico Water Management,” *Journal of Borderlands Studies* 1, no. 1 (1986): 73–108.
- 33 Ibid., 74.
- 34 US Section of the IBWC, “Diversion Dams and Related Structures,” https://www.ibwc.gov/Mission_Operations/Diversion_Dams.html.
- 35 Carter, Mulligan, and Ribando Seelke, “U.S.-Mexican Water Sharing,” 5–6.
- 36 Ibid.
- 37 US Section of the IBWC, “Minutes between the United States and Mexican Sections of the IBWC,” https://www.ibwc.gov/Treaties_Minutes/Minutes.html.
- 38 Mumme and Collins, “The La Paz Agreement 30 Years On,” 306, 323–324.
- 39 Stephen Mumme, “Innovation and Reform in Transboundary Resource Management: A Critical Look at the International Boundary and Water Commission,” *Natural Resources Journal* 33, no. 1 (1993): 94.
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- 41 Ibid., 312.
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- 46 Silva-Rodríguez de San Miguel, “Water Management on the Mexico-US Border,” 294.
- 47 Carter, Mulligan, and Ribando Seelke, “U.S.-Mexican Water Sharing,” 12–14, 21–24.

- 48 Mumme, “Innovation and Reform in Transboundary Resource Management,” 94, 118–119.
- 49 Ibid. 94; Nicole Carter & Leonard Ortolano, “Working Toward Sustainable Water and Wastewater Infrastructure in the US-Mexico Border Region: A Perspective on BECC and NADBank,” *International Journal of Water Resources Development* 16, no. 4 (2000): 692; and Silva-Rodríguez de San Miguel, “Water Management on the Mexico-US Border,” 292.
- 50 Bonner and Rozental, “Managing the United States-Mexico Border.”
- 51 Carter, Mulligan, and Ribando Seelke, “U.S.-Mexican Water Sharing,” 12–14, 21–24.
- 52 Polioptro Martinez-Austria, Luis Derbez, and Maria Elena Giner, “The US-Mexico Institutional Arrangement for Transboundary Water Governance,” in *Free Flow: Reaching Water Security through Cooperation*, United Nations Education, Scientific and Cultural Organization (UNESCO) (Paris: UNESCO, 2013), 182–185.

4 Process aspects of the development of shared waters agreements

The Columbia River Treaty

Kim Ogren and Aaron T. Wolf

In this chapter, we provide an overview of the role process plays in water conflict management, focusing on the Columbia River Basin as a case study. Practitioners and academics agree that how an agreement is reached matters just as much, if not more, than the content of the agreement. The characteristics of a process can contribute to legitimacy, trust, consensus, and other outcomes needed for continued cooperation, including through institutions¹ and joint activities. Likewise, “bad” process practices can contribute to conflict.

What do we mean by process? Most simply put, “process” is how a decision is made or a conflict is managed. It includes who is involved and the power of each group or individual participating in the decision or conflict. A process can take the form of a negotiation, lawsuit, technical study, and/or mediation.²

In this chapter, we discuss how process, especially participatory process, addresses or abates water conflicts by facilitating the creation of sustainable agreements and institutions. Then we lay out one approach for transforming conflict into cooperation through a process by guiding the parties through four stages of transformation, using the Columbia River Treaty as an example.

How can process help move a basin out of conflict?

In this section,³ we offer an approach one can use in conflict management processes as a way to move away from or through a conflict. There are no “blueprints” for negotiations over water-related differences. There do seem to be, however, general patterns in approaches to water collaboration that have emerged over time. “Classic” disputes between, for example, developers and environmentalists, rural and urban users, or upstream and downstream riparians, suggest zero-sum confrontations where one party’s loss is another’s gain. Yet such “intractable” differences are regularly and commonly addressed as creative thinking and human ingenuity allow solutions that draw on a more intricate understanding of both water and conflict to come to the fore.

We offer one path to the transformation of water-related differences from zero-sum, intractable differences to positive-sum, creative solutions, which centers on a migration of thought generally through four stages: adversarial, reflexive, integrative, and action. While not ideal, note that all stages can exist simultaneously, and need not be approached in sequence, and furthermore, there is not necessarily a “right” stage that must be achieved for “success.” In today’s world, many disputes never move beyond the first or second stage, yet are tremendously resilient, while a few have achieved the fourth stage and are fraught with tension. Nevertheless, like any skill, it is useful to understand the structure of an “ideal” path, in order to perfect the tools required for any individual situation.

The generalized path described here is structured around an understanding of each of the four stages through any of four perspectives, as described in [Table 4.1](#) and [Figure 4.1](#). These four stages of negotiations correspond to four levels of need within each of us: physical needs, emotional needs, intellectual needs, and spiritual needs. Whether as individuals, groups, or nations, we react defensively or aggressively when our needs are threatened; anger and tension are shields protecting vulnerability. Maslow’s hierarchy of needs categorizes basic human needs to their level of motivating behavior.⁴

Table 4.1 Four stages of water collaboration

<i>Negotiation stage</i>	<i>Common water claims</i>	<i>Needs</i>	<i>Geographic scope</i>
Adversarial	Rights	Physical	Nations

<i>Negotiation stage</i>	<i>Common water claims</i>	<i>Needs</i>	<i>Geographic scope</i>
Reflexive	Needs	Emotional	Watersheds
Integrative	Benefits	Intellectual	“Benefit-sheds”
Action	Equity	Spiritual	Region

Source: Compiled by authors from Jay Rothman, “Supplementing Tradition: A Theoretical and Practical Typology for International Conflict Management,” *Negotiation Journal* 5, no. (1989): 265–277; and Jay Rothman, “Pre-Negotiation in Water Disputes: Where Culture is Core,” *Cultural Survival Quarterly* 19, no. 3 (1995): 19–22.

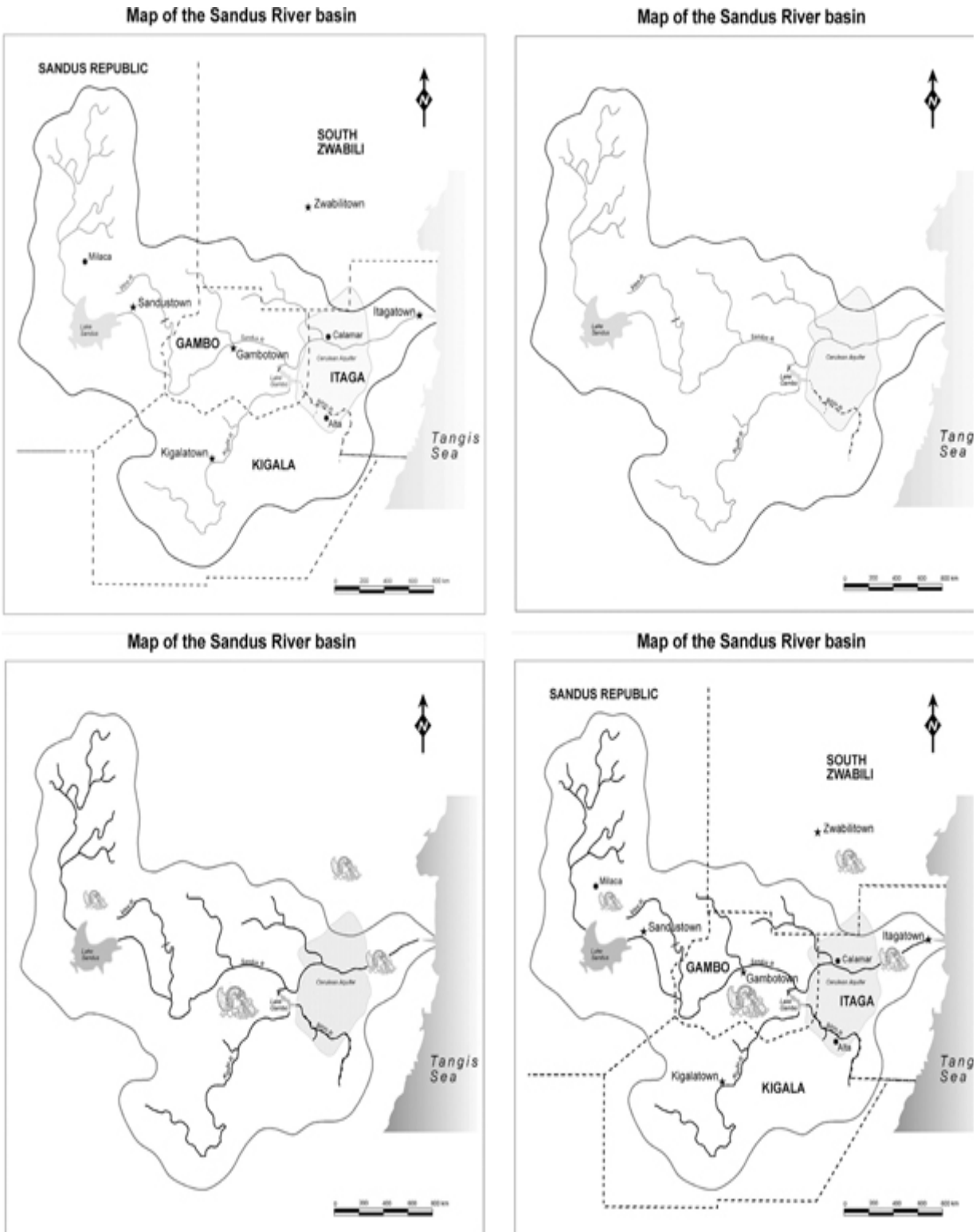


Figure 4.1 Example geographic scopes, using the “Sandus River Basin.”
 Source: Wolf et al, Effective Negotiation for Transboundary Rivers.

These stages build primarily on the work of Jay Rothman, who initially described his stages as ARI—Adversarial, Reflexive, and Integrative.⁵ When ARI become ARIA, adding Action, Rothman’s terminology⁶ also evolved to Antagonism, Resonance, Invention, and Action. We retain the former terms, feeling they are more descriptive for our purposes. These claims stem from an assessment of 145 treaty deliberations described in Wolf.⁷ Rothman⁸ too uses the terms rights, interests, and needs, in that order, arguing that “needs” are motivation for “interests,” rather than the other way around. Our order feels more intuitive, especially for natural resources.

Thinking of negotiations less in terms of rational interests and more in relationships allows us to center on the process of “transformation” in negotiations: the point at which parties move from thinking of themselves as representing countries or political bodies to perceiving more broadly the needs of all stakeholders within a basin. These are critical junctures in negotiations, where movement from “rights-based” to “needs-based” to “interest-based” to “equity-based” negotiations suddenly becomes possible. In international basins, this transformation may normally take years, during which time political tensions are exacerbated, ecosystems go unprotected and water is generally managed, at best, inefficiently.

In Stage 1, in its initial, *adversarial*, setting, regional geopolitics often overwhelms the capacity for efficient water resources management. Metaphorically, the political boundaries on a map at this stage are more prevalent than any other boundaries. Dialogue is often focused on the past, based on the *rights* to which a country, state, or other political constituency feels it is entitled, and a period of expressing pent-up grievances can be necessary. As a consequence of these initial tensions, the collaborative learning emphasis is on *trust-building*, notably on active and transformative listening,⁹ wherein each party makes large claims of what is “rightfully theirs.” Inefficient and inequitable proposals are inevitable during this stage of negotiations.

Although understanding the baseline of any basin may take decades, if it is possible at all, it is not necessary to agree to all data before greater cooperation takes place—assessments or training workshops can be used in and of themselves as confidence-building measures to move to the next stage, even as greater mutual understanding of the basin is being created.

These can open us up to the possibility that there is more to a situation than we originally thought and help us be willing to listen to other perspectives without believing that we need to change them.

As the adversarial stage of negotiations plays out, occasionally some cracks can be seen in the strict, rights-based, stakeholder-based positions of each side (although in actual water negotiations, this process can last decades). Eventually, and sometimes painfully, a shift can start to take place where the parties begin to listen a bit more, and where the interests underlying the positions start to become a bit apparent. In this, Stage 2, a *reflexive stage*, negotiations can shift from *rights* (what a person or group feels it is entitled to) to *needs* (what is actually required to fulfill their goals). Conceptually, it is as if we have removed the political boundaries from the map and can, as if for the first time, start to assess the needs of the watershed as a whole. This shift, from speaking to listening, from rights to needs, and from a basin with boundaries to one without, is a huge and crucial conceptual shift on the part of the participants, and can be both profoundly difficult to accomplish, and absolutely vital to achieve. To help accomplish this shift, the collaborative learning emphasis is on *skills-building*, and we approach the (boundaryless) basin by sector rather than by nation.

The tone is more open. Listening becomes pivotal to success. The process involves all parties with a stake in an issue—those who are affected by the outcome and those in a position to help implement or block implementation of an outcome (i.e., stakeholders). Attempts are made to shift the nature of negotiations to try to increase the amount of resources and to maximize mutual gain. At this stage, the attention shifts from past to future, as stakeholders examine each other's interests beyond positions. A process of social learning sets in. Parties can begin to ask, "What could be?" rather than "What was?" or "What is?" The metaphor for this stage is a basin without borders where, rather than rights, there are needs; and rather than thinking of solely national issues, we might look instead to how different sectors might be developed basin-wide.

Once participants have moved in the first two stages from mostly speaking to mostly listening, and from thinking about rights to needs, the problem-solving capabilities which are inherent to most groups can begin to foster creative, cooperative solutions.

In this, Stage 3, an *integrative stage*, the needs expressed earlier begin to coalesce together to form group interests—the “why” underlying the desire for the resource. Conceptually, we start to add *benefits* to the still boundaryless map, and in fact to think about how to enhance benefits throughout the region, primarily by adding resources other than water, and geographical units other than the basin. The collaborative learning emphasis is now on the *consensus-building* of the group, and we begin to move in “benefit-shed,” rather than being restricted by the basin boundaries.

Once the shift has been made from thinking about allocating water to allocating benefits, it is a natural progression to think together about how to enhance the benefits within and beyond the basin. This may be done within the realm of water resources alone: a well-designed dam upstream might, for example, both enhance agricultural production downstream and help protect riparian habitat. But it is often helpful to think at this stage about “baskets of benefits,” which may go well beyond water, or well beyond the basin in question.¹⁰ Indeed, the most successful cases of building regional approaches to water have gone beyond seeing water as the end to seeing it as a means to achieve other goals, such as socioeconomic development and reduction of fears of floods and drought. Energy production and water development are often linked, for example, as are afforestation programs, transportation networks, and environmental protection. Naturally the transaction costs of including more sectors than water go up exponentially, but so do the potential benefits. This means bringing in actors beyond the water sector and expanding the basket to be considered.

Finally, while tremendous progress has been made over the first three stages, both in terms of group dynamics, and in developing cooperative benefits, Stage 4, the last, *action*, stage helps with tools to guide the sustainable implementation of the plans which have been developed, and to make sure that the benefits are distributed *equitably* among the parties. The scale at this stage is now *regional*, where, conceptually, we need to put the political boundaries back on the map, reintroducing the political interest in seeing that the “baskets” which have been developed are to the benefit of all. The collaborative learning emphasis is on *capacity-development*, primarily of institutions.

The most critical questions at this stage are: “How can the benefits be distributed equitably or perceived as fair?” “How can sustainable and resilient institutions be crafted?” and “How are existing institutions and

organizations to be taken care of or compensated for any change?” The first may require trade or side-payments, while the second and third must evoke the best in institutional design. It is important to remember that conflict potential can actually increase during periods or situations of increased benefits. The increase of benefits alone will not ensure the mitigation of conflict. This is because parties may perceive that the other is getting relatively more benefits. Thus, the perceptions of fairness and equity, not just the tangible delivery of benefits, are critical.

It is also critical not to think of these “stages” as a linear process, where the further along the participants are the better. Most basins ebb and flow back and forth over time: finding the level that meets a particular set of hydro-political needs for a given place and time is important. One might think of these all existing in parallel “universes” simultaneously, each with its own set of approaches or tools, any of which may be useful at any given time, or conceptually as a helix or set of spheres. We break them apart here only for the purposes of explanation: in an absence of cooperation, or bad cooperation or total chaos, where and how one might start on a path to better cooperation outcomes.

How can process contribute to long-term management of conflict?

One way process can mitigate conflict over water is by increasing and sustaining institutional capacity in the basin.¹¹ Aaron Wolf, Shira Yoffe, and Mark Giordano found that the best indicator of potential conflict in international rivers was the institutional capacity of the basin, or its ability to absorb the change (be it geopolitical, socioeconomic, or biophysical) occurring within the basin.¹² In that study and others, institutional capacity was measured as the presence/absence of a treaty/agreement between riparian nations or the presence of a river basin organization.¹³ However, from the experience in some basins, it is evident that merely the presence of an agreement or basin-wide organization does not ensure successful cooperation.¹⁴ Therefore, it is important to explore the characteristics of sustainable institutions¹⁵ and how to incorporate them into the creation of an institution during a decision-making or other process.

Table 4.2 Characteristics of sustainable institutions

Leadership - A person or an organization pushes the institution to achieve its vision by sustaining momentum and keeping the support of various parties and funding sources.¹

Information sharing and learning (e.g., social learning) - A commitment to share data and information in order to foster shared learning and understanding.²

Trust - The institution needs to be trusted to reduce pushback on its proposals/efforts. Those within the institution also need to trust one another to stay actively involved.³

Flexibility (adaptability) - Ability to adapt to new political or scientific realities or information such as changes in political leaders, shifting political ideologies, or a new understanding of ecosystem linkages.⁴

Accountability - The institution is held accountable by its constituency, and members/participants within the institution are also held accountable for their commitments and as such this increases an institution's legitimacy.⁵

Balanced approach to sovereignty - When dealing with multiple scales of governance (e.g., federal, state, local) institutions balance power and respect sovereignty.⁶

Fair representation - Those interested in or affected by the issue are represented within the institution or have other meaningful avenues for input. This may include sovereigns, stakeholder groups, and the public.⁷

Adequate resourcing - A twofold issue, the institution requires resources (e.g., funding) itself to continue functioning but also ensuring others have resources to stay involved (e.g., lowering transaction costs for participants).⁸

Source: Ogren and Wolf.

- 1 Andrea Gerlak and Tanya Heikkila, "Collaboration and Institutional Endurance in US Water Policy," *Political Science & Politics* 40, no. 1 (2007): 55–60; and Per Olsson, Carl Folke, and Fikret Berkes, "Adaptive Comanagement for Building Resilience in Social-Ecological Systems," *Environmental Management* 34, no. 1 (2004): 75–90.
- 2 Browning-Aiken and Morehouse, "Social-Ecological Resilience of Transboundary Watershed Management"; Barbara Cosens, "Transboundary River Governance in the Face of Uncertainty: Resilience Theory and the Columbia River Treaty," *Journal of Land, Resources & Environmental Law* 30, no. 2 (2010): 229–265; Gerlak and Heikkila, "Collaboration and Institutional Endurance in US Water Policy"; Claudia Pahl-Wostl, "A Conceptual Framework for Analysing Adaptive Capacity and Multi-Level Learning Processes in Resource Governance Regimes," *Global Environmental Change* 19, no. 3 (2009): 354–365; and John T. Scholz and Bruce Stiftel, eds., *Adaptive Governance and Water Conflict: New Institutions for Collaborative Planning* (Washington, DC: Resources for the Future, 2005).
- 3 Gerlak and Heikkila, "Collaboration and Institutional Endurance in US Water Policy"; and Olsson, Folke, and Berkes, "Adaptive Comanagement for Building Resilience."
- 4 Jordan and Wolf, eds., *Interstate Water Allocation in Alabama, Florida, and Georgia*; and Lynn Mandarano, Jeffrey P. Featherstone, and Kurt Paulsen, "Institutions for Interstate Water Resources Management," *Journal of the American Water Resources Association* 44, no.1 (2008): 136–147.
- 5 Lebel et al., "Governance and the Capacity to Manage Resilience": 19; and Per Olsson et al., "Shooting the Rapids: Navigating Transitions to Adaptive Governance of Social-Ecological Systems," *Ecology and Society* 11, no. 1 (2006): 18.

- 6 Mandarano, Featherstone, and Paulsen, “Institutions for Interstate Water Resources Management.”
- 7 Cosens, “Transboundary River Governance in the Face of Uncertainty”; Scott Hardy and Tomas Koontz, “Rules for Collaboration: Institutional Analysis of Group Membership and Levels of Action in Watershed Partnerships,” *Policy Studies Journal* 37, no. 3 (2009): 393–414; Huitema et al., “Adaptive Water Governance,” 26; Lebel et al., “Governance and the Capacity to Manage Resilience,” 19; and Stephen Leitman, “Apalachicola-Chattahoochee-Flint Basin: Tri-State Negotiations of a Water Allocation Formula,” in *Adaptive Governance and Water Conflict: New Institutions for Collaborative Planning*, ed. Scholz and Stiftel, 74–88.
- 8 William Blomquist, Tanya Heikkila, and Edella Schlager, “Building the Agenda for Institutional Research in Water Resource Management,” *Journal of the American Water Resources Association* 40, no. 4 (2004): 925–936; and Huitema et al., “Adaptive Water Governance,” 26.

The current understanding of sustainable institutions indicates that such institutions typically have one or more of the following characteristics: (1) strong leadership, (2) information sharing and learning, (3) trust, (4) flexibility, (5) accountability, (6) a balanced approach in dealing with issues of sovereignty, (7) fair representation, and (8) adequate resourcing (see [Table 4.2](#)). These characteristics are interrelated. Information sharing and joint learning can build trust, as can accountability measures. Fair representation and efforts to balance sovereignty incorporate aspects of accountability while respecting various authorities and legal realities.

External factors can also contribute to or work against the endurance of an institution. External factors that bolster an institution can include crises that remind participants why it is important to stay engaged¹⁶ and a diverse set of other institutions contributing to polycentricity within a basin.¹⁷ Other factors may cause an institution to collapse. [Table 4.3](#) presents a number of potential biophysical, geopolitical, and socioeconomic stressors an institution may face and what characteristics may enable the institutions to withstand the stress.

[Table 4.3](#) Stressors to institutions

<i>Stressor type</i>	<i>Examples</i>	<i>Characteristics for resilience</i>
Biophysical	• Extreme events (e.g., floods and droughts) • New information or data about the biophysical system	• Adaptive management • Information sharing
Geopolitical	• Elections (turnover of elected officials) • Demographic shifts • New lawsuits filed	• Trust • Social learning • Flexibility/adaptability
Socioeconomic	• Economic recessions • Variable funding stream	• Reduce transaction costs

<i>Stressor type</i>	<i>Examples</i>	<i>Characteristics for resilience</i>
		• Flexibility/adaptability

Source: Ogren and Wolf.

One way we use the process to create strong or resilient institutions is through broader (often public) participation in a process. The popularity of public participation and collaboration in water management has increased over the past couple of decades.¹⁸ This is due in part to the fact that participatory processes are regarded as one way to increase the sustainability of an institution.¹⁹ A participatory process may be used to create the institution, or the institution may use a participatory process as it carries out its mission. In [Table 4.4](#), we summarize our observations of how participatory processes contribute to sustainable institutions, highlighting some of the critical aspects of good public participation processes.

[Table 4.4](#) How a participatory process can contribute to sustainable institutions

<i>Characteristic</i>	<i>Potential contribution of participatory processes</i>
Leadership	Local leaders can help champion the institution and its cause.
Information sharing and learning	Participation provides a venue for bi-directional information sharing and an opportunity to educate participants.
Trust	Trust can be increased through positive interactions in the participatory process. Through engagement stakeholders and sovereigns build trust in each other.
Flexibility (adaptability)	Involvement of a variety of interested and affected parties early on may mean the institution is able to more readily adapt to changes since (1) it will ideally already have all political interests represented and (2) with broader involvement of groups the expertise involved in the creation of institution is greater and may better anticipate potential stressors.
Accountability	Those involved in the participatory process can help hold the institution accountable for its commitments and may view the institutions and its decisions as more legitimate as a result of their involvement.
Balanced approach to sovereignty	With a variety of sovereigns involved in a process, decision makers at different scales are present and can use their respective authorities as appropriate.
Fair representation	Participation provides a venue for fair representation if structured appropriately.
Adequate resourcing	Increased buy-in due to participation may result in increased access to funds or the political support to lobby for funds.

Source: Ogren and Wolf.

Several frameworks identify different structures for different degrees of public participation (see Table 4.5). To recap the benefits of participation, such as reducing resistance to implementation of decisions,²⁰ participation must be meaningful.²¹ In their framework for meaningful participation in environmental assessments, Jennifer Stewart and A. John Sinclair²² identify several metrics for participatory processes: (1) integrity and accountability, (2) influence (participants can affect outcomes), (3) fair notice and time, (4) inclusiveness and adequate representation, (5) fair and open dialogue, (6) multiple and appropriate methods, (7) adequate and accessible information, and (8) informed participation.

Table 4.5 Levels of public participation

<i>Framework</i>	<i>Levels or types of participation</i>	
Ladder of citizen participation ¹	• Citizen control • Delegated power • Partnership • Placation	• Consultation • Informing • Therapy • Manipulation
A new ladder of citizen participation ²	• Resolution/prevention • Litigation • Mediation • Joint planning	• Consultation • Information-feedback • Education
Levels of co-management ³	• Partnership/community control • Management boards • Advisory committees	• Communication • Cooperation • Consultation • Informing
Public participation spectrum ⁴	• Empower • Collaborate • Involve	• Consult • Inform
Five models for different degrees of participation ⁵	• Contractual projects • Contributory projects • Collaborative projects	• Co-created projects • Collegial contributions

Source: Sherry R. Arnstein, “A Ladder of Citizen Participation,” *Journal of the American Institute of Planners* 35, no. 4 (1969): 216; Fikret Berkes, “Co-Management: Bridging the Two Solitudes,” *Northern Perspectives* 22, nos. 2–3 (1994): 18–20; Desmond M. Connor, “A New Ladder of Citizen Participation,” *National Civic Review* 77, no. 3 (1988): 248–257; International Association for Public Participation, “IAP2 Spectrum of Public Participation,” <https://iap2.org.au/wp->

[content/uploads/2020/01/2018_IAP2_Spectrum.pdf](#); and Jennifer L. Shirk et al., “Public Participation in Scientific Research: A Framework for Deliberate Design,” *Ecology and Society* 17, no. 2 (2012): 29–48.

1 Arnstein, “A Ladder of Citizen Participation.”

2 Connor, “A New Ladder of Citizen Participation.”

3 Berkes, “Co-Management.”

4 International Association for Public Participation, “IAP2 Spectrum of Public Participation.”

5 Shirk et al., “Public Participation in Scientific Research.”

Jennifer Shirk et al.²³ suggest that when designing a participatory process attention must be paid to the degree and quality of participation. Quality of participation refers to the extent to which a process’ goals and efforts align with, respond to, and are pertinent to the needs and interests of participants and involves issues of credibility and trust, fairness, responsiveness, relevance, and agency.²⁴ Degree of participation refers to the duration of involvement, level of research effort, number and diversity of participants, depth of involvement, and power (the ability to influence the outcomes of a process).

In order to determine the appropriate structure of a participatory process, one should answer a number of questions, namely: (1) who should be included? (2) why are they involved? (3) what should that involvement consist of? (4) when should involvement occur? and (5) how can you ensure the form participation fits the specific situation at hand? Pulling from the experience of practitioners and scholars, the National Academy of Sciences published a comprehensive report which addresses when government agencies should pursue public participation and what to consider when answering the questions above.²⁵ The report authors highlight the need to: (1) consider the context (no two situations are identical); (2) ensure transparency, information sharing, and good communication; (3) identify and address the problem in a meaningful manner; and (4) allow for iteration to incorporate new information and promote adaptability.

Why does process matter?

Process can mitigate conflict or exacerbate it. This is seen in the history of the Columbia River Treaty (CRT), between the United States and Canada,

and brought into force in 1964, which allowed for the construction of four dams and outlined the process for determining the timing of flows across the two countries' border. When the CRT was initially negotiated and then implemented in the 1950s and 1960s, Canada and its province of British Columbia did not consult local citizens living in the basin about constructing three large dams that would flood large areas of land and displace around 2,300 citizens. Likewise, neither the United States nor Canada consulted with Native American tribes or First Nations. The ramifications of excluding those parties were both immediate and long-lasting, a clear example of the Adversarial Stage, described earlier. It took Canada three years to ratify the treaty due to opposition in British Columbia. Residents and elected officials in the province were unhappy that it would bear the costs of the treaty, while the federal government reaped the monetary benefits. In order to address this issue, Canada and British Columbia signed an agreement that transferred the responsibilities and benefits to the province, a move towards the Reflexive Stage. Even with the agreement, residents of the basin still were angry at the process of implementing the treaty. Individuals were not fairly compensated for their property and homes were burned as the province built three dams. It took until 1995 and the formation of the Columbia Basin Trust for money from the treaty projects to be directed specifically to the basin (revenues from the treaty go to the province at large) in order to address impacts from the treaty dams and their annual operations.²⁶

Fifty years later, when British Columbia launched a process to review the CRT and determine whether it wanted to continue with, modify, or terminate the treaty, the province took a very different approach. This time it worked harder to engage those interested in and affected by the treaty—a nice example of the Integrative Stage. The province asked citizens how they wanted to be engaged and then modeled its approach after the recommendations it received. The province hosted multiple community listening sessions throughout the basin as well as a technical conference. It also consulted stakeholders at local, provincial, and federal levels of government as well First Nations when making its decision. While acknowledging that British Columbia's review of the treaty was not perfect (no process is), basin residents in the province frequently mentioned that the 2011–2014 review process was much better than the original treaty negotiation process. As a result of the engagement efforts of the treaty

review process, residents in the British Columbia portion of the basin felt listened to and were more supportive of what the province recommended for the future of the treaty.²⁷

Similarly, the US process also had oversights or omissions in its approach to the original treaty. Some Native American tribes did not acknowledge the Columbia River Treaty as legitimate. However, with the US 2014/2024 Columbia River Treaty Review process hosted by the US Army Corps of Engineers and the Bonneville Power Administration from 2010 to 2013, many tribes saw the upcoming changes to the treaty and potential for renegotiations of certain treaty terms as an opportunity to address some of their river management concerns. Their inclusion in the review process as sovereign entities, and a promise by the US government to continue consultation moving forward, also improved their views of the treaty as a legitimate agreement.²⁸

In the next section of the chapter, we discuss how a process can also set up a basin for continued cooperation through the formation of sustainable institutions.

Process and current dialogue on the Columbia

None of the recommendations here happen on their own, nor do they exist in a vacuum, separate from the surrounding hydropolitics and geopolitics in a basin. With our example of the Columbia Basin, one question that continues to inform ongoing discussions over treaty provisions is what might be gained by the implementation of a river basin organization?

In order to foster precisely the sort of dialogue advocated in the aforementioned sections, the Universities Consortium on Columbia River Governance was established in 2008 to provide an impartial, nonpartisan platform to facilitate informed, inclusive dialogue among key decision-makers and other interested people and organizations in the international river basin. It was led by representatives from one university in each of the basin states (in the United States) and province (in Canada), at the Universities of British Columbia (Canada), and Idaho, Oregon, and Montana (United States), holding annual stakeholder meetings for five years leading up to renewed formal treaty negotiations.

Since then, the members of the consortium have worked extensively with tribes and First Nations throughout the basin to explore their role in international treaty negotiations and transboundary river basin management more generally. The outcome of this initiative is captured in a 2016 article by Matthew McKinney, Richard Kyle Paisley, and Molly Smith Stenovec, *A Sacred Responsibility: Governing the Use of Water and Related Resources in the International Columbia Basin Through the Prism of Tribes and First Nations*. Participants agreed that the basin should move forward to create some as yet undefined type of inclusive, sustainable forum for transboundary dialogue, cooperation, and problem-solving, following three principles:

- Ecosystem health should be included along with flood risk management and hydropower generation as core goals of treaty implementation;
- Tribes and First Nations need to be included as co-equal partners along with the two nations (the United States and Canada) in basin governance; and
- Participation of the public at large in shared governance should be encouraged and incorporated in governance of the basin.

As of this writing, formal negotiations between the United States and Canada are ongoing over the Columbia River Treaty. In parallel, participatory dialogue is being fostered by a number of nongovernmental organizations and universities, including working groups which are exploring possible designs for future governance of the basin as a whole.

Conclusion: process matters in creating institutions and sustaining them

Water, unlike other scarce resources, is integral to all facets of life—from biology and ecological integrity, to health, economies, and community identity, to aesthetics and spiritual practice. It touches our deepest values. It also fluctuates wildly in space and time in its presence.

Water management, therefore, is by definition conflict management. Yet water management is usually fragmented, and it is often subject to

contradictory, competing, and/or antiquated laws. Though different laws try to provide certainty about the use and availability of water, the task for water management is multi-objective and based on navigating competing interests and needs.

Within a nation or state, these interests usually include domestic users, agriculturalists, hydropower and energy producers, recreators, and environmentalists—any two of which are regularly at odds—and the chances of finding mutually acceptable solutions typically drop as more stakeholders are involved. Add international boundaries, and, without careful understanding and handling of the issues involved, the chances decrease yet again. Finally, trying to anticipate and plan for the dynamic nature of the hydrologic system as well as the natural systems and society that depend upon it, is more of an art than science, and challenges our traditional organizations and structures.

As a consequence, crafting processes for anticipating, mitigating, and/or resolving issues that inevitably arise can be as important as assessing the underlying scientific parameters of a basin. Dialog and conflict transformation can provide alternatives to costly and adversarial legal processes, and the very act of working on a problem together can in and of itself help reduce the level of a dispute.

One of the most important outcomes of collaborative processes can be arrangements that institutionalize aspects of an agreement or create outlets for further dialog and adaptive management. As changes in basins accelerate due to population, economic, and climate dynamics, the resiliency brought about by such institutions will be ever more critical in our relationships with our scarce water resources as well as with each other.

Notes

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5 International river basin organizations and benefit-sharing arrangements in the Columbia and Senegal international river basins

Past, present, and future

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The international Columbia River Basin^{1,2}

The international Columbia River Basin is one of the international watercourses shared between Canada and the United States. In the Columbia Basin, Canada is generally the upstream watercourse state and the United States is generally the downstream watercourse state. The Columbia River is 1,952 km long and the basin covers 640,000 km² in both Canada and the United States. Canada supplies approximately 35 percent of the water flowing out of the Columbia River at Portland in the United States, and as much as 50 percent at flood level, with the Canadian percentage likely to further increase due to climate change.³ The Columbia Basin has nearly 7.5 million people living within it.⁴

The road to an IRBO and benefit sharing in the Columbia River Basin

Prior to having a formal general agreement to govern shared international waters, Canada and the United States established various ad hoc commissions, which proved to be increasingly insufficient to handle the growing water-related disputes between the two countries. The International Waterways Commission, established in 1905, only dealt with issues on a case-by-case basis. As Canada and the United States entered into negotiations to establish a permanent body to replace the International Waterways Commission, the tone of the meeting was informed by the concerns of each state.

For the United States, the overriding issue was sovereignty—the US position was that absolute territorial sovereignty is retained over the waters within the territory of each nation-state. While the United States was interested in the practical necessity of an agreement to manage transboundary waters, it did not want to relinquish political independence in the process. The American view was also that tributaries should not be included in any commission's authority. In comparison, Canada was very much interested in establishing a more egalitarian relationship with the United States. However, Canada was hampered, not only because of its relative size and level of development at the time but also because Canadian foreign policy was still the purview of the United Kingdom. As a result, negotiations had to be carried out between Ottawa, Washington, and London. Canada also wanted a comprehensive agreement, which would include tributaries, and a commission with greater authority than the bodies of the past.

The resulting Boundary Waters Treaty (BWT) in 1909 is thought to reflect, to some extent, the interest of each negotiating body.⁵ For the purposes of the BWT, “boundary waters” were defined as:

the waters from main shore to main shore of the lakes and rivers and connecting waterways, or the portions thereof, along which the international boundary between the [United States] and the Dominion of Canada passes, including all bays, arms, and inlets thereof, but not including tributary waters which in their natural channels would flow into such lakes, rivers, and waterways, or waters flowing from such

lakes, rivers, and waterways, or the waters of rivers flowing across the boundary.⁶

Pursuant to the BWT each country also reserved the right to control the use of waters within its jurisdiction, while maintaining that boundary waters were subject to equal and similar rights. The BWT created the International Joint Commission (IJC), requiring future hydromodifications be approved by a majority of the Canadian and US commissioners of that entity.

Cooperation and benefit sharing in the Columbia under the Columbia River Treaty

Subsequent to entering into the BWT, Canada and the United States turned their attention to the regulation and management of the Columbia, which, by 1944, was receiving serious consideration by the IJC. The two driving forces were the perceived need in both countries to control flooding and develop hydropower resources.

It then took, according to Paul Pitzer,

[t]wenty years, from the mid 1940s through the mid 1960s, for the [United States] and Canada to identify the best dam sites, calculate the benefits of storage, and negotiate allocation of the benefits from dams in British Columbia that would regulate the flow of the Columbia.⁷

The IJC was the vehicle for cooperation between Canada and the United States. Under the 1909 Boundary Waters Treaty, the IJC possessed jurisdiction over the boundary waters between the two countries, although the decisions of the IJC remained non-binding unless supported by treaties between the two states:

On 9 March 1944, the [United States] government referred the matter of optimizing joint development on the storage on the Columbia to the IJC. The IJC, in turn, created the International Columbia River Engineering Board composed of two members from each country. The board set up an Engineering Committee and charged it with the task of obtaining data and analyzing the situation. Planners realized that increased reservoir storage in Canada would produce massive benefits

in the [United States]...With that in mind, the IJC and its boards and committees began determining the exact value of those benefits and the fairest way of crediting to Canada a reasonable share of the resulting wealth.⁸

The extensive technical studies of the IJC continued from 1944 until 1959, when, at the request of Canada and the United States, the IJC promulgated a set of principles intended to govern any sharing of benefits that might arise as a result of joint development of the Columbia. In making recommendations, the IJC was guided by the goal of the equitable sharing of downstream benefits attributable to any cooperative undertakings, and in an advantage to each country, as compared with any alternatives that might be available to them. The IJC further stipulated that power benefits in the United States from upstream storage in Canada should be shared on a substantially equal basis, provided that an equal split of benefits would result in an advantage to each country. When an equal split would not result in an advantage to each, the countries would then have to negotiate and agree upon such other division of benefits as would be equitable to both, and make cooperative development feasible.

The critical acknowledgment underlying the IJC stipulation was that an international project ought not to proceed unless both countries affected would benefit.⁹ However, to the extent that a benefit occurred in one nation and costs were imposed in another, the solution was not to dispute whether the project should proceed but rather to redistribute the benefits so that both countries obtained an interest.¹⁰ Another important aspect of the IJC's recommended principles was that the focus was on gross benefits, eliminating the necessity to calculate net benefits. When both countries have at least the assurance that they are better off with, rather than without, an initiative they are more likely to support it.

Based on the above principles, Canada and the United States were eventually able to negotiate the Columbia River Treaty (CRT) in 1961. The CRT explicitly recognized that the construction and operation of four CRT projects—three in British Columbia, Canada (the Duncan, Mica, and Keenleyside dams) and one in Montana, in the United States (Libby Dam)—would increase both the useable energy and dependable capacity of power plants in the United States. It would also provide irrigation and flood control benefits in the American part of the basin. All of this would not be

possible at the same cost without the three CRT projects in Canada. In return for building these three projects, the CRT specifically entitled Canada to, among other things, a lump sum payment for various downstream (flood control) benefits, as well as one half of the additional power generated by plants in the United States that resulted from storage across the border in Canada. The benefits of the CRT over the years have included preventing/reducing flooding and generating tens of millions of dollars in power benefits for both Canada and the United States.¹¹

In summary, the current governance regime for the Columbia is the product of an over 100-year history of both formal and informal agreements.¹² These reflect ever-changing interests and understandings of various sources of pollution, the value of ecosystem preservation, evolving beliefs regarding the roles of sovereigns and stakeholders, and changing levels of political will to commit resources to conservation, management, and environmental initiatives in both Canada and the United States.¹³

Challenges in the Columbia

The current challenge associated with the CRT probably is, that after 60 years of relatively successful implementation, negotiations have now been initiated between Canada and the United States to “modernize” it.

This modernization is arguably necessary to address the fact that over that time period there have been various negative social and environmental consequences associated with the CRT.¹⁴ For example, inundation of land created by the CRT dams flooded an estimated 40,000 ha of lake systems, 8,500 ha of rivers, 12,000 ha of wetlands, and 20,000 ha of floodplains.¹⁵ Inundation of the rivers and lakes systems in Canada as a result of the CRT has had a significant impact on local fish and wildlife populations. Before the treaty, the Columbia was perhaps the most productive salmon-bearing river on the west coast of North America. Subsequently, migratory salmon stocks have largely been destroyed by the CRT. The migration of Pacific salmon in the 1930s into the upper Columbia River Basin was initially affected by the American Bonneville and Rock Island dams in the lower portion of the river. Salmon passage into Canada was subsequently terminated by the building of the Grand Coulee (1948) and Chief Joseph (1955) dams in the United States.¹⁶ Also, there was little, or no, input from

local communities and/or indigenous groups into decisions regarding the establishment and ongoing operation of the original CRT dams. This has led to ongoing calls for increased public participation in decision-making by local governments and nongovernmental organizations, and especially by aboriginal peoples.¹⁷

Other issues being dealt with in the CRT modernization negotiations include distribution of benefits going forward; whether, and how, to add “ecosystem function” as a co-equal CRT objective along with power generation and flood control; how to deal with the impacts of climate change; how to incorporate the principles of (active) adaptive management into the CRT; whether, and how, to do holistic watershed management beyond the current purview of the CRT; whether, and how, to return salmon to the Canadian portion of the Columbia; and how to implement a new and, as yet untested, “called upon” flood control regime which is scheduled to replace the current flood control system in 2024 absent agreement to the contrary.¹⁸

The IJC currently has very little role in managing the CRT dams and has not been directly involved in negotiations by Canada and the United States to modernize the treaty. The reasons the IJC is currently less favored are complicated but likely reflect a long-term trend in Canada towards provincial empowerment. This trend has manifested itself in various ways, including the 1982 addition of section 92A to the Canadian Constitution confirming the exclusive legislative jurisdiction of the provinces over various resources, including the “development, conservation and management of sites and facilities in the province for the generation and production of electrical energy.”¹⁹ The IJC still has formal conflict prevention/resolution mechanisms, if useful/desirable for renegotiation/modernization of the CRT. Arguably, the mere existence of such a robust/effective mechanism has been helpful in resolving potential issues quickly and inexpensively at an informal, and operational, level.²⁰

Only time will tell whether, and under what circumstances, the institutional architecture and associated benefit-sharing mechanisms embedded in the current CRT are amenable to modernization; pressure is mounting to adjust the CRT before the current flood control provisions expire in 2024. The fact that the BWT and CRT have survived for so long in their current form are reasons for cautious optimism. At least two of the

basic principles driving the CRT might be particularly worthy of emulation and cautious transfer to other jurisdictions. These are: (1) when a benefit occurs in one nation, and costs are imposed in another, a possible solution is to equitably distribute benefits so that both countries obtain an interest in those benefits; and (2) the wisdom of focusing on calculating gross benefits.

The international Senegal River Basin

Similar in basin and population sizes to the Columbia, the Senegal River Basin, located in Western Africa, has a drainage area covering 448,379 km², a population of around 7.4 million in the basin, and is shared by four riparian nations—Guinea, Mali, Mauritania, and Senegal.²¹ These four countries were under French colonial rule until 1962 and represent an ethnically diverse area.²² This region has experienced “geopolitical turmoil”²³ including, at times, violent conflicts.²⁴ Despite this, cooperation in the basin over water resources has developed over time, leading to the creation and evolution of the basin’s current IRBO.

The road to an IRBO and benefit sharing in the Senegal River Basin

“[C]ooperation to develop the basin on an integrated basis started in the colonial era when the Senegal River Basin Development mission was set up in 1935.”²⁵ In 1963 the four riparians signed the Convention Relating to the General Development of the Senegal River Basin, which established an Inter-State Committee (Article 1), charged with the promotion and coordination of studies and development work on the Senegal River. Under the convention, the Senegal was declared an international river in 1964.²⁶

In 1972, Mali, Mauritania, and Senegal signed the Convention Relating to the Statute of the Senegal River and the Convention Establishing the Senegal River Basin Organization.²⁷ The current IRBO, the *Organisation pour la Mise en Valeur du Fleuve Sénégal* (OMVS), was created by the latter convention. In 2006 Guinea joined the OMVS.²⁸ In relation to joint/common works in the basin, the members of the OMVS²⁹ have adopted both the 1978 Convention Concerning the Legal Status of Common

Works³⁰ and the 1982 Convention Regarding the Methods of Financing Joint Works.³¹

Partly in response to pressure from local populations³² and various problems, including an “increase in waterborne diseases...destruction of native fish stocks and the elimination of traditional flood-recession agriculture,”³³ as well as to address a situation “of relative legal vacuum,”³⁴ the 2002 Water Charter of the Senegal River (2002 Water Charter)³⁵ was adopted by the members of the OMVS to supplement the existing legal regime.

Cooperation and benefit sharing in the Senegal under the OMVS

The Senegal and the OMVS are often cited as compelling examples of cooperation and equitable benefit sharing associated with transboundary shared international watercourses. This is because the management of the Senegal employs a unique and innovative approach to the ownership and operation of infrastructure, which is embodied in the above-mentioned Convention Concerning the Legal Status of Common Works and Convention Regarding the Methods of Financing Joint Works. These agreements provide for the “common and indivisible ownership” and management, by the members of the OMVS, of several shared infrastructure projects. The former convention lists these joint works, which include the Manantali and Diama dams. The rights and obligations of the co-owner states are founded on principles of equality and equity.³⁶ The legal technique of using joint works cements the concept of the community of interests in the Senegal.³⁷ The shared ownership and management of these joint works “is far more than would be expected under the most cooperative theories of basin management or good neighborliness.”³⁸

Remarkably, some of the jointly owned works in the Senegal are located entirely within one riparian’s territory, such as the Manantali Dam in Mali. Thus, three countries jointly build, own, and operate a dam in one country. The financing and benefit sharing of these joint works are linked to each other as outlined in the Convention Concerning the Legal Status of Common Works; the investment and operating cost contributions of each “co-owner state” for these joint works, are proportional to the benefits received by these same co-owner states.³⁹ The Convention Regarding the

Methods of Financing Joint Works further elaborates on the financing arrangements for these shared projects.

These joint works are an innovative example of benefit sharing on a shared international watercourse,⁴⁰ and illustrate “the high level of integration between States and their acceptance to leave the management of the River and its resource to the OMVS for the common good of States.”⁴¹ The OMVS and the Senegal have justifiably received much attention for this novel arrangement.⁴²

The Senegal situation also reflects the duty of riparian states to cooperate in the management of shared international watercourses under international law.⁴³ For example, the shared ownership and management of joint infrastructure in the Senegal reflects an international legal obligation to cooperate. The commitment to cooperative management in the Senegal is also reflected in the 1972 Convention on the Statute of the Senegal River and the 2002 Water Charter, which requires prior approval by contracting states for the implementation of certain projects. In the Senegal, “Senegal, Mali and Maur[itania] (as well as Guinea) established an extraordinary framework of cooperation, including joint ownership of key river-regulation infrastructure and a river basin organization with extensive decision-making power.”⁴⁴

Challenges in the Senegal

The scope of the IRBO has expanded over time, and through various agreements, to address issues and to encapsulate more interests and values. Despite some questions regarding the efficacy of the Senegal IRBO,⁴⁵ it remains a “unique case of basin cooperation based on the concept of benefit sharing”⁴⁶ representing a “pioneered progressive and articulated legal regime.”⁴⁷

The challenges facing the Senegal going forward are not dissimilar to those faced by Columbia. They relate to, but are not limited to, public participation, successfully dealing with the negative social and environmental impacts of dams, equitably sharing benefits within countries, and improving the OMVS’ effectiveness.⁴⁸ The OMVS, however, provides a suitable forum for these various interests and issues to be heard and hopefully resolved.

The Senegal can be considered a classic case of “resource capture” where a “fall in the quality and quantity of renewable resources can combine with population growth to encourage powerful groups within a society to shift resource distribution in their favour.”⁴⁹ According to Thomas Homer-Dixon, the plan “to seek international financing for the Manantali Dam on the Bafing River tributary in Mali, and the Diama salt-intrusion barrage near the mouth of the Senegal River between Senegal and Mauritania” was:

designed to regulate the river’s flow to produce hydropower, expand irrigated agriculture, and provide river transport from the Atlantic Ocean to landlocked Mali, which lies to the east of Senegal and Mauritania.

But the plan had unfortunate and unforeseen consequences. Anticipation of the new dams sharply increased land values along the river in areas where high-intensity agriculture would become feasible. The elite in Mauritania, which consists mainly of white Moors, then rewrote legislation governing land ownership, effectively abrogating the rights of black Africans to continue farming, herding, and fishing along the Mauritanian riverbank.

...In the spring of 1989, the killing of Senegalese farmers by Mauritians in the river basin triggered explosions of ethnic violence in the two countries. In Senegal, almost all of the 17,000 shops owned by Moors were destroyed, and their owners were deported to Mauritania. In both countries several hundred people were killed and the two nations nearly came to war. The Mauritanian regime used this occasion to activate the new land legislation, declaring the Mauritians who lived alongside the river to be ‘Senegalese,’ thereby stripping them of their citizenship; their property was seized. Some 70,000 of the black Mauritians were forcibly expelled to Senegal, from where some launched raids to retrieve expropriated cattle.⁵⁰

The Senegal River Basin is now governed by a relatively progressive legal regime with a broad scope. As it stands today, the regime encompasses many diverse interests and issues and also represents the progressive development of the law of international watercourses, as is shown in the

improvements reflected in the 2002 Water Charter over the older 1972 convention relating to the Statute of the Senegal River.⁵¹

The 2002 Water Charter, in Article 4, incorporates the fundamental human right to clean water,⁵² which “is particularly significant, as it is the first such reference...in a freshwater treaty.”⁵³ By recognizing the basic human right to clean water, the charter reinforces the position of local communities.⁵⁴

The Senegal shows an evolution in whose rights and interests are represented. In addition to principles such as equitable and reasonable utilization, notification, and polluter-pays, the 2002 Water Charter provides for rules relating to the preservation and protection of the environment⁵⁵ and for public participation (an early leader in this respect in West Africa).⁵⁶ The charter also took “into account the Guinean part of the basin in the development of the policies and the programs of development of the basin of the Senegal River”⁵⁷ prior to Guinea ultimately joining the OMVS; thus, supporting the evolution of the OMVS from the “contracting State-based approach” to a “riparian State-based perspective.”⁵⁸

Any dispute between the member states regarding the interpretation or application of the relevant conventions is to be resolved by conciliation and mediation. If the member states cannot reach an agreement, the dispute is to be submitted to the African Union.⁵⁹ As a last resort, contracting states can refer their dispute to the International Court of Justice. For the duration of the dispute, the charter continues to apply and the OMVS Council of Ministers is able to adopt provisional measures.⁶⁰ The OMVS is not a dispute settlement mechanism in itself but has provided a useful forum for riparian countries to address and solve disputes.⁶¹

Adaptation of the institutional framework in the Senegal appears to have also allowed the riparians to overcome various challenges and tensions in the basin. The Organization of the Senegal Riparian States (OERS) was created in 1968 with a view to replacing the initial 1963 Inter-State Committee and broaden the scope of the regional cooperation.⁶² In 1972, the OMVS was established to surmount existing difficulties and replaced the OERS. The probable lesson learned from this experience is that institutions need to adapt to changing circumstances or they will become redundant or die.

Additionally:

The sophisticated character of the Senegal legal regime allowed the development and implementation of a genuine ‘water diplomacy.’ For example, when, at the beginning of the 1990s, Mauritania and Senegal ceased all diplomatic relations because of a conflict over the frontier between the two countries on the Senegal River and over grazing rights, the only forum within which the two States were still cooperating was the OMVS.⁶³

This resonates with an observation by the United Nations Department of Political and Peacekeeping Affairs that:

Importantly, natural resource conflicts are often more amenable to mediation than disputes where ideology or ethnicity are the main driving factors. Finding consensus and building alliances over natural resources is often easier because natural resources shape economic incentives that transcend other divides. Mediation over natural resources can effectively help parties identify ways to maximize and share benefits, and ultimately unlock entrenched or zero-sum positions, allowing parties to develop cooperative and constructive relationships that can be carried over to other areas.⁶⁴

The Senegal agreements have evolved over time to cover a wide scope of issues including irrigation, salt-water intrusion, navigation, and environmental protection, as well as topics such as hydropower generation and flood control, as in the Columbia. Most legal instruments throughout the world concerning joint infrastructure are usually concluded on a bilateral basis, making the Senegal a relatively rare, but very interesting and important, exception.⁶⁵

Conclusion

This final section of the chapter discusses six issues in addressing the following questions: Do the Columbia and Senegal support the proposition that the establishment of IRBOs and benefit-sharing arrangements can help address tensions associated with the conservation and management of

shared transboundary international waters, and could the lessons learned be cautiously transferred?

First, in both the Columbia and the Senegal⁶⁶ the imperative for economic development and the opportunity for mutual gain triggered incentives to cooperate, leading to the establishment of relatively robust IRBOs and an associated mechanism for equitable sharing of benefits. In the Columbia, two key lessons were: (1) when a benefit occurs in one nation, and costs are imposed in another, a possible solution is to not dispute whether the project should proceed but rather to equitably distribute benefits so that both countries obtain an interest in those benefits; and (2) the wisdom of focusing on calculating gross benefits and thereby eliminating the difficult challenge of trying to calculate net benefits. How benefits were to be calculated appears to have been less of an issue in the Senegal. In both the Columbia and Senegal, there continues to be discussion over how benefits are allocated between stakeholders and sovereigns within countries.

Second, the institutional architectures of the IRBOs and the precise mechanisms for equitable sharing of benefits vary significantly in the Columbia and Senegal. However, both the Columbia and Senegal appear to have been relatively successful in reasonably and equitably sharing benefits. In the Senegal, the institutional architecture of the IRBO and the associated mechanism for equitable sharing of benefits has famously included joint management/ownership of infrastructure. In the Columbia, the institutional architecture of the IRBO and the associated mechanism for equitable sharing of benefits has yet to evolve in this direction. In both the Columbia and Senegal, the establishment of enduring institutions appears to have helped facilitate success.⁶⁷

Third, the Columbia and Senegal have striven to address environmental and social issues arising from dam construction and operation. However, in the Columbia, many individuals, especially aboriginal peoples, continue to suffer “from loss of access to productive floodplains that provided most, or part, of their means of survival.” In both the Columbia and Senegal, dam construction affected, among others, key migratory and other fish stocks to an extent that would not meet contemporary best practice standards. A partial solution in the Columbia has been to establish the Columbia Basin Trust, whose purpose is to help more equitably distribute benefits within Canada. A partial solution in the Senegal has been to introduce artificial

flood releases to help conserve and maintain downstream floodplains of value to local people. This technique has also been used on the Columbia, in part to reduce problems with dam-induced total dissolved gases that can kill fish.⁶⁸ In the Senegal, joint arrangements have been supplemented at a later stage by the Senegal 2002 Water Charter, which importantly added a measure of environmental protection and public participation. There has also been a continuing evolution and expansion of the scope of the legal and policy regime and the IRBO to accommodate and overcome issues and update the interests covered.

Fourth, one key test in both basins going forward will be whether their respective governing institutions are sufficiently adaptable to deal with such matters as climate change, meaningful public participation in decision-making, and environmental protection, as these issues increasingly emerge and evolve over time.⁶⁹ The role of IRBOs in the Columbia and Senegal in this necessary/desirable transition will be significant, including as simply repositories of trust, goodwill, knowledge, and institutional memory.

Fifth, both the Columbia and Senegal support the proposition that the establishment of an IRBO and appropriate benefit-sharing arrangements can help address tensions associated with the conservation and management of transboundary shared international waters. In both cases, the real test will be whether the IRBOs that have been established, and their associated equitable benefit-sharing arrangements, can be adjusted to deal with the new imperatives caused by, for example, the exigencies of climate change and the vagaries of an increasingly complex and uncertain world.

Finally, the lessons learned in the Columbia and Senegal could be transferrable, but with the caveat that transboundary shared international waters vary greatly throughout the world in regard to their political, hydrological, biological, economic, and social circumstances, and these variances need to be taken into account in transferring lessons learned and/or instituting change.

Notes

1 Given the objective and limitations of this chapter, we will touch upon some of the salient points that provide interesting comparisons and lessons learned.

2 Among other sources this chapter draws on: Richard Kyle Paisley, "A Long History of Cooperation between Canada and the USA on Boundary Waters," in *Research Handbook on*

- International Water Law*, ed. Stephen C. McCaffrey, Christina Leb, and Riley T. Denoon (Cheltenham: Edward Elgar, 2019); Richard Kyle Paisley, Cuahtemoc Leon, Boris Graizbord, and Eugene C. Bricklemeyer, Jr., “Transboundary Water Management: An Institutional Comparison among Canada, the USA and Mexico,” *Ocean and Coastal Law Journal* 9, no. 2 (2004): 174; and Charles V. Stern, *Columbia River Treaty Review* (Washington, DC: Congressional Research Service, 2018).
- 3 For more information see Paisley, “A Long History of Cooperation.”
 - 4 United Nations Environment Programme (UNEP)/Global Environment Facility (GEF) Transboundary Waters Assessment Programme River Basins (TWAP RB), “Columbia Basin Fact Sheet,” <http://twap-rivers.org/indicators/>.
 - 5 Treaty Relating to Boundary Waters, and Questions Arising Between the United States and Canada (Boundary Waters Treaty), 11 January 1909. See also Paisley et al., “Transboundary Water Management.”
 - 6 Ibid.
 - 7 Paul C. Pitzer, “The World Commission on Dams: A Case Study on Grand Coulee Dam and the Columbia River Basin Project Process and Lessons Learned,” in *Reclamation: Managing Water in the West—The Bureau of Reclamation: History Essays from the Centennial Symposium, Vol. 1*, US Department of Interior Bureau of Reclamation, 801–824. Chapter can be found at: <http://www.riversimulator.org/Resources/USBR/ReclamationHistory/PitzerPaulC.pdf>.
 - 8 Ibid.
 - 9 Alex Grzybowski, Stephen C. McCaffrey, and Richard Kyle Paisley, “Beyond International Water Law: Successfully Negotiating Mutual Gains Agreements for International Watercourses,” *Pacific McGeorge Global Business and Development Law Journal* 22 (2010): 139–154.
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6 The Niger Basin

Is development raising the stakes of cooperation?

Luca Ferrini

The Niger Basin is home to over 130 million people throughout nine countries in West and Central Africa. Six of the nine basin countries are Least Developed Countries and seven are among the 20 poorest countries in the world, with large income disparities in the richer basin countries. With the most rapidly growing populations globally, whose revenues depend mainly on agriculture and livestock, the basin countries face growing pressures on water, land, and energy resources in a drive to develop. Moreover, the Intergovernmental Panel on Climate Change has declared the Sahel one of the most vulnerable regions to climate change worldwide.¹

Against this background, the Niger Basin Authority (NBA, ABN in French), created in 1964 and refounded in 1980, tries to promote the sustainable and cooperative management of shared water resources—the basis for livelihoods and development—based on an elaborate legal framework as well as respected planning, allocation, and monitoring instruments, yet struggling with a number of challenges. In the absence of significant national financial resources, the NBA has increasingly been called upon by its member states to attract donor funding for infrastructure projects. As large projects such as the Fomi Dam in Guinea and the Kandadji Dam in Niger are developed, application of the legal and political commitments on transboundary cooperation faces a stern test, as riparian countries are presented with concrete cases of what is at stake in the basin. As perceptions of risks and opportunities for regional cooperation change in the increasingly security-centered discourse in the Sahel, the NBA faces “crunch time” for defining its role in the coming decade.

This chapter focuses on the history of cooperation and conflict in the Niger Basin since 1964, and the role of the NBA. It analyzes this historical

trajectory as a function of perceived risks and opportunities of riparian countries. Findings point to a historical prevalence of cooperation over conflict, linked to a predominance of perceived opportunities from cooperation over its risks. It argues that this is due mainly to three factors: low development of the basin, role of external actors (e.g., development partners), and initiative of particularly entrepreneurial individuals within the basin (“champions”).

Since 2015 an increased risk of conflict has been noted, which can be linked to the development of major infrastructure in the basin. The chapter argues that this recent trend headlis likely to limit a further deepening of cooperation, but that the legal framework developed until today, coupled with the broader geopolitical dynamic in the Sahel region, e.g., regional cooperation linked to security initiatives against terrorism, is likely to prevent conflict.

Analytical framework

Responding to a tendency to view cooperation and conflict as mutually exclusive, initially as a binary variable and quickly as a spectrum, Mark Zeitoun and Naho Mirumachi² provide a framework for analyzing the interrelation between cooperation and conflict, pointing out that transboundary water management is a deeply political process influenced by the political context in which it is embedded. They state that cooperation and conflict coexist at different levels at different times, illustrating the relationship through the Transboundary Waters Interaction Nexus (TWINS) matrix of conflict and cooperation.³ For producing a historical overview of cooperation and conflict in the basin, this chapter builds on the framework and on the assessment of legal-institutional and strategic-technical dimensions of water diplomacy described in the Introduction to this volume. See [Figure 6.1](#).

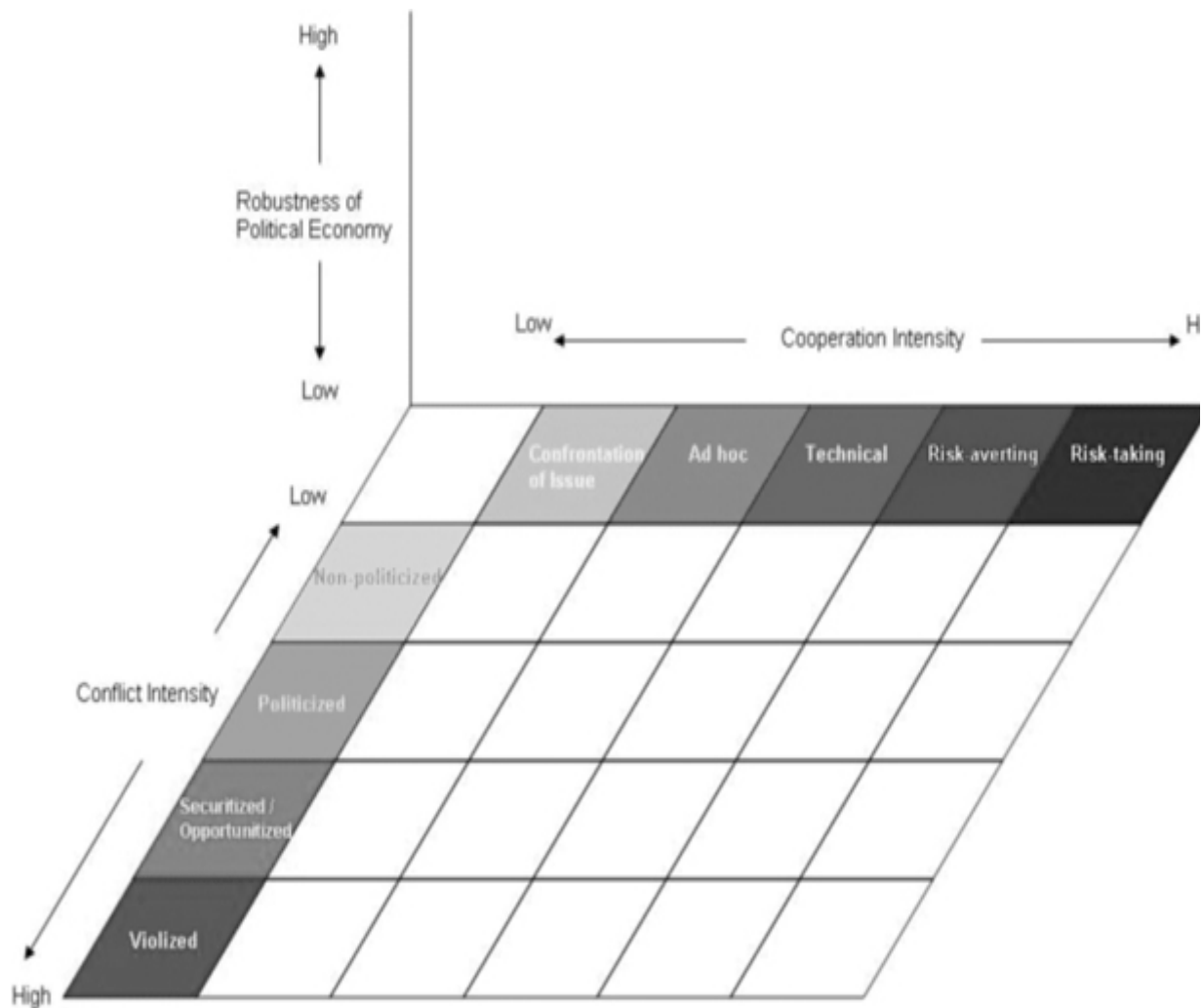


Figure 6.1 The Mirumachi framework.

Source: Mark Zeitoun and Naho Mirumachi, "Transboundary Water Interaction I: Reconsidering Conflict and Cooperation," *International Environmental Agreements* 8, no 4 (2008).

The literature on transboundary water management takes different angles to study the drivers of conflict and cooperation in shared basins, from political economics to security studies to international law.⁴ Legal frameworks are found to significantly reduce the likelihood of conflict, but they alone do not guarantee a smooth resolution of a conflictual situation, and may even limit options for optimal resolution.⁵ The existence of an agreed institutional space for dialogue and exchange reduces the risk of disputes turning into conflict.⁶ Efforts to calculate in monetary terms the

costs and benefits of transboundary cooperation⁷ tend to show the many economic advantages of cooperation.

Analyses of the drivers of cooperation and conflict in the political economy of transboundary waters have given a central role to the perceived risks and opportunities that countries see in cooperation. Countries are represented by decision-makers with different perceptions of risks and opportunities, the interplay of national and international dynamics plays a key role, and deals on cooperation are often situation- and time-specific, requiring constant renegotiation and adaptation.⁸

An analysis based on perceived risks and opportunities of riparian countries at different moments of the period under analysis (1964–2019) sheds light on the drivers and obstacles to cooperation in the Niger Basin. Referring to the five categories of risk and seven categories of risk reduction identified by Ashok Subramanian, Bridget Brown, and Aaron Wolf,⁹ changes in levels of cooperation and conflict are analyzed. They also inform possible trends for the coming decade.

The Niger Basin: risks and opportunities for cooperation

The Niger River in West and Central Africa is the third longest in Africa and ninth in the world. Its basin covers a total area of 2.13 million km² over nine countries: Benin, Burkina Faso, Cameroon, Chad, Guinea, Ivory Coast, Mali, Niger, and Nigeria (see [Figure 6.2](#)). All nine riparian states are in the bottom third of the 189 countries according to the Human Development Index (2018) of the United Nations Development Programme (UNDP), with five in the bottom 15. Most of them face rapid population growth (an estimated annual average of 3.2 percent) and urbanization in a vulnerable environment characterized by pockets of political instability, insecurity, and difficult climatic conditions.



Figure 6.2 Map of Niger River Basin.

The Niger River and its tributaries provide water for drinking, agriculture, industry, energy, and transport to the nine riparian countries, making it an invaluable resource that has to be properly managed to overcome the above-mentioned challenges and ensure long-term and fair benefit sharing. While progress in the basin is being made, 30 percent of the population still does not have access to an improved water source, 75 percent does not have improved sanitation facilities, and only 35 percent has access to electricity.¹⁰

The pressure to develop and increase access to energy, food, and water means that there is increasing pressure to make use of the basin's resources for national purposes. Large infrastructure projects for hydropower and irrigation show a potential for conflict around the use of the shared resource, particularly with regard to the flow of the main course of the Niger River. Examples include the Fomi Dam in Guinea, the Office du Niger irrigation scheme in Mali, and the Kandadji Dam in Niger. While minimum flows have been agreed upon in the Water Charter, enforcement, monitoring, and respect of those remain a challenge.

Sound integrated transboundary management, notably through the NBA, is recognized as important to promote development in the basin. This was arguably one of the main opportunities seen by riparian countries in initiating transboundary cooperation.¹¹ The NBA is largely regarded as capable of developing basin development plans based on hydroclimatic scenarios, the basin's Action Plan for Sustainable Development of 2008 (APSD, PADD in French) being its primary example (the document represents to date the basis of the NBA's coordination of the basin's development).

However, climate and river flow variability provide elements of uncertainty in planning resource use. This translates to a larger perceived risk for riparian countries because it is more difficult for the NBA to give clear answers on trends of resource availability, including floods and droughts, and therefore build trust in the institution. Enormous challenges of data collection and verification in what is a very large and poor basin affected by issues of insecurity make it difficult for the NBA to establish itself as a center of trustworthy and useful information, let alone as the initiator of joint infrastructure projects. In this respect, the opportunity seen by countries in NBA-led decisions is reduced.

However, the potential for the NBA to attract external (mainly donor) funding for regional and national activities remains a strong opportunity for riparian countries. The institutional guarantee of validating intervention in the basin through an official space for regional dialogue increases the attractiveness of the NBA as a beneficiary of development finance and thus represents an opportunity for riparian countries and donors alike. This, combined with the more invisible advantages of regular regional exchange at political and technical levels, represents opportunities for cooperation.

Results

Since the very early years of the twentieth century, colonial powers (Britain, France, Germany) had diplomatic exchanges on the navigation of the Niger River, and its principal tributary, the Benue.

After independence, the first act regarding navigation and economic cooperation between the “States of the River Niger” was concluded in 1962, followed by the establishment of the Niger River Commission in 1964. In the following years, focus quickly shifted from navigability to other uses of water resources.

Due to a sharp decrease in rainfall, the basin experienced a prolonged period of low runoff starting in the late 1960s (and lasting until the early 2000s), with the average annual flow in Bamako (Mali) falling by 30 percent compared to the period 1905–1970. This period has recently been followed by a period of increased runoff, and these periods can broadly be related to political cycles of increased and decreased attention towards the NBA.¹² In fact, the dramatic consequences of low runoff raised attention around the need to better manage the transboundary resources of the river, albeit with a lag. The inability of the commission to provide answers to the drought in the 1970s triggered a reorganization of the institution, which was renamed NBA. It took until 1987 for a revised convention to be adopted with a new mandate. An initial ambition to focus the mandate on coordinated infrastructure development of the basin was scaled back in favor of an emphasis on coordination and fundraising. The 1987 convention¹³ is still the legal basis of the NBA and grants its legal personality.

While it does not make explicit mention of conflict management, the concept of diplomacy over shared water and land resources is captured in the rather general expression “promoting cooperation.” “Integrated development,” “harmonize and coordinate,” and “joint projects” all point to a vision of collaboration and cooperation, while conflict resolution and legal disputes are not mentioned.

With the legal basis of the NBA strengthened, the following decade, the 1990s, was dominated by issues affecting another critical aspect of the river basin organization’s functioning capacity: finances. Arrears in member state contributions largely caused by the debt crisis meant that the very functioning of the NBA Secretariat was jeopardized.

As economies regained strength starting in 1999, member states returned to plans for large infrastructure (mainly multipurpose dams serving energy, irrigation, and flow regulation needs), refocusing attention on the need to coordinate the impacts of such projects between upstream and downstream.¹⁴ A renewed global focus on international and regional cooperation brought new momentum and a real high-level drive to the NBA.

The April 2004 conference of heads of state and government in Paris, responding to an invitation by President Jacques Chirac of France, built momentum for the “Shared Vision Process.” The Shared Vision was elaborated between 2002 and 2008 through an inclusive consultation process supported by the World Bank, Canada, the European Union, and France.

The Shared Vision created the conditions and further momentum towards the adoption of the Water Charter in 2008 and the Action Plan for Sustainable Development (PADD) in 2007, which substantiate the political Shared Vision in legal agreements and technical tools to implement it.¹⁵ The PADD is the economic and environmental framework stemming from the preferred scenario of infrastructure development (centered around the flow regulation effect of the three multipurpose dams of Fomi, Taoussa, and Kandadji, in Guinea, Mali, and Niger, respectively) that was confirmed and adopted by the council of ministers and still is the official development plan of the basin.

The Water Charter, signed and ratified at the highest level in all basin countries, is the legally binding framework for cooperation on sustainable water resource development, complementing the 1987 convention. Arguably the main tool for water diplomacy in the basin, it includes the obligation for riparian countries to preserve the quantity and quality of the basin’s water resources and its environment, to exchange information and consult each other on planned measures, and to notify other states in the event that measures may have “significant adverse effects” on other states. The charter foresees five annexes,¹⁶ three of which have been completed and adopted, while the remaining two are currently being drafted (Figure 6.3).

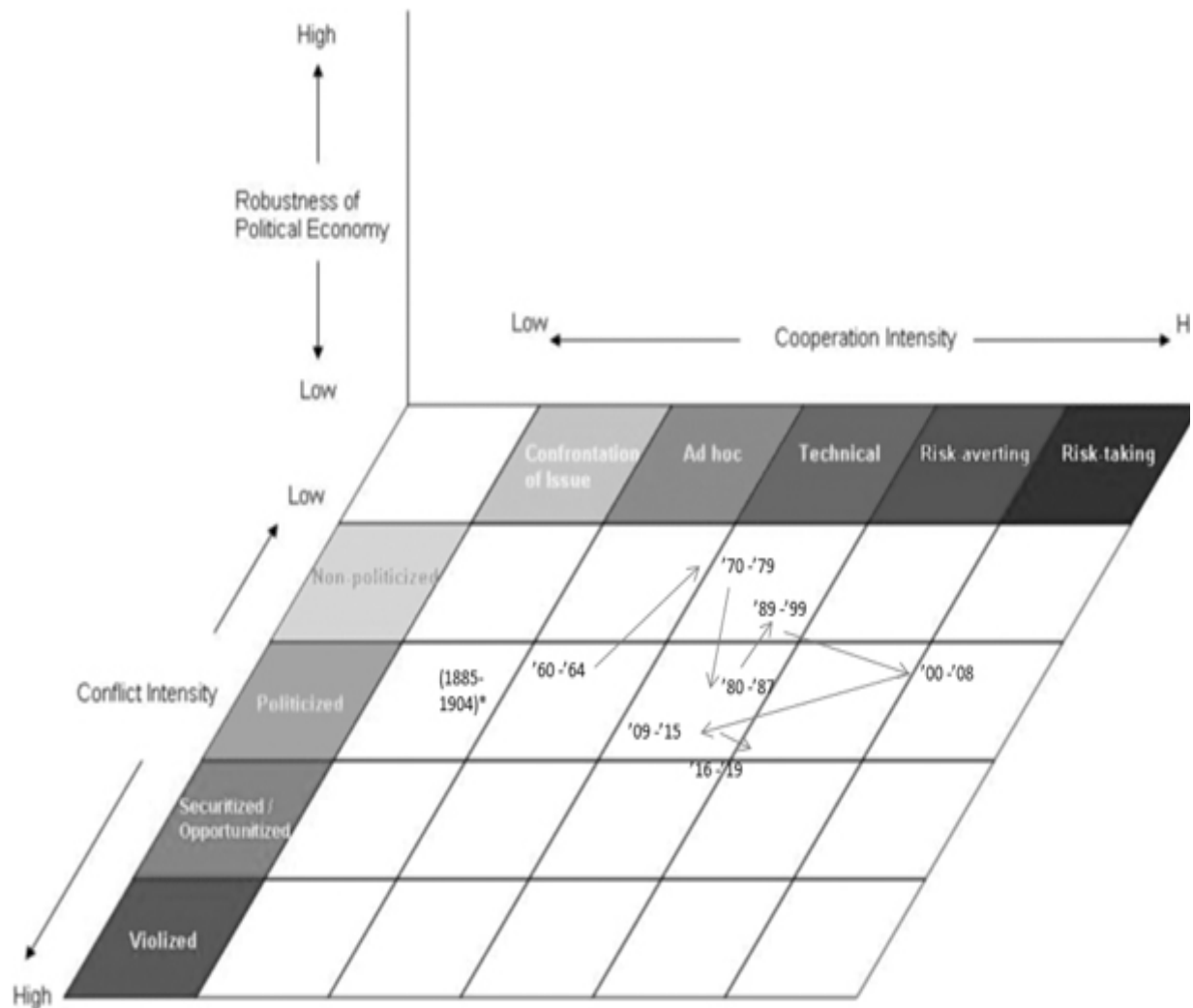


Figure 6.3 Applying the Mirumachi framework to the Niger River Basin.

Source: Author, adapted from Mark Zeitoun and Naho Mirumachi, "Transboundary Water Interaction I: Reconsidering Conflict and Cooperation," *International Environmental Agreements* 8, no 4 (2008).

Discussion – the role of the NBA in water conflict management and cooperation

The basin has so far not witnessed cases of outright conflict over the management of its resources. However, recent developments, notably in the planning and construction of large infrastructure, have refocused attention around the instruments and capacities available to the NBA as a river basin

organization for managing conflicting positions among the different states, and potential cases of noncompliance with its legal texts.

In terms of the history of cooperation and conflict management at the Niger Basin level, the Mirumachi framework shows an environment of prevalently low, occasionally politicized conflict which, however, never reaches violence and only rarely moves into securitization of conflict. On the cooperation scale, a medium-low level of cooperation dominated the period between 1960 and 1999, with cooperation mostly happening at a technical level around the definition of the basin's needs and the institutional arrangement of the NBA. Attempts to move to a risk-averting form of cooperation, inspired by the lessons of the drought of the 1970s, were stifled by issues of financial and organizational capacities.

Nevertheless, there was a progressive move towards the highest degree (risk-taking) of cooperation, which peaked in the late 2000s with the adoption of the Shared Vision, Water Charter, and PADD, through which riparian countries sacrificed some sovereignty in exchange for increased knowledge, stability, legal clarity, and opportunities to access finance.

After 2008, a return to a predominantly technical level of cooperation concerned with the practical implementation of these texts has been noted. The most recent years point in the direction of more risk-averting cooperation, with countries such as Guinea, Mali, and Niger intensifying exchanges around the transboundary implications of their infrastructure projects which otherwise lead to a rapid escalation of conflict.

When it comes to drivers for, and obstacles to, cooperation, the institutional framework of the Water Charter and Shared Vision appears to ensure a decent minimum common denominator for ensuring peaceful resolution of conflicts. But which perceived risks and opportunities lie behind their adoption by member states? And how does this affect the NBA's role in water diplomacy?

Continued low development of the basin

An initial drive to manage the river's water flow to enable navigation recognized that transboundary cooperation was needed, and quickly expanded to a joint willingness to prevent negative effects from extreme variations in water flow, such as floods, desertification, silting, and more recently climate change. Particularly the drought of the 1970s–1980s raised

political awareness of the risks of not developing water flow regulation mechanisms.

Indeed, the highly natural state of the basin means that populations and ecosystems are at the mercy of natural cycles of flooding, rainfall and changes in the productivity of land, and the depth of the water table. This means a direct dependence on rainfall for water and food supply, as still today over 70 percent of the population lives in areas where food security depends on unreliable rainfall and highly variable inter- and intra-annual river flows.

Reduction of these risks was a major driver for the creation of the NBA.¹⁷ Not only did member states realize the transboundary nature of these challenges, which could not be resolved at the national level, but the scale of the basin and the limited shared understanding of its hydrology called for cooperation around new knowledge and information systems backed by data collection and analytical tools. Basin countries had only to gain from cooperation around their shared waters. Perceived opportunities from shared and better information, coupled with a hope for joint brainstorming on solutions to reduce vulnerability to droughts and floods by managing the river's flow, spoke in favor of setting up the NBA and giving dialogue an institutional setting. This is a mission given to the NBA and a driver of its creation and subsequent institutional development.

Following the disillusion of the 1970s during the drought, the solution was seen in giving more powers to the NBA, which was strengthened from "commission" to "authority." At the time, there were hardly any cases of infrastructure construction upstream which could cause certain countries to see a major risk in deeper regional cooperation by raising the issue of the downstream impacts of the projects.

The ratification of the Water Charter, with its legal obligations on notification of major projects and delegation of sovereignty on regional validation of impact studies to the NBA, while representing a major success of the NBA, could be seen as a move of little political astuteness by countries such as Guinea and Cameroon, which are now restricted in their choices. The risk of accepting such deeper cooperation does not necessarily make sense from an international relations realist point of view, but according to some insiders are outweighed by other less visible benefits in terms of regional ties to the other countries.¹⁸ The regional dialogue was

seen also as an opportunity for regional cooperation on other matters, which is also partly why joining the NBA was so attractive to countries only marginally touched by the basin, such as Ivory Coast and Chad, or even Burkina Faso and Benin.

Attracting external finance

Also related to the low development of the basin, but deserving of separate mention, is the interest of riparian states to deepen cooperation around the NBA with the aim of attracting external finance for interventions and development actions in the basin. The promotion of the Integrated Water Resources Management paradigm from the mid-1990s created a funding space for river basin organizations by donors which riparian countries attempted to capitalize on through the Shared Vision and the Water Charter. This contributed to driving a renewed engagement of donors and the NBA in the 2000s. Technical assistance around studies and consultations for the finalization of the NBA's key legal and technical documents speeded up the existing momentum in the region.¹⁹

For member states, the NBA level increases their fundraising profile by providing access to regional funding for activities and programs in the Niger Basin and recently also climate finance. Member states and donors see the NBA level as a form of accreditation. Having a national project feature in an NBA plan or program helps countries with fundraising, while also reassuring donors on a minimum process of regional validation of the project.²⁰

The “neutral” role of the NBA in brokering the identification of a preferred scenario for infrastructure development in the basin has posed a key opportunity for member states to show donors their agreement around a set of prioritized projects. Beyond that, the recognition of the need to agree on a balanced and equitable scenario of basin development has strengthened the mandate of the NBA and allowed it to take the lead in terms of tools and processes for the development of the PADD.²¹ The signature of the PADD and its scenario of basin development is to date a major success of the NBA and still drives its operations. Given its dated role, however, this is a case of a deal that has to be considered dynamic.²²

NBA management, personal ties, and “champions”

In its five decades of existence, the quality of management of the NBA has affected the degree of cooperation between basin countries. Cycles of poor management have reduced trust in the NBA’s ability to deliver on its mandate, with effects both on riparian countries’ and partners’ trust. A recent example of this is the period 2010–2015. Under the leadership of a Nigerian executive secretary, relationships with development partners were almost brought to a halt, and internal issues of personal interests and factional disputes marred the very functioning of the Executive Secretariat.²³

Given that executive secretaries are chosen with the accord of the Summit of Heads of State, there can be doubts as to whether such a “sabotage”²⁴ of the NBA was politically driven in order to further the interests of a particular country or group of countries. It can be argued that after the quick surge forward by the NBA in the 2000s, one or more countries saw a risk in the actual implementation of some of the decisions reached, for example, the development scenario based on the three dams of Fomi, Taoussa, and Kandadji. But in the absence of such proof, or of overly apparent reasons for which this would have been done, we can at most relate this to a symptom of the low priority given to the NBA by the rotating summit presidency. This also indicates—in spite of strong de jure bases of cooperation—a limited de facto willingness.

What remains of value is evidence that “individual decision makers matter [and that] Champions are key.”²⁵ Entrepreneurial executive secretaries, ministers, and presidents of the Ministerial Council, as well as heads of state and government, have been identified as one of the main factors for the successes that the NBA has had, particularly in the 2000s.²⁶

In its current constellation, the NBA’s Summit of Heads of State and Government is made up of a core group of presidents who have strong personal ties dating back to their university times in France.²⁷ This means that sensitive issues such as the speedy construction of a major dam upstream can be settled informally through a few phone calls between presidents and the NBA’s executive secretary. But this is only a historical window, and changes at the head of the basin states in the coming years could mean a change in tendency and a need to revert to much more formal and official practices if conflict around major dams is to be prevented.

High-level civil servants and ministerial advisors at country level who have been charged with the NBA file have been shown to have a significant influence on decisions at Ministerial Council level, as they are in charge of preparing the decisions. This dynamic is reinforced at the group level, as these civil servants most often outlive ministerial changes and are trusted on political decisions in official instances where the nine countries come together to take joint decisions. Typically resistant to change, this group of decision-makers has its own perception of risks and opportunities which, however, represent them as a group much more than they represent the countries on whose behalf they are negotiating. This confirms key message two of Subramanian, Brown, and Wolf: “countries are not unitary actors.”²⁸

In turn, the performance of the NBA has had an impact on the trust of its member states, of its partners, and of civil society. The identification of the lack of representation of the NBA beyond state structures as one of its main shortcomings, exposed by community unrest around planned infrastructure works in the basin, led to the instauration of civil society focal points in the nine basin countries.²⁹ While their operationalization remains difficult, this improvement in the NBA’s governance was seen positively by a wide range of actors which moved closer to the NBA and its ambitions.

Nevertheless, in the relationship between performance and trust there remains the typical paradox of river basin organizations and other entities whose mandate it is to prevent conflict. It is not in times of peace that the organization obtains visibility and interest; it is in times of conflict and catastrophes that the organization itself has not been able to prevent. It is following the big drought of the 1970s that attention refocused around the NBA, and it is after the floods of the beginning of the 2010s that questions were raised about the need to improve the NBA’s early warning system and its communication.

The issue of performance is all the more relevant as the Sahel and West Africa have witnessed a mushrooming of regional institutions in a variety of domains touching on water, agriculture, energy, and environmental and general economic cooperation. The perceived opportunities for riparian states from being part of one of the few regional institutions in the 1960s are not the same as the perceived opportunities of being part of the NBA today. Presidents and ministers who assemble in the context of NBA statutory meetings are today likely to gather in dozens of other meetings,

making the NBA meetings less attractive as routine opportunities to discuss matters of regional cooperation.

Changes in the institutional constellation of the region call for a further specialization of the NBA on missions, products, and services in which it has a comparative advantage as well as a degree of trust by its constituents, clients, and partners. While the ongoing organizational audit of the NBA is to provide options in this respect, the decision is a political one and the feeling is that it will again depend on the entrepreneurship of an individual decision-maker as well as on the combined perception of risks and opportunities of such a development by member states. There is value in the argument that the NBA's Executive Secretariat, as an institution in itself aiming to consolidate its existence, has an interest in proving its value added and economic worth to riparian states through a visible accomplishment and regular fulfilling of a key mission, whether early warning on floods and droughts, or the enabling of a major infrastructure project of shared regional interest.

Since 2015 an increased risk of conflict has been noted, which can be linked to the concrete development of major infrastructures in the basin. This recent trend is likely to limit a further deepening of cooperation, although the legal framework developed until today, can help prevent or at least mitigate conflict.

Conclusion

This chapter focused on the history of cooperation and conflict in the Niger Basin since 1964 and the role of the NBA. In terms of the history of cooperation and conflict management at the Niger Basin level, findings point to a historical prevalence of cooperation over conflict. The Mirumachi framework depicts an environment of low, politicized conflict that never reaches violence and only once tentatively moves into securitization of conflict. On the cooperation scale, there is a progressive move towards a peak of "risk-taking" cooperation in the late 2000s, after which a return to a predominantly technical level of cooperation has been registered.

The prevalence of cooperation over conflict can be linked to a predominance of perceived opportunities from cooperation over its risks, due mainly to three factors: low development of the basin, the role of

external actors (e.g., development partners), and the initiative of particularly entrepreneurial individuals within the basin (“champions”). In a basin characterized by very little infrastructure development and high vulnerability to climatic cycles and extreme events, basin countries have historically seen more opportunities than risks in cooperation around their shared waters. In terms of external actors, the accreditation effect of applying for development funds through a regional organization is one of the main drivers for continued and to some extent deepened cooperation, up to today, as transboundary issues such as of climate change adaptation take over from the more traditional themes of desertification and Integrated Water Resources Management. While state representatives have had center stage throughout the 55 years of the NBA’s existence, particular individuals’ initiative as well as dynamics by specific groups of actors have driven decisions to move toward or away from deeper cooperation.

It appears that member states have more or less consciously drawn a line at the level to which they are willing to give away their sovereignty, at least in the face of the current perceived return that an additional loss of sovereignty would bring them. This is best exemplified by the reticence of member states (and most donors) to move towards labeling certain infrastructure projects “shared,” and formally owned or managed by the NBA. Institutional arrangements around specific multi-purpose dams identified in NBA’s PADD, such as the Fomi and Kandadji dams, represent a defining moment for cooperation and conflict in the basin. The NBA will have to proactively play its role if it is to set a precedent for further infrastructure developments in the basin, at least to ensure that the legal texts are observed.

There is a risk that internal political pressures will push countries to try and turn a blind eye toward agreements they voluntarily entered in the past, but the institutional framework of the Water Charter and Shared Vision ensure a decent minimum common denominator for ensuring peaceful resolution of conflicts in the future, as all nine countries have ratified the legally binding commitments for dispute prevention and resolution. In addition, the broader geopolitical dynamic in the Sahel region, which is pushing from various angles for stronger regional cooperation linked to security initiatives against terrorism, is likely to raise the risk for states of not cooperating in the context of the NBA. Will anyone dare to drown regional cooperation in shared waters?

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7 Water diplomacy and conflict transformation in the Nile River Basin

The key role of the Nile Basin initiative over the past 20 years

Ana Elisa Cascão, Wubalem Fekade, Malte Grossmann, and Abdulkarim Seid

The Nile Basin is considered as one of the world's hydropolitical hotspots and much has been debated in academic and policy circles about the likelihood of interstate conflict between the Nile countries. This perception has led to numerous calls within the basin and from the international community for “conflict prevention” and “conflict management,” wherein an active “water diplomacy” would play a fundamental role. We consider that before engaging with this kind of terminology, one needs to have a more nuanced understanding of what the “conflict” in the Nile Basin is about. Only then it will be possible to analyze the contribution of the Nile Basin Initiative (NBI)—a quasi-river-basin-organization—to find sustainable technical, institutional, legal, and political solutions to the hydropolitical challenges that share a river embedded in regional geopolitical complexity.

The authors suggest that the role of the NBI can be defined as one of “conflict transformation”: 20 years after its establishment it is possible to show how the NBI process has contributed to a transformation of regional hydropolitical relations. Into “what,” how, and with what kind of outcomes will be discussed in this chapter.

The way conventional literature has been looking at the conflict in the Nile Basin suggests that countries could use military power and enter into armed conflict because of scarcity of water, changes in current water allocations, new infrastructure, or because past agreements are not respected.¹ However, we consider that the “conflict” around Nile issues is not only about water. It is embedded in a complex web of international relations and geopolitics, which includes geostrategic and geo-economic competition between the Nile riparians, but also directly or indirectly involves regional and global players that have been involved in financing cooperation processes and or investing in water-related infrastructure. This cannot be overlooked when analyzing the historical trajectory of hydropolitical relations. This is particularly relevant because the basin is characterized by complexity: in hydrological terms, because of its several sub-basins with different hydrological and environmental characteristics and respective contributions to the total Nile flows. In geographical terms, being a basin shared by 11 riparians with different historical trajectories, sociopolitical systems, and economic development paths. Besides, all the riparians aim at making use of the Nile water for development projects, wherein national interests still feature high in decision-making processes.

We consider that it is fundamental to deescalate these perceptions and recognize that the conflict is mainly about the co-existence of different (and sometimes divergent) national interests on how, where, and when to utilize the common water resources. Divergent national interests have historically led to very suboptimal water resources development. Above all, the conflict is also about politically-charged (and historically-conditioned) perceptions, paradigms, discourses, and behaviors that shaped the way countries conduct their policies, positions, strategies, and diplomacy related to transboundary water management. Ultimately such developments have led countries to pursue unilateral projects forfeiting potentially more optimal, comprehensive, and effective approaches. Meanwhile, population growth, growing demands for water, food and energy, environmental degradation, and climate change keep mounting and keep calling for basin-wide solutions that can be provided only through cooperative approaches.

Based on the understanding of the conflict as defined earlier, all riparian countries, with financial and technical support of development partners, established two tracks of transboundary cooperation in the 1990s. Negotiations for a new legal and institutional framework were initiated in

1997 (political track), and the NBI was established in 1999 (technical track). Both tracks were and are overseen by the Nile Council of Ministers (Nile-COM), which included representatives from all the riparian countries. The two tracks were eventually expected to converge and give birth to a permanent river basin organization (RBO), the Nile Basin Commission. That convergence has not yet happened, and the technical track—the NBI—can by now be defined as a quasi-RBO: an institution working toward equitable and reasonable utilization and development of common water resources (similar to a full-fledged RBO), but still operating without a legal framework and therefore still being transitional.

One of the key implications of the lack of a legal framework is that the NBI continues to operate based on the issues voluntarily agreed by the countries to address within the NBI framework—there is no legal requirement to do so. However, the NBI is an established intergovernmental mechanism that has agreed upon rules of procedure that apply for those issues or projects that are brought to the NBI platform. When we speak of the NBI we mean in the first place the countries' deliberations and decisions within the governance framework of the NBI (Nile-COM), the Nile Technical Advisory Committee (Nile-TAC), and regional expert working groups, etc. The implementation is assisted by the three NBI centers—the Secretariat (Nile-SEC) based in Uganda, the Eastern Nile Technical Regional Office (ENTRO) based in Ethiopia, and the Nile Equatorial Lakes Subsidiary Action Programme—Coordination Unit (NELSAP-CU) based in Rwanda. These three institutions are the secretariats and implementation agencies and as such play a major role in developing the common agenda. However, all outcomes of the NBI process are contingent on the political endorsement of the member states. This continued transitional nature notwithstanding, the NBI has been playing a fundamental and central role in transforming the conflict through technical, strategic, institutional, and legal mechanisms.

The departure point in the mid-1990s was one wherein knowledge about the resource base and the opportunities to optimize water utilization were extremely limited. The strategy-oriented knowledge products generated by the NBI opened a new chapter in decision-making processes at basin, sub-basin, and national levels. The knowledge products (namely scientific studies, strategic analyses, Decision Support Systems [DSS], hydro-meteorological databases, socioeconomic assessments and inventories,

State of the Basin Reports, cooperative investment preparations, etc.) and the processes of generating these products (that is, inter-riparian expert validation consultations, working group meetings, and deliberations) have been path-breakers. Besides, the NBI-related processes have provided numerous governance, public engagement, institutional, legal, and political opportunities to overcome long-lasting deadlocks. The process of establishing a full-fledged RBO in the Nile Basin is far from being completed, but the transformations are already tangible.

Theoretical approach

This chapter adopts the view that a state of conflict between two or more interacting parties—whatever the scale and nature of the parties and the causes undergirding the conflict—in and of itself may not indicate a negative state. On the contrary, when the parties-in-conflict use the conflict situation as a feedback mechanism to bring about overdue restructuring of their relationship given irreversible changes (in the respective countries or the international or global environment they are operating under), then conflicts can spur countries to take timely action that leads to positive outcomes. In this sense, conflicts can be drivers for transformation.

This take on conflict also implies recognition of its ubiquity, unavailability, and inherence as parties are bound to continue interacting with each other directly or indirectly. Another consequence of viewing conflicts as benign is the responsibility it assumes, on the part of decision-makers, to have a disposition for collaborative and proactive action to create partnerships and search for common ground while taking conflicts as givens. Given this, we define water diplomacy as the exertion of efforts to intermediate transboundary disputes by bringing water science (data, information, knowledge products) to bear on the transformation of conflicts toward collaborative and constructive working partnerships from which all parties-to-the conflict benefit by addressing the root causes.²

This chapter adopts the concept of “conflict transformation” as preferred to “conflict prevention and management.”³ Transformation involves understanding the root causes of the conflict—not only the hydrological, economic, environmental, or social, but above all the political and diplomatic causes.⁴ It understands the determinant role of the asymmetric

capacities of countries to generate knowledge, set the agenda, negotiate the terms of an agreement, or generate alternative future scenarios. This approach is considered appropriate for two reasons: (1) to analyze the nature and intricacies of the conflict, namely the interplay between inadequate development of common resources and asymmetric power relations and (2) because it looks in-depth at processes and trends that have transformed or can transform conflict.⁵

By looking at processes, one can understand how countries understand what transboundary cooperation entails and what the expected outcomes are. The latter may consist of water security, maintenance of water allocations, food security, development of storage capacity, or infrastructure investment. By looking at trends, one can understand how and why patterns and priorities in national and regional settings change over time, and how conflict can change and also lead to different scenarios for how to address them; the nature and constellations of cooperation and negotiations can change as well. Ultimately, a “conflict transformation” approach does not only focus on understanding how transboundary arrangements change over time but also on what the several actors are doing (or are aiming) to promote structural transformations. This chapter applies this approach to understand the specific role of the NBI over the past 20 years in promoting structural changes in the Nile Basin through technical, strategic, institutional, and legal mechanisms.

The Nile Basin Initiative and its role in water diplomacy

Having in mind the theoretical approach defined in the previous section, it is possible to say that the NBI (as an institution empowered by its member countries and its governance structures, namely is highest decision-making body—the Nile-COM) has been playing a proactive role in conflict transformation in the basin for the past two decades through technical and political water diplomacy. This role has evolved significantly since NBI’s inception in 1999.⁶ At least two distinct periods can be identified: the first decade (1999–2009) and the second (2010–2019).

During the first decade, the NBI process contributed to a transformation of the conflict through two interconnected technical water diplomacy processes: (1) by promoting trust and confidence under a number of

“Shared Vision” programs,⁷ which have contributed to a partial decrease in the enduring conflictive and asymmetric relations between countries and (2) by enabling an environment that allowed riparians to think regionally, namely by jointly studying and preparing projects with tangible basin-wide benefits. These processes have been facilitated and supported by the three NBI centers (Nile-SEC, ENTRO, and NELSAP-CU). Worth noticing is that during this first decade, the NBI’s technical track of cooperation was expected to run parallel to the political track, under which a new and comprehensive institutional and legal framework—the Cooperative Framework Agreement (CFA)—was being negotiated. As will be shown later, this assumption did not hold.

During the second decade, keeping the two tracks separated proved untenable. Disagreements arising in the political track had numerous spillovers on the technical cooperation. In the last decade, the NBI’s role has gradually moved toward intermediation in technical-cum-political water diplomacy. This happened in two ways. First, the NBI is now the springboard for strategic analyses on future scenarios for water resources management and development, namely by generating joint cooperative planning tools and studies on numerous fields of action (see Strategic Mechanisms of Water Diplomacy section). Second, the NBI (on behalf of its members and institutional governance structures) has been providing support to political processes, namely, to renewed talks on the reengagement of Egypt in the NBI. See [Figure 7.1](#) for a portrayal of how the different processes have been interlinked.

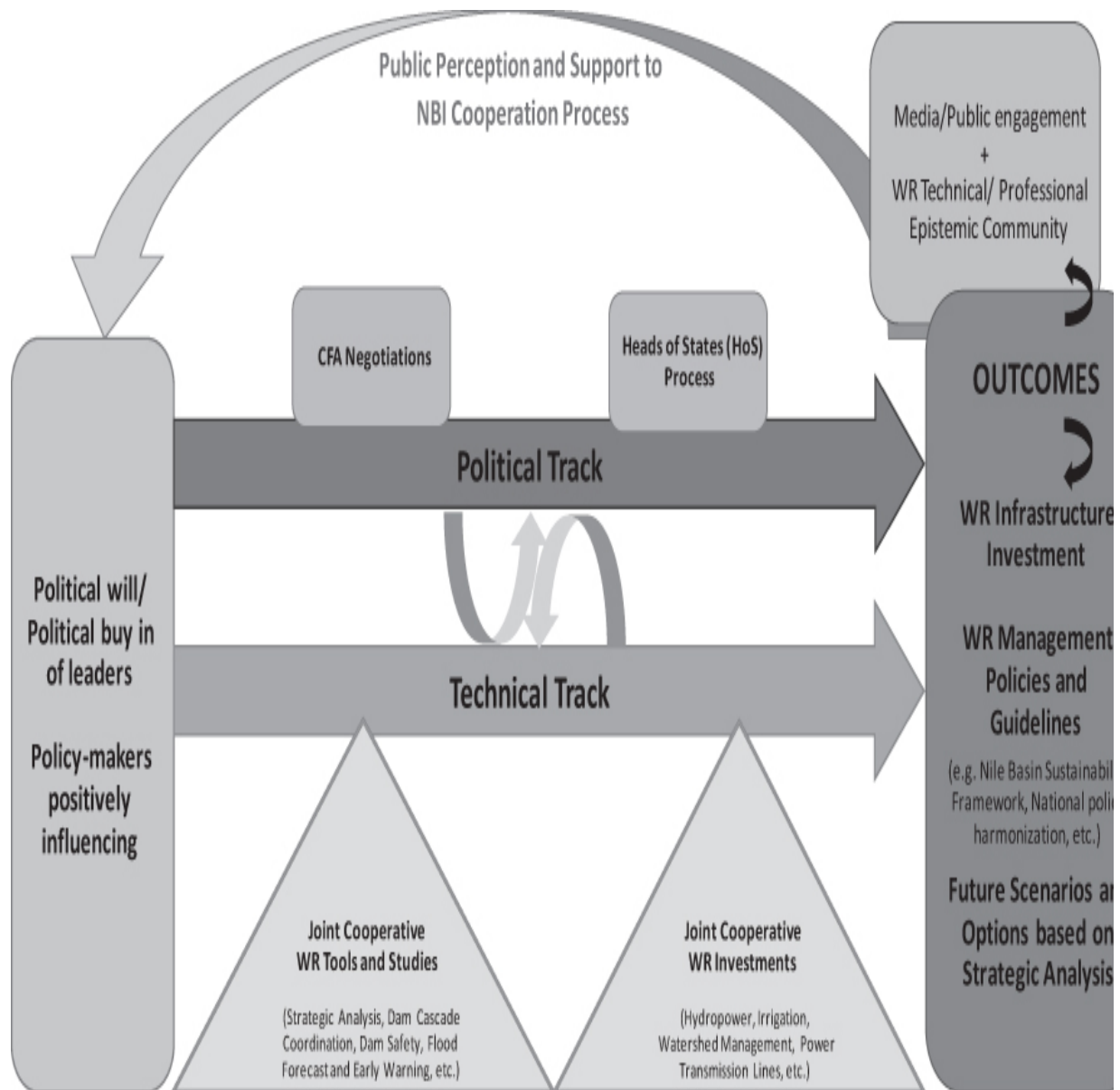


Figure 7.1 Reinforcing political and technical tracks of water diplomacy in the Nile Basin.

In a nutshell, despite the fact that the NBI is a unique RBO, it has contributed significantly to a transformation of the conflict in the basin over the past 20 years. The NBI is unique in the sense that it is only a quasi-RBO, as it still does not (yet) have an agreed and endorsed permanent institutional and legal framework/foundation. However, even as a

transitional arrangement the NBI functions and delivers more than many other fully-fledged RBOs.

The NBI's trajectory is also unique in the sense that despite the extremely complex historical and background and disruptive hydropolitical developments of the past decade, it has been able to adapt, survive, and transform itself. The NBI mandate has not changed since 1999, but its operation has expanded considerably, including providing all riparians with strategic analyses that can guide and influence their decision-making processes toward more optimized approaches. It is now clearer than ever that a robust and empowered regional institution is required for promoting joint cooperative water-related investments, while at the same time minimizing costs and risks associated with scenarios of non-cooperation. The NBI's role to date in regional water diplomacy—be it technical and/or political cooperation—is evident. The next section explores the different mechanisms the NBI has employed over the last two decades and their relevance.

NBI: mechanisms of water diplomacy and their relevance

This section provides analysis and discussion of the different complementary and reinforcing mechanisms of water diplomacy promoted under the NBI process. As we are talking about processes that are still ongoing and work-in-progress, it would not be appropriate to pass final judgment about success or failure. The purpose is rather to analyze and debate their actual and/or potential contribution to the transformation of the conflict in the Nile Basin, as well as the challenges that come with it.

Legal-political mechanisms of water diplomacy

The hydropolitical disputes in the Nile Basin have long been associated with legal agreements. It is out of the scope of this chapter to analyze the intricacies of these agreements, but rather to briefly refer to the implications of the negotiations of a new Nile agreement to the NBI's institutional sustainability and even to the NBI's *raison d'être*.

The CFA negotiations initiated in 1997 among all riparians aimed at reconciling the interests of all in a basin-wide legal agreement, while simultaneously providing the legal and institutional basis for the

establishment of a permanent RBO, to replace the transitional NBI.⁸ With the end of the negotiations in 2007, and the decision by upstream countries to go ahead with a signature in 2010, and the subsequent withdrawal of Sudan and Egypt from the process and freezing of participation in the NBI (Sudan returned fully in 2012), the current hydropolitical situation has evolved into a very complex one, nevertheless not one without possible legal-political solutions.⁹

Because of the disagreement on the political track, Egypt considers the technical track to be delegitimized as well. For Egypt, the two cooperation tracks cannot be understood separately. The Egyptian authorities strongly criticize the decision of the upstream countries to move ahead with the signature of the CFA, while the reservations of the downstreamer and pending issues were not addressed.¹⁰ Consequently, Egypt considers the technical track to not have legal or political legitimacy to continue its work before a solution for the legal-political quandary is found, and calls for the resumption of the negotiations. On the other side, the CFA's signatory countries do not agree, claiming that the negotiations over the CFA have been concluded per the rules of the CFA Negotiation Procedures, to which Egypt has been a party, which namely stipulated that the agreement could enter into force after the deposit of six ratification instruments.¹¹

As of mid-2019, three countries—Ethiopia, Rwanda, and Tanzania (respectively in 2011, 2012, and 2015)—have ratified, while Kenya and Uganda are finalizing their ratification processes and aiming at depositing soon. This indicates that riparians are at a crossroads between adopting the CFA as a basin-wide agreement and having a legal process lingering for a long period over political disagreements. See [Figure 7.2](#) for a timeline of NBI legal-political mechanisms.



Figure 7.2 NBI legal-political mechanisms.

In a nutshell, there is still no basin-wide agreement—the NBI operates under a transitional institutional arrangement and the absence of Egypt makes the dialogue about technical and strategic cooperation more challenging and incomplete. However, the continuous uninterrupted engagement of the other riparians in the NBI clearly shows that countries are still committed to basin-wide cooperation.

However, for the purposes of this chapter, the main question is: Besides the mechanisms already mentioned, what have been the specific tools of water diplomacy that the NBI has been employing to find a solution for this legal-political quandary? Several attempts have been made to re-establish the dialogue and address pending issues. A dual approach can be observed. On the one side, the NBI attempted to avoid that dialogue which had been established earlier would loosen, while, on the other hand, preventing that the level of confidence would deteriorate further. A deliberate effort was therefore made to utilize informal ways of engaging with Egypt, for example through enabling a continued flow of information from the NBI's work, encouraging participation in major public events such as the Nile Basin Development Forum¹² or Nile Day Celebrations, continued engagement with water professionals from Egypt, and targeted third-party facilitated events such as study tours and trainings.¹³

These more informal processes have been essential to approach the different parties and foster dialogue aimed at analyzing and finding solutions for pending issues. The role of the NBI has varied between being

the facilitator of such forums and being an active participant in externally organized events, side by side with official representatives from the riparians.¹⁴ It is difficult to judge the effectiveness of such informal processes, but they have been fundamental for sustaining dialogue between Egypt and upstream neighbors since 2010.

On the other side, a long period of direct diplomatic efforts led by the Nile countries, and in particular the Nile-COM, continued. One of the main high-level political attempts in that direction has been a process led by the Nile-COM and facilitated by the NBI executive director. Between 2015 and 2017, several consultations at the level of Nile-COM were held, and a special committee (comprised of Sudan, Uganda, and Rwanda) was established to re-engage with Egypt, all of which culminated in an Extraordinary Nile-COM Meeting in March 2017.¹⁵ In this process Egypt set out its areas of concern, however no jointly acceptable way forward could be agreed that would enable Egypt to resume participation in the NBI. This was followed by even higher-level talks (between ministries of water and foreign affairs) not only about pending issues but also about expanding the scope of cooperation toward wider regional cooperation and integration. These talks culminated in the first Summit of Nile Basin Heads of State that took place in Uganda, in June 2017. However, no solution was found and the impasse regarding Egypt's re-engagement in the NBI process(es) remains.

Despite the fact that a political solution was not (yet) achieved at the first Nile Heads of State Summit, an analysis of the process shows how the NBI governance structure had been able to mobilize all riparian countries, including Egypt, to find a solution at the highest political level. The Nile-COM in particular has been the main mobilizing force of this process, especially the representatives of the Troika (Uganda, Sudan, and Rwanda), who worked closely with the ministries of foreign affairs and presidential cabinets. During this process, the NBI-Secretariat has provided background support to the Nile-COM.

Institutional mechanisms of water diplomacy

When the NBI came into existence in 1999, it was the first institutional setup in the Nile Basin that included all riparians, contrary to previous cooperative attempts in the basin. Institutional mechanisms of water

diplomacy are an effort the NBI has been pursuing to put participatory and basin-wide cooperation on robust, lasting organizational-cum-institutional architecture as developed, financed, and owned by the Nile riparian states. For that matter, the NBI still is the only existing institutional platform with a mandate for hydropolitical cooperation in the basin, despite the fact that Egypt has frozen (but not withdrawn) its participation in the NBI.

The analysis of the NBI processes as an institutional mechanism of water diplomacy shows two different periods. The first was prior to 2010, when Egypt and Sudan froze their participation in the NBI because of disagreements in the political track. Up until then, the NBI was the platform being used and promoted for dialogue and confidence-building among all parties, the forum where countries could discuss and decide upon technical issues of interest to all—this included knowledge and strategic planning tools, but also to advance talks about future investments in the basin, their opportunities, risks, and trade-offs. The roles of the three NBI centers were well defined, as were the governance structures, and the stakeholder involvement mechanisms—countries were jointly working toward a Shared Vision, under the guidance and oversight of Nile-TAC and Nile-COM, the highest decision-making bodies of the NBI. See [Figure 7.3](#) for a timeline of institutional mechanisms in the two different periods.

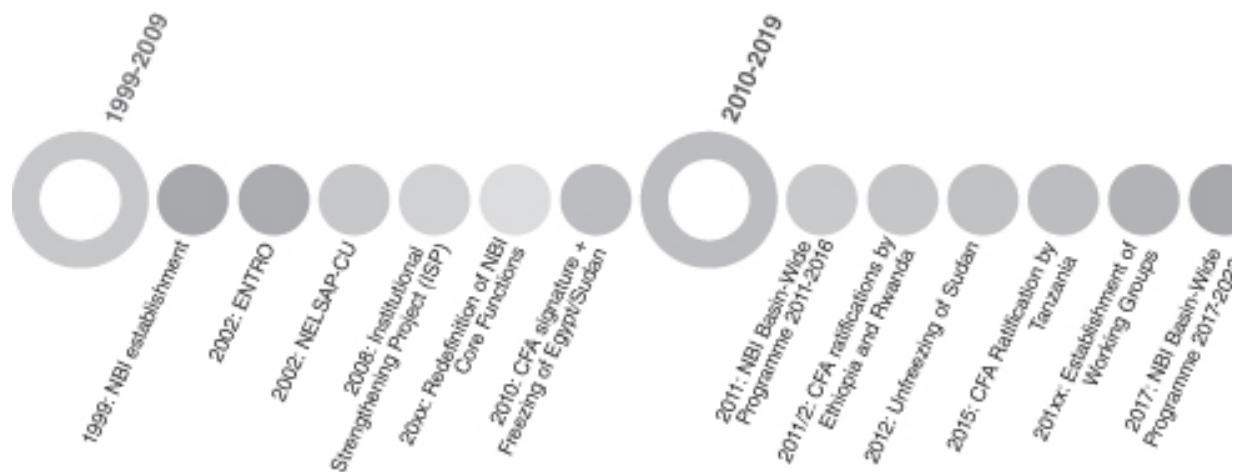


Figure 7.3 NBI milestones of institutional mechanisms of water diplomacy.

However, the NBI was designed as a transitional arrangement pending the conclusion of a new legal and institutional framework (the CFA) then

being negotiated under the political track. Although the technical (NBI) and political (negotiations over the CFA) processes were conducted in parallel, the fact is that since 2010 the CFA process is in a pending status. As mentioned earlier, so far only three countries have finalized ratification of the CFA, and one country—Egypt—is not exercising its membership while Sudan came back to the NBI in 2012.¹⁶ This pending situation negatively affected the modus operandi of the NBI in institutional, financial, and political terms. Regardless of the challenges, the NBI's core orientation remains unchanged: to promote dialogue and enable negotiations between the Nile riparians in their search for workable solutions. Since 2008 the three core functions of the NBI are clearly spelled out: (1) Water Resource Management, (2) Water Resources Development, and (3) Facilitating basin cooperation.¹⁷ As such, the NBI actually has a clearly articulated water diplomacy-related mandate of facilitating cooperation. The NBI has done so in many different ways in the past, most notably through the Shared Vision programs of Confidence Building and Stakeholders Involvement or Applied Training, but mainly through organizing and preparing hundreds of meetings between and across different stakeholders at different levels: political (Nile-COM, EN-COM and NEL-COM), technical (Nile-TAC, regional expert working groups,¹⁸ national consultations), research community (especially through the Nile Basin Development Forums,¹⁹ a science-policy dialogue platform organized by the NBI), and civil society (especially regarding media coverage).

Since the beginning of the second decade of its existence, the NBI process has been focusing on enabling technical decision-making processes pertaining to joint planning, management, and development of water resources. The engagement of member states has been systematically broadened through the establishment of mandated regional expert working groups for key areas of technical cooperation (e.g., wetlands, hydrological monitoring, strategic water assessment). This has created a closer link between the NBI centers and the national governance structures (not limited to the water sector). It is worth highlighting that all these latest developments have been taking place against a background of complex hydropolitical, geopolitical, and regional political changes.

The cumulative effects of these institutional mechanisms are: (a) consolidation of a formal governance platform and procedures related to

basin development—in the form of established intergovernmental procedures and regular meetings that enable countries to deliberate in a structured manner on common issues and (b) gradual emergence and consolidation of not-so-formal yet critical norms and values that guide the cooperation process, and that find their expression in a multitude of joint consultations, joint recommendations, policy decisions, and joint investment projects. All meetings and processes have facilitated a constant feedback between technical and political tracks of cooperation; enabled a renewed dialogue at national, sub-basin and basin levels; and ultimately contributed to the creation of a technical and professional Nile epistemic community.

Last but not least, over the past decade, one of the instrumental mechanisms aimed at reinforcing understanding of benefits of cooperation has been specific activities related to public participation and dialogue, namely through proactive media engagement.²⁰ The goal has been to promote public consensus on transboundary cooperation that would eventually enable leaders and policy-makers to embark on new and bold decisions that may not necessarily be in line with national historical sanctioned narratives. These media engagements have at the same time increased the visibility of the NBI's work—which has been often “side-lined” by the disproportional media coverage of disagreements, failed or incomplete negotiations, and/or potential conflicts.

Technical mechanisms of water diplomacy

The resource base, current uses, challenges posed to the resource, potential/future uses, and infrastructure needs and opportunities, are thorny issues in the Nile Basin. While decisions over the allocation, management, and development of the water resources should be based on sound and objective scientific knowledge, this is not an easy task. One can find enduring disputes about basic figures on water availability, asymmetric capacities to generate knowledge, strong resistance to sharing national data, and lack of harmonization of national databases, among many other predicaments. The role of the NBI in promoting a common knowledge base dates back to its inception and it became more extensive and sophisticated over time.²¹ It is this very effort of the NBI that counts as a technical mechanism of water diplomacy. Such efforts include the endeavor to

establish commonly validated data, such as those developed under the Cooperative Regional Assessment Studies for the sectors of watershed studies, irrigation, power trade in the Eastern Nile sub-basin,²² the establishment of standards; and the development of common analytic tools that can provide a solid foundation for dialogue and cooperation.

During the first decade of existence (1999–2009), under the Shared Vision Program, among others, the NBI initiated the following knowledge-related foundational mechanisms:

- *Water Resources Planning and Management Program*: to enhance the analytical capacity from a basin-wide perspective to support decision-making processes at national and regional levels;
- *Water Policy Component*: to establish a baseline and needs assessment, and establish guidelines and good practices for policy formulation and implementation; and
- *Nile Decision Support System (Nile DSS) Component*: establishment of groundbreaking analytic tools and a database to monitor, model, and forecast current and future utilization, management, and development of common resources, which ultimately can serve to inform decisions at national and regional levels. The Nile DSS is the fundamental knowledge tool used as the basis for water resources analysis and decision-making processes developed in the following decade.

These mechanisms were a cornerstone of the Nile cooperation process (see [Figure 7.4](#) for a timeline of technical mechanisms). First, they represent the first knowledge base jointly developed by all countries (through the NBI centers), which have generated knowledge previously inexistent. It is particularly relevant to highlight that those knowledge products/processes were generated by a two-decade-long collaborative effort by professionals of the Nile countries themselves. For sustainable conflict transformation, solutions to transboundary problems should emerge out of the interaction of the parties themselves through joint analyses, information sharing, and relationship building so that ultimately the needs (and fears) of all are addressed. Therefore, the NBI's efforts have provided a foundation for sustainable cooperation and conflict transformation. Besides, focusing on the large benefits from cooperation overrides the last-longing dominant

perceptions that focus on the risks of conflicts. Therefore, this represented a major discursive transformation. Second, the new knowledge generated clearly contributed to more informed and collective decision-making.

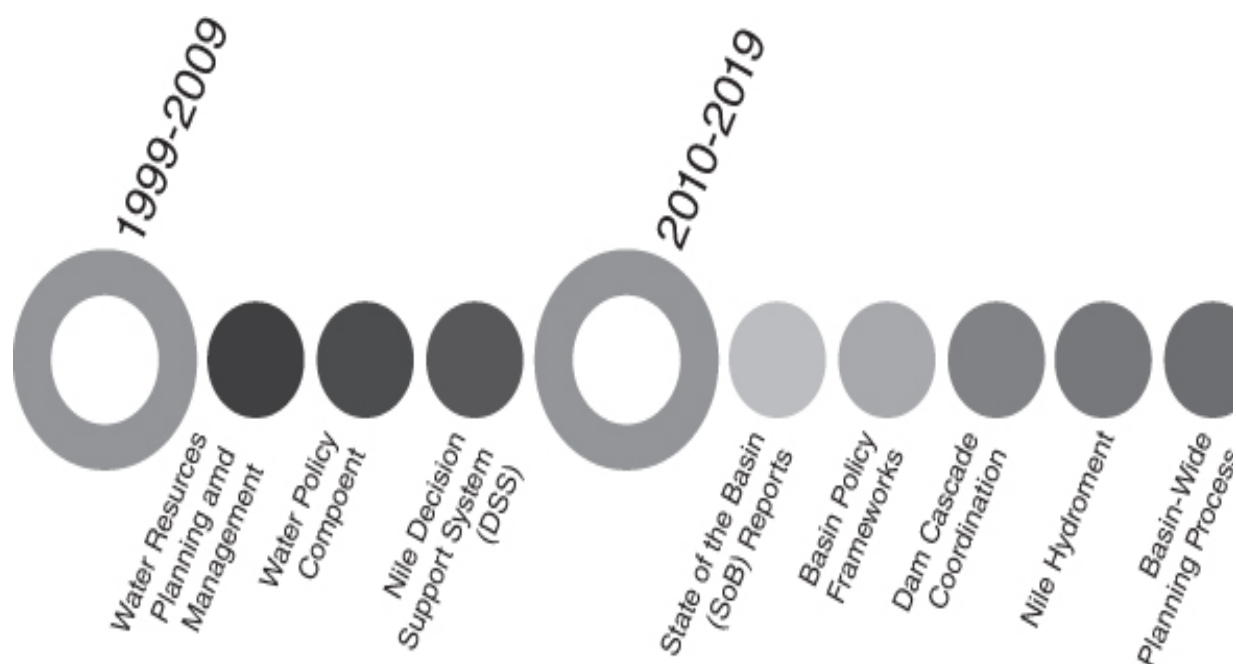


Figure 7.4 Timeline of main technical water diplomacy mechanisms.

During the second decade (2010–2019), technical cooperation moved toward the generation of strategic knowledge and planning tools, tailored to inform and influence increasingly complex collective decision-making processes:

- *State of the Basin (SoB) Report and Nile Basin Water Resources Atlas:* the first SoB in 2012 provided a comprehensive overview of relevant issues and a joint understanding of the state of the basin resources and development.²³ The second SoB (2019) is currently being finalized. An SoB is a fundamental component of any transboundary decision-making process, as it is a prerequisite for a reporting process designed to monitor policy impact and to inform basin planning cycles. The Water Resources Atlas²⁴ captured for the first time a commonly agreed description of the basin's hydrology, which was the outcome of a consultative process to establish a baseline for water use and flows;

- *Policy framework for basin management*: under the Nile Basin Sustainability Framework,²⁵ member states have continuously developed specific policies, strategies, and guidance, which are binding for the cooperation under the NBI framework that is intended to provide orientation for countries. This includes procedures for information and data sharing, disclosure of information on planned investment projects,²⁶ and strategies to address wetlands and environmental flows,²⁷ all of which ultimately constitute parts of an enabling policy framework for basin management;²⁸
- *Establishment of a Nile Hydrological Monitoring System*: in 2014 the Nile-COM agreed on the design of a basin-wide joint hydrological network²⁹—a regional monitoring of more than 70 hydrological stations that will allow countries to monitor and share data in a systematic manner and under agreed mechanisms; implementation began in 2018; and
- *Coordinated management of dam cascade*: after having addressed issues around dam safety,³⁰ the riparian countries are now working to study the optimization potential of the coordination of dams of regional significance (in particular in the Eastern Nile), and toward a transboundary dam reservoir cascade management mechanism;³¹ precursors for coordinated operation—such as flood flow forecasting—have been operational for several years now.

The technical processes mentioned earlier have resulted in the collaborative generation of knowledge products and capacity building of strategic importance. These include data collection, scientific monitoring, modeling and assessment, forecasting, and state of the basin reporting. This represents a great leap forward in terms of enabling transboundary cooperation processes, as Nile countries move progressively toward regional thinking, planning, and ultimately collective action. They are also key entry points to embark on joint investments of regional significance.

Strategic mechanisms of water diplomacy

Based on (but going beyond) technical mechanisms of cooperation, in the last decade under the NBI process, the riparians have also been deploying

strategic mechanisms of water diplomacy, at least along three different fronts: (1) having the riparian countries jointly developing strategic options for improved basin-wide management based on a collaborative water resources assessment (called simply Strategic Analysis hereafter); (2) moving toward a basin-wide multi-sectoral investment program incorporating projects of regional significance (referred to as the Nile Investment Agenda hereafter); and (3) promotion of cross-institutional cooperation between riparian countries beyond the (strict) water sector, namely on projects of regional significance such as energy, environment, trade, and ultimately regional integration.

The NBI process is moving toward a joint basin management and planning framework that consolidates many of the partial elements developed over the last few decades. In a nutshell, joint basin planning is aimed at providing a mechanism for coordination of water resources management and development interventions in the basin. Joint planning serves two interrelated goals: to contribute toward harnessing the opportunities across national boundaries and to reduce tensions among riparian countries. Ultimately, a comprehensive planning framework will be instrumental to guide future water development and management in a manner that is optimal and sustainable, and that therefore decreases the likelihood of conflicts.

The foundation for the current strategic work being developed by the NBI was laid in the “NBI Strategy 2017–2017” (also known as the ten-year strategy).³² The strategy builds on the achievements of the last decade, but aims to translate the NBI’s Shared Vision into a more concrete agenda for the basin and defining the NBI’s specific niche in delivering this agenda. The “new” NBI strategic pillars are summarized in [Figure 7.5](#)—they are broad enough to encapsulate the agendas of all actors and back up a broader vision of regional economic cooperation as set out by the first Nile Basin Heads of State Summit in 2017.³³ A joint planning framework is consequential for basin cooperation in the long run. However, articulation and adoption of an agreed upon joint planning and management framework implies building consensus regarding the (current and future) pressures, risks, and threats the common Nile water resources face.

GOAL 1: WATER SECURITY
- MEETING RISING WATER DEMAND



GOAL 2: ENERGY SECURITY - UNLOCKING AND
OPTIMISING HYDROPOWER POTENTIAL



GOAL 3: FOOD SECURITY - INCREASING
AGRICULTURAL PRODUCTIVITY



GOAL 4: ENVIRONMENTAL SUSTAINABILITY
- PROTECTING AND RESTORING DEGRADED
ECOSYSTEMS



GOAL 5: CLIMATE CHANGE ADAPTATION
- PREPARING FOR CLIMATE CHANGE
IMPACTS



GOAL 6: TRANSBOUNDARY WATER GOVERNANCE
- BRINGING PEOPLE TOGETHER TO BUILD A
COMMON GROUND FOR WIN-WIN BENEFITS



Figure 7.5 NBI strategy 2017–2027: the six cooperation pillars.

The three primary strategic mechanisms are Strategic Analysis, the Nile Basin Investment Agenda, and cross-institutional cooperation in a multi-level, multi-actor context—each of which is discussed in turn below. First, in terms of Strategic Analysis, since 2016, all riparians except Egypt have endorsed and have been involved in an in-depth collaborative assessment of water supply and demand (irrigation, municipal and industrial use, hydropower, wetlands, etc.) which will inform the process of exploring strategic options for future developments.³⁴ The motivations for this process come from: first, the fact that unless water resources development planning is coordinated, the basin is very likely to face severe water shortages; and, second, that there are technical solutions through which greater water use efficiency can be achieved and water shortages substantially alleviated.

Therefore, this strategic mechanism serves two purposes: (1) to establish a mechanism for regular update of the baseline and future water resources development that can be used to inform basin planning; and (2) to provide

strategic recommendations for improved water resources management. These recommendations are to be consolidated into a basin framework management plan that will provide orientation and reinforce the rationale for the emerging regional investment agenda.

Second, in terms of the Nile Basin Investment Agenda, the development of multisectoral investment programs is one of the ongoing strategic mechanisms involving the NBI and other regional institutions. The NBI process has fostered sub-basin approaches to identifying investment projects of regional significance that are embedded in the basin agenda, such as taking into account cumulative effects, addressing priorities for sustainable and efficient water resources management and that have the collective buy-in from riparians. An example is the Rusumo Falls Hydropower Project (jointly owned by Rwanda, Burundi, and Tanzania), which has been developed to showcase opportunities around jointly owned infrastructure. One of the challenges for the NBI has, however, been that it has not been able to attract the major projects of regional significance to its platform, mainly due to countries' concerns around the ability of the NBI to build consensus around them without unwarranted delay. For example, the Grand Ethiopian Renaissance Dam or GERD (launched in 2011) has been implemented outside the NBI framework when it could have been under ENTRO/NBI auspices.³⁵ Building a basin-wide consensual investment agenda on priority projects is therefore also one of the strategic directions for the NBI, which, however, is also highly contingent on the political process.

Third, the NBI process has increasingly recognized the multi-level and multi-actor context of cooperation. The NBI has therefore established cross-institutional cooperation with other intergovernmental mechanisms that also have a mandate related to the basin's development. This is in an effort to coalesce around a broader Nile agenda. In particular, there are two regional institutions that cut across the basin: the Lake Victoria Basin Commission (LVBC) and the Water Unit of the Intergovernmental Authority on Development (IGAD).³⁶ Regarding the infrastructure and trade agenda, these are under the broader framework of the African Union and the Common Market for Eastern and Southern Africa (such as the East African Power Pool and the Programme for Infrastructure Development in Africa). Also, attempts are made to strengthen cross-border cooperation on sub-basins between countries under their respective cooperation arrangements.

Moving forward, a comprehensive agenda for regional investments is at the heart of all these processes, as the recently developed strategic Eastern Nile Multi-Sector Investment Opportunity Analysis (MSIOA) shows.³⁷

These strategic mechanisms of water diplomacy are highly political and face challenges. The Strategic Analysis is progressing but Egypt is not participating in the assessment. Hence it will make the task of translating the recommendations into policy more complex. As for the Nile Investment Agenda, it requires numerous iterations among institutions, and it will need to transcend the common problems related to cross-institutional cooperation. The high-level engagement, such as high-level representatives of ministries of relevance and even heads of state, will be crucial for countries to jointly move forward with the agenda of regional development and integration.

In conclusion, the ongoing processes highlight the constructive proactive role that the NBI currently has, and can be expanded, to guide the Nile riparians toward regional, basin-wide, and holistic strategic thinking and action(s)—wherein the benefits are understood, generated, and shared, and transboundary costs, impacts, and risks minimized.

Conclusion

The analysis in this chapter has shown how the NBI played a central role in transforming the conflict in the basin. Several mechanisms of water diplomacy have been deployed over the past 20 years. This has been far from a straightforward task, namely due to the complex nature of the “conflict,” and the hyper-fast political, economic, and geostrategic changes in the region. The NBI’s trajectory in promoting water diplomacy is unique—despite the complex hydropolitical developments of the past decade, the NBI has been able to adapt, survive, and transform itself into a (quasi-)river basin organization. The NBI is now in a position to provide strategic directions to guide decision-making toward optimized approaches to water management and development. The jury is still out on how decision-makers will use it in their national and/or regional decision-making processes.

Overall, the NBI has been able to bring to the attention of political leaders, water resource managers, and the public at large that the Nile is a shared, finite, and increasingly vulnerable system; that upstream and

downstream riparians are interdependent, and hence the need for recognition of mutuality; that more can be gained from basin-wide sustainable cooperation; and that non-cooperation is a non-starter. Further, the NBI's work is gradually but surely transforming views of the conflict over the Nile from a "battle" toward a collective problem that can be solved through collaboration. The NBI has played multiple intermediation roles to transform the conflict in the Nile Basin:

- It has striven to support countries in framing and appraising the Nile water resources problems beyond the hydropolitical, to include scientific, long-term, basin-wide approaches;
- It has striven to support riparians to appreciate that along with the problems, challenges, fears, and disputes, lie immense opportunities and possibilities (awaiting bold and visionary actions) to jointly generate viable win-win solutions;
- It has enabled, riparian countries to keep engaged and communicating with each other even when disagreements surfaced. Such complex behavior, on the part of riparians' leaders and policy-makers, bodes well for the basin and deserves all-round support from within and outside the basin;
- It has built capacities and narrowed knowledge asymmetries that in the long run will enable more productive engagement;
- It has collaboratively built a significant knowledge base (which has improved the scientific and general understanding of the basin); and
- It has gradually contributed to the emergence of what one may call "normative infrastructure" of producing water science among policy-makers, scientists, researchers, and technical staff of the countries and to build up an epistemic community of practitioners.

Last but not least, two central questions remain unanswered: Can the NBI really continue to function indefinitely in the absence of a permanent legal framework? And, in the long-term, can the NBI deliver according to its mandate, and still be the springboard for meaningful regional investments that promote optimal utilization of the Nile water resources? The hydropolitical trajectory of the past 20 years intimates that the answers ultimately depend on whether the leadership of the Nile riparians can

muster the required political will and audacity to embark on sustainable transboundary cooperation that builds on, but transcends, what the NBI has delivered so far.

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8 Managing abundance

CICOS and the Congo

Tobias von Lossow

The Congo is among the most important river basins worldwide. The basin features plenty of hydrological, climatic, and geographical superlatives which reflect the importance of this river system for the entire African continent. The Congo originates in the equatorial highlands, flows northwest, and traverses the world's second largest rainforest before it forms in the southwest a series of waterfalls and rapids and drains through an 80 km long delta into the Atlantic. At more than 4,700 km, the Congo is the second longest river in Africa after the Nile, encompassing the continent's largest catchment area with 3.7 million km². The Congo is the world's second largest river by volume after the Amazon, discharging about 41,000 m³ per second into the ocean. Some stretches of the Congo are up to 11 km wide, others up to 220 m deep. Countless smaller branching tributaries, various waterways and canals crisscross Central Africa, building a unique and dendritic network of 25,000 km in total, of which at least 17,000 km are navigable. The Congo is the lifeblood of Central Africa's socioeconomic development, providing its most important regional transport network. The continent's largest body of freshwater regulates the pulse of a gigantic ecosystem—the river basin and the rainforest—and holds the world's greatest untapped hydropower reserve.¹

Given its scale and scope, the Congo provides the outstanding potential for the development of the whole region that can foster cooperation among the riparian states. But there is also a risk of increased competition and conflict over the shared water resources. Its mandate makes the transboundary river basin organization (RBO) of the Congo, the Kinshasa-based International Congo-Oubangui-Sangha² Commission (*Commission Internationale du Bassin Congo-Oubangui-Sangha*, or CICOS), the obvious

regional actor for facilitating cooperation over water, joint project implementation, and water diplomacy intervention when tensions arise. In this regard, CICOS has been successful in the field of navigation in its 20 years of existence. This chapter assesses whether CICOS is appropriately designed and sufficiently equipped to play such a positive role also in more competitive and controversial areas, such as hydropower development or water transfers that will gain importance in the future.

Hydropolitical setting

The hydropolitical geography in the Congo Basin features a set of characteristics that make the constellation of the riparian states and the water issues quite specific in comparison to other major river basins worldwide. The Congo Basin hosts ten riparian states: the Democratic Republic of the Congo (“Congo-Kinshasa”/DRC) with 62 percent of the basin area, the Central African Republic (11 percent), Angola (8 percent), the Republic of the Congo (“Congo-Brazzaville”; 7 percent), Zambia (5 percent), Tanzania (4 percent), Cameroon (2 percent), and Gabon, Burundi, and Rwanda (each less than 1 percent). Despite the large number of riparian states, the DRC dominates the basin to a certain extent; holding upper, middle, and lower reaches of the river makes it an upstream and downstream riparian alike (see [Figure 8.1](#)). A significant proportion of the rainfall in the basin occurs in these areas, too. The de facto control of the Congo by the DRC—perceiving the river as its own—has been politically largely uncontroversial in comparison to other major basins with little reason to demur for the other riparian states.³

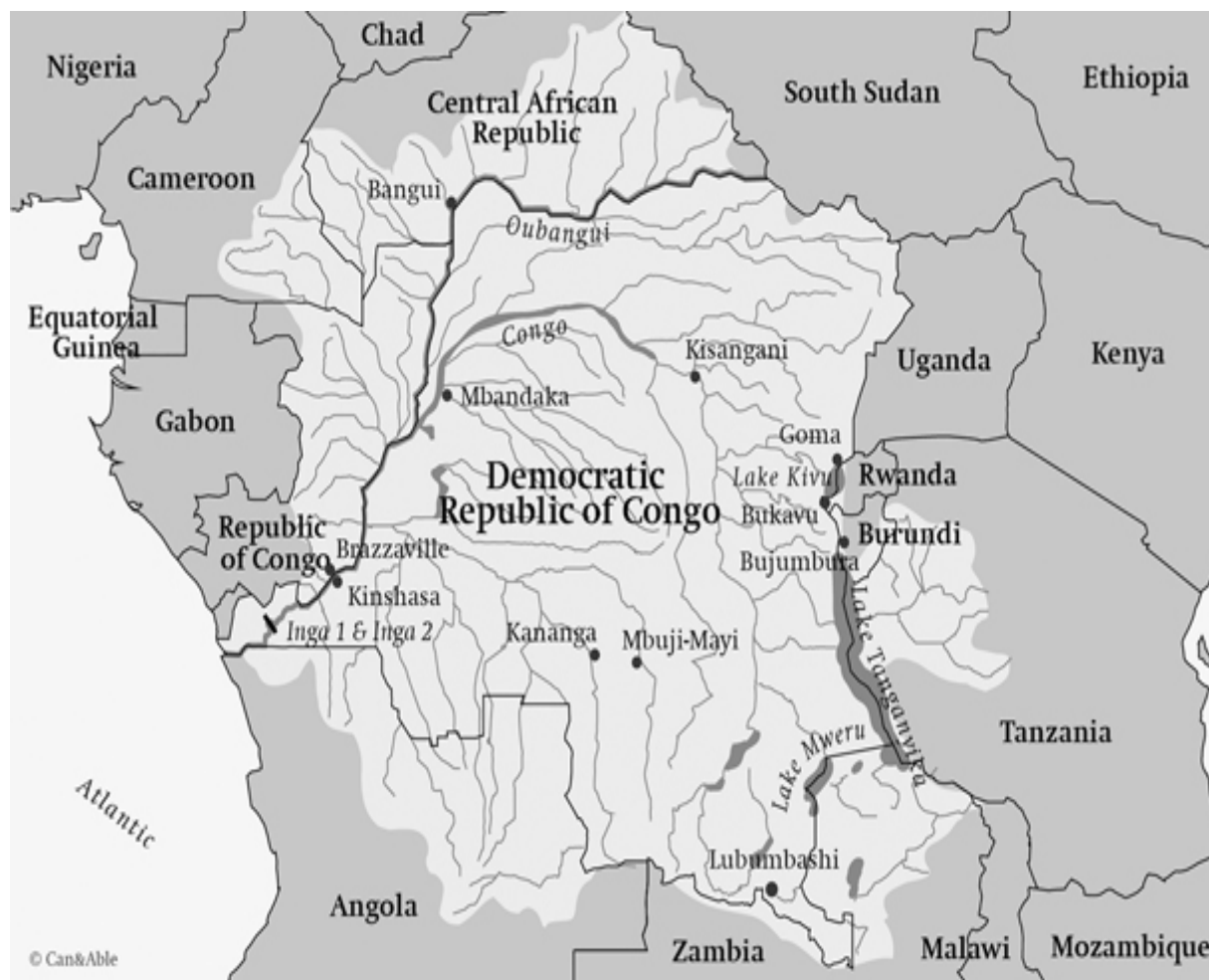


Figure 8.1 The Congo Basin.

So far, the geographical and hydrological conditions have prevented classic interstate water conflicts between upstream and downstream states—typically between relatively water-rich countries in higher altitudes contributing to the river discharge and states that are primarily consuming these resources in arid or semi-arid regions downstream. Due to the sheer dimensions, water use in the basin has often been discussed in a regional context—even more with regard to future hydropower exploitation. Several countries in the region could benefit from intensified water utilization or water infrastructure development. Furthermore, all riparian states and in particular the geographically privileged DRC require external partners to implement major hydraulic engineering projects. This opens the door for other states to influence policy-making, planning and implementation to a

certain degree. In general, the economic and financial situation of all the riparian states make multilaterally planned, financed, and implemented infrastructure more appealing.

Moreover, and importantly, only a small proportion of the Congo's impressive water volume is actually used. Classic upstream-downstream rivalries or conflicts over water distribution and consumption, or control over the resources, as in other major river basins, are practically irrelevant for the Congo.⁴ This applies even more for certain stretches of the river which mark borders between riparian states. In such cases, the planning and implementation of infrastructure projects can even dictate cooperation, for example when a dam is to connect the river banks of two countries.

Challenges in the basin: cooperation and conflict potential

The basin provides cooperation potential in various fields. Historically, navigation played a very important role for commercial transport. Disputes over the legal status of the Congo date back to the late nineteenth century. At the Berlin Conference in 1894–1895, the river was declared an international zone under the King of Belgium to ensure free access and navigation.⁵ After decolonization, the legal status of the Congo as an international river was contested by Zaire. During the 1970s and 1980s a few specific, mostly bi- or trilateral, agreements were made that primarily dealt with the maintenance of navigable sections and the river as border section.⁶ Today, the Congo is the prime means of transport in the region, where roads are in bad shape and partly impassable during the rainy season, the railway network run down, and flight connections scarce and expensive. Plenty of remote settlements can only be reached by waterways, which makes significant parts of the population dependent on the river as the only transport infrastructure.

Nevertheless, despite its huge importance for transport, connecting also important inland ports, the Congo suffers from poorly maintained shipping infrastructure. Ports lie in ruins, jetties crumble, signals and signs are lacking or need to be renewed. A further challenge is poorly trained crews. On the treacherous waterway, accidents occur on a regular basis, with more than 1,000 lives reported lost every year; accidents with hazardous loads threaten the environment even if the enormous volume of the Congo can

absorb pollutants better than other rivers. Illegal “taxes” collected by local networks and criminal gangs also hamper commercial shipping. In addition, remarkably decreasing water levels as a consequence of climate and environmental change leave certain settlements cut off from the outside world for certain periods of the year, in particular in the southeastern and northern parts of the basin.⁷

Another area of cooperation is the protection of ecosystems, biodiversity conservation, and climate change adaptation. The Congo is inseparably linked with the gigantic rainforest that it traverses. About 50 percent of the river’s water cycle occurs in the tropical rainforest, while the evaporation from the rainforest contributes 75–95 percent to the region’s rainfall. In terms of biodiversity, the Central African rainforest is the world’s most diverse rainforest, home to 10,000 plant species and 2,500 animal species, among them two-thirds of all primates.⁸ The forests are also key for reducing greenhouse gas emissions through conservation, which makes the whole ecosystem a matter of global concern.⁹ As a carbon sink, the forest holds up to 39 billion tons of carbon dioxide, which corresponds to total global emissions in 2018. About the same quantity is stored in the peatlands and wetlands, most of it in the inner delta of the Congo.¹⁰ However, due to massive logging and mining activities, about 2,000 km² of rainforest are lost every year, degrading the ecosystem’s capacity. This threatens the rainforest, hampers navigation, and reduces hydropower potential due to diminishing rainfall, falling water levels, and changing sediment loads.

Hydropower is another prominent water use. The Congo Basin holds 13 percent of global hydropower potential, which is to equivalent 100,000 megawatts, which could supply most of the continent’s current electricity needs.¹¹ To date, less than 3 percent of this potential has been developed, in about 40 barrages altogether. Only the Inga dams south of Kinshasa can generate significant amounts of electricity—but the installed capacities of almost 1,800 megawatts (MW) (Inga 1, Inga 2) are not used. Both plants run at under 50 percent capacity, also because maintenance has been neglected. Another large dam with 4,800 MW has been planned and will be built in the area (Inga 3), but has been delayed several times given high costs, the fragile security situation, and poor investment conditions. The region suffers a lack of electricity: in the DRC for instance, less than 10 percent of the population has access to electricity, and in the south, some

mines operate at reduced capacity or suspended operations because of electricity shortages.

Holding about one-third of Africa's freshwater, the Congo could contribute to improved drinking water supplies and food security in the region. About 60,000 km² of agricultural land could also be irrigated—an equivalent to the size of Togo or Latvia. Water supplies and food security are alarmingly low across the basin. In the DRC, at the bottom of these rankings, less than 10 percent of households have a main supply, only 26 percent of the population has adequate access to clean drinking water, and most depend on unsafe resources, increasing severe health risks and mortality rates. Also, agriculture and food production need to be stepped up, as all ten Congo riparian states are food net importers. So far, there are just a few larger irrigation projects in the basin—most agriculture is rainfed and often practiced in subsistence farming.

Despite the big potential for cooperation, competition over utilization and distribution of the shared water resources of the Congo will increase in the future.¹² As a consequence, tensions may rise, for instance in the context of increasing water demands for hydropower or increasing pollution related to mining activities. One example that illustrates diverging interests and conflict potential is the Water Transfer Project, which is supposed to divert water from the Congo Basin into the Lake Chad Basin to ameliorate the ecological disaster in the latter.¹³ Such a transfer would result in even faster decreasing water levels in the Congo, which would hamper navigation in the upstream branches and reduce hydropower potential downstream.

Consequently, the DRC and the Republic of Congo oppose such plans while the Central African Republic and Cameroon along with the other Lake Chad riparian states of Niger, Nigeria, and Chad support it. The idea of such a water transfer has been reappearing for several decades—in other contexts also discussed from the Congo to the Niger or the Nile.¹⁴ The current regional and international focus on the security and water situation in the Lake Chad region has stirred a concrete interest in this idea. In 2018 the Italian Ministry for the Environment, Land, and Sea signed a memorandum of understanding according to which Italy, together with the Chinese Company PowerChina, would complete feasibility studies for the water transfer to the Lake Chad Basin.¹⁵

Creation and mandate of CICOS: success story with broad competences

Cameroon, the Central African Republic, the Republic of Congo, and the DRC established CICOS in November 1999. As an intergovernmental body, the commission was put in place as part of a rather long-term approach to facilitate cooperation, as well as to overcome the limits of previous cooperation mechanisms.¹⁶ CICOS is a specialized agency of the Central African and Monetary Economic Community (*Communauté Économique et Monétaire des États de l'Afrique Centrale*—CEMAC) but includes also non-CEMAC-members.¹⁷ CICOS particularly refers to the CEMAC-DRC navigation code—common rules and standards that were agreed on already in April 1999 and that form the basis for regulating the navigation on the waterways under the commission. Interestingly, this institutionalization of a uniform river agreement applied only to the navigable waters of the basin.¹⁸

It took until 2004 before CICOS effectively became operational. The starting point of what turned into a broader and largely harmonious cooperation was inland navigation, particularly to improve the conditions for navigation on the Congo. In 2007 the member states signed an addendum to the agreement which expanded the organization's mandate to water resources management and turned CICOS into a transboundary operating RBO with coordinating and advisory tasks. Over the following years, the positive cooperation experience over navigation encouraged the member states to put more effort and greater political weight behind CICOS. The intensified relations between the member states had also a moderating influence on some of their other conflicts, such as DRC's territorial disputes with the Republic of Congo and with Angola.¹⁹ CICOS role in formulating common interests and coordinating cooperation, while acknowledging diverging interests, has even attracted further riparian states: Gabon joined in 2010 and Angola in 2016 (the latter of which had had observer status since 2007).

Since the expansion of the mandate in 2007, CICOS has thus been entrusted with two main missions: the promotion of inland navigation, and Integrated Water Resources Management (IWRM). While the mandate itself remains relatively vague, in particular on the implementation of IWRM, CICOS has formulated a set of comprehensive objectives to:

- guarantee the sustainable management of waterways;
- harmonize river transport regulations for safe navigation and environmental protection;
- integrate all kinds of water use into regional planning;
- optimize water allocations by water use;
- share the benefits generated by the uses of water among the riparian states;
- support the development and fight against poverty in the subregion; and
- promote food security.²⁰

The commission has undergone a remarkable development in the 20 years of its existence—from a very specialized agency with a narrow focus on navigation to an RBO with a mandate to coordinate and facilitate IWRM in the basin.²¹

Programs and projects

A look into some of the most important projects and activities illustrates how CICOS is interpreting and implementing its mandate and to what extent the structures and programs qualify CICOS to take a lead in water diplomacy. Since 2006 CICOS has been cooperating with the government of Germany on transboundary water management. In the framework of the *Gesellschaft für Internationale Zusammenarbeit* (GIZ)'s project “GETRACO” (*Gestion Transfrontalière de l'Eau dans le bassin du Congo*), activities aimed to strengthen CICOS' capacities in the areas of inland navigation and water management, in particular by investing in water transportation infrastructure.²²

Proposed in the Ouagadougou Declaration of 2010, funded by the European Union, and implemented under the lead of the African Union Commission,²³ the Monitoring for Environment and Security in Africa (MESA) program aims to strengthen information management, decision-making, and planning capacities related to the environment, climate, civil security, and related issues in CICOS member countries. MESA maintains and upgrades satellite data receiving measurement stations. With regard to

water management, it monitors the evolution of the water levels in the sub-basins as well as the hydrological cycle in order to assess the impact of climate change. The operational services are supposed to improve and consolidate a water level warning system to better anticipate navigation difficulties on the Oubangui, Kasai, and Sangha rivers.²⁴

Since 2014, CICOS has built up a network of measurement stations in the basin after monitoring had been interrupted for more than 20 years. In cooperation with the World Meteorological Organization (WMO) and other donors, CICOS has designed this ambitious project to rehabilitate the hydrometric network in the watershed. This program is part of the WMO World Hydrological Cycle Observing System, or “WHYCOS,” establishing the CONGO-HYCOS that aims at gaining improved knowledge on the water resource and in particular at strengthening the operational capacities of the National Hydrological Services (SHN).²⁵

Another project develops a modeling and allocation tool for the basin’s water resources to strengthen knowledge and enhance decision-making related to Congo’s IWRM. CICOS has developed a prospective decision-making tool that contributes to better monitoring of the resources as well as to the hydrometric reference network (CONGO-HYCOS) and basin-wide information system. The tool also allows for better planning and evaluation of the environmental and social impacts of large hydraulic infrastructure, such as dams for hydroelectricity production, irrigation projects, and water transfers.

A French Development Agency (*Agence Française de Développement*) project supports CICOS on IWRM and spatial hydrology. Building upon technical assistance set up by the French Ministry of Foreign Affairs between 2008 and 2010, several projects on water resources monitoring, capacity building, and the prospective tool have been carried out since 2011. In 2015 the support for CICOS was renewed with a project to monitor water resources using space altimetry.²⁶

Since 2012 CICOS has developed a Water Management Master Plan (*Schéma directeur d’aménagement et de gestion des eaux*, SDAGE), which was finalized in 2015. The process was in line with the IWRM principles and African Union Water Vision 2025, building upon multi-stakeholder and multi-sector meetings.²⁷ Interestingly, it did not concern the navigation mandate of CICOS, for which a separate strategic planning document

exists. The result was a shared vision that addresses many of the urgent challenges:

The Congo Basin in 2035, a space of regional integration where emerging nations work in solidarity to build their capacities to make water a driver of economic growth and a source of well-being, while preserving eco-systems, adapting water use to climate change and favoring the sharing of costs and benefits.²⁸

Developing the basin and preventing conflict

The development of CICOS over the 20 years of its existence can be described as a slow but steady upward curve, a continuously growing success story. Water management and navigation are two urgent issues that have dominated the agenda, with the latter serving as the entry-point which paved the way for a further deepening of successful cooperation. Navigation remains a central pillar, while CICOS has addressed further challenges, gained additional competences, and taken on more tasks over time. The official expansion of the mandate in 2007 turned CICOS into an RBO assigned for the planning and implementation of a basin-wide IWRM. This major step allowed it to focus better on the opportunities and potential benefits from the river. Gabon and Angola joining the organization in 2010 and 2016, respectively, illustrating that CICOS' development has attracted new member states. With hydropower and infrastructure development CICOS is also concerned with more controversial areas that might lead to conflict. With regard to its capacity and ability to contribute, implement, or even guide water diplomacy in the Congo Basin, CICOS shows several strengths as well as various shortcomings, discussed below.

On the technical side, CICOS is working on various projects to improve scientific monitoring, data collection, modeling and assessment, and forecasting, as well as reporting, to create a sound basis for informed decision-making. Particularly GETRACO was a success story that established an information management system in the first project phase.²⁹ When CICOS was first established most of the data available was poor and often outdated; systematic and basin-wide collection only started some years later. While these efforts are an important step for informed decision-making in the future, basin-wide relevant data from CICOS countries are

not necessarily acknowledged or taken into consideration in countries that are part of the basin but not of CICOS.

Looking into the functional scope of CICOS, the comprehensive and broad mandate after 2007 has allowed it to address various diverse water(-related) challenges through an intergovernmental body, from navigation to hydropower development. Still, the approaches rely on de facto separate projects and programs, supported, funded, and implemented by different partners under different regulations, which might hamper the consistency of CICOS' strategic direction. It remains also rather vague (or varies from case to case) to what extent CICOS itself can actively shape these projects and programs, has financial competences, or has actual power and standing to act individually.

In addition, CICOS has a legitimacy issue, claiming basin-wide competences and action but representing only six out of the ten riparian states. While the absence of Burundi, Rwanda, Tanzania, and Zambia had been plausible under the 1999 agreement and the mandate focusing on navigation, since navigation does not extend into the southeastern parts of the river system, it is rather problematic under the amended and more comprehensive and inclusive mandate of 2007, as IWRM ideally requires the cooperation of upstream states.³⁰

Institutionally, CICOS provides a quite elaborate organizational structure (see [Figure 8.2](#)). It is based on the standard model for RBOs that consists of (a) the decision-making body, the Council of Ministers that meets at least annually and sets out the general and broader policy direction; (b) the advisory board, the Steering Committee, composed of national delegates preparing the ministers' meetings; and (c) the General Secretariat under the leadership of the secretary-general, appointed by the Council of Ministers and in charge of executing all CICOS activities and projects. While the political level functions relatively smoothly, the executive side has been suffering from underfinancing and staffing problems.³¹

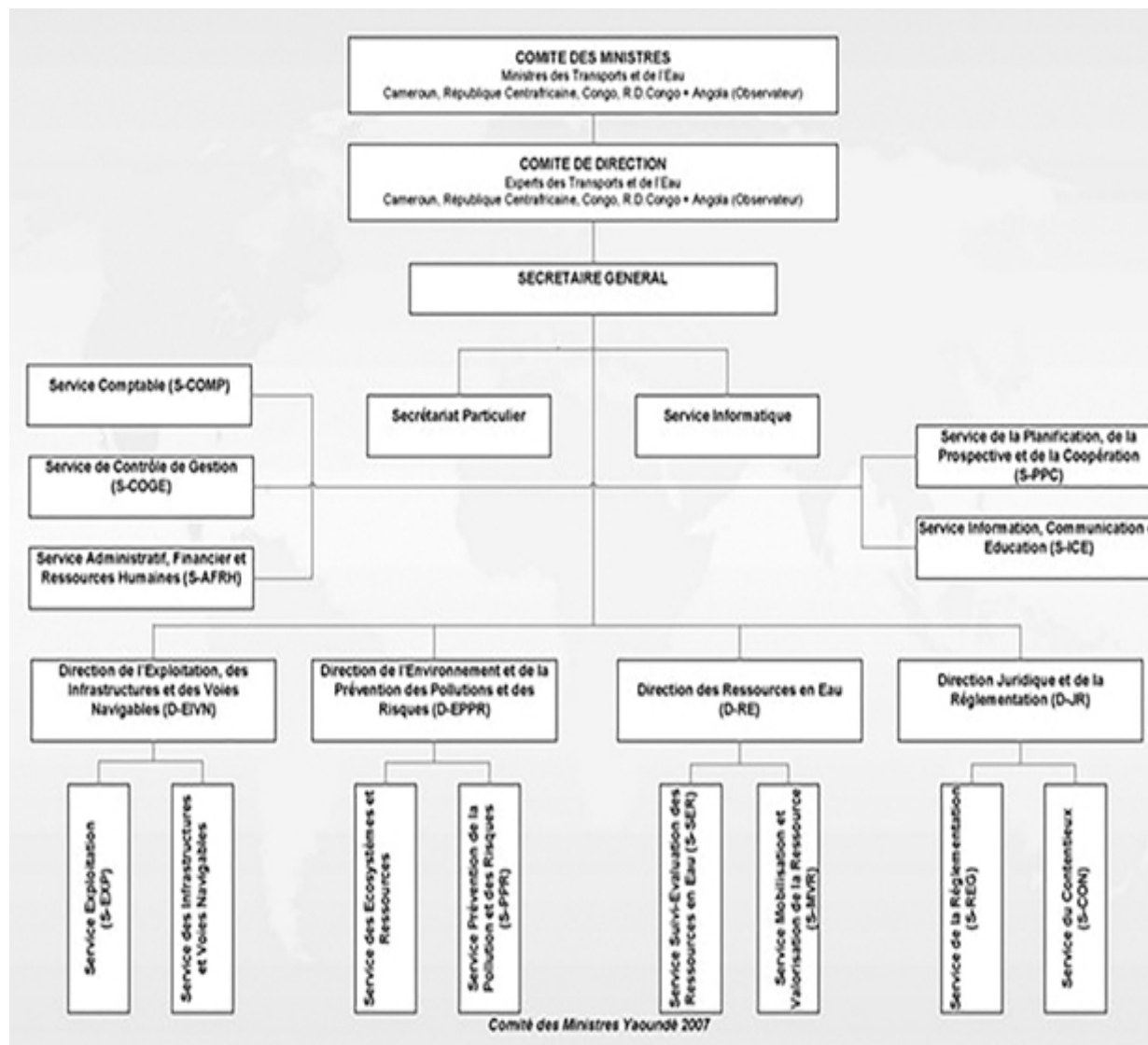


Figure 8.2 Organizational structure of CICOS (in French).

The institutional set-up below the General Secretariat allows it to independently address different issues to achieve CICOS' overall goals, such as infrastructure, pollution, and ecosystems protection. To what extent and how various stakeholders are engaged in policy-making and project implementation remains unclear beyond the case-to-case project basis. CICOS is a quite flexible organization that implements programs and projects by cooperating with different partners. It has been politically backed and financially supported by a broad spectrum of international actors, such as the European Union, Germany, France, the African

Development Bank, and the World Bank. Several of these have been engaged with long-term commitments. But this flexibility might implicitly bring conflicts of interest between different projects. CICOS provides an appropriate forum to get together and to negotiate water-related issues in the basin on various levels—including interministerial committees. But the political and legal components of cooperation do not play a central role in the overall institutional set-up, neither are intersectoral conflicts appropriately addressed.

In relation to strategic considerations, CICOS has proven partially successful, in the way it has set-up basin-wide planning, developing comprehensive strategies and guidelines. This is particularly illustrated in the area of navigation, which combines investments in infrastructure, such as signals and port, and capacity building, such as training for captains, pilots, and mechanics.³² The generally cooperative atmosphere in the basin when it comes to water-related planning is advantageous here—national plans and strategies have so far neither undermined nor contradicted the efforts of CICOS.

The organization generally stands for a basin-wide direction and perspective with the aim of optimizing benefits. Still, diverging national interests time and again block development of joint approaches between riparian states, which applies, for example, to the DRC, which still prefers bilateral cooperation over basin-wide regulations. Plenty of the hydropower discussions and developments also take place—often bilaterally—outside of CICOS, which only marginally addresses this topic. The DRC has, for instance, already agreed to supply South Africa with 2,500 MW generated at the planned Inga 3 dam—more than half of its output.³³ While the efforts in navigation have proven to be long-term and have a basin-wide orientation, delivering concrete and tangible results, this is not as obvious in other areas.

On the political side, the support for and backing of CICOS in the basin has constantly increased over time. The DRC, for instance, did initially not necessarily promote a transboundary RBO for a river perceived as its own. But the increasing interest in and speculations from other riparian states and outside the basin on how the water could be used changed the position in Kinshasa.³⁴ While two more riparian states joined later, Burundi, Rwanda, Tanzania, and Zambia are still not members of the organization. So, despite

the fact that 90 percent of the basin is in the territories of CICOS member states, its legitimacy is undermined or limited when it comes to strategic basin-wide planning—even if the non-members are at least not opposing CICOS. Zambia and Tanzania are reportedly considering whether to join the commission.³⁵ Still, long-term financial support from the basin and external partners, as well as the shift of sovereignty to CICOS for transboundary planning, implementation, or conflict resolution has not materialized.

The new mandate of 2007 brought a shift from the dominating interstate dynamics towards a community of interest with different preferences; changing also the basically technical character of the initial navigation focus to a broader, multi-sectoral, more political one addressing IWRM and regional development. Still, while the CICOS member states agree on the principles of IWRM and the expansion of the mandate, they oppose the transformation of the commission into a transnational authority. This can limit the role of CICOS as a regional actor and leaves decision-making on the Congo in the realm of interstate politics. A structural obstacle hampering deepened cooperation is that CICOS members are part of historically overlapping and competing regional blocs and organizations, i.e., the Southern African Development Community, the East African Community, the Economic Community of Central African States, and CEMAC.

In relation to international awareness, support for CICOS has constantly been increasing over the last two decades. Still, the Congo Basin and CICOS receive comparatively little attention since relations and the (hydro)politics between the Congo riparian states are not as strained or perceived as worrying a security threat as, for instance, those along the Nile, Euphrates, and Tigris, or at the Amu Darya and Syr Darya rivers in Asia. Further awareness raising with regard to the importance of the basin and its challenges is badly needed, for instance with regard to the Water Transfer Project. The latter would have dramatic effects on the river system, particularly accelerating the decreasing water levels in the north of the basin.³⁶

Conclusion: growing importance—growing challenges

Typically, RBOs have two core functions: first and more practically, to provide an ideally basin-wide water management to the benefit of broader regional socioeconomic development under the consideration of the protection of the capacities of the river system. Second and rather political, RBOs address increasing competition, disagreement, dispute, or conflict over distribution and utilization of shared water resources. In reality, this means, for many RBOs, to manage water scarcity accelerated by increasing water demand and decreasing supplies, and to mediate and outbalance diverging hydropolitical interests in the basin, as well as to facilitate negotiation and conflict resolution processes in order to find compromises for sensitive water-related questions, such as dam construction or expansion of irrigated agriculture.

CICOS provides these two functions, but they are not developed to the same degree. On the one hand, the mandate, projects, and activities of CICOS adequately address relevant water issues in the basin and put the organization at the heart of the IWRM. Together with its partners, the organization has experience and expertise in water management and has been further developing and expanding its interventions. Strategic and basin-wide planning in various projects, the broad mandate, and the well-developed structure of the organization indicate that CICOS is well placed to implement transboundary water management.

In comparison to RBOs in other basins where water scarcity, overuse, and infrastructure are often at the heart of the water conflict, CICOS focuses a lot more on the development of water infrastructure and projects that actually increase the water use. Comprehensive and integrated planning as well as coordination capacities are a strength of CICOS. Even if the main focus on navigation in its early days was a comparatively low hanging fruit, it had more or less to be developed from scratch, benefitting all riparian states and serving as a best-case example that encouraged further engagement. Even in the more contested field of hydro-energy, the riparian states and CICOS highlight the regional dimension.

On the other hand, CICOS has little to no experience in the management of interstate conflicts over the distribution or utilization of water resources—simply because there have never been major tensions in the history of the Congo Basin. Besides not being experienced in moderating positions,

balancing interests, mediating conflict, and negotiating compromises, CICOS is not appropriately designed and equipped for such a task either. It lacks an institutionalized conflict resolution mechanism, and so potential major conflicts would be addressed by the Council of Ministers. This bears the risk that if specific conflicts escalate in this highest body, for instance over irrigation projects or hydropower development, they could paralyze cooperation within the whole organization.

The current absence of a major conflict does not prevent such conflicts in the future, and so more efforts toward conflict prevention would be important. Several developments in the basin, such as increasing shipping, climate change, and deforestation, or the increasing electricity and water demand, indicate increasing competition, which makes water conflicts more likely to occur and intensify in the years to come.³⁷ Given its expertise in water management, CICOS is one of the most obvious, natural, and appropriate potential facilitators for the task of conflict management, and to take a leading role in the basin's water diplomacy. CICOS is partly in a position, and maybe has under the mandate of water management even has the political obligation, to prevent the conflicts of tomorrow. Whether it has the power and the capabilities to do so will depend on how CICOS further develops. It might require institutional readjustments, such as establishing committees and mechanisms for conflict resolution, or even stronger political commitments that empower CICOS' decision-making competences.

The priorities of the member states are so far on infrastructure development, and not so much on governance issues. This underlines how the political and functional components of cooperation fall rather short. The development of conflict resolution mechanisms and the promotion of basin-wide and cross-sectoral stakeholder meetings could further these needed political processes. If the remaining non-member riparians join the organization, CICOS' legitimacy to act on behalf of the whole basin would further increase. Ideally, and in order to strengthen its power, CICOS would be transformed into a transnational authority—a process that has rather been blocked by the member states in recent years. Upgrading CICOS in this way would also help to tackle external interests that are also undermining its mandate, such as those of South Africa in the case of hydropower at the Inga falls or China in the case of the Water Transfer Project.

To be prepared for the future, CICOS needs to evolve into a strong RBO that is also able to (1) address abundance of water and related challenges, as well as (2) prevent future conflict linked with scarcity and overconsumption. The Congo is today at a point where other major river basins were in the 1950s to 1970s—where decisions have been taken to intensify the utilization of the shared water resources, mostly in a unilateral way. CICOS can show that regional coordination, integrated planning, and careful development of water infrastructure has the potential of conflict prevention and can even work in a situation in which water conflicts are at best at the horizon. To foster and support such an effort gives the international community the opportunity to avoid shortcomings and mistakes that in other river basins were missed.

Notes

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- 5 Mutoy Mubiala, *L’évolution du droit des cours d’eau internationaux à la lumière de l’expérience africaine, notamment dans le bassin du Congo/Zaire*, new online edition (Geneva: Graduate Institute Publications, 1995).
- 6 Alfonso Medinilla, “Understanding the International Congo Ubangui-Sangha Commission (CICOS),” European Centre for Development Policy Management, December 2017, 5–6.
- 7 Julie Ladel, Pierre Nguinda, and Albert Pandi et al., “Integrated Water Resources Management in the Congo Basin Based on the Development of Earth Observation Monitoring Systems in the Framework of the AMESD Programme in Central Africa,” 13th World Water Congress, Montpellier, France, September 2008, 5; and Sakibede, “Presentation of International Commission,” slides 6–8.
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- 9 Medinilla, “Understanding the International Congo Ubangui-Sangha Commission,” 6.
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- 15 Lake Chad Basin Commission (CBLT), “Signing of MoU between LCBC and Italy,” press release, 18 October 2018, www.cbtl.org/en/news/signing-mou-between-lcbc-and-italy.
- 16 CICOS, “Historique,” <https://www.cicos.int/non-classe/historique/>.
- 17 DRC and, later on, also Angola.
- 18 Medinilla, “Understanding the International Congo Ubangui-Sangha Commission,” 7–8.
- 19 Von Lossow, “The River Congo—Africa’s Sleeping Giant.”
- 20 CICOS, “Mandat,” <https://www.cicos.int/la-cicos/mandat/>.
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- 22 Deutsche Gesellschaft für Internationale Zusammenarbeit, “Transboundary Water Management in the Congo Basin,” factsheet, October 2014.
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9 Water diplomacy in the absence of a river basin organization

A case study in Jordan, Israel, and Palestine

Samer A. Talози and Natasha Westheimer

In Jordan, Palestine, and Israel, water security is plagued by natural water scarcity, regional political instability, and conflict, as well as rapid environmental and social changes over the last half-century. Without a formal institution to manage shared water in the region, such as a river basin organization (RBO), water diplomacy occurs through alternative platforms, including in the four forms of water diplomacy defined in this book: legal, institutional, technical, and strategic planning. This chapter illustrates that the existing mechanisms are insufficient to achieve improved transboundary water governance and regional water security.

The Jordan River (JR) Basin straddles a highly contentious border region—between Israel, Jordan, Syria, Lebanon, and Palestine. Divided into “upper” and “lower” sections, the basin drains an area of 18,000 km² (see [Figure 9.1](#)). The river’s headwaters start at the Hasbani River in southern Lebanon, the Dan River in northern Israel, and the Banias River Springs, controlled by Israel, although formerly in Syrian territory.¹ These three spring-fed rivers merge 6 km south of Israel's border with Lebanon to form the upper section of the JR.² It flows southward through northern Israel to Lake Tiberias. Immediately south, the JR conjoins with the Yarmouk River, forming the lower section of the JR and meanders south 200 km down the Jordan Valley dividing Israel and Palestine from Jordan, before emptying into the Dead Sea. Beyond being a river holy to the three monotheistic religions, it is a lifeline to the Dead Sea, a tourist hotspot, and an environmental wonder. In Jordan, the basin provides a primary water resource. In Palestine, the JR is symbolic of its deeply sought-after

sovereignty and water rights, and it would serve as a border with Jordan in a Palestinian state. In Israel, the JR resources have become more important than the river itself, with hydraulic projects collecting and conveying waters from tributaries and the upper section of the JR to fortify its water and agricultural economies.

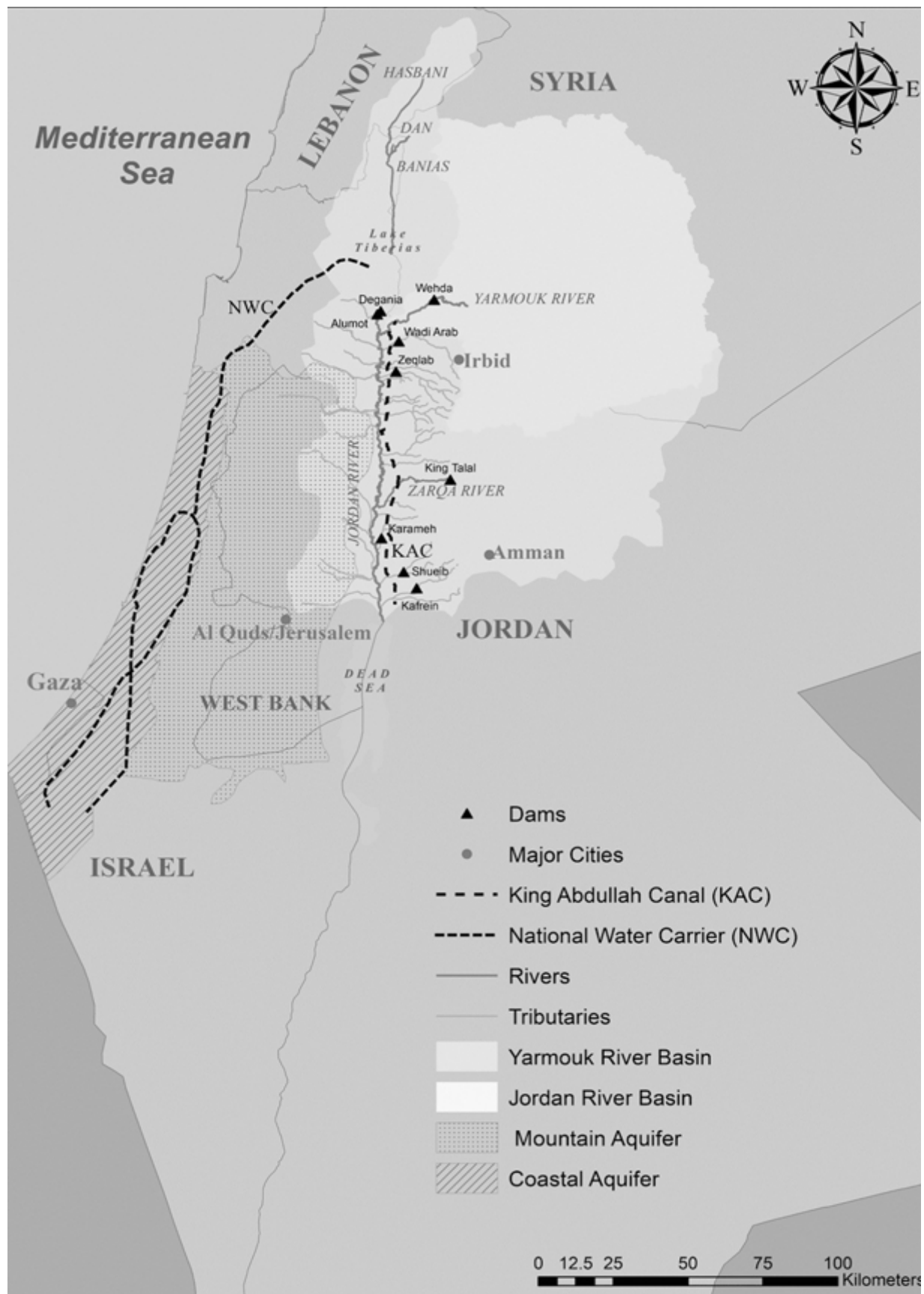
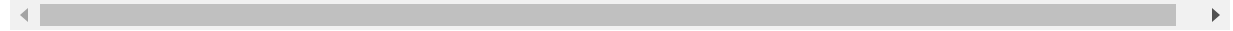


Figure 9.1 The Jordan River Basin.



Flow rates, especially in the lower section of the JR, have decreased sharply over the past several decades, since diversions of the river and rapid agricultural expansion began in the 1960s.³ Aggressive hydraulic infrastructure development has diverted 98 percent of the river's flow, 46.47 percent by Israel, 25.24 percent by Syria, 23.24 percent by Jordan, and 5.05 percent by Palestine.⁴⁵ Downstream, the effect on the lower section of the JR is drastic—estimates of the current annual discharge into the Dead Sea ranges between 20 and 200 million cubic meters (MCM) compared to the historical 1,300 MCM.⁶

Water quality has similarly deteriorated in the lower section of the JR, displaying high salinity and pollution rates,⁷ which has eliminated species and prevented the development of aquatic life.⁸ Point source pollution includes fish pond effluent and diverted saline spring water from Israel as well as desalination brine from Jordan.⁹ Non-point source pollutants include untreated wastewater from Jordan, agricultural runoff, and subsurface flow from Jordan and Israel.¹⁰

Groundwater similarly plays a critical role in the discussion on shared water in this region, particularly between Israel and Palestine. The Mountain Aquifer is the largest underground water resource in the region, underlying the central hills of Israel and the West Bank. Water is accessed through drilling and from wellheads and springs. Israel utilizes 80 percent of available groundwater in this basin, and Palestinian rights for resource development in the basin have yet to be fully realized.¹¹ Another central groundwater basin in the region is the shallow Coastal Aquifer, located along the Mediterranean coast shared by Israel and Gaza. Due to limited access to potable water in Gaza, the aquifer is abstracted beyond the recharge rate to meet demand. In Gaza, this aquifer is now suffering from seawater intrusion and wastewater pollution, and 97 percent is now unsafe for drinking.¹² Due to the geological nature of this coastal basin, contamination is localized and portions of the aquifer under Israel remain separate from those under Gaza.¹³ There are also groundwater resources shared between Israel and Jordan, which are utilized locally. Israel also

operates wells in Jordanian territory within the framework of bilateral agreements.

Water access among the riparian countries varies. Desalination and wastewater reuse in Israel, coupled with its tight control over the region's shared surface and groundwater, generates sufficient water supplies for Israel, averaging 289 liters per capita per day (l/c/d).¹⁴ Access to water in Palestine remains below the World Health Organization standards of 100 l/c/d, with only 21.4 l/c/d of potable water available in Gaza and 81.3 l/c/d in the West Bank in 2017.¹⁵ In Jordan, water availability per capita has declined in recent years, exacerbated by the influx of Syrian refugees¹⁶; consumption averaged 125 l/c/d in 2017.¹⁷

Due to contentious political relations, limited political will, and geopolitics, the regional political authorities have yet to institutionalize a formal mechanism for managing shared waters. As seen elsewhere in transboundary basins, if a country cannot control real or perceived risks, it often chooses to pursue its own interests or maintain the status quo over entering into cooperative agreements.¹⁸ Where risks can be minimized, and where riparian states face water-related challenges such as scarcity, underdevelopment of water resources for human use, or environmental challenges, states often opt for establishing institutionalized mechanisms for cooperation in the form of river basin organizations. Establishing an RBO would be a risk for Israel: introducing transboundary water management mechanisms, which presumably center water rights and access, would likely necessitate establishing land rights in areas such as the Golan Heights of Syria and the Jordan Valley of the West Bank, for which Israel is interested in maintaining its control over.

The theoretical framework for water diplomacy presented in the Introduction of this book, and summarized in [Table 9.1](#), will be used to frame the analysis of the JR in the absence of an RBO. Although the geographical bounds of the Jordan River Basin include parts of Syria and Lebanon, the analysis of this chapter focuses on Israel, Palestine, and Jordan. Syria and Lebanon are riparians to the basin, and thus any future RBO should consider their inclusion. Since Israel has no diplomatic relations with Syria or Lebanon, this is politically implausible at present. Further, Israel maintains control of Syrian and part of the Lebanese tributaries of the upper section of the JR. These factors have resulted in a

reality where transboundary water management has primarily only considered Israel, Jordan, and Palestine as critical riparians. See [Table 9.1](#) for a list of mechanisms of water diplomacy and a brief explanation of their importance.

Table 9.1 Mechanisms of water diplomacy and their importance

<i>Mechanisms</i>	<i>Technical</i>	<i>Legal</i>	<i>Institutional</i>	<i>Strategic</i>
What	Scientific monitoring, data collection, modeling and assessment, forecasting, state of basin reporting	Agreements among states giving the RBO mandate—direct or indirect—to deal with transboundary water problems. Regulations and procedures for using water	Governance mechanisms including Secretariat Stakeholder engagement mechanisms	Basin-wide strategies, action plans, guidelines to deal with transboundary opportunities and risks (vis-à-vis national strategies, plans, etc.)
Why	Discussions, debates and negotiation must be based on science and objective data as much as possible	Without legal mandate and procedures, RBOs do not have legitimacy in dealing with problems	Institutional frameworks provide legitimate forums to come together to discuss and negotiate	These strategies and guidelines provide basin-wide direction and perspectives that optimize basin-wide benefits, minimize transboundary costs/impacts/risks

Source: Adapted by authors, based on Introduction to this book

Without a formal RBO, there are alternative interventions and platforms that enable water diplomacy. The rest of the chapter reviews water diplomacy on the legal, technical, institutional, and strategic levels, assessing the capacity for government authorities and other stakeholders, including academia, civil society, and international actors, to utilize alternative water diplomacy to fulfill the functions of an RBO—and perhaps may serve as predecessors to an RBO.

Legal agreements

There is no single legal instrument to enable basin-wide transboundary water management in Jordan, Israel, and Palestine, only bilateral treaties, such as the peace treaty between Israel and Jordan,¹⁹ as well as the Oslo

Accords²⁰ between Palestine and Israel, provide the only legal basis for water diplomacy.²¹

Treaty of peace

A unique part of the 1994 peace treaty between Jordan and Israel was the inclusion of agreed arrangements for the utilization of shared water. Water Annex II²² has most shaped the situation of the lower section of the JR. Article III emphasizes the protection of water resources. It states that both Jordan and Israel “protect, within their own jurisdiction, the shared waters of the Jordan and Yarmouk Rivers and shared groundwater against pollution, contamination, harm or unauthorized withdrawal of each other’s allocations.”²³ Although the treaty succeeded in preventing military conflict over water, it failed to preserve the lower section of the JR and the Dead Sea ecosystems.²⁴ In fact, the quality and quantity of water in the lower section of the JR deteriorated at a higher rate after the treaty was signed due to increased river access by both countries.²⁵ Further, the arrangements and provisions are insufficient to manage severe changes in climate conditions, including recent droughts.²⁶

The absence of Palestine from the Water Annex II is a glaring shortcoming in the treaty, with no specifications of Palestine’s access to JR water. Violations of international water law, unfair and harmful policies, and the lack of political will to uphold the principles of equitable practice on the JR have denied Palestinians access to the river and their water rights.²⁷ There is also an observed bias in the 1994 peace treaty to satisfy Israel’s demands at the expense of other riparian countries, which adversely affects the water quantity and quality available to neighboring states.²⁸ Further developments and migrations into the JR basin, which have prompted significant governance reform and infrastructure development to meet basic water needs in Jordan,²⁹ would also warrant the reconsideration of the water annex terms.³⁰ Further, the institutional arrangements within the agreement, discussed later, have not fulfilled the Article III mandate to protect shared waters.

The Oslo Accords

The 1995 Oslo II Accords is the central legal arrangement between the government of Israel and the Palestinian Authority that sets out principles for managing shared water. Article 40 of Annex II defines allocations of groundwater resources and principles to “prevent any harm, pollution, or deterioration of water quality of the water resources,” and sets out institutional arrangements for shared management of regional groundwater resources between the two parties.³¹ Allocations of surface water were not included in the agreement, excluding Palestinian rights to the JR. While Oslo guarantees future resource development by Palestine, the institutional arrangements—discussed in the section ahead—both minimize the optimized basin use and further entrench Israeli control of resources. Further, since the signing of the agreement, quantity projections for Palestinian future needs are now outdated due to population changes.

Grassroots and community-led action

Coalitions or partnerships between Palestinian and Israeli activists, communities, and organizations have employed actions that attempt to change or challenge existing legal arrangements both formally—through legal petitions—and informally—through acts of civil disobedience. A noteworthy example of the former is the case of Battir, a historical Palestinian village in the West Bank settled along productive springs of the Mountain Aquifer and known for its centuries-old terraces and irrigation methods. In response to Israel’s plans to build a separation wall through the town’s terraces, which would disrupt and disconnect water sources and agricultural lands, the community of Battir, with the support of a regional nongovernmental organization (NGO), EcoPeace Middle East, petitioned this decision in the Israeli High Court. The case led to a temporary injunction to stop the barrier from proceeding, and also successfully secured Battir as a UNESCO World Heritage Site.³² With the lack of regional, legal instruments to ensure water access and protect environmental lands and groundwater flows, this form of joint, legal action secures a small victory for the alternative form of water diplomacy.

The second form of grassroots, legal-based action happens informally through various measures of civil disobedience. Activists engage in various

forms of civil disobedience to find alternatives where water rights cannot be achieved due to existing de facto and de jure legal arrangements. For example, in May 2019, a coalition of Palestinian and Israeli activists rehabilitated an access road for emergency water trucks to a group of small villages in the southern West Bank; the Israeli military declared the area a closed military zone on the day of the roadwork. By actively refusing military orders, 17 activists were arrested, which drew public attention to the implications of discriminatory legal arrangements on water access and water rights for Palestinians.³³ Alternatively, in Nabi Saleh, Palestinian community leaders and activists organize weekly marches to the village's historical groundwater spring, which has been taken over by a neighboring Israeli settlement. International and Israeli activists support Nabi Saleh in confronting the legal arrangements that limit water access by participating in these protests.³⁴ These informal modes of civil resistance bring public attention to the key issues, though they have not provoked major shifts in legal arrangements for water management. These forms of action are received with broad and divergent levels of support from the general public.³⁵ Nonetheless, trends indicate that the occurrence and scale of these forms of action are growing,³⁶ which illustrates the lengths to which local communities are willing to go in order to meet basic needs and advance their rights where formal platforms are failing.

Legal water diplomacy—is it sufficient?

Although relevant legislation and agreements exist, implementation of the environmental clauses of the Jordanian-Israeli peace treaty and the water and environmental clauses of the Palestinian-Israeli Oslo II Accords are lacking due to inefficiencies, inequities, and limited political buy-in to the institutional arrangements developed to implement the agreements. In addition, the exclusion of Palestine as a riparian in any legal arrangement with Jordan, and the subsequent dismissal of its rights to water, remains a significant issue. Efforts to protect shared resources are stunted by territorial disputes and security concerns. Meanwhile, a growing community of activists and communities is finding alternative pathways to jointly confront the failures on the legal level, despite resistance from their own communities and governments.

Institutional arrangements

In the context of shared waters between Jordan, Palestine, and Israel, institutional arrangements are primarily unilateral, with some formal and ad hoc bilateral and multilateral platforms.

Unilateral institutional arrangements

Water governance in Jordan is characterized by a lack of communication, transparency, and coordination between ministries which has resulted in gaps in workflow.³⁷ According to Jordanian law, the JR should be under the management authority of the Ministry of Water and Irrigation, within which the Water Authority of Jordan is in charge of domestic water and sewage and the Jordan Valley Authority is responsible for agricultural water and development of the Jordan Valley.³⁸ However, managing the JR falls out of the jurisdictional map of these institutions. Further, the Ministry of Environment's water quality monitoring does not include the JR.³⁹ In Jordan, authorities prioritize water utilization with limited regard to the deteriorating status of the river's ecosystem.

The focus of water governance in Israel is to provide water for domestic use and to maintain resource utilization quantities.⁴⁰ Unlike its neighbors, Israel's strong economy enables it to develop alternative resources to meet growing demand. In 2018, desalination facilities generated 40 percent of the domestic water supply, and 86 percent of wastewater is treated for reuse in agriculture.⁴¹ The Israeli Ministry of Environmental Protection (MoEP) affirmed its commitment to the rehabilitation of the lower section of the JR through wastewater treatment, eco-friendly development, and awareness-raising.⁴² However, the annual reports of the MoEP do not reference the JR.⁴³ The "Environment in Israel" report included the water quality status of major streams in Israel, not including the JR.⁴⁴ While 60 MCM of fresh and reused water has been allocated for the environment since 2010, Israel's limited efforts to rehabilitate or sustainably manage shared resources has led to the continued deterioration of resources.⁴⁵

The Palestinian Water Authority (PWA) is mandated to manage the water sector in Palestine, including securing water rights for Palestinians and ensuring fair distribution.⁴⁶ While Palestinian water sector institutions do

not benefit from equitable utilization of the shared water resources,⁴⁷ the PWA's ability to advance wastewater collection, treatment, and reuse is similarly limited by jurisdictional and political barriers. Development of large-scale wastewater treatment infrastructure in the West Bank and Gaza requires approvals from Israeli authorities; as such, wastewater contamination is a major threat to shared resources.⁴⁸ Further, the geographical and political divisions between the West Bank and Gaza, coupled with the dire economic situation, limit the capacity for Palestinian institutions to govern effectively,⁴⁹ leaving Gaza on the brink of collapse and the West Bank far from meeting demand. Despite these barriers and significant implementation delays, the water sector is continuing to pursue infrastructure interventions and a reform plan to improve the supply and management of water.

With limited coordination, coupled with the pressing demands for water resources, the institutional set-up within each country has impeded their ability to manage and protect shared waters, in particular the JR. As a result, the river today is merely a stream of brine from desalination units, effluent from fisheries, agricultural runoff, treated/untreated wastewater, and limited base flow from annual floods that are not captured by dams. These conditions, which have prevailed and increased since the 1960s, have had considerable negative impacts not only on the ecosystem of the lower section of the JR but also on the Dead Sea.

Bilateral institutions: Israeli-Jordanian Joint Water Committee

The Israeli-Jordanian Joint Water Committee (JWC) was written into existence in 1994 with the signing of the peace treaty. Comprised of three representatives from each country, the JWC is tasked with any water-related issues that may subsequently arise between the two riparians.⁵⁰ While the JWC seems to focus on quantitative water issues, such as monitoring flows and managing water allocations, water quality issues and the overall health of the lower section of the JR have seemingly not been a focus of the JWC.⁵¹ Meeting dates, minutes of meetings, and decisions of the JWC are not publicized. The JWC does not have a website or any other means of communication with the public, which has likely reinforced negative public opinion of the water agreements and peace treaty.

The committee's formation was preceded by over a decade of informal, secretive field talks between Israeli and Jordanian water experts. These talks were held to consider a Jordanian request to increase water diversions into the King Abdullah Canal (formerly the East Ghor Main Canal). These "Picnic Table Talks" resulted in an increase in delivered quantities to Jordan.⁵² While these talks were useful in advancing the discussions between Jordan and Israel on water, for the public, land rights were more important than water management. As such, it would have been difficult to formalize any water-related agreements before signing the peace agreement.

Despite the long working relationship, water issues between the two states remain sensitive. When the 1994 peace treaty was signed, water issues were among the last to be settled, after all night meetings, and drew in the heads of state—King Hussein and Prime Minister Yitzhak Rabin.⁵³ Given the high level of politicization and securitization of water, very little is written on the activities of the JWC.⁵⁴ Even if the JWC is upholding the 1994 treaty, by ensuring relative political stability around the issue of water, it is failing to prevent the deterioration of the river's quality and decrease of its flow. Future stability is not necessarily guaranteed by this agreement either—and the effectiveness of these neighbors' relationship is subject to fluctuating diplomatic and political relations.

Bilateral institutions: Israeli-Palestinian Joint Water Committee

The Israeli-Palestinian Joint Water Committee (also referred to as JWC) was established through the Oslo II Accords to manage the use of shared water resources and waste management. With an equal number of representatives from both Israeli and Palestinian water authorities, the committee was established to not only manage such systems, but monitor and enforce programs, exchange information, protect quality and supply of sources, and oversee all operations related to water management.⁵⁵ Israel considers the committee and Oslo II as the final and binding rule to which they are largely obliged.⁵⁶ Yet Palestinians raise the concern that Israel's de facto veto authority over all water projects proposed to the committee is inequitable and has impeded the fulfillment of obligations according to Oslo II. While all Palestinian projects require the approval of the committee, there is no analogous requirement for approval on water

projects within Israel, even for abstraction projects in the Mountain Aquifer.⁵⁷

In January 2017, after years of projects were frozen in the committee, an agreement was reached between the parties to reinstate the committee. Yet as of January 2019, only two Palestinian water projects had acquired its approval. Most infrastructure projects are still subject to additional approvals from the Israeli Ministry of Defense. As part of a broader Israeli campaign to maintain control over areas of the West Bank, approving infrastructure in these areas is highly politicized.⁵⁸ While it is promising that the committee is meeting again, the institution is not sufficiently ensuring water access and rights.

Multilateral discussions

In an effort to advance national policy priorities, as well as regional peace agreements between Jordan, Palestine, and Israel, various platforms for multilateral discussions have been created. The United States historically coordinated these multilateral discussions, although this has been minimized largely due to shifts in US policy since 2016, in favor of Israeli political priorities, and subsequent reactions by the Palestinian Authority⁵⁹ and government of Jordan. The primary multilateral, institutional platform which currently engages on some level of water diplomacy, distinctly through the lens of Palestinian economic development, is the Ad Hoc Liaison Committee (AHLC). The AHLC was established as a policy-level coordination mechanism, chaired by Norway, and cosponsored by the European Union (EU) and the United States. Through a biannual meeting, 15 countries and international agencies, as well as Palestinian and Israeli authorities, meet to discuss an array of regional issues, largely focused on Palestinian economic development.⁶⁰ Jordan is not a party to the AHLC. While discussions are closed, the minutes published on the AHLC website indicate that water resource development and water and land rights have been frequent topics of conversation, although minimal attention has been given to improving joint resource management.

Institutional water diplomacy—is it sufficient?

Unilateral institutional efforts by all riparian authorities are ineffective platforms for managing shared waters. While Israel maintains relatively strong water institutional arrangements compared to its neighbors,⁶¹ this fortifies its hegemony over the region's resources. Jordan is plagued with mismanagement of water resources and poor coordination between institutions and stakeholders, breeding inefficiency and loss of resources in the water sector. Jordan prioritizes meeting water demands, particularly amid the recent refugee crisis from Syria. Further, restrictions on Palestinian institutional development due to the Israeli occupation limits its capacity to govern water management.

Bilateral institutional arrangements, while sometimes formal in nature, fluctuate based on diplomatic relations between authorities, which can serve to both enable and impede progress. Multilateral discussions are the only institutional platform to enable water diplomacy in the region; however, while the focus is primarily on water rights and institutional development in Palestine, these platforms have minimal capacity to advance joint management. Further, Palestine is always excluded from Israeli-Jordanian discussions and works related to the Jordan River, further disaggregating regional coordination.

Technical arrangements

In the Israeli, Palestinian, and Jordanian context, technical water diplomacy is primarily manifested in academia and on the civil society level, although some political-level technical water diplomacy occurs within multilateral platforms.

Multilateral

The primary mechanism for technical water diplomacy on the political level, in this case, is the hydrological discussions facilitated by the United States, which have been ongoing in the region since the 1930s.⁶² Since 1994, the US Geological Survey (USGS)-facilitated Regional Water Data Banks project has met on a semi-annual basis to “enable the exchange of consistent, compatible, and reliable water data and information to support

decision-making at both local and regional scales” in Israel, Palestine, and Jordan.⁶³ The Regional Water Data Banks program has faced some key challenges. For example, in meetings held outside of the Palestinian territory, Palestinian participants, on occasion, did not receive permits to attend some of the discussions. Nonetheless, this initiative advanced even amid heightened conflict and met during the second intifada,⁶⁴ which may indicate the value placed on such initiatives by the involved parties. The progress made within these discussions remains unreported over the last decade, presumably due to the political sensitivities of the initiative and its results. However, in 2018–2019, the United States made a significant policy shift by withdrawing support for the Palestinian Authority. While the impact of this decision on the USGS hydrological discussions is still unknown and/or unreported, this signifies the fragility of such multilateral platforms. The limited capacity for the public to access information or monitor the progress of this platform mirrors the closed-door nature of bilateral joint water committees, which likely fuels mistrust between the publics on water issues.

Academia and civil society

There is no shortage of initiatives to promote technical water diplomacy around shared regional water by research institutes and universities. One such example is the German-funded project “Globaler Wandel des Wasserkreislaufs (GLOWA)” Jordan River Initiative, which has a steering committee of researchers across Jordanian, Israeli, Palestinian, and international universities and institutions. From 2004 to 2011, GLOWA facilitated a series of conferences, panels, and workshops, and its 40 research teams produced more than 340 publications. The platform, which utilized a science-based approach for decision making and planning, developed a Water Evaluation and Planning Tool (WEAP), which supported stakeholders in understanding the future of the JR basin under the impact of climate and global change.⁶⁵

Civil society organizations have also led a series of initiatives that promote technical water diplomacy. The Arava Institute’s Center for Transboundary Water Management in Israel, for example, partners with regional researchers to conduct environmental assessments, including the Jordan River and the Dead Sea.⁶⁶ Another core regional player, EcoPeace

Middle East, has also utilized technical water diplomacy to advance its initiatives. Its Protecting Groundwater program, for example, was a joint Israeli-Palestinian-Jordanian research initiative which investigated the environmental hazards across groundwater in the Jordan Valley and the West Bank and promoted measures for improved groundwater management based on hydrological findings.⁶⁷ While civil society-led research has generated sound policy recommendations and community-level interventions, a noteworthy science-policy disconnect remains in adoption by decision-makers.

Technical water diplomacy—is it sufficient?

Despite the ongoing political challenges in the region, technical water diplomacy seems to be the most effective and productive alternative diplomatic mechanism in the region. Long term partnerships and research programs in academia and civil society continue—this book chapter included—without total disruptions from political-level conflict. The objectives of such initiatives are routinely targeted at advancing equitable and sound transboundary management. Generally, science-based solutions are more likely to get public-opinion support over the politically-based solutions; for example, some of EcoPeace’s science-based advocacy led to the release of additional water from the Sea of Galilee into the lower section of the JR.⁶⁸ However, despite significant contributions from these players, the overall improvement in the management of shared waters has been minimal. While many of these technical interventions are applauded by the international and donor community, these programs have had minimal spill-over or adoption on the political and institutional levels.⁶⁹

Strategic planning

For Israeli, Jordanian, and Palestinian political authorities, strategic planning is confined to the national level, while a basin “Master Plan” has been developed by a regional NGO.

Political-level interventions

Strategic, basin-level planning is limited on the political level. National level strategies are largely centered on supporting economic development and national water security. Palestine and Jordan's water strategies are tightly linked to their consultants and donors, who support the sector in the implementation of national plans and sectoral reform. Coordination between donors, however, is limited on the regional level.

A primary example of regional, strategic planning is the Red Sea-Dead Sea Water Conveyance project (RSDSWC). The project was initially designed to pump water from the Red Sea to the Dead Sea to help mitigate the latter's declining levels. However, rather than addressing political inaction and environmental damage to the lower section of the JR, the RSDSWC is often considered a band-aid solution, which could create new environmental hazards.⁷⁰ While only a pilot of the initial design of the RSDSWC is advancing, albeit slower than expected, this demonstrates how environmental protection may be lost at the expense of national priorities and interests, which are often further enabled by donor support.

Civil society

The most noteworthy effort of regional strategic planning is the Master Plan developed by EcoPeace Middle East, with offices in Jordan, Israel, and Palestine. The Master Plan provides a transboundary water governance framework to mitigate damage to the lower section of the JR and support sustainable economic development across the region.⁷¹ Within this framework, EcoPeace notes that Palestine must be recognized as a full riparian to the JR, entitled to access to water and to sovereignty over its lands in the valley, in order to achieve sustainable transboundary water management.⁷² The Master Plan, developed by a team of international and regional experts, attempts to unify national plans. As such, it identifies 127 regional and national interventions in Israel, Palestine, and Jordan that could comprehensively rehabilitate the lower section of the JR and its tributaries.⁷³

The Master Plan has received buy-in and support from the EU and World Bank,⁷⁴ yet the organization's promotion of environmental cooperation as a means of peacebuilding makes its relationship with the three governments

challenging. While several mayors of the communities in which EcoPeace operate have been engaged in its programs, the regional Master Plan has yet to be fully adopted by national-level authorities, and the envisioned memorandum of understanding between the three authorities that EcoPeace advocated for remains unsigned. The full implementation of this strategy requires significant financial investment (US\$4.58 billion) by 2050, although the plan has been proposed as a series of multiple interventions that can be implemented individually or collectively.⁷⁵ Despite limited political-level buy-in, the international donor community has funded a series of wastewater, greywater, and solid waste collection and treatment projects from the Master Plan.⁷⁶

Strategic water diplomacy—is it working?

Strategic water diplomacy in Israel, Palestine, and Jordan is deeply limited by national-level priorities and political buy-in. While efforts on the civil society level have produced comprehensive direction for regional integration and cooperation, donor-driven economic development in Jordan and Palestine, coupled with strengthened Israeli water security, minimize political interest to improve transboundary water management on the political level. Instead, limited investment is going towards productive, strategic interventions, such as those identified in the EcoPeace Master Plan; instead, mega-projects such as the RSDSWC are advancing and unilateral resource development continues to shape national-level strategies.

Conclusion

Political relations between Jordan, Israel, and Palestine are perpetually strained. In the water sector, these relations are characterized by the need to coordinate, rather than cooperate, in order to advance national interests and water security. As a result, regional water resources have continued to deteriorate, Palestinian water rights remain unmet, and regional stability and economic development are stunted.

Without a regional institution to manage shared water, such as a river basin organization, water diplomacy occurs on alternative platforms, including the four forms of water diplomacy defined in this book: legal, institutional, technical, and strategic planning. While legal water diplomacy

operates via two bilateral agreements, territorial disputes, security concerns, and limited institutional arrangements to implement legal agreements minimize the effectiveness of these mechanisms. The de jure and de facto legal reality in Palestine have prompted community activists from across the region and abroad to take formal and informal legal action. On the institutional level, the unilateral nature by which the three authorities operate, including in multilateral platforms, leaves shared water resources overutilized and polluted at the expense of national water security and economic development. Similar priorities drive strategic water diplomacy on the political level. Regional, civil society-led strategic diplomacy, as well as technical diplomacy, have prioritized improved transboundary water governance and serve as strong alternatives to water diplomacy in the absence of an RBO. Nonetheless, limited political buy-in has stunted the implementation of these programs' outcomes.

Across these four pillars of diplomacy, there are some noteworthy connections. For example, the strategic planning efforts by EcoPeace were informed by decades of technical water diplomacy between scientists across the region. Outputs of bilateral and multilateral institutional diplomacy as well as legal developments also shape the direction and focus of strategic planning across various actors. These connections, which are typically central to the functioning of a formal river basin organization, are nonetheless quite minimal in this region, precisely because there is no coordinated, regional platform to host the legal, institutional, technical, and strategic planning modes of water diplomacy.

The alternative arrangements for water diplomacy are, in some capacity, preventing significant, violent escalations around transboundary water among the three countries. On the civil society level, many of these programs also serve as an important mechanism to build and strengthen cross-border relationships—an output not to be taken for granted. However, despite these noteworthy benefits, these mechanisms have minimal capacity to improve the state of water conditions in the basin.

If current practices continue, it is only a matter of time before shared groundwater, the Jordan River, and Dead Sea ecosystems collapse. The environmental devastation of this collapse is clear, but the broader social, economic, and security implications that will result from such a reality are difficult to gauge today. The magnitude of impact from such shocks, however, will depend on the alternative measures taken by each state to

prevent or adapt to them—whether collectively or unilaterally. Without an institutional structure that has broad political-level support, such as an RBO, water diplomacy in Israel, Palestine, and Jordan is insufficient to achieve improved transboundary water governance. The development of such a platform and the advancement of basin-wide planning require significant shifts in political will, yet they could have profound impacts on the environment, on water rights, and access for residents across the region, the national economies, as well as regional stability.

Notes

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10 Water diplomacy in the Helmand River Basin

Exploring the obstacles to cooperation within the shadow of anarchy

Mohsen Nagheeby and Alistair Rieu-Clarke

After protracted conflicts and negotiations, influenced by the geopolitical interaction of the “Great Game,” Afghanistan and Iran agreed on a treaty in 1973¹ to share the waters of the Helmand River, or Hirman River (as it is known in Iran). Despite significant swings in the political regime of the region, and while the treaty and the Helmand River Commission (HRC) provide a basis for bilateral cooperation, the story of the Helmand River Basin (HRB) has remained largely unchanged since the mid-nineteenth century—with one country blaming the other for not respecting the treaty and its “water rights.”

The Helmand River offers a classic example of the challenges faced in fostering transboundary water cooperation. These challenges are evident in the views of the media within both countries. Iran—as an earlier-developing downstream state—asserts a historical right over existing water uses for farming, in addition to claiming a basic human right to drinking water and an environmental right to protect the delta’s wetlands. Also, Iran, while recognizing the Afghans’ right to development, blames Afghanistan for “not providing the amount of water stated in the treaty for downstream,” therefore “violating the treaty.” Iran also accuses Afghanistan of “not taking care of the downstream environment,” and especially the delta Hamoun wetlands because of its “mismanagement,” “inequitable” and “unfair” sharing of water, expanding irrigation lands for “opium,” and building several dams “without carrying out an Environmental Impact Assessment.”² Afghanistan—as a late-developing upstream state—in response, while not

answering the downstream calls for cooperation over the Hamoun wetlands, claims a right to development in order to overcome severe poverty. There have also been accusations that Iran, by appropriating “more” water than what is recognized in the treaty, is, along the same lines, guilty of “mismanagement” and “violating the treaty.”³ Within this historical context of counter-accusations that can be traced back to the 1870s, the sustainability of the entire river basin and in particular of the Hamoun wetlands has fallen victim to increased competition, unilateral water utilization, and an upstreamer reluctant to cooperate, and there is no sign of significant progress in resolving the dispute.

For many years, the HRC, as a diplomatic tool with its almost yearly bilateral meetings, has been increasingly faced with technical, managerial, legal, and political challenges. These severely hamper its ability to perform its primary function of fostering water cooperation. It is therefore important to critically assess the role of the HRC and to identify obstacles that negatively affect its contribution. Thus, a fundamental question that will be addressed through this chapter is: Why has the dispute over the Helmand remained unchanged despite the establishment of the HRC?

In seeking to examine the factors that hamper the effectiveness of the HRC, much attention in the literature has focused on technical and managerial factors. This focus has emphasized challenges to cooperation such as the conflicts of interest between Afghanistan and Iran over utilization of shared waters, highly asymmetric socioeconomic patterns, local tensions over water utilization, climatic and environmental risks, unilateral upstream dam development, mismanagement, and inefficient water uses.⁴

However, two major factors have not been well captured in the literature related to the dispute: on the one hand, there is an existing strong potential from interdependency and broad cultural, socioeconomic, and political commonalities between Iran and Afghanistan (which requires further study), and on the other hand, problems caused by the geopolitical complexity of the basin (which is the focus of this chapter). The dispute may indeed reflect conflicting views over the river’s political and legal regime, and differing views on the utilization of shared waters. However, the *persistence* of disputes over the Helmand waters between Iran and Afghanistan has been arguably more influenced by *geopolitical factors* in the region and the anarchic setting in Afghanistan.

As argued in this chapter, the anarchic setting, which is a byproduct of protracted foreign intervention and military occupation by the British Empire, the Soviet Union (USSR), the United States, and the North Atlantic Treaty Organization (NATO), negatively influences the effectiveness of technical and managerial solutions; and as a consequence, limits the performance of the HRC. Expanding the focus of this chapter by closely examining the geopolitical history of the Helmand River provides a more comprehensive approach to the study of the HRC in water diplomacy, and illustrates the complex political dimensions and interactions between the countries.

RBOs and cooperation under the shadow of anarchy: unravelling the fear of riparian states

Despite pioneering efforts by neoliberal institutionalists to offer a more elaborate and integrated theoretical concept of river basin organizations (RBOs),⁵ a deeper understanding of the impact of geopolitical history on water diplomacy remains necessary. In particular, it is necessary to more fully account for the geopolitical shadow of the past and existing political forces in a specific basin when analyzing why states (and RBOs) get stuck in disputes over transboundary waters. While RBOs certainly have the potential to manage water conflicts and prevent them from becoming a high-level political concern among riparian states, the question that remains is, can they progress water diplomacy from conflict management to conflict resolution, or a transformation in the highly anarchic geopolitical setting?⁶

In analyzing anarchy within the HRB context, this chapter focuses on three main obstacles that negatively influence the ability of the HRC to foster transboundary water cooperation. Firstly, anarchy feeds competition and conflict among states, and the *dominant* nature of political processes is striving for *power* and *self-interest*. Such conditions of anarchy compel states to fight for their *survival* and security to protect themselves.⁷ Accordingly, cooperation becomes difficult or, as this chapter maintains, fails to result in conflict transformation to ensure equity and sustainability—the principle foundations of transboundary water cooperation.⁸ Thus, striving for a balance of power dominates in anarchic settings and it may

result either in no or limited cooperation, or the abuse of cooperation in order to maintain the status quo.

Secondly, while states may “seek to maximize their individual *absolute* gains” in a mixed interest situation, in anarchic settings they fear being cheated out of the outcome of cooperation. Institutions can assist states in maximizing both the collective benefits that derive from transboundary water cooperation and the resultant gains to individual states. However, despite there being legal and institutional mechanisms available to address cheating, states within an anarchic setting are reluctant to make such commitments due to a fear of *relative* gains by the other riparian. Thus, fear of *relative gains* is the main barrier to cooperation that emanates from anarchy. The major concern in an anarchic context is that cooperation “might produce a more dangerous *potential* foe in the future” because of a fear that “today’s friend may be tomorrow’s enemy.”⁹

Finally, another obstacle to water cooperation in an anarchic setting is *uncertainty*: “[s]tates are uncertain about one another’s future *intentions*,” thus, they must give serious consideration to each other’s future capabilities. However, the inability of states within an anarchic setting to predict or control the interests and behavior of partners foments political uncertainty and consequently makes states wary when seeking to cooperate effectively. Ultimately, while the worst possible outcome of failed cooperation might be losing the opportunity to make progress, in an anarchic setting the achievement of cooperation might result in a much greater perceived risk of loss of power, independence, or even greater insecurity. Under these circumstances, states are unwilling to commit to a durable cooperative arrangement, preferring instead “to be more readily able to exit from the arrangement if gaps in gains...come to favour the other.”¹⁰

The history and politics of the legal and institutional arrangements in the Helmand River Basin

The 1,300 km Helmand River originates in the Hindu Kush mountains west of Kabul in Afghanistan. Near Qale Bist, the river’s major tributary, known as the Arghandab River, joins the Helmand River. Crossing southwest, then north, it forms 55 km of the Afghan-Iranian border and ultimately ends in

the 18,000 km² Sistan delta, where it forms a large complex of three main interconnected wetlands, the Hamoun-e-Puzak, Hamoun-e-Saberi, and Hamoun-e-Hirmand, and subsequently overflows to the south into the Gaud-e-Zirreh. While most of the river basin is located in Afghanistan, a large part of the delta, in particular the Hamoun wetlands, is located in Iran. See [Figure 10.1](#) below for a map of the basin.



Figure 10.1 The Helmand River Basin.

The Helmand River, with an average surface water availability of 9,552 million cubic meter (MCM),¹¹ is considered the lifeblood of one of the poorest regions of both riparian states. The water resources of the HRB are used extensively for irrigation and are crucial for Afghan and Iranian farmers alike. In addition, the Helmand River is a critical resource for sustaining the transboundary Hamoun wetlands, which, from an environmental perspective, are the most important parts of the river delta. The livelihood of people living around the Hamoun wetlands is extremely dependent on the water resources of the Helmand River, supporting activities such as fishing, reeds harvesting, and bird hunting. Only the Iranian side of the wetlands is listed under the Ramsar Convention and recognized as a UNESCO Biosphere Reserve in 2016.¹² However, the Hamoun wetlands have gradually diminished, seriously threatening the ecosystem and livelihoods of local communities, which puts public pressure on the Iranian government.

Both Afghanistan and Iran have unilaterally implemented water development projects with the aim of achieving their respective “hydraulic missions.” According to Vincent Thomas and Manijeh Mahmoudzadeh Varzi,¹³ Afghanistan currently uses surface water mostly for agricultural purposes (with explosive growth in opium cultivation),¹⁴ yet the total irrigable 250,219 ha cannot be irrigated to its full extent while also suffering from a lack of proper infrastructure to secure drinking water. In addition to operating the Kajaki Dam and Dahla Dam since the 1950s, Afghanistan currently plans to develop several other dams like the Kamal Khan—which is upstream near the Iranian border—and increasing the storage capacity of the Kajaki Dam in order to expand irrigated areas. A further dam that is under construction is the Bakhsh Abad on the Farah River. The dams are also considered for generating electricity.

These unilateral dam developments and irrigation expansion in Afghanistan, particularly for opium cultivation, have always attracted sharp criticism from Iran. It blames Afghanistan for not respecting the treaty and downstream rights, and the needs of the Hamoun wetlands in particular. These concerns were expressed by President Hassan Rouhani of Iran at a United Nations (UN)-backed conference on sand and dust storms in Tehran; showing his deep concern by remarking that “building dams [in Afghanistan]¹⁵ without studying environmental aspects is damaging for the

region.”¹⁶ In response to these criticisms, Afghanistan argues that, “Iran has no right for water more than the allocated amount in the treaty.”¹⁷ A few days after Rouhani’s speech, President Ashraf Ghani of Afghanistan said that “water is another major resource for Afghanistan,” and that “we are already investing in dams and irrigation infrastructure to raise agricultural productivity, and as technical designs are completed we will be accelerating investment in this sector that is key for both growth and poverty reduction.”¹⁸

Iran started to develop reservoirs in the early 1980s in order to secure water for the livelihoods of local residents, particularly in harsh times of drought. Four reservoirs known as Chahnimeh have been developed for securing drinking water and the agricultural demands of 120,000 ha. Despite the government’s effort to conduct several projects to increase efficiency and decrease the total irrigated lands in Sistan plain, in order to align the water demand with the allocated waters provided for in the treaty,¹⁹ it has not yet fully achieved the desired goals.

In a similar vein, and in response to the Iranian concerns, Afghanistan blames Iran both for exceeding its allocation of water under the treaty and mismanagement that, the Afghan government argues, negatively affects the Hamoun wetlands. Iran has rejected this accusation and asked Afghanistan to be committed to the treaty and cooperate over the protection of the transboundary Hamoun wetlands.

Political and legal arrangements

After several fruitless attempts to resolve disputes, such as the 1905 British arbitration (known as the “McMahon arbitration”) and a 1939 bilateral treaty (coming out of friendly relations between Reza Shah Pahlavi in Iran and Mohammad Zahir Shah in Afghanistan), Iran and Afghanistan, based on an American proposal, created the Helmand River Delta Commission in 1948. Focused primarily on joint fact-finding, it presented its recommendation for water allocation between the two countries in 1951.²⁰ The commission’s representatives estimated water demands at the time for merely irrigation and domestic use, without addressing the environmental requirements of the Hamoun wetlands.

Despite Iran's initial rejection of the commission's report, and following a period of severe drought in the downstream part of the river, the two countries signed the Helmand River Water Treaty in 1973. The agreement centers on previous recommendations that were initially rejected by Iran—namely to supply Iran with an average of 22 cubic meter per second, with an additional four cubic meter per second for “goodwill and brotherly relations” in a normal (or above normal) water year. This is about 820 MCM per year or only 8.5 percent of the average surface water availability of 9,552 MCM in the whole basin; or 14 percent of 5,661.71 MCM measured at nearby Kajaki Dam, and less than 14 percent of the overall water demand and requirement in the Sistan.²¹ This highly asymmetric water allocation has been one of the major sources of contention.

In order to address the conflicts over the waters of the Helmand and to implement the provisions of the treaty, Article VIII directs each party to appoint a commissioner and deputy commissioner. The first protocol to the treaty sets out the commissioners' authority and functions.

The signing of the treaty in 1973 was widely promoted by the officials of both countries. The Afghan prime minister, Mohammad Musa Shafiq, for instance, stated that the treaty “will solve the Helmand problem” and that “another 100 years of the two nations are [not] wasted on finding a solution for this difficulty.” Similarly, the Iranian prime minister, Amir Abbas Hoveyda, pointed out that, “there is no longer any question mark in relations between the two countries.”²²

However, enthusiasm by the riparian states for the treaty quickly faltered. It did not enter into force until June 1977, when the instruments of ratification were exchanged.²³ The delay in ratification can be explained by the discontent of the Afghan government and parliament, which perceived Afghanistan as acting as a “water dealer,”²⁴ and “resented ‘giving away’ what they regarded as precious Afghan water.”²⁵ There was also disdain for the treaty by some Iranians who accused their signatory of being a “traitor.”²⁶

The treaty remained in abeyance and no official cooperation between the countries on water-related issues took place for some 20 years due to: (1) the great political upheaval in Afghanistan as a result of the Soviet invasion in 1979, the subsequent civil war, and the US-led invasion of 2001; and (2) the Iranian revolution of 1978–1979, and the subsequent war that Iraq

waged against Iran from 1980 to 1988, initiated by the Western-backed Saddam Hussein.

Then, after a period of drought, civil war in Afghanistan, and the collapse of the Taliban, the countries held the first meeting of the Joint Committee of Commissioners²⁷ (of the HRC) in Tehran in August 2004. Subsequent meetings of the HRC continued at a rate of around two per year. To date, 20 meetings of the HRC have been held in either Iran or Afghanistan. Iranian and Afghan commissaries held their nineteenth and twentieth meetings in Tehran and Kabul from 5 to 8 January and 11–12 June 2019, respectively, during which there were calls for expanding mutual water cooperation to better implement the treaty. The HRC's administrative structure was changed at its nineteenth meeting by affording the commissioners the higher diplomatic level of deputy ministers; this change may be understood as another attempt to strengthen the role and influence of the HRC.²⁸

In 2017, and in parallel to a meeting of the HRC, higher-level negotiations between Iran and Afghanistan sought to establish a Comprehensive Strategic Partnership on several issues, including security and water, with an emphasis on boosting economic cooperation between the countries.²⁹ Although the HRC has a separate identity, these negotiations are assumed to provide hope as a catalyst to promote strategic collaboration between the countries over some related Helmand problems and thus indirectly improve the HRC's performance. However, it is too early to assess the impact of the negotiations and analyze how they might overcome impediments that emanate from new waves of anarchy in Afghanistan, such as the re-empowering of the Taliban and the rise of Daesh.

Although there might be some critics of the treaty, generally speaking, Iran is supportive at a high political level.³⁰ Similarly, despite decades of skepticism toward the treaty in Afghanistan, it has recently received the same official political support, and has even been described by Sultan Mahmoud Mahmoudi, a former Afghan commissioner, as “the best agreement in the region and the world.”³¹ Both countries have recognized that recent activities of the HRC will provide a basis for the creation of a constructive dialogue, not only to implement the provisions of the 1973 treaty but also to ensure the equitable and sustainable management of transboundary waters, including the preservation of the Hamoun

wetlands.³² The disputes, however, have continued in practice while both sides still accuse each other of violating their treaty obligations.

The section below will address the following questions: Why did both countries accept the treaty despite strong national resistance? For example, why did Iran agree to receive a very low amount of water compared to its demand? And why have there been changes in Afghan government's views about the treaty?

The HRC and anarchy in light of features of survival, relative gains, and uncertainty

It should be noted at the outset of this section that water diplomacy within the HRB cannot be fully understood without considering the broader turbulent geopolitical context. The relationship between major political milestones in the region and the adoption and evolution of cooperative arrangements concerning the HRB, while meriting further analysis, is outlined in [Figure 10.2](#) below.³³

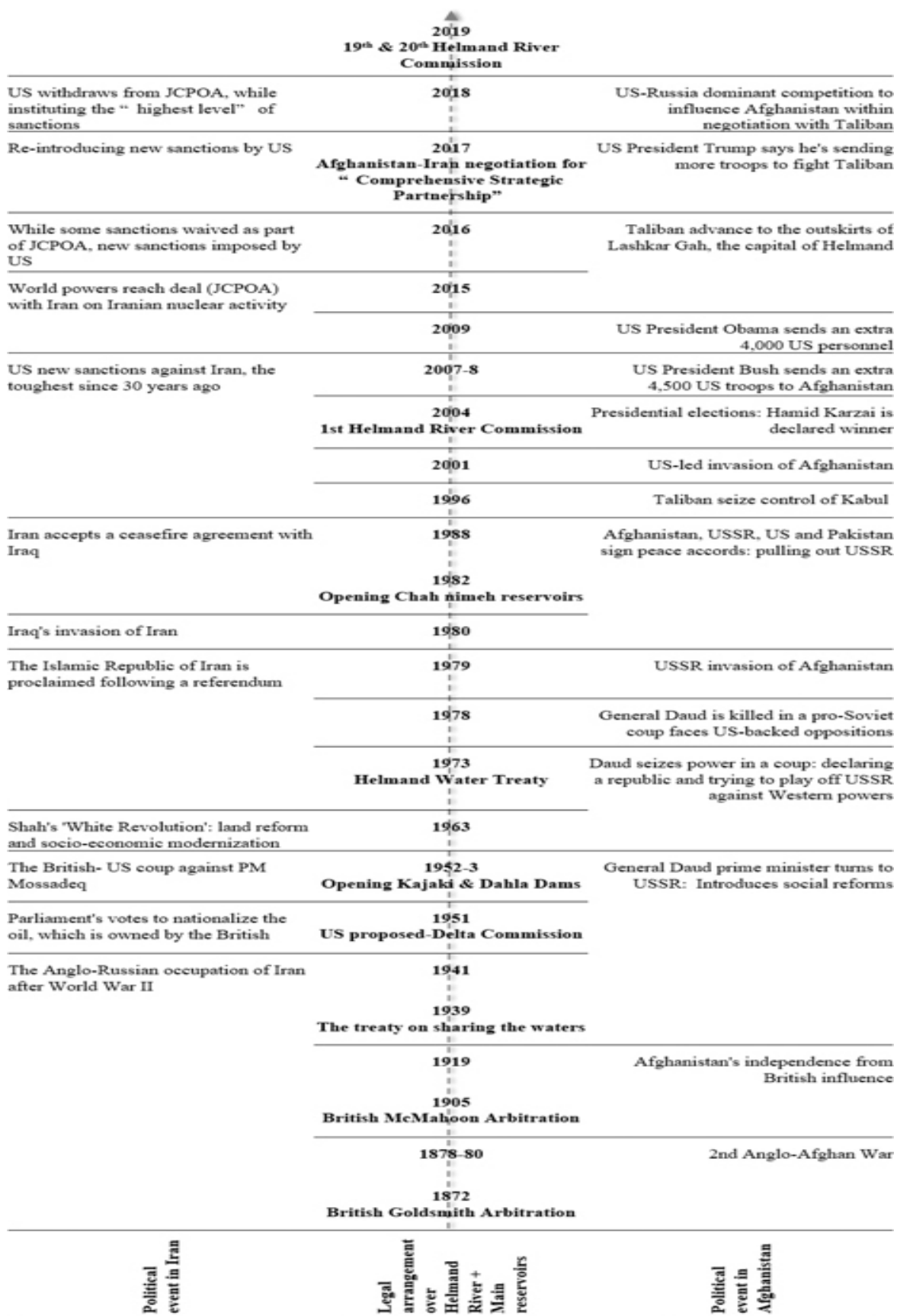


Figure 10.2 Timeline of developments in the Helmand River Basin.

Source: own compilation based on Pirous Mojtahed-Zadeh, “Lake Hamun, a Disaster in the Making: Hydropolitics of Hirmand and Hamun,” United Nations Environment Programme, 1995, <http://www.unep.or.jp/ietc/publications/techpublications/TechPub-4/lake1-7.asp>; Vincent Thomas and Manijeh Mahmoudzadeh Varzi, “A Legal Licence for an Ecological Disaster: The Inadequacies of the 1973 Helmand/Hirmand Water Treaty for Sustainable Transboundary Water Resources Development,” *International Journal of Water Resources Development* 31, no. 4 (2015): 499–518; Iran Press, “Iran, Afghanistan to Finalize a Comprehensive Cooperation Document,” 6 January 2019, <http://iranpress.com/iran-i131310>; Fars News Agency, “Tehran, Kabul to Expand Energy, Water Cooperation,” 7 January 2019, <http://en.farsnews.com/newstext.aspx?nn=13971017000553>; Michael H. Fuchs, “It’s Time to End America’s War in Afghanistan,” *Guardian*, 19 August 2018, <https://www.theguardian.com/commentisfree/2018/aug/19/its-time-to-end-americas-war-in-afghanistan>

Rarely has a river experienced such long wars, military invasions, and political swings as the Helmand. A recent UN report describes the political situation of Afghanistan as an “eroding stalemate.”³⁴ The US intervention, now in its nineteenth year, also remains stuck in “strategic limbo.”³⁵ Analysts describe the complex politics of Afghanistan as a country where “state collapse, civil conflict, ethnic disintegration and multisided intervention has locked it in a self-perpetuating cycle that may be simply beyond outside resolution.”³⁶ Thus, the situation in Afghanistan, in which most of the HRB is located, is reflected in the separation, contention, and fragmentation of authority and power either of the international community or national government. Authority belongs to whoever wins the latest battle. And conflict has deep social and political roots. The national authority has limited control over both the behavior of insiders and outsiders.³⁷ Despite international efforts to bring peace and stability to the country, chaos and anarchy remain prevalent in Afghanistan, a state “where outsiders come and go without any records kept.”³⁸ This anarchic nature of the political setting in Afghanistan, it is argued, undermines water diplomacy in the HRB, and influences the behavior of both riparian states.

Like Afghanistan, known as a buffer state between superpowers, Iran, as a regional power in the Middle East, has also experienced severe pressure from outsiders, particularly the United States. The Anglo-American coup in 1953 against a new democratic government, supporting Iraq's 1979 invasion, and imposing economic sanctions during and after the negotiations on a nuclear deal, are just a few examples of the attempts of superpowers to assert their influence over Iran. In this respect, the former US National Security Council officials Flynt Leverett and Hillary Mann Leverett highlight that, "[h]egemonic strategies...are inherently expansionist: a state uses military, political, and economic power not just to defend its interests but to bend others into accommodating them."³⁹

Notwithstanding these influences, Iran shares several key objectives toward Afghanistan with the UN, such as: supporting the peace-building process; reconstruction and development; sanctioning the opium trade; and hosting refugees from Afghanistan, which has the second largest refugee population in the world.⁴⁰ This becomes more significant when considering that poor water management and noncooperative water development in the Helmand Basin worsen violence, and increase opium cultivation and migration in Afghanistan—factors that all have a negative impact on not only neighboring countries but also Western countries.

The HRC and dominance rivalry: competition for survival, power, and self-interest

The purpose of this section is to illustrate how the struggle for power and self-interest—largely of non-riparian states—overshadows water diplomacy in the basin. The section focuses primarily on analyzing the geopolitical nature and roles of outsiders, and their foreign policies toward Afghanistan.

Geopolitical competition in Afghanistan has been dominated by the strategic rivalry and confrontation between superpowers, namely the British and Russian Empires and later the United States versus the USSR. Regional powers have also become enmeshed in the competition over “influence, power, hegemony and profits.”⁴¹ As a result, this anarchic setting has led all involved parties, including Iran and Afghanistan, to compete for power and self-interest in a way that protects their survival.⁴² This seemingly unbreakable cycle arguably casts a dark shadow over all economic and

social developments in the basin and favors the interests and security of the outsiders, who have pursued different strategies for ruling Afghanistan.

Within the nature of the Great Game, the strategies of the outsiders have highly politicized and securitized water, in line with their own geopolitical interests,⁴³ and therefore hindered water conflict transformation. Not surprisingly, for instance, almost all of the legal arrangements between Iran and Afghanistan over the Helmand River have been negotiated with the support of superpowers. Such was the case with the British-instituted Goldsmith and McMahon arbitrations of 1872 and 1905 respectively. These were followed by the US-proposed Delta Commission of 1951, and, finally, the 1973 treaty. All of these initiatives, and, in particular, the earlier ones, have been described as “the force of dictat” being applied to a local issue as a “bulwark” against Czarist or Russian expansion.⁴⁴ Indeed, during the Cold War the US government considered the conflict between Iran and Afghanistan over the Helmand River as a political opportunity to bring the countries under its influence in order to protect its broader geopolitical interests in the region, and protect its security against the threat of the USSR. This hegemonic strategy is illustrated by the following 1947 statement by the US Central Intelligence Agency (CIA):

The United States and Great Britain are keenly aware of this Soviet interest, which may threaten the strong traditional British influence in Afghanistan and adjacent areas. It is an important part of American policy in the Middle East that no state in the area shall have its independence and integrity endangered and that American influence be maintained and strengthened wherever possible. A dispute such as the one between Iran and Afghanistan over the Helmand River threatens this policy.⁴⁵

Just as political rivalry between outside powers emerges from ideological dispositions, ranging from imperial capitalism to Marxism-Leninism, so too are water development projects influenced by competition between the power and self-interest of countries. As Arthur Schlesinger contended, “[d]ams were the American alternatives to Communist land reform.” The US policy, “wherever possible,” has therefore strategically proposed river authority schemes as solutions to the most stubborn international conflicts, such as in Palestine and Kashmir. An example can be seen in the case of the

Helmand and Arghandab Valley Authority (HAVA) in Afghanistan, which was established in 1952. HAVA was regarded by the US government as a means to “create a secure political base [against the US’s rival, the USSR].”⁴⁶ Thus, the process of signing (or perhaps being forced to sign) the peace agreement over shared waters, the 1973 Helmand River Water Treaty, should be seen through this lens of geopolitical imperialist rivalry among the superpowers of that moment. This is well demonstrated by Asadollah Alam in maintaining that Americans forced the Iranian regime at the time to compromise and provide incentives to Afghanistan over the Helmand waters in order to control growing Soviet influence within the latter country.⁴⁷ Therefore, it is expected that not only the riparian states’ rights to water but also the sustainability of water management within the whole basin, would be sacrificed in favor of superpowers’ geopolitical interests.

This influence of outsiders is still exemplified in the 2017 “US Global Water Strategy,” which refers to water as at the core of the US foreign policy agenda in Afghanistan, with the aim of protecting “US national interests.”⁴⁸ This kind of foreign policy agenda and intervention by outsiders over the longer term, creates what Alfred McCoy⁴⁹ calls, a “black hole” of geopolitical instability. Similarly, the 2011 NATO report to the UN secretary-general concerning the construction of the Kamal Khan dam calls for “transnational water agreements.”⁵⁰

This demonstrates how outside powers have highly politicized water development in Afghanistan, potentially at the risk of threatening long-term sustainable and equitable cooperation between the riparian states. This does not mean that national interests and the agreements or differences between Iran and Afghanistan over the Helmand River are without value, power, and influence, but the reality is that anarchy, and geopolitical rivalry, have severely overshadowed the priorities of the riparian states and led them to strategically focus on power, security, and self-interest for their survival, at least in the period of geopolitical vulnerability.

Thus, on the one hand, within the vulnerable political situation in Afghanistan, the government views development over water resources as a strategic resource, a symbol of nation-building, and a way of monopolizing power against its national rivals. On the other hand, within an anarchic geopolitical context, water-related projects are not solely for socioeconomic

development but rather for geopolitical reasons that serve the security interests of all the actors involved. In turn, this situation has seriously impacted water diplomacy. Although there might not now be clear evidence to trace the interventions of outsiders in the water diplomacy of the HRB, the shadow of the outsiders' past politics has its impact on the respective discourses, behavior, and the atmosphere of negotiations within the HRC.

The HRC and greater fears of relative achievements and cheating

A fear of cheating exists in the HRB, though, interestingly, the atmosphere of the negotiations inside the HRC is, according to Jabbar Vatanfada, the former Iranian commissioner, “amicable” most of the time.⁵¹ Yet, problems and disputes have persisted, in part because of points of contention such as disagreement over measuring water flow. While there is not a reliable study by the HRC or others to analyze the potential impacts of natural phenomena and human-made development in the HRB, lack of common monitoring of the transboundary river by the HRC, a basic core function of any RBO the world over, has bred distrust between the riparian states.

For instance, according to the 1973 treaty, one of the main sticking points concerns Article I(c), which defines a “normal water year.”⁵² This depends on the measurements recorded by the Dehrawud hydrometric station located upstream near the Kajaki Dam. In years when the amount of water is less than a normal water year due to climatic variation, the water allocated to Iran is to be decreased proportionally. Thus, defining a “normal” water year and demonstrating the causes for a probable decline in water flow in upstream Afghanistan are crucial for proper implementation of the treaty. While Iranian officials have repeatedly requested visits to this station for verification of the Afghan reported water flow, particularly during periods of drought, the Afghans have always denied these requests based on “security” reasons.⁵³ For their part, Afghans have always criticized Iran for having “hundreds” of water pumps on the river bank and therefore claiming that they are using “more” water than is their right according to the treaty.⁵⁴ While Iran claims that the water abstraction by these pumps is “negligible” compared to its 820 MCM water right, a specific project has been conducted to provide water to those river bank farmers in order to remove the pumps, and accordingly ensure compliance

with the treaty's obligation.⁵⁵ However, the pumps still abstract water from the river, and Iran claims that its unsuccessful attempts to take out pumps are "the fault of local social resistance farmers."⁵⁶ These ongoing back-and-forth exchanges have not only damaged the trust between the riparian states, but have also severely heightened the fear of cheating.

The behavior and concerns of the riparian states of the HRB in an anarchic context may also reflect the relative achievements over the utilization of shared waters. For instance, the continued debate between the reluctant riparian states in relation to these issues of visiting monitoring stations and removing pumps might be understood in terms of a fear of relative gains. Considering the "black hole," there is perhaps a serious question for the riparian states that: If there is not a minimum guarantee for the future, why would the countries make promises? This critical question forces them to behave very conservatively and cautiously. Perhaps this fear can also be observed in their misleading claims over the dichotomous issues of unilateral development and environmental protection. While Iran has expressed concern about the effects of Afghan dams on its future water utilization, in particular the downstream ecosystem,⁵⁷ Afghanistan is worried by Iran's international campaign to protect the Hamoun wetlands.

On the one hand, Iran's concern might be justified not only because an upstream storage dam may potentially provide material power (Afghanistan could essentially control water flows), but also because a dam will give Afghans the upper hand and more capabilities in future negotiations over other issues. The anarchic condition of Afghanistan may also support this interpretation; namely, it cannot give a guarantee to Iran about Afghanistan's compliance with any agreement over water or not abusing the dams by outsiders against its security. Thus, even though dams in Afghanistan may be in line with Iran's main interests in Afghanistan, such as security and development, Iran's fear might be justified due to threatening its national security.

On the other hand, Afghan fears over Iranian efforts to make an international campaign to protect the Hamoun wetlands might be interpreted as providing Iran with a greater capability to force Afghanistan—as a late-developing country⁵⁸—to comply with environmental obligations or cut international support for its projects, before using waters for its development. It should, however, be noted that the protection of the

Hamoun wetlands might also be beneficial for Afghanistan, but perhaps it is not the priority now; and therefore, Afghanistan might rather express concern about what Iran may achieve by this campaign. This fear may also be traced to Afghanistan's reluctance to join the Ramsar Convention. As a result, both riparian states may express concern about relative gains, which, in an anarchic setting, may override the pursuit of individual absolute gains.

The HRC and uncertainties

The uncertainty of one state over the future intentions of the other can lead to a focus not only on absolute but rather on relative gains from cooperation in order to protect security and survival. This complex security dilemma might be interpreted as explaining why Iran and Afghanistan, while not fully satisfied with the treaty's provisions and with each other's compliance with it, might nevertheless not exit. The reason may be arguably justified by a feeling of uncertainty about the future that is very murky and puzzling in an anarchic setting, leaving a state feeling vulnerable and fearful of the other achieving relatively greater gains by leaving the treaty.

This is evident in the discussions related to the implementation of the 1973 treaty. On the one hand, while Iran has expressed concern over the quantity and the mechanisms for allocating water,⁵⁹ an alternative solution has failed to present itself—and perhaps there is a recognition that the status quo, even though it is very far from the actual needs, at least provides some degree of certainty for Iran against Afghanistan, particularly during drought seasons. Thus, Iran's behavior might be observed to support the maintenance of the treaty in its own favor while adopting a strategy of persuading Afghanistan to cooperate over the protection of the Hamoun wetlands.

On the other hand, while Afghanistan has not—at least until recently—been satisfied with the treaty,⁶⁰ it maintains it because of a similar fear of uncertainty. It might be interpreted that, first, Afghanistan is afraid that if it leaves the treaty, a new round of negotiations may lead to additional obligations; and, second, Afghanistan perhaps has found some degree of certainty that the treaty gives it the upper hand in current negotiations over the Helmand River. Considering also that withdrawal from the treaty may produce obstacles to attracting international financial support, Afghanistan

also strives to influence the implementation of the treaty for its own interest while not responding to the call for cooperation on the Hamoun wetlands.

Finally, the “black hole” is also observed in the HRC since there is no minimum guarantee of holding the next meeting or fulfilling commitments within the anarchic political turbulence. This is also observed in the lack of confidence in how the representatives of the HRC negotiate and commit. The vulnerability, complexity, and utmost political sensitivity of the issue, along with public pressure, make the respective negotiations for all representatives too risky. These sources of uncertainty affect the behavior of the two states, influence the outcome of every round of negotiations overseen by the HRC, and form a barrier to equitable and sustainable cooperation and conflict transformation.

Conclusion

Despite cooperation through the HRC, both riparian states of the Helmand River have continued to unilaterally utilize their shared waters. While Afghanistan has been developing dams, lack of a positive response to calls to consider environmental impacts and revive the Hamoun wetlands through cooperation reflect a situation that is reminiscent of the “tragedy of the commons.”⁶¹ Despite the fact that the disputes over the utilization of the Helmand River between riparian states have been fundamental of a technical and managerial nature, the disastrous politicization of the disagreements influenced by the toxic nature of the Great Game has complicated the situation.

A global geopolitical overlay can easily be posited on top of a regional (hydro)security complex.⁶² The review of the geopolitical history of the Helmand River shows that there is a negative correlation between anarchy and water conflict transformation. Many Western countries, in particular the United Kingdom and the United States, have demonstrated continued interest in the HRB.⁶³ This means that the HRB dispute appears both as a symptom of the anarchy created by competition between non-riparians and as a tool used by outsiders for their own interests in a broader geopolitical context. The consequence is that progress toward water diplomacy is constrained because the outsiders’ priorities have served their national interests, without sufficiently paying attention to the interests of the riparian

states and without an integrated vision of the whole river basin based on equity and sustainability.

Yet, the continuing anarchy presses both Iran and Afghanistan to struggle for survival in the negotiations conducted through the HRC, which are essentially imbued with power-seeking, driven by self-interest, heated by the fears of cheating and relative gains, and weakened by uncertainties. Despite Iran's call, Afghanistan may consider cooperation over shared water resources as being too risky within the present turbulent geopolitical setting. This confirms that policies and institutions within certain settings, such as the HRB, must be applied by paying attention to the impacts of anarchy on states' behavior in order to better understand the root causes of water conflict.

Finally, despite the fact that this chapter argues that the water-related institutions remain unable to effectively address the water disputes in anarchic settings, they play subsidiary roles. Therefore, this chapter does not suggest that the HRC is entirely toothless. In the geopolitical chaos of the basin where even a little dispute may escalate into full-blown conflict, the commission may provide a forum for both states to communicate in a legitimate way to at least manage, even if they cannot resolve, their water conflicts.

Notes

- 1 The Afghan-Iranian Helmand-River Water Treaty, 1973, https://www.internationalwaterlaw.org/documents/regionaldocs/1973_Helmand_River_Water_Treaty-Afghanistan-Iran.pdf.
- 2 Tasnim News, "Hidden Realities of the Helmand River and the 1973 Treaty" [in Farsi], 6 March 2017, <https://www.tasnimnews.com/fa/news/1395/12/16/1346429/>.
- 3 Soltan Mahmoud Mahmoudi, "Historical Events after the Signing of the Helmand River Water Treaty" [in Farsi-Dari], *8am Daily Newspaper*, 16 May 2017, <https://8am.af/x8am/1396/02/26/historical-events-after-the-signing-of-the-treaty-helmand-river/>.
- 4 Eelco van Beek, Babak Bozorgy, Zoltán Vekerdy, and Karen Meijer, "Limits to Agricultural Growth in the Sistan Closed Inland Delta, Iran," *Irrigation and Drainage Systems* 22, no. 2 (2008): 131–143; and Vincent Thomas and Manijeh Mahmoudzadeh Varzi, "A Legal Licence for an Ecological Disaster: The Inadequacies of the 1973 Helmand/Hirmand Water Treaty for Sustainable Transboundary Water Resources Development," *International Journal of Water Resources Development* 31, no. 4 (2015): 499–518.
- 5 Susanne Schmeier, Andrea Gerlak, and Sabine Blumstein, "Clearing the Muddy Waters of Shared Watercourses Governance: Conceptualizing International River Basin Organizations," *International Environmental Agreements: Politics, Law and Economics* 16, no. 4 (2016):

- 597–619; and Susanne Schmeier and Zaki Shubber, “Anchoring Water Diplomacy: The Legal Nature of International River Basin Organizations,” *Journal of Hydrology* 567 (2018): 114–120.
- 6 It is important to consider the spectrum from conflict management to resolution and transformation. Conflict management is a set of policies and practices to handle or control or limit conflict. Conflict resolution and transformation go further by emphasizing outcomes in terms of justice and equity. Thus, conflict resolution or transformation “is found to be more fair—procedurally—than is conflict management, and may be supported to a limited extent by international water law.” See Mark Zeitoun et al., “Transboundary Water Justice: A Combined Reading of Literature on Critical Transboundary Water Interaction and ‘Justice,’ for Analysis and Diplomacy,” *Water Policy* 16, Supplement 2 (2014): 174. See also Mark Zeitoun, Naho Mirumachi, and Jeroen Warner, *Transforming Water Conflicts* (Oxford: Oxford University Press, 2019).
 - 7 Joseph Grieco, “Anarchy and the Limits of Cooperation: A Realist Critique of the Newest Liberal Institutionalism,” *International organization* 42, no. 3 (1988): 485–507.
 - 8 Alistair Rieu-Clarke, *International Law and Sustainable Development* (London: IWA Publishing, 2005).
 - 9 Grieco, “Anarchy and the Limits of Cooperation,” 487.
 - 10 Ibid., 500, 506.
 - 11 Thomas and Varzi, “A Legal Licence for an Ecological Disaster.”
 - 12 While there have been some efforts to invite Afghanistan to join the international campaign to revive the Hamoun wetlands, their participation, so far, has not been forthcoming.
 - 13 Thomas and Varzi, “A Legal Licence for an Ecological Disaster.”
 - 14 UN Office on Drugs and Crime (UNODC), “Afghanistan Opium Survey 2017: Cultivation and Production,” November 2017, https://www.unodc.org/documents/crop-monitoring/Afghanistan/Afghan_opium_survey_2017_cult_prod_web.pdf.
 - 15 He also targeted Turkey’s dam development over the Tigris River, in particular the Ilisu Dam.
 - 16 Dominic Dudley, “War of Words Heats Up between Iran and Afghanistan over Water Resources,” *Forbes*, 12 July 2017, <https://www.forbes.com/sites/dominicdudley/2017/07/12/iran-afghan-water-dispute/>.
 - 17 Mahmoudi, “Historical Events after the Signing.”
 - 18 Dudley, “War of Words Heats Up between Iran and Afghanistan over Water Resources.”
 - 19 Tasnim News, “Organizing and Establishing Rural Cooperative Unions in the New Irrigation Plan of Sistan Plain” [in Farsi], 8 May 2019, <https://www.tasnimnews.com/fa/news/1398/02/18/2007266/>.
 - 20 For an extensive legal and political history of the HRB, see, e.g., Pirouz Mojtahed-Zadeh, “Hydropolitics of Hirmand and Hamun,” In Pirouz Mojtahed-Zadeh, ed., *Boundary Politics and International Boundaries of Iran* (Boca Raton, FL: Universal Publishers, 2006); and, A.H.H. Abidi, “Irano-Afghan Dispute over the Helmand Waters,” *International Studies* 16, no. 3 (1977): 357–378.
 - 21 Thomas and Varzi, “A Legal Licence for an Ecological Disaster.”
 - 22 Abidi, “Irano-Afghan Dispute over the Helmand Waters”: 372.
 - 23 Ibid.
 - 24 Mahmoudi, “Historical Events after the Signing.”
 - 25 Quoted in CIA, “Iran-Afghanistan: Helmand River Dispute Still Sensitive,” declassified report, “sanitized copy,” approved for release 6 September 2012, doc. no. CIA-RDP08C01297R000100130002-7, 16 December 1981, 1, <https://www.cia.gov/library/readingroom/docs/CIA-RDP08C01297R000100130002-7.pdf>.

- 26 Quoted in Asadollah Alam, *Yad'dashtha-ye Alam: Virayesh va Muqaddamah az Alinaqi Alikhani* [The Alam Diaries: edited by Alinaqi Alikhani] (Bethesda, ML: Ibex Publishers, 1992). Asadollah Alam, the former Iranian prime minister and the minister of the Royal Court at the time, shouted at signatories for being “cowards” and “betrayers.” See *ibid.*, 480–481.
- 27 Under Article 7 of Protocol No. 1 of the 1973 treaty, the Afghan and Iranian commissioners constitute the “Joint Committee of Water Commissioners.”
- 28 Fars News Agency, “Tehran, Kabul to Expand Energy, Water Cooperation,” 7 January 2019, <https://en.farsnews.ir/newstext.aspx?nn=13971017000553>.
- 29 Iran Press, “Iran, Afghanistan to Finalize a Comprehensive Cooperation Document,” 6 January 2019, <http://iranpress.com/iran-i131310>.
- 30 Eghtesad News, “Zarif Answered the Question Raised by Parliament Member Regarding Iran’s Helmand Right” [in Farsi], 6 May 2018, <https://www.eghtesadnews.com/fa/tiny/news-212097>.
- 31 Quoted in Mahmoudi, “Historical Events after the Signing.”
- 32 Islamic Republic News Agency (IRNA), “The Helmand [River] Promotes Iran-Afghanistan Cooperation” [in Farsi], 7 October 2016, <http://www.irna.ir/sb/fa/News/82259662>.
- 33 Additional events to be taken into consideration include 1828: Iran’s loss of Caucasus to Russia; 1857: Treaty of Paris: Iran’s loss of Herat to Great Britain; 1926: crowned Reza Shah Pahlavi; 1933: Zahir Shah becomes king; Major droughts as key drivers in legal and political interactions: 1939–1940, 1946–1947, 1950, 1960, 1971, 2000–2001, 2004, and 2007.
- 34 UN secretary-general, “Special Report on the Strategic Review of the United Nations Assistance Mission in Afghanistan,” UN doc. A/72/312– S/2017/696, 10 August 2017.
- 35 Michael H. Fuchs, “It’s Time to End America’s War in Afghanistan,” *Guardian*, 19 August 2018, <https://www.theguardian.com/commentisfree/2018/aug/19/its-time-to-end-americas-war-in-afghanistan>.
- 36 Max Fisher and Amanda Taub, “Why Afghanistan’s War Defies Solutions,” *New York Times*, 24 August 2017, <https://www.nytimes.com/2017/08/24/world/asia/afghanistan-intervention-state-collapse.html>.
- 37 Zalmay Khalilzad, “Anarchy in Afghanistan,” *Journal of International Affairs* 51, no. 1 (1997): 37–56.
- 38 Kimberly Zisk Marten, “Defending against Anarchy: From War to Peacekeeping in Afghanistan,” *Washington Quarterly* 26, no. 1 (2002): 35.
- 39 Flynt Leverett and Hillary Mann Leverett, *Going to Tehran: Why the United States Must Come to Terms with the Islamic Republic of Iran* (New York: Metropolitan Books, 2013), 332.
- 40 Mohsen Milani, “Iran’s Policy Towards Afghanistan,” *The Middle East Journal* 60, no. 2 (2006): 235–279.
- 41 Mohsen Nagheeby and Jeroen Warner, “The Geopolitical Overlay of the Hydropolitics of the Harirud River Basin,” *International Environmental Agreements: Politics, Law and Economics* 18, no. 6 (2018): 839–860.
- 42 *Ibid.* See also Abidi, “Irano-Afghan Dispute over the Helmand Waters.”
- 43 Nagheeby and Warner, “The Geopolitical Overlay of the Hydropolitics.”
- 44 CIA, “The Helmand Waters Dispute between Iran and Afghanistan,” declassified report, “sanitized copy,” approved for release 16 November 2012, doc. no. CIA-RDP08C01297R000100130005-4, 29 June 1964, 4, <https://www.cia.gov/library/readingroom/docs/CIA-RDP08C01297R000100130005-4.pdf>.
- 45 CIA, “The Controversy between Iran and Afghanistan over the Helmand River Waters,” declassified report, “sanitized copy,” approved for release 6 September 2012, doc. no. CIA-RDP08C01297R000100130020-7, 24 October 1947, 25, <https://www.cia.gov/library/readingroom/docs/CIA-RDP08C01297R000100130020-7.pdf>.

The CIA also noted that “[w]hile the dispute is essentially local it has wider significance as a source of friction between two Middle Eastern states and as a possible means of weakening their ability to resist pressure by the Soviet Union.” See *ibid.*, ii.

46 Quoted in Nick Cullather, “Damming Afghanistan: Modernization in a Buffer State,” *The Journal of American History* 89, no. 2 (2002): 528, 529.

47 Alam, *Yad’dashtha-ye Alam*.

48 US Department of State, “US Government Global Water Strategy,” Washington, DC, 2017, https://www.usaid.gov/sites/default/files/documents/1865/Global_Water_Strategy_2017_final_508v2.pdf. In similar approaches to that of the United States, countries like the Netherlands, Switzerland, and Sweden have included water as a core foreign policy issue in their national interest. See Swiss Federal Council, “Global Programme Water Division,” <https://www.eda.admin.ch/deza/en/home/sdc/organisation/departments/global-cooperation/global-programme-water-initiatives.html>; Government of the Netherlands, “What Does the Special Envoy for International Water Affairs Do?” <https://www.government.nl/topics/water-management/waterenvoy>; and Government Offices of Sweden, “International Development Cooperation,” <https://www.government.se/government-policy/multilateral-cooperation/>.

49 Alfred W. McCoy, “How the Heroin Trade Explains the US-UK Failure in Afghanistan,” *Guardian*, 9 January 2018, <https://www.theguardian.com/news/2018/jan/09/how-the-heroin-trade-explains-the-us-uk-failure-in-afghanistan>.

50 UN secretary-general, “Quarterly Report to the Security Council on the Operations of the International Security Assistance Force,” UN doc. S/2011/760, 7 December 2011, 11, http://www.un.org/ga/search/view_doc.asp?symbol=S/2011/760.

51 IRNA, “The Helmand [River] Promotes Iran-Afghanistan Cooperation.”

52 Article I(c) identifies a “normal water year”—the year during which the total volume of water from the first of October to the end of the succeeding September, measured and calculated at the hydrometric station of Dehrawud, upstream of Kajakai Dam, is 5661.71 MCM.

53 Mahmoudi, “Historical Events after the Signing.”

54 *Ibid.*

55 Tasnim News, “Hidden Realities of the Helmand River.”

56 Mahmoudi, “Historical Events after the Signing.”

57 Tasnim News, “Hidden Realities of the Helmand River.”

58 For discussion about the rights and obligations of late developing states in transboundary river basins, see James C. McMurray and A. Dan Tarlock, “The Law of Later-Developing Riparian States: The Case of Afghanistan,” *New York University Environmental Law Journal* 12, no. 3 (2003): 711–761. See also Mark Zeitoun, “The Relevance of International Water Law to Later-Developing Upstream States,” *Water International* 40, no. 7 (2015): 949–968; and Mohsen Nagheeb, Mehdi Piri, and Michael Faure, “The Legitimacy of Dam Development in International Watercourses: A Case Study of the Harirud Water Basin,” *Transnational Environmental Law* 8, no. 2 (2019): 247–278.

59 Tasnim News, “Hidden Realities of the Helmand River.”

60 Mahmoudi, “Historical Events after the Signing.”

61 Quoted in Garrett Hardin “The Tragedy of the Commons,” *Science* 162, no. 3859 (1968): 1243–1248.

62 Nagheeb and Warner, “The Geopolitical Overlay of the Hydropolitics.”

63 The dams in the Helmand River are still protected by the British Army. The basin is under the study of the US Army and major funding is provided by these countries. For instance, the United Kingdom invested £2.8 million over three years (2011/2012–2013/2014) to the Helmand River Study and Master Plan. See Department for International Development,

International Aid Transparency Initiative, “Business Case Intervention Summary. Title: Helmand River Basin Study and Master Plan (HRBMP)—200870. What Support Will the UK Provide?” http://iati.dfid.gov.uk/iati_documents/3755598.odt. The question is how much their policy and financial support are aligned with the idea of fostering mutual cooperation between riparians on a basin-wide view.

11 Prolonging or resolving water conflicts in Central Asia?

The International Fund for Saving the Aral Sea

Jenniver Sehring and Saghit Ibatullin

The Aral Sea Basin in Central Asia includes most of Tajikistan, Turkmenistan, and Uzbekistan, over half of the Kyrgyz Republic, close to 40 percent of Afghanistan and about 10 percent of Kazakhstan. A significant part of it lies in arid climate zones. Extensive agricultural development along the two main rivers, the Amudarya and Syrdarya, has led to the desiccation of the Aral Sea with its well-known environmental, social, and economic consequences, and widespread land degradation. It has also established unequal water use patterns that became increasingly contested after most of the basin ceased to be part of Soviet central planning.

After the dissolution of the Soviet Union in 1991, many Western experts expected conflicts over water in Central Asia.¹ Instead, the newly independent states (without Afghanistan) established the International Fund for Saving the Aral Sea (IFAS) and a number of subordinate bodies (including the Interstate Commission for Water Coordination, ICWC) to address the Aral Sea crisis and jointly manage the transboundary rivers. This is often praised as a success in itself. However, IFAS has also been criticized for its biased structures, ineffectiveness, lack of mandate and power—all reflecting political asymmetries among its members. It also could not prevent tensions over water, and hostilities regarding new dam projects.

This chapter first gives a brief overview of the challenges for transboundary water management in the Aral Sea Basin and the institutional setup of IFAS, then analyze the technical, strategic, and institutional

mechanisms it employs, before assessing its role in water diplomacy. Understanding water diplomacy as being about the processes of establishing joint water governance arrangements to realize equitable and sustainable outcomes, we argue that IFAS—rather than being an actor in shaping and using these processes—presents an institutionalized platform that has to varying degrees enabled as well as constrained water actors in Central Asia to negotiate and cooperate on water. IFAS has developed into and remains an important forum to enable both formal and informal dialogue on regional water cooperation and coordination with donors. However, due to its structural weaknesses, it has not managed to be a driver for effectively implementing agreements and developing new, basin-wide acceptable policies for joint water management.

Brief overview of water issues in the Aral Sea Basin

For the more than 50 million people of the Aral Sea Basin, water is a key driver for food security, biodiversity, employment, and poverty reduction. Over 8.4 million hectares of irrigated agriculture contributes about 20 percent to the regional gross domestic product and employ 40 percent of the population. Some 45 large hydropower stations in the region generate 37 gigawatt-hours per year of hydroelectricity, accounting for 27 percent of average energy consumption in the Aral Sea Basin and for about 90 percent in Kyrgyzstan and Tajikistan. The rivers provide numerous environmental services, for example to migratory birds, fish production, and tourism.²

Surface water resources are concentrated in two major rivers, the Syrdarya and Amudarya, which together form the Aral Sea Basin (see [Figure 11.1](#)). These rivers are the main transboundary water arteries flowing through six countries: Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan.



Figure 11.1 Aral Sea Basin.

On average, annually about 79 km³ and 37 km³ of water flows through the Amudarya and Syrdarya rivers respectively. While Central Asia is often perceived as a water-scarce region, per capita water availability is not scarce, but shortages result mainly from unequal distribution, overconsumption and unsustainable use.

Eighty percent of the flow of the Amudarya (length: 2,540 km, basin: 309,000 km²) is formed in Tajikistan (12 percent Afghanistan, 6 percent Uzbekistan, and 3.5 percent Turkmenistan). Some 74.2 percent of the flow of Syrdarya (length: 3,019 km, basin: 219,000 km²) is formed in

Kyrgyzstan (12.1 percent Kazakhstan, 11.1 percent Uzbekistan, and 1.1 percent Tajikistan). In contrast, water is used mainly in the irrigated lands located in the middle and lower reaches. This considerable disparity in generated flow and water abstraction between the countries is one of the basic challenges for water cooperation.

In Soviet times, water and energy resources were part of the region's inter-republic integrated management system among all riparians, excluding Afghanistan. Water from the Amudarya and Syrdarya rivers was stored in upstream reservoirs in the Kyrgyz and Tajik Soviet Socialist Republics (SSRs) and supplied to extensive irrigation systems in the downstream Kazakh, Turkmen, and Uzbek SSRs for agricultural production. In exchange, oil, coal, and gas were transferred from downstream to upstream republics in winter. The needs of downstream states for energy were covered by the Soviet Common Electricity Net. It ensured that water stored upstream would be available for irrigation during summer and not used for energy production in winter.

This system disintegrated after 1992. Lacking the mutual energy supplies, upstream countries faced a worsening winter energy crisis and changed the operational regime of the reservoirs to increased winter releases for hydropower. Before 1991, 70 percent of river runoff was accumulated in the reservoirs of the upstream countries and discharged downstream in the crop season. Now, upstream countries discharge up to 70 percent of river runoff in winter for hydropower production to replace the missing fossil imports. This led to flooding of downstream areas in winter and reduced water availability for irrigation in summer, threatening the food security of downstream countries. As a consequence, disagreements and tensions among states about seasonal water allocation increased, reinforced by new dam building projects. The Kambarata dam project in Kyrgyzstan, and even more the Rogun hydropower project in Tajikistan were long opposed by Uzbekistan, alarmed at the prospect of Tajikistan gaining greater control over water and trading energy with new partners.

The water challenges in the region are amplified by the impacts of climate change, population growth, environmental degradation, and economic development. While the water flow could increase in the short term as a consequence of glacier melt, increased variability and changes in the flow pattern could have dramatically adverse social, economic, and environmental consequences across Central Asia.³

The situation is further aggravated and complicated because of decay of water infrastructure and its interdependence. The system of main canals built during Soviet times supplied water to entire irrigation districts, some of which were shared by different republics (e.g., the Fergana irrigation district shared by the Uzbek and Kyrgyz SSRs, or the Chirchik-Angren-Keles irrigation district and the Golodnaya Steppe irrigation district, both shared by the Uzbek and Kazakh SSRs). After independence, these irrigation systems have become transboundary and countries depend on each other for maintenance and water supply. As a result, besides political decisions on the amount and timing of water allocation, practical questions of managing and maintaining the canals, hydraulic facilities, and collector and drainage systems as well as supplying water in a reliable manner are part of the joint water management challenges in the region. Nevertheless, the main challenge has remained the upstream-downstream disagreements between water needs of the agricultural and energy sectors, thus the timing of the water releases from the reservoirs and embedded in regional political and economic disparities.

The International Fund for Saving the Aral Sea

Right after independence, the Central Asian successor states of the Soviet Union (thus without Afghanistan) have developed a legal framework for cooperation in the field of regional water resources management in the Aral Sea Basin. The following analysis will therefore concentrate on the cooperation between them. The most important regional agreements are that of 1992 on cooperation in joint management, use and protection of water resources of interstate sources; the 1993 agreement on joint action to address the problem of the Aral Sea and surrounding areas, environmental improvement and ensuring socioeconomic development of Aral Sea region; and the 1998 agreement on the use of water and energy resources in Syrdarya basin.⁴ The global water conventions play a role since Kazakhstan (2002), Uzbekistan (2007), and Turkmenistan (2012) joined the United Nations Economic Commission for Europe (UNECE) Convention on the Protection and Use of Transboundary Watercourses and International Lakes, while only Uzbekistan is a party to the UN Convention on the Law of the Non-Navigation Water Uses of International Watercourses.

Declarations of the heads of state form important soft law, such as the Nukus Declaration of Central Asian States and International Organizations on Sustainable Development of the Aral Sea Basin (1995); the Ashgabat Declaration (1999); the Tashkent Statement (2001); the Dushanbe Declaration (2002); and the Joint Statement of the Heads of State—Founders of IFAS (2009). They have played a positive role in laying the foundation for the regulation of transboundary water resources in the region.

Based on the 1992 and 1993 agreements, the five countries established first the Interstate Commission for Water Coordination in 1992, and in 1993 the International Fund for Saving the Aral Sea. The ICWC and basin water management organizations (BWOs) for Syrdarya and Amudarya, which date back to the 1980s, were integrated into the IFAS structure.

The highest decision-making body of IFAS is the Council of the Heads of States, in which the presidents of the member states are represented. The president of the country that holds the chairmanship is the president of IFAS.

In accordance with the agreement of 1999, On the Status of IFAS and Its Organizations, IFAS comprises:

- the IFAS Board;
- the Audit Commission;
- the Executive Committee of IFAS (EC IFAS), with branches in member states and the Regional Center of Hydrology;
- the Interstate Commission for Water Coordination (ICWC) with the ICWC Secretariat, the Scientific Information Center (SIC ICWC), the BWOs Amudarya and Syrdarya, and a Coordination Centre for Metrology; and
- the Interstate Commission for Sustainable Development (ICSD) with ICSD Secretariat and the Scientific Information Center (SIC ICSD).

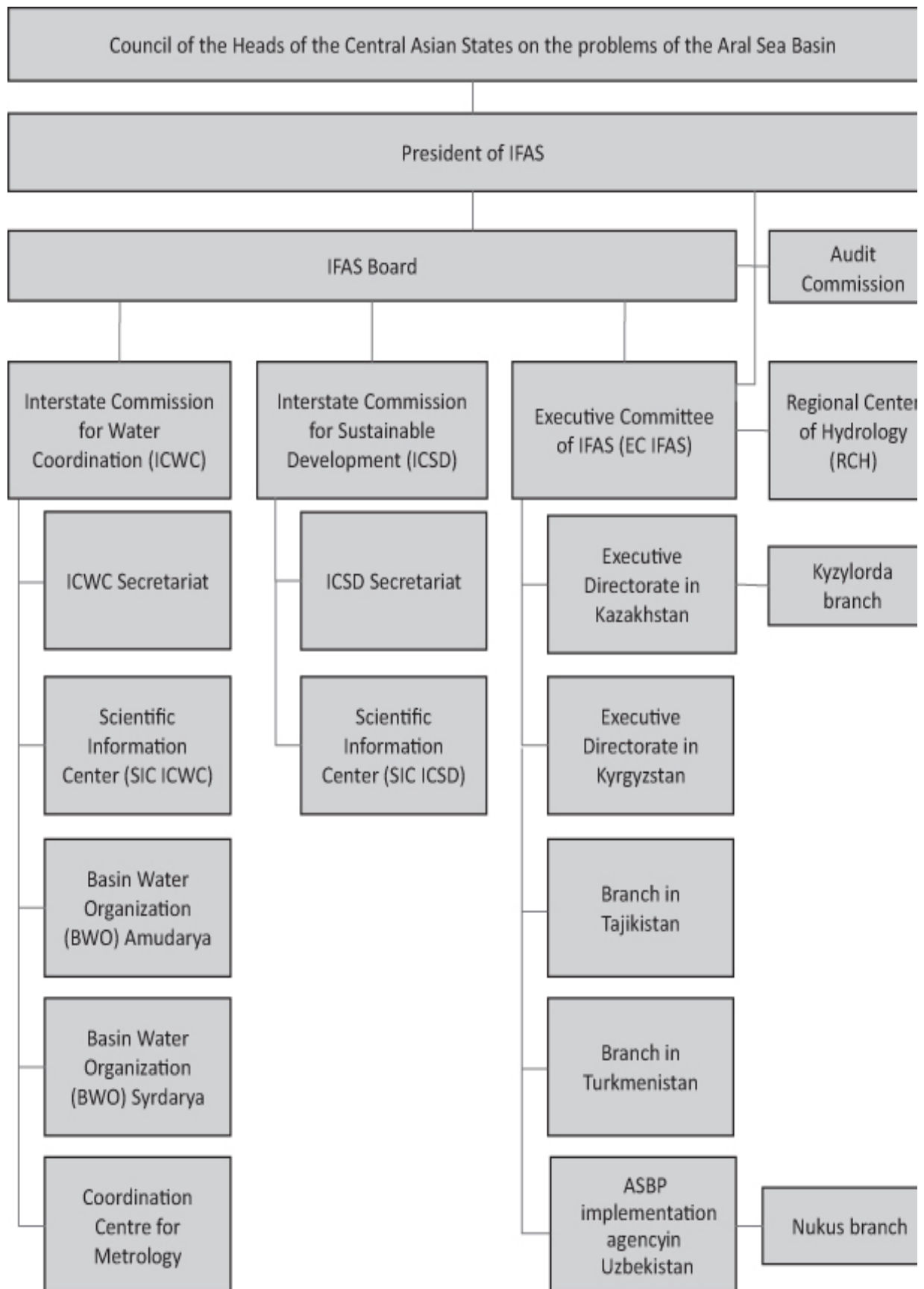


Figure 11.2 Organizational structure of institutional arrangements in the Aral Sea Basin.

Source: Graph by the authors.



Following is an explanation of the mandates of some of the individual bodies mentioned above. First, the Executive Committee (EC IFAS), was established to ensure implementation of resolutions of the Council of the Heads of States, coordinate the implementation of programs and projects, assist ICWC and ICSD in their work, and enhance cooperation with donors. One of its main tasks is the preparation and implementation of projects and programs relating to Aral Sea Basin problems, coordinated in the so-called Aral Sea Basin Program (ASBP) (see below). EC IFAS communicates with the national ministries and other relevant agencies, represents IFAS in international organizations, raises financial and other resources, provides information, prepares and hosts meetings of the IFAS Council of the Heads of States and the IFAS Board, and organizes thematic conferences. The chairmanship of EC IFAS rotates every three years among the member countries. Every country can send two permanent representatives to the EC.

Moving on, the Interstate Commission for Water Coordination is responsible for the development of a common water management policy, taking into account the interests of the countries with the aim of ensuring efficient use and protection of water resources. Its main task is to agree on annual water-use limits for each member state for the main water sources and the operation regimes for major water reservoirs. Meetings of the ICWC take place twice a year and are chaired by the member countries on a rotating basis. Members are the five ministers responsible for water resources or their deputies. All decisions are made unanimously, while the dispute resolution mechanism is very weak to non-existent.⁵ Operative bodies of the ICWC are the secretariat in Khujand, Tajikistan, and a Scientific Information Centre in Tashkent. The latter is in charge of a joint database on water resources, monitoring of irrigated land, applied research, and training of water experts.

The executive bodies of the ICWC are two basin water management organizations, BWO Amudarya and BWO Syrdarya, which implement the distribution of water resources among the countries. The BWOs' regional infrastructure comprises hydraulic facilities, including diversion works,

waterworks and respective facilities, interstate canals, gauging stations, and other assets. Some of these assets were handed over to them temporarily by the Central Asian countries to facilitate operations. All other infrastructure, including utilities, is owned and operated by the countries. BWOs have their respective territorial divisions for operating diversion works, waterworks, and interstate canals. The BWOs had already been established by the Soviet Union. The headquarters of the BWO Syrdarya is in Tashkent, Uzbekistan; that of the BWO Amudarya is in Urgench, Uzbekistan.

The Interstate Commission for Sustainable Development has a broad mandate focused on programs and plans for regional sustainable development, coordinating activities relating to the Central Asian countries' obligations under environmental conventions with a trans-boundary impact, promoting the unification of the legal framework and guidelines relating to environment protection, and interstate information exchange. In 2003, a Regional Center of Hydrology was established under EC IFAS, the main objective of which is to improve hydrometeorological forecasting, environmental monitoring, and data sharing between national agencies. IFAS is represented in all member states by branches and offices of the Executive Committee, ICWC and ICSD, and other sub-bodies.

The role of IFAS in regional water diplomacy

As the description above shows, the region enjoys a legal, institutional, and technical framework for cooperation between the countries with respect to the use and protection of transboundary watercourses. In the rest of this chapter, we want to assess how IFAS works in practice and how effective it is as an actor in water diplomacy, i.e., how successful it has been in preventing or mitigating tensions and disputes on water allocation and use in an impartial way. As Anoulak Kittoulak and Susanne Schmeier outlined in the Introduction to this volume, this requires technical mechanisms (e.g., providing impartial science and knowledge), strategic mechanisms (e.g., basin-wide strategies that transcend national interests), legal mechanisms (e.g., obligations and procedures), and institutional mechanisms (e.g., a clear mandate and governance structure to provide a legitimate forum for negotiations). Below we look at these four dimensions to assess how IFAS acts in addressing water challenges among the countries and resolving conflicts.

Strategic mechanisms: the Aral Sea Basin program

We start examining the four dimensions by looking at the strategic mechanisms since one of the reasons for establishing IFAS and one of its main activities has been developing and implementing four regional comprehensive Aral Sea Basin Programs (ASBP-1 for 1995–2001, ASBP-2 for 2002–2010, ASBP-3 for 2011–2015, and ASBP-4 since 2018). Their aim has been to finance joint interstate projects directed at saving the Aral Sea and improving the environmental situation in the areas affected by the Aral Sea disaster, addressing common social and environmental problems in the region, establishing and maintaining an interstate environmental monitoring system, financing joint research and engineering projects, and improving the management of transboundary water resources. The ASBP is a major coordinating framework among the Central Asian states and international actors. Initially developed together with the UN Environment Programme, the UN Development Programme (UNDP), and the World Bank, it has been receiving support from numerous multilateral and bilateral donors who are closely involved in defining the priorities and funding the implementation (see [Table 11.1](#) below).

Table 11.1 Phases of the Aral Sea Basin Program

<i>Phase</i>	<i>Timeframe</i>	<i>Priorities</i>	<i>Funds (planned)</i>	<i>Donors</i>
ASBP-1 approved in 1994	1994–1996 preparatory phase	• Stabilizing the environment in the Aral Sea basin • Restoring the disaster zone around the Sea • Improving management of transboundary waters in the basin • Developing the capacity of the regional organizations to plan and implement the Program	US\$ 32 million for regional projects	USAID (US\$ 7 million), Netherlands (US\$ 6 million), EU TACIS (US\$ 7 million), World Bank (US\$ 5.5 million), UNDP (US\$ 2 million), other donors such as Canada, Finland, Switzerland, UK, Italy, Denmark, Sweden, Japanese PHRD funds and the Kuwait Fund (US\$ 6 million)

<i>Phase</i>	<i>Timeframe</i>	<i>Priorities</i>	<i>Funds (planned)</i>	<i>Donors</i>
1998–2003 Water and Environmental Management Project, WEMP		US\$ 21.2 million	GEF (US\$ 12.2 million), 5 Central Asian countries (US\$ 4.1 million), Netherlands (US\$ 2.3 million), EU TACIS (US\$ 1.4 million), SIDA (US\$ 0.3 million), Unidentified (US\$ 0.9 million)	
ASBP-2 approved 2003–2010 in 2003		• Water management • Socioeconomic development • Ecology • Environmental monitoring	Between 2 million IFAS members, – 1 billion US\$ (different sources), of which US\$ 35 million by IFAS member countries	UNDP, World Bank, Asian Development Bank, USAID, Switzerland, Japan, Finland, Norway, and others
ASBP-3 approved 2011–2015 in 2009		• Integrated Use of Water Resources • Environmental protection • Socioeconomic development • Improving institutional and legal instruments	US\$ 15.4 billion, incl. US\$ 15 billion for 501 national and US\$ 386 million for 90 regional projects	National budgets (invested US\$ 13.3 million for 374 projects as of 2016), World Bank, GIZ, ADB, SDC, EU, USAID (invested and/or committed to US\$ 96.79 as of 2016)
ASBP-4 mandated in 2018	Under development	• Integrated Use of Water Resources • Environmental protection. • Socioeconomic development. • Improving the institutional and legal instruments.	Tbd	Tbd

Source: Table by the authors, adapted from Shira Babow, “Knowledge as Power: The Role of Scientific Data in Transboundary Water Governance. The Case of the Syr Darya River Basin,” unpublished master’s thesis, University of Geneva, 2018

The ASBP has the aim of aligning activities and strategies in the basin countries toward joint objectives. However, development, coordination, and implementation of the ASBP faced challenges and it has not managed to provide a long-term basin-wide strategy. After ASBP-2 was considered to have too many national projects, it was decided that ASBP-3 should include only projects “of regional significance.” This then led to a clash of different national interests; Kyrgyzstan complained that most of its projects were rejected. That is an indicator for one of the weaknesses of the ASBP: it has been focused on projects, and the potential for funding is an incentive for buy-in by all riparians. Taken together, these projects do not transcend national interests and shape a joint vision for the basin, but rather represent a conglomerate of different priorities.

Technical mechanisms: data and knowledge management, technical cooperation

The operational core of IFAS is the ICWC with the BWOs and the Scientific Information Centre. We differentiate between two important technical mechanisms of IFAS: (1) data and knowledge management (and sharing), and (2) technical cooperation in the operation of transboundary water infrastructure, each of which is discussed in turn below.

First, in terms of data and knowledge management, information exchange is part of the mandate of ICWC. In theory, data on water quantity and quality in the Amudarya and Syrdarya rivers are collected by the two BWOs and compiled by SIC ICWC on a ten-day, monthly, and annual basis. However, not all riparian states perceive SIC ICWC as a neutral regional body. Its use of knowledge is seen as politicized and one-sided.⁶ There is widespread mutual distrust in information sources and in organizations engaged in the provision and consolidation of information at both national and regional levels.⁷ Because of this lack of trust in SIC ICWC, in particular Kyrgyzstan and Tajikistan opposed the open exchange of information and open access to all data on flow discharge. The joint

development of the regional information system (the CAREWIB project) by SIC ICWC faced severe challenges in terms of legitimacy, and ultimately the major donor withdrew from it. Besides the political challenges, problems are also related to insufficient human resources and funding for collecting and managing information at national level, which makes it difficult to achieve reliable and regular information exchange even domestically.

How can the distrust in SIC ICWC and other institutions be explained? As mentioned earlier, the BWOs were established in Soviet times, and the SIC ICWC was formed by merging three units of the highly prestigious former Central Asian Scientific Institute for Irrigation (SANIIRI). In accordance with the priority given to irrigation in Soviet Central Asia, all these organizations were based in the downstream regions, namely in Uzbekistan. On the one hand, this allowed the integration of the existing scientific and technical expertise into the new institutions. On the other hand, it perpetuated the domination of the agriculture and irrigation sector's interests.⁸

In 2011, an EC IFAS working group proposed to develop a joint information space on water resources, environment, energy, and hydrometeorology. However, like the other reform proposals during these years,⁹ it was blocked by a lack of consensus. No interstate agreement on the exchange of hydrological information in the Aral Sea Basin has been signed. This impedes not only planning and forecasting by the regional and national bodies, but also dilutes the impacts of international projects and investments in technical and professional capacities.

Second, in terms of technical cooperation in operation of transboundary water infrastructure, despite the challenges related to data management, technical and professional communication between the countries constitutes a major strength of water cooperation within the IFAS framework. This concerns especially the operational management of water infrastructure and short-term issues. An example are the pumping stations of the Karshi and Amu-Bukhara canals, which are located on Turkmen territory but owned and maintained by Uzbekistan. The daily cooperation between Uzbek and Turkmen staff in the framework of the BWO Amudarya is very trustful and smooth.¹⁰ In general, discussions among technical level representatives of

countries tend to be more pragmatic and oriented toward cooperation than at political level.¹¹

When implementing joint projects of the ASBP, in the operational management of water infrastructure, or when being trained together, water specialists maintain contacts and exchange information in the framework of IFAS despite the often divisive and nationalistic discourse at the political level. Partly, this is owed to long-standing personal networks based on joint education in the Soviet Union and a common identity among Central Asian water experts. The IFAS contributed to this by giving a steady structure that helped to sustain these networks and dialogue after the Soviet Union broke up and even in politically tense times.

Legal mechanisms for transboundary water management

This section discusses, first, legal mechanisms for water allocation, then legal mechanisms for the water-energy nexus. We have already mentioned the regional agreements and joint declarations that reflect the political commitment to cooperate on water. However, from a legal perspective, many of the agreements that form the basis for transboundary water management and the work of IFAS do not contain clear provisions relating to equitable and reasonable use of water resources, the obligation not to cause significant harm, or detailed procedural obligations with respect to notification, consultations, and negotiations; they are either of a merely declarative nature or lack effective mechanisms to ensure their compliance.

First, in the 1992 agreement on cooperation in joint management, use and protection of interstate sources of water resources, the five Central Asian states agreed to keep in place the quota system for water allocation established by the Soviet Union until a new strategy was developed, and founded the Interstate Commission for Water Coordination (ICWC).¹² These quotas are based on the Soviet plan for the allocation of water resources of the Syrdarya (1982) and of the Amudarya (1987)—the latter one not taking into account Afghanistan as a major upstream riparian.

As can be seen in [Table 11.2](#) above, this system allocated water mainly for the irrigation needs of downstream countries. The main reason was to provide food security for the growing population and boost cotton production. Water allocation for the (limited) irrigation areas in upstream countries is marginal and has therefore been contested by the upstream

countries.¹³ Afghanistan is not considered at all, and while development efforts with potentially increased water usage in Afghanistan are still limited today, they might increase in the future. Since independence, the countries made several attempts to create a new, mutually acceptable arrangement that would govern the use of transboundary water resources. They produced significant research and data and involved leading Central Asian and international experts, but a new allocation mechanism has never been created. Nevertheless, formal legal mechanisms are only one part of the rules. Not seldom, cooperation—e.g., on water releases during drought times—is based on informal arrangements between water managers across borders that sometimes counteract official policies.¹⁴ In this respect, the ICWC meetings provide a platform for dialogue and sometimes important informal arrangements that ensure water supplies are made at their margins. This supports again the argument that the existence of such platforms is a value in itself.

Table 11.2 Water allocation quotas in the Aral Sea Basin, excluding Afghanistan

	<i>Uzbekistan (%)</i>	<i>Turkmenistan (%)</i>	<i>Kazakhstan (%)</i>	<i>Kyrgyzstan (%)</i>	<i>Tajikistan (%)</i>
Amudarya	48.2	35.8	-	0.6	15.6
Syrdarya	50.5	-	42.0	0.5	7.0

Source: Alfred Diebold and Jenniver Sehring, *From the Glaciers to the Aral Sea: Water Unites* (Trescher Verlag, 2012).

Second, besides the question of water allocation, the reconciliation of the interests of the agriculture and energy sectors is the other major issue in the Aral Sea Basin to be tackled. As explained above, the unified energy system of the Soviet Union broke down after independence, and upstream states have increasingly been operating the dams for hydropower generation, which means water is increasingly being released in winter instead of in summer.

A positive example for a new legal mechanism was the 1998 agreement on water-energy-exchange at the Syrdarya: it regulates that Kyrgyzstan discharges water from the reservoirs in summer for the downstream states Kazakhstan and Uzbekistan, and these deliver energy fuels to Kyrgyzstan in winter, so that it does not need to produce hydropower. However, it was negotiated outside the IFAS framework and after a few years was not effectively implemented anymore.¹⁵

In the context of new dam constructions on the tributaries of the Amudarya and Syrdarya, the issue of hydropower has been excessively politicized. The massive Rogun hydropower project on the Vakhsh River, a major tributary of the Amudarya, led to increasing tensions between Tajikistan and Uzbekistan, as did, to a lesser extent, the plans around the Kambarata Cascade in the upper Syrdarya/Naryn River in Kyrgyzstan. In the case of Rogun, the World Bank facilitated independent technical, socioeconomic, environmental, and social impact assessment studies and regional consultations. IFAS representatives took part in these discussions, but IFAS did not play a leading role in addressing the issue. The tensions eased after a change of government in Uzbekistan in 2016, with the new president ready for dialogue and consideration of mutually acceptable compromises. One visible new effort was the proposal of the president of Kazakhstan at the IFAS Summit in Turkmenbashi in 2018 to establish a Water-Energy Consortium for Central Asia.¹⁶ It remains to be seen if and how it will materialize. In order to understand why this crucial water issue was hardly proactively addressed by IFAS, we need to look at the institutional mechanisms and their constraints.

Institutional mechanisms: governance of IFAS

Institutional mechanisms like a clear mandate and governance structure are necessary for a river basin organization to be accepted as a legitimate forum for negotiations by all riparians. As we show in the following, this aspect is the weakest part of IFAS and considerably restricts its potential as a water diplomacy actor.

As mentioned earlier, some sub-bodies of IFAS had before existed as distinct entities, while others were established only several years after IFAS was created. This history has left an imprint on the mandate and structure of IFAS: it has no single mechanism that would unite its three main bodies (EC IFAS, ICWC, and ICSD) to ensure concerted action. The 1999 agreement “On the Status of IFAS and Its Organizations” assigns the status of an international organization to IFAS, but also to the “organizations of the IFAS” individually. Thus, the Executive Committee of IFAS, the BWOs, and SIC ICWC all have their own legal status, without specifying their hierarchy within the IFAS system and regulating their relations.¹⁷ Regulatory documents of these institutions show several inconsistencies

and are not reciprocally linked and there is no interaction in the planning of activities. As a result, there is no joint “corporate identity” and all bodies act rather independently of each other.¹⁸ It depends on the respective chairmanship to create a joint visibility, and only the Kazakh Chairmanship 2009–2012 did so effectively with a website and other outreach material.

Another governance challenge relates to the rotation of the location of EC IFAS according to the chairmanships: since countries could not agree on a permanent location, the EC IFAS is located in the respective country of the chairmanship. Thus, the Executive Committee has been located in Almaty (1993–1997), Tashkent (1997–1999), Ashgabat (1999–2002), Dushanbe (2003–2009),¹⁹ and again in Almaty (2009–2012), Tashkent (2013–2016), and since 2017, Ashgabat. This places a burden on the host governments to allocate adequate resources for the work of a temporary secretariat and train new staff to support it. But also for donors it means that assistance for capacity development of staff, office equipment, website development, and similar are lacking sustainability. Every three years, institutional capacity development has to start from scratch. In addition, the establishment of the new chairmanship, including its approval by all IFAS member countries, the nomination of the chairperson, the hiring of new staff, and provision of facilities take up to 1.5 years.²⁰

Ensuring equitable water allocation across sectors and countries would require IFAS to act impartially across sectors and countries. However, it is dominated by national and sectoral interests. The country delegates at EC IFAS and ICWC—national representatives subordinated to their government—have usually little room for maneuver in negotiations, receiving very strict instructions from the capitals. This concerns also operational or declarational decisions made by EC IFAS and ICWC, and countries have vetoed proposals by other countries out of principle, not based on the matter at hand.²¹ In a political culture where decisions are taken top-down and often require the highest level to make a decision, this rigid guidance reduces considerably the effectiveness of decision-making based on water management considerations.

In addition, the chair of EC IFAS acts, with some notable exceptions, usually not as the head of a regional organization, but upon his²² respective government’s directives. In several cases, the chairperson was not released from his national government function. With a few exceptions, the technical

staff of EC IFAS is always national staff from the country that has the chairmanship.²³ All important and strategic decisions of IFAS are taken by Summits of the Heads of States or meetings of the Board. However, as relations between the member countries became more tense, such meetings became less frequent. For example, after the April 2009 IFAS Summit in Almaty, no meeting of the Council of the Heads of States took place until August 2018 in Ashgabat, and no IFAS Board meeting took place between 2010 and the end of the Uzbek Chairmanship in 2016, paralyzing the organization's political decision-making. Thus, precisely in the sort of difficult times when IFAS would be most needed as a water diplomacy actor to bring countries together, it cannot act due to its dependence on the countries' leadership. It is therefore hardly in a state to counterbalance and mitigate tensions but is instead a victim of them.

In its sub-bodies, in particular the ICWC, decision-making is dominated by the water and agricultural sector. Representatives of the energy sector from all parties are invited to take part in meetings as guests. While Tajikistan some years ago merged the water and energy agencies into one ministry, for Kyrgyzstan it means that its representatives in ICWC might not have the domestic authority to enforce compliance with the decisions by the energy sector.²⁴ The downstream countries, represented by their powerful ministries of water resources and agriculture, were able to prevent the full involvement of the energy sector as demanded by the upstream countries and the integration of their energy security concerns in the mandate.

While Kazakhstan and Turkmenistan, where the economic importance of agriculture is outweighed by the fossil fuels industry, were open to discuss this issue during the 2010–2011 reform efforts, Uzbekistan, with the most powerful agricultural lobby, resisted. As a result, ICWC is still perceived as being mainly concerned with ensuring that upstream reservoirs release water in due time and sufficient quantity to meet the needs of irrigated agriculture in downstream countries.²⁵ IFAS is a continuation of Soviet water management with respect to some of its bodies (the BWOs and SIC ICWC), its rules (water quotas), and even its staff. In 2003, a UNDP expert mission report noted: “[e]ssentially, the structures in place in 1987 have remained intact, and the principles and persons driving this structure remain

at the center of institutions that exist today.”²⁶ In 2019, this assessment is still valid.

These shortcomings have long been visible and voiced by some riparian countries as well as donors. In 2009, when Kazakhstan took over the rotating chairmanship of IFAS, it therefore started efforts to discuss the reform of its institutional structure. On 29 April 2009, it hosted an IFAS Summit of the Central Asian Heads of States in Almaty. In their joint statement, the presidents emphasized the need “to further improve the organizational structure and the contractual and legal framework of IFAS in order to raise the effectiveness of its operation.” A group of more than 60 experts from all member countries, supported by GIZ and UNECE, developed proposals on improving IFAS’ structure and its regulatory framework. The proposals included three possible options as to how to improve its functioning: (1) to strengthen the existing structure of the regional cooperation mechanism; (2) to create a new regional organization; or (3) to establish separate international river-basin commissions for the Amudarya and Syrdarya.²⁷ All options foresee also the inclusion of Afghanistan into the structure. In addition, rules of procedures for the rotation of the chairmanship were developed, as was a draft institutional treaty to replace the more than two dozen separate, obsolete, and sometimes contradictory documents that serve as the legal basis of IFAS.

However, the proposed reforms were not adopted by the IFAS Board due to the resistance of Uzbekistan. When it took over the chairmanship in 2013, the reform efforts stalled. As a consequence of frustration with the lack of a reform process and perceived neglect of its interests, Kyrgyzstan officially froze participation in IFAS in May 2016. Only under the Turkmen chairmanship did another IFAS summit take place in August 2018, in the city of Turkmenbashi, and discussions about reforming the structure were reopened. Kyrgyzstan, attending the summit as a guest, announced that it was considering restoring participation.²⁸

Assessment: the ambiguity of IFAS

IFAS’ role in water diplomacy is ambiguous: it is at the same time impeding and enabling processes of establishing joint water governance arrangements to realize equitable and sustainable outcomes. In many respects, IFAS is

symptomatic of the region: it represents its power asymmetries (economically strong and politically powerful downstream countries vs. economically weak and political unstable upstream countries), political culture (strong hierarchies, and the importance of personal networks and informal arrangements), water discourse (focus on technical problems and an engineering perspective), and donor-driven policies (ASBPs).

The politically and economically weaker upstream states from the outset have expressed dissatisfaction with the dominance of certain countries within IFAS and in the donor-funded projects implemented through it.²⁹ Even before Kyrgyzstan officially froze participation in IFAS, it had not appointed members to the EC since 2009. From other countries, representatives have sometimes not continuously been present. This is a sign that the riparian countries do not see IFAS as a major platform to ensure that the views of all member states are adequately represented and taken into account.

Ultimately, IFAS has not provided a level playing field for transboundary water management. The key documents that have determined the structure and mandate of IFAS and its sub-bodies were negotiated between 1991 and 1999. During these years, the negotiation power of the two upstream countries was further weakened through their more challenging transformation period, including the civil war in Tajikistan.³⁰ Later on, it proved impossible to change the achieved status quo. The hegemony of the irrigation sector and thus the downstream countries remained in place.

On the other hand, and also beyond water, IFAS is the only regional organization where all five Central Asian countries cooperate. Often this fact alone is mentioned as an indicator of its value and importance. Indeed, it has been—with varying degrees among different chairmanships—an important platform for achieving agreements on water among the countries and coordinating technical level management. Thus, while IFAS appears to be weak when it comes to legal mechanisms, formal institutional mechanisms, and data aspects of technical mechanisms, its strengths are in the operational technical mechanisms and the informal institutional mechanisms it provides.

It can be argued that, from a water diplomacy perspective, IFAS indeed is effective in providing mechanisms that at a very practical level prevent and mitigate water-related conflicts as long as they are not politicized and

dealt with at higher decision-making levels. It has, however, not managed to be a platform for effectively implementing agreements and developing new, basin-wide acceptable policies for joint water management that would prevent and resolve water-related conflicts in the long-term.

Conclusion

The importance of transboundary water resources in Central Asia has provided compelling incentives for regional cooperation on water. IFAS was established with the commitment of the states to cooperate on their shared water resources. In the middle of a difficult transition period and facing severe environmental problems, the newly independent states set up joint institutions and managed to achieve certain progress in improving water relationships in the transboundary basins of the Amudarya and Syrdarya. In contrast to numerous other, short-lived, regional organizations, it has continued to exist during difficult times.

Nevertheless, there are still important challenges and unresolved tasks in amplifying the impact of improved water resources management on income, employment, food security, and economic growth. So far, IFAS' impact on solving these issues has been limited. The regional power asymmetries are determining its working mechanisms and ultimately prevent IFAS from being an impartial regional actor accepted by all riparians. Overall, it appears that IFAS and all related bodies and agreements do not represent a new water cooperation agreement based on the interests of all riparians, but in many respects still resemble the power relations of the early 1990s.

Still, we should not underestimate the extent to which IFAS plays an important role for enabling operational, technical cooperation and providing a set of institutions that allow the shaping and sustaining of professional networks and informal arrangements, which are an important element of Central Asian politics. Many immediate, smaller-scale transboundary issues could be addressed in this way. Given these features and the divisions among the organizations within IFAS, we might value its role in water diplomacy not in being an actor in itself, but in providing a set of institutionalized structures for dialogue and cooperation of which political actors at various levels can make use.

Notes

- 1 See, e.g., David R. Smith, “Environmental Security and Shared Water Resources in Post-Soviet Central Asia,” *Post-Soviet Geography* 36, no. 6 (1995): 351–370.
- 2 Saghit Ibatullin et al., *Managing Water Resources in the Aral Sea Basin: Current Situation, Vision and Roadmap* (Washington, DC: World Bank, 2016); and UN Food and Agriculture Organization (FAO), “The Aral Sea Transboundary River Basin,” in “Irrigation in Central Asia in Figures—AQUASTAT Survey 2012,” FAO Water Report No. 39, 2013, www.fao.org/nr/water/aquastat/basins/aral-sea/aral.sea-CP_eng.pdf.
- 3 Stefanos Xenarios et al., “Climate Change and Adaptation of Mountain Societies in Central Asia: Uncertainties, Knowledge Gaps, and Data Constraints,” *Regional Environmental Change* 19, no. 5 (2019): 1339–1352.
- 4 Agreement on cooperation in joint management, use and protection of water resources of inter-state sources, signed 18 February 1992, Alma-Ata, Kazakhstan; agreement on joint action to address the problem of the Aral Sea and surrounding areas, environmental improvement and ensuring socio-economic development of Aral Sea region, signed 26 March 1993, Kyzyl-Orda, Kazakhstan; and agreement on the use of water and energy resources in Syrdarya basin, signed 17 March 1998, Bishkek, Kyrgyz Republic.
- 5 See article 13 of the 1992 agreement.
- 6 Shira Babow, “Knowledge as Power: The Role of Scientific Data in Transboundary Water Governance. The Case of the Syr Darya River Basin,” unpublished master’s thesis, University of Geneva, 2018.
- 7 Ibatullin et al., *Managing Water Resources in the Aral Sea Basin*.
- 8 Marton Krasznai, “Institutional Cooperation on Water Resources Management in Central Asia,” in *Water Resources in Central Asia: International Context*, ed. Sergey S. Zhiltsov et al. (Cham: Springer, 2018), 41–60.
- 9 See below section 4.4
- 10 Lead author’s interview with an international expert (a), Tashkent, 03/04/2019.
- 11 Ibatullin et al., *Managing Water Resources in the Aral Sea Basin*; and UNDP, “Final Report of the Central Asia Regional Water Advisor and a Proposed Programme for Continued UNDP Involvement,” 2006.
- 12 Viktor Dukhovny and Vadim Sokolov, “Lessons on Cooperation Building to Manage Water Conflicts in the Aral Sea Basin,” UNESCO, IHE, and WWAP, “From Potential Conflict to Co-Operation Potential” (PCCP) series, No. 11, 2003.
- 13 Both Kyrgyzstan and Tajikistan had an interest in extending their irrigation area. See also the preamble of the 1992 agreement.
- 14 Lead author’s interviews (informal conversations) with international experts (a) and (b), Tashkent, 3 April 2019.
- 15 Diebold and Sehring, *From the Glaciers to the Aral Sea*.
- 16 Elya Altynsarina, “Central Asian Leaders Hold First Aral Sea Summit since 2009, Agree to Develop Action Plan,” *Astana Times*, 28 August 2018, <https://astanatimes.com/2018/08/central-asian-leaders-hold-first-aral-sea-summit-since-2009-agree-to-develop-action-plan/>.
- 17 UNECE, GTZ, and EC IFAS, “Strengthening the Institutional and Legal Frameworks of the International Fund for Saving the Aral Sea: Review and Proposals,” draft discussion paper, 31 January 2010, https://www.unece.org/fileadmin/DAM/env/water/cadialogue/docs/Draft_Paper_united_FINA_L_ENG.pdf.

- 18 For example, there is no website of IFAS, just websites of the respective chairmanships. The website of ICWC does not refer to IFAS at all: see www.icwc-aral.uz.
- 19 The planned move to Bishkek did not take place due to political turmoil in Kyrgyzstan in 2005.
- 20 Krasznai, “Institutional Cooperation on Water Resources.”
- 21 Lead author’s interview with international expert (b), Tashkent, 3 April 03/04/2019.
- 22 All EC IFAS chairs as well as all national delegates so far have been men.
- 23 Under the Kazakh chairmanship, an international expert from outside the region was recruited as deputy chairman. This was not continued by the following chairmanships.
- 24 UNECE et al., “Strengthening the Institutional and Legal Frameworks.”
- 25 Krasznai, “Institutional Cooperation on Water Resources”; and UNDP, *Final Report of the Central Asia Regional Water Advisor and a Proposed Programme for Continued UNDP Involvement*.
- 26 UNDP “Central Asian Water Mission: Final Report and Recommendations,” unpublished, 2003, 14.
- 27 UNECE et al., “Strengthening the Institutional and Legal Frameworks”; and Ibatullin et al., *Managing Water Resources in the Aral Sea Basin*.
- 28 24.kg News Agency, “Kyrgyzstan Ready to Restore Participation in IFAS,” 24 August 2018, https://24.kg/english/94269_Kyrgyzstan_ready_to_restore_participation_in_IFAS/.
- 29 World Bank, *An Independent Evaluation of the World Bank’s Support of Regional Programs: Case Study of the Aral Sea Water and Environmental Management Project* (Washington, DC: The World Bank, 2006).
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12 The Mekong River Commission as a water diplomat

Anoulak Kittikhoun and Denise Michèle Staubli

The Mekong River Basin is undergoing rapid changes following previous earlier infrastructure developments. The construction of water and related infrastructures, especially the first two mainstream hydropower dams in the Lower Mekong River Basin, has ignited fierce debates, public contestations, and alarming talks about water tensions and possible conflicts in a historically warring region and a current geostrategic hotspot of major power rivalries that is mainland Southeast Asia. This chapter argues that the Mekong River Commission (MRC), as the only water treaty-based organization of the Mekong, has played an increasing role in water conflict management in the last two decades by facilitating and supporting water-related negotiations for the sustainable management of the basin. While the MRC has faced challenges in bringing the countries together, it has managed to establish itself as a knowledge hub and water diplomacy platform. The three examples of how the MRC handles the consultations over the Lower Mekong mainstream dams of Xayaburi, Don Sahong, and the proposed Pak Beng¹ serve as cases to illustrate the organization's water diplomacy framework in action.²

The Mekong River Basin and MRC put into context

The Mekong is one of the planet's great rivers. With a length of approximately 4,763 km, it is the twelfth longest river of the world, draining an area of approximately 810,000 km². Its source is in the Tibetan Plateau, China, where it descends roughly 4,000 m before flowing through Myanmar, Laos, Thailand, Cambodia, and Vietnam into the South China Sea.³ The Upper Mekong, called Lancang in China, may contribute up to 40

percent of flow during the dry season. Overall, most Mekong flow comes from the tributaries of the Lower Mekong River Basin.⁴

The Lower Mekong River Basin is bigger and more habitable than the river valleys in the highlands of the Upper Mekong River Basin. Approximately 65 million people live in the lower basin; about 12 million more than in the year 2000. Population growth has slowed down with rapidly developing economies and socioeconomic change. At the same time, there has been a rise in urbanization (e.g., Vientiane, Udon Thani, Ubon Ratchathani, Phnom Penh, and Can Tho), though rural populations remain high in the basin, with most people working in the agricultural sector. In their endeavor to alleviate poverty and meet regional demands, Laos and Cambodia have also made increased use of hydropower development in the early twenty-first century, while Thailand and Vietnam have mostly exhausted their hydropower and other developments.⁵

The existing electricity generating capacity of the Lower Mekong River Basin was estimated at 10,017 megawatts (MW) in 2015, out of a potential technical capacity of 28,543 MW. Eleven Mekong mainstream dams are planned—seven in Laos, two on the Lao-Thai border, and two in Cambodia, with the first dam, Xayaburi, coming into operation in 2019. Tributary dams, mostly developed in Thailand and Vietnam, have also seen further development in Laos and Cambodia. In the Upper Mekong River Basin, China has already built a number of large storage dams, with an installed hydropower capacity of 19,285 MW in 2017, and a planned increase to 29,168 MW. While agriculture is highly developed in Thailand and Vietnam, this is less so in Laos and Cambodia, though the latter countries plan to expand farming areas.⁶

External influences and early development plans

The Mekong region could be classified as a “shatterbelt”—a term coined for the few regions on earth which are caught between regional conflicts and conflicting influences of external powers.⁷ Major powers that have intervened at some point in history include Britain, France, the United States, Soviet Union/Russia, Japan, and China. Even during times of peace, national and regional processes have been influenced by international and foreign initiatives.

Starting in the 1950s, the United Nations (UN) and the United States undertook various missions and investigations in an attempt to study and develop the Mekong. Influenced by these, the Mekong Committee, the predecessor of the MRC established under the UN, elaborated the 1970 Indicative Basin Plan with some 180 projects, including a US\$2 billion short-term program for 700,000 ha of irrigation expansion and tributary hydropower development as well as a US\$10 billion long-term program comprising a cascade of mainstream dams. In 1987, this plan was downscaled to 29 projects by the Interim Mekong Committee (interim because Cambodia was out of the committee as a result of internal conflicts). Due to regional military conflicts and a legal hurdle for mainstream dams,⁸ much of the Indicative Basin Plan was never implemented, save some hydropower in the tributaries. In 1995, the four Lower Mekong riparians negotiated a new treaty, the Mekong Agreement of the MRC—in full, the Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin—between Cambodia, Laos, Thailand, and Vietnam.

A year before the creation of the MRC, France's Compagnie Nationale du Rhône (CNR) led a study for the Interim Mekong Committee called the 1994 Mekong Mainstream Run of River Hydropower. This study, not considered again in formal MRC meetings, has been influential in the countries, introducing a major shift away from storage to run of river dams. At that time, the MRC member countries could not agree on a basin plan due to different perspectives. Moreover, influential key donors in the early years up to 2010 have promoted the MRC's role as a knowledge hub rather than an enabler for infrastructure projects. Hence, in the course of the twenty-first century, the riparian countries moved ahead with the implementation of projects based on national interest, with the MRC not yet playing a role in altering the number and location of mainstream dams. This is also related to the fact that energy and water resources planning has not been well integrated. Energy-related decisions, such as power master plans and electricity trade agreements, have had a major influence on the water sector, where the private sector and other regional mechanisms, e.g., the Association of Southeast Asian Nations, the Asian Development Bank-supported Greater Mekong Subregion Program and others, have traditionally been involved.

The Mekong River Basin's unique biodiversity

While hydropower has economic benefits, it is also known to have environmental and social drawbacks, especially when dams are not properly designed, with environmental and social standards lacking. In the 1990s and early 2000s, controversies around the Pak Mun Dam in Thailand and Yali Falls Dam in Vietnam were the first visible cases of public contestation in the Lower Mekong River Basin. Hydropower development in the Lower Mekong River Basin has drawn international attention as the Mekong is extraordinarily high in biodiversity—the world's second most species-rich region after the Amazon, supporting millions of livelihoods. Its status as one of the last almost untamed great rivers of the world and the need to remain so also brings out particular passion among global environmental activists.

The Mekong River Basin comprises significant ecosystem types such as rivers, wetlands, forests, and grasslands. The Mekong wetlands are of economic, cultural, and social importance. The Mekong waterbody, the world's most fauna-diverse river, includes key environmental features, mostly caused by the Southwest Monsoon generating high seasonal flow variation, including the water flow reversal to and from the Tonle Sap Lake. Deep pools serve as refuge and spawning habitats for a variety of fish species, whereas drier sandy habitats are crucial for vegetation, amphibians, reptiles, and birds.⁹

The analysis shows that current national hydropower plans are suboptimal as they combine both beneficial and nonbeneficial projects from an economic and environmental point of view. If these are implemented, impacts related to Mekong tributary and mainstream hydropower development are predicted to be substantial. Crucial disrupting factors include the alteration of the flow regime, barriers for fish migration paths, and trapping of sediments.¹⁰

The MRC's approach to water diplomacy

While other regional and international and nongovernmental organizations (NGOs) in the basin are important in the water governance of the Mekong, the MRC holds a unique role in transboundary water management in the basin. In fact, it is the only body mandated to both bring benefits to

countries by cooperation as well as to deal with riparian disputes arising from the use of the common water resources. The MRC's unique role in facilitating water-related solutions may be explained by looking at technical, legal, institutional, and strategic aspects of the water diplomacy framework presented previously by the authors (see Figure 12.1 below).¹¹

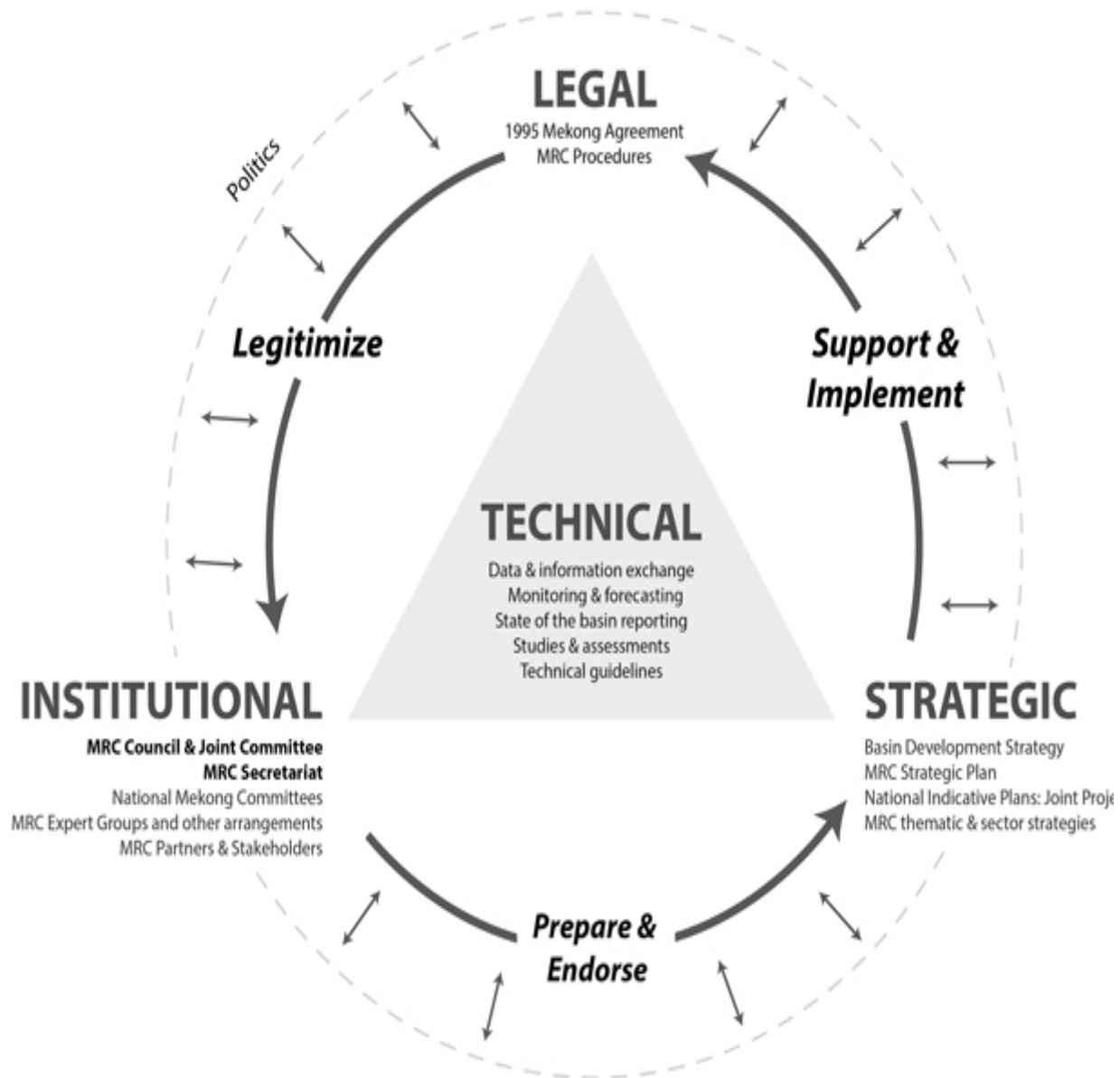


Figure 12.1 The MRC water diplomacy framework.

At its core, the MRC water diplomacy framework has *technical* cooperation on water: data/information collection, management and

sharing, monitoring and forecasting, state of the basin reporting, studies and assessment, and technical guidelines that serve as a basis to understand and tackle issues from a scientific viewpoint. Based on this solid technical foundation and understanding, three distinct but interrelated mechanisms facilitate and support negotiated solutions to water disagreements, tensions, and disputes: *legal*, *institutional*, and *strategic*.

In legal terms, the 1995 Mekong Agreement, along with the five MRC “procedures” that were subsequently developed to monitor and deal with the maintenance of flows, water quality, water use monitoring, data and information sharing, and consultation on infrastructure projects, lay solid legal foundations in terms of international obligations in sharing and utilizing a transboundary river. No other developing basins have such comprehensive rules for the management of their transboundary rivers. Individually and collectively these procedures are ahead of the curve for their time and place and demonstrate the countries’ commitment to work together.

One of the main procedures, or certainly most visible, the Procedures for Notification, Prior Consultation and Agreement (PNPCA), was adopted in November 2003. As the name indicates, the PNPCA is a set of three different processes undertaken by MRC member countries under the facilitation of the MRC Secretariat (MRCS) for certain projects using water from the Mekong River Basin which may significantly alter water flow or water quality of the mainstream. Such projects may include large-scale irrigation, hydropower, and flood control. Lasting six months, unless extended, Prior Consultation focuses on assessing and discussing transboundary impacts of proposed development projects and what can be done to avoid, minimize, and mitigate these. The procedures allow national information about commercial projects of a country to be shared internationally, scientific assessments by independent experts to be carried out, and discussions and debates to be held by stakeholders. It is a legitimate platform where different views can be heard openly, and tensions managed and addressed in a transparent fashion.

In terms of institutions, the MRC is well established, with a Council of Ministers meeting once a year, a Joint Committee (JC) of heads of department in charge of Mekong affairs meeting twice or more a year as needed, and a strong Secretariat acting as a technical knowledge hub and water diplomacy platform facilitator (see [Figure 12.2](#) below). Linking up

with the MRC at the regional level and coordinating Mekong issues at the national levels are the National Mekong Committees and their secretariats. The national committees are chaired by the minister in charge of water management and consist of vice ministers and heads of departments from key line agencies including foreign affairs, planning and investment, environment, and water-related sectors (energy, agriculture, transport, fisheries, etc.).

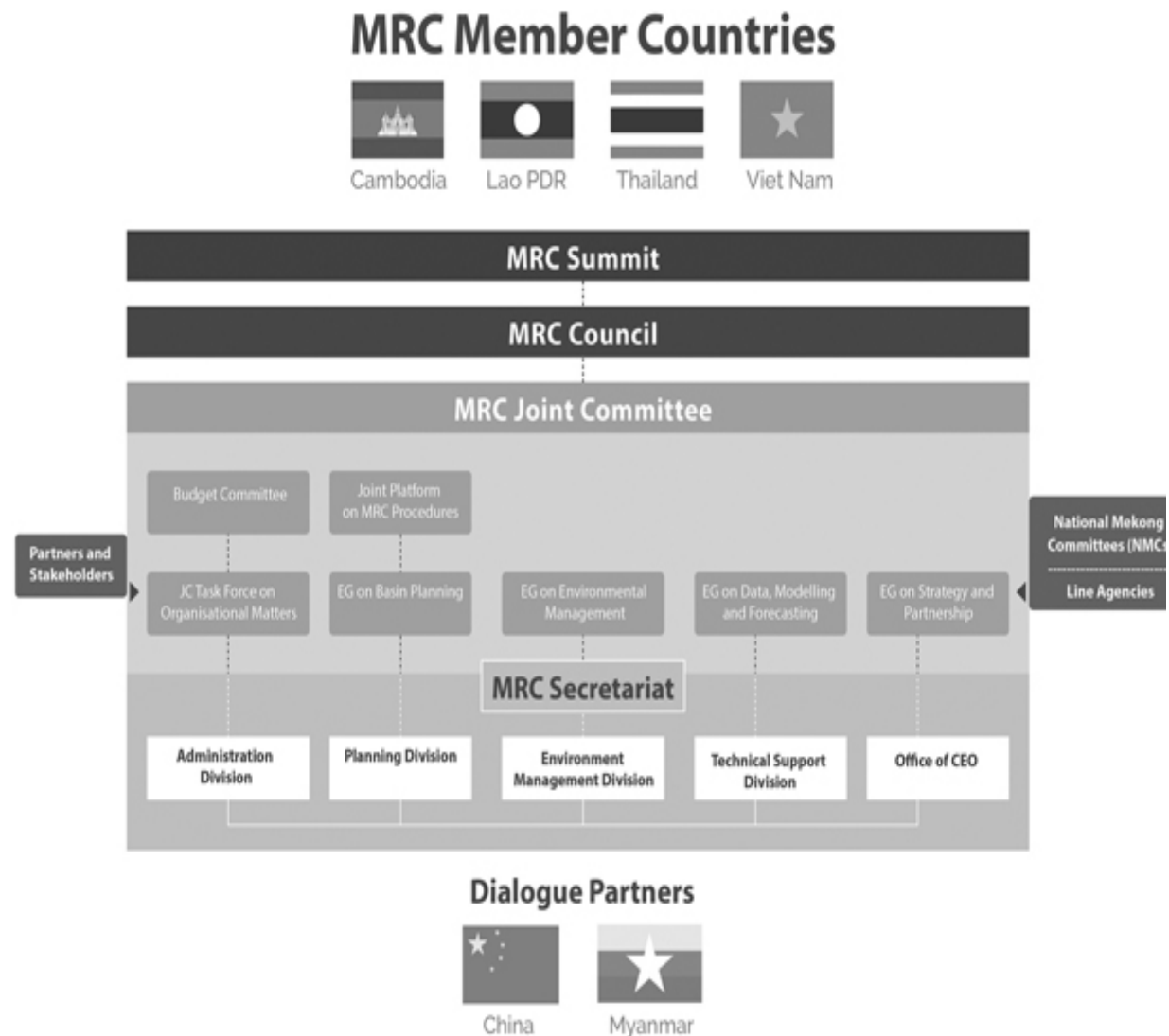


Figure 12.2 MRC governance structure.

In 2010, the MRC was given the highest political commitment with the first Summit of Prime Ministers—this was repeated four and eight years

later. At their latest summit, the Mekong leaders upheld the MRC's role as "primary and unique" in Mekong development and management. Starting in 2017, regional and national linkages were strengthened with the establishment of expert groups in basin planning, environmental management, data modeling, and forecasting, and, for the first time in Mekong history, in strategy and partnership—in essence a group devoted to water diplomacy and cooperation. The MRC also has established regional stakeholder engagement in the form of regular Regional Stakeholder Forums and specific forums for certain issues or groups that bring in voices of nonstate actors including NGOs, civil society organizations, the private sector, and others.

While the legal foundations legitimize the institutional mechanisms (MRC bodies), the institutions, in turn, are the vehicles that prepare and endorse strategies and plans from the basin as opposed to national perspectives. The basin-wide strategies and plans provide directions and guidance to address basin-wide needs, challenges, and opportunities that one country cannot do alone. This strategic aspect, therefore, rounds out the water diplomacy framework, and directly supports the implementation of the 1995 Mekong Agreement—the legal foundation.

In the MRC's case, the main common strategy is the Integrated Water Resources Management (IWRM)-based Basin Development Strategy, first approved in 2011, and updated and agreed again in 2016. The strategy sets out shared understandings about development opportunities, medium- and long-term risks, and priorities for development and management. The strategy is mainly implemented by the MRC through the MRC Strategic Plan and by the countries through the National Indicative Plans 2016–2020. In addition to the Basin Development Strategy, the MRC also has sector or theme focused strategies on climate change, flood and drought management, hydropower, navigation, and fisheries.

Water diplomacy in action: prior consultations of infrastructure projects

While the term "water diplomacy" is fashionable and recent, we have argued previously that the MRC's role as a water diplomat goes back longer, to its early days: from supporting dispute resolution between

Cambodia and Vietnam on the Yali Falls project, to public and private diplomacy in dealing with China's damming of the Upper Mekong, and brokering agreement between Cambodia and Vietnam on navigation. Those early experiences and the recent cases newly presented illustrate how the role of the MRC in providing a water diplomacy platform and its Secretariat as the "honest broker" gradually evolved and adapted over time with the organization's legal, institutional, and strategic strengthening.

Xayaburi hydropower project

MRC member countries, donors, civil society, and nongovernmental and international organizations have sparked lively debates about the first Lower Mekong mainstream dam. Xayaburi is one of six planned mainstream hydropower projects upstream of the Lao capital, Vientiane: a priority dam of previous Mekong Committee studies and assessed by the 2010 MRC Assessment of Basin-Wide Development Scenarios. This assessment confirmed that the location and other factors of Xayaburi are more favorable than for other dams further downstream regarding adverse impacts affecting Cambodia and Vietnam.¹² The project was submitted by Laos to the MRCS for Prior Consultation in September 2010 and ended without agreement in December 2011, as both the MRC JC and Council of Ministers could not come to a final decision on the conclusion of the process.

Due to this and several other issues, the first Prior Consultation on the Xayaburi project was perceived as rather unsuccessful by some stakeholders: from too few opportunities for public participation to the MRC's inability to stop the dam. Nonetheless, the process allowed for public debates, as well as technical recommendations from the MRCS and further studies by the developer that contributed to the improvement of the dam.¹³

Laos has welcomed visits from around the world to Xayaburi for site inspection and mutual learning and has engaged leading international agencies, such as the US Army Corps of Engineers and the Australian Centre for International Agricultural Research, as well the Lao government's own reputable consultants, for example, Pöyry of Switzerland and CNR of France, to support ongoing design optimization, adaptation, and monitoring. Millions were invested in redesigning the dam in the

aftermath of the consultation. The MRCS experts reviewed the redesign, acknowledging significant efforts and improvements by the Lao government and the developer of the project to avoid, minimize, and mitigate potential transboundary impacts.¹⁴

The first Prior Consultation also led to conducting a comprehensive “MRC Council Study”—the Study on Sustainable Management and Development of the Mekong River Including Impacts of Mainstream Hydropower Projects,¹⁵ as agreed by the MRC council on 8 December 2011. The data, tools, and results of the study further strengthen the MRC’s technical knowledge base in supporting its water diplomacy mission.

In retrospect, the MRC has performed solidly: in technical areas as well as in preparing relevant guidelines, studies, and strategies in anticipation of the first Prior Consultation. Some of the institutional aspects had some room for improvement, especially the involvement of regional stakeholders during the consultation, the decision-making process facilitated by the MRCS among the countries, and the organization of the post-Consultation process.

Regarding institutional aspects, the MRCS formed a task group to facilitate and support the work of the special JC working group that was established to advise the MRC JC during the Prior Consultation. In three sessions, the special JC working group discussed the Prior Consultation roadmap, the scope of assessment, site visit, mode of national consultations, coordination issues, and the findings of the assessment. At the end of the six-month Prior Consultation, a special JC session in April 2011 and later a Council of Ministers meeting in December 2011 were tasked to conclude the process; but no common agreement was reached.¹⁶

Some member countries asked for more time for transboundary impact studies and consultations, especially Cambodia and Vietnam. Laos was not in favor of an extension of the official consultation as it considered itself to have followed the required steps of the six-month process. Instead, further studies to address issues raised by the MRCS Technical Review and concerns from stakeholders were to be conducted in the aftermath.¹⁷

Member countries conducted national consultations.¹⁸ Stakeholder voices about mainstream development were heard during consultations on the MRC basin development planning process, the Strategic Environment Assessment (SEA),¹⁹ and other related activities, which helped inform the

MRCS review of Xayaburi.²⁰ During the consultation itself, there were no additional regional stakeholder fora, but stakeholders could submit their comments about the project and process itself via the MRC website on the Xayaburi project. After the official process, there was limited interaction and data and information exchange between Laos, its developer, and the MRCS as the post-Consultation process as such was not formalized.²¹

Anticipating the notification of the first hydropower project, the MRCS worked on various strategies and developed a hydropower program. The established MRC Initiative on Sustainable Hydropower coordinated the drafting process of the Preliminary Design Guidance for Proposed Mainstream Dams in the Lower Mekong River Basin (PDG) accepted by the MRC JC in 2009. This served as the main tool to assess the documents submitted by Laos on the Xayaburi hydropower project.²²

Technically, the MRCS was backed and equipped with scenario assessments, specific studies, and guidelines. Also, the MRCS task group could rely on the most up-to-date technical expertise according to international standards, with the support of individual experts and a sediment and fisheries expert group, to examine and improve the Xayaburi hydropower project. The results of this MRCS Technical Review were published in March 2011 as agreed by the MRC JC. The review identified gaps in the submitted documents and in knowledge on migratory fish species and asked among others for further measures on fish and sediment management.²³

When Laos submitted the revised Xayaburi design, the MRCS review of the Xayaburi design changes assessed these against the recommendations made by the MRCS Technical Review and new evidence from subsequent studies and research for improved mitigation measures. Besides providing further recommendations on navigation, fisheries, hydrology, sediment, water quality and aquatic ecology, and dam safety, the design review highlights the importance of the MRC Joint Environment Monitoring, and adaptive management once the dam is in operation. It also states that the MRCS needs to receive more information on the assumed baseline data and the planned operating rules to judge the effectiveness of the re-engineered fish passage and sediment flushing operations.²⁴

Don Sahong hydropower project

The Don Sahong hydropower project resulted in similar upheavals to Xayaburi. The dam is situated on the Hou Sahong channel, which is considered a key route for fish migration in this part of the Mekong mainstream in Laos, just before the border with Cambodia. This second MRC Prior Consultation was conducted between July 2014 and January 2015; the proceedings for Don Sahong have taken longer though than those for Xayaburi.²⁵

The Don Sahong hydropower project was first submitted to the MRCS in September 2013 as a “Notification” only. The notified countries, Cambodia, Thailand, and Vietnam, asked for a resubmission for Prior Consultation though, which led to a pre-assessment by the MRCS for further consideration by the countries, JC, and Council of Ministers. At the council meeting in June 2014, Laos accepted the request and informed the MRC that it would submit the project as a Prior Consultation.²⁶

Despite all efforts, at the end of the consultation, the MRC JC and council could again not agree on how to move forward with the proposed dam. In consequence, the governments were asked to step in using their diplomatic channels. Despite the experience from Xayaburi, no criteria were agreed for a justified extension, which made the decision-making process difficult, even though the MRCS received support from the three notified countries to prolong the Prior Consultation to consider and assess additional documents submitted by Laos.

Overall, the MRCS’ strength has been to provide sound technical expertise and recommendations, while some institutional aspects have still not been fully addressed. There was more timely provision of information to the public but communication was still largely about “informing.” Due to no clear ending of the Prior Consultation, the post-Consultation has still not been formalized. However, the MRCS has managed to facilitate an agreed joint project between Cambodia and Laos on the Khone Falls area. This project includes a Joint Environment Monitoring of the Don Sahong project under MRC.

Regarding institutional aspects, a MRCS Task Group worked on the Technical Review with the support of independent international experts, as was the case for the first Prior Consultation. During the Prior Consultation, the JC working group met three times. A JC meeting and a council meeting

discussed the results of the assessment and further proceedings, but without a clear ending. Considering the minimal disturbances to the hydrology and sediment transport by the dam, Laos viewed the risks related to the project as low. Hence, Laos wished to close the Prior Consultation.

The MRC member countries conducted national consultations. In addition, the MRCS organized one regional public consultation in Pakse, in southern Laos, and welcomed the submission of stakeholder views on its website. These mostly concerned fisheries and livelihood issues. Some NGOs also raised questions about whether the 260 MW production of the small-scale Don Sahong Dam is worth the related potential negative environmental and social impacts.

With the objective of improving the implementation of the PNPCA and other MRC procedures, the MRCS established a Joint Platform in 2013. Various meetings were held but the 2017 workshop on lessons learned for PNPCA proved particularly useful. During the Don Sahong Consultation, the Basin Development Strategy 2011–2015, one of MRC's key strategic documents, was also available.

Regarding technical aspects, the PDG continued serving as the guiding document for the project evaluation. During the post-Consultation process, other MRC guidelines have emerged, which play a vital role, including the Guidelines for Joint Environment Monitoring of Mekong Mainstream Hydropower Projects.

The MRCS Technical Review on the Don Sahong questioned the plan to use the Hou Xang Pheuak and Hou Sadam channels as alternative fish routes to the Hou Sahong channel. Potential negative impacts on the Irrawaddy dolphin population, a now-iconic species of the Mekong, were raised too. Potential adverse transboundary impacts related to water quality, sediment, and water flows to Cambodia and the delta were less significant.

With the pilot test of the Joint Environment Monitoring as part of the MRC joint project between Cambodia and Laos, monitoring in the areas of hydrology and hydraulics, sediment, water quality, aquatic ecology, and fisheries is planned. In terms of fisheries, the pilot test foresees monitoring of the three channels, which play a key role in the project design to have reliable data and information on fish species, their migration patterns, catches, and values.²⁷

Pak Beng hydropower project

Starkly contrasting the reception of the first two cases, the Pak Beng hydropower project was generally met with little public opposition. Nevertheless, there were concerns over cumulative negative environmental impacts. It was mainly the Thai riverine communities taking prominent opposition to Pak Beng. These groups had already taken the Xayaburi case to court and are spatially clearly closer to the Pak Beng project than the further downstream lying riparian countries of Cambodia and Vietnam.²⁸

An improvement in the consultation processes was observed through the three cases. This third MRC Prior Consultation on the Pak Beng project between December 2016 and June 2017 was assessed as a distinctly greater success by the MRC and stakeholders than the first two. For one, the expectations of the member countries, stakeholders, and development partners were clear at the submission of the Pak Beng hydropower project. Lessons learned during the first two cases were implemented for the third PNPCA.²⁹ Furthermore, the MRCS emerged stronger after its reform in 2016, with key management, strategic, and technical personnel fully committed to ensuring the best processes and outcomes.

For this improvement, three factors were decisive. First was better-informed stakeholders, with more timely information sharing of documents, and more involvement in the process, including open regional forums as additional instruments to many informal interactions and meetings with key stakeholders. Second, higher transparency and better management characterized the process, with clearly defined steps for the preparation phase, Prior Consultation, and post-Consultation process. Third, the aspired end result of the Prior Consultation was clearly envisioned. This succeeded in concluding a negotiated and agreed statement from the member countries in June 2017. The process and outcome of the Prior Consultation was highly appreciated and complemented by the MRC's donors.

In short, the MRC's Prior Consultation process has improved in terms of institutional aspects. Clearly, stakeholder engagement has evolved. Starting as a mainly informational instrument, it shifted towards consulting and finally collaboration on how to address concerns. Therewith, this evolution distinctly contributes to diffusing tensions in the region.

The timeline was tight, similar to the previous two cases. The Technical Review was well prepared in three meetings of the JC working group. The

review process was supported by national experts while national and two regional public consultations, organized by the MRCS, opened up the opportunity for inputs from stakeholders. Furthermore, stakeholders could also share their views via the MRC website.

All three notified countries reported their issues on technical aspects but also on data and information availability. In requests for more in-depth studies on transboundary and cumulative impacts, as well as monitoring and other follow-up work, these concerns were pushed to more relevance. Fish, sediment, and dam cascade coordination issues were raised most saliently by stakeholders. The highlighted topics were reliably taken into account by Laos, which showed strong commitment.

To conclude the Prior Consultation process, the MRCS has made strategic use of its networks within the member countries to lobby for an agreement for the first time. Reaching a major target, Article 7 “to make every effort to avoid, minimize and mitigate harmful effects” of the Mekong Agreement has helped to develop the joint statement, which is a significant success for the MRC and its member countries. The agreed statement forms the basis for a Joint Action Plan for the Pak Beng project.

Incorporation of the key findings from the Pak Beng hydropower project consultation process is requested by the joint statement to further improve future PNPAs. The request also includes “the development of Commentaries to the Procedures for Notification, Prior Consultation and Agreement through its work with the MRC Joint Platform.” A common understanding of the PNPA is the main purpose of these commentaries. Moreover, the PDG has been updated based on the newly developed MRC guidelines for hydropower impact mitigation and risk management, considering lessons learned and new critical topics.

As Laos submitted the project at the feasibility stage, in technical terms, the MRC has grasped the opportunity to influence the final design and operation of the dam. The design of a fish passage, sediment management, and navigation lock were the main concerns of the MRCS Technical Review. Above this, the Technical Review strongly encouraged investigating upstream impacts into Thailand as well as socioeconomic impacts on downstream countries. The approved Joint Action Plan ensures ongoing provision of information and technical engagement between Laos, the developer, and the MRC during the finalization of the design, construction, and operation phases of the dam.

Conclusion

In many senses, transboundary water resources management is much more a political than a technical challenge. In the Mekong River Basin, a region shaped by its war-ridden past, superpower rivalries, and recurring tensions, it is noteworthy that the Mekong River and its resources have not been a source of conflict for the last 30 years now; even though opposition to and controversy about the development of the basin have attracted international attention. This chapter has argued that the MRC, as an intergovernmental river basin organization, has evolved from a more technical background into a water diplomat, strengthening its brokering skills to bring together its member countries in water-related negotiations. This can be described by the legal, institutional, and strategic mechanisms which MRC can rely on to look into issues from an objective technical and scientific perspective. With high levels of legal mandate and institutional development, as well as technical and strategic resources, the MRC capacity for engaging in water diplomacy is highly functional, and its water diplomacy outcomes effective.

As the cases of potential conflicts in using and developing mainstream hydropower demonstrate, the organization has proven its worth and value in supporting the countries in resolving potential disputes and mitigating transboundary impacts, also through the involvement of the public on infrastructure projects, which usually remain restricted to a small circle of powerful actors. This is only possible through a strong and proactive MRC. The commission is able to draw on its legal foundation—the Mekong Agreement and procedures that make obligations on member states—to make use of its institutional support and engagement from National Mekong Committees, partners, and stakeholders; and the strategic direction that it has been given from the Basin Development Strategy and other basin-wide strategies to bring in its technical knowledge.

These four different aspects—technical, legal, institutional, and strategic—of the MRC water diplomacy framework are all equally essential. While challenges remain in their practical application, the MRC has made good steps ahead and can be seen as one of the world's most successful cases of transboundary cooperation on a major river. This can also be credited to the Mekong River Basin countries, which, despite their warring past and continuing differences, usually have goodwill and positive intentions to come and work together in a “One Mekong, One Spirit” way to achieve a

shared vision for the Mekong—an economically prosperous, socially just, and environmentally sound river basin.

Notes

- 1 The most recent Prior Consultations on the Pak Lay Dam and Luang Prabang Dam are not included at the time of writing.
- 2 The theoretical approach to water diplomacy and cases presented in this chapter are based on an article by the authors, with updated information where relevant. The views are the authors' and not necessarily those of the Mekong River Commission or partners. See Anoulak Kittikhoun and Denise M. Staubli, "Water Diplomacy and Conflict Management in the Mekong: From Rivalries to Cooperation," *Journal of Hydrology* 567 (2018): 654–667.
- 3 Mekong River Commission, *State of the Basin Report 2018* (Vientiane: Mekong River Commission, 2019).
- 4 MRC, *Integrated Water Resources Management-Based Basin Development Strategy 2016–2020 for the Lower Mekong Basin* (Vientiane: Mekong River Commission, 2016).
- 5 MRC, *State of the Basin Report 2018*.
- 6 Ibid.
- 7 Saul Bernard Cohen, *Geography and Politics in a World Divided* (New York: Random House, 1963).
- 8 Article X of the Mekong Committee 1975 Joint Declaration of Principles states: "Mainstream waters are a resource of common interest not subject to major unilateral appropriation by any riparian State without prior approval by the other Basin States through the Committee."
- 9 MRC, *State of the Basin Report 2018*.
- 10 MRC, *The Council Study: Cumulative Impact Assessment of Water Resource Development Scenarios* (Vientiane: Mekong River Commission, 2018).
- 11 This corresponds to the water diplomacy framework of this edited volume.
- 12 MRC, *Assessment of Basin-Wide Development Scenarios: Main Report—Basin Development Plan Programme, Phase 2* (Vientiane: Mekong River Commission, 2010).
- 13 Kittikhoun and Staubli, "Water Diplomacy and Conflict Management."
- 14 See MRC, *Review of the Design Change Made for Xayaburi Hydropower Project: A Technical Reference Paper* (Vientiane: Mekong River Commission, 2019).
- 15 The MRC conducted the Council Study from 2012 to 2017. The study assessed impacts of developments in water-related sectors on the environment, social issues, and economies in the Lower Mekong River Basin.
- 16 Kittikhoun and Staubli, "Water Diplomacy and Conflict Management."
- 17 Ibid.
- 18 MRC, *Procedures for Notification, Prior Consultation and Agreement (PNPCA). Proposed Xayaburi Dam Project—Mekong River: Prior Consultation Project Review Report* (Vientiane: Mekong River Commission, 2011).
- 19 The SEA of mainstream dams was carried out by a consulting company for MRC and did not have all MRC members' official endorsement.
- 20 Kittikhoun and Staubli, "Water Diplomacy and Conflict Management."
- 21 Ibid.
- 22 Ibid.
- 23 Ibid.

- 24 MRC, *Review of the Design Change Made for Xayaburi*.
- 25 Kittikhoun and Staubli, “Water Diplomacy and Conflict Management.”
- 26 Ibid.
- 27 MRC, *Joint Environment Monitoring of Mekong Mainstream Hydropower Projects: JEM Pilot Project Proposal—Don Sahong. Version 1.0* (Vientiane: Mekong River Commission, 2019).
- 28 Kittikhoun and Staubli, “Water Diplomacy and Conflict Management.”
- 29 Timing of notification, information completeness, length of consultation, and the period after the Prior Consultation process were among key issues. See *ibid*.

13 China in international institutions for water governance

Lei Xie and Zha Daojiong

Does China have reasons to be satisfied with the state of affairs in regional transboundary water governance between itself and its Southeast Asian neighbors? And, would China have reasons to be more systematically involved in such transboundary river basin organizations as the Mekong River Commission (MRC)?

To a certain degree, answers to these and related questions seem obvious. Given the continuing external portrayal of China—the upstream riparian state of river systems in continental Asia—as a malevolent hydro-hegemon, there is a long way to go for shared water to stop being a source of diplomatic friction for China. Aside from costs to its soft power, China has good reasons to be concerned about shared water being turned into an issue for powerful contenders of geopolitical influence in its neighborhood. The launching of the Lower Mekong Initiative (LMI) by the United States in 2009, and with all five Southeast Asian states in the Mekong region joining, signaled to China that shared river water can be turned into an asset of diplomacy for its smaller neighbors. The same could be said for the Greater Mekong Sub-region (GMS) program driven by Japan and the Asian Development Bank, or the Mekong-Japan and Mekong-Korea frameworks. Still, this should not be a surprise on the part of China, as the management of transboundary water has economic, social, regional, and environmental functions as well as international political implications.

The trajectory of China's handling of shared water resources with its neighbors is well documented.¹ One notable feature in the Chinese tradition is to favor bilateral venues for the management of transboundary water

issues. Another significant feature is that by practice China's watercourse treaties with its neighboring countries date back some 60 years but, in comparison with the core principles of the 1997 UN Watercourses Convention (UNWC),² China's agreements in this field are relatively unsophisticated.³ This does not imply, though, that research interests on the part of Chinese academics are devoid of attempts to deepen and broaden Chinese contributions to transboundary water governance. For example, some Chinese scholars view current Chinese water treaties have yet to sufficiently cover its transboundary groundwater resources.⁴ In foreign affairs, the existence of a gap between research and policy making is not unique to China. Our point here is to encourage the fostering of an epistemic community of Chinese and international researchers to make the sharing of principles a point of departure in future dialogue toward improved water governance for all in the region.

China's formal government-to-government diplomacy with the five states of the lower Mekong River Basin has demonstrated a propensity for learning. According to views in a policy journal of the Chinese government, in March 2016—spurred in part by the launching of region-wide cooperation initiatives by such geographically external actors as the United States, Japan, South Korea, and India—China formally launched the Lancang-Mekong Cooperation Mechanism (LMC).⁵ The LMC means that for the first time, a multilateral platform for cooperation has been created between all of the Lancang-Mekong River riparian states: China, Myanmar, Laos, Thailand, Cambodia, and Vietnam.

Arguably, the unusually severe drought spanning from southwestern China to lower Mekong River Basin countries in late 2009 played a large role in the heightened level of diplomatic initiatives between major countries and those of the lower Mekong River Basin. For the 15 years prior, China had been building hydroelectric projects on the Lancang River (the upper Mekong) in Yunnan province, and so accusations of an irresponsible and/or uncaring yet powerful China found an easily receptive audience in the Mekong region and beyond.⁶ The LMC can be seen as China's belated response.

How can we understand the fact that China chose to create a new mechanism rather than make fuller use of a readily available multilateral venue such as the MRC in addressing issues stemming from concerns about

water sharing and river basin management? Answers to such questions must be situated against the larger background of Chinese approaches to diplomacy with Southeast Asia in particular, and international resource management in general.

The goal of this chapter is twofold. One is to offer an understanding of China's approaches to international institutions for the governance of transboundary river basins by examining Chinese scholarly articulations and policy actions. Doing so can help enrich our assessment of possible Chinese positions on water issues. The other goal, flowing from the first, is to discuss China's engagement with the MRC and its member states. Topics to be addressed include: (a) China's diplomatic engagement with the MRC; (b) Chinese assessment of the MRC's role in regional water diplomacy; (c) China's rationale and diplomatic initiative in the region including the new LMC mechanism; and (d) possible future directions in China's engagement with the MRC.

The search for a region-wide mechanism to govern relations between the Mekong riparians dates back to the colonial era—for the lower Mekong states. Post-World War II efforts in search of interstate/-society synergy were numerous and met with limited success.⁷ China came into the picture in the early 1990s, when its plans for hydro-dam construction in Yunnan province began in earnest. Ever since, China has been on the defensive over how its use of the upstream impacts the socioeconomic and environmental welfare of the downstream states.

In Chinese studies on international affairs, those with other states of the Lancang/Mekong River riparian included, transboundary water is a boutique topic in the sense that only a very narrow band of practitioners in discussions, negotiations, and cooperation with neighboring countries are literate on the topics. The spread of institutional memory on engagement and cooperation is even thinner. Also, transboundary issues between China and those of the lower Mekong River riparian have traditionally ranked rather low in the hierarchy of research concerns. This is partly because the thrust of China's economic foreign economic engagement takes place in its coastal provinces, and partly due to residual diplomatic and socioeconomic tensions with its land neighbors in the Cold War era, in addition to the southwestern frontier being of a lesser degree of national-level concern. Water and water-related issues were treated with, at best, some scant mention in passing, whether due to weakness in knowledge base or

arrogance on the part of an upstream state/society. In short, the authors of this chapter try to make a good-faith effort aimed at enriching the basis for shaping an epistemic community of scholars worldwide who would share the vision of river basin management through cooperation and collaboration.

Water (and) diplomacy: the Chinese conceptualization

In the context of discussing transboundary river management, possible interpretations of the notion of “water diplomacy” can range from: (a) access to water being used by one actor as leverage for diplomatic/political gains, to (b) the geological reality of water sharing between upstream and downstream states being an impetus for cooperation, which may or may not yield gains in diplomatic/political relations. A strong and even dominant stream of interpretation by observers outside China sees (a) as a fitting frame, whereas such assumptions and/or arguments are often met with protests from Chinese interests which tends to try to prove (b) true.

Regardless, generally, in international relations, practicing water diplomacy is not a smooth process. Bifurcated views can be found with regard to water diplomacy in terms of conflicts and political tensions,⁸ and cooperation as an opposite position to conflict.⁹

In this chapter, water diplomacy refers to the rationale of countries’ water-related foreign policy processes, which may see cooperation and conflict occur simultaneously in negotiating over how river basins are shared.¹⁰ In comparison to other international issues, transboundary rivers pose greater challenges to cooperation, particularly in regions where instability is seen among nation-states.¹¹ Asymmetries are likely to be displayed in countries’ dependence on water resources as well as their possession of policy information over the use of shared rivers.¹² In contexts where socio-political conditions are complicated, nation-states’ cooperation in the water sector cannot be isolated from cooperation in other major sectors, such as trade and transportation, etc.¹³ Institutional cooperation in the water sector alone may well be the very first step toward long term interstate collaboration over transboundary river sharing.

The legal aspect in Chinese water diplomacy with its Mekong River Basin neighbors is an insistence on domestic law taking priority over such

international instruments as multinational treaties. Flowing from the country's adherence to the "Five Principles of Peaceful Co-existence," China has continued its support of the United Nations as a key platform for addressing interstate affairs and conflicts, including cooperation on environmental issues. For instance, it has adopted the UN's Sustainable Development Goals, including Goal 6, "to ensure access to water and sanitation for all."¹⁴ What then explains the fact that China continues to be a nonparty to the UN Watercourses Convention, given that decades have passed?¹⁵

Part of the answer can be found in the Chinese representative's four-point objections on 21 May 1997. The first point of objection was over procedural matters. The second was based on seeing territorial sovereignty as a basic principle of international law: "A watercourse State enjoys indisputable territorial sovereignty over those parts of international watercourses that flow through its territory." Thirdly, in terms of rights and responsibilities, the Chinese position is based on seeing "an imbalance between those [rights and responsibilities] of States on the upper reaches of an international watercourse and those of States on the lower reaches." The fourth and final point of objection had to do with the compulsory fact-finding requirement in dispute settlement: "The Chinese Government...are not against fact-finding as an optional means of settlement, but we cannot agree to any mandatory means or procedures for the settlement of a dispute without the consent of the countries parties to the dispute."¹⁶

However, insistence on an upstream state's right over water in its territorial space does not imply disregard of "no significant harm" and other commonly held principles. As a matter of fact, those principles are enshrined in China's water treaties, albeit of a bilateral nature.¹⁷ Some scholars find China to be contesting the definition and practicality of the no harm principle, which has caused difficulties with some states.¹⁸ China specified the upper limits of water withdrawals from transboundary waters in a 1996 Ministry of Water Resources circular—which remains in effect.¹⁹ Still, as a philosophical matter, Chinese water policy scholars continue to question if the right of upstream states such as China are legally protected, suspecting that the UN Watercourses Convention has adopted principles that favor downstream countries.²⁰

Nevertheless, Chinese authorities have adopted cooperative policies on its shared river basins. On a regular basis, China cooperates with India, Mongolia, Russia, and Kazakhstan—on the basis of respective bilateral arrangements and agreements—to provide them with hydrological data. China has consistently complied with these agreements by ensuring timely collection and release of seasonal water data in order to alert downstream countries and help them prevent flooding.²¹ Hydrological data provision is also a pillar of cooperation between China and the MRC (see below).

The same pattern can be found in China's interactions with India in the handling of bilateral issues involving transboundary water. The core of sensitivity is seen to lie in the unsettled border between the two countries. Before the water dispute is resolved, it is impossible for a fact-based assessment of the amount of water flow from China into India. As a result, on the one hand, Chinese observers are generally unhappy with Indian voices making broad-stroke claims that China is turning off the water tap, but at a “total loss” as to how to respond to such claims.

Over the years, the tendency has also been for water disputes around the world to be painted as existential threats. However, China and India have chosen to “securitize their water dispute.” Water-based cooperation between them has remained low, confined to an expert-level mechanism, and memoranda of understanding on sharing hydrological data.²² Still, it fits into the same Chinese pattern of pursuing pragmatic cooperation regardless of dividends generated.

In summary, the Chinese conceptualization of water diplomacy is as follows. First, the upstream riparian state does have reasons for insisting on its rights to water resources within its territorial boundaries, as the sharing of water is a natural choice dictated by gravity. This stance does expose China to criticism due to the vastly greater number of human and animal inhabitants within the riparian regions, raising questions about the notion of equitable use of water withdrawal. Second, China selectively applies key principles enshrined in such multilateral water treaties as the UNWC. As a political tactic, China could have later on signed onto the treaty, as its neighbor Vietnam (a significant upstream state in relation to Cambodia) did in 2014. Third, China has been consistent in cooperation with its neighboring states and the MRC through the provision of hydrological and flood data. The scope for cooperation can perhaps be deepened. Still, being

a nonparty to either a UN treaty or a multilateral agency has not prevented China from conducting cooperation in areas it sees as feasible.

All in all, water diplomacy with Chinese characteristics does not see China conforming to the norms of formal/multilateral diplomacy centered on transboundary water governance. Furthermore, cooperation has evolved by treating water-related matters as they are, rather than as leverage in relation to broader diplomatic concerns.

China's engagement with the Mekong River Basin

In principle, China adopts technocracy and techno-economic rationalities. Its decision-making processes are promoted as “apolitical” and “rational,” emphasizing efficiency.²³ With regards to water resource management, the Chinese authorities, and experts who advise them, give high value to the importance of water quantity in water management, which is key to generating profits and protecting lives.

In scholarly Chinese literature, which is heavily tilted toward discussions along the line of water and environmental sciences, the shared river is a geographical entity for people-to-people and industry- to-industry interactions. Furthermore, it is actors in Yunnan Province (the provincial government included) that take the lead in representing China in interacting with neighboring countries to the south.²⁴ To Chinese scholars of international affairs, China has not and does not intend to exert its perceived power over the Lower Mekong countries. It is difficult for concerns over water sharing, in spite of the hydro-dam construction, to arise to the level of Chinese securitizing of the river. There is no acute water quantity competition between China and the Lower Mekong countries.²⁵

In terms of water science, China's contribution to the river basin's runoff area reaches 10 percent of the total withdrawal.²⁶ To Chinese scholars, this calculation makes China only partially responsible for the overall water quantity of the river basin.²⁷ From a position of “techno-economic rationality,” China respects its downstream neighbors who are left with fair opportunities to explore economic profits from the Mekong River Basin. China has repetitively made statements to the effect that “the hydropower cascade development on the Lancang River does not compromise water consumption.”²⁸

However, it is recognized that the issue of protection of water ecology in the Mekong River Basin has not been accorded the same attention. China's damming activities could have implications for fisheries and soil fertility, and affect the livelihoods and economies of millions of people in the Mekong River Basin and beyond. Less ecological consideration has also been shown in discussions among Chinese scholars. In particular, scholars of international relations, due to lower engagement with the subject of water management and environmental science, mostly support Beijing's hydropower developments, viewing the negative ecological effects of damming activities as "unavoidable."²⁹ They noted that within China itself as well as in Western countries that developed earlier, hydropower developments had contributed significantly to economic and social progress, with little opposition from domestic environmentalists. As China becomes more developed, environmental concerns and protection are increasingly being prioritized.

In the Mekong River Basin, China's engagement can be categorized by two types of activities: bilateral engagement between China and individual states; and interaction with regional organizations, particularly with the Association of Southeast Asian Nations (ASEAN)-based institutions and the Mekong River Commission.

Engagement with individual Mekong states

China's interactions with riparian states started on a bilateral basis, along with Beijing's accelerating the uses of the Mekong River Basin. As early as 1994, the government established a special committee to understand water resource management in the Lancang-Mekong River, and a report was issued to provide scientific evidence to support plans to establish a series of hydropower plants.³⁰ In the later 1990s, China first worked with Laos, then Vietnam, and finally Myanmar individually before a multilateral turn toward working with ASEAN states collectively. With these countries, China did touch upon the ecological protection of the river as well as collective regulation over navigation. More specifically, China and Laos as well as China and Myanmar respectively formed bilateral agreements on navigation over Lancang-Mekong rivers in 1994 and 1997, mentioning that the protection of river ecology is an important aspect of navigating along the river. Similarly, Vietnam signed an agreement with China on the

protection of river ecology. During this time, China was actively engaging in bilateral discussions with regard to the use of water resources of the Mekong.

China's diplomacy with downstream states has shown a focus on alleviating water-related disasters, such as during the 2016 Mekong drought, when China responded to Vietnam's calls to implement an emergency water supplement by discharging three to three-and-a-half times more than the normal flow. The plan benefitted not only Vietnam but also household water supply and agricultural production in Laos, Myanmar, Thailand, and Cambodia.³¹

Engagement with the MRC and its former incarnation (the Mekong Committee)

The Mekong River Commission is institutionally designed to promote and coordinate the sustainable development of the Mekong River Basin with three permanent bodies: the Council, the Joint Committee, and the Secretariat.³² Out of six riparian actors, only the four lower countries³³ have signed the 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin (the 1995 Mekong Agreement), which created the MRC.

China's relations with the MRC have undergone change, reflecting constant changes in turn in the former's international water and foreign policy. The MRC was preceded by the Mekong Committee, which was a result of the United States' Mekong River Basin water policy in the 1960s. As explained above, due to its concerns over international water law and with a preference for developing bilateral relations with riparian states, China has reservations with the Mekong Agreement, partly based on the UN Watercourses Convention, and has shown reluctance to join the MRC.³⁴

China has reservations in relation to the Prior Consultation principle, which requires notification as well as prior consultation or agreement with other riparian states via the MRC Joint Committee on the use of shared water resources in the Mekong. China believes that the principle impedes its sovereign right to manage water resources within its territory. Beijing has expressed concern that upstream countries are disadvantaged in the current international legal framework,³⁵ which favors the rights of

downstream countries.³⁶ To China, downstream countries are empowered by international water law to impinge on upstream countries by demanding transparent information disclosure.³⁷ Such a requirement could result in inequity when upstream countries are forced to disclose information that may undermine the planning and management of their own water resources.³⁸ Downstream countries, including in large basins such as the Nile and the Mekong, have often developed their water resources extensively without notification to and consultation with anyone, let alone upstream countries. Some of these very downstream states, having benefited from existing uses developed earlier, are viewed as trying to prevent upstream (late) development through international legal frameworks.

While the MRC acts as an important basin-scale cooperative mechanism, Chinese scholars have shown concerns about the efficiency of the MRC, especially how it could effectively coordinate among its member states. The MRC's decisions are not legally binding³⁹ and are ineffective at regulating access to water by quantity. This may pose problems for riparian states that share the Mekong River Basin.⁴⁰ Furthermore, Chinese scholars have been suspicious of the MRC's power to implement the agreement and have interpreted Article 35 as a sign that the MRC has to resort to national governments for compliance with the 1995 Mekong Agreement.⁴¹

The MRC is also often regarded as driven by external interests. It has been funded by various outside donors: the European Union, European countries, Australia, and Japan. The external "sponsorship feature" of the MRC has also in the past proved influential in its operations and decision making.⁴² The 1995 agreement did not specify the financing of the MRC. It should be noted, however, that with the roadmap for self-finance by 2030 reaffirmed by the Mekong prime ministers at their third MRC Summit in 2018, and with a riparian chief executive officer in place and increasing financial contributions from member states, the MRC has been trying to enhance local ownership and decision making.

The MRC originally was established as a technically oriented scientific body focusing primarily on providing scientific evidence to advise on basin-wide water resources development and management.⁴³ China's diplomatic engagement with the MRC has also focused on this feature. Since 1992, China has developed formal diplomatic relations for dialogue

with the Interim Mekong Committee, and became a “Dialogue Partner” of the MRC in 1996. In 1993, the Interim Mekong Committee reached an agreement for China to provide seasonal hydrological data from two of its hydrostations in Yunnan. Furthermore, in 2001 the Chinese government to provide to the MRC Secretariat hydrological information, which is an input into the MRC’s flood forecasting system. The agreement was renewed in 2008.⁴⁴ Later, in 2010, China agreed to extend the hydrological data provision by 30 days.⁴⁵ Such a move arguably demonstrates progress in the Chinese commitment to work with the MRC.⁴⁶ The same agreement was again renewed in 2019, along with other cooperation initiatives.⁴⁷

To the Chinese government, the MRC serves an important function as a professional body bridging between China and its downstream riparian neighbors. In 2010, Yunnan in southwest China and other countries in the Mekong River Basin experienced drought. China is assumed, by some of its neighbors, to have caused the disaster through the impact of reservoir filling and releases on low flows and flash floods, respectively. Beijing attempted to prove that its dam construction on the river had not caused droughts.⁴⁸ The MRC was the only stakeholder that supported China’s position.⁴⁹ In the 2016 drought, China and the MRC also worked together, for the first time, in conducting a joint observation and analysis on the release of water supplement from the Chinese Jinghong Dam; and they released a joint report.⁵⁰

Additionally, the MRC and China have also worked together to support the prevention of water-related disasters. Together with the International Water Management Institute, the two sides conducted another joint study on the hydrological impacts of the Lancang hydropower cascade on downstream extreme events such as floods and drought.⁵¹

Finally, in addition to the above, China and the MRC hold annual meetings, conduct regular exchanges of visits, participate in each other’s technical meetings, and have jointly held three technical symposia. The Chinese minister of water resources, leading a large Chinese delegation, participated in the third MRC Summit in 2018, stating that “China attaches great importance to the cooperative relations with MRC, and has carried out diversified, fruitful and practical cooperation with MRC and its member countries in the realms of technical exchange, capacity building, and joint research.”⁵²

China's launching of the Lancang-Mekong Cooperation mechanism

As mentioned at the beginning of the chapter, in 2016 China launched the Lancang-Mekong Cooperation Mechanism. According to the inaugural Sanya Declaration, the LMC's primary purpose is to promote regional integration and investment. Water resources are listed as one of the five priority areas.

China was motivated to establish the LMC mechanism to secure its national interests in foreign policy as well as in water uses in Southeast Asia. With complex regional politics and international relations, Southeast Asia has been actively sought after by powerful states such as Japan and the United States. Since 2014, China's demand for regional stability and an intention to accelerate Belt and Road Initiative (BRI) has fueled its interest in taking on a more active role in the Mekong region. The Chinese government advocates that the management of the Mekong River Basin should be solely constituted by local actors—that is, riparian states. China aims to include the riparian states as key actors in this new institutional arrangement. In this way, China has also empowered itself to take control of the design and implementation of the new governance institution of the Mekong River, while at the same time excluding other actors. The Chinese government also seeks credit for its past work with regard to Southeast Asia and the Mekong region. China has started to actively take a lead in regional development, with Beijing determined to develop its image as a responsible regional power.⁵³ China has also improved in domestic water resource management and is keen to expand this into international river basins.

The LMC is a nascent organization and of an experimental nature when it comes to putting into action visions of deeper cooperation. Chinese scholars of water science are correct to remind their government agencies that initiatives with more definite objectives are easier to implement than those that remain aspirational. Under the LMC, Chinese interests lie in such areas as navigation, hydropower, joint management, data sharing, flood control, and agricultural/industrial water use. However, only flood control and drought relief are attractive objectives for all the riparian countries across the watershed. Building on the historical experience of cooperating with the MRC, hydrological data sharing should be a priority for cooperation. Last but not least, hydropower can continue to be an objective,

but it is best implemented mainly through bilateral cooperation, and on tributaries.⁵⁴

According to China, the purpose of the LMC is to lead regional development in the Mekong River Basin. Chinese authorities and experts recognize that there is a lack of effective leadership on the matter of using shared water resources, and this has led to tensions.⁵⁵ China has stressed the establishment of interstate cooperation among *all* six riparian states. The LMC, according to the Chinese authorities, should have the capability to effectively direct collective actions among member states over the shared water resources.⁵⁶ Beijing is also aware that to secure its own interests, better cooperation is needed with other downstream states,⁵⁷ including continued economic gains from projects that range from navigation and hydropower to eco-tourism.⁵⁸ Equally, to guarantee economic cooperation, China has to ensure its citizens' human security with respect to rising transnational crime, drugs, etc.⁵⁹

As regards LMC-MRC relations, some may believe that the LMC will supplant and marginalize the MRC, while China has officially welcomed the cooperation. Its water minister has invited the MRC to play a constructive role in the LMC, and the LMC Five Year Action Plan on Water Resources identifies the MRC as a partner.

Conclusion and policy suggestions

First, viewed against the four dimensions of water diplomacy as set out in the Introduction to this volume, China is thin on the first two: legal and institutional. Instead, China has consistently insisted on treating water governance challenges and disputes by placing them in diplomatic (i.e., case-by-case rather than rule-based) contexts. This could result in protracted processes of negotiations on the one hand, or, it could result in fast compromise lest the country's larger goals of diplomacy be adversely affected. Future research efforts can benefit from detailed case studies to test the validity of such reasoning.

The second conclusion, closely related to the first, is that Chinese approaches to water diplomacy are heavily tilted toward the third (technical) and fourth (strategic) dimensions of water diplomacy. For China, there is no barrier to technical/scientific cooperation with governments and

institutions of the riparian countries, as has been the case with regard to its association with the Mekong River Commission. This tradition augurs well for the future development of riparian-wide strategic cooperation. In this scenario, the Chinese government can be expected to support and endorse various Chinese entities in partaking in basin-wide strategies, action plans, and guidelines to deal with transboundary opportunities and risks. When it comes to implementation, however, Mekong riparian organizations and Chinese agencies may have to learn to accommodate each other in the search for mutually agreeable and effectual solutions.

In other words, there is a certain level of bifurcation in the Chinese approach to water diplomacy in its own neighborhood. On the one hand, China displays a strong propensity towards unilateralist approaches, which, against the larger backdrop of China being the more materially resourceful actor when interacting with the lower Mekong River Basin states, is going to be difficult to change. On the other hand, Chinese absence from multilateral institutions devoted to water diplomacy is no barrier to project cooperation. This combination leads us to the following policy suggestions.

Upgrade partnership between MRC and China

Ever since 1996, the year after the MRC's establishment, China and the MRC have witnessed decades of close and productive—if only somewhat protocol based—cooperation at the technical level. Arguably, there has been more than enough time for China to accept the MRC's standing invitation to join as a full member. Full membership by China is desirable but not necessary in a technical sense. As a matter of political diplomacy, reservations and even hesitation on the part of current MRC member governments is understandable due to the asymmetry of power distribution in the event of Chinese membership.

An enhanced partnership should make interactions between the MRC and China less protocol driven, with increased flexibility and convenience for interactions among the various stakeholders each represents. Furthermore, the MRC and China should explore ways for the former to engage in a broader array of issue areas with China, rather than being confined to issues of the *mainstream* Lancang/Mekong rivers per se. The MRC's expertise in water-related socioeconomic issues are of great value

and can assist China in working with its neighbors through such arrangements as the LMC.

Explore MRC participation in LMC

Located within the region and armed with longstanding knowledge, the MRC is best placed to interact with riparian states and appreciate their different social needs. More importantly, the MRC's issue (rather than political-systemic) orientation makes it diplomatically acceptable to members of the LMC. The MRC can help the LMC through providing expertise and arguments for possible blueprints for synergy among different actors who by nature are better at taking care of their respective interests and priorities. The current LMC mechanism relies on state-level interactions and has not yet effectively incorporated the interests of all relevant stakeholders within the river basin to create a negotiated system of governance. The MRC is in a good position to explore local knowledge, stakeholders' views, and best practices for water management in different parts of the Mekong River Basin. This is the gap that the MRC can help to fill to the benefit of everyone involved. Therefore, the MRC is deserving of special membership within the LMC Mechanism. The right direction is for the MRC Secretariat to be invited to participate in the Joint Working Group of the LMC on Water Resources and develop a partnership agreement with the LMC Water Center.⁶⁰

Last but not least, *engage and educate a broader array of stakeholders about progress in riparian governance*. For reasons historical, cultural, and geostrategic, the Mekong River continues to attract interest and imagination from a broad array of actors outside the region. The plus side stemming from such attention is that offers of assistance and participation enrich the knowledge and skills base for project conceptualization and possibly implementation as well. An unavoidable downside, nonetheless, comes from the ad hoc nature of such expressions of interest and/or concern, which is more often than not driven by developments beyond routine control or plan. It is the historical/contextual factors that stakeholders from outside the region need to be made aware of. And, to do that, governments and riparian organizations should forward and channel external resources into projects that are more in line with what is required in the long-term sustainable management of resources in the riparian region.

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14 Managing disagreements in European basins

What role for river basin organizations in water diplomacy?

Susanne Schmeier and Ivan Zavadsky

Water diplomacy has become ever more prominent on the international agenda. Policy makers increasingly refer to the need to engage in water diplomacy to address emerging disagreements over shared and often scarce water resources. For instance, water diplomacy plays an increasingly important role in the foreign policy¹ of the European Union (EU), as well as in the foreign policy and development strategies of individual member states such as Germany² and the Netherlands,³ as well as of Switzerland.⁴ Likewise, journalists have warned of the increasing risks of water conflicts and highlighted the need for water diplomacy.⁵ Academia has followed suit and is increasingly engaging in research on water diplomacy.⁶

Within Europe, however, the concept of water diplomacy does not seem to play a prominent role—at least at first glance. In both policy and academic debates about (transboundary) water resources in Europe, water diplomacy is hardly ever mentioned. Instead, the concepts of water governance, water legislation, and water resources management prevail, and river basin organizations (RBOs) are often presented as platforms for coordinating different states' interests and respective actions and implementing specific technical tasks.

This does not, however, imply that there are no disagreements between the riparian states in relation to shared watercourses in Europe. Instead, it suggests that these disagreements are being dealt with in a different manner than in other regions. This leads to questions of what role water diplomacy

plays in Europe—or how disagreements over shared water resources are being addressed—and what role RBOs play in this context.

This chapter aims at answering these questions by investigating how water-related challenges and disagreements—that also occur in basins with well-established governance mechanisms—are being addressed and, in particular, what role RBOs play in this. It does so by providing a brief overview of the framework for governing shared water resources in Europe and studying two cases, the Danube and the Rhine river basins. In order to do so, the chapter relies on a conceptual framework that builds on the theoretical framework developed in the Introduction of this volume, as well as on research on (transboundary) water resources management, especially on the management of disputes and the specific role of RBOs therein,⁷ with a particular focus on the wider European region.⁸

In order to understand how water-related disagreements are addressed in Europe's shared basins and what role RBOs play, it is important to differentiate between notions that are often used interchangeably or in an overlapping manner: transboundary water management, water cooperation, and water diplomacy.⁹ Without going into the details of the current debate on what water diplomacy exactly constitutes,¹⁰ it is important to highlight here that transboundary watercourses can be governed by both technical (or administrative) and diplomatic means (with legal, institutional, and political ones being situated somewhere on the continuum between those two extremes). The particular means of water management chosen depend on the context in the basin and the challenges it faces (and acknowledging that also technical means have—as the Introduction to this volume highlighted—an important indirect role to play especially in preventing but also in mitigating and resolving disagreements).

This chapter argues that based on a complex and tight net of legal, institutional, and political instruments, in Europe technical and administrative transboundary water management by regional, transboundary, and national institutions (including RBOs) most commonly prevail over the application of direct diplomatic means. In cases where disagreements escalate beyond a level that technical or administrative means of water management and the prevention of disagreements could be applied to, European water managers and policy makers do, however, have specific diplomatic instruments at their hands to mitigate or resolve such

disagreements. RBOs thus play a largely technical and administrative role, coordinating member countries' water management activities in a predefined legal and institutional setting (and thus largely work on conflict prevention). However, RBOs can become, and have been, involved in more political and diplomatic activities as well. They are thus important intermediaries that link technical river basin management to more political cooperation and diplomacy efforts.

The European legal and institutional framework and the role of RBOs

The management, use, and protection of water resources in Europe are embedded in a tight legal, institutional, and political framework. It ranges from the pan-European level all the way to the local level, providing numerous rules, policies, and tools to various actors that guide water resources management in all its dimensions. A considerable share of this framework is of relevance to the many transboundary watercourses in Europe.¹¹

At the broadest regional level, that of the United Nations Economic Commission for Europe (UNECE), the Convention on Protection and Use of Transboundary Watercourses and International Lakes (also referred to as the Helsinki Convention)¹² provides international water law guidance on the protection and use of transboundary watercourses. Parties to the convention—among them all European states except for the United Kingdom—commit themselves to a number of substantive and procedural principles for the management of shared watercourses. These include the principle of riparian community, that of equitable and reasonable utilization, and the obligation not to cause significant harm (Article 2). It is important to note that the convention requires parties to establish joint bodies (Article 9), thus emphasizing the importance of RBOs in transboundary basins. Other pan-European conventions complete this pan-regional legal regime for managing transboundary water resources and preventing or mitigating disagreements over them. Such agreements include especially the 1991 Espoo Convention,¹³ which requires parties to take all appropriate and effective measures to prevent, reduce and control significant adverse transboundary environmental impacts (Article 2 of the convention); and the

1992 Convention on the Transboundary Effects of Industrial Accidents,¹⁴ which provides guidance concerning the pollution of rivers from industrial accidents.

The EU provides the most comprehensive, binding, and detailed cooperation and integration framework for the region, covering a broad range of issue areas, including water and the environment. Moreover, the supranational legal and institutional framework of the EU that forms the basis of a common integration agenda ensures that states are committed as well as bound to addressing issues of mutual concern in a cooperative manner, including those of a conflictual nature.

Comprehensive EU legislation governs the use, management, and protection of water resources, including those shared between states. The EU Water Framework Directive (WFD)¹⁵ is at the heart of this. Without engaging in a detailed presentation of the WFD, it is important to note here that it sets strict objectives on the chemical and ecological status of water bodies that have to be reached in all basins (Article 4). Based on the basin principle (Article 3), it provides procedural and managerial guidance on how to achieve these objectives, with river basin management plans and related programs of measures being the key instruments (Articles 11 and 13). Other—more issue-specific—instruments complement the WFD: the Drinking Water Directive, Floods Directive, Bathing Water Directive, Groundwater Directive, Urban Wastewater Treatment Directive, and Nitrates Directive.

Specifically with regard to disagreements, EU legislation in general and the WFD in particular provide resolution mechanisms.¹⁶ Member states can call on the EU Commission's assistance in case of a dispute with another state, with the Commission being able to issue a recommendation or a report that advises the concerned states on how to deal with the matter. While such a recommendation itself is not immediately legally binding, it is authoritative in so far as the Commission can institute proceedings against any state failing to meet its obligations under the WFD (the same can be done by any member state in front of the European Court of Justice if it suffers from damage that results from noncompliance with the WFD by another state). This equips the Commission with wide-ranging responsibility with regard to mitigating disagreements among member states¹⁷ and reinforces the normative clout of EU water law on them.¹⁸ This

also illustrates the tight network of legal and institutional linkages, with interstate disagreements within the EU also often constituting noncompliance with the WFD, thus enabling such disagreements to become matters of compliance with the binding EU legal framework. This allows for an authoritative resolution that interstate relations typically do not permit.

This EU legislation is transposed into national (and subnational) law in the EU member countries. In Germany, a riparian state to all the basins discussed in this chapter, for instance, the WFD has been transposed into national law through the Federal Water Act (*Wasserhaushaltsgesetz*, or WHG). It lays down the basic provisions for water resources management. In addition, the government regulates specific issues through statutory regulations such as the Groundwater Ordinance, the Surface Water Ordinance, and the Wastewater Ordinance. As a country with a federal system, the individual states (“*Länder*”) play a key role in water resources management in Germany. *Länder* water acts and various ordinances at that level regulate a number of issues. In addition, local authorities also play an important role through local bylaws on specific matters.¹⁹ Practices are similar in other EU states. Moreover, even non-EU members often apply EU water legislation as part of their accession efforts to the EU, which requires them to implement the EU’s *acquis communautaire*, thus ensuring that most basins in the wider European region can rely on the WFD as a common legal framework that guides their basin-specific cooperation efforts by constituting a far-reaching normative clout.²⁰ While the WFD (and its implementation in member states) has received considerable criticism for both its substantive and procedural requirements and the (lack of) progress that could be achieved on its basis in many water bodies,²¹ it can still be regarded as a unique instrument for governing (shared) watercourses that have made substantial contributions not only to improving the state of many water bodies but also to bringing riparian states together in a cooperative manner and thus preventing or mitigating disagreements among them that are all too common in many of the world’s basins.

In order to address the additional complexity that the transboundary nature of many watercourses brings, European countries have established agreements and RBOs to govern cooperation over their shared watercourses. RBOs or similar joint bodies exist for the majority of

Europe's transboundary basins,²² providing important tools and instruments for the cooperative management of transboundary water resources.²³ They also provide a forum for meetings among riparian states, and for regular exchanges and joint decision-making on critical matters. By addressing matters of a potentially conflictual nature in a regular, structured, and predefined process, RBOs thus contribute to the prevention of disagreements or full-fledged conflicts. RBOs coordinate efforts toward monitoring and assessing the state of a basin and its resources, and organizing related data gathering, analysis, and exchange. This constitutes the basis not only for managing water resources across riparian states but is also often a key prerequisite for preventing or mitigating disagreements. And RBOs are important platforms for engaging different stakeholders in the management of shared water resources.

If disagreements nonetheless occur, RBOs provide mechanisms for addressing them in a predefined and de-escalating manner. The Finnish-Russian Commission on the Utilization of Frontier Waters, for instance, is mandated to arbitrate a disagreement or provide an advisory opinion on the matter at stake, while in the Rhine River Basin the International Commission for the Protection of the Rhine refers disputes to a special arbitration tribunal to be set up if the need arises. It is interesting to note in this context that many treaties on which European RBOs are based provide for either bilateral negotiations as a key means for dispute-resolution or refer the matter to an external party (e.g., a specific arbitration tribunal,²⁴ a third party,²⁵ or the International Court of Justice). This reconfirms the rather technical approach that many European RBOs take, focusing on providing the technical and procedural framework for addressing disagreements among member states rather than directly engaging in mitigation or resolution,²⁶ thus pursuing a very technical approach to water diplomacy.

In spite of the many challenges it is facing,²⁷ EU legislation in the form of the WFD—together with instruments in the wider European region—thus provides a comprehensive legal, institutional, and technical framework for environmental policy in general and water resources management—including transboundary—in particular. RBOs as agents for organizing, managing, and coordinating required activities thereby play a particularly important role in ensuring the smooth implementation of these complex

requirements and thus the cooperative, nonconflictual, and sustainable management of Europe's shared water resources.

The Danube River Basin and the Bystroe Canal challenge

The Danube River Basin covers a territory of nearly 820,000 km², shared by 19 countries,²⁸ making it the most international basin in the world. It provides important resources and services to its riparian states and their populations, ranging from drinking-water supply to hydropower generation, and from navigation to agricultural water use.

It is important to note that while pan-European legal and institutional frameworks apply to the Danube River Basin, the WFD is de jure applicable only to those Danube riparian countries that are members of the EU. It does, however, have legal and—more importantly—political effects on the other countries as well. This is because of these countries' association or accession status with regard to the EU, making the EU's *acquis communautaire* applicable to them. The basin is governed by the International Commission for the Protection of the Danube River (ICPDR), which was established on the basis of the 1994 Danube River Protection Convention.²⁹

A key disagreement between two riparian states of the Danube River Basin, Romania and Ukraine, concerns the Bystroe Canal, a navigation project initiated by Ukraine in the early 2000s and still opposed by Romania today. The deep-water navigation canal runs from Vilcovo in Ukraine through the Danube Delta to the Black Sea and provides Ukraine with an additional, deeper navigation route through the delta—an alternative access to the Black Sea to the previously existing route through Romania. The Ukrainian government approved the project in 2004, aiming to strengthen the country's transport sector and ultimately foster economic development.

Criticism of the project mainly concerned its potential environmental impacts on the Danube Delta—a UNESCO Transboundary Biosphere Reserve and a Ramsar site—and the fact that Ukraine had not conducted a comprehensive environmental impact assessment. An additional criticism—that would become the main component of the Bystroe disagreement—was the fact that Ukraine had not fully notified Romania or all Danube riparian

states as it should have done under various instruments governing the Danube River Basin and the entire region, including the 1991 Espoo Convention. While Ukraine notified Romania of its intent to develop the project in 2002, it had not provided the required documentation (such as the environmental impact assessment, which was only finalized after the project had started already³⁰). These concerns were first raised by Romania, but it was quickly joined by regional and international environmental nongovernmental organizations (NGOs) as well as third party governments.³¹

As a reaction to the start of project implementation, Romania submitted a complaint to the UNECE under the Espoo Convention and its Implementation Committee for alleged noncompliance by Ukraine with the convention and shortly thereafter requested the establishment of an Inquiry Commission. This was accepted by the UNECE, and a commission with experts from Ukraine and Romania and an independent international expert was established. The commission concluded in 2006 that the project was likely to have significant transboundary impacts.³² As Ukraine continued to deny the environmental impacts and continued with implementation, Romania submitted another request to the Espoo Implementation Committee in 2007. The committee reconfirmed that Ukraine needed to make stronger efforts to comply with the requirements of the Espoo Convention. This position was reconfirmed in yet another meeting of the Implementation Committee in 2009, as Ukraine continued project implementation and made significant progress, finalizing the project that year.³³

The issue was not only addressed at the pan-European level in the context of the UNECE but also at other levels, including the basin level. The ICPDR, as the basin's RBO, addressed this issue a number of times. For example, in 2003, at the ordinary meeting of the ICPDR, a statement was issued that emphasized that the ICPDR was "deeply concerned about possible transboundary environmental impacts"³⁴ and therefore warned that continuous construction without proper assessments of the transboundary impacts was "contrary to the spirit and requirements of the Danube River Protection Convention."³⁵ In October the following year, the executive secretary of the ICPDR and a Hungarian national expert took part in a mission organized by the European Commission and the Espoo Convention

to the Danube Delta. And in the 2004 ordinary meeting of the ICPDR (as well as in front of the ICPDR's Standing Working Group), Ukraine presented a number of reports and assured the ICPDR that the recommendations issued by the Espoo Convention would be implemented.³⁶ Romania also supported this. Based on this, the ICPDR agreed a number of resolutions, including inviting Ukraine to share additional information with all ICPDR contracting parties and requesting the executive secretary of the ICPDR to continue the dialogue with Ukraine and to monitor the implementation of Ukraine's commitments.³⁷ This was followed up again during the ICPDR's Standing Working Group meeting in June 2005, when the ICPDR contracting parties, in rather strong language, again recalled Ukraine's commitment to share information (including the environmental impact assessment for the second phase of the project) and to notify the ICPDR of future activities and the ICPDR's involvement in their monitoring.³⁸ In addition, the ICPDR president (its highest representative) was requested to approach Ukraine with these requests.³⁹

In the following years, the ICPDR kept requesting Ukraine to provide additional information (including an adequate environmental impact assessment), displaying continuous engagement at the political level. At the same time, the ICPDR also got involved in a number of more technical activities that aimed at addressing the disagreement. These included conducting an assessment of available documentation to better understand the impacts of the canal (confirming the likelihood of negative environmental effects) and developing a sub-basin management plan for the Danube Delta. This aimed at ensuring the cooperative management of the delta by Ukraine and Romania, thus engaging them in cooperation rather than conflict.

Ultimately, Ukraine did comply with all international requirements and provided Romania as well as other states and international organizations with the required information, notified the second phase of the project, and implemented environmental mitigation and management measures. The project did thus ultimately comply with all legal and political requirements of the region. This did not eliminate Romanian concerns over the project but did contribute to a reduction in disagreements between both countries, as well as between Ukraine and the wider European community, and to cooperation being maintained.

The case of the Bystroe Canal shows both the complexities within disagreements over the use and management of shared water resources, and the role legal and institutional mechanisms—namely RBOs—can play in addressing them in a cooperative manner. Even if disagreements do not get fully solved—as the case of the Bystroe project shows—the embeddedness of the process of addressing agreements within a comprehensive regional legal and institutional political framework ensures that at no point in time is overall cooperation at stake between the concerned states.

This presents a stark contrast to other transboundary basins. The RBO in this case has played an important role in maintaining the political pressure while at the same time continuously offering technical inputs and maintaining an exchange at the technical level, ensuring ongoing dialogue between the disagreeing parties. This has made an important contribution to containing the disagreement within the overall legal and institutional framework and at a technical rather than a high political level. This ensured that the disagreement did not escalate to a level where national security considerations or other high politics dimensions would be linked to it, making a resolution much more difficult and an escalation beyond questions of water resources management much more likely. It thus presents a typical case of how disagreements over shared water resources are addressed in the pan-European context and the facilitating role RBOs play.

The Rhine River Basin and the Haringvliet issue

The Rhine River Basin is located at the heart of Europe, covering a territory of 170,000 km². It provides important services to nearly 60 million people living in the basin. The basin is governed by a comprehensive legal and institutional framework that has fostered cooperation among its nine riparian states since the 1950s. The International Commission for the Protection of the Rhine (ICPR) brings together the five states that contain a significant share of the basin (Germany, France, Luxemburg, the Netherlands, and Switzerland), with the aim of cooperating on its sustainable development. This includes not only water quality—the original focus of cooperation—but also other matters of relevance for the transboundary basin, including ecological restoration, flood management, fish migration, and climate change. Based on the 1999 Rhine Convention,⁴⁰ the ICPR prepares international measuring programs to monitor the Rhine

ecosystem, prepares programs of measures to address key water management issues, and coordinates any other relevant activities (Article 8). This includes the development of the Rhine River Basin Management Plan in response to WFD requirements.

While cooperation generally functions well and is often praised as a model for transboundary water management,⁴¹ disagreements continue to occur among riparian states. One that has sparked a lot of attention is the Haringvliet case, which presents a typical example not only of the challenges the governance of shared water resources in Europe is faced with, but also of how they are addressed within the complex multilevel legal and institutional framework in Europe, ultimately mitigating disagreements in a manner that avoids political escalation.

Based on earlier efforts under the Salmon 2000 program, in 2009, all members of the ICPR committed to the Master Plan Migratory Fish for the Rhine River,⁴² which aimed to re-introduce fish species formerly inhabiting the river. Among them, the Atlantic salmon was of particular ecological, but also political importance as it had become the ICPR's flagship species, symbolizing collective efforts at cleaning up the Rhine and improving the river's ecological status. The strategy linked to the plan focused not only on water quality issues—one of the reasons why the salmon population had declined almost to extinction—but also on hydro-morphological alterations impeding the migration routes of salmon, both important objectives in the WFD and thus of a binding nature to the ICPR's member states (except Switzerland).

In order to achieve the objectives of the Master Plan, states undertook a number of measures, mainly focusing on improving the fish passability of transverse structures in the Rhine and its tributaries in order to improve habitat connectivity. Between 2009 and 2018, more than 500 transverse structures were dismantled⁴³ and a number of fish migration aids were installed. Further measures are planned until 2027. Until then, Rhine riparian states are expected to have spent more than 627 million EUR on measures to address hydro-morphological alterations that disrupt habitat connectivity.⁴⁴ Additionally, a complex monitoring network for migratory fish—especially salmon—was set up that helps keep track of the salmon population as well as the effectiveness of measures implemented to achieve the objectives of the Master Plan. Most of these costly measures are borne

by upstream states (Germany and France), where most transverse structures are located. The measures have led to significant success, with salmon returning to the Rhine. From 1990 to 2010, the number of adult salmon accounted for in the monitoring system increased from 1 to 549.⁴⁵

One particularly important measure concerned the most downstream state, the Netherlands. The Master Plan required the opening of one of the three distributaries of the Rhine for salmon to pass—a large sluice gate system at the mouth of the Rhine, originally built for stormwater protection, flood management, and the prevention of saltwater intrusion—the Haringvliet Sluice Gates. This measure was in line with a Dutch national plan, also proposing the opening of the gates (to at least some extent) that aimed at implementing measures that had been called for by Dutch environmental NGOs since the late 1990s and were finally adopted by the Dutch government in 2000.⁴⁶

In 2010, shortly after the adoption of the Master Plan, a new government was elected in the Netherlands. The new government rested strongly on agricultural interests—which included flood protection and the prevention of saltwater intrusion and thus opposition to the opening of the Haringvliet gates. As a result, the government soon, in 2011, announced that it would not open the Haringvliet gates as previously agreed in a Dutch national process as well as with other ICPR member states.

This constituted a major impediment to river continuity and fish migration, and if salmon (as well as other anadromous fish species) would not be able to enter the river from the sea at all, all upstream efforts to ensure fish migration would be in vain. The other ICPR member states, strongly committed to the Master Plan, were taken by surprise. They quickly escalated their disagreement as the Dutch government confirmed its strong stance on keeping the gates closed.

In addition to public discussions—fostered by environmental NGOs in all riparian states, including the Netherlands—the matter was quickly taken to the political level. The ministers of the environment in the affected states (all Rhine riparians except the Netherlands) discussed the issue and eventually drafted a joint formal letter to the government of the Netherlands recalling the Dutch commitment to the Master Plan. It also referred to its legal obligations under the WFD with regard to the ecological status of water bodies within the EU, which includes river continuity and the

requirement to improve passability for fish. These letters to the minister of the environment were also provided to the Dutch parliament. At the same time, the European Commission itself entered into discussions with the government of the Netherlands (starting in 2010), outlining the potential legal consequences of noncompliance with WFD requirements.

The ICPR quickly got involved, as the RBO responsible for the coordination of Rhine riparian states' efforts at sustainable water resources management and the institution which originated the Master Plan. It played an important role in addressing disagreements and ensuring that they were addressed in the framework of pre-existing and well-defined structures: the matter was discussed repeatedly during the ICPR's Strategy Group meetings, providing all delegations the possibility of exchanging views and addressing the matter in a structured and cooperative manner.

In addition, a group was established by the ICPR consisting of experts from all member countries, tasked with discussing the issue (and an expert group was established at the level of the Netherlands to identify viable fish migration options). These discussions included investigations of potential alternatives for salmon migration beyond the Haringvliet sluices that would have offered a compromise solution. Such a solution was not found, however, as salmon depend entirely on the Haringvliet migration route. Nevertheless, it highlighted in a scientifically sound and inclusive manner the importance of this migration route and thus underlined the need to reopen the sluices in the interest of the entire basin.

Eventually, the Dutch government reversed its decision and announced in late 2011 that it would open the sluice gates. It would only do this, however, in 2018, which is justified with the numerous measures that would need to be implemented to allow for an opening of the gates while protecting the population from floods and changing local drinking water intakes (which would also involve additional costs).⁴⁷ In November 2018, the gates were indeed (partially) opened and now allow for fish migration.⁴⁸ Issues remain with regard to the partial opening of the gates and the fact that current Dutch legislation still allows for closing the gates in times of low water levels in order to prevent salinity intrusions, which could, according to estimates, still be the case for 100 days per year,⁴⁹ trending upwards as a result of climate change.

The Haringvliet case study highlights how disagreements over a water management issue can be addressed through predefined cooperative technical and institutional processes—supported by higher-level political intervention to build up momentum (in the form of the ministerial letters) and public pressure through NGOs. This has allowed for the disagreement to be addressed in a way that not only solved the underlying technical matter but also ensured cooperative relations among all involved states throughout the entire process. The Haringvliet disagreement—similarly to the Bystroe Canal disagreement—thus got solved in the context of and thanks to the overarching cooperation framework in the pan-European region, with the RBO playing an important role as the actor that bridges technical knowledge and political negotiations.

Conclusions

This chapter analyzed two of the most recent and prominent disagreements over shared water resources in Europe. While acknowledging the uniqueness of each case and each basin, this provides a number of important findings.

First, a key element of transboundary water resources governance in Europe is the prevention of disagreements. Legal instruments at different governance levels (namely the WFD and national water law) and clear political guidance ensure that states (and water users within these states) use, manage, or protect water resources in an agreed-upon manner, contributing to jointly defined goals. RBOs have a particularly important role to play in such dispute prevention as the institutions shaping water resources management rules and coordinating riparian states' interests in a basin through river basin management plans. They provide negotiation fora for their member states (and other concerned actors) to address potential disagreements in a structured, predefined manner, and on the basis of sound technical knowledge. Second, noncompliance can be addressed on the basis of predefined and clear mechanisms at different governance levels—from the compliance mechanisms of the different UNECE-related conventions to legal enforcement mechanisms in the EU. Third, with integrated action sometimes required at the technical water management and higher political levels, the linkages between these different mechanisms is a third characteristic of cooperative water resources management in Europe.

RBOs not only coordinate and guide the technical dimensions of river basin management, thus bringing riparian countries together under one cooperation framework, but they also link political processes to river basin management. They thus bridge between technical water resources management and political negotiations, combining all levels of water cooperation and anchoring different efforts in the basin in a comprehensive approach.

Other, similar cases confirm these observations. In the case of the Elbe River Basin, for instance, recent disagreements have also been, or still are, addressed through various technical as well as administrative processes on the basis of a predefined legal, institutional, and political framework. Disagreements include that over the contamination of sediments from upstream, causing harm in downstream areas, namely the harbor of Hamburg;⁵⁰ and that over the construction of a weir in the Czech Republic just upstream of the German border. In both disputes, the affected actors have based their argumentation on legally binding requirements under the WFD and pursued respective legal and administrative channels for addressing the matter. Public pressure in the framework of a well-developed stakeholder engagement system has helped to raise awareness of the issues and gather momentum for solving them.

A number of challenges nonetheless remain. As disagreements over shared water resources tend to arise over water quantity issues or the unilateral development of infrastructure, any future changes in water availability, namely due to climate change, or the development of infrastructure to meet clean energy and climate change mitigation commitments, could potentially trigger new disagreements that RBOs need to be prepared for. Continuously adapting water resources management in Europe to newly arising challenges is therefore of utmost importance, including within RBOs. The development of adaptation strategies for the Danube and the Rhine river basins in the past few years⁵¹ point in the right direction, but more efforts are needed to ensure that water resources management remains cooperative in the future. This also needs to include other sectors and their impacts on water resources—especially in the context of increasing water demands from, for example, the energy sector—by approaching water in an integrated manner. Ultimately, ensuring that European RBOs remain fit for purpose is key.

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15 Conclusion

Managing tensions and sharing benefits— international rivers in conflict and cooperation

David Grey, Anoulak Kittikhoun, and Susanne Schmeier

At the start of this century, United Nations Secretary-General Kofi Annan, echoing sentiments in both policy and academic circles the world over, stated that “fierce competition for freshwater may well become a source of conflict and wars in the future.”¹ After closer examination, and following wise counsel, a year later he said: “But the water problems of our world need not be only a cause of tension; they can also be a catalyst for cooperation. If we work together, a secure and sustainable water future can be ours.”²

Managing tensions

Taking the first Kofi Annan prognosis seriously, this book tackled the challenging yet increasingly pertinent question of whether and how international river basin organizations (RBOs), traditionally understood as technical water managers, can and have played a role in managing and resolving tensions and disputes between riparian states sharing transboundary watercourses. Through a comprehensive theoretical framework and a number of case studies spanning several important river basins in both the developed and developing worlds, it became clear that RBOs play four significant water diplomacy roles.

First, through the very legal mandate given to them by sovereign states to ensure water resources are used in a reasonable and equitable manner, to prevent significant harm, and ensure cooperation. Second, through the

organizational and institutional frameworks that serve as legitimate platforms for information sharing, discussion, and debate. And third and fourth, through the technical and strategic works that seek to understand the issues, perceptions, and tensions from a scientific and technical viewpoint, develop a common understanding of the challenges and opportunities, and inform negotiated solutions from a river basin-wide perspective instead of narrow-minded national positions.

Whether RBOs can play effective roles depends on the strength of these four interrelated factors—legal mandate, institutional development, technical capacity, and strategic influence. RBOs such as the Mekong River Commission (MRC) or the International Commission for the Protection of the Danube River, with strong legal mandates and sufficiently developed institutional mechanisms such as ministerial meetings, and various technical working and expert groups, are capable of bringing riparian states with different perspectives together. Their technical works, such as common basin monitoring, data collection and sharing, assessment and forecast of impacts, and recommendations on corrective measures, have helped to inform decisions made by states. Basin-wide strategic planning processes, such as the Basin Development Strategy of the Mekong or the Danube River Basin Management Plan, have achieved objectives such as establishing joint visions for the basins and a common understanding of the key water management issues, and shared perspectives on priorities and actions to address them.

Many RBOs around the world do, however, struggle. With a restrictive legal mandate, such as the Nile Basin Initiative, or in the absence of a basin-wide RBO covering all major riparian countries, such as the case of the Jordan River, major water tensions and conflicts are not addressed by RBOs. In such situations, there is a major lack of means and tools for bringing riparian states together over a contested matter in order to identify mutually beneficial solutions, instead of pursuing unilateral strategies that often lead to conflict. While water diplomacy is often practiced in such basins, it does not often deliver tangible outcomes. This is because institutional arenas operating in such a basin are seen as insufficiently legitimate by some to bring all parties together. Meanwhile, the technical and strategic works, frequently lacking a basis in common river monitoring and data sources, are often too contested to serve as good inputs for policy discussions.

As the book has approached water diplomacy within the broader context of transboundary water resources management and water cooperation, it is critical and beneficial for riparian states to strengthen their RBOs' water diplomacy capacity and effectiveness. Doing so would ensure tensions do not spiral into active conflicts that either subtract from water management and water cooperation gains or prevent further optimization of benefits that cooperation among the countries would otherwise yield. Enabling RBOs to prevent conflicts through effective transboundary water resources management and to create benefits through water cooperation constitute a first indirect element of water diplomacy—a water diplomatic non-regret measure.

Sharing benefits

At the same time, one needs to take the second Kofi Annan statement equally seriously, viewing water not only as a cause of tension to be managed but as a catalyst for cooperation to achieve a sustainable and secure future. Water diplomacy is thus necessary but not sufficient to ensure positive water resources management and cooperation outcomes. Due to constant natural and human-made disasters, compounded by growing climate change risks and impacts, RBOs should do more than conflict management, and direct their water diplomacy to ensure the four types of benefit in international rivers are realized as much as they can, and shared in an equitable and reasonable manner. The four types are: benefits to the river, benefits from the river, benefits because of the river, and benefits beyond the river (see [Table 15.1](#)).

Table 15.1 Types of cooperation benefits in shared international rivers

<i>Types</i>	<i>Issues for conflicts</i>	<i>Opportunities for cooperation</i>
<i>Benefits to the river</i>	Problems with water quality, watersheds and wetlands, fisheries, environment	Improvement in water quality, water flows, fisheries, and other aquatic animals, watershed conservation, protection of wetlands
<i>Benefits from the river</i>	Competition over water use, exploitation, and development; uncoordinated and suboptimal national plans and projects	Enhanced basin-wide benefits and reduced transboundary costs from improved and more cooperative water resources development and management projects for hydropower, irrigation, flood and drought management, navigation, environment protection, and tourism

<i>Types</i>	<i>Issues for conflicts</i>	<i>Opportunities for cooperation</i>
<i>Benefits because of the river</i>	Water tensions leading to tense regional relations and wider political economy impacts	Shift to cooperation, collaborative and joint development, away from dispute, tensions, military expenditure; from focusing on self-sufficiency and independence in food and energy to regional security in food and energy interdependence
<i>Benefits beyond the river</i>	Low regional integration and high fragmentation	Regional integration of infrastructure, markets, and trade

Source: Adapted from Claudia W. Sadoff and David Grey, “Beyond the River: The Benefits of Cooperation on International Rivers,” *Water Policy* 4 (2002): 393.

We can assume that when these benefits are generated across the board, or when states are entering into more and more arrangements for benefit sharing that meet their respective basin’s needs, the chances are they would have less to quarrel about. In short, RBOs need not choose whether to manage tensions or create shared benefits—they need to do both, and very often at the same time.

Conflict and cooperation continuum

Interestingly, the different RBOs’ place in the water diplomacy capacity and effectiveness matrix introduced in the Introduction to this volume figure fairly differently in the cooperative continuum. The cooperative continuum (see [Figure 15.1](#)) posits that riparian states enter into different types of cooperation arrangements in their river basins, with the variation depending on the context of the respective basin—including the hydrological, environmental, socioeconomic, and political—as well as the consequent benefit-sharing mechanisms. In terms of conflict management though, river basins toward the left end of the continuum (which are characterized by a high level of unilateral action) tend to exhibit more conflictual dynamics, while basins toward the right side, with more joint effort and action, tend to be involved in fewer disputes.

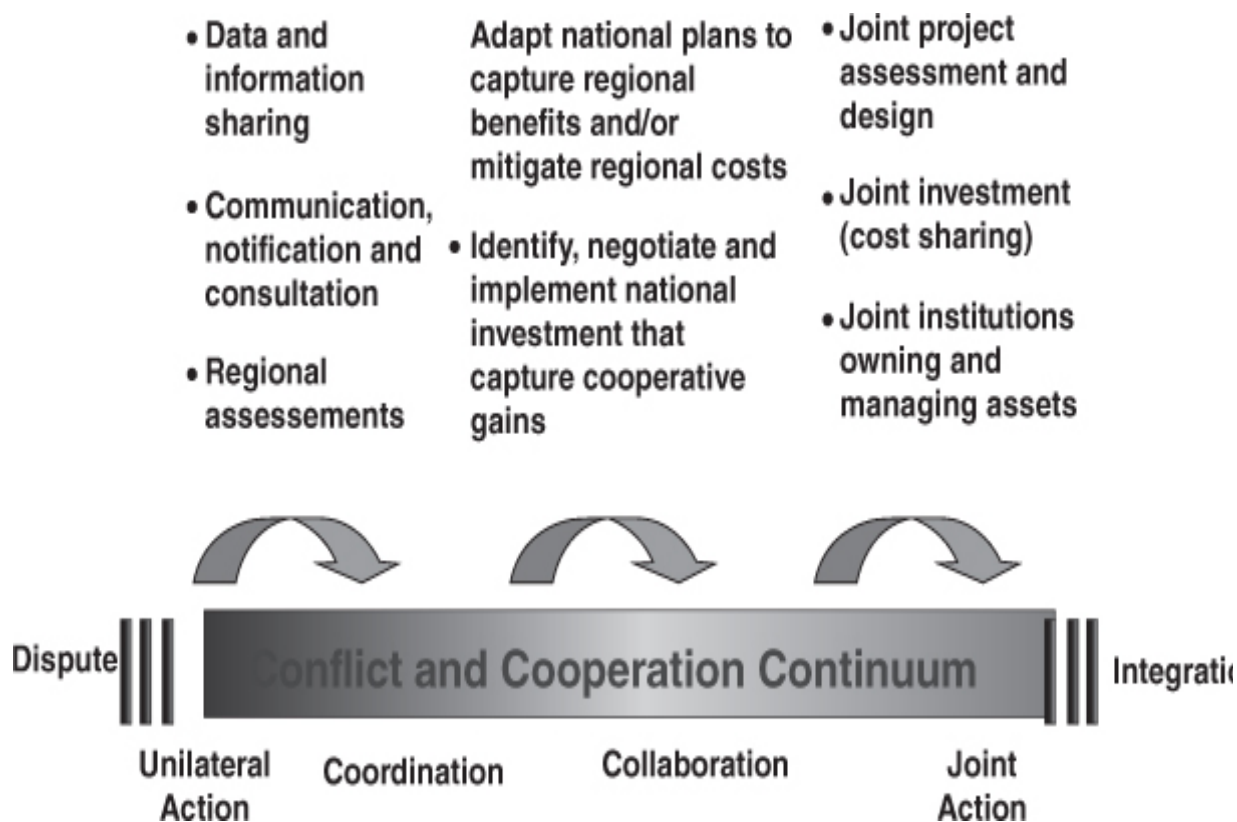


Figure 15.1 Conflict and cooperation continuum.

More than a few basins lie somewhere on the left between “unilateral action” and “coordination.” As stated in the Introduction, the capacities of RBOs to manage tensions in these basins range from limited (Jordan) and developmental (Congo, Niger, and Helmand) to restricted (Nile), with outcomes that are, respectively, of limited effectiveness, emerging (going in the right direction), and transitional (could go forward or backward). In terms of benefit sharing, there are some worthy efforts being made but significant breakthroughs are still pending. For example, the hydropower project jointly owned by Burundi, Rwanda, and Tanzania (Rusumo Falls) is considered a good example of three riparians coordinating and collaborating in the Nile, but the Nile Basin Initiative’s ability to initiate more of these highly needed projects remains limited by political tensions and impediments. In other cases, some communication and information sharing are done but not together among all parties (as in the Jordan) and some whole-of-basin regional assessments take place but are either contested (such as the Nile), or lacking a common strategic approach and more driven

by donor interests than by a true commitment of all riparians to mutually beneficial cooperation (such as the Congo). But most of the time, the countries, especially the dominant ones in each basin, prefer to take unilateral or bilateral approaches to developing water infrastructure projects—the Grand Ethiopia Renaissance Dam in the Nile, the Fomi Dam of Guinea in the Niger, and dam development and irrigation expansion by Afghanistan in the Helmand, are cases in point.

In the Amudarya and Syrdarya rivers of the Aral Sea, something of a reversal has happened in terms of benefit sharing. During Soviet times, a comprehensive joint management scheme of water assets delivered the benefits—in the winter, upstream reservoirs in Kyrgyzstan and Tajikistan stored water to supply later in the summer for irrigation in downstream Kazakhstan, Turkmenistan, and Uzbekistan. In exchange, energy (oil, coal, and gas) from downstream was sent to Kyrgyzstan and Tajikistan to compensate for the loss of electricity production by their upstream dams. With the collapse of the Soviet Union this system is gone, and the independent states of Central Asia have faced difficulties in coordinating their water uses. To secure energy in the winter, the upstream states release more water from their dams to produce energy, leading to not only flooding in the downstream in this period but also less water in the summer for downstream lucrative crop production. Furthermore, Kyrgyzstan and Tajikistan have been in conflict with Uzbekistan over new hydropower projects (the Kambarata dam in Kyrgyzstan and the Rogun dam in Tajikistan) that the former are proposing or building. The “RBO” in the basin, the International Fund for Saving the Aral Sea, with its myriad subordinate but legally separate and independent institutions and bodies, has struggled to deal with high tensions among the states due to a weak legal mandate and poor institutional coherence. No longer it is able to effectively manage and share the benefits of water resources use in the basin.

Therefore, in addition to difficulties in handling tensions and conflicts associated with those types of actions, these RBOs also have some way to go in terms of bringing together their riparian states to collaborate on water resources management and water cooperation in their respective transboundary basins. This could be done, for example, by better understanding—in a joint manner—the challenges the basins are facing,

better coordinating efforts to address key challenges, and adapting national plans to mitigate regional costs or capture regional gains.

Other RBOs and basins lie along the middle of the conflict and cooperation continuum. Although they rank fairly high in terms of their water diplomacy capacities to manage tensions and conflicts, they are situated in between coordination and collaboration, and sometimes fall to the right, at joint action, in terms of benefit sharing. In the Mekong, the Mekong River Commission has been able to gradually address tensions among the riparians over the mainstream hydropower infrastructures through various means: a clear legal mandate to bring the parties together; rules and procedures for notification and consultation; and technical and strategic works from basin-wide perspectives to help inform negotiated measures for improving the dam designs, joint monitoring, and adaptive management. In this sense, national projects are adapted to mitigate regional costs. While this is laudable, the commission, as envisioned in the Mekong Agreement, has so far not been able to optimize shared benefits through joint investment projects—the highest level of benefit sharing—that meets objectives of energy, food, waterborne transport, and environmental security. Some preparatory works have been initiated in this regard but actual dealmaking still has a long way to go. Some joint investment projects—mostly in the hydropower sector—have been prepared by two or three countries, although this has taken place outside the current MRC framework.

In the Danube and Rhine, with strong Europe-wide legal frameworks in relation to water and the environment, and specific basin management regulations, the riparian states collaborate and coordinate in sharing the costs of monitoring and addressing issues in the rivers. They also reap all four types of benefits in the rivers through year-round navigation, acceptable water quality, environmental services, political cooperation, and regional integration.

Good cases of joint action are RBOs in the Columbia, the US-Mexico shared rivers (Colorado and Rio Grande), and the Senegal. While these benefit-sharing schemes have not been without problems, they represent the highest level of cooperation sovereign states have entered into to jointly develop and manage their common transboundary water resources. Interestingly in these cases, the RBOs had little role in dealmaking—they were in fact parts of the deal creation. After mid-twentieth century

devastating floods in the Pacific Northwest of the United States and Canada, the Americans and Canadians got together to establish the Columbia Basin Treaty that developed and managed three dams (Mica, Arrow, and Duncan) in the Canadian and one (Libby) in the US parts of the Columbia. Following a series of negotiations, gross benefits were divided equally, with Canada paid for flood storage (through American finance of the dams and extra power imported from the United States) and the United States protected from flood damage.

Even more astonishing, following years of colonialism, wars, and conflict, and poverty-stricken, the three riparians of the Senegal River (Mali, Mauritania, and Senegal) negotiated and concluded a series of river treaties³ that together developed, financed, owned, and operated water infrastructures in one country Mali (the Manantali dam) and on the border of two countries, Senegal and Mauritania (the Diama Dam).

The three countries agreed to share proportional costs and multisector benefits each was expected to receive. Senegal would finance 42.1 percent and get back 58 percent of irrigation, 33 percent of energy, and 6 percent of navigation benefits. Mali would invest 35.3 percent with returns of 11 percent for irrigation, 52 percent for energy, and 82 percent for navigation. And Mauritania would receive 31 percent in irrigation, 15 percent in energy, and 12 percent in navigation for shouldering 22.6 percent of the costs.⁴ Despite ongoing problems of implementation in practice, including the generation and distribution of benefits that are behind ambitious expectations, the fact that the three riparians came together in the first place and made it happen is a testament to what is theoretically possible.

Conflict and cooperation—a bit of this, a bit of that

It goes without saying but bears repeating that rivers traversing more than one country, let alone a dozen with different political systems, cultures, socioeconomic developments, and hydrological conditions and positions (upstream-downstream) are extremely complex and unpredictable. As in the ancient Chinese wisdom: “not only can water float a boat, it can sink it too.”

Efforts to develop and manage them for the interests of one country, sector, stakeholder, or groups thereof would always be political and not

always harmonious in terms of benefits, costs, challenges, and risks, inevitably leading to rivalries and clashes. To help them manage the tensions and to optimize benefits from the rivers, states establish legal and institutional frameworks, most prominently RBOs.

While we assess the current capacity and effectiveness of these RBOs in managing conflicts through water diplomacy, and their place along with the conflict and cooperation continuum in terms of benefit sharing, these positions are dynamic and could shift depending on the vision, political commitment, resources, and shocks that may materialize to close the gaps and reduce the weaknesses that hold the RBOs and river basins back. In conflict management, RBOs or basins that are stuck in less than optimal settings—low levels of legal and institutional development, and/or low levels of technical and strategic influence—should devote efforts to address those issues in order to have more chance of being effective. At the same time, tensions could also be transcended when enough benefits are jointly created and shared, and riparian states acknowledge and appreciate those over unilateral action.

In all basins reviewed in this book, it is clear that RBOs do a bit (or a lot) of both—water diplomacy for conflict management and benefit-sharing. While every basin should get out of the conflict space, and therefore need to equip their RBOs with the capacities (legal, institutional, technical, and strategic) to do so, the right level of cooperation for generating more benefits—the place of RBOs along the cooperation continuum—depends very much on the needs of the basin, the impending risks and challenges, and the calculation of costs and benefits.

Every basin should aim to increase the ability of its RBO to keep water tensions under control, but not everyone can or needs to follow the examples of the Columbia or Senegal basins— with joint investment infrastructures without clearly assessing the opportunities, risks, and resources involved, and years of negotiation. But those RBOs that may wish to do so would need strong institutions, technical and strategic works, and perhaps the support of powerful partners to secure political commitments, broker agreements, and finance them. Others seem to provide their riparian states and populations exactly with suitable mechanisms, tools, and services necessary for cooperatively and effectively managing shared water resources. These RBOs perform well after making conscious decisions through their institutional development to focus on “coordination” and

“collaboration” types of benefits. In any case, from both conflict management and cooperation optimization points of view, joint efforts by riparian states are always better than unilateral actions. Whether those joint efforts are in coordination, collaboration, or joint action will depend on each basin.

Overall, this book has shown the great variety in challenges transboundary river basins face and the great variety in RBOs that have been established to ensure cooperation over conflict in them. It has highlighted that specific factors—namely the legal basis, the institutional framework, the technical capacities, and the strategic influence of RBOs—matter for conflict prevention, mitigation, and resolution, providing the basis for joint action that creates cooperation benefits that can be shared in the basin. It has, however, also shown, that the exact nature and design of these factors depend considerably on the basin context, the water resources management issues at stake, and the level of development and regional integration, as well as the preferences of riparian countries in how to address their challenges.

Notes

- 1 Quoted in Sandra L. Postel and Aaron T. Wolf, “Dehydrating Conflict,” *Foreign Policy*, 18 November 2009.
- 2 UN, “World’s Water Problems Can Be ‘Catalyst for Cooperation’ Says Secretary-General in Message on World Water Day,” UN doc. SG/SM/8139-OBV/262, 26 February 2002.
- 3 These are the 1972 convention that created the Organisation pour la Mise en Valeur du Fleuve Sénégal, the 1978 Convention Concerning the Legal Status of Common Works, and the 1982 Convention Regarding the Methods of Financing Joint Works.
- 4 Winston Yu, “Benefit Sharing in International Rivers: Findings from the Senegal River Basin, the Columbia River Basin, and the Lesotho Highlands Water Project,” Africa Region Water Resources Unit Working Paper no. 1, World Bank, 12 November 2008, 17–23. These cost and benefit sharing numbers have subsequently been revised.

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