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THE LAST DROP: PRACTICAL TOOLS FOR ADDRESSING TRANSBOUNDARY WATER CRISES

This panel was convened at 3:00 p.m., Friday, March 29, 2019, by its moderator, Stephen McCaffrey of the University of the Pacific McGeorge School of Law, who introduced the panelists: Makane Moïse Mbengue of The University of Geneva Law School; Susan Daniel of the International Joint Commission; Hannah Lobel of the U.S. Department of State; and Christina Leb of The World Bank Group.

Introductory Remarks by Stephen McCaffrey*

It is my job as moderator to welcome you to this panel, which is entitled "The Last Drop"—ominously—"Practical Tools for Addressing Transboundary Water Crises." We have got a terrific group of panelists here for you, all of whom are deeply and broadly experienced in the field, and I would like to begin by introducing them briefly.

Makane Moïse Mbengue is a professor of international law at the Faculty of Law of the University of Geneva and affiliate professor at Sciences Po Paris (School of Law). He has been involved in water negotiations in Africa, and in particular, within river basin institutions such as the Organization for the Development of the Senegal River (OMVS), the Niger Basin Authority (NBA), and the Lake Chad Basin Commission (LCBC). He is the author of many publications in the field of water, and he is a coauthor of the new Oxford commentary on the 1997 UN Watercourses Convention.

Susan Daniel is the legal advisor for the United States Section of the International Joint Commission (IJC) between Canada and the United States, and that section is located here in Washington. The IJC assists in preventing and resolving disputes between the two countries over use of waters they share. Prior to moving to Washington, Susan served as attorney advisor for the U.S. Section of the International Boundary and Waters Commission on the southern boundary of the United States, so it is between the U.S. and Mexico, in El Paso, Texas. That is where she was located. She has also served as legal counsel to the Oklahoma Municipal League, an association of cities and towns there, and was in private practice in Bartlesville, Oklahoma.

Hannah Lobel is an attorney-adviser in the Office of the Legal Adviser in the State Department. She is currently handling issues related to transboundary waters around the globe, with much of her time currently occupied with the negotiations to modernize the Columbia River Treaty regime between the United States and Canada. That is a challenge.

Christina Leb works at Senior Water Resources Specialist at the World Bank with a focus on transboundary water governance. Prior to working at the Bank, Dr. Leb worked at the Faculty of Law at the University of Geneva. She remains an associate member of the Platform for International Water Law at the University of Geneva. Her work and publications focus on transboundary water resources management and international water law.

As you can see, we have a very experienced group of panelists.

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I will say a few words to set the scene, which are inspired by the description of the panel that you will find in your program, but I want to focus on one aspect of it, because the overriding phenomenon of our time and the future is anthropogenic climate change. This is going to have profound effects on, among other things, Earth's fresh water. Most of that resource is shared by two or more countries, particularly if you take the broad view, as I tend to do, that most water available to humans moves through the hydrologic cycle that we all learned about in grade school. We did not learn that it is being sped up by climate change, which is going to have increasing impacts itself.

There is a particular fundamental mismatch in this field, which countries will have to deal with in the very near future, if not right now, and it is this: treaties—we all know this as international lawyers—are instruments that stabilize international relations, and as the *Gabcíkovo* case showed, they are ordinarily hard to get out of or change. And that is for a good reason: stability.

Climate change and other forces, such as population growth, have made and will continue to make some water treaties obsolete. How do we build in or even add on mechanisms to deal with this challenge? Is creative interpretation or agreed changes in practice under treaties sufficient? What if there is no agreement? What then?

Our panel will grapple with these questions and the extent to which our current governance mechanisms are sufficiently robust and resilient to cope with these challenges. We will try to operate in a roundtable format. The idea is for them to each say a few words briefly and then for us to react and talk a little bit about our own experience and concerns and things that have been shared by other panelists and then to open it up to your comments and questions.

So, Makane, will you start us off by briefly describing a few examples of the African experience?

Remarks by Makane Moïse Mbengue

Good afternoon to everybody. I thank the organizers for the invitation. I have the privilege and hard task to set the scene in ten minutes by discussing transboundary water crises in Africa. Of course, when we talk about transboundary water crises, it is impossible to talk about them without addressing Africa. There are recent studies that have identified seventeen river basins in the world that have been characterized by a very high risk of tensions, and among those seventeen river basins, eight of them are in Africa. It is, thus, impossible to talk about transboundary water crises without taking into account the situation in Africa.

I will focus only on three examples in Africa: the Nile Basin River, the Lake Chad Basin, and the Senegal River. These will be my examples to illustrate certain of the ideas I will throw here on the table.

I think that in order to understand or to analyze transboundary water crises in Africa, one can focus on three issues. The first issue is what I call the *occurrence* issue, the second one is what I call the *persistence* issue, and the third one is what I call the *resilience* issue.

Allow me to start with the occurrence issue. When do transboundary water crises occur in Africa? I think that there are three main factors that trigger transboundary water crises in Africa. The first factor is what I call the natural factor—climate variability, water variability, drought that has in many transboundary water causes in Africa led to a lot of tensions.

The best example we can think about is the example of the Lake Chad Basin. The Lake Chad Basin is maybe one of the biggest ecological disasters. The surface area used to be about 25,000 square kilometers, and today the surface area is only about 2,000 square kilometers. We are talking about a very huge ecological disaster that has led to many tensions.

Just to give one example, the Lake Chad is the hub for Boko Haram, a very important terrorist group in Africa.

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The second factor is what I would call the legal factor. Africa is quite often praised for having a lot of river basin agreements. We have something like 160 river basin agreements, but then when you pay attention, among those 160 river basin agreements, maybe only 90 to 100 are really effective, meaning that they contain substantive and possible rules that can really help in the management of transboundary water resources. This means that at least one-third of those agreements are not really effective. I am among the people who believe that, for instance, the 2010 Nile Cooperative Framework Agreement is among those agreements that are not very effective, and of course, this legal factor leads to tensions and to transboundary water crises.

One legal factor I want to touch upon very quickly, because I think that sometimes we tend to forget it when we discuss transboundary water crises in Africa, is the border issue or to be more precise the legal uncertainty surrounding the delimitation and/or demarcation of certain borders. Many transboundary water crises in Africa are connected to border disputes. For instance, the territorial dispute between Benin and Niger before the International Court of Justice—where the course of the boundary on the Niger River was at stake—led to a certain extent to a transboundary water crisis since the two states had conflicting sovereignty claims over the islands within the Niger River, in particular the Island of Lété. The case concerning *Land and Maritime Boundary Between Cameroon and Nigeria*, also before the International Court of Justice, revealed the same patterns of connections between border disputes and transboundary water crises within the Niger River Basin. And I will come back to that later maybe in the discussion, but for instance, within the Senegal River Basin, in 1988, there was almost a war between Senegal and Mauritania, two countries that are riparian of the Senegal River, because the border between the two countries on that river was never clear. Populations from each side believed that they could just use the water they wanted to use regardless of border considerations, and at a point such a situation gave rise to violent conflicting uses of the waters of the Senegal River and to an important transboundary water crisis that led the two countries to cease their diplomatic relations for many years.

A third factor that is important to take into account when one wants to understand why certain transboundary water crises occur in Africa is the institutional factor. In most of the cases, transboundary water crises occur in Africa because there is not a strong or efficient institutional mechanism to manage the transboundary water resources and to ensure cooperation between the various riparian states. We can also come back to that during the discussion, but I believe that a lot of the tensions within the Nile River Basin, for instance, are due to this very weak institutional framework that is the Nile Initiative Basin, which is not strong enough to really serve as a proper forum for the management of the Nile Basin water resources.

Then, as I said, there is a second issue that is very important, which is the persistence, the why. Why do transboundary water crises in Africa persist? Why do they even aggravate? I think there are three main reasons there. The first reason is that sometimes regarding many of these transboundary water crises, states are reluctant to accept the idea of customary rules or principles of international water law that could apply to solve the water crisis. Sometimes, there is even a rejection of those rules. Many transboundary water crisis persist or aggravate because of this rejection or reluctance to accept that there are rules and principles of customary international law that apply.

The best example, in my view, is the Nile River Basin with Egypt, which for a long time, has rejected this idea of customary rules, claiming that it has millenary rights over the Nile. This has not helped in solving the transboundary water crisis that has derived from the construction of the Grand Ethiopian Renaissance Dam.

The second reason is the reluctance to use dispute settlement mechanisms, in particular judicial means of dispute settlement. In many of those river contexts, because states do not have recourse to dispute settlement mechanisms, of course, there is an aggravation of the water crises. I can also come back to that during the discussion, but, for instance, in the Senegal River context, there

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was in 2004 again another huge crisis between Mauritania and Senegal regarding the use of the waters. And the reason is that persistent border dispute that they do not want to solve before an international court and tribunal in order to better ensure peaceful management of the waters.

The third reason for the persistence is what I would call the absence of water diplomacy. One cannot prevent transboundary water crises if there is no culture of cooperation, if there is no culture of water diplomacy, and, of course, this is something we need to push for in many of those African river basins.

Some of you have surely heard about the so-called "Lake Chad Replenishment Project" that had been conceived to save Lake Chad. The idea is to divert water from the Ubangi (a tributary of the Congo River), and to channel in it in the Lake Chad—basically replacing one ecological disaster with another one. It is unclear to what extent interested countries of the Congo-Ubangi-Shanga Basin International Commission, such as the Democratic Republic of Congo (DRC), have been consulted for such a diversion scheme as required under customary international law and whether DRC has consented to such a project. Risks of unilateral actions, because of lack of water diplomacy, are of course not good to solve these tensions.

And then last but not least, the third issue is resilience. I think there the question is what can be done to make transboundary watercourses in Africa be resilient to crises. Here, I am going to throw ideas on the table because it brings us more closely to the discussion of this afternoon: practical tools.

I think what we need to develop today is a new generation of water agreements that focus on prevention of water conflicts. There is a very nice model since 2017 at the level of Central Africa. They have concluded an agreement called the Convention on the Prevention of Conflicts in the Management of Water Resources in African Central States. The Convention was negotiated in the framework of the Economic Community of Central African States (ECCAS), with the support of the United Nations Economic Commission for Europe (UNECE) secretariat of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes and the African Development Bank.

What should resilience be about? Resilience should be about social resilience, making sure we have water agreements that allow for public participation because quite often the population is involved in those tensions.

Resilience should also be about economic resilience, better benefit sharing.

Scientific resilience, i.e., more data sharing between the countries, is also fundamental to ensure resilience in general. Quite often, a transboundary water crisis happened because states are accusing each other of something that the other state has not done, like Nigeria has accused Niger of taking too much water from the Niger River, but in reality, there was less water for Nigeria because of climate change impact on the Niger River Basin. So, data sharing is crucial to prevent transboundary water crises.

The last thing that is very important, in my view, is what I would call the ecological or environmental resilience, making sure that we have water agreements or water instruments that can deal with the management of climate variability. We do not have that yet in the current generation of water agreements.

These are the elements I wanted to put on the table. Thank you very much, and I am looking forward to more discussion.

Stephen McCaffrey

Thank you, Makane, very much. Susan, will you tell us a bit about the North American experience through the lens of the International Joint Commission and, perhaps to the extent you want to, the International Boundary and Water Commission (IBWC)?

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Remarks by Susan Daniel*

I would be happy to, and I must say I am so pleased to be here at the ASIL meeting this afternoon and to be participating on this panel with such esteemed scholars and speakers, and thank you, Professor McCaffrey, for your introduction.

This is the 110th anniversary this year of the Boundary Waters Treaty. The Boundary Waters Treaty was signed in 1909 to prevent and resolve disputes regarding the use of the water shared by Canada and the United States, and in the Boundary Waters Treaty, the parties called for the establishment of an International Joint Commission to help it carry out certain provisions of the treaty. I would say that in the theme of this meeting that the International Joint Commission is a very good tool in the toolbox of the governments for resolving disputes.

At the time the Boundary Waters Treaty was signed in 1909, there were disputes along the boundary that were causing tension. Settlers in Montana and Alberta were constructing competing canals to divert waters from the St. Mary and Milk Rivers for their own use, and in the Niagara River, it was becoming increasingly clear that there needed to be a joint management plan for the development of hydroelectric power production to protect the important interest of navigation and to safeguard the unique and scenic beauty of the Niagara Falls. The Boundary Waters Treaty provided a framework to handle these disputes.

The clarity and simplicity of the treaty are the real reasons for its success. The treaty sets out general principles to be applied on a case-by-case basis. It does not set out detailed prescriptions. This approach has ended up being very adaptable over time as new issues arise, and the original principles have really stood the test of time.

The Commission was organized by the two countries and held its first meeting here in Washington, D.C., in 1912, and since that time, the Commission has worked to resolve more than 120 issues raised by the two countries. The Commission is comprised of six members, three appointed from Canada, three from the United States. They are appointed at the highest levels of government, and once they are appointed, the treaty requires them to subscribe to a solemn declaration that they will faithfully and impartially perform the duties charged to them under the treaty. And it is this duty of impartiality that has led the Commission to operate independently at arm's length from the governments.

The Commission is supported by section offices in both countries. There is a Washington office, and there is an Ottawa office. And we work very collegially. Commissioners and staff work by consensus, which in the IJC sense typically means unanimity, meaning they talk through issues until they reach an agreement on what is the best approach that is in the best interest of both countries.

I very much enjoy working with my Canadian colleagues. Every staff person has a counterpart in Ottawa, so there is a legal advisor for the Canadian section. And one side never goes forward without the agreement of the other section. It works as a unitary body.

Under the treaty, the Commission has two main responsibilities. One is to approve applications for projects that use, divert, or obstruct boundary waters or, in some cases, transboundary flows. The treaty sets out clear principles and rules that the Commission has to follow when considering such projects. When the Commission approves a project, it issues what is called an "order of approval," and in this order, the Commission sets conditions for the operation for the design and operation of the project. And the rules provide that the Commission is to consider interests that may be harmed by the project on the other side of the line. It is also customary for the

* International Joint Commission.

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Commission to form a board to monitor the operation of the project, and as of today, we have over twenty boards, which monitor projects along the boundary.

The second main responsibility of the Commission is to investigate, research, and report on matters or questions of difference between the two countries that are referred to it. They are called "references," and the best example of a reference is the standing reference under the Great Lakes Water Quality Agreement, which was signed in 1972. Under that agreement, the two countries asked the Commission to report on the progress of the governments to restore the biological, physical, and chemical integrity of the Great Lakes, and to report on the progress of the parties to restore the conditions of the water, boards were established under the Great Lakes Water Quality Agreement. The Commission staffs those boards through a Great Lakes Regional Office in Windsor, Ontario. We have three offices: Windsor, Washington, and Ottawa.

A lot has been written about the Commission and about the Boundary Waters Treaty. People wondered why does it work, why has it been such a good framework. Is it the clarity and simplicity of the treaty that stood the test of time? And if you would like to look at the treaty, I brought copies, so you can see if you think it is clear and simple. Or some people think is it the unique North American context that has made this very successful.

The geography certainly has something to do with that. The border between the United States and Canada is very long. It is over five thousand miles long, hundreds of water bodies, multiple basins and watersheds, and it just so happens in this geography, neither Canada nor the United States is the primary upstream or downstream riparian. Thus, maybe it is that geography that has made it so successful.

But I think I will leave it there right now. I have some case studies, if we want to get into particulars. It is something that a lot of countries wish to have such a commission.

Stephen McCaffrey

Now I would like us to turn to existing agreements, implementation of them, pressures on them, and, Hannah, could you start us off looking at these issues, maybe through the lens of the Columbia River Treaty?

Remarks by Hannah Lobel*

Sure. Thanks. You are going to get a double dose of the United States and Canada right now, so apologies, but I was really struck as Makane was talking.

Stephen McCaffrey

But it is a different treaty.

Hannah Lobel

It is a different treaty. But I was struck when you were discussing those key resilience factors, how at play those are in our current discussions and objectives with the Columbia River Treaty.

Susan just explained this kind of general treaty regime we have with Canada, with the Boundary Waters Treaty, and just for some context about the Columbia River Treaty, it is what is considered a

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special agreement. It is a basin that the two countries took out of the Boundary Waters Treaty. While the Columbia River Treaty is in force, the Boundary Waters Treaty does not apply to it.

For just a little context for those unfamiliar with the treaty, under the treaty, three dams were built in British Columbia, and one dam was built in Montana. The driving idea behind the treaty was to develop the river as a resource focusing on hydropower generation and flood risk management, and with the idea that operations geared toward those two primary goals would make possible other benefits as well.

I think it has been tremendously successful in a lot of ways. It has allowed British Columbia over decades to develop and finance its hydropower system, and it has provided critical flood control for the United States and the Pacific Northwest but also for British Columbia through the management of the flows that go through the Kootenai River in Montana with Libby Dam.

The two governments have been able to implement the treaty through the treaty protocol and various supplemental agreements over 55-plus years, and they have been able to do so in a way that has been able to take into account some other interests. I think the key benefits in that regard are ecosystem benefits, namely being able to augment flows for fish purposes. Fish in the Pacific Northwest is a really critical issue, and it is particularly of great importance to the tribes in the Columbia Basin.

We have had a lot of successes with the treaty, but it has not been without its challenges, and at the current time, the two countries are taking a really hard look and seeing how we might improve the regime or its implementation, and so I thought I would highlight a couple of issues that might be of interest.

One, as has been flagged, is the climate change issue, changes in hydrology. That system itself has been conceived of and managed largely based on a snowpack-driven hydrology. With changes in climate, changes in hydrology, we may see more frequent rain-driven events, and it is harder to forecast for those. So that may call for examining flexibilities, going back to the condition you were flagging, Steve, about how do you get certainty but also how do you allow for flexibility.

Similarly, and I do not know if this is really a pressure on an agreement, but it is a factor that, like changes in hydrology, you want to be able to adapt to, is changes in technology really, changes in how we are able to process data and information. Looking back at how the treaty was developed in the 1950s (it was signed in 1961 and entered into force in 1964), when they were developing these storage reservation diagrams for how storage would be operated at these dams, they were using three events, three flood events, and that is just not where we are with information anymore. We have a lot more data, and we have a lot better tools for projecting things. How do you incorporate that new way of managing information technology into an existing agreement? I think that there are a lot of opportunities there, but it can also be difficult.

One looming pressure in the treaty itself, which in some ways is driving a lot of the discussion right now, is that in 2024, the flood risk provisions of the treaty shift to something different, and I think it is fair to say that our two countries have differing views on how that shift should be managed. And I will just leave that one at that.

And then we have some social- and economic-driven pressures. We have the fact that this is a treaty that was designed to really maximize power benefits, and power markets have shifted considerably. Power sources have not quite developed in the same way that was originally conceived or was expected under the treaty. The United States is looking at how is that benefit really most equitably shared.

I mentioned the ecosystem already. We have been able to do quite a bit under the existing agreement, and I think there is more that can be done. But that is definitely an issue of where do you find the spaces because it is a shared river. It is a shared ecosystem, but there are also different ecosystem interests on either side of the border.

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I think the other issue—and this goes back to one of the points Makane was raising—is how do you incorporate local interests, because I think that transboundary water conflicts and issues, they can become so political at a high level. But, in reality, there are just extraordinary local issues in terms of local interests and how local needs are being met.

This is an area where I just think the boards that Susan was talking about under the IJC have just done extraordinary work in terms of being able to be a platform where communities can come and voice concerns and be heard by an entity that then feeds information back to the governments with recommendations and guidance.

I will just say a few quick words about what it has been like conducting this negotiation so far in terms of trying to make sure we understand the interests of the region—and I also think it is interesting from an international negotiation perspective to be so deeply rooted in local issues. In 2013, the U.S. implementing entity for the treaty, which is the Bonneville Power Administration and the U.S. Army Corps of Engineers, organized what they called the "Sovereign Review Process," where those two entities brought in the four U.S. states that are impacted and representatives from the tribes in the basin, and they put together what their recommendation for a modernized treaty regime would look like. Then that was delivered to the State Department and the U.S. government evaluated it. We have been very vocal that we have been using that recommendation as a guide. That was a very helpful way to inform the U.S. objectives.

But, additionally, during the course of these negotiations, which is something very new to me, we are out in the region quite frequently doing things like public town halls, where we hear from the community, and we are also doing regular consultations with the tribes as part of our consultation responsibility. I know Canada is doing some very similar things on its side. We are hopeful. We have a long way to go with our partner to the North, and we are working to represent all these different interests and try and find common ground.

It is hard because there are a lot of expectations, and they are really high. And they can be in conflict. I am confident that we will find a way forward, but those are some of the existing issues and pressures we're trying to work through.

Stephen McCaffrey

But you are talking.

Hannah Lobel

We are talking.

Stephen McCaffrey

Okay. Finally, Christina, could you address generally the implementation of international water law, including good practice examples that can inform water cooperation?

Remarks by Christina Leb*

Sure. Let me cover the world in five minutes. I will start with the good practice examples just because it relates directly to all the previous speakers, and it relates to your question regarding what makes the Boundary Waters Treaty so resilient. It is really each of the examples that have been

* The World Bank Group.

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raised. They have institutions. It is these joint mechanisms that allow for the adaptive capacity in basins. They are platforms for cooperation between the countries. They are a result of cooperation. They are usually based on international agreements, and they then become platforms that make the cooperation in the basins much more dynamic. They can lead to a deepening of cooperation.

For instance, in the Rhine, the initial cooperation was about gaining a common scientific understanding of pollution, and then later through various conventions, 1963 and 1999, it went from pollution prevention to giving the institution an expanded mandate on flow management, flood prevention, species diversity, and wetlands renovation, thus expanding the cooperation between countries.

Same in the Senegal River Basin, it started out with a certain set of common works, more common works were agreed later on. OMVS is now even active in electricity trade. It is linking to the West Africa power pool. It is this expansion of cooperation in the technical sense and the deepening, and also the expansion in the geographic sense. There are basins which start out with bilateral cooperation, on a very specific project. For example in the Orange-Senqu Basin. You have the Lesotho Highlands Project between South Africa and Lesotho, and then in addition to that, a broader basin treaty was built, also because of the SADC Protocol that recommends the creation of joint institution. The UNECE Convention on the Protection of Rivers and Lakes also has a Secretariat. The Convention went from a convention that was open for membership of UNECE member countries to opening it up to a global convention. It is these institutional mechanisms that help cooperation in basins.

This recommendation for this good practice is also built into the global conventions. I mentioned the UNECE Convention, which goes beyond the recommendation that is in the 1997 UN Watercourses Convention, where there is a recommendation of having joint mechanisms. The UNECE Convention sets an obligation for contracting parties to establish joint mechanisms because it is recognized that these mechanisms are important for building resilience and making mechanisms adaptive to the changes in the hydrological regimes and to the changes in water needs and demands. We have population growth. We have changing land use patterns. That all is better managed through institutions.

Now, what do we do in the absence of institutions? There again, the global conventions have good guidance. We have the general principles of international water law and particularly clearly codified in the UN Watercourses Convention from 1997, and here really the principle of cooperation is the underlying principle that helps as guiding tools for countries that seek to try to find ways to establish good coordinated basin management.

In international water law, the principle of cooperation is not just a procedural principle, but it aims at optimal use of water resources, not maximum use, but the equitable reasonable use of trying to maximize the benefits for all while minimizing the detriments and making sure that needs are being met.

The second principle, which is key to equitable and reasonable utilization is the one that in practice and implementation also creates the biggest challenge because when we discuss with countries where we implement capacity-building activities, one of the key challenges is the data that needs to be available. The principle of equitable and reasonable utilization demands that one country which plans a measure regarding a transboundary waterway knows what are the historic uses, the current uses, the future uses, the hydrological regime now, what will happen in the future, not only in its own country, but in the entire basin to really assess whether its use is equitable and reasonable.

Now, many countries we work with do not even have the data systems that are needed to carry out water management according to modern standards. Then think about having the data also from the entire basin. That is a key challenge in the absence of cooperation. We get back to this cooperation principle.

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The geospatial data, the new technologies are of tremendous help, but they cannot replace some of the ground data that you need.

The second challenge with the equitable and reasonable utilization principle is the question of equity. It does not matter how scientifically minded water resource managers are; equity touches on the emotions. It is the history of relations with the neighboring countries. And again, it goes back to the principle of cooperation because, in the end, only the countries that are affected will be able to determine what equity means for them at that point in time where they can actually sit together, come together, and reach an agreement. And that leads to the stickiness of agreements, for instance, equity agreed on in 1960 may no longer equitable today because needs and underlying conditions have changed.

The third principle, which is not, per se, a cooperation principle, is the prevention of significant harm. That principle or, more importantly, the obligation to notify that is attached to that principle is a key mechanism to lead to coordinated management. the customary obligation is to notify for significant adverse impact, and it has also been written into numerous treaties with lower thresholds. For instance, in international financial institutions such as the World Bank, we do not apply any thresholds. Our policies on the notification requirement trigger the moment water is used, or if there is a risk of pollution of shared waters.

That triggers a notification process with some exceptions, and it helps as an awareness raiser of the importance of looking at the basin when thinking about national water resource management.

For instance, in Afghanistan where we worked, the requirement to notify on a specific project helped the country to identify that it was internally not well set up to deal with this issue because inter-ministerial communication was limited.

That is the final issue that I want to come to for transboundary water resource management. The national institutions—and it goes back to your institutional questions—and the way they are set up, the way they are communicating with each other is of primary importance because a lawyer at the ministry of foreign affairs will think very differently about water resource management than the engineer in the water or agriculture ministries. It is important to bring in the water resource managers because their understanding of the hydrologic cycle. As you mentioned, Stephen, this interconnectedness of all these territories is really what in the end leads to the application of the principles of international water law.

Stephen McCaffrey

Excellent. Thank you. And Christina has a book on cooperation if you want further discussion of that.

Now, if I can just throw out a couple of questions and ideas that came up during your various excellent contributions. The first one has to do with what I said at the outset, and that is how to build into treaties mechanisms for ensuring flexibility. And the one that I know of that really has worked over time is in your bailiwick, Susan. It is the IBWC's Minute Process, right? Incredible. This came out of an old treaty, and yet these people—maybe you can describe it. But they built into the treaty regime and structure, the institution, a mechanism for updating it, changing it.

Susan Daniel

Right. It is somewhat analogous to the orders of approval on the Canadian side. When the Commission decides to move forward with a project, it goes through this Minute Process. It has been about ten years since I have been there. I am somewhat rusty on IBWC work.

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The two commissions are somewhat different in that there is more done domestically on each side. They do not quite operate as a unitary body like the IJC does, but when there is an agreement by the Commission to go forward with the project, it is the Minute Process. And on the U.S. side, there is a Circular 175 process that goes through that, almost like a treaty, Minute.

Stephen McCaffrey

For example, one of the more recent Minutes provided for storage of water in the United States for Mexico.

Susan Daniel

That is right.

Stephen McCaffrey

It is water to which Mexico is entitled, but they do not have any way to store it. Now, you might be thinking, yes, but there is not enough water. In some years, there actually is enough, and so without any storage possibility, it just flows through. And Mexico cannot take advantage of it.

I mean, basically, what happens is these minutes get drafted within the Commission or within each section of the Commission. They go up through the respective foreign ministries, and they are adopted. And in effect, they become modifications of the basic treaty because they are part of the obligations of the parties under the treaty, and that, as far as I know, is a unique thing.

Susan Daniel

Right. And I might say back to the International Joint Commission, we have been studying the history of the Commission's existence. The first fifty years of the IJC were really focused on issuing orders of approval for projects, for dams. The last fifty years has been more focused on the reference side of the treaty. But we have done a lot of updating of orders, the same sort of thing, when orders may have been issued in the early 1900s, and you need to look at them to see how they are still operating and maybe taking into account changes in the area. We have been successful in issuing supplementary orders of approval and have spent quite a bit of time doing that with Lake Superior and Lake Ontario.

But the two commissions, it is interesting how they differ. The IJC, for whatever reason, developed where the Commission issues an order of approval and then steps away from it and does not own and operate the projects. On the U.S.-Mexico side, the IBWC does own and operate the projects, and it is like a mini bureau of reclamation.

They do not step away. When there is a Minute to build a project, the IBWC owns and operates on the respective sides of the border wastewater treatment plants, levees, dams, the hydroelectric plants, bridges, all owned and operated by the IBWC. And the IJC did not develop that way. They issue the orders, and they step back and do not own and operate.

Stephen McCaffrey

Thank you. Just one other question that was raised by something that was said, Christina, you referred to the obligation to notify, which I think is a very important obligation. If you are planning a project, you should notify the other state likely to be affected or that will possibly be

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affected by the project and give them an opportunity to comment and perhaps enter into consultations with it without giving that state a veto, certainly, over the project. But at least there is an exchange.

I am thinking of this in terms of climate change and in terms of whom you impose this obligation on, and you say, "Well, of course, any state that is contemplating a project, it might adversely affect another state." Well, yes. But you think of something like a Baia Mare cyanide spill in Romania, way up in the headwaters of the Danube, but the stuff was so toxic that it basically killed all life in the Tisza River. It made it into the Danube. It affected the drinking water supply for Budapest. When they are planning that mine—it was a gold mine—do they have to notify all of the countries in the Danube Basin? In retrospect, you would say, well, yes, but as a practical matter, how are we going to deal with this?

And the reason I ask is that there have been a lot of other breaches of these so-called mine waste lagoons. I love that euphemism. You call something toxic and horrible a "lagoon." But, anyway, Brazil, elsewhere, sometimes related to heavier snowfall or precipitation, rainfall, than, "normal," what normal was.

Can we set up a process to anticipate and protect against that, prevent that?

Christina Leb

Yes. I think the process, if it had been planned with World Bank financing, they would have had to notify.

Stephen McCaffrey

So everything ought to go through the World Bank, but then there is China.

Christina Leb

One of the reasons why there is no threshold, almost all of the riparian countries are member countries of the World Bank. We are very concerned that all of our member countries are informed of what we are doing with respect to their shared resources.

But another issue is the significant adverse impact, this threshold of the customary role. It is very difficult to say in advance where is this threshold and what is the risk. We even notify wastewater treatment plants. The water colleagues ask, "Why do we notify a wastewater treatment plan?" Well, even that one can have an accident, right? And then it goes into the river and then to drinking water and to aquifers.

The other issue is the two-way street of harm, right?

Stephen McCaffrey

Can you explain that to our audience?

Christina Leb

Yes. Basically, in the river basins, we think of water flowing, and it is flowing downstream. What we get from the colleagues who are asked to notify, "Why do I need to notify the upstream countries if I am planning something downstream?"

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Stephen McCaffrey

Because the Bank requires you notify all countries in the basin, basically, or the riparian countries.

Christina Leb

Unless for a very specific case, if it is the most downstream country and it is a tributary exclusively located in that country. But, basically, it is because over time, impacts add up, and over time, countries that develop heavily downstream will foreclose future use of countries upstream that develop later.

Stephen McCaffrey

Ethiopia has complained about this in respect to Egypt, that Egypt had developed the Nile so much that Ethiopia cannot touch it without causing harm to Egypt. Whether that is true or not, I do not know, but it is coming close. Still, that is a complaint of Ethiopia.

Christina Leb

That is an argument, but that is exactly the issue with what are the best mechanisms of notification where they can really prevent everything. I do not think we can prevent everything, right? We cannot come up with rules that will make sure that we absolutely prevent each and every risk. But we cannot come up with mechanisms and create institutions. Dispute settlement mechanisms, compensation mechanisms, where if something happens immediately, there can be a response. If there is impact, there is a compensation regulation. That is why we have dispute settlement mechanisms. We cannot really prevent every risk, it would prevent development, quite honestly, if we did. We have to build in these risk management mechanisms. Again, I come back to the institutions. Institutions are a very good way to do that.

Stephen McCaffrey

Absolutely. Okay. Rather than ask another question, I will ask members of the panel if they have something further contribute or a question to ask of one of their fellow panelists. Christina?

Christina Leb

I have a question, and that goes back to the history of the Nile, if you allow, Makane, because you mentioned that for you, the Cooperative Framework Agreement (CFA) is an agreement that has been negotiated between the Nile countries for a long time, and we have how many signatures now?

Stephen McCaffrey

Six. Six signatures and three ratifications. We need six ratifications.

Christina Leb

It is not yet in effect, but you mentioned that still you would not consider it as an effective agreement, and I was wondering what is your reasoning behind it, or what are the specifics of why you think it could be more effective or what would be better?

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Makane Moïse Mbengue

Well, thank you very much. You know, I am always careful when I talk about the Nile, and I see that we have in the room the Honorable Legal Counsel from the African Union, Ambassador Namira Negm, who is from Egypt and who let me know one year ago that I was almost "blacklisted" in Egypt because of some positions I took during the negotiations of the Cooperative Framework Agreement regarding the Nile River Basin. But she made some good offices and now I am welcome again in Egypt thanks to her.

Basically, that brings us back to this element that I was referring to when I talked about the rejection of customary rules and principles of international water law. Why I think the Nile cooperative framework is not effective in terms of law—and also it will not be in terms of implementation—is because some of the principles that are there simply do not exist under customary international water law, and they do not really solve the issue of the water crises that occur within the Nile River Basin.

Take, for instance, Article 15 on water security. Water security is about preserving acquired rights, which is what Egypt and Sudan have been trying to claim for ages that they have millenary rights over the Nile. What is interesting is that both Egypt and Sudan decided not to get into that framework, despite all the effort that has been put to take into account their concerns and even creating new principles to take that into account. And when one looks at the management today of the situation resulting from the Grand Ethiopian Renaissance Dam, it seems that a different road is taken than the one of the Cooperative Framework Agreement. Let us simply think about the Declaration of Principles between Egypt, Ethiopia, and Sudan in 2015, plus the Minutes; they do not reflect that Cooperative Framework Agreement. That is why I am saying I believe that it is among those agreements—and I am not criticizing those that have been drafting it or negotiating it—that are not very effective or will not be effective in managing transboundary water crises in Africa. But it is not the only one. We have about sixty of them, and we need to think about that.

But if you allow me, Steve, just to jump on one of your points, I think, at least in the African context today, that we need to think more and more about the regionalization of water agreements. I think there is a fragmentation in water law that is not always viable or efficient. Sometimes you take a country, for instance, like Nigeria, which is within the Niger River Basin, while being connected to the Lake Chad Basin to a certain extent. Or you take Senegal, it is riparian of the Senegal River, but also of the Gambia River. You have this bipolar syndrome where states are governed by different rules, different principles, depending on the basins where they are, and this does not help in managing or even preventing transboundary water crises.

The model of the Economic Community of Central African States (ECCAS), is interesting. They went for regionalization. The Southern African Development Community (SADC) did the same. They went for that agreement relating to all of the shared water resources in the SADC region, and I think that this can help if you have less fragmentation in the law. It can help in preventing these water crises.

Stephen McCaffrey

On the Declaration of Principles, like the SADC agreement, I think you will find the echoes of the CFA, the cooperative framework agreement, in the Declaration of Principles. Of course, they are declared as principles.

You can say from Egypt all the way down to Southern Africa, these basic principles have been recognized. Whether they have been implemented for other reasons you have mentioned, Makane, is another question.

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Christina Leb

I had two points. One, I am not sure whether it will resolve the crisis over the CFA, but in the meantime, the water community has come up with a definition for water security, so good news. It is managing resources sustainably, delivering services, and mitigating risk. It is not something that can be achieved, but it is a process. It will not resolve it.

But then what I wanted to get back to is the comment on using the Declaration of Principles versus using treaties, because as lawyers, we often have the feeling that a treaty is the best because it must be the most effective. It is not effective in many regions. In many regions, international relations, water resource management, is done much better without international treaties.

Makane Moïse Mbengue

Soft law.

Christina Leb

Yes, soft law. Either declarations by ministers, by heads of states. Central Asia is one of the prime examples, right? In Central Asia there are a number of treaties. The framework on paper based on treaties is very good. It is not working as well as it is written onto the paper because, again, that is the one big caveat of institutions. They are not immune to politics. The process is stalled somewhat at the moment, but what is really effective in Central Asia are declarations by heads of states.

In the end, when water resource managers go about how do we regulate the water resources, they are not going back to the treaties, which actually are very good. They are going back to what did the heads of states say in 2009 when they had the last joint declaration and what did they say in the earlier declarations. It is really also these tools to consider in terms of the cultural context, the regional context on what actually works best.

The India-Bangladesh Joint Commission is based on a ministerial declaration. There is no treaty behind it, yet it works well for the two countries.

Stephen McCaffrey

Excellent. Other comments?

Susan Daniel

I just wanted to give a shout-out to the boards, where I was saying that the IJC is a tool, going along with the theme of the conference, the IJC is a tool of the governments. I did not know if I emphasized that the tool for the IJC is its boards, and it is kind of a soft law, but there is a lot of flexibility. And these boards have really evolved over time.

I was going to give an example.

Stephen McCaffrey

I do not think there is anything in the treaty about boards, right?

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Susan Daniel

Right, right. The governments and IJC have, over the history, set them up. I was going to use the example of the Lake of the Woods Watershed. I do not know if any of you have ever been there. It is a beautiful area in Minnesota, Ontario, a little bit of Manitoba.

In the early days of the Commission, we got several references to look at water levels, and our reports helped the governments enter into some conventions, the Lake of the Woods Convention in the 1920s and the Rainy, Namakan Lake Conventions in the 1930s, and the Commission was given the task of setting the emergency water levels by virtue of high water, low water in these boundary waters. In the 1940s, the IJC issued an order of approval, set up a board of control to monitor the water levels, and these boards have really evolved over time. In the 1950s, we received a water quality reference to look at water quality. We set up a pollution board to report on pollution.

I was saying that Canada and the United States are sometimes downstream interests, sometimes upstream. In the Lake of the Woods, Canada is the downstream interest and is very concerned about water pollution. Lots of lakes along the boundary suffer from eutrophication. If you have seen pictures of Lake of the Woods, you would be surprised how the blue-green algae has taken over. As a result of this, we received another reference from the governments in 2010 to look at binational governance mechanisms, and we made recommendations to do a water quality plan of study. We also made the recommendation to merge the two boards, merge the pollution board with the water levels board. The governments agreed to that. We merged the boards, and we also asked to look at a larger area, the watershed.

Now in 2013, we created the Lake of the Woods-Rainy River Watershed Board. It is one of our largest boards. It has over twenty members. We typically have government members on the boards—federal, state, provincial members—and we made spaces for local members, made spaces for making sure the indigenous voices were heard—First Nations, tribal, Métis, and it is really an exciting board. If you ever want to know what the Commission does, go to one of the board meetings. That is where it is really from the bottom up, and they inform the IJC. The IJC can inform the governments, and I think the boards are why the IJC is successful at preventing and resolving disputes.

Stephen McCaffrey

Just one last question, which has to do with indigenous populations, which in the past have often been overlooked in development projects flooded out by the reservoir, for example, behind the dam. Are we doing better? I think we are at least starting. The original Columbia River Treaty did not take into account the indigenous populations or the environment. Of course, it was before we discovered the environment in 1961. Only partly facetious there, right?

Hannah Lobel

Well, you know, this is going to sound strange, but if you read the president's message in transmitting the treaty to the Senate, you will see that there was some environmental consideration. The dams that blocked fish passage in the United States on the Columbia were not dams that were created under the treaty. There was a thought that if dams were built in Canada, they would not interfere with anadromous fish. So, strangely enough, there was some concept that it might be helpful to anadromous fish.

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Stephen McCaffrey

Excellent, excellent. Makane?

Makane Moïse Mbengue

We have a new generation of water agreements in Africa that we call "Waters Charters." The one from Senegal was the first one, 2002. Then the Niger River Basin Authority adopted one in 2007, and the Lake Chad Basin has one since 2012. The Waters Charters incorporate provisions on public participation, some of them referring to tribal chiefs, not indigenous communities, but tribal chiefs and of course the challenge is to implement it.

But we have this new generation of water instruments in Africa that are insisting on the need to have as stakeholders being involved in the use, management and allocation of water resources. And for the Senegal River, for instance, the water charter says that in the Permanent Commission for Waters of the OMVS, the Senegal River Basin organization, you need to have representatives of the local populations that participate in the decision-making process relating to water allocation.

Now the challenge is to implement those rules, but we are having more and more this opportunity to better integrate public participation.

Stephen McCaffrey

Thank you.

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