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Hydrodiplomacy, Legal and Institutional Aspects of Water Resources Governance

FROM THE INTERNATIONAL TO THE DOMESTIC PERSPECTIVE

Training manual



GGRETA project

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Introduction

Novelty and purpose of the Manual

The approach of combining water diplomacy, international water law, and domestic water law is quite novel and innovative. It has been tested successfully in its full format in a pilot training course held in Tashkent (Uzbekistan, July 2015); events with the same structure were also held in Gaborone (Botswana, May 2015) and San Salvador (El Salvador, November 2015), all of which were organized by UNESCO-IHP, in the framework of the project “*Governance of Groundwater Resources in Transboundary Aquifers (GGRETA)*” funded by the Swiss Agency for Development and Cooperation (SDC). In view of its novelty and successful testing, it has been decided to disseminate the approach through this “Manual” in the hope that it may be adopted by a wide audience of potential users throughout the global water community. Furthermore, this manual is issued with a view to enhance much-needed capacity-building for improved transboundary and correlated domestic water resources governance across the globe.

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Challenges of water governance

Governance of water resources has been propelled high on the agendas of governments and the United Nations and other inter-governmental organizations and agencies, particularly as a result of mounting evidence of water insecurity compounded by climate variability. Its upward trend began developing with the Second World Water Forum (The Hague, 2000), where water governance was identified as one of seven key challenges facing the global water community, and one of the highest priorities for action, and continued progressing through the first *World Water Development Report* (UNESCO-WWAP, 2003), which acknowledged that the looming “water crisis...is a crisis of governance” (p.528). More recently the centrality of water resources governance to the global water community’s agenda was attested to by the UN water family’s vision to implement the post-2015 water-related *Sustainable Development Goal (SDG)* No.6, adopted alongside sixteen other SDGs by the UN General Assembly in September 2015. The *Principles on Water Governance* formally adopted by the Organization for Economic Cooperation and Development (OECD) in June 2015, also point in the direction of the centrality of water resources governance. The *Groundwater Governance Framework for Action*, that provides guiding principles on groundwater governance, was prepared by UNESCO-IHP in cooperation with FAO, the World Bank and other partners as a result of a

four-year project funded by the Global Environment Facility (GEF), that assessed the present groundwater governance status in all regions of the world; it is a valuable tool for countries seeking to improve the management of their groundwater resources and aquifers.

The dimensions of water governance are multiple. Key among them are mechanisms for the prevention of disputes over the allocation and use of scarce water resources, and the legal and institutional regimes created to manage these critical water supplies. The complexity of governing the water resources of rivers, lakes and aquifers that are “transboundary”, i.e., common to two or more States, is compounded by the multiplicity of jurisdictions involved. The challenges ahead for transboundary water governance are formidable. Navigating the competing interests and values of concerned States, and negotiating solutions for governance frameworks that will defuse the conflict potential implicit in such competition looms large.

Germane to this challenge, robust negotiated solutions and governance frameworks for transboundary freshwater bodies must be anchored in the bedrock of international law governing relations among sovereign States with specific regard to the freshwater bodies they have in common. A complementary challenge is translating negotiated solutions for the governance of transboundary freshwater bodies, as well as the obligations stemming from the rules of international water law that have crystallized into agreed governance frameworks, into “action on the ground” at the domestic level of the States concerned.

Moreover, The SDG No.5 stresses the importance of adoption and strengthening sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all level. Governance of water resources cannot be complete without integration of the gender perspective into the regulatory framework, institutional capacity and hydrodiplomatic approach. Gender-sensitive water governance is needed in order to adequately design basic services and allow women to have means and capacity to cope and adapt to increasing competition and climate change induced consequences on water. (UNDP, 2016). Addressing gender inequalities can contribute to the improvement of domestic and transboundary water governance. In that respect, UNESCO WWAP has developed a methodology for sex-disaggregated data collection using multi-sectoral gender-sensitive water indicators, with the aim of advocating for the implementation of gender-sensitive water monitoring in the post-2015 agenda and, in particular, in the monitoring framework of the SDGs

Rationale and scope of the Manual

This Manual is meant to be instrumental for capacity-building in relation to transboundary water conflict prevention and resolution, and to the legal and institutional dimension of transboundary water resources governance. As water management includes also dispute management, the Manual explores first dispute management techniques, with particular attention to alternative dispute resolution (ADR) – methods for resolving disputes outside of litigation – that includes mediation and facilitation of negotiations. ADR seeks to find solutions that are developed through dialogue, which tend to be more robust. Dispute management and ADR take on a particular significance in the context of governance of transboundary water bodies. Next, the Manual explores the legal and institutional dimension of the governance of the water resources of transboundary rivers, lakes, and aquifers. This dimension engages the binding rules of cooperative behaviour for the multiple States partaking of the same river, lake, or aquifer, and multi-State institutional arrangements for cooperation. Both are rooted in a few core principles of international water law, and spring from the will of States to manage conflict and reach a negotiated settlement of competing interests and values through, notably, ADR. Finally, the interplay between the transboundary and the domestic legal and institutional dimension is also canvassed in this Manual from two complementary angles: by looking into general reflections of awareness of, attention to, and concern for, transboundary rivers, lakes, and aquifers in States' domestic water laws; and, perhaps more importantly, by identifying ways for domestic water laws and institutions to align with the rules agreed upon by the States concerned for the management, development, and protection of their transboundary water resources as a vehicle for State compliance with such agreed rules.

A white speech bubble with a pointed tail pointing towards the bottom-left corner, set against a solid red background. The bubble contains the chapter title and subtitle.

Chapter 1.

Water Diplomacy Perspective

The Water Diplomacy

Melissa McCracken and
Aaron T. Wolf

Introduction to Hydropolitics

This chapter provides an introduction to the hydropolitics of water and provides evidence of support for cooperative agreements and increasing institutional capacity of neighboring states to reduce conflict and increase cooperation over shared waters. The development of cooperative agreements and institutions within international basins creates precedence and a pathway to attain negotiated agreements in other transboundary basins and over groundwater. This chapter further discusses the benefits and reasoning for a hydrodiplomatic approach.

Water management includes dispute management. Water, unlike other scarce, consumable resources, is used to fuel all facets of society, from biologies to economies to aesthetics and spiritual practice. Moreover, it fluctuates wildly in space and time, its management is usually fragmented, and it is often subject to vague, arcane, and/or contradictory legal principles. There is no such thing as managing water for a single purpose—*all* water management is multi-objective and based on managing competing interests and values. Within a nation these interests include domestic users, agriculturalists, companies that generate hydropower, recreationists, and environmentalists—any two of which are regularly at odds—and the chances of finding mutually acceptable solutions drop exponentially as more stakeholders

are involved. Add international boundaries, and, without careful re-crafting of the issues involved, the chances of finding acceptable solutions decrease exponentially yet again.

Surface and groundwater that cross international boundaries present increased challenges to regional stability because hydrologic needs can often be overwhelmed by political considerations. While the potential for paralyzing disputes is especially high, history shows that water can catalyze dialogue and cooperation, even between especially contentious riparians, those who live along a river, or those who share an aquifer. (Interestingly, “riparian” has the same root as “rival” signifying that those who share access to a river by nature can have competing interests.)

There are 276 watersheds around the world that cross the boundaries of two or more nations (Wolf et al., 1999; De Stefano et al., 2010), and 592 transboundary aquifers (out of which 366 located outside the EU region) according to the UNESCO transboundary aquifer inventory and the last map (UNESCO IGRAC, 2015) prepared by the UNESCO International Groundwater Resources Assessment Centre (IGRAC). Within each international basin or aquifer, demands from environmental, domestic, and economic users continually increase, while the amount of freshwater in the world remains roughly the same as it has been throughout history. Given the scope of the problems and the resources available to address them, avoiding

violent water conflict is vital. Disputes are expensive, disruptive, and interfere with efforts to relieve human suffering, reduce environmental degradation, and achieve economic growth. Developing the capacity to monitor, predict, and pre-empt transboundary water differences particularly in developing countries, is key to promoting human and environmental security in international river basins, regardless of the scale at which they occur. Yet conflict can yield positive results as well, providing opportunities for dialogue, increased mutual understanding and improved relationships and integrated planning.

Figure 1

International River Basins (Figure 1a) and Transboundary Aquifers of the World (Figure 1b) (see Appendix 1)

There is some room for optimism, though, notably in the global community’s record of resolving water-related disputes along international waterways. For example, the record of acute conflict over international water resources is overwhelmed by the record of cooperation. Moreover, the most vehement enemies around the world either have negotiated water sharing agreements, or are in the process of doing so at the time of writing, and once cooperative water regimes are established through treaty, they turn out to be impressively resilient over time, even between otherwise hostile riparians, and even as conflict is waged over other issues. The precedence set by the positive record of cooperation on

international rivers, highlights the need for similar cooperative water sharing agreements on other transboundary basins and aquifers, and it provides support for cooperation through hydrodiplomacy within these aquifers. Violence over water does not seem strategically rational, hydrographically effective, or economically viable. Shared interests along a waterway or an aquifer seem to consistently outweigh water's conflict-inducing characteristics and also the impacts of climate change.

One productive approach to the development of transboundary waters has been to examine the benefits from an integrative perspective. This has regularly required countries to get past looking at the water as a commodity to be divided, and rather to develop an approach, that equitably allocates not only the water resource, but the benefits derived from it.

A. Why Water Diplomacy?

A general pattern of unilateral development and transformation has emerged over time, known as the 'crisis curve'. Riparians implement water development projects unilaterally first on water within their territory, often without consultation with their neighbors, in attempt to avoid the political intricacies of the shared resource. At some point, one of the riparians, generally the regional power, will implement a project that impacts at least one of its neighbors. This might be to continue

to meet existing uses in the face of decreasing relative water availability. This project, which impacts one's neighbors, can, in the absence of relations or institutions conducive to conflict management, become a flashpoint, heightening tensions and regional instability, and requiring years or, more commonly, decades, to resolve.

In the meantime, water quality and quantity degrade, negatively impacting upon the health of dependent populations, and ecosystems. This problem only worsens as the dispute intensifies. Disparities (economic development, infrastructural capacity, political orientation) between nations further complicate international water resources management. In the case of groundwater, very few agreements or institutions actually exist between countries over the shared used of groundwater, therefore limiting capacity for preventing the intensification of a dispute over groundwater.

As water resources are trigger points for many differences, how can we move debates about the resources beyond entrenched positions? What are some less confrontational approaches that bring competing interests and institutions together to craft workable solutions; ones that build community rather than disrupt it? Can we find solutions and outcomes that work across different scales of both time and space? What are some ways we can work more

peacefully within contentious situations? Experience suggests that 21st century water demands and associated issues will challenge us to seek new strategies. The scarcity of water, depleting resources within these water bodies, historical claims of boundaries, resource access and use are complex issues and it is these complexities we face that call for approaches that foster sustained, long-term stewardship and that connect people with the environment as well as with their communities.

B. Alternative Dispute Resolution (ADR)

Despite the complexity, water disputes do get resolved. The challenge for shared waters is to get ahead of the 'crisis curve' discussed above, by building capacity and cooperative management mechanisms. What then, is the most productive path towards cooperative management and the prevention of conflict? Preventative Diplomacy is where disputes are easier to prevent before they begin; one method of effective application of preventative diplomacy has been preventative negotiations for problem solving (Spector, 2000). Alternative dispute resolution – or the method of resolving disputes outside of litigation – similarly seeks to find solutions that are developed through dialogue, which tend to be more robust. Alternative dispute resolution includes mediation and facilitation in negotiations.

Early intervention with an ADR approach is beneficial to the process of conflict management, as it helps to shift the dispute from impasse dynamics to problem solving. The involvement of stakeholders in this process is crucial to problem solving and the development of a framework for future cooperation. States have engaged in preventative diplomacy and ADR to create positive sum integrative water resources management.

Negotiation, mediation, and facilitation are central concepts of ADR and water conflict transformation. Negotiation is a voluntary bargaining relationship between opposing parties. In a negotiation process the needs and interests of the opposing or disputing parties/stakeholders are considered with the goal of problem solving to reach a mutually acceptable solution. Mediation is also a form of ADR. In mediation, a neutral third party assists the negotiations to help reach consensus on the substantive conflict issue. The goal of mediation is to reach an agreement, which may be through a process set by the mediator. The mediator may also provide guidance or additions to the solutions proposed by the parties. Facilitation is very similar to mediation, where a neutral third party assists the negotiations. Contrastingly to mediation, facilitation often focuses on a dispute that has potential rather than one in conflict. In addition, a facilitator is a leader of the process that

is determined by the participants. Box 1 further defines basic definitions for ADR.

Box 1 – Basic Definitions for Dispute Resolution (see Appendix 1)

C. Cooperation Continuum

Using the basic concepts and definitions with respect to ADR, we can take a further look at the continuum of cooperation types available and where methods of ADR come into play (see Figure 2). Conflict exists on a spectrum of avoidance to escalation. Avoidance represents a conflict that has reached an impasse in negotiations or conflicting parties avoid discussing the conflict entirely. Avoidance can also be a strategy for a more powerful actor, who could receive the benefits desired from the water resource without negotiations. Opposite avoidance is escalation, or the increased intensity of the dispute. The appropriate intervention will vary depending on the status of the conflict. The lower half of the figure shows the various ADR techniques or types of intervention that maybe required depending upon the conflict.

Figure 2

Conflict-Cooperation Continuum (See Appendix 1)

While using ADR, it is important to recognize the distinction between distributive (also known as zero-sum or win-lose) bargaining—negotiating over one set amount, where one party's

gain is the other's loss—and integrative (positive-sum or win-win) bargaining, where the solution is to everyone's gain. Reaching a collaborative arrangement is the goal of integrative bargaining. It depends on identifying values and interests that underlie positions; using these interests as building blocks for durable agreements; diagnosing the causes of conflict and designing processes appropriate to these causes; and focusing on procedural and psychological, as well as substantive satisfaction of parties. Interest-based bargaining or negotiations is the preferred way to accomplish this.

In traditional positional, or distributive, bargaining, parties open with high positions while keeping a low position in mind and they negotiate to some space in between. Sometimes this is all that can be done. In contrast, interest-based, or integrative bargaining involves parties in a collaborative effort to jointly meet each other's needs and satisfy mutual interests. Rather than moving from positions to counter positions toward a compromise settlement, negotiators pursuing an interest-based bargaining approach attempt to identify the interests or needs of other parties prior to developing specific solutions. Often, outside help is needed to facilitate dialogue, rather than to dictate solutions. It essentially is a process of social learning. Parties actually educate each other in their interests, and thus become re-educated in their own interests in the process.

After the interests are identified, the

negotiators jointly search for a variety of settlement options that might satisfy all interests, rather than argue for any single position. This encourages creativity from the parties, especially in technical water management negotiations. Engineers may use their technical knowledge to liberate creativity rather than simply applying it to defending solutions. The process can actually generate solutions that no one person may have thought of before negotiations. The parties select a solution from these jointly generated options. This approach to negotiation is frequently called integrative bargaining because of its emphasis on cooperation, meeting mutual needs, expanding the bargaining options so that a wiser decision, with more benefits to all, can be achieved.

D. Negotiation Techniques

Given the vast array of experiences, what are the best approaches to water negotiations? This answer may prove to be elusive and often conditional, as the best approach may be dependent upon whom is being asked and the particular situation that it is being asked about. Applying a particular script associated with a particular negotiation framework, may not always be appropriate for every water dispute negotiation. Rather it may be more important to utilize aspects from the general water negotiation frameworks to create a specialized approach to each water dispute. For example, negotiation scholars now recommend the value of negotiating less important issues

prior to shifting negotiations towards more significant or sensitive areas of disagreement. Negotiators can “mix and match” different lines of inquiry in order to improvise during negotiations rather than rely on a single framework that may not fit the negotiation strategies of other parties.

There are several principal water negotiation frameworks that are described briefly in the following Box 2. For our purpose, however, we will be focusing on the general water negotiation framework: Four Worlds of Water Conflict Transformation. This framework focuses on identity, or the core motives that influence decisions. It uses varying negotiation stages, common water claims, collaborative skill, and geographic scope to explore and understand the identity behind a conflict and a potential positive-sum outcome.

Box 2: Water Negotiation Frameworks (see Appendix 1)

E. Water Conflict Transformation: Four Worlds

This section focuses on one path to the transformation of water related differences from zero-sum, intractable differences to positive-sum, creative solutions, and centers on a migration of thought generally through four stages: Adversarial, Reflexive, Integrative, and Action, abbreviated ARIA. The ARIA methodology originates from Rothman

(1989) and is a method of engaging conflict as an opportunity to foster creativity and problem solving.

In the initial Stage 1 – *adversarial* – setting, regional geopolitics often overwhelms the capacity for efficient water resources management. Dialogue over these systems is often focused on the past, based on the *rights* – or positions – to which a country feels it is entitled, and a period of expressing pent-up grievances can be necessary. In Stage 2, the *reflexive stage*, negotiations can shift from *rights* to *needs* (what is actually required to fulfil a country's goals). A shift in the negotiations can start to take place where the parties begin to listen a bit more, and where the interests underlying the positions start to become apparent. Conceptually, it is as if we have removed the national boundaries from the map and can, as if for the first time, start to assess the needs of the water system as a whole.

In Stage 3, the *integrative stage*, the needs expressed in Stage 2 begin to coalesce together to form group interests – the “why” underlying the desire for the resource. Conceptually, we start to add *benefits* to the boundary-less map, and to think about how to enhance benefits throughout the region, primarily by adding resources other than water, and geographic units other than the watershed. Stage 4, the *action stage*, helps with tools to guide the sustainable

implementation of the plans that have been developed in Stage 3, and to make sure that the benefits are distributed *equitably* amongst the parties.

Within the Four Worlds Framework, note that all four stages exist simultaneously, and need not be approached in sequence; furthermore, there is not necessarily a “right” stage that must be achieved for “success”. Most basins and aquifers 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 – there is no “right” set of answers. 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 rather than strictly linear. 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 in detail in the following sections, is structured around an understanding of each of the four stages through any of four perspectives, as described in Table 1.

Figure 3

Table 1. Four Worlds of Water Conflict Transformation (See Appendix 1)

■ Four Worlds: Understanding Needs

The 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. Many understand these needs through Abraham Maslow's (1954) hierarchy of needs, which categorizes and ranks basic human needs to their level of motivating behaviour: physiological, safety, belonging, esteem, and self-actualization needs.

The most effective path to understanding the Four Worlds depends on how you learn best. If visual models help, take a look at Figure 3. If you were to look down on the figure in a map view, each state would be within the other – each expands out from, and incorporates, the previous state. Yet from the side, they also rise – not because higher is better, but because higher is higher (in some traditions, each state is associated with different chakras, or centers of energy, each ascending from the one before.

Understanding Needs (see Appendix 1)

A key point to understand about the worlds is that they exist all the time, simultaneously. One intuitive example might be seen through a piece of bread, which exists most recognizably on a physical plane or, if one is hungry or the bread is particularly good, one perceives the bread emotionally. One can also intellectualize the bread and consider its components and interaction with our body to provide sustenance. Finally, one might say a blessing over the bread, removing its “profane” covering, and it now becomes a source of spiritual nourishment. While these four levels of perception can be thought of separately, and might occasionally be achieved in sequence, they should not be considered as distinct or linear. The bread, in this example, exists simultaneously in all four states – it is up to us to determine through which lenses it will be perceived. Nonetheless, understanding the four worlds in sequence is often useful, if not critical. Someone desperately hungry, for example, may have difficulty taking the time and effort to intellectualize anything when offered a piece of bread.

Another point is that one state is not “better” than any other; the object is *not* to get to the “higher” states; each state has its place and vital role. Even those who meditate deeply and regularly, experiencing near-transcendent clarity, need also to ensure the physical body is nourished.

F. Building Negotiation Skills: Four Worlds/ARIA in Detail

■ Stage 1: Adversarial – Rights

The *adversarial* stage, as initially described by Rothman, focuses on bringing to the fore the conflicting parties' positions – or the *what* that defines their stance on the conflict (Davies and Kaufman 2002). Within water disputes, the *adversarial* stage is heavily impacted by the political boundaries that divide a basin or overlay the aquifer. To the disputing parties, these boundaries are at forefront of their positions, more so than any other interest or sector within the region. The initial focus of this stage is on the *rights* that each country or entity believes they are entitled. When rights and positions are primarily fixated on in negotiations, there will be inevitable inequalities and inefficiencies

Initial positions in advance of water negotiations are often extreme, and usually based either on hydrography, i.e. from where a river or aquifer originates and how much of that territory falls within a certain state, or on chronology, i.e. who has been using the water the longest. The "doctrine of absolute sovereignty" is often initially claimed by an upstream riparian. This principle, often referred to as the Harmon Doctrine (for the US attorney general who suggested this stance in 1895 regarding a dispute with Mexico over the Rio Grande), argues

that a state has absolute rights to water flowing through its territory. Considering this doctrine was immediately rejected by Harmon's successor and later officially repudiated by the US (McCaffrey 1996), was never implemented in any water treaty (with the rare exception of some internal tributaries of international waters), was not invoked as a source for judgment in any international water legal ruling, and was explicitly rejected by the international tribunal over the Lac Lanoux case in 1957, the Harmon Doctrine is wildly over-emphasized in academic literature as a principle of international law.

The downstream extreme claim often depends on climate. In a humid watershed, the extreme principle advanced is "the doctrine of absolute riverain integrity," which suggests that every riparian is entitled to the natural flow of a river system crossing its borders. This principle has reached acceptance in the international setting as rarely as absolute sovereignty. In an arid or exotic (humid headwaters region with an arid downstream) watershed, the downstream riparian often has older water infrastructure that is in its interest to defend. The principle that rights are acquired through older use is referred to as "historic rights" (or "prior appropriations" in the US), that is, "first in time, first in right".

These conflicting doctrines of hydrography and chronology clash along many international rivers, with positions usually defined by relative riparian status.

Downstream riparians often receive less rainfall than their upstream neighbors and therefore have depended on river-water for much longer historically. As a consequence, modern “rights-based” disputes often take the form of upstream riparians arguing in favor of the doctrine of absolute sovereignty, with downstream riparians taking the position of historic rights.

These extreme and contradictory positions are neither tenable nor sustainable, and parties almost invariably move beyond their insistence on their own “rights” at the expense of other parties. In order to move from this adversarial, rights-based positioning, we focus on interpersonal skills and relationships, with a strong emphasis on building trust and on the process of conflict transformation. In addition, this stage beginning to identify and analyzes the positions and interests of the parties.

As part of this stage, disputing parties have initial tensions and mistrust in each other. It is often beneficial for participants to walk through the historical context of the conflict, as well as complete a general hydro-political assessment of the current setting of the watershed or aquifer. Since the parties are perceiving the conflict nationally and rights-based, having the opportunity to vent and perhaps address past grievances can be a positive step towards beginning to build confidences. Furthermore, a collaborative discussion of the assessment of the water resource can also be used to build confidence

and trust, even if the disputing parties do not necessarily agree upon the data.

In contentious water related situations, positions are what parties say they want in terms of the resource. Interests however are what these parties really want, and what motivates their needs. Their positions tend to be inflexible, immediate and often deeply held, and results in intractable behavior and action. Interests conversely reflect the broader and longer term aspirations and hopes of the parties involved in any contentious water related situations. In order to move forward towards negotiation and ultimately cooperation and collaboration, it is better to focus on reconciling the interests of contentious parties. This because for every interest there are several possible positions that can satisfy that interest and this provides more options for solutions. Most times, parties tend to adopt the most obvious position and this may be difficult to reconcile. By analyzing the positions of contentious parties, it is apparent that there are often many shared and compatible interests amongst them.

After having a better understand of positions and interests, we can now consider what would motivate parties in any contentious water issues would go beyond their positions and decides to move forward to negotiate their interests to find win-win solutions for each party. To do this we need to consider the barriers and enabling conditions to negotiation and how the barriers can be overcome and the enabling conditions be used to move forward.

Skills should be developed at this level to lead to greater understanding and more mutually satisfying outcomes. The collaborative learning emphasis is on self-awareness of how we communicate and perceive situations, and *trust-building*, such as through active and transformative listening. Trust building skills can open disputing parties up to the possibility that there is more to a situation than originally thought, and help them be willing to listen to other perspectives without believing that they need to change them.

■ Stage 2: Reflexive – Needs

As described above, many sets of negotiations surveyed begin with parties basing their initial positions in terms of *rights* – the sense that a country is entitled to a certain allocation based on hydrography or chronology of use. In most disputes that have actually been resolved, however, particularly on arid or exotic streams, the paradigms used for negotiations have not been “rights-based” at all – neither on relative hydrography nor specifically on chronology of use, but rather “needs-based.” Needs are defined, for example, by irrigable land, population, or the requirements of a specific project.

One might speculate as to why negotiations move from rights-based to needs-based criteria; let’s look at allocation as an example. The first reason may have something to do with the psychology of negotiations, and the natural trajectory through the four levels

of negotiations mentioned here. Where each negotiator may initially see him- or herself as a national first and foremost, where the rights of one’s own country are paramount, over time one must empathize to some degree to notice that even the entity on the other side of the table, regardless of the level of enmity, requires the same amount of water for the same use with the same methods as oneself.

The second reason for the shift from rights to needs may simply be that rights are not quantifiable and needs are. We have seen the vague guidance that the 1997 UN Convention on the Law of the Non-Navigational Uses of International Watercourses provide for allocations – a series of occasionally conflicting parameters that are to be considered as a whole. If two nations insist on their respective rights, there is no spectrum along which to bargain; no common frame of reference. One can much more readily determine a needs-based criterion – irrigable land or population, for example – and quantify each nation’s needs. Even with differing interpretations, once both sides feel comfortable that their minimum quantitative needs are being met, talks eventually turn to straightforward bargaining over numbers along a common spectrum.

Therefore, as the adversarial stage occurs, participants begin to shift away from their rights and nationally based positions towards voicing their *needs* regarding the shared waters. This shift occurs when parties begin to listen

more than speak. In this *reflexive* stage of the negotiations, the tone is more open. Listening becomes pivotal to success, and 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). The goal of this stage is to attempt to shift the nature of negotiations to try to increase the amount of resources available to develop alternative solutions and to maximize mutual gain.

Conceptually, we want to remove the political boundaries from the map of and begin to assess the needs of the basin. This shift towards conceptualizing the watershed as a whole, rather than political segments, is a vital first step toward sustainable management of the water system. Taking the borders “off the map” allows for thinking about water needs by *sector*, rather than purely by political entity. Shifting that emphasis allows for greater cross-boundary efficiencies in *all* sectors, and provides greater opportunities for integrated management. Therefore, the emphasis of this stage is on *skills-building*, such as communication skills or applying listening skills to discover the underlying needs.

Part of the challenge of this stage of the negotiations is the vulnerability some developing countries perceive of themselves, which prevents them from being forthcoming regarding their needs for the shared water. Working towards building the capacity within

developing countries is imperative to creating a more level power structure at the negotiation table. Often developing countries have three main limitations as noted by Kjellen in (Wolf 2010):

a) limitations on knowledge or data, meaning they might have to rely on information from more developed countries, b) financial or economic limitations, and c) limitations on the importance of the environment on the political agenda – other sectors and interests, such as development and economic growth, are likely to be more valued than environmental protection. (Kjellen in Wolf 2010).

While the allocation of water, particularly in international systems, is often contentious, the underlying interests of most countries are to secure the benefits of water use. Focusing on the benefits derived from the use of water in a river system, rather than the physical water itself, provides many more opportunities for defining cooperative management arrangements that are acceptable to all parties. Negotiations focusing on benefits sharing allows for the allocation of water, or water resource development, to be separated from the benefits derived from the water or its development. One fundamental lesson of universal experience is that water is best managed as a unit, such as a basin or aquifer, as often an action in one part will have impacts in another. Just as good water resource management practices can increase the availability of water, integrated planning that maximizes the

benefits derived from water can clearly increase the overall productivity of the system. Furthermore, a focus on sharing the benefits derived from the use of water, rather than the allocation of water itself, provides far greater scope for identifying mutually beneficial cooperative actions.

■ Stage 3: Integrative – Benefits

In the first two stages, participants migrated from speaking to listening and from considering rights to needs. In the third stage, the *integrative* stage, the parties begin to identify the common needs behind the opposing positions. These group needs are the 'why' behind the desire to use the resource. Within Rothman's ARIA model, the *integrative* stage is when parties work to brainstorm to find consensual ideas. Jointly, they answer 'how' to resolve the conflict (Davies and Kaufman 2002).

Looking at water specific conflicts, at this stage the parties are still engaging with the boundary-less map of the basin or aquifer in order to brainstorm benefit enhancements throughout the region, not just within a specific country. The benefits being added to the map can – and should – be resources other than water; this is called expanding the pie. The shift in thinking is from allocating water to allocating benefits. The emphasis in this stage is on *consensus-building*, thinking creatively, and thinking in terms of the

"benefitshed." The benefitshed moves beyond the boundaries to encompass other benefits that could be available to the negotiators. In a sense, this stage is the start of negotiations over the shared waters.

At the heart of this framework is the potential to move from national agendas that are unilateral, to national agendas that incorporate significant cooperation, and to converge upon a shared cooperative agenda. The extent to which this will occur will be determined by each party's perception of the benefits it can secure from cooperation. Convergence towards a cooperative agenda will be facilitated by several important and practical steps. First, the perception of the range and extent of potential benefits needs to be expanded to the extent possible, from the obvious to the less apparent. Second, the distribution of benefits, and benefit-sharing opportunities to redistribute the costs and benefits of cooperation, need to be explored to enable the definition of a cooperative agenda that will be perceived as fair by all parties. Third, alternative modes of cooperation need to be recognized and appropriate types of cooperation identified to secure the greatest net benefits.

A first step in motivating cooperation is to recognize the widest possible range of potential benefits that cooperation could bring. There will be no cooperation if benefits are perceived to be insufficient relative to the costs of cooperation. Benefits are broadly defined here to

include economic, social, environmental and political gains. Integrated, basin-wide water resources management is increasingly recognized as the ultimate goal for ensuring the sustainability and productivity of watersheds and is a challenge in any setting, as the priorities and concerns of myriad users must be reconciled. In the context of international aquifers, moves toward integrated management cannot be made without international cooperation. The complexity and costs of international cooperation can be very great, and must be achieved in the absence of any ultimate entity with the mandate and authority to impose a solution.

Sadoff and Grey (2002) developed a useful framework for broadening the range of recognized benefits of cooperation by proposing the identification of four types of cooperative benefits. This framework was developed in the context of surface water systems; however the concepts are equally applicable to groundwater systems. Their framework is summarized as follows, including applicability to groundwater:

Type 1

- *Benefits to the river* are derived from cooperation that enables better management of ecosystems. All other benefits are underpinned by *benefits to the river*.
- *Benefits to the aquifer* can be achieved, for example, through improved conservation, sustainable use, and increased water quality management;

therefore, environmental cooperation increases *benefits to the aquifer*.

Type 2

- *Benefits from the river* are derived from the efficient, cooperative management and development of shared rivers. Increased food and energy production are examples of *benefits from the river*.
- *Benefits from the aquifer* can be gained, for example, through sustainable use, increasing recharge, and managing extraction; productivity can be improved through cooperation, thereby increasing the economic *benefits from the aquifer*.

Type 3

- *Benefits because of the river* are derived from the lessening of tensions because of cooperation. Tensions between co-riparian states will always be present, to a greater or lesser extent, and those tensions will generate costs; therefore reduction of tension will reduce the costs *because of the river*.
- *Benefits because of the aquifer* can be attained through cooperation and development. Cooperative benefits can reduce tensions between shared-aquifer states and reduce the associated economic and political costs *because of the aquifer*.

Type 4

- *Benefits beyond the river* are derived from greater cooperation between

the states, even economic integration among states. International rivers can be catalytic agents, and this cooperation yields benefits from the river and reduces costs because of the river generating *benefits beyond the river*.

- *Benefits beyond the aquifer* include indirect economic benefits from regional cooperation, such as shared infrastructure and lowered barriers to cooperation in other sectors. In addition, increased collaboration and exchange of information or data between the co-groundwater users is also a *benefit beyond the aquifer*.

In order to develop these cooperative benefits, participants in this stage must develop creative thinking skills as well as consensus building skills, before shifting to the final, action, stage.

■ Stage 4: Action – Equity

The adversarial, reflexive and integrative stages have progressed the negotiations into developing cooperative benefits within benefitsheds, as well as positively improving the group dynamics and relationship between the disputing parties. The watershed, however, is not composed of a benefitshed and the political boundaries do exist. The final *action* stage places the political boundaries back on the benefitshed map. Conceptually, this stage considers the basin at a *regional* scale; it helps to ensure that the benefits created in the integrative stage are distributed

equitably and to aid in the sustainable implementation of the action plans have been developed. The emphasis in this stage is on *capacity-building*, particularly of institutions.

Sharing benefits and costs. A “fair” distribution of benefits and costs is central to achieving sustained cooperation. If significant benefits accrue in one country, while significant costs are borne by another, it is possible that a project providing net benefits on a basin-wide scale could actually generate net losses in any one country. If benefits are simply secured where they are generated under an optimal cooperative scenario, the distribution of benefits this creates may well be perceived as unfair by some countries. Where this initial distribution of benefits from a cooperative management and development scenario is seen as unfair, benefit-sharing mechanisms can play a pivotal role in motivating and sustaining cooperation. Benefit sharing can be defined as any action designed to affect the allocation of costs and benefits. Benefit sharing provides countries with the flexibility to separate the physical distribution of water development (where activities are undertaken), from the economic distribution of benefits (who receives the benefits of those activities). This allows countries to focus firstly on generating aquifer or basin-wide benefits, and secondly on sharing those benefits in a manner that is agreed as fair.

Tools for sharing benefits and costs.
Opportunities and mechanisms for benefit

sharing should be considered from the earliest stages of project identification and design. The form it takes will be highly situation specific, but could involve monetary transfers, granting of rights to use water, financing and ownership of investments, or the provision of non-related goods and services. The range of benefits under discussion is also a critical issue.

The broader the range of benefits under discussion, the more likely states will be able to find a configuration of benefits that is mutually acceptable. While some benefits are difficult to share or compensate, in general the optimization of benefits should be more robust and more flexible than the optimization of physical water resources, because benefits tend to be more easily monetized and compensated.

Guidelines for Equitable Distribution of Benefits. Putting the borders back on the map reminds us of the critical national interests at stake in negotiations. It is not enough, politically speaking, to sustainably develop a region for its own sake – constituents will want to know, justifiably, “what’s in it for us?” Chances are, when the plans for regional development were crafted in the last stage, the benefits were distributed unequally across space. Now with the borders back on the map, it is clear that this inequity translates to nations – some countries and regions will gain greater benefits, and some fewer. In many agreements, principles of international law are called upon to help guide equity.

Recall from Stage I, however, that law offers general guidelines rather than specific formulae for allocating either water or benefits. In the few water treaties that define and allocate benefits rather than water (see Wolf 1999 for examples), benefits are usually defined economically, and mechanisms such as side payments are developed for their equitable distribution.

Institutional Capacity for Sustainable Development. Figuring out in theory what benefits will be developed and how they will be distributed has been a tremendous exercise, but still leaves out who will manage the effort and how. Institutional capacity should be increased to ensure that institutions have: (1) a clear and strong mandate to promote and enhance the institutionalization of good water management and water use throughout all levels of society, (2) an organizational system conducive to effective and efficient management decisions with good incentives, accountability and control, and (3) improved decision support mechanisms through research on lessons learned and the use of indigenous knowledge. Again, crafting institutions requires a balance between the efficiency of integrated management with the sovereignty-protection of national interests. Along with greater integration of scope and authority may come greater efficiency, but also greater potential for disagreements, greater infringement on sovereignty, and greater transaction costs (Feitelson and

Haddad 1998). Simultaneously, bearing in mind the often limited financial and manpower resources of governments, some circumstances may prove that effective and efficient service delivery can be achieved by empowering and strengthening the capabilities of local communities and user groups to assume part of the management responsibility and authority over infrastructure and the resource itself. Such empowerment can often be established simply by providing a formalized platform that allows all interested parties to voice their concern and contribute to the decision making process. Some possible institutional models are offered in Figure 4 below. Nevertheless, for every set of political relations, there is some possible institutional arrangement that will be acceptable (even if it is only to collect data separately but in a unified format, in the hopes that they may one day be merged) and, if its management is iterative and adaptive, responsibility can be regularly “re-crafted” to adapt or even lead political relations.

Figure 4

Conflict – Cooperation Continuum considering Benefits and Institutional Capacity Models (See Appendix 1)

Given that political entities are the primary bodies that are responsible for the benefits and sovereignty within their territories, negotiating parties are unlikely to be able to support a fully integrated water resource management plan without first addressing critical issues. Within the action stage the parties

may encounter issues such as: how the distribution of benefits can be equitable and perceived as fair; how intuitions can be created that are sustainable and resilient; and how existing institutions can be altered and compensated for the change? In many cases, the best form of management is adaptive management, where the intuition is capable of adapting to change and can mitigate the impact of stressors on the institutions sustainability. Therefore, intuitions crafted for implementation of developed plans must balance the integrated management proposed and agreed upon in the negotiations and with the sovereignty of national interests. It is within this stage and process, that the creative solutions proposed must also be considered within the context of international and domestic water law to ensure their legality and their legal sustainability.

Chapter 2.

Transboundary

Legal Perspective

International Water Law

Gabriel Eckstein

Introduction to International Law

A. What is International Law

International law is the accepted set of rules that govern the conduct and relations of states. It serves as a framework for state conduct and a mechanism for encouraging stability and consistency in international relations among nations.

International law differs from domestic legal systems in a number of important ways. First, the key actors under international law who possess rights and obligations are nation-states. In other words, international law is primarily applicable to nation-states, and only applies to private citizens and business entities under special circumstances.

Second, while most national legal systems employ a central law-making body or legislature to make the laws, an executive to implement and enforce such laws, and a judiciary to interpret the laws, international law operates in an entirely different manner. With some exceptions, the development, implementation, and enforcement aspects of international law are based on negotiated agreements. This means that states typically are not bound to a particular international obligation unless they have expressed their consent to comply with that requirement.

Sovereignty is the chief explanation and justification for this consent-based approach to international law. Sovereignty refers to the supreme, absolute and uncontrollable power by which a state may govern itself. It applies internally and affords the state the power to rule within its territory, as well as externally where it has the freedom to carry out its activities without interference or control by other states. In the international arena, traditional sovereignty is limited only where one nation's rights interfere with those of another.

As a result, international legal rules develop when states need to cooperate with other states, or otherwise where national interests are aligned. These needs and aligned interests, in turn, create incentives for states to comply with international law.

B. How is International Law Created

International law is formed through the mutual consent of nations that is provided by the states either explicitly in a written agreement (codified international law), or through their consistent adherence to certain conduct (customary international law). Both sources of law are critical to the development of international law and can operate in tandem.

■ Codified International Law

Codified international law encompasses all written agreements that are intended

to be legally binding instruments by the states parties to such agreements. While these agreements may be called conventions, treaties, pacts, protocols, charters, and letter agreements, the important criteria are that they be 1) in written form, and 2) specifically intended to be both legally binding and governed by international law. As such, codified international law does not apply to written instruments that are not intended to be legally binding, such as declarations, resolutions, and memoranda of agreement.

A treaty or other written agreement between nations is like a legal contract between individuals or business entities and binds all of the parties based on their consent to be obligated. Treaties typically address issues that transcend national boundaries and that require cooperation and coordination among the states. Moreover, they can codify existing, well-accepted international norms, as well as create new binding rules based on specific circumstances.

■ Customary International Law

Customary international law refers to international commitments arising from established state practices rather than from written obligations. It results from 1) a general and consistent conduct of states that is 2) followed from a sense that such behavior is both legally appropriate and mandated. The first component is described as "state

practice,” and reflects a need to show that a significant number of states are abiding by certain conduct over time. The second component, termed “*opinio juris*,” requires that the conduct be pursued out of a sense of legal obligation rather than moral responsibility or threat of reprisal.

Customary international law differs from conventional international law in the sense that it exists, even in its unwritten form. This is not to say that codified and customary international law are mutually exclusive. Articulations of customary international law are often found in bilateral and multilateral treaties and conventions. Likewise, a norm found in numerous international agreements could be deemed a part of customary international law where the number of states that are bound to the specific treaty, and which conform their conduct to the particular conduct or norm, becomes significant.

■ Additional Sources of International Law

Two other sources of international law should be mentioned: general principles of law, and subsidiary sources of international law.

“General principles of law” refers to law derived from the domestic practices of the majority of legal systems around the world. Such general principles can include legal norms that are broadly recognized – such as rules relating to estoppel and proportionality, the

principle of good faith, and prohibitions against slavery – and are identified through inference, analogy, and inductive reasoning from existing international or domestic (national) laws. General principles of law are only utilized in the rare instance where rules of codified or customary international law are lacking or inadequate.

“Subsidiary” sources of international law refer to sources regarded as of secondary, rather than primary, significance. They include decisions of international and domestic courts and tribunals, as well as the published interpretations of the most highly qualified scholars from around the world. While judges and scholars do not create law in the international arena, their analysis of state practice and international norms can serve as evidence of customary international law.

C. Enforcement of International Law

While international law is a form of law, it operates very differently from the domestic legal systems of states. Enforcement, for example, does not occur through an executive branch of government using enforcement officers. Rather, because international law functions as a consent-based form of governance, enforcement of international law is achieved through collective action and reciprocity. Thus, collective economic, diplomatic, and military sanctions are the tools most often used

as mechanisms for enforcing international obligations. Such sanctions may be imposed through the United Nations, by regional intergovernmental organizations (s.a., European Union or Organization of American States), by informal coalitions of nations, and occasionally by individual states. As a result, the notion of reciprocity also acts as a form of enforcement of international law. In other words, states are more likely to abide by an agreement or negotiate a resolution to a dispute in order to receive the same treatment.

Of course, international law may also be addressed through international tribunals. Such tribunals, however, are not compulsory and require the consent of the disputing states to have the matter adjudicated by the panel, as well as to accept the judgment of the panel. While the International Court of Justice and International Court of Arbitration are two examples of permanent tribunals, there are others that are established on an ad hoc basis and, therefore, have only temporary existence for the purpose of an adjudication.

D. Hierarchy in International Law

Treaties and convention generally reign supreme in international law as they comprise ratified formal agreements (like contracts) between nations. Next in the hierarchy come customary international law, which are obligatory to the extent that they do not conflict

with commitments contained in treaties and conventions. Third in the hierarchy are generally accepted principles of law, which usually are used only where gaps exist in codified and customary international law. While the above three sources of law are regarded as primary sources, judicial decisions and the writings of highly qualified scholars are viewed as subsidiary sources of international law. These latter sources are typically used to bolster the existence of legal norms found in codified and customary international law, or referenced to support arguments regarding emerging trends in the law.

While the above hierarchy of law is widely recognized, it is not absolute. The international legal system acknowledges a number of important exceptions.

■ Peremptory Norms

Certain norms of customary international law are regarded as being of such fundamental importance that they are recognized as peremptory or *jus cogens* norms. These are norms from which no derogation is ever permitted and include prohibitions against slavery, crimes against humanity, and other highly egregious acts.

■ Conflict in Laws

Where two principles of law apply to the same factual situation but where those two norms conflict, two principles of law may be utilized. Where the two laws differ in their specificity – one law addresses

the subject matter generally, while the other law addresses it more specifically – the principle of *lex specialis derogat legi generali* provides that the law governing the specific subject matter (*lex specialis*) overrides the law that only governs general matters (*lex generalis*). Thus, for example, where a regional or global convention provides generally for the equitable allocation of water between two states, but a treaty between the two nations allots the water in disproportionate proportion, the treaty provision would override the more general obligation. Where both laws equally address the subject matter in terms of specificity, the “last-in-time” rule usually applies. In other words, a treaty with a particular rule (or a new customary practice) would supersede an older treaty or customary practice that proffers a contrary rule.

Introduction to International Water Law

A. What is International Water Law

International water law encompasses the accepted set of rules governing relations among nations over fresh water resources. It provides a general framework for state conduct in the regulation, allocation, management, and protection of transboundary freshwater bodies, such as rivers, lakes, wetlands, and aquifers.

B. Scope of International Water Law

International water law generally applies to fresh water resources. It does not apply to marine or oceanic water where a separate body of law – “Maritime Law” and the “Law of the Seas” – applies. It also does not apply to fresh water bodies that are entirely domestic, but rather only to those that are systemically connected within a transboundary drainage basin, also described as a “watercourse.”

Under the 1997 *UN Convention on the Law of the Non-Navigational Uses of International Watercourses*, the most prominent articulation and codification of international water law, a “watercourse” is defined as “a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus,” while an “International watercourse” refers to “a watercourse, parts of which are situated in different states.” Considered together, the term watercourse is conceived broadly and encompasses the entire system of interrelated waters in a drainage basin or catchment, including tributaries, that traverses an international political boundary.

The interpretation of watercourse under the 1997 UN Watercourses Convention also extends to certain, but not all, ground water resources. Based on the definition of watercourse, only aquifers

that are systemically (hydraulically) linked to a transboundary river or lake and that normally flow to a common terminus are covered by the norms articulated in the Convention. Aquifers that do not have a hydraulic connection to a transboundary surface water body, such as fossil aquifers, fall outside the scope of the Watercourses Convention, even where the unconnected aquifer itself is transboundary.

C. Principle Tenets of International Water Law

As with every facet of international law, international water law is the product of decades of legal development. It is comprised of customs and principles that have been interpreted and refined by nations and negotiators, national legislatures and scholars. International water law originated with the uncompromising notions of absolute territorial sovereignty and absolute territorial integrity. The first supported primarily the claims of upstream states to the unrestrained use of resources found within their territories, regardless of transboundary and downstream consequences. The latter provided lower riparian nations with the right to the undiminished natural flow of a river's flow, regardless of any limitations it may impose on upstream nations. Given their absolutist and intractable nature, it suffices to say that both notions have been decisively rejected by the international community.

Today, a form of limited sovereignty applies globally for transboundary watercourses. In essence, this approach calls for the recognition that all riparians to a particular transboundary water body have rights to that shared resources. In other words, a state's sovereignty is only unlimited until it interferes with the sovereign rights of another state. Moreover, this limited sovereignty approach recognizes that for nations to maximize their rights, they must engage in a minimum degree of cooperation with their riparian neighbors. Under this general rubric, international water law now recognizes at least two substantive and three procedural legal obligations.

■ Substantive Obligations under International Water Law

Equitable and reasonable utilization

The rule of equitable and reasonable utilization is the one of the cornerstones of international water law and is fundamental to the peaceful management of transboundary water resources. The obligation requires each riparian state to continuously ensure that its uses of the waters of a transboundary watercourse are both equitable and reasonable in relation to the interests and uses of other riparian states.

In most situations, equity is interpreted in terms of an equitable share of the benefits (but not necessarily the water)

of a watercourse, while reasonableness is interpreted in terms of the appropriateness of the particular use of the water under all of the relevant circumstances. What constitutes equitable and reasonable in a given situation is assessed through an analysis of all germane factors and conditions, such as: geographic, hydrologic, hydrographic, climatic and ecological circumstances; prior, existing, and potential uses of the waters; social and economic needs of each state; feasibility of alternatives to the proposed project; and compensation as a means for resolving conflicts.

Such an assessment can, but need not be an objective calculation and can be achieved through diplomacy and negotiated conclusions. For example, where riparian states agree to allocate the vast majority of a river's volume to one nation based on a negotiated settlement, the outcome could still be deemed equitable and reasonable so long as the parties engaged in fair negotiations.

The determination of equitable and reasonable utilization, however, does not result in a permanent outcome. Rather, it is a dynamic process that, over time, is subject to changing circumstances. For example, a prolonged drought or significance population growth could require the reinterpretation of a previously achieved accord over what constitutes equitable and reasonable on a watercourse. As a result, the principle of equitable and reasonable utilization requires regular communication and cooperation among the riparians.

No significant harm

The rule of no significant harm is also regarded as a fundamental principle of international water law. The principle refers to the obligations of states to not cause another state significant harm through the use of a transboundary watercourse. Application of this notion requires an understanding that harm is generally defined in terms of an impact on the people or the interests of another state in the use of the watercourse. A negative impact to the environment by itself, and which does not affect the population, economic development, or other critical interests of a nation, might not be actionable. Additionally, only those harmful impacts that rise to the level of "significant" will violate the norm. What is deemed as "significant" will depend on the degree of harm that has historically been acceptable under normal conditions, as well as the actual impairment or damages caused by the conduct. Regardless, the negative impact must be higher than merely perceptible or trivial, but can be less than severe or substantial in order for it to be deemed a violation.

In addition, the duty to prevent significant harm to other riparian states is not absolute. Rather, it is based on a due diligence standard, which means that a country must exercise its best efforts to prevent such harm. Hence, compliance with the obligation is, in part, a function of a country's ability to fulfill the obligation. Countries lacking financial or technical resources would be afforded greater leniency in fulfilling this

obligation, while those with the required competence and assets will be held to a stricter standard.

While the principles of equitable and reasonable utilization and no significant harm are not mutually exclusive, it is conceivable that one state's use of a transboundary watercourse could cause another state significant harm, but could also be deemed an equitable and reasonable use. For example, the diversion by a drought-stricken upstream nation of the majority of the flow of a transboundary river might result in a substantial decrease in water reaching a downstream riparian that rises to the level of significant harm. However, if the downstream riparian has alternative sources of freshwater available, the diversion could be deemed equitable and reasonable under the circumstances. While the dispute has been debated among scholars, the majority and better view is that the no significant harm rule is subordinate to that of equitable and reasonable utilization. In other words, if a use is equitable and reasonable, it is justifiable even if it causes significant harm.

■ Procedural Obligations under International Water Law

Cooperation

International law, and specifically international water law, imposes a duty on all states to cooperate. Cooperation is, in fact, absolutely necessary to ensure

good relations in the international arena. In the context of a watercourse, this means that riparian states must engage each other, at the very least, when they encounter a conflict over the uses of the watercourse.

Implementing such cooperation clearly overlaps with all of the procedural obligations discussed in the following section. Nonetheless, the duty to cooperate is itself a separate, procedural obligation under international water law. It reflects that fact that cooperation is grounded in good faith and must be affirmatively pursued. Thus, for example, unnecessary delays or systematic refusals to consider proposals by other riparians, or even superficial cooperation without an intention to achieve an accord, could be deemed a violation of the obligation.

Regular Exchange of Data and Information

The need to exchange data and information on the conditions of a transboundary watercourse is unequivocal. Without the sharing of such material, the activities of each riparian state will be hampered by an inability to fully project and mitigate any deleterious consequences that might result from the utilization of the watercourse. Thus, the obligation is intended to ensure that all riparian states possess the facts necessary to utilize the transboundary watercourse in an equitable and reasonable manner, as well as in a manner that prevents or minimizes significant harm.

The obligation to exchange data and information, however, is not a static requirement. Since watercourse conditions and climates can vary substantially, the obligation requires a “regular” exchange, meaning that the sharing of material must be conducted on a systematic and ongoing basis.

While the precise types of data and information that must be shared is not always detailed, when read in concert with the chief obligation of equitable and reasonable utilization, it is evident that the material should encompass watercourse-related data and information, such as: geographic, hydrologic, hydrographic, climatic and ecological conditions; prior, existing, and potential uses of the waters; social and economic needs of each state; existing and proposed projects; and availability of alternative sources of fresh water.

Where a state has been asked to provide data or information that is not readily available, the requested state must employ its “best efforts” to comply with the request. In other words, it must provide all material that can be readily generated or collected, must not stall for time, and must not provide irrelevant material. The requested state, however, may require a reasonable charge to cover the costs of generating or collecting that data or information.

Prior Notification of Planned Measures

The duty to provide prior notification of planned measures is a procedural

mechanism designed both to encourage communications and cooperation, and to minimize the possibility that a proposed activity might cause the violation of the principles of equitable and reasonable utilization or no significant harm.

Fundamentally, the obligation requires a state that is planning an activity related to a transboundary watercourse, and that might be prejudicial to other riparian states, to notify those potentially affected states. In order to provide the potentially affected state context, such notification must be accompanied with all readily accessible and relevant data and information that has been generated and collected about the planned measures. Once notification is provided, the state planning the activity has a duty to consult with the potentially affected states. All states involved are then expected to arrive at an equitable resolution regarding any differences between them pertaining to the planned activity.

D. Sources of International Water Law

■ Codified International Water Law

The most prominent and authoritative codification of International Water Law is the *1997 UN Convention on the Law of the Non-navigational Uses of International Watercourses*. Adopted by the UN General Assembly on 21 May 1997, the Watercourses Convention

entered into force on 17 August 2014 when the 35th nation (Vietnam) submitted its notice of ratification. As of 1 January 2015, the Convention had been ratified by 36 Parties.

While regarded as a European Convention, the Member States of the *1992 UN/ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes* recently initiated action to open that instrument to global membership. The 1992 UN/ECE Convention, was originally opened for membership on 17 March 1992, and came into force on 6 October 1996. As of 29 December 2015, the Convention had been ratified by 41 Parties including the European Union.

■ Customary International Water Law

By its very nature, customary International Water Law is unwritten law. Hence, evidence for such customary laws is reliant on the publications of prominent scholars and on the work-product of non-governmental organizations whose purpose is to compile the status of International Law. A number of the more prominent publications addressing customary international water law can be found in the section IV (Reference for International Water Law).

The most prominent non-governmental organization whose purpose is to compile the status of international law is the International Law Association (ILA).

Because of its unofficial status, the ILA's work-product is not considered to be an official source of international law. Nevertheless, the Association has always been held in the highest regard and its compilations are often cited as evidence of the state of international water law. The most influential ILA reports include:

- Helsinki Rules on the Uses of the Waters of International Rivers and Comments, in Report of the Fifty-Second Conference 484, Article II (1966)
- The Seoul Rules on International Groundwaters, in Report of the Sixty-Second Conference 251 (1987)

E. International Water Law and Transboundary Aquifers

While the scope of the UN Watercourses Convention does apply to many transboundary aquifers, there is an ongoing debate whether the same principles of law should apply equally and in a similar manner to surface as well as subsurface water resources. Consider that while over 3,600 treaties relating to the use of the world's 276 transboundary surface waters have been catalogued since 805 CE, there are only six¹ transboundary aquifers globally with a formal agreement in force out of around 600 transboundary aquifers that have been catalogued to date by UNESCO (UNESCO IGRAC, 2015). Clearly,

1. Northern Western Saharan Aquifer System, Iullemeden Aquifer, Nubian Sandstone Aquifer, Guarani Aquifer, Genevese Aquifer, and Disi Aquifer.

experience in and knowledge about managing transboundary aquifers is limited. Moreover, many transboundary aquifers are either disconnected from all river basins or lie underneath multiple river basins, resulting in circumstances that are distinct from those found in most transboundary rivers and lakes. As a result, the status of international law for transboundary ground water resources is still in a very early stage of development.

It is noteworthy that in 2008, the UN International Law Commission submitted its proposals to the United Nations General Assembly in the form of Draft Articles on the Law of Transboundary Aquifers (Draft Articles). While the Draft Articles followed closely the structure of the UN Watercourses Convention, there were a number of significant alterations that accounted for the particular differences between surface and ground water bodies.

Taking into account the Draft Articles, the existing handful of agreements covering a transboundary aquifer, and the analysis of prominent scholars, a number of procedural norms for the management of transboundary aquifers appear to be emerging as customary norms of international law. Those include the aforementioned regular exchange of data and information, and prior notification of planned activities. They also include the corollary obligations to generate supplemental data and information on an on-going basis through monitoring and related activities, as well

as to create an institutional mechanism to facilitate or implement the agreement.

F. International Water Law and Joint Institutional Mechanisms

Authorities, commissions, councils, and other institutional mechanisms are especially relevant to the management, allocation, protection, and development of international watercourses. They can help facilitate the procedural obligations noted above as well as minimize conditions that might implicate violations of the substantive international water law norms. Globally, there are at least 105 transboundary surface water bodies and eight transboundary aquifers that utilize some form of joint institutional mechanism (Eckstein and Sindico, 2014).

There is no ideal structure for an institutional mechanism. Such entities must be designed and organized in relation to political, social, economic, and environmental circumstances, as well as economic and technical capacities. They can be in the form of independent joint authorities with full legal personality and supranational character and authority, as was created by Mali, Mauritania, and Senegal in the Organization for the Development of the Senegal River, and by Mexico and the United States in the International Boundary and Water Commission.

Institutional mechanisms can also be structured as joint commissions with

political and administrative components that operate in a consultative capacity to the respective riparian governments. While the political division typically develops recommendations for managing the watercourse, the administrative division manages the daily responsibilities of the entity. Commissions occasionally also include a technical committee to provide background studies and technical expertise. Example of such commissions include the Genevese Aquifer Management Commission established by France and Switzerland to coordinate the exchange of information, monitoring,

and ground water exploitation, and the Permanent Okavango River Basin Water Commission created by Angola, Botswana, and Namibia with the objective of acting as “technical advisor to the Contracting Parties ... on matters relating to the conservation, development and utilisation of the resources.”

Other formats for joint institutional mechanisms that have been utilized on various transboundary rivers, lakes, and aquifers around the world include executive councils, consultative committees, and advisory boards.

Chapter 3.

Bridging Perspective

Linking International Water Law and Domestic Water Law

Stefano Burchi

Introduction – the “bridging” perspective

As has been illustrated in Chapter 2, international water law encompasses the accepted set of rules governing relations among sovereign nations over fresh water resources. It provides a general framework for state conduct in the regulation, allocation, management, and protection of transboundary freshwater bodies, i.e., rivers, lakes, wetlands, and aquifers which form or are bi-sected by an international boundary line. This is contrasted to domestic water law, which encompasses the accepted set of rules governing relations among people, private and public corporations, and the government in a given nation over that nation's freshwater resources, up to the international border with neighbouring nations. Beyond such border, the nation's domestic water law ceases to have effect, and that of the neighbouring nation(s) steps in and controls, inside the respective borders.

International and domestic water law have, as a result, clearly separate ambits of application, and obey separate norms, setting one apart from the other. Yet, freshwater bodies that form or are traversed by the international boundary lines between or among nations attract both sets of norms, the international as two or more nations are involved, but also the domestic as the domestic water law of each nation involved applies, up to the border with fellow nations partaking of the same freshwater body.

The resulting overlap, where boundary and trans-boundary freshwater bodies are governed, at one and the same time, by international water law and by the domestic water law of the concerned nations, suggests the existence of a grey area where the two sets of norms meet and interact, without mixing in view of their profound diversity. It is such grey area where “bridging” plays itself out, and where the contours and modes of interaction between international water law and domestic water law need mapping out.

For one thing, the boundary or trans-boundary character of freshwater bodies tends increasingly to reverberate in the domestic water laws of the nations where such freshwater bodies represent a significant share in the makeup of the freshwater resources of those nations. In addition and perhaps more importantly, the norms posited by international water law must be complied with, and implemented, by the concerned nations inside their respective borders. This is achieved principally through the domestic water laws of each concerned country, which must be aligned with the norms – obligations, rights, standards – deriving from international water law, as these have absolute priority over domestic norms. As has been flagged in Chapter 2, however, alignment of domestic water laws and compliance with international water-related obligations are not automatic, nor a foregone conclusion, for the latter may be difficult to respect and

fulfill and may, as a result, be ignored or modified by States as circumstances on the ground and the political agendas dictate. Besides, as already noted in Chapter 2, one of the challenges of the international legal system is the lack of an international police force that can enforce international obligations in general, and international water-related obligations in particular, and that can force a recalcitrant State to align its domestic water laws as required by international obligations.

With these caveats, the grey area where international water law and domestic water law meet and interact, as well as relevant modes of interaction, can be described by reference to:

- reverberations in the domestic water laws of awareness of, attention to, and concern for, the boundary or trans-boundary nature of that part of the nation’s freshwater bodies that mark, or are traversed by, the international boundary lines with neighbouring nations; and
- domestic compliance with, and implementation of, norms of inter-State behaviour stemming from international water law sources, notably, treaties and agreements, via alignment of the domestic water laws of concerned nations with such norms of inter-State behaviour.

This area and modes of interaction will be explored in the sections that follow, *seriatim*.

A. Reverberations of international water law in the domestic water laws

Increasingly, reverberations of international water law can be found in the domestic water laws, particularly of nations where boundary and trans-boundary freshwater bodies are a significant component in the makeup of the nation's freshwater resources. Awareness of, attention to, and concern for, the boundary or trans-boundary nature of that part of the nation's freshwater bodies that mark, or are traversed by, the international boundary lines with neighbouring nations reverberate in the domestic water laws in a variety of ways, illustrative of different modes of interaction:

- through the provision in the water laws of policy directions to Government agents/bodies regarding the negotiation of treaties and agreements with the country's neighbours, or domestic action, regarding boundary and trans-boundary freshwater bodies (Bangladesh, Water Act 2013, Art.7; Bhutan, Water Act 2011, Art.78; Kyrgyzstan, Law of 29 June 2001 on Water Objects, Water Resources and Water Economy Constructions in the Kyrgyz Republic; Namibia, Water Resources Management Act 2013, Arts.28 and 29; Peru, Law on Water Resources 2009, Art.33; South Africa, National Water Act 1998, Arts.102-107; Tanzania, Water Resources Management Act 2009, Arts.98-100; Zambia, Water Resources Management Act 2011, Arts.56-58; Vietnam, Law on Water Resources 2012, Arts.27.2, 55.1(e), 67, 68);
- through provisions in the water laws that empower special-purpose institutions for the formulation of policy and guidance in the matter of boundary and trans-boundary freshwater bodies (Armenia, Water Code 2002, Art.64; Uruguay, Law 18.610 of 2009 carrying the Principles for a National Water Policy, Arts.8, 25, 26 and 29; Honduras, Law on Water Resources 2009, Art.22);
- through provisions in the water laws that assert a position of principle regarding the country's boundary and trans-boundary freshwater bodies (Cambodia, Law on Water Resources Management 2007, Art.34; Paraguay, Law on Water Resources 2007, Art.8; Zambia, Water Resources Management Act 2011, Arts.55 and 57(2); Vietnam, Law on Water Resources 2012, Arts.66 and 69);
- through provisions in the water laws that weave consideration of the country's international water-related obligations in the fabric of water resources planning (Vietnam, Law on Water Resources, 2012, Art.17.6), and of the domestic governmental decision-making process leading up to the grant – or denial – of water abstraction licenses/concessions and of wastewater discharge permits to freshwater bodies (Namibia, Water

Resources Management Act 2013, Arts.45(2)(g)(ii) and 75(1)(g); South Africa, National Water Act 1998, Arts.27(1)(j), 45(2)(a)).

B. Aligning domestic water laws with international water law

The prime instrument of domestic compliance with the norms of inter-State behaviour in relation to boundary or trans-boundary freshwater bodies and with the rights and obligations stemming from treaties and agreements a particular nation stipulates with neighbouring nations, are the domestic water resources laws of that nation. In view of the primacy of international law over domestic law as a matter of over-arching law and principle, domestic water laws must be aligned with international treaties and agreements if compliance with the latter is to be achieved.

For the purposes of this Manual, alignment will be explored and illustrated by reference to selected features of the Integrated Water Resources Management (IWRM) paradigm, which is reflected in the contemporary domestic water laws of a vast majority of nations across the globe, as well as in many a treaty and agreement over boundary or trans-boundary freshwater bodies. Such select features are:

- the allocation of water resources to competing uses and users, and

- the protection of water resources from pollution.

■ Allocation of water resources

When a treaty or agreement over a boundary or trans-boundary freshwater body provides, explicitly or also by implication, for the allocation of the water resources of such boundary or trans-boundary freshwater body among the nations that are a Party to such treaty or agreement, the domestic water laws of the Parties must respond by putting in place a domestic allocation mechanism capable of ensuring respect domestically for the allocations agreed by the Parties to the agreement. For if such a mechanism is not in place domestically, and as a result, the nationals of any Party are at complete freedom to abstract as much water as they need or like from a boundary or trans-boundary freshwater body covered by an agreement, how will any Party to the agreement be able to ensure that the agreed volumes or flows to be delivered to the other Party or Parties across the border will actually be available?

The point will be illustrated by reference to selected boundary and trans-boundary freshwater treaties and agreements, by contrasting the relevant water allocation provisions against the domestic water laws of the nations that are a Party to such treaties and agreements.

Example 1 – Revised Protocol on Shared Water Resources in the Southern African Development Community (SADC), 2000

Article 4

Specific Provisions

4. *Prevention and Mitigation of Harmful Conditions*

- *(b) State Parties shall require any person intending to use the waters of a shared watercourse within their respective territories for purposes other than domestic or environmental use or who intends to discharge any type of waste into such waters, to first obtain a permit, licence or other similar authorisation from the relevant authority within the State concerned. The permit or other similar authorisation shall be granted only after such State has determined that the intended use or discharge will not cause significant harm on the regime of the watercourse. [emphasis added]*

As can be readily seen, Article 4.4(b) of the SADC Protocol is very explicit when it requires the domestic water laws of the twelve continental nations that are a Party to the Protocol to subordinate water abstractions in general, and abstractions from shared water resources in particular, to a “permit, licence or other similar authorization” from a competent authority of the nations concerned. Unless a system of water abstraction “permits, licences” or the likes is in place in the domestic legal system of the States Party to the Protocol, there is no way they can comply with the Protocol’s provision, and with the obligation stemming from it. As this Manual is not the place for an in-depth review of the domestic water laws of each of the twelve continental nations that are a Party to the SADC Protocol, for the purposes of this Manual suffice it to say:

- that at first glance, Namibia, South Africa, Tanzania and Zambia have modern water laws, all of which provide for government-administered water abstraction licensing, meeting the requirements of the SADC Protocol’s provision above-mentioned;
- however, the effectiveness and degree of operationalization “on the ground” of those laws in general, and of the provisions on water abstraction licensing/permitting in particular, varies, thus casting a shadow of doubt on the actual responsiveness of those water laws to the requirements of the SADC Protocol.

Example 2 – Tripartite Interim Agreement between the Republic of Mozambique and the Republic of South Africa and the Kingdom of Swaziland for Co-operation in the Protection and Sustainable Utilization of the Water Resources of the Incomati and Maputo Watercourses, 2002

Article 9

Flow Regimes

(2) *Any abstraction of waters from the Incomati or Maputo watercourses, regardless of the use or geographic destination of such waters, shall be in conformity with the flow regimes of Annex I and relevant provisions of this Agreement and its Annexes.*

...

The Tripartite Interim Agreement (TIA) is not so explicit as the SADC Protocol as regards the domestic water law requirements stemming from its provision in Article 9(2). The implication, however, is very clear that, in order for “any abstraction” of water from the nominated trans-boundary rivers to be in conformity with the agreed “flow regimes” and, in particular, with the agreed allocations among the three nations Party to the TIA, there must be in place in each of the Parties legislation providing for the subordination of water abstraction in general, including abstractions from the Incomati and Maputo rivers, to government-administered licences, concessions, authorizations or the likes. As with the SADC Protocol, unless a system of water abstraction licences, concessions or the likes is in place in the domestic legal system of the States Party to the TIA, there is no way these can comply with the agreement’s water allocation provisions, and with the obligations stemming from them. As this Manual is not the place for an in-depth review of the domestic water laws of each of the Parties to the TIA, for the purposes of this Manual suffice it to say:

- that at first glance, Mozambique, South Africa and Swaziland all have modern and comprehensive water laws, all of which provide for government-administered water abstraction licensing, meeting the requirements of the TIA’s water allocation provisions above-mentioned;
- however, the effectiveness and degree of operationalization “on the ground” of those laws in general, and of the provisions on water abstraction licensing/permitting in particular, varies, thus casting a shadow of doubt on the actual responsiveness of those water laws to the requirements of the TIA.

■ Protection of water resources from pollution

When a treaty or agreement over a boundary or trans-boundary freshwater body provides for the protection of water resources from pollution originating from within the nations that are a Party to such treaty or agreement, the domestic water laws of the Parties must have in place mechanisms – notably, a wastewater discharge permit or authorization system - capable of ensuring respect domestically for the pollution abatement/control targets or other restrictions agreed by the Parties to the agreement. For if such a mechanism is not in place domestically,

and if, as a result, the nationals of any Party are at freedom to pollute a boundary or trans-boundary freshwater body covered by an agreement, how will any Party to the agreement be able to ensure that the agreed water quality targets or other agreed restrictions are achieved for the boundary or trans-boundary water body eventually?

The point will be illustrated by reference to selected boundary and trans-boundary freshwater treaties and agreements, by contrasting the relevant water pollution control provisions against the domestic water laws of the nations that are a Party to such treaties and agreements.

Example 1 – Revised Protocol on Shared Water Resources in the Southern African Development Community (SADC), 2000

Article 4

Specific Provisions

2. *Environmental Protection and Preservation*

b) *Prevention, reduction and control of pollution*

iii) *State Parties shall, at the request of any one or more of them, consult with a view to arriving at mutually agreeable measures and methods to prevent, reduce and control pollution of a shared watercourse, such as:*

- *setting joint water quality objectives and criteria;*
- *establishing techniques and practices to address pollution from point and non-point sources;*

cc) *establishing lists of substances the introduction of which, into the waters of a shared watercourse, is to be prohibited, limited, investigated or monitored.*

4. *Prevention and Mitigation of Harmful Conditions*

(b) State Parties shall require any person intending to use the waters of a shared watercourse within their respective territories for purposes other than domestic or environmental use or who intends to discharge any type of waste into such waters, to first obtain a permit, licence or other similar authorisation from the relevant authority within the State concerned. The permit or other similar authorisation shall be granted only after such State has determined that the intended use or discharge will not cause significant harm on the regime of the watercourse. [emphasis added]

It is readily apparent that Article 4.4(b) of the SADC Protocol is very explicit when it requires the domestic water laws of the twelve continental nations that are a Party to the Protocol to subordinate waste discharges in general, and waste discharges to shared water resources in particular, to a “permit, or other similar authorization” from a competent authority of the nations concerned. Moreover, Article 4.2(b)(iii) is equally explicit when it directs the Parties to craft complementary, pollution-specific measures like “water quality objectives and criteria”, “lists of substances” to be prohibited or restricted, or also less precise measures like generic “techniques and practices” for the control of pollution from both point- and non-point sources. The difference is that, whereas Article 4.4(b) is prescriptive of a precise obligation, and is therefore immediately operational, Article 4.2(b)(iii) is not, as it requires a determination or determinations by the Protocol Parties in order for it to become operational, and to begin displaying its full effects “on the ground”.

With this caveat, unless a system of waste discharge permits or authorizations is in place in the domestic legal system of the States Party to the Protocol, ideally tied to the achievement of “water quality objectives and criteria” for the Parties’ freshwater bodies in general, and for the Parties’ boundary and trans-boundary freshwater bodies in particular, there is no way the Parties can comply with the Protocol’s above-mentioned provisions. In particular, a domestic waste discharge permit/authorization system is also directly instrumental to “limiting” the

disposal of “restricted” substances into the boundary or trans-boundary freshwater bodies of the Parties to the Protocol, under Article 4.2(b)(iii)(cc). Such system is therefore directly instrumental to complying with that provision of the Protocol, if and when it has been acted upon by the Parties by the adoption of the required determination(s).

Against this complex web of interlocking obligations, and as this Manual is not the place for an in-depth review of the domestic water laws of each of the twelve continental nations that are a Party to the SADC Protocol, suffice it to say:

- that at first glance, Namibia, South Africa, Tanzania and Zambia have modern water laws, all of which provide for government-administered waste discharge permits to freshwater bodies in general, meeting the requirements of the SADC Protocol’s provision above-mentioned;
- however, the effectiveness and degree of operationalization “on the ground” of those laws in general, and of the provisions on waste discharge permitting in particular, varies, thus casting a shadow of doubt on the actual responsiveness of those water laws to the requirements of the SADC Protocol.

Example 2 – Tripartite Interim Agreement between the Republic of Mozambique and the Republic of South Africa and the Kingdom of Swaziland for Co-operation in the Protection and Sustainable Utilization of the Water Resources of the Incomati and Maputo Watercourses, 2002

Article 8

Water Quality and Prevention of Pollution

1. *In order to protect and conserve the water resources of the Incomati and Maputo watercourses, the Parties shall, through resolutions adopted by the TPTC, and, when appropriate, through the co-ordination of management plans, programmes and measures, proceed to-*
 - a. *endeavour to develop an evolving classification system for the water resources of the Incomati and Maputo watercourses;*
 - b. *classify and state the objectives and criteria in respect of water quality variables to be achieved through the agreed classification system for the water resources;*
 - c. *adopt a list of substances the introduction of which, into the water resources of the Incomati and Maputo watercourses, is to be prohibited or limited, investigated or monitored;*
 - d. *adopt techniques and practices to prevent, reduce and control the pollution and environmental degradation of the Incomati and Maputo watercourses that may cause significant harm to the other Parties or to their environment, including human health and safety, or to the use of the waters for any beneficial purpose, or to the living resources of the watercourses; and*
 - e. *(omitted).*

Like in Example 1, the TIA provisions of Article 8(1) are quite explicit in directing the Parties to craft a number of pollution control-specific measures. In view of its precision relative to the other nominated measures, the adoption of a “list of substances” the discharge of which to the Incomati or Maputo rivers is to be prohibited or restricted, and the determination of “water quality objectives and criteria” tied to a “classification” system of the waters of the Incomati and Maputo rivers, stand out among the prescribed anti-pollution measures. Like the near-identical provision in Example 1, although the operational effectiveness of Article 8(1)(b) and (c) of TIA is subordinate to the adoption of a determination by the Parties to the agreement, it nonetheless requires that a government-administered system of waste discharge permits or authorizations be in place domestically in the TIA Parties, catering for water pollution control, including for the control of pollution of the stretches of the Incomati and Maputo rivers that are inside the territory of each Party. For, as explained in Example 1, a domestic system of waste discharge permits or authorizations to freshwater bodies is directly instrumental to operationalizing the “list of substances” to be agreed in future by the Parties to the TIA for “restricted” discharges to the Incomati and Maputo rivers, as well as the “water quality objectives and criteria” tied to a “classification” system of the waters of the Incomati and Maputo rivers. By contrast, the other anti-pollution measures listed in Article 8(1)(a) and (d) are too indeterminate for precise obligations to be derived from them for the Parties to the agreement, that needed acting upon through specific provisions in the domestic water laws of the Parties.

As this Manual is not the place for an in-depth review of the domestic water laws of each of the Parties to the TIA, for the purposes of this Manual suffice it to say:

- that at first glance, Mozambique, South Africa and Swaziland all have modern and comprehensive water laws, all of which provide for government-administered waste discharge permits or authorizations to freshwater bodies, meeting the requirements of the TIA’s water pollution control provisions above-mentioned. However, of the three countries, only South Africa’s water legislation provides for a “classification” system of the country’s water resources, and for “water quality objectives and criteria” tied to such classification system. Mozambican and Swazi water legislation do not, however they provide for other measures complementary to waste discharge permitting. It can be doubted whether such other measures fully match the requirements of TIA Article 8(1)(b), if and when this is acted upon by the TIA Parties and a determination agreed upon by them;
- regardless, the effectiveness and degree of operationalization “on the ground” of those laws in general, and of the provisions on waste discharge permitting in particular, varies, thus casting a shadow of doubt on the actual responsiveness of those water laws to the requirements of the TIA.

Appendix 1.

Chapter 1 —

Water Diplomacy

Figure 1.a

Figures, Tables and Boxes

International River Basins

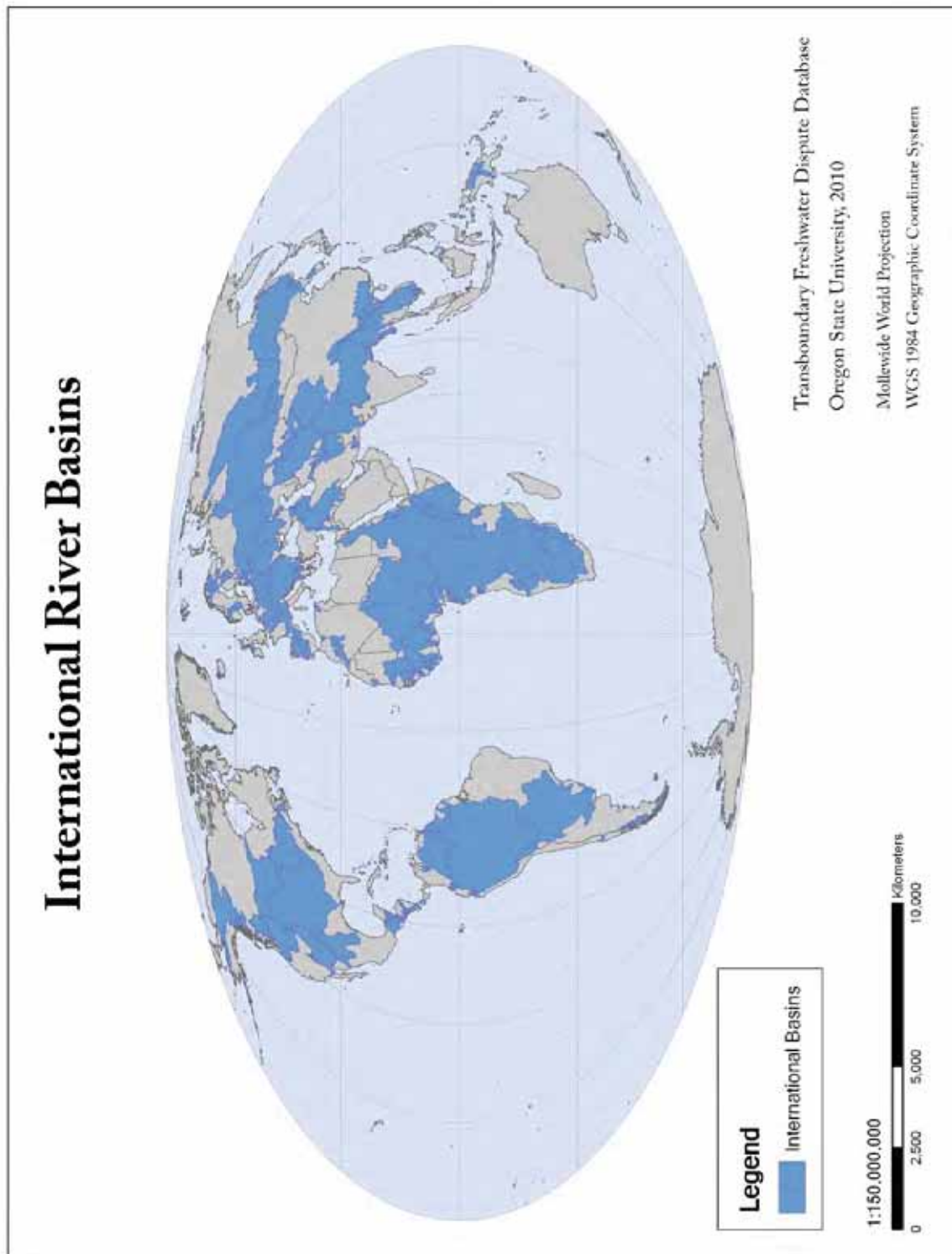
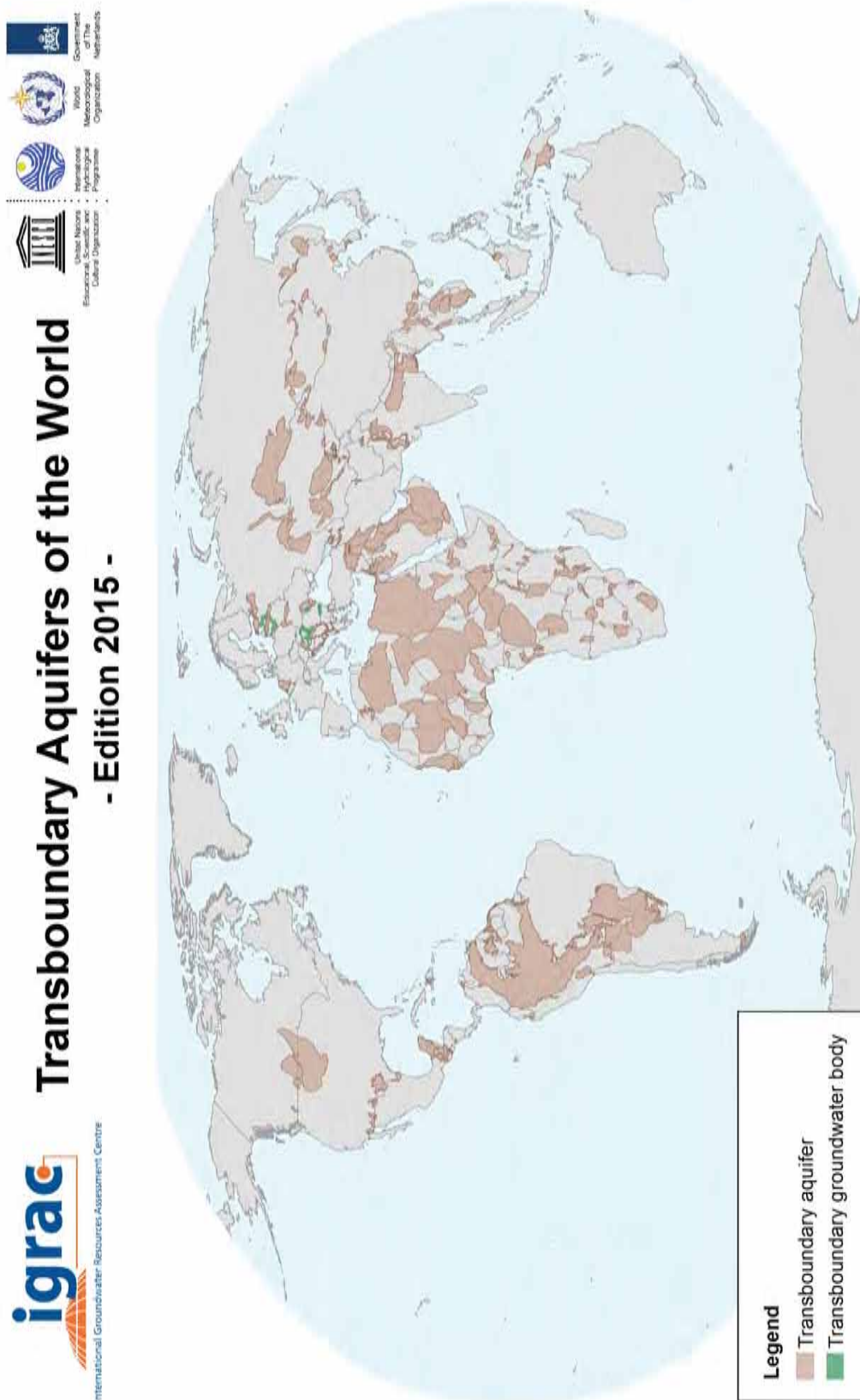


Figure 1.b

Transboundary aquifers of the world (simplified version)



Box 1. Basic Definitions for Dispute Resolution (Adapted from Barkai 1996 in Wolf 2010)

Competitive

This is a traditional style of negotiations that is known by several different terms: positional, adversarial, win-lose, power negotiation, and hard bargaining. In a competitive negotiation, parties want to 'beat' their opponents by maximizing their own gains. Negotiators tend to have little value in maintaining a positive relationship with their opponent and will use high demands and threat, while working to undermine their opponent's confidence.

Cooperative

In contrast, cooperative negotiators value the relationship between opposing parties. Negotiators of this style want to work with their opponents and reach a fair agreement. They do this through the use of reasonable opening offers, good faith gestures, and mutual concessions. This type of negotiation is also known as win-win, problem-solving and interest-based bargaining.

Distributive Bargaining

Also known as zero-sum negotiation, is when the parties are negotiating over a fixed issue; therefore, if one party gains the other party loses. The negotiation is over how the bargaining range, which is set, will be distributed between the parties. In this type of bargaining, the parties are in direct conflict but can assume negotiation styles at that are either competitive or collaborative. Often the initial perceptions of water disputes is from this perspective, where the parties believe there is a fixed issue, such as a fixed volume of water to be allocated.

Integrative Bargaining

This type of bargaining is also known as win-win. Parties work together to create joint gains by integrating or reconciling differing interests. Integrative bargaining requires more than a single issue so that parties can trade, or parties can collaborate to increase the amount of resources by 'expanding the pie.' This maximizes the potential mutual gains available to both parties. Water disputes, rather than being distributive, are integrative, and there are often many benefits that can be shared between the parties, of which they are initially unaware.

Interest-based

With interest-based bargaining, the emphasis is to shift the negotiations from positions to interests and a more collaborative nature. Negotiators attempt to determine their interests prior to developing solutions, then the negotiators can begin to develop a wider-range of alternatives before deciding upon the best ones.

Positions

Positions are based on the interests of the negotiating parties, however, the interests are not typically disclosed, especially in competitive negotiations. Positions are the solutions the parties say that they want. Within a typical negotiation, parties will take up and then give up a series of positions, while the underlying interests remain consistent.

Interests

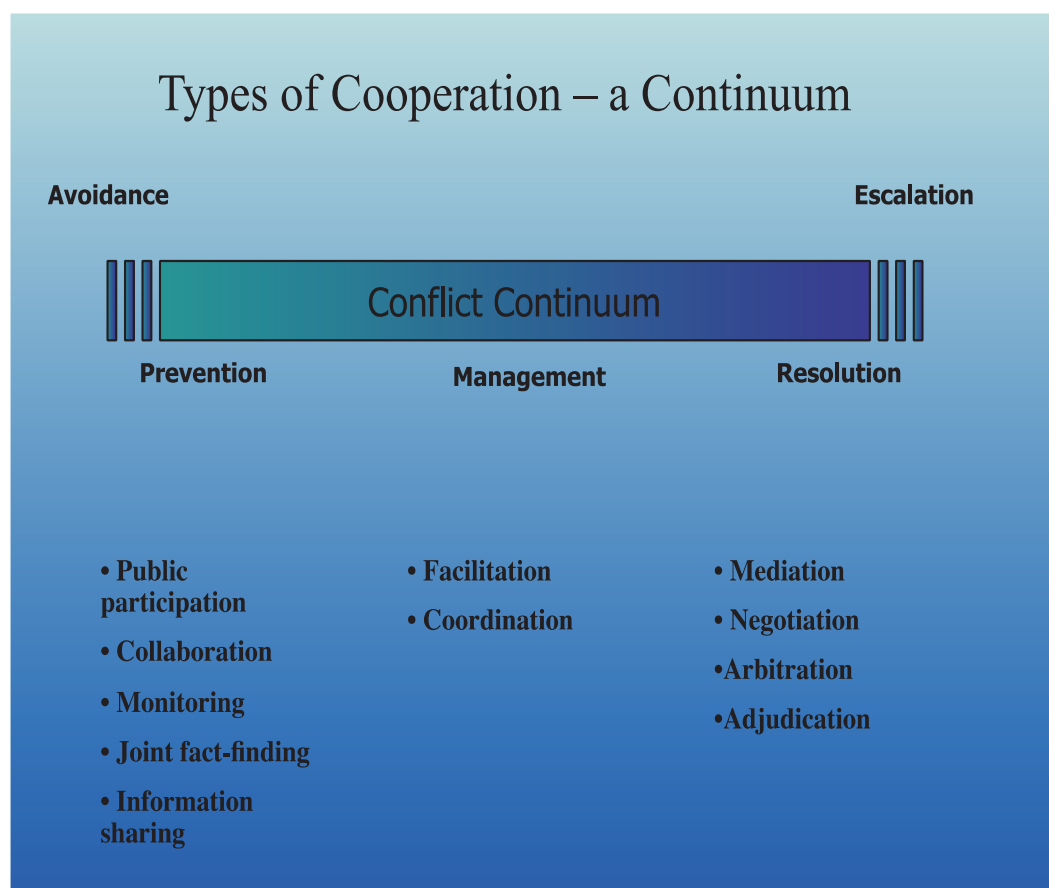
Interests are the 'why' behind the positions negotiators take. They represent the basic needs of the party. It is understanding these needs and interests that is key to creating win-win negotiations. Typically, parties' interests are not explicitly stated during a negotiation; the difficulty lies with finding a way to disclose interests without having them be taken advantage of.

Best Alternative to a Negotiated Agreement (BATNA)

A BATNA is a measure that negotiators use to evaluate a proposed agreement, as it is the alternative that would result without reaching an agreement with the opposing party. Understanding BATNA is important in a negotiation as it can prevent a negotiator from accepting an unfavorable agreement from their position or interests. Having a strong BATNA can impact the power dynamics between the negotiating parties; typically, parties with a strong BATNA will have more power during the negotiation process (Fisher et al. 2011).

Figure 2

Conflict – Cooperation Continuum



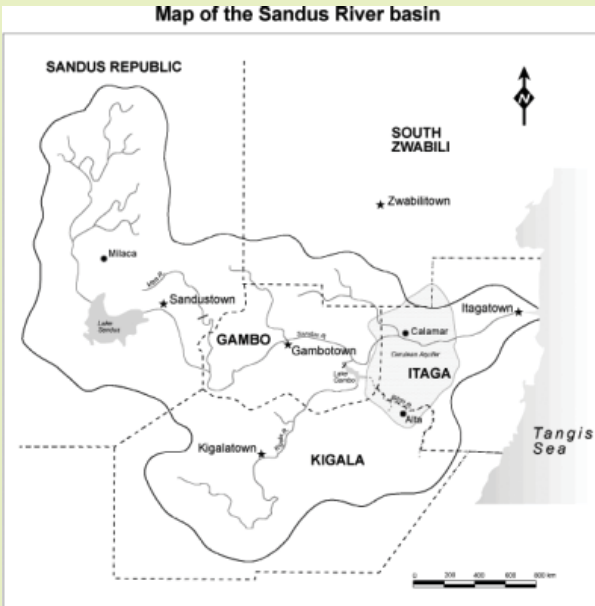

Box 2. Water Negotiation Frameworks

The principal water negotiation frameworks include, in no particular order, the Four Worlds Framework; the Water Diplomacy Framework, the Water Security Framework, and the Hydro-Trifecta Framework.

- The Four Worlds of Water Conflict Transformation focuses on identity, differentiating between rights, needs, benefits, and equity and when integrated with the 4i approach the goal is to create a new super ordinate identity;
- Water Diplomacy focuses on interests on the flexible uses of water and joint fact finding to create value rather than zero-sum thinking through loops of societal, political and natural networks;
- Water Security focuses on investment and risk utilizes a web of climate, energy, food, water, and community to define what might be tolerable for water use and reuse without getting into “trouble”; and
- The Hydro-Trifecta Framework operates somewhat like a compass orienting and guiding the direction of the negotiations using the three frameworks of water security, water diplomacy, and water conflict transformation.

The above is a brief generalized description of the frameworks. The Four World, Water Diplomacy, and the Water Security Framework all have annual workshops dedicated to them, at Oregon State University, Tufts, and University of East Anglia, respectively. For the interested reader, additional materials have been included that are specific to each framework.

Table 1. Stages of Four World Water Conflict Transformation

Negotiation Stage	Common Water Claims	Collaborative Skills	Geographic Scope
Adversarial	Rights	Trust-Building	<p>Map of the Sandus River basin</p>  <p>This map shows the Sandus River basin with national boundaries between Sandus Republic, South Zwabili, Gambo, Itaga, and Kigala. Major cities like Sandustown, Kigalatown, and Itagatown are marked. A scale bar indicates distances up to 600 km.</p> <p>Nations</p>
Reflexive	Needs	Skills-Building	<p>Map of the Sandus River basin</p>  <p>This map shows the Sandus River basin with watershed boundaries. The Tangis Sea is visible to the east. A scale bar indicates distances up to 600 km.</p> <p>Watersheds</p>


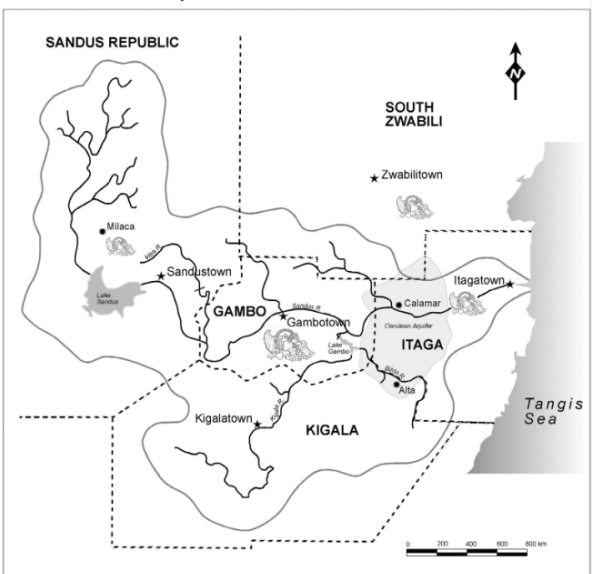
Integrative	Benefits	Consensus-Building	<p>Map of the Sandus River basin</p>  <p>"Benefit-sheds"</p>
Action	Equity	Capacity-Building	<p>Map of the Sandus River basin</p>  <p>Region</p>

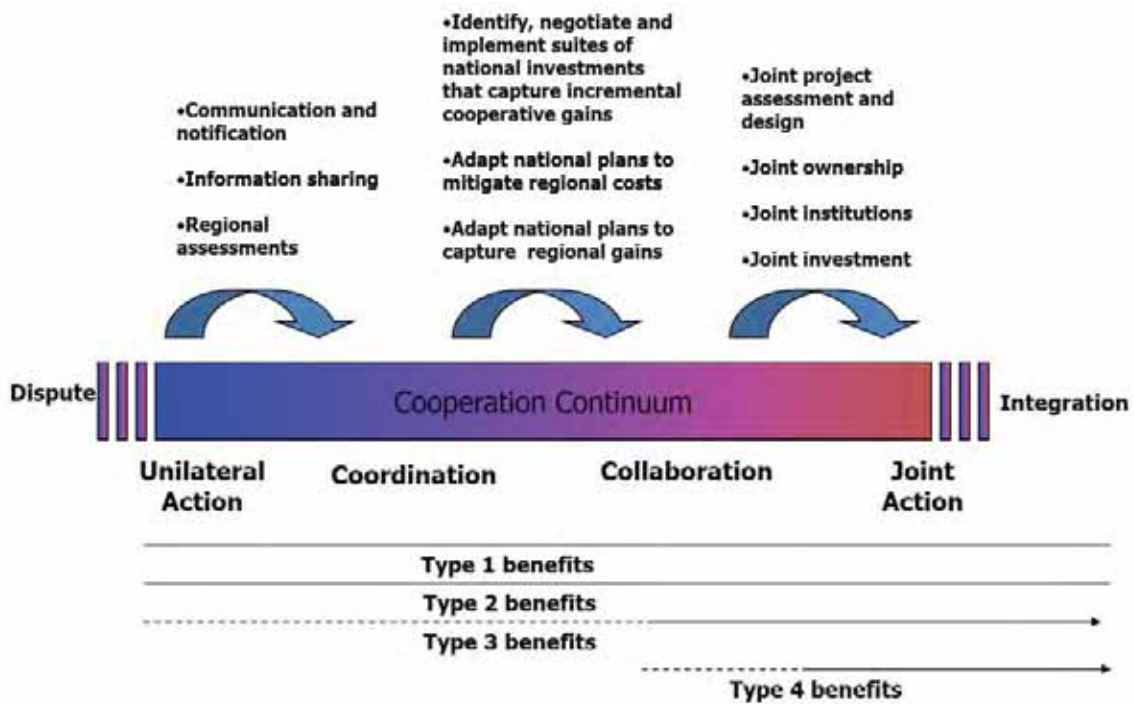
Figure 3

Understanding Needs



Figure 4

Conflict – Cooperation Continuum considering Benefits and Institutional Capacity Models



Source: Sadoff, Claudia W. and David Grey. "Beyond the River: The Benefits of Cooperation on International Rivers." *Water Policy*. Vol 4 #5, 2002. pp. 389-404.

Exercises and Learning Modules

A. Trust-Building

As part of building a constructive dialogue over an issue as complex and potentially contentious as water, creating an atmosphere of trust and openness is vital for allowing the proliferation of critical dialogue with the goal of reaching positive-sum, integrative solutions. In the Stage 1, the tone should be set to positive and participatory, while encouraging participants to discover similarities between each other. This will help to break down the mistrust and wariness between sides, as it will humanize the other side through the identification of commonalities. One method is to conduct ice-breakers or “Getting to Know You Exercises” (Davies and Kaufman 2002).

1. Ups and Downs

This exercise is drawn from material used in classes and workshops taught by Professor Edy Kaufman. A variation can be found in Davies and Kaufman (2012).

Duration 10-15 mins

Context During the initial part of Stage 1, such as following introductions.

Objective: This exercise helps to build an open, participatory atmosphere, while highlight similarities between participants.

Instructions The facilitator presents an attribute or quality; if a participant identifies with the attribute they stand. The people that remain seated then applaud the standing participants. The goal is to find out unknown shared qualities among the participants. Potential attributes could include: women, men, place of birth, number of siblings, religion, number of languages spoken, dietary preferences (i.e. vegetarian), or left handed.

Attributes chosen should be sensitive to the conflict and cultures of the participants. Following the exercise, the facilitator should lead a discussion about the importance in recognizing commonalities and how those in conflict tend to define the opposite sides by the attribute that divides them; whereas there normally are many attributes that define people and many of them unifying across divides.

B. Skills-Building

The most difficult leap in negotiations (or in most discussions, for that matter), is to get past positions (what someone is saying) to understanding their interests (why they are saying it). Yet understanding interests is critical to effective dialogue. The single most effective way to accomplish this leap is to listen – truly listen – to the speaker. Listening at depth is not an easy skill, especially in many western cultures where power seems to be associated with how much is said (and sometimes with how loudly). This section also presents exercises for building both active and transformational listening skills.

2. Active and Transformative Listening

This exercise is drawn from material used in classes and workshops taught by Professor Aaron Wolf. A variation can be found in Wolf ed. (2010).

Duration 1.5- 3 hours

Context Towards the end of Stage I or beginning of Stage II.

Objectives These exercises offer two skill-sets for listening: active listening, which is a set of ground rules for polite, constructive discourse; and transformative listening, which allows for deeper work, useful especially when powerful emotion is present.

Active Listening Instructions

With active listening, the goal is for the listener to help facilitate a healthy open dialogue. The participants are divided into pairs or groups of three. The speaker should speak on a topic that is not very sensitive or emotional. The speaker within the group with speak without interruption for about 5 minutes, while the listener(s) try to truly listen to what the speaker is saying using active listening techniques. Then the groups should rotate roles to give the speaker a chance to practice active listening.

Active listening requires paying attention, reflecting messages back to the speaker and prompting for more information, if appropriate. Several active listening skills follow:

- **Body language.** Face the speaker and do not do anything else while listening. Notice and acknowledge the speaker's body language, what can it tell you?

- **Repeat main points.** Repeat the main points of the speaker (this lets the speaker know that they have really been heard, a powerful psychological message, as well as helping to focus the dialogue);
- **Ask.** Ask (non-threatening) questions. Useful both to better understand the speaker, and also to reassure them that you are really listening;
- **"I" not "you" statements.** When speaking, speak in the first person – "I" not "you" – setting a tone that is more reflective and less confrontational;
- **Future, not history.** Speak in the future or present tense, not the past. This further reduces the possibility of accusations, and allows for greater cooperation to build for a common future. [In many settings, a period of venting of past grievances does need to be set aside – that, after all is a main reason why some negotiators initially participate. It should be done in as productive a way as possible, and then put aside for the duration.]

Transformative Listening Instructions

Differing from active listening, the goal with transformative listening is for the listener to make themselves absolutely present for the speaker to more deeply delve into their issues. Transformative listening can be used when real emotion is present and it allows the speaker time to work through their emotions and issues.

For this exercise, the participants should be divided into pairs – one speaker and one listener. The pairs should then create a list of topics they feel strongly about. The listener selects a topic important to them, and the speaker argues passionately to the opposite of the listener's position. The speaker should go on uninterrupted for two minutes, after which the listener may interject *only* to enquire (ask for more information), summarize, paraphrase, or acknowledge. This should go on for another 5-10 minutes. Then the participants should switch roles and repeat the exercise.

Following the exercises the facilitator should lead a discussion regarding the observations of emotions and non-verbal communication during the exercises. Typically, the listener will go from anger and dismissal, to intellectual curiosity, to some level of empathy for the other position. The speaker, in turn, will likewise typically move from absolute conviction to some recognition of the legitimacy of the opposite side, or even to a bit of empathy for the opposite position the longer he or she is allowed to speak (this is the "transformation" in transformative listening).

3. Using Listening to Explore Underlying Needs

This exercise is drawn from material used in classes and workshops taught by Professor Edy Kaufman. A variation can be found in Davies and Kaufman (2012).

Duration	1-2 hours
Context	During the middle to end of Stage II.
Objective	To apply active and transformative listening skills to the conflict, in order to help participants work together to discover their needs or interests underlying their rights or positions.
Instructions	This exercise should be completed after practicing active and transformative listening skills and trust building exercises. This exercise needs participants to trust in each other in order to allow them to open up and be vulnerable regarding their needs and interests. Without trust and confidence ground rules determined for the meeting, participants may be reluctant to probe deeply into their issues.

Similar to the transformative exercise, the participants should be divided into pairs or groups of three with one speaker, one listener, and one note taker, if only two than the listener can take notes. Given at least an hour, the groups use the listening skills to explore the current conflict. The listener encourages the speaker using eliciting and counselling phrases. The note taker or listener records the needs that become apparent through the conversation. Roles should rotate during the timeframe so that each participant has the opportunity to act as the speaker, listener, and note taker.

The notes from all of the small groups should be collected and presented to the group. The needs that are reoccurring amongst all the small groups could be considered the priorities for the forthcoming negotiations on the conflict. Having the note takers present the groups' observations, helps the larger group work towards understanding the other participants needs.

A debriefing should follow where the participants discuss the relevance and validity of the exercises, as well as the value of understanding the 'why' behind the other participants' rights. At this point, the participants should begin to understand that there is often misperceptions about other sides in a conflict, and that people tend to only express their actual needs indirectly. The goal is that through verbalizing the needs, common ground areas can be identified for future group problem solving.

C.Consensus Building

Building on the trust and insights on needs, the participants should be in a participatory state that is ready to collaborate on innovative solutions. Collaborative problem solving is a skill that the participant use to reach consensus on a solution that is an alternative to a forced solution or unsatisfactory compromise. Reaching consensus means that all participants' voices have equal value and their concerns are heard and address before a decision is made. The following is a consensus-seeking exercise.

4. Bridging the Gap

This exercise is drawn from material used in classes and workshops taught by Professor Edy Kaufman. A variation can be found in Davies and Kaufman (2012).

Duration 1-1.5 hours

Context End of Stage II or beginning of Stage III

Objective To practice collaborative problem solving and consensus.

Materials Yellow, blue and green name tags or post-it notes.

Instructions The participants are divided into two groups, making sure that the conflicting parties are mixed between the groups. One side is given yellow tags to wear, the other is given blue to wear. The scenario is a dam is purposed for construction on a river that supports vital habitat for salmon and provides other environmental benefits. No other details are needed for the scenario; this allows the participants to improvise details in support of their side based on their personal knowledge. The yellow team is supporting pro-dam, and the blue team is supporting pro-fish or pro-environment.

Round 1 In the first round of about 10 minutes, the individuals from the teams pair up with one or two members of the other team. The goal is to try and persuade those on the other side to change their views. At the end of the round, those who have switched to the other viewpoint should change their tag accordingly. Generally, during this round none of the participants will change sides.

Round 2

During this round of a similar length, the individuals again pair up with members of the other team. The individuals again are trying to persuade the other side; however they are asked to find possible points of agreement or a lesser evil alternative, such as a dam with a fish ladder. At the end of the round, if all the members of a small group have agreed on an alternative then they switch their tags for green (a mixture of yellow and blue).

Round 3

The final round follows the procedure of the previous rounds, except the greens are now trying to persuade the remaining blues and yellows. They attempt to do this by developing different and more creative alternatives that both sides can agree upon.

Following the exercise, the facilitator should lead a discussion on the results and outcome of the rounds, how they differed between each round, what alternative solutions persuaded participants to become green, and why did those alternatives persuade the pro-dams or pro-fish individuals to become more open to a new situation. The goal is to highlight that when people are in confrontation over opposing positions, they tend to become more polarized. When the opportunity to create alternative solutions is available, people are less likely to become polarized and entrenched in their position.

Appendix 2.

Chapter 2 —

International Water Law

Exercises

1. Overview

The following negotiation exercise is designed to introduce participants to the multitude of issues and factors related to the negotiation of a transboundary freshwater agreement. In the scenario presented below, a river and an aquifer traverse the borders of three countries. While there are no agreements for managing or regulating either to the river or aquifer, the countries are interested in such a possibility. Of course, each country has its own interests and objectives for the use of these fresh water resources as well as its own vision for any potential agreement. Participants in this negotiation simulation will be assigned to represent one of the three countries and then asked to negotiate and draft specific provisions that will serve as the basis for an agreement on the use of the river and aquifer. While each team's goal is to negotiate provisions that are most favorable to their country and its interests, teams also must realize that to realize an agreement, they may have to compromise.

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2. Preparation

Divide participants into teams of three to four members whereby each team represents one of the States in the simulation exercise. After reviewing the scenario, each team should complete the following:

- Review and discuss the scenario
- Identify their country's interests, goals, and objectives in relation to the transboundary river and aquifer
- Review the "Principle Tenets of International Water Law" discussed in this Manual and discuss what they would mean in practical terms in the context of the present scenario
- Building on that review, identify the types and content of transboundary rules and regulations related to the transboundary river and aquifer that would ensure the country's interests, goals, and objectives
- Identify points on which the team may be willing to compromise

The preparation should take a minimum of 30 minutes, but can certainly be extended.

3. Negotiations

The negotiations can be facilitated by a neutral moderator. However, that moderator should limit their involvement to suggesting which country would begin the negotiations, when to call a break to allow teams to discuss issues privately, and (when necessary) to ask questions that provoke thought and responses from the teams on a specific fact or possible transboundary rule. The specific tasks for the negotiations are described below.

Teams should sit at a negotiating table that accommodates all members of every team. Ideally, this could be a large round table, or tables arranged in a triangular fashion. An alternative would be a table that accommodates only one or two chief representatives from each team, but with space behind those representatives for the rest of the team.

The negotiations should be allowed to proceed for at least 90 minutes, but can certainly be extended.

4. Review and Discussion

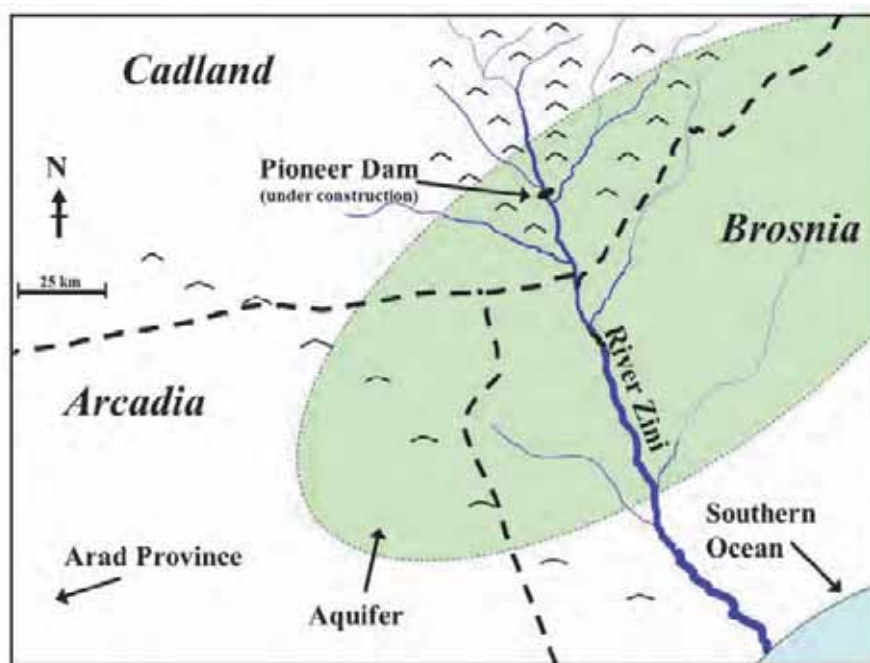
To a large extent, the review and discussion of this simulation exercise may be the most important component of this exercise. This is where participants can explore the rules and provisions that were sought in comparison with those that were actually achieved. This assessment should be conducted with reference to ongoing water disputes, cooperative efforts, and completed agreements and should be evaluated in terms of which provisions are desirable and which are realistic under the circumstances.

To begin the review, each team should present and explain their country's interests, goals, and objectives in relation to the transboundary river and aquifer, as well as explain their negotiation strategy. Thereafter, the moderator and participants should identify the types and categories of rules and provisions they negotiated – those that were pursued, those that were achieved, and those that failed to be realized – and compare them against the “Principle Tenets of International Water Law” discussed in this Manual. Those rules and provisions should then be assessed in relation to one or more ongoing water disputes, cooperative efforts, and completed agreements from around the world.

The review should be allowed to proceed for at least 60 minutes, but can certainly be extended.

Simulation Exercise – International Water Law²

■ Fact Pattern



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The States of Arcadia, Brosnia and Cadland are neighboring countries. Geographically, Cadland lies to the north of Arcadia and northwest of Brosnia, while Arcadia lies to the west of Brosnia and south of Cadland. River Zini begins its flow in Cadland, flows across the border into Brosnia and empties into the Southern Ocean. While neither River Zini nor its tributaries flow through Arcadia, the river's watershed does extend into the eastern section of Arcadia.

In addition, all three countries overlie a large, recently discovered and yet-unnamed aquifer. Preliminary studies suggest that geographically, 50% of the aquifer underlays Brosnia, 30% underlays Arcadia, and 20% underlays Cadland, however, the true boundaries of the aquifer are still uncertain. A chief dispute among the region's water

2. This simulation exercise, instructions, and scenario are taken from material used in classes and workshops taught by Professor Gabriel Eckstein. A variation of this exercise and scenario is found in Richard Kyle Paisley (2007), *FAO Training Manual for International Watercourses/River Basins including Law, Negotiation, Conflict Resolution and Simulation Training Exercises*.

scientists pertains to the source of the aquifer's recharge and whether the aquifer is hydraulically connected to River Zini. Scientists in Cadland argue that such a connection does not exist, or, at the very least, is insignificant, and that the aquifer is likely a non-recharging aquifer. In contrast, Arcadian scientists are quite certain that the aquifer receives considerable amounts of recharge from River Zini. The studies of Brosnian scientists are mixed and inconclusive. None of the countries has the knowledge base to conduct detailed studies of the entire aquifer's extent, volume, recharge, or the hydraulic connection between the river and aquifer. Moreover, none has adequate resources to invest in such an endeavor, especially since they must allocate their resources very carefully in light of all of the other national priorities they each face.

The region's climate is relatively predictable with the rains coming primarily in the late winter and early spring followed by a relatively dry summer and fall. The volume of rain that falls on the region varies from year to year, however, precipitation rates are higher over Brosnia and eastern Cadland and significantly lower over Arcadia. The great majority of the water in River Zini originates in Cadland. The actual contribution of the two states to the flow of River Zini has never been formally studied but is estimated at 75% from Cadland and 25% from Brosnia. It is unclear whether and how much rainfall in the region recharges the aquifer.

Arcadia has a primarily agrarian population of forty-five million, one-third of which reside in Arad Province, the country's arid interior located approximately 250 kilometers west of its border with Brosnia. Although very fertile, the interior region has very few freshwater resources. Non-governmental agencies suggest that as much as half of the population in this region does not have access to adequate fresh water to meet basic daily needs. Accordingly, Arcadia's chief priority is to provide for its citizens by developing new water resources to meet their basic needs. The country is also interested in enhancing the region's agricultural capacity. A number of Arcadian politicians and academics have raised the possibility of pumping water from the newly discovered aquifer and diverting it to Arad.

Brosnia is a small country in comparison with its neighbors. Its land area is approximately one-quarter the size of Cadland and one-third the size of Arcadia, and it has a population of twelve million people. The scenery in this country, which enjoys a marine temperate climate, is spectacular largely because much of the country is still in its natural, pristine condition. The majority of the population lives along the Southern Ocean and River Zini. In recent years, Brosnia has become closely allied with a number of environmental and tourism organizations. As a result, the country has a growing tourism industry and prides itself on pursuing a balance between development and environmental goals. For example, expeditions on River Zini have

become especially popular because of the Zini Skipjack, a fish inhabiting the lower and middle reaches of River Zini (primarily in Brosnia). Zini Skipjack have been known to top 100 pounds and grow to lengths of 1.5 meters, and are especially known for jumping out and skipping on the water's surface. The fish is highly dependent on the river's seasonal flooding for breeding and development, as well as the deep rapids of the middle reaches, which allow these large fish ample space to swim in highly aerated waters. Expeditions are organized both to view the fish in its natural habitat as well as for sport fishing.

Cadland is a mountainous country with a temperate climate and a population of twenty-two million. Of the three countries, Cadland's population is experiencing the fastest growth rate due to cultural and religious traditions. Cadland believes that its greatest developmental obstacle is the lack of food and energy security. It is especially interested in developing the irrigation potential of River Zini through the construction of dams and diversion canals in its territory. In fact, it has already begun construction on the largest of the proposed dams – Pioneer Dam – at a point twenty-five kilometers north of its border with Brosnia. Because of the 10-meter height of the planned dam, Cadland also proposes to use the structure to generate electricity. While Cadland claims that any downstream consequences would be insignificant, those consequences have not been studied or identified.

Although all three countries are considered developing nations, Brosnia is a bit more economically developed than the other two and is classified in the upper-middle income level according to The World Bank classification system. Arcadia and Cadland are classified as falling in the lower-middle income category.

■ The Task

Arcadia, Brosnia and Cadland have agreed to meet to begin negotiating an agreement containing both general and specific principles and provisions for the use and allocation of River Zini and the aquifer. During preparatory discussions, the three countries specifically agreed that the main purpose of the meeting is to formulate provisions that, to the greatest extent possible, will:

- identify each states' rights in River Zini and/or the aquifer;
- identify each states' responsibilities in River Zini and/or the aquifer; and

Accordingly, each negotiation team is expected to bring to the negotiating table proposals for provisions, including proposed language that would achieve these two objectives as well as the respective national interests of the three countries.

Appendix 3.

Chapter 3 —

Linking International
Water Law and
Domestic Water Law

Exercise 1

Note: the Law on Water Resources referred to in sub-paragraphs 3.1 and 3.2 is appended to this exercise. The Law is one and the same for both countries A and B.

■ Scenario

1. River Y rises and flows in State A, crosses the border into State B downstream, and eventually empties out to the Ocean in State B.
2. The two States have agreed to share river flows in accordance with a schedule of agreed withdrawals at agreed points along the course of the River, before and after the border. In particular, the two States have agreed as follows:

“Any abstraction of waters from River Y, regardless of the use or geographic destination of such waters, shall be in conformity with the flow regimes in Annex I of this Agreement. If the available flows fall short of the agreed flow regimes, existing abstractions will be curtailed by the competent authorities, on both sides of the border.”

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■ Your assignment

3. You are members of State A and State B teams appointed to review the domestic water legislation of your respective country, and check it for consistency and compliance with the terms of the agreement. In particular, you are to report and make recommendations to your respective governments on the following:
 - does the Law on Water Resources of your country contain the kinds of provisions/mechanisms that are necessary to give effect to the terms of the agreement regarding the sharing of River Y flows?
 - what provisions, in particular, are needed in the Law on Water Resources to facilitate compliance with the terms of the agreement regarding allocation of River Y flows at times of water shortage, when the available flows in the River are insufficient to meet the agreed sharing schedules?

Exercise 2

Note: the Law on Water Resources referred to in sub-paragraph 3.1 is appended to this exercise. The Law is one and the same for both countries A and B.

■ Scenario

1. River Y rises and flows in State A, crosses the border into State B downstream, and eventually empties out to the Ocean in State B.
2. With a view to enhancing the availability of river water for a variety of uses, the two States have agreed to control pollution of the waters of River Y and, to this end, have agreed as follows:

“To adopt a list of substances the introduction of which into the water resources of River Y is to be prohibited or limited”. As a complement to this measure, States A and B have further agreed “to adopt water quality objectives and criteria for the waters of River Y, based on a classification of such waters”.

■ Your assignment

3. You are members of State A and State B teams appointed to review the domestic water legislation of your respective country, and check it for consistency and compliance with the terms of the agreement. In particular, you are to report and make recommendations to your respective governments on the following:
 - does the Law on Water Resources of your country contain the kinds of provisions/mechanisms that are necessary to give effect to the terms of the agreement regarding control of pollution of the waters of River Y and, in particular:
 - the introduction of prohibited or restricted substances in the River?
 - water quality objectives and criteria for the River, based on the classification of its waters?

LAW ON WATER RESOURCES

CHAPTER I

GENERAL PROVISIONS

Article 1

The general purpose of this Law is to foster the effective and sustainable management of water resources to attain socio-economic development and the welfare of the people.

This Law determines:

- the rights and obligations of water users,
- the fundamental principles of water resources management, and
- the participation of users in the sustainable development of water resources.

Article 2

In this Law, the following technical terms shall be understood to mean:

- “aquifer” means a permeable water-bearing geological formation underlain by a less permeable layer and the water contained in the saturated zone of the formation³;
- “authorization” is the instrument of a right to discharge, dispose of, or deposit in or in the vicinity of a water resource or aquifer, polluting substances
- “basin” means a geographical area determined by the watershed limits of the system of waters, including surface and underground waters;
- “groundwater” means water flowing within a saturated soil, rock medium, fractures or other cavities within the ground;
- “international river, lake or aquifer” means a river, lake or aquifer parts of which are situated in different States⁴;
- “licence” is the instrument of a right to abstract and use water and water resources;
- “person” means any physical or juridical person, whether private or public;
- “public purpose” refers to urban and rural water supply, food production, hydro-power generation, navigation, industrial development and the maintenance of minimum flows for ecological, cultural and religious purposes and the preservation of aquatic life;

3. United Nations General Assembly Resolution A/RES/63/124, Part one, Art. 2, December 2008

4. United Nations General Assembly Resolution A/RES/63/124, Part one, Art. 2, December 2008

- “sub-basin” means part of a basin;
- “water” means surface, underground and atmospheric water;
- “water resources” means water in a river, stream, water fall, canal, lake and swamp, pond, reservoir or storage, and groundwater in aquifers;
- “waterworks” means large and minor dams, weirs, diversion canals, dykes/ embankments, large and minor drainage systems, irrigation systems, large and small reservoirs, aqueducts/ conduits , wells and boreholes, hydropower dams and such other structures or installations as are constructed or used for the purpose of diverting, storing, conveying and abstracting, using, conserving and protecting water resources, for drainage purposes of inundated areas, or for the prevention and mitigation of the effects of floods and of other water-related emergency situations.

Article 3

All water and water resources are owned by the State.

Article 4

Water and water resources shall be managed and developed based on the principle of integrated water resources management (IWRM).

The IWRM principle shall take into account:

- all aspects of water resources;
- linkages between water resources and other components of the natural environment;
- requirements for an effective and sustainable water use for subsistence and for economic development purposes, with due regard for the ecosystem support function of water resources.

The implementation of the IWRM principle shall be carried out jointly and within a cooperation framework of all relevant agencies.

Article 5

The Ministry of Water Resources (MWR) is responsible for leading and supervising the implementation of the present Law. The MWR shall conduct its business in consultation with other concerned ministries.

CHAPTER II

WATER RESOURCES INVENTORY AND PLANNING

Article 6

The MWR shall keep a centralized inventory of the water resources in the State. This inventory shall indicate the location, quantity and quality of the resources.

Data on quantity and quality, and any other water-related information collected by other institutions, whether at the national, provincial or district level, shall be submitted to the MWR in a technically standardized format.

The above data and information may be provided free of charge to all government agencies and other communities, except for those classified as confidential. The MWR may charge a fee for the data requested for commercial purposes.

Article 7

The MWR shall be responsible for preparing a national water resources master plan.

Water resources projects shall be prepared based on the data and information contained in the water resources inventory, in accordance with the national water resources master plan, the economic development plan and the national and regional environmental plans, to ensure a proper balance between water availability and the present and foreseeable demands for water.

Article 8

The MWR shall manage the river basins, sub-basins, watershed run-off, groundwater and aquifers in collaboration with all concerned ministries.

Procedures for development and implementation of plans for the management, conservation and development of river basins, sub-basins, watershed run-off, ground water and aquifers shall be regulated by a Government decree.

CHAPTER III

WATER RESOURCES USE AND DEVELOPMENT

Article 9

Every person has the right to abstract and use water for his/her vital human needs including drinking, washing, bathing and other domestic purposes including watering for animal husbandry, fishing and the irrigation of domestic gardens and orchards.

The above-mentioned uses are not subject to a license.

Article 10

The abstraction and use of water for purposes other than those mentioned in Article 9, and the construction of waterworks relating thereto, are subject to a license.

The procedure for license applications shall be regulated by a Government decree.

Article 11

The conditions, modalities and procedures for the granting, transfer, cancellation, time limitation, and renewal, of water abstraction licenses shall be regulated by a Government decree.

Abstraction licenses shall be subject to the payment of charges, which shall be determined and collected in accordance with a Government decree.

Article 12

Prior to granting a water abstraction license to any person, the MWR shall consult with other concerned agencies, the local authorities, and with stakeholders, on the water abstraction and on the construction of waterworks proposed by the applicant.

Article 13

A licensee may transfer his/her water abstraction right totally or partially to another user, after securing prior approval of the MWR.

Article 14

The MWR may amend a license in the public interest, subject to compensation.

Article 15

The MWR may amend or cancel a license at the request of the license holder.

The MWR may amend, suspend or cancel a license *ex officio* in the following cases:

- violation of the conditions of the license;
- violation of the provisions of this Law and other norms adopted thereunder;
- abstraction of water in a quantity or at a rate exceeding the amount permitted
- use of water for purposes other than those authorized;
- non-use of water for a period of two consecutive years after the license was issued;
- transfer of the license without prior approval;
- causing a negative impact on public health or on the environment;
- failure to pay the prescribed abstraction charges.

In such cases, the license holder shall present a written statement to the MWR to explain the reasons for his/her actions or omissions.

CHAPTER IV

GROUNDWATER

Article 16

Any person who carries out the drilling or digging of wells as a profession or for commercial purposes shall supply the MWR with a detailed report on the drilling or digging operations, the technical specifications and other pertinent information.

The abstraction of groundwater for commercial purposes shall be subject to a license.

The MWR may gazette zones where the drilling or digging of wells shall not be permitted.

Article 17

Any person who discovers groundwater in the course of mining or other activities shall report such discovery and all relevant data to the MWR.

CHAPTER V

PROTECTION OF WATER RESOURCES

Article 18

The discharge, disposal or deposit in or in the vicinity of a water resource or aquifer, of polluting substances which are likely to deteriorate the quality of water and to endanger human, animal and plant health shall be subject to authorization.

The above-mentioned polluting substances and the technical standards for handling them shall be determined in a Government decree.

Article 19

The MWR may declare a “protected water zone” in the following cases:

- when the quantity, quality or ecological balance of surface or underground water resources are, or are at risk of being, seriously affected;
- when a watershed is degraded by human activities or natural causes;
- when water is hazardous to the health of the people.

The procedure for the declaration of a “protected water zone”, and the kinds of restrictions applicable therein, shall be determined in a Government decree.

CHAPTER VI

INTERNATIONAL FRESHWATER BODIES

Article 20

The Government has the right and the duty to participate in the utilization, development and management of an equitable and reasonable share of the international rivers, lakes and aquifers in its territory, consistent with the obligations arising from the international agreements to which the State is a Party.

The MWR shall pay particular attention to the optimum and effective use of the River Y basin in all fields, including navigation and transport.

CHAPTER VII

INCENTIVES AND PENALTIES

Article 21

The Government may grant a reward or incentives to those who engage in research on, or the development of, new technologies and equipment that will contribute to the reduction of waste and to improvement in water quality, and increase water use efficiency.

The criteria and modalities for the granting of rewards or incentives shall be provided in a Government decree.

Article 22

Breaches of the provisions of the present Law shall be punished as follows:

1. by imposing a fine on a person who:

- abstracts water without securing a license;
- digs or drills wells for the exploitation of underground water without securing a license. The amount of fine shall be double in case the digging or drilling of wells causes land subsidence or erosion. The offender shall be liable for the damage resulting from the land subsidence or erosion;
- breaches the conditions stipulated in a license or authorization;
- obstructs, without proper justification, the performance of the duties of the competent government officials;
- constructs water-works without a license;

2. by imposing a fine and/or imprisonment on a person who:

- discharges polluting wastewater into a river, lake or aquifer without an authorization;
- violates the restrictions in force in a protected “water zone”;
- obstructs the natural flow of a river, stream or canal without a license.

In case of a repeated offence, the penalty shall be double.

Article 23

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In addition to the penalties prescribed in the preceding Article, a convicted offender shall remove all kinds of works constructed in violation of this Law, and shall repair and restore the prior *status quo* of the sites, and all equipment and machinery shall be confiscated and become the property of the State.

CHAPTER VIII FINAL PROVISIONS

Article 24

All legal provisions inconsistent with this Law are hereby repealed.



Appendix 4.

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Chapter 2. International Water Law

Global and Regional Agreements

1997 UN Convention on the Law of the Non-navigational Uses of International Watercourses:

- Arabic: http://internationalwaterlaw.org/documents/intldocs/UN_Watercourses_Convention-Arabic.pdf
- Chinese: http://internationalwaterlaw.org/documents/intldocs/UN_Watercourses_Convention-Chinese.pdf
- English: http://internationalwaterlaw.org/documents/intldocs/UN_Watercourses_Convention-English.pdf
- French: http://internationalwaterlaw.org/documents/intldocs/UN_Watercourses_Convention-French.pdf
- Russian: http://internationalwaterlaw.org/documents/intldocs/UN_Watercourses_Convention-Russian.pdf
- Spanish: http://internationalwaterlaw.org/documents/intldocs/UN_Watercourses_Convention-Spanish.pdf

1992 UN/ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes:

- English: <http://www.unece.org/fileadmin/DAM/env/water/pdf/watercon.pdf>
- French: <http://www.unece.org/fileadmin/DAM/env/water/pdf/waterconf.pdf>
- Russian: <http://www.unece.org/fileadmin/DAM/env/water/pdf/waterconr.pdf>

2000 Revised Protocol on Shared Watercourses in the Southern African Development Community: <http://www.internationalwaterlaw.org/documents/regionaldocs/Revised-SADC-SharedWatercourse-Protocol-2000.pdf>

Selected Basin Agreements

2015 Agreement between the Government of the Hashemite Kingdom of Jordan and the Government of the Kingdom of Saudi Arabia for the Management and Utilization of the Ground Waters in the Al-Sag/Al-Disi Layer:

- Arabic: http://www.internationalwaterlaw.org/documents/regionaldocs/Disi_Aquifer_Agreement_2015.pdf
- English: http://www.internationalwaterlaw.org/documents/regionaldocs/Disi_Aquifer_Agreement-English2015.pdf

2008 Convention on the Protection, Utilization, Recharge and Monitoring of the Franco-Swiss Genevese Aquifer:

- French: <http://www.internationalwaterlaw.org/documents/regionaldocs/2008Franko-Swiss-Aquifer.pdf>
- English: <http://www.internationalwaterlaw.org/documents/regionaldocs/2008Franko-Swiss-Aquifer-English.pdf>

1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin: http://www.internationalwaterlaw.org/documents/regionaldocs/Mekong_River_Agreement.pdf

1994 Convention on Cooperation for the Protection and Sustainable Use of the Danube River:

- English: http://www.internationalwaterlaw.org/documents/regionaldocs/Danube_Convention-English.pdf
- German: http://www.internationalwaterlaw.org/documents/regionaldocs/Danube_Convention-German.pdf

1994 Treaty for the International Commission for the protection of the Meuse and Scheldt Rivers: http://www.internationalwaterlaw.org/documents/regionaldocs/Commission_for_Meuse_and_Scheldt.pdf

1961 Treaty relating to cooperative development of the water resources of the Columbia River Basin (with Annexes): <http://gis.nacse.org/tfdd/tfdddocs/246ENG.pdf>

1960 Indus Waters Treaty: <http://www.internationalwaterlaw.org/documents/regionaldocs/IndusWatersTreaty1960.pdf>

Other Relevant Documents

Draft articles on the law of the non-navigational uses of international watercourses and commentaries thereto and resolution on transboundary confined groundwater (1994): http://www.internationalwaterlaw.org/documents/intldocs/UNILC_Commentaries_on_Draft_UNWC.pdf

U.N. General Assembly Resolution on the Law of Transboundary Aquifers, A/RES/63/124 (2008): http://www.internationalwaterlaw.org/documents/intldocs/UNGA_Resolution_on_Law_of_Transboundary_Aquifers.pdf

Excerpts from the U.N. International Law Commission Report and Commentaries on the Draft Articles on the Law of Transboundary Aquifers:

- English: http://www.unwater.org/downloads/chp4_en.pdf
- Arabic: http://www.unwater.org/downloads/chp4_ar.pdf
- Chinese: http://www.unwater.org/downloads/chp4_ch.pdf
- French: http://www.unwater.org/downloads/chp4_fr.pdf
- Russian: http://www.unwater.org/downloads/chp4_ru.pdf
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International Law Association Seoul Rules on International Groundwaters (1986): http://www.internationalwaterlaw.org/documents/intldocs/seoul_rules.html

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- Paisley, Richard Kyle, 2008. FAO Training Manual for International Watercourses/ River Basins Including law, Negotiations, Conflict Resolution and Simulation training Exercises: http://www.fao.org/nr/water/faonile/fao-manual_negotiationskills-internationalwaterlaw_sep07.pdf
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Chapter 3. Linking International Water Law and Domestic Water Law

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- Bangladesh, Water Act 2013, Act No.14 of 2013
- Bhutan, The Water Act of Bhutan 2011, enacted 31 May 2011
- Cambodia, Law on Water Resources Management 2007
- Honduras, Law on Waters, Decree No.181-2009 of 30 September 2009
- Kyrgyzstan, Law of 29 June 2001 on Water Objects, Water Resources and Water Economy Constructions in the Kyrgyz Republic
- Namibia, Water Resources Management Act 2013, Act No.11 of 2013
- Paraguay, Law 3239/2007 of 14 June 2007, on Water Resources
- Peru, Law No. 29.338 of 30 March 2009 on Water Resources
- South Africa, National Water Act 1998, Act No.36 of 1998
- Tanzania, Water Resources Management Act, No.11 of 2009
- Uruguay, Law 18.610 of 2 October 2009, carrying the Principles for a National Water Policy
- Vietnam, Law No. 17/2012/QH13 of 21 June 2012, on water resources
- Zambia, Water Resources Management Act 2011, Act No.21 of 2011

International treaties and agreements

- Revised Protocol on Shared Watercourses in the Southern African Development Community, done at Windhoek, 7 August 2000 <http://www.internationalwaterlaw.org/documents/regionaldocs/Revised-SADC-SharedWatercourse-Protocol-2000.pdf>
- Tripartite Interim Agreement between the Republic of Mozambique and the Republic of South Africa and the Kingdom of Swaziland for Co-operation in the Protection and Sustainable Utilization of the Water Resources of the Incomati and Maputo Watercourses, done at Johannesburg, 29 August 2002

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