
Fighting Water Wars: Regional Environmental Cooperation as a Roadmap for Peace

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INTRODUCTION

There is a general consensus among experts that water scarcity in the twenty-first century will seriously threaten world peace. As it is essential for virtually all domestic, agricultural and industrial uses, as well as for maintaining ecological balance, water is the fundamental pillar of socio-economic, cultural, political, and environmental development. Water's deepening scarcity, the thinking goes, could thus lead to an upsurge in interstate armed clashes. However, management of transboundary waters has historically led to a process of cooperation rather than confrontation—a trend that is greatly enhanced where institutions are able to properly cultivate environmental governance, and when civil society can deploy transnational ties.

In other words, water has not lead to major interstate clashes, at least not *yet*. The question now is how should we cope with increasing

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water stress so as to continue fostering cooperation? This article intends to explore this issue, starting with a brief overview of global water resources, followed by a presentation of the main paradigms regarding environmental scarcity and conflict, and ending with a case study of conflict containment through water cooperation.

THE WORLD WATER SITUATION: A SWORD OF DAMOCLES

Less than 3 percent of the world's water is fresh—the remaining is seawater and undrinkable. Of this 3 percent, over 2.5 percent is frozen, locked up in Antarctica, the Arctic, and other glaciers. Thus, humanity must rely on this 0.5 percent for all its fresh water needs. Currently, more than 780 million people lack access to an improved water source.¹ More than

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3.4 million people die each year from poor water sanitation and hygiene-related causes,² and nearly all of these deaths—99 percent—take place in the developing world, making unclean water a greater threat to human security than violent conflict in these countries.³

Moreover, analysts see a grim future for the world's water resources, for several reasons. First, massive pollution of rivers, lakes, and aquifers across the world, along with the alteration of watercourses (a result of the construction of dams, mainly for the production of hydropower), are progressively reducing Earth's water reserves. Secondly, the excessive use of water for industrial and agricultural purposes is cutting off essential access to water for numerous peoples around the world. The rapid growth of the population in recent decades will, if the same level of consumption is maintained, further reduce the availability of water resources. Third, as it was established by the Intergovernmental Panel on Climate Change (IPCC), global warming and climate change will have a strongly negative impact on access to and demand for water in most countries, due to changes in the hydrological cycle and levels of precipitation.

CONFRONTING PARADIGMS: WATER WARS VERSUS HYDRIC PEACE

Based on current scientific projections, political scientists and international relations analysts believe that in the coming decades we should see increased interstate hostilities over water scarcity. Water shortages can quickly become a cause of conflict, as upsurges in violent clashes threaten local and international security.⁴ The alarm bells first sounded in 1991, with an article published in *Foreign Affairs* by Joyce Starr titled “Water Wars.”⁵ Then, in August 1995, the Vice President for Environmentally and Socially Sustainable Development at the World Bank, Ismail Serigaildein, warned that “if the wars of this century were fought over oil, the wars of the next century will be fought over water—unless we change our approach to managing this precious and vital resource.”⁶

However, in the early 2000s the study of environmental conflicts, regarding water in particular, shifted to question the relationship between environmental factors and conflict. This change stressed the plurality of factors that lead to conflict. Indeed, the outbreak of conflict cannot be reduced to a single cause but must be understood in relation to the social, economic, and political context that shapes its particular characteristics. Within this framework, a team led by Professor Aaron T. Wolf, from Oregon State University, conducted a three-year study that collected information on water interactions among States from 1950 to 2000. During those fifty years, there were over 1800 of these “hydric interactions” documented, of which only thirty-seven led to serious conflicts, none of which involved war.⁷ In fact, the last known war over water occurred more than 4,500 years ago between the city-states of Lagash and Umma in the Tigris–Euphrates basin.⁸

This research concluded that the management of transboundary waters drives a process of cooperation instead of confrontation, a trend that is greatly enhanced in watersheds where there are existing political relationships and institutions that can shape environmental governance. Moreover, the resolution of water conflicts can prompt regional integration that changes how environmental governance is discussed. By fostering civil society opportunities for collaboration and peacebuilding, conflict can be avoided. Indeed, nearly 450 agreements on

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Thus, some studies on the prevention and resolution of water-related conflicts are skeptical of the supposed inevitability of an ecological disaster, and instead point to careful management of transboundary waters as a way to foster global environmental governance. In this sense, water is seen as a

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..... catalyst for cooperation: the total interdependence of all parties concerned in a water system requires actors to find agreements concerning its administration, under penalty of a disruption that would make all of them victims.⁹

The hydropolitic conflicts studied by Wolf exhibit certain peculiarities of great interest: the displacement of governments as the only actors in transboundary water management, and the establishment of civil society ties that go beyond the borders of the nation-state.¹⁰ Continuing with this

perspective, Ken Conca points out that rivers are a source of livelihood, pillars of culture and community, and a key component in development strategies. As such, they must not be taken in isolation, but as elements of larger and more complex socio-ecological systems.¹¹ He considers three main elements of river management: human needs, the requirements of agro-industrial growth, and the uses of ecosystems. These elements cannot be confined to state borders. Following these clues, this paper focuses on the role played by the regional institutional framework of water governance as a key actor for containing conflict and fostering cooperation.

CONTAINING CONFLICT AND BUILDING PEACE: REGIONAL WATER COOPERATION

Lake Victoria is an example of how peace can be achieved in spite of water scarcity—a site where conflict is not only contained, but where the institutional framework used for this purpose serves to foster regional cooperation.¹² Lake Victoria, whose water is used for drinking as well as for household and industrial use, supports the livelihoods of people living along its shores, mainly in the fishing industry. It is the habitat of tilapia

(*Oreochromis niloticus*) and Nile perch (*Lates niloticus*), two types of fish that are in great demand. However, the serious human and environmental situation at the Lake Victoria basin are turning it into a “sick giant.”¹³ People living in its surroundings languish in abject poverty and are devastated by health threats such as HIV/AIDs and water borne diseases like bilharzias and diarrhea. Chemical runoff from industry and agriculture as well as human waste runoff create severe pollution and health hazards. The lake is also infested with deadly water hyacinth, which is depriving the lake of oxygen. Moreover, within the next twenty-five years the region’s population is expected to double, adding to the demand generated by growth in industry and agriculture. The constant threat of droughts adds to the urgency of the problem.¹⁴

However, in spite of the difficult environmental and human problems around Lake Victoria, there is cooperation rather than conflict in the basin. How could this be possible? In order to answer this question, I undertook three months of fieldwork research in the area of Lake Victoria.¹⁵ From March to June 2014, I conducted dozens of semi-structured interviews with international and regional organizations, regional and national officials, local representatives, NGOs, and scholars along eleven cities in Kenya, Tanzania, and Uganda.¹⁶

I also performed extensive interviews of nearly one hundred fishermen, individually or in small groups, in their places of work and residence, and along relevant sites of the three shores of the lake: Dunga Beach in Kisumu, Kenya; Kigungu in Entebbe, Uganda; and Igombe in Mwanza, Tanzania. These interviews were supplemented by observations of various fishing activities performed both on land and on the water. These activities involved fishing of the lake’s predilected specimens; treatment of the fishing nets and other gear after use; sale of the day’s catch to the brokers who resell it in different local markets; measurement and verification of fishing catch for eventual export; and health controls of the catch and compliance to fisheries legislation performed by local and national inspectors.

These interviews and observations aimed to paint a picture of the everyday experiences of the inhabitants of the areas affected by some type of water conflict. I recorded their collective and individual reactions, partnerships, or cross-border conflict between neighbors, and the actions of the participating NGOs to conserve the environment or to assist local populations. I also noted the perceptions of local governments in tackling these problems, the considerations of potential threats to national security, and the different means of addressing the problems. Fishing has been chosen as the leading activity for our research because of its crucial importance

for managing the resources of Lake Victoria: it is its principal economic activity, and one of the largest in the region. From this starting point, we have reached a number of preliminary results that support the following four points.

1) Regional integration processes are a key factor for peacebuilding in transboundary waters

Almost every actor interviewed, at the national, regional or international levels claims that the situation is one of *both* conflict and cooperation. Conflict, which is sometimes latent, is present to the extent that the lake resources are becoming scarce, particularly the fishing stocks. However, officials—as well as activists of non-governmental organizations and the fishermen themselves—are convinced that conflict containment and cooperation are a result of an ad hoc regional institutional framework created for the management of the lake's resources. Most of the interviewed actors believe the following three organizations play a principal role in the prevention and resolution of conflicts: Lake Victoria Basin Commission (LVBC), Lake Victoria Fisheries Organization (LVFO) and Lake Victoria Environmental Management Project Phase II (LVEMP II). Thus, they logically look to the East African Community to foster this cooperation, as the responsibility to effectively manage the lake's resources rests on its shoulders. All parties agree that strengthening the East African Community's involvement in the governance of Lake Victoria is a key priority.

2) States are unable to manage transboundary water basins on their own

The main objective of the regional organizations created to prevent conflict and strengthen cooperation around Lake Victoria is to *harmonize* the various regulations and regulatory inconsistencies applied by states to the lake. There are often different laws enforced among the riparian countries regarding matters such as the type of fishing nets permitted (this being a crucial factor to the extent that it determines the size of the fish captured, and with it, its maturity—the capture of immature fish can be disastrous for the renewal of fish species) and the homogenization of fishing restriction periods, which, when practiced at different times, pushed fishermen to venture beyond their national borders of the lake and thus encouraged transnational disputes. To reconcile these differences, it is necessary to include all stakeholders involved in the management of transboundary waters; or, in other words: any lack of cooperation inevitably entails conflict.

3) Transboundary civil-society linkages entail a transnational community

One of the main objectives of interviewing local actors was to understand how they perceive their cross-border neighbors, with whom they share the scarce resources of the lake. Based on these interviews, one is able to confidently state that, through transnational civil-societal linkages, the lake's community transcends national identity.¹⁷ It is in fact possible to imagine the existence of a single community in which all of the lake's inhabitants feel a part of. Indeed, the conflicts that actors report are explained in terms of altercations between fishermen and enforcement officials (notably between Kenyan residents and the Ugandan coastal police), or between "good" and "bad" people.

This indicates that the concerned parties perceive the conflict not in terms of citizenship, but on *moral* parameters applicable to the whole community of the lake. This conclusion can be supported by the strong mobility of fishermen, who circulate among different coastal villages to undertake their activities, always integrating in local communities, but also redistributing economic gains to their original places of provenance (through regular visits or remittances). This means that incomes from fishing do not stay where they are made, but circulate around the whole area of the watershed. Moreover, strong family ties are generated from marriages between citizens of different countries, creating lasting transboundary linkages. As a corollary to these elements, actors request a deepening of the management of the lake's resources at the regional level, to the detriment of national policies that might be incompatible among them and therefore contrary to the general interest of the inhabitants of the lake as a whole.

4) Transdisciplinarity as the pillar of transboundary water management

Last but not least, the inquiry reveals a dimension that is not properly analyzed in academic and political analyses of water governance: transdisciplinarity. Transdisciplinarity describes a new integrative approach that transcends existing research boundaries.¹⁸ Problems that involve an interface of human and natural systems are complex and multidimensional,¹⁹ hence the foolishness of addressing them in the isolation of any single discipline. Indeed, technical solutions without knowledge of social sciences to accompany them are empty, and water policies that lose sight of the scientific dimension are blind. The management of water resources has *sui generis* characteristics that require, for its proper approach, to go beyond these two approaches. Actually, if transboundary basins constitute

complex social-ecological systems, the reality is that the science of the engineer, the political scientist, or the international analyst cannot alone give a full account of the situation, much less propose plausible solutions.

A fertile hydro-political approach must include both social anthropology and the sociology of cross-border linkages, cooperation, and conflict. These disciplines allow us to understand both the social dynamics and the particularities of the eco-human systems on which the policies operate. Moreover, a deeper perspective that aspires to a more thorough understanding of water systems and to long term policies requires the

..... intervention of political ecology, which is understood not only as the political analysis of human-environmental dynamics, but also as the process of bringing to the political arena the scientific comprehension of nature itself.²⁰ Simultaneously, the spiritual dimension that water encompasses demands philosophical and religious study to understand the hydro-political consequences of certain decisions. Thus, it is only through extensive interdisciplinary studies that we can weave governance of natural resources, conflict management, cooperation, and peace-building together, and deepen the institutional framework of the processes of regional integration.

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CONCLUSION

The Stoic philosopher Epictetus explains the idea that, if while sailing in the open sea I feel a coming storm, there are two paths I can take: the terror that leads to error in the assessment of both reality and in the proper actions to undertake, or impassibility, which comes from the comprehensive and objective representation of what it is in front. The latter is the only way to act according to the truth.²¹ Increasing world water scarcity is a storm whose clamor will most likely fall upon us with rage. This storm will certainly generate fear, undermine trust, and enhance the possibility of conflict between nations. If we are to address potential conflicts over water only through a security lens, it will be what the sociologist Robert Merton termed a “self-fulfilling prophecy,”²² effectively bringing to war what could have been a roadmap to peace.

What we can do then is follow the road toward peace that some case studies, such as Lake Victoria, show us is possible. Though there are cultural, political and historical differences in each case, it is possible to look for similarities in how a regional institutional framework of water management works. Because, as for the alchemist who thinks of all metals as potential gold, for water management, conflict over trans-boundary basins lays out an actual process of peace, waiting to be implemented.*f*

ENDNOTES

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of the Republic of Kenya, Ministry of Agriculture, Animal Industry and Fisheries of the Republic of Uganda, Ministry of Water of the United Republic of Tanzania, Ministry of Livestock and Fisheries Development of the United Republic of Tanzania; Local political representatives: leaders of the Beach Management Units (BMU) from Dunga Beach (Kenya), Kigungu (Uganda) and Igombe (Tanzania); Representatives of NGOs: Sustainable Development Environment Watch (SUSWATCH Kenya), Lake Victoria Center for Research and Development (OSIENALA), Uganda Coalition for Sustainable Development (UCSD), The Environmental Management and Economic Development Organisation (EMEDO), The East African Civil Society Organizations Forum (EACSOFF); Scholars: University of Nairobi, University of Dar es Salaam, Institut de recherche pour le développement (IRD), Institut français de recherche en Afrique (IFRI-Nairobi), National Fisheries Resources Research Institute of Uganda (NaFIRRI).

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